# FINANCIAL STABILITY REPORT

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# FINANCIAL STABILITY: MAIN VULNERABILITIES AND RISKS

The level of uncertainty surrounding the macro-financial situation of the global economy and the Spanish economy remains high. Notably, in comparison with the last *Financial Stability Report* (FSR), the risks to financial stability resulting from geopolitical tensions have increased, from their already high level, with the emergence of a new flashpoint in the Middle East.

Also, the weakness of some economies, in particular those of the euro area and China, and expectations that monetary policy will remain restrictive for longer have led to a worsening of the growth outlook and have highlighted the downside risks to the economic scenario. Meanwhile, monetary policy tightening has helped to moderate inflationary pressures in the euro area and other regions and to stabilise the risks posed by high inflation.

Lastly, although the financial markets have returned to normal since the turbulence in March this year, there is still a risk that agents will become more pessimistic about the macro-financial environment and more risk averse. This would have negative consequences for financing conditions (see Figure 1).

With regard to the vulnerabilities identified, those related to high government debt and the financial position of firms and households remain unchanged, while those associated with financial intermediation capacity and the real estate sector have eased.

In this setting, the Spanish banking sector has proved to be resilient. Indeed, its profitability and solvency have performed favourably, non-performing loan (NPL) ratios have continued to decline and the conditions on wholesale bank funding markets have returned to normal. However, with interest rates expected to remain higher for longer, the cost of liabilities, which had been contained, is gradually rising and some deterioration in credit quality can be expected. Under the macroeconomic projections baseline scenario, this would be no obstacle to the organic generation of capital and the maintenance of a sound liquidity position, but the materialisation of the risks identified could give rise to the need to absorb losses. Accordingly, it is still necessary for banks to use the current favourable profitability situation to build up resilience to adverse scenarios.

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

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.

Figure 1

**Financial stability: main vulnerabilities and risks (a) (b) (c)**


**SOURCE:** Banco de España.

**a** In this report, **vulnerabilities** are defined as economic and financial conditions that increase the impact or probability of the 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 an increase in risk aversion and the possibility that its effects could be amplified by certain financial vulnerabilities has been identified and discussed in past FSRs, specifically as a factor associated with geopolitical risks and risks linked to economic activity and inflation. Macro-financial developments, particularly higher interest rates for longer, prolonged signs of weakening demand and continued uncertainty make it advisable to monitor this risk particularly closely in coming quarters.

## R1 Geopolitical risks

Geopolitical tensions continue to pose elevated risks to financial stability. In particular, they continue to have the potential to adversely affect global value chains, essentially through trade in energy and other commodities, and to contribute to sharp falls in the prices of risk-bearing financial assets.

The war in Ukraine, which broke out in 2022, and the recent escalation of tensions in the Middle East are the main sources of uncertainty, although geopolitical risks are global in scope. Thus, greater tensions have also been observed recently in Africa and in the Asia-Pacific region. In Latin America, a particularly important region for Spanish banks, some signs of political instability are also apparent. In addition, the possibility of intensification of cyber attacks globally remains a specific risk.

That said, the resilience in the global economy and international financial markets has been greater than expected following the Russian invasion of Ukraine. In particular, the most adverse scenarios have been avoided in the energy markets, where prices fell markedly from the second half of 2022 until the middle of this year. However, in recent months there have been notable increases in the price of oil,

Chart 1
Natural gas and oil prices (a)

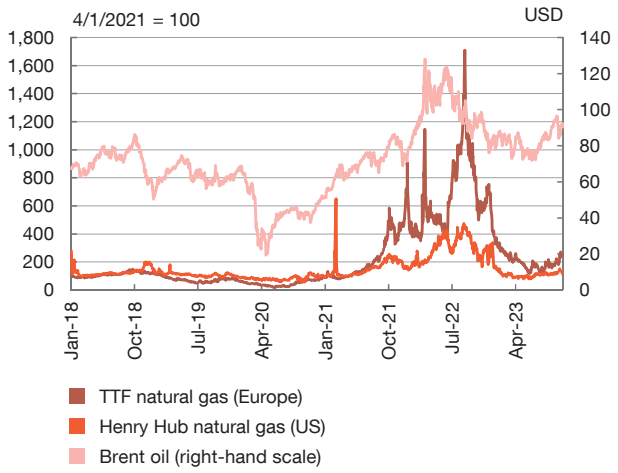
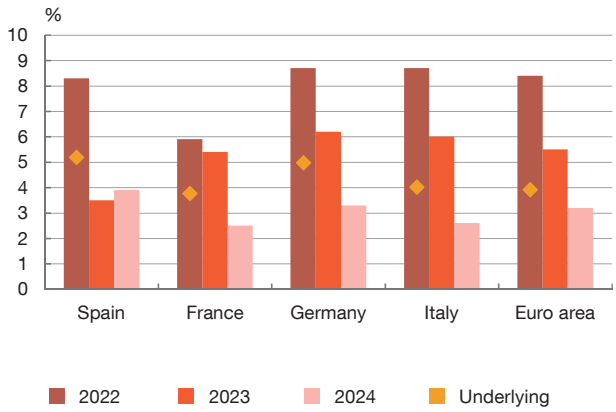



Chart 2
IMF inflation forecasts




**SOURCES:** Refinitiv and IMF (October 2023 *WEO*).

**a** Latest observation: 23 October.

driven by OPEC+ production cuts and, more recently, the tensions in the Middle East. Since the beginning of October, these tensions have also pushed up the price of gas on international markets (see Chart 1).

The box accompanying this section analyses in greater detail the potential impact of the situation in the Middle East, through financial market and, especially, energy market channels. The market reaction to date as a result of the current escalation of tensions is assessed and the historical experience of events of this type is reviewed.

In the medium and long term, the risk remains of a divided world order becoming entrenched, which would, at least partly, reverse the efficiency gains obtained from economic and financial globalisation.

### R2 Higher and more persistent inflation

The fall in energy prices since the second half of 2022 and the effect of the monetary policy tightening have contained inflation notably in the euro area (see Chart 2) and other regions during 2023.

Looking ahead, the inflation projections anticipate a gradual fall in inflation to around 2% in the medium term, both in the euro area and in Spain, and the risks surrounding these projections are balanced. On one hand, as already indicated, geopolitical factors are an important source of upside risks for the prices of energy and other commodities, such as food, which could give rise to a broader increase in inflationary pressures. Climate factors are also an exogenous source of risk for energy and food

Chart 3
Short-term interest rates forecast. OECD Economic Outlook (a)

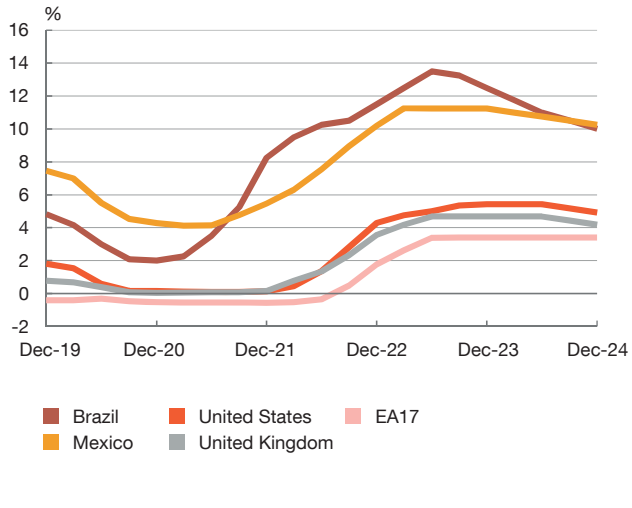
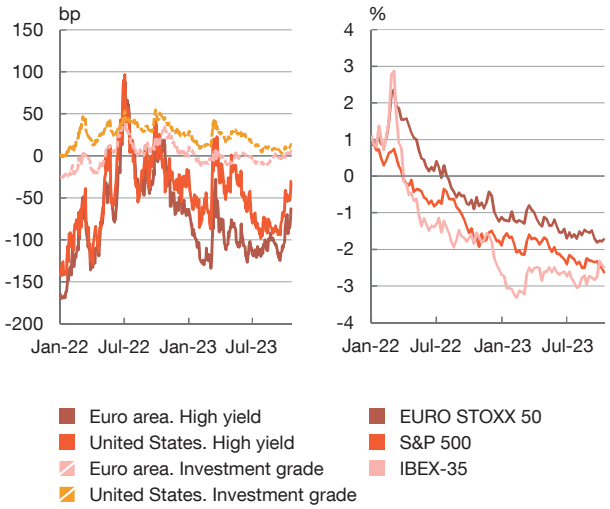



Chart 4
Spreads of NFCs' bonds against the swap curve (l-h panel) (b) and equity risk premium (r-h panel) (c). Deviations from historical average




**SOURCES:** OECD and Refinitiv Datastream.

**a** Short-term interest rates forecast refers to projected values of three-month money market rates. Forecast data are calculated by the OECD by making an overall assessment of the economic climate in individual countries and the world economy as a whole, using a combination of model-based analyses and statistical indicator models.

**b** High yield: ICE Bank of America Merrill Lynch Non-Financial High Yield Index. Investment grade: ICE Bank of America Merrill Lynch Non-Financial Index. The deviations are calculated with respect to the historical average for 1998-2023. The average is 454 bp for euro area high-yield bonds, 446 bp for US high-yield bonds, 78 bp for euro area investment-grade bonds and 131 bp for US investment-grade bonds.

**c** The equity risk premium is calculated using a two-step dividend discount model. For more details, see Russell J. Fuller and Chi-Cheng Hsia. (1984). "A simplified common stock valuation model". Financial Analysts Journal. The historical averages are calculated for the period 2006-2023. The average is 6.62% for the EURO STOXX 50, 5.00% for the S&P 500 and 7.89% for the IBEX 35.

prices. In addition, a higher than expected increase in wages and profit margins would lead to a larger increase in inflation. On the other hand, the materialisation of downside risks to the growth scenario or a potentially greater monetary-policy impact could give rise to lower than projected inflation.

Against this backdrop, the Governing Council of the European Central Bank (ECB) has indicated that it considers, on the information currently available, that the current level of interest rates, if maintained for a sufficiently long duration, is broadly consistent with reaching the 2% medium-term inflation target. In any case, it continues to stress that it will adjust its monetary policy on the basis of the incoming data to ensure price stability.

Amid global inflationary pressures, the transmission of monetary policy adjustments across regions, through trade and, in particular, financial channels, also needs to be considered. Economic growth in the United States has remained highly robust and recently there has been a slight rise in inflation, so the Federal Reserve System is expected to keep interest rates high, and above those of other advanced economies, for longer (see Chart 3). This contributes to expectations of a more prolonged tightening of global financial conditions, given this country's central position in the international financial system.

As regards the Chinese economy, continuation of its opening up, following the abandonment of the "zero-COVID" policy, which has led to an increase in China's output and in its contribution to global supply, and its weak domestic demand have tended to reduce global inflationary pressures.

The current cycle of interest rate rises in the advanced economies has not led to large capital outflows from the emerging countries, largely because they raised their interest rates early to comparatively high levels, particularly in Latin America (see Chart 3). However, potential additional tightening of global financial market conditions continues to be an important risk to financial stability for these countries.

### R3 Greater risk aversion among economic agents

The risk premia on debt securities and equities remain at historically low levels (see Chart 4), despite the increase in the financial burden on agents and an economic outlook characterised by still relatively high inflation and weak growth. The global banking turmoil of March this year led to a slight rise in risk premia, which has since been rapidly and almost completely corrected.

In this setting, there is a risk that an increase in agents' risk aversion[2] may generate even higher borrowing costs and reduce activity, as agents postpone or cut back their consumption or investment plans for precautionary reasons.

This greater risk aversion could be a consequence of there being less funds available to cover financial losses. For example, economic agents whose liquidity reserves decline as a result of a sustained increase in financial costs find that their ability to assume additional increases in these costs or other kinds of shocks has been reduced.

The lower willingness of economic agents to take risk may also stem from a more negative perception of the probability of adverse macro-financial developments. In particular, from greater pessimism over the future course of growth and inflation. The existence of relatively high valuations in the current uncertain environment may make these perceptions more fragile, and lead to a sharper and larger price correction if they become more pessimistic still.

Until now, financial markets have generally adjusted to higher interest rates in an orderly fashion, but the emergence of financial tensions in certain segments may

2 For the purposes of this analysis, the term "risk aversion" is used in its broad sense, i.e. as the reduced willingness of agents to assume risk, owing to a more pessimistic assessment of the future probability of adverse macro-financial scenarios or a lower preference for (or a higher cost of) decisions that may generate losses. A strict definition referring exclusively to agents' preferences has not been applied.

worsen global risk sentiment. This would exert upward pressure on the risk premium of traded financial instruments and would also restrict the supply of bank credit.

Internationally, the increase in risk aversion may tighten financing conditions, especially in emerging countries, beyond the effects of more restrictive monetary policies on risk-free rates. This is particularly relevant for countries, such as Türkiye, in which larger financial vulnerabilities have built up. The change of direction in Türkiye's economic policies has begun to reduce its vulnerabilities, but the adjustment process poses significant challenges, which would increase in the event of a deterioration in global financial conditions.

Vulnerabilities at global level in certain non-bank financial intermediaries and the materialisation of losses on real estate investments, particularly in China, could also amplify these dynamics.

### R4 Downside risk to economic growth

Growth in economic activity, both at global level and in the euro area and Spain, has weakened in 2023 to date. In the case of Spain, the growth rates observed in the first two quarters (4.2% and 2.2% year-on-year in 2023 Q1 and Q2, respectively) are significantly higher than those observed for the euro area as a whole (1.1% and 0.6%) and for the other large European economies. That said, a significant loss of

Chart 5
Activity in the euro area, the United States and Spain (a)

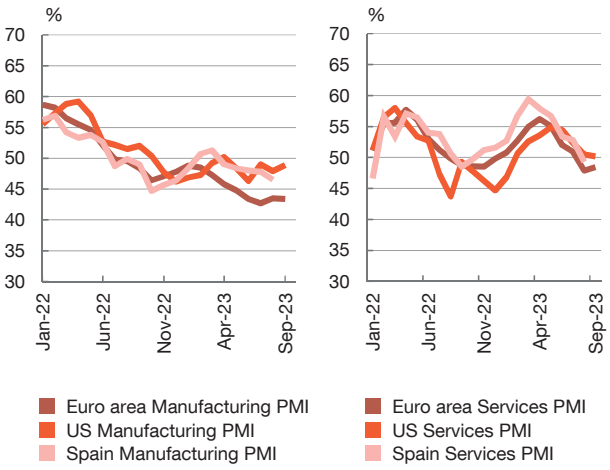
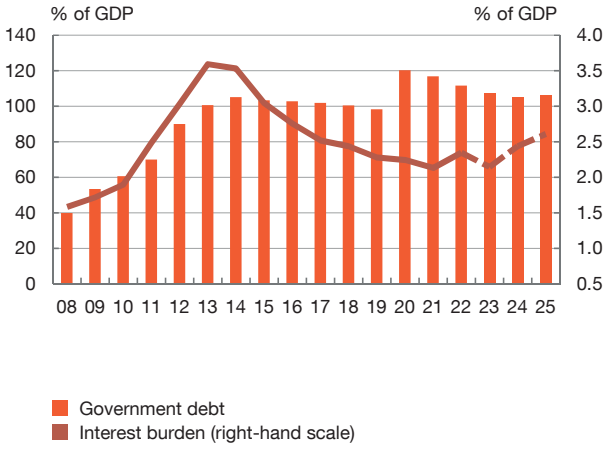



Chart 6
Spanish government debt and associated interest burden (b)




**SOURCES:** S&P Global, IGAE and Banco de España.

**a** Latest observation: September 2023 (US and euro area flash estimate) and August 2023 (Spain).
**b** For 2023-2025 the chart depicts the Banco de España projections published in September 2023. In the case of the government debt-to-GDP ratio, the projections are automatically revised down due to the upward revision to nominal GDP announced by the INE in the same month.

momentum is also observed with respect to 2022. The outlook for activity is tilted towards the downside in various sectors and geographical areas (see Chart 5).

The projections for 2023-2025 envisage average growth for the Spanish economy of around 2%, in a context of upward revision to the flash estimates of GDP for previous years. According to these revisions, Spain had already recovered its pre-pandemic level of activity in 2022. The latest Banco de España projection exercise, however, revised down growth for 2024 and 2025, as a consequence of lower external demand, in a setting of low growth in Europe as a whole, further tightening of financial conditions and higher oil prices.

Should these factors be affected by further negative shocks, the growth slowdown in Spain may be steeper. That would have a negative impact on the income of households and non-financial corporations (NFCs), squeezing their ability to meet their financial obligations in the current high interest rate environment.

The main vulnerabilities[3] of the Spanish economy and financial system include:

### V1 High level of government debt

Spain's government debt ratio declined further, to 111.2% of GDP in June 2023, more than 14 percentage points (pp) below its March 2021 peak of 125.3%. Similarly, the budget deficit continued on the downward trend that began in 2021 Q2, to stand at 4.4% of GDP in June 2023 (down from 4.8% in 2022 Q2 and 11.1% in 2021 Q1). The reduction in the government debt ratio was driven exclusively by the growth in nominal GDP, since the growth in interest paid and in the primary deficit would have increased the ratio by more than 11 pp since 2021.

Looking ahead, the Banco de España's projections envisage a gradual decline in the government debt ratio over the coming years, although it would still stand at very high levels in 2025 (around 108%). At the same time, this debt level, coupled with higher financing costs, is set to drive up Spain's public debt burden, which could reach 2.6% of GDP in 2025, up by 0.5 pp on the present figure and by 1 pp on the low recorded in 2008 (see Chart 6).

Indeed, the cost of new government debt issuance was close to 3.6% in September 2023, well above the average for the period 2013-2021 of 0.5%. This mainly owes to the increase in risk-free rates driven by monetary policy tightening, while the risk premium on Spanish government bonds has held stable since end-

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.

2022 at close to 100 basis points (bp), 30 bp higher than the average for 2021, when it reached its lowest ebb since the global financial crisis.

Thus far, the relatively long maturities of existing debt (7.8 years) and the repayment of debt issued at comparatively high interest rates during the sovereign debt crisis have tempered the impact of costlier new issuance on the average cost of public debt.

In this setting, the high level of public debt and the large structural budget deficit remain a significant element of vulnerability for the Spanish economy, particularly in the event of scenarios entailing an abrupt change in market risk sentiment, such as those mentioned above. Furthermore, they reduce the fiscal space to cushion potential shocks to the economy.

Against this backdrop, fiscal policy should fulfil the EU recommendations[4] so as to gradually reduce the country's debt and structural budget deficit. This requires the design and implementation of a programme geared towards lasting fiscal consolidation. Furthermore, making good use of the NGEU funds, which have no direct impact on the budget deficit but do have a positive bearing on economic activity, would also help to lessen the short-term impact on activity of this fiscal consolidation process. Likewise, an ambitious package of structural reforms would help to reduce fiscal imbalances by boosting the economy's potential growth.

### V2 Financial weakness of households and firms

Debt ratios continued to decline among NFCs and households in the first half of 2023, by 4.6 pp and 2.4 pp of GDP, respectively, compared with end-2022. However, the percentage of vulnerable agents is expected to rise due to slowing demand and the steadily climbing interest burden.

In the case of NFCs, profit and profitability continued to improve in the first half of 2023.[5] However, some sectors did less well as a result of the negative performance in the manufacture of refined petroleum products and the wholesale fuel trade, which had recorded strong profits in the previous year. The most recent results of the survey on the access to finance of enterprises (SAFE) suggest that SMEs performed less favourably than larger firms.

Further, over the coming quarters NFCs will continue to face profitability risks. Weaker demand will temper profit growth, both through more sluggish turnover and the more limited capacity to pass cost increases through to selling prices. In addition,

4 See the European Council Recommendation on the 2023 National Reform Programme of Spain, 24 May 2023.

5 Based on the Banco de España Central Balance Sheet Data Office Quarterly Survey (CBQ), which collects data from a small sample of firms that are, generally speaking, significantly larger than the Spanish average.

upward pressure on labour and energy input costs would also contribute to less positive developments in terms of profits.

Meanwhile, the gradual increase in the average cost of corporate debt as higher interest rates are passed through, particularly in the cost of bank loans (see Chart 7), which has begun to temper the growth in profit after interest in the first half of 2023, is likely to continue to exert downward pressure on profitability. This despite the mitigating effect provided by the existing long-term, fixed-rate debt that is unaffected by interest rate resets in the near term, in particular debt associated with the ICO loan guarantee facility deployed early in the pandemic. However, it appears that such debt is being repaid at a rapid pace (-21.8% to June 2023).

The cost of corporate funding on wholesale markets climbed further in the first half of 2023, having risen very sharply over the course of 2022, as a result of monetary policy tightening. Corporate risk premia are yet to tighten significantly, but possible increases in risk aversion could exert additional pressure on this component of funding costs.

Overall, therefore, the high financial pressure on some firms remains an element of vulnerability, and one that may intensify as shorter-term debt is renewed. To date, the growth in the proportion of vulnerable firms has been kept in check by healthy profits. However, the downside risks to activity could weaken this favourable factor.

Households, meanwhile, saw their nominal gross disposable income recover by 8% year-on-year in 2023 Q2 (1.7% in the case of real disposable income), helping to mitigate the adverse effects of higher inflation and interest rates on their ability to consume and to meet payment obligations.

Higher interest rates, however, continue to exert upward pressure on indebted households' interest burden and the average cost of debt. Specifically, the interest burden on mortgage debt has risen for households across all income quintiles (see Chart 8), and the average cost of existing mortgages in August 2023 stood at 3.4%, up 234 bp on end-2021 levels (see Chart 7).

Looking ahead, a greater pass-through of higher interest rates to the cost of existing household debt can be expected, which will contribute to driving up the proportion of indebted households with a high debt burden, despite the increase in early debt repayments made by households in recent months. For instance, it is estimated that interest rates will rise by more than 1 pp on around 30% of variable-rate mortgages over the 12 months after June 2023.

In the face of this increased financial pressure on households, modifying the contractual terms and conditions of their debt could help increase the likelihood of debt collection and mitigate the adverse impacts on consumption. Royal Decree-

Law 19/2022 introduced a raft of measures, not least a reform of the Code of Good Practice (CGP) for the amendment of the terms and conditions on the mortgage loans of vulnerable and potentially vulnerable households. In the first seven months of 2023, the number of applications for measures under the CGPs (over 42,000) was low relative to the total number of existing mortgage loans (accounting for less than 0.4%) and compared with the number of qualifying mortgages, but represented a notable increase on the average number of applications submitted in equivalent periods since the CGP was introduced in 2012. Only a small percentage of the applications made (8%) have led to measures effectively being implemented, although a decision has yet to be given on 50% of applications. Around 40% of applications were rejected, a high percentage of which because they did not qualify for objective reasons. Similarly, there has been no significant increase in the total volume of forborne household loans outside the scope of the codes.

When assessing the number of applications made and measures implemented, it should be borne in mind that only a short amount of time has elapsed since the new CGP entered into force at the start of the year. Moreover, households' servicing capacity appears to have been sustained by the resilience in employment and income. Modifying mortgage terms and conditions, whether under the CGPs or otherwise, entails costs for households to the extent it calls for an additional financing effort. In general, therefore, households have incentives to only use these options when they have liquidity problems for which there is no alternative solution. In any event, how these measures evolve will need to be closely monitored in line with the macro-financial setting.

### V3 Weaknesses in the financial sector's intermediation capacity

The profits of the Spanish banking sector once again performed favourably in 2023 H1. Return on assets (ROA) and return on equity (ROE) stood at 0.8% and 12.1%, respectively, in June 2023, 15 bp and 200 bp higher than at end-2022.

The rise in interest rates has continued to drive up banks' revenue more than it has their financing costs, and the consequent growth in net interest income was again the factor that most contributed to profitability in 2023 H1 (see Chart 9). These positive developments in net interest income have more than offset the adverse change in operating costs in the current inflationary environment, the rise in impairment charges (concentrated in business abroad) and the impact of the extraordinary levy on banks' business in Spain.

The Spanish banking sector's comfortable liquidity position and the negative rates from which the present rate hike cycle began in 2022 have helped to contain the cost of liabilities, particularly bank deposits (see Chart 7). However, policy rate hikes passed through more strongly to average bank deposit rates in 2023 H1, and the

Chart 7
Increase in interest rates on loans and deposits (a)

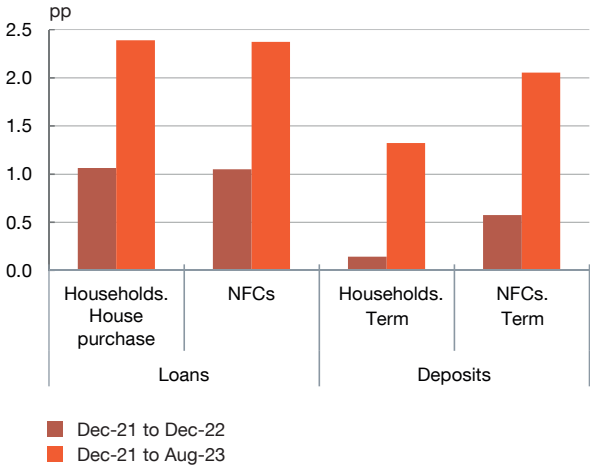
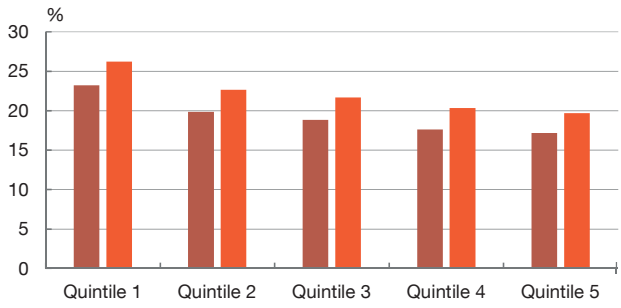
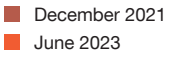






Chart 8
LSTI ratio. Stock of mortgage loans at each date. By income quintile (b)




**SOURCES:** INE and Banco de España.

**a** Cumulative change (in pp) in the interest rate used in loan and deposit transactions in the reference period.
**b** The chart shows the loan service-to-income (LSTI) ratio of existing mortgages for two dates (December 2021 and June 2023) and in each income quintile. The LSTI ratio shows the relationship between the annual mortgage servicing cost and household income (proxied using average gross annual household income in the same postcode). The values shown correspond to the average LSTI ratio in each quintile, weighted by the outstanding loan amount to represent more precisely the LSTI ratio for total outstanding credit. Data for household income broken down by postcode are not available for recent years. Therefore, the present values are calculated taking the latest income data and based on changes in the average net income per household in the INE's Living Conditions Survey.

contribution of other financial liability categories to interest expenses also increased. As a percentage of total liabilities, these expenses have risen by 114 bp in annualised terms since December 2022, to stand at 2.3%.

Meanwhile, the progress in the phasing-out of the Eurosystem's Targeted Longer Term Refinancing Operations (TLTRO)[6] is prompting a slight shift in the composition of liabilities towards funds from financial intermediaries, particularly in the form of interbank loans. As regards deposits from households and firms, these saw moderate growth at consolidated level but began to decrease in business in Spain, posting year-on-year growth of 1.3% and -1%, respectively, in June 2023.

Following the initial impact of the financial turmoil in March, the market conditions for European banks have largely returned to normal. For instance, there has been a notable recovery in debt issuance since May, which will foreseeably enable Spanish banks to comfortably fulfil their funding plans for this year and comply with resolution requirements.

The stock prices of Spanish banks have largely recovered, after losing close to 20% of their value as a result of the collapse of Silicon Valley Bank (SVB) and Credit

6 These Eurosystem operations provide long-term funding to credit institutions on favourable terms to stimulate lending to the real economy. The first TLTRO programme was launched in 2014, and the last programme (TLTRO-III) was launched in 2019 and is expected to be repaid in full in 2024.

Chart 9
Breakdown of the change in profit.
Consolidated net profit as a percentage of ATAs (a)

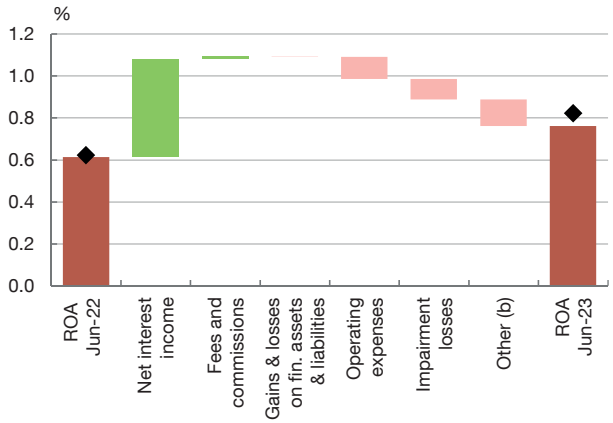
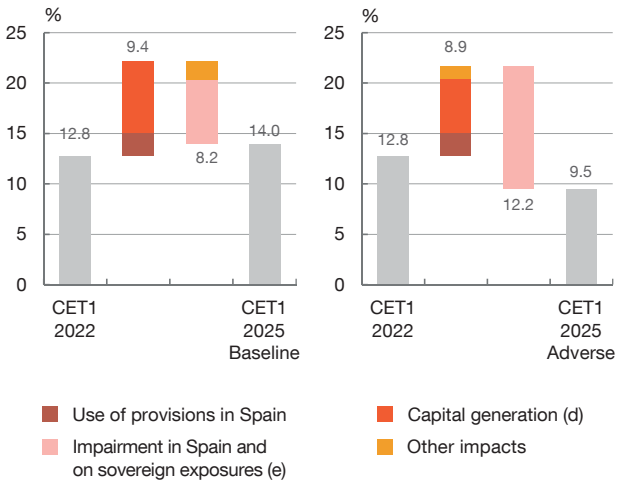



Chart 10
FLESB stress tests. Impact on CET1 ratio under baseline scenario (l-h panel) and adverse scenario (r-h panel) (c)




**SOURCE:** Banco de España.

**a** The red (green) colour of the bars denotes a negative (positive) contribution of the corresponding item to the change in consolidated profit in June 2023 compared with June 2022. The black diamonds denote the ROA excluding extraordinary losses in June 2022 from the purchase of offices by a bank (-€0.2 billion) and the impact of the 2023 temporary levy on the banking sector in June 2023 (-€1.3 billion).
**b** Includes, among other items, the extraordinary losses and temporary levy on the banking sector mentioned in the previous note.
**c** The figures above (below) the bars denote the net effect of positive (negative) flows. The initial and final CET1 ratios are presented fully-loaded. Other impacts include the change in RWAs between 2022 and 2025 and the effect of the ICO guarantees. Aggregate results, including banks directly supervised by the SSM and the Banco de España.
**d** This variable includes net operating income in Spain and net income attributable to business abroad. Thus, the capital generated by the banking group overall is compared with the impairment losses in Spain and sovereign losses which are the focus of these tests.
**e** This variable shows the projection over the three years of the exercise of gross impairment losses on the credit portfolio for exposures in Spain and other types of losses (associated with the fixed-income portfolio, foreclosure management and the sovereign portfolio).

Suisse, but they remain 6.2% below their level prior to 8 March 2023[7] (-9.2% in the case of euro area banks).

In parallel to these funding source adjustments, Spanish banks have maintained a sound liquidity position, presenting a liquidity coverage ratio (LCR) and net stable funding ratio (NSFR) of 176.9% and 131.1%, respectively (above the minimum requirement of 100% in both cases).

Nevertheless, the LCR has decreased by 28.7 pp from its June 2022 level of 205.6%. This appears to be linked to the decline in deposits at central banks (where part of the low-cost financing these had provided was held as liquidity reserves) and is in line with expectations in view of the higher cost of such funding and the incentives to reduce its use.

Against this backdrop, Spanish banks also managed to raise their CET1 capital ratio by 25 bp year-on-year, to 13.1% at June 2023.

7 On 8 March SVB announced significant sales of its financial instruments and additional distress sales. This led to a major bank run on 9 March and the bank's failure on 10 March, triggering a global correction in bank stock prices.

Despite this good recent performance, the materialisation of the macro-financial risks identified in this report may have a significant negative impact on the banking sector. The stress test tools are extremely useful to assess this impact.

The results of the stress test exercise coordinated by the EBA, published in July, show that the European banking sector overall is resilient under an adverse scenario characterised by a severe downturn and further increases in inflation and interest rates. Under that scenario, the aggregate CET1 ratio remains at 10.4% in 2025, after absorbing a negative impact of 459 bp. The eight Spanish significant institutions taking part in the exercise post an aggregate CET1 ratio of 10%, similar to the European average, at end-2025, with a lower impact (240 bp) that counters their lower initial CET1 ratio (12.4%, compared with a European average of 15%).

The Banco de España's top-down stress test exercise[8] uses the EBA's adverse scenario, together with additional hypotheses of stressed credit quality in certain business sectors, owing to the uncertainty created by the accumulation of extraordinary shocks in the period 2020-2022. It also covers a broader sample of significant and less significant institutions. Using this alternative methodology, the results likewise show high overall resilience, despite the additional stress applied to credit risk, with the CET1 capital ratio down to 9.5% at the end of the exercise, a decline of almost 330 bp (see Chart 10). Without this additional stress, the results would be similar to those obtained in the EBA exercise.

In any event, the results of the stress tests show a certain degree of heterogeneity across banks and the possible effects of a high macro-financial risk environment must be closely monitored.

While focus is mainly given to the stress test results under the adverse scenario, those obtained under the baseline scenario can be used as an indicator of the expected solvency of the banking sector provided there are no major deviations from the macroeconomic projections. The results show that, despite the rise in interest rates, the projected continued growth and the financial positioning of the banking sector allow for organic capital growth in the period 2023-2025. In particular, in the Banco de Espana's stress test, and in accordance with the September 2023 projections, the CET1 ratio could grow by almost 140 bp over that period.

Meanwhile, global concerns persist regarding the vulnerabilities in the non-bank financial intermediation segment, especially as regards tight liquidity positions and high leverage. By sector, open-end investment funds show most signs of vulnerability.

8 The Banco de España's stress text exercise (the Forward Looking Exercise on Spanish Banks, FLESB) is based on regulatory and supervisory reporting and on banks' own estimates, drawing on their different risk models and financial performance. The EBA coordinates a bottom-up exercise with constraints, in which the banks themselves estimate the results of the exercise, subject to certain methodological constraints and outlier testing and using supervisory top-down models.

Chart 11
Residential real estate indicators (a)

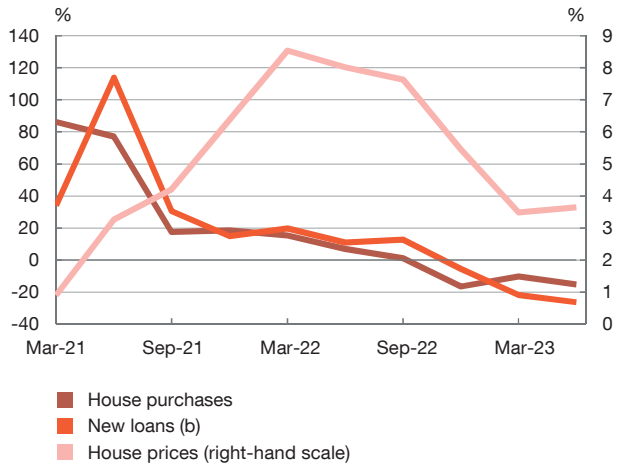
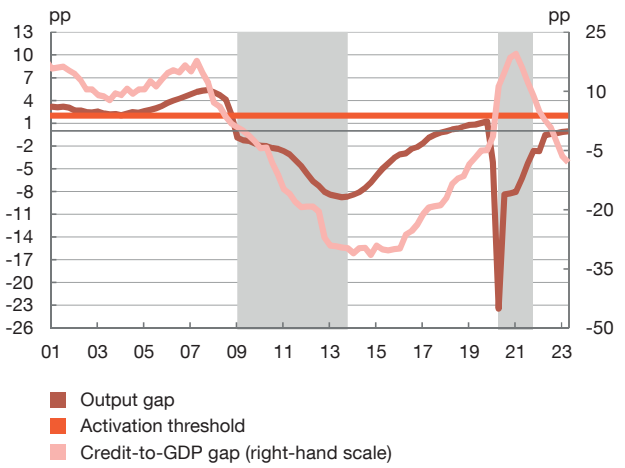



Chart 12
Credit-to-GDP gap and output gap (c)




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

**a** Year-on-year rates of change based on seasonally adjusted series.
**b** Rate of change on volume of credit granted in each quarter.
**c** The output gap represents the percentage difference between observed GDP and its quarterly potential level. Values calculated at constant 2010 prices. See Pilar Cuadrado and Enrique Moral-Benito. (2016). "Potential growth of the Spanish economy", Documentos Ocasionales, 1603, Banco de España. The credit-to-GDP gap is calculated as the percentage point difference between the observed ratio and its long-term trend calculated by applying a one-sided Hodrick-Prescott filter with a smoothing parameter of 25,000. This parameter is calibrated to the financial cycles historically observed in Spain. See Jorge E. Galán. (2019). "Measuring credit-to-GDP gaps. The Hodrick-Prescott filter revisited", Documentos Ocasionales, 1906, Banco de España. Data available up to June 2023. The grey shaded areas show two financial crisis periods identified in Spain since 2009: the systemic banking crisis (2009 Q1 to 2013 Q4) and the crisis triggered by the COVID-19 pandemic (2020 Q1 to 2021 Q4). The orange horizontal line denotes the reference threshold for activation of the CCyB, equal to 2 pp for the credit-to-GDP gap.

As indicated in previous editions of this report, were the risks identified to materialise, the response of these funds could trigger a spiral of highly discounted asset sales, which would lead to further tightening of financing conditions in the banking sector, and to a potential reduction in the value of its holdings of marketable financial instruments.

### Real estate market

On this occasion, the build-up of real estate imbalances, some incipient signs of which were observed in 2022, has been excluded from the list of vulnerabilities.

The contraction both in activity and credit on the housing market, which began in 2022 Q3, has continued so far in 2023. In particular, the volume of house purchases declined by 15% year-on-year in 2023 Q2 (compared with a fall of 10% in 2022 Q4), while new residential mortgage loans showed a more marked drop of 26.3% (compared with a decrease of 5.5% in 2022 Q4). In consequence, more houses have been sold without a mortgage than with one. That said, both the volume of house purchases and new mortgage loans are still above their pre-pandemic levels.

House price growth headed up again in 2023 Q2, interrupting the downward trend of the previous 12 months. Specifically, the year-on-year rate of growth stood at 3.6%

in June 2023 (see Chart 11), somewhat higher than headline inflation. In consequence, close monitoring of this indicator is needed especially in the case of new housing, to assess the persistence of this behaviour.

In this setting in which the previous expansionary pattern of the housing market is correcting, indicators of house price imbalances remain close to neutral, so far with no signs of any easing of credit mortgage standards and conditions.

### Macroprudential stance

The Banco de España's macroprudential policy stance remains heavily influenced by the uncertainty surrounding macro-financial developments. Moreover, the credit-to-GDP gap continues to narrow – driven by the contractionary behaviour of credit and by nominal GDP growth – and on the latest data available is now in negative territory, farther from the activation threshold than it was six months ago (see Chart 12). In turn, the output gap has moved closer to positive values, in a setting in which activity has continued to grow so far in 2023 and inflationary pressures persist.

Consequently, the countercyclical capital buffer rate currently remains at 0% and no other macroprudential measures have been activated. As described in detail in Chapter 3, the impact of the ECB's revised floor methodology for other systemically important institutions (O-SIIs) has been passed through to capital requirements in the Spanish banking sector, giving rise to an increase of 25 bp in the minimum buffer rates required of Spain's two most systemically important institutions.

Box 1

## ANALYSIS OF THE EFFECTS OF MIDDLE EAST CONFLICTS ON THE FINANCIAL AND ENERGY MARKETS

The new geopolitical tensions caused by Hamas' attack on Israel on 7 October may have a significant impact on the world economy, manifesting itself through various trade and financial channels. The effect on the oil and gas energy markets would be particularly noteworthy, as different historical episodes since the mid-20th century illustrate. The more the conflict expands, the more disruptive will these effects be, particularly if other energy-commodity exporting countries in the region become involved or if severe disruptions in the main distribution routes arise.

### Energy markets channel

The impact of a geopolitical event of this kind on oil and gas prices depends on the production volume that is ultimately affected and the duration of the event. Based on these variables, the main events of this kind which have occurred in the Middle East since the 1973 oil crisis have had an uneven effect on oil prices (see Chart 1).[1] Some of these events, such as the 1970s crisis, had more persistent effects, while other more recent ones were more temporary – which also depends on the effect of mitigating factors. These include the spare capacity of other producer countries or the use of inventories and strategic reserves.

For now, the current Middle Eastern tensions have not affected oil production and have hardly affected that of gas,[2] so the immediate impact on their prices has been relatively limited (around $6 per barrel of Brent oil and around €10/MWh of gas in Europe). However, the expansion of the conflict to other countries in the region, some of which are among the main world producers of energy commodities (such as Saudi Arabia, Iran, Iraq and Qatar), could have more significant effects.

A particularly severe scenario would be the blockade of strategic corridors, such as the Strait of Hormuz, through which around 20% of the global oil supply (see Chart 2) and 25% of that of liquefied natural gas flow, according to International Energy Agency data.

This would have a direct impact on the European Union's and Spain's energy imports from the Middle East, which account for around 10% of the total (see Chart 3).[3] Even if it were possible to import these products from other countries, the prices of these energy commodities, particularly oil,[4] which has a more globally integrated market, would rise.

Such an increase in energy prices would trigger another shock for the world economy, in the wake of the shocks in recent years, with additional adverse consequences in terms of activity and further rising inflation, which could lead to a more restrictive monetary policy stance.

### Confidence and financial markets channel

The adverse effects of the energy shock would be compounded by other possible impact channels, such as those deriving from heightened uncertainty and geopolitical instability, potentially affecting households' and firms' confidence and expenditure decisions, or from a higher level of risk aversion in the financial markets.

In this connection, the international financial markets have reacted in a much more subdued manner in the ten days since the Israel-Hamas conflict erupted than in the same period after Russia's invasion of Ukraine. The latter conflict had a more widespread and pronounced impact which persisted beyond the first ten days of analysis, especially in the European markets.

The fact that energy price hikes have been moderate, as noted earlier, and, in particular, lower than those seen after the Russia-Ukraine conflict started, has contributed to this (see Chart 4). That said, it is true that a larger increase in natural gas prices has been observed.

The ten-year sovereign bond yields in the United States, Germany and Spain fell during the first few days of the Israel-Hamas conflict, although much of these falls reversed in the same period, mainly in the United States

1 See James D. Hamilton (2011), "Historical oil shocks", National Bureau of Economic Research, NBER Working Papers, 16790.

2 A small gas field in Israel has been shut down.

3 The EU's and Spain's trade exposures to the Middle East are mainly confined to energy product imports, while the volume of exports and imports of other items account for around 2% of the total.

4 See Banco de España (2020), "Geopolitical tensions and oil prices", Quarterly Report on the Spanish Economy, Box 2, Economic Bulletin 1/2020.

Chart 1
Geopolitical tensions and oil price


Chart 2
Oil exports through the Strait of Hormuz

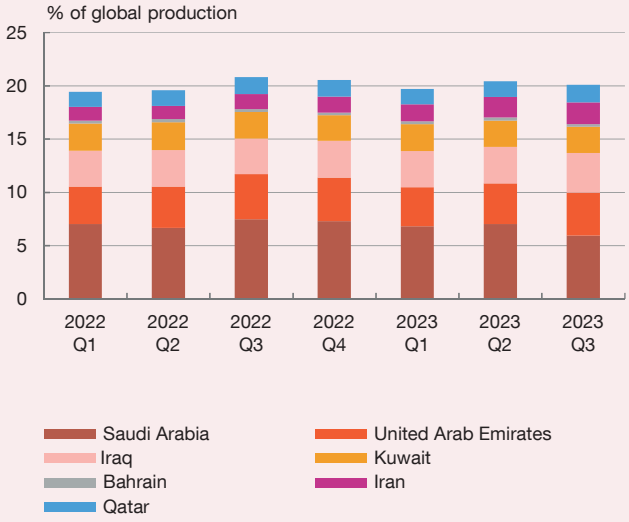
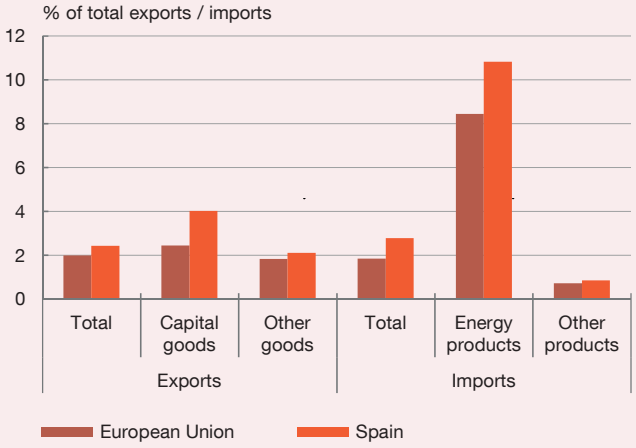



Chart 3
Trade with Middle Eastern countries (2022) (b)




**SOURCES:** Eurostat, International Energy Agency, Refinitiv and Banco de España.

**a** Prompted by the Yom Kippur War.
**b** Saudi Arabia, Bahrain, United Arab Emirates, Iran, Iraq, Israel, Jordan, West Bank, Kuwait, Lebanon, Oman, Qatar, Syria and Yemen.

(see Chart 5).[5] This means that investors have not significantly revised their expectations on the future path of interest rates nor sought safe-haven assets intensely since the outbreak of the conflict.

The EURO STOXX 50, the IBEX 35 and the S&P 500 have proved resilient to the Israel-Hamas conflict as at the cut-off date for this analysis. This is in stark contrast to the invasion of Ukraine, which had a highly adverse effect on

5 The decrease in sovereign bond yields could have been due not only to the search for a safe-haven asset, but also to the effect of certain Federal Reserve System members' statements opposing further monetary policy tightening.

Chart 4
Energy prices

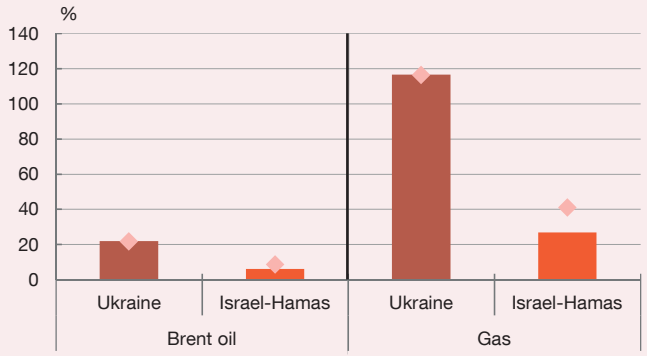



Chart 5
Fixed income (ten-year government bond yields)

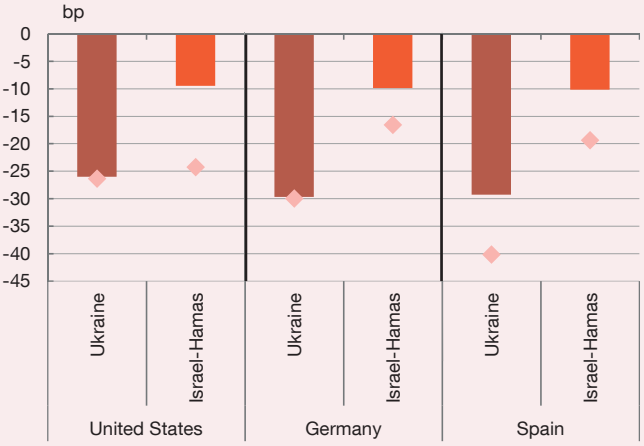



Chart 6
Equity (stock market indices)

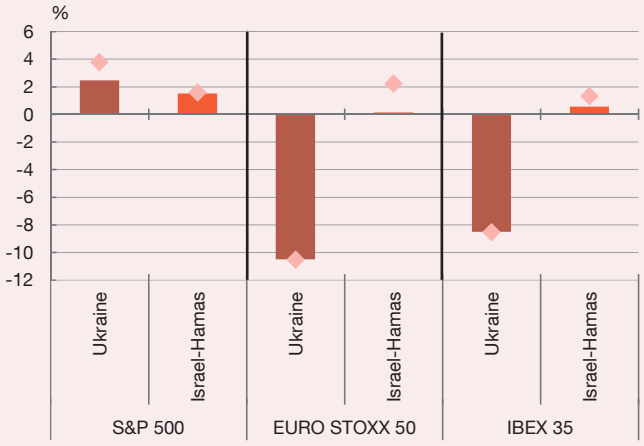
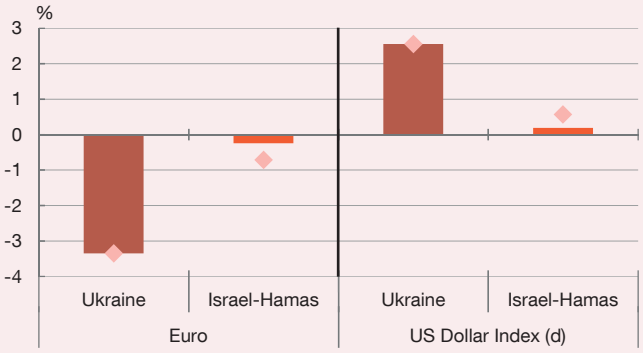



Chart 7
Exchange rates




Cumulative change in the first 10 days of the Ukraine War (a)
Cumulative change in the first 10 days of the Israel-Hamas conflict (b)
Maximum cumulative daily change in the first 10 days (c)

**SOURCE:** Bloomberg.

**a** Change calculated from the day before the start of the Ukraine War (i.e. from 23 February 2022).
**b** Change calculated from the day before the start of the Israel-Hamas conflict (i.e. 6 October 2023).
**c** The highest cumulative daily change within the same ten-day period is shown.
**d** The US Dollar Index measures the US dollar's performance relative to a basket of six major currencies (euro, yen, pound sterling, Canadian dollar, Swedish krona and Swiss franc).

the European stock markets (see Chart 6). Lastly, the dollar's initial appreciation against other advanced economy currencies, including the euro, is now partially reversing, contrary to events following Ukraine's invasion, when the dollar index rose by 2.5% and the euro lost more than 3% against the dollar, with these movements persisting over time (see Chart 7).

## Historical experience on global energy and financial market trends following the outbreak of conflicts in the Middle East

There is much uncertainty regarding the outcome of the Israel-Hamas conflict, its possible expansion across the region and the degree to which the different global

geopolitical actors may become involved. Against this backdrop, it is useful to measure developments in the energy and financial markets during the months following the outbreak of previous armed conflicts in the Middle East. Despite certain limitations, this exercise provides a useful historical reference to assess the current uncertain environment.

More specifically, the exercise analyses the change in financial variables (the ten-year US bond yield and the S&P 500 and MSCI Europe indices) and the oil price (the price of a barrel of Brent oil), using a list of dates on which the main armed regional conflicts began as the starting point, from Black September (the Jordanian civil war, 6 September 1970) to the Yemeni civil war (using the Saudi-led intervention on 25 March 2015 as the reference date).[6]

For each conflict, the last trading day prior to the referenced date is determined and the change in each variable is calculated (differences in bond yields and cumulative growth relative to the start date for stock market indices and oil prices) for the next six months (the most relevant risk horizon for the purpose of the Financial Stability Report).

After that, the 15th, 50th (median) and 85th percentiles are calculated for each date for each variable and for the aggregate six-month trends under consideration for each conflict. This provides a central trend (the median) as well as a measure of uncertainty for the potential impact of the armed conflicts on the selected variables over each time horizon. In addition, the charts show the minimum and maximum impact of the armed conflicts. They also show the average impact of six conflicts that are particularly significant in terms of both their regional scale and loss of life, the uncertainty surrounding their consequences[7] and the current episode of the Hamas-Israel conflict.

Among the limitations of this analysis, it is worth noting that other macro-financial events or shocks may occur in the six-month time frame following each conflict and influence these variables.[8] However, the set of historical conflicts under consideration is broad and representative, which means it is possible to estimate a general distribution of the upside and downside risks over the six-month time frame linked to the current Hamas-Israel conflict.

In the case of the Brent oil price, it is striking that, although half of the conflicts entail an increase in oil prices, the other half have the opposite impact, leading to the median effect being negligible. However, the distribution of impacts covers highly adverse scenarios, with steep jumps in oil prices such as, for example, those seen during the Yom Kippur War or the Iraqi invasion of Kuwait in 1990, which is consistent with the leading role played by Middle Eastern countries in global oil supply (see Chart 8).[9]

For ten-year US bond yields, Chart 9 shows that, while there is a slight negative trend, consistent with the role played by US bonds as a safe-haven asset in such scenarios, there is also historical evidence of increase in the yields on these bonds. This could possibly be explained by the fact that some of these armed conflicts (such as for example, the Yom Kippur War or the Iran-Iraq War) can also create significant inflationary pressures, raising expectations for future interest rates.

Regarding the S&P 500, a general upward trend is visible despite conflicts breaking out in the Middle East. However,

6 The list of conflicts considered includes: Black September, Jordanian civil war (06/09/1970); the Yom Kippur War (06/10/1973); the Turkish invasion of Cyprus (20/07/1974); the Lebanese civil war (13/04/1975); the outbreak of the Kurdish-Turkish conflict (27/11/1978); the Iranian Revolution (16/01/1979); the uprising in Syria (31/05/1979); the Iran-Iraq War (22/09/1980); the 1982 Israel-Lebanon War (06/06/1982); the First Intifada (08/12/1987); the Gulf War: the Iraqi invasion of Kuwait (02/08/1990); the Gulf War: Operation Desert Storm (17/01/1991); the Second Intifada (28/09/2000); Israel's Operation Defensive Shield (29/03/2002); the Iraq War (20/03/2003); the Israel-Hezbollah War (12/07/2006); the start of Israel's Operation Cast Lead in the Gaza War (27/12/2008); the 2011 Egyptian Revolution (25/01/2011); the Syrian civil war (15/03/2011); the Iraqi Insurgency (30/12/2013); Israel's Operation Protective Edge in the Gaza War (08/07/2014); the Saudi-led intervention in the Yemeni civil war (25/03/2015). Some of these conflicts took place over a long period of time and span other significant events happening at the same time as those listed, which, nevertheless, cover a wide range of conflicts in the region since 1970.

7 These are the Yom Kippur War, the Iranian Revolution, the Iran-Iraq War, the Gulf War: the Iraqi invasion of Kuwait, the Gulf War: Operation Desert Storm and the 2011 Egyptian Revolution.

8 An additional limitation is posed by the fact that the political and economic structures in place in decades long past are not perfectly comparable.

9 Note that although Brent oil is not the type of oil produced by Middle Eastern countries, this commodity's price has historically closely tracked that of its main counterparts around the world.

Chart 8
Brent oil price (a)

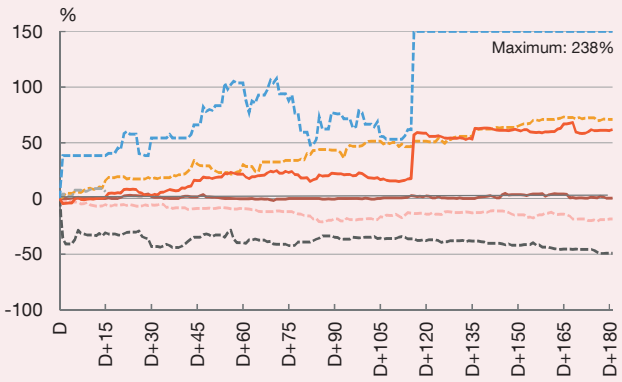



Chart 9
US 10-year sovereign bond (a)

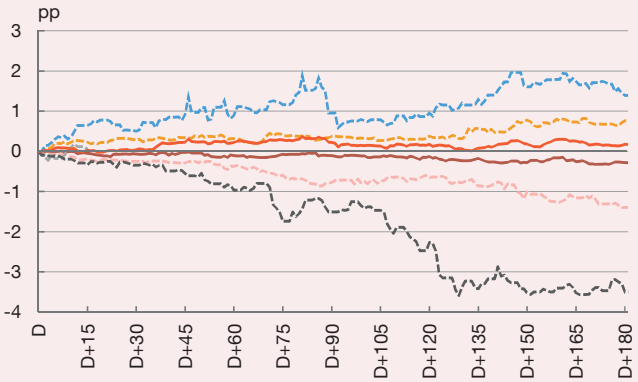



Chart 10
S&P 500 Index (a)

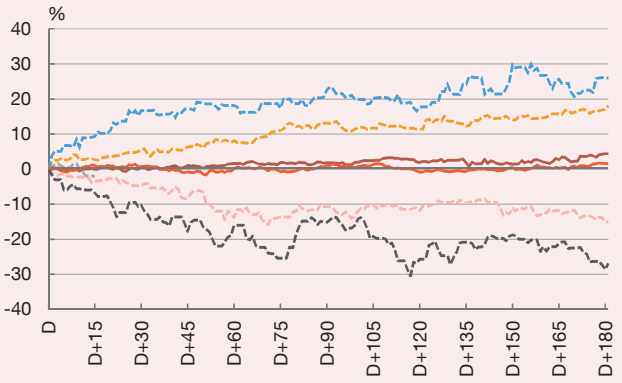
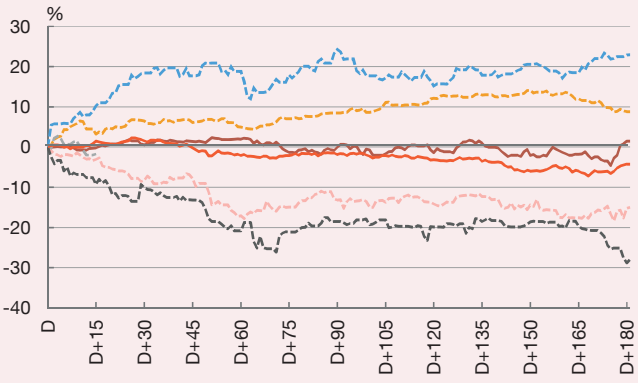



Chart 11
MSCI Europe Index (a)





**SOURCES:** Datastream, Thomson Reuters and Banco de España.

**a** D denotes the day before the start of each conflict. For each day in the period between D and D+180 days (six months), the following are measured relative to D: the change (in the case of US government bond yields) and cumulative growth (in the case of stock market indices and oil prices).
**b** For the purposes of this chart, the major conflicts are the Yom Kippur War (06/10/1973), the Iranian Revolution (16/01/1979), the Iran-Iraq War (22/09/1980), the Gulf War: the Iraqi invasion of Kuwait (02/08/1990), the Gulf War: Operation Desert Storm (17/01/1991) and the 2011 Egyptian Revolution (25/01/2011).

some conflicts with more uncertain global consequences, such as the Yom Kippur War, can put clear downward pressure on share prices, as revealed by the most hard-hit percentiles (see Chart 10).

Turning to the MSCI Europe, a nearly-zero median impact can be observed alongside, once again, a broad spectrum of changes, both positive and negative. In any case, the existence of possible historic trends with steep drops can be seen in the prices of equity securities in Europe (see Chart 11).

In general, the historical analysis set out here enjoins a certain degree of caution in assessing the potential economic and financial impact of the current conflict between Israel and Hamas in the short term. There are

scenarios entailing little to no impact – the outbreak of a conflict in the Middle East does not, on its own, provide certainty with regard to changes in the prices of energy or financial assets. For example, there are various historical examples of outbreaks of conflict that have not stopped oil prices from dropping in subsequent months. However, this past experience also suggests that, depending on the potential escalation, there may be severe shocks in the prices of financial assets and oil. Such disruptions appear to be linked to conflicts that stand out owing to the intense uncertainty they occasion for international geopolitical equilibria.

# 1

# RISKS LINKED TO THE MACRO-FINANCIAL ENVIRONMENT

The global economy is decelerating against a backdrop of still high inflationary pressures and restrictive monetary policies. The economic growth outlook has tended to worsen in many countries, especially in the euro area and China. Although conditions have improved in the emerging market economies, there are areas of vulnerability in some of the economies to which the Spanish banking system is significantly exposed.

Despite the Spanish economy having shown relatively robust economic growth, it is also facing some weakening. The main sources of risk to growth are related to global economic developments, the effects of monetary policy tightening and geopolitical tensions.

In the financial markets, although risk-free interest rates have continued to rise, risk premia remain very contained, standing at historically low levels. The Spanish real estate market is also being affected by the rise in interest rates, with a pronounced decline in the volume of house purchases and new mortgages; however, house prices are decelerating more gradually for now.

In aggregate terms households' and firms' economic and financial position has evolved favourably over the last two quarters thanks to the buoyancy of income. However, the gradual pass-through of higher interest rates to the cost of debt raises the financial pressure on borrowers. The increase in economic activity is allowing for an improvement in the still high budget deficit and in government debt, which remains an element of vulnerability.

## 1.1 Macroeconomic environment

### 1.1.1 Systemic and materially significant countries

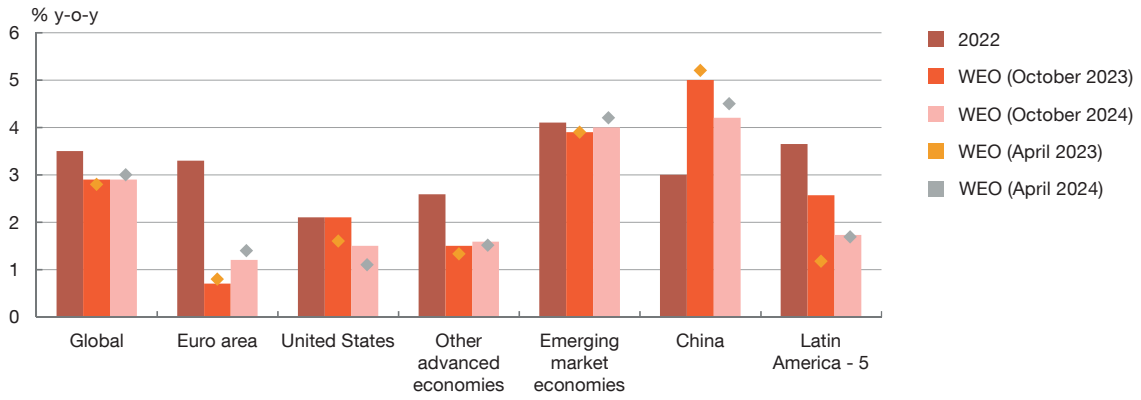
**In 2023 to date global economic activity has slowed, while inflation rates have declined.** Although GDP grew more than expected in 2023 H1, with positive surprises in certain economies, such as the United States, the latest indicators point to a growing economic weakness, which seems to have passed through from manufacturing to the services sector in H2. The prolongation of the war in Ukraine, the still high inflationary pressures, the consequent restrictive monetary policy stance and the strong deceleration in China remain a drag on global growth.

**Since spring, revisions to the global growth outlook for 2023 and 2024 have been heterogeneous across geographical areas** (see Chart 1.1.a). For instance,

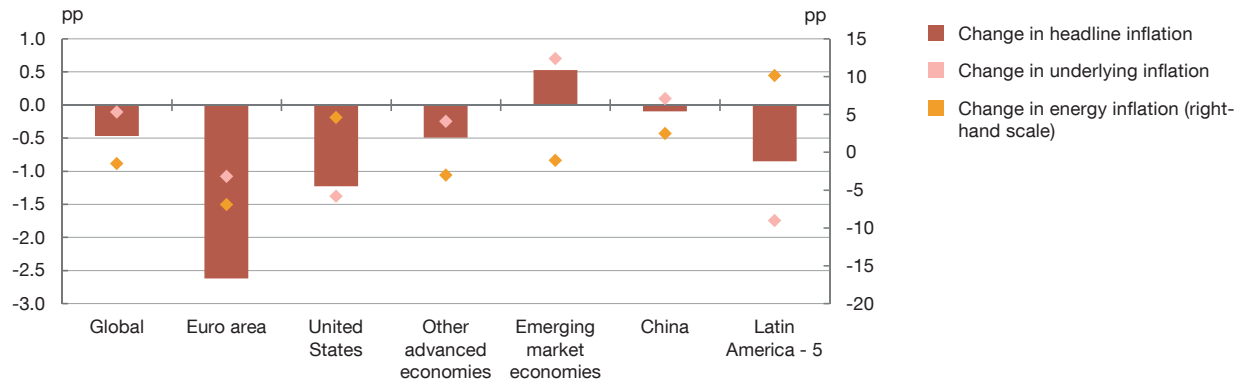
Chart 1.1

**Uneven economic slowdown by region and limited correction of underlying inflation rates**

1.1.a GDP growth outlook (2022-2024) (a)




1.1.b Change in headline and underlying inflation between April 2023 and September 2023 (b)




**SOURCES:** IMF, national statistics and Refinitiv.

**a** WEO projections for October 2023. The diamonds denote the projections for April.

**b** Inflation is the year-on-year rate of change in the consumer price index. The "Global" aggregate includes the United States, the euro area, the United Kingdom, Japan, Canada, Norway, Sweden, Switzerland, China, India, Indonesia, Malaysia, Philippines, Thailand, Brazil, Chile, Colombia, Mexico, Peru, Czech Republic, Hungary, Poland, Russia and Türkiye. The "Emerging market economies" aggregate includes China, India, Indonesia, Malaysia, Philippines, Thailand, Brazil, Chile, Colombia, Mexico, Peru, Czech Republic, Hungary, Poland, Russia and Türkiye. The "Latin America - 5" aggregate includes Brazil, Chile, Colombia, Mexico and Peru.

forecasts for the United States and Latin America have been revised upwards, owing to the economic buoyancy observed in the two regions. By contrast, in the euro area growth expectations for the two years have been revised downwards, owing to tighter financial conditions, lower external demand and higher energy prices, among other factors. In China, the growth outlook has been revised down notably as a result of the country's real estate crisis (see Box 1.1) and weak domestic and external demand.

**Risks to global growth remain skewed to the downside.** The risks to activity include those deriving from geopolitical tensions, not only due to uncertainty about the duration and scope of the war in Ukraine and the recent conflict in the Middle

East, but also to the prospects of trade and financial fragmentation along geostrategic lines, which would weigh on global trade and growth. A further tightening of financial conditions, deriving from a deterioration in the inflationary situation, the worse fiscal outlook in some systemically important countries, such as the United States, or higher risk premia, would also adversely affect the global economy.

**Risks to inflation are now more balanced.** Although headline inflation has decreased (see Chart 1.1.b), the persistence of very high underlying inflation illustrates well the existence of some upside risks. In this connection, low labour market slack (which could lead to greater wage pressures) and the recent rise in energy prices (mainly deriving from supply-side factors, and which could worsen owing to the Middle East conflict) could generate new inflationary pressures. Conversely, factors such as the normalisation of supply chains globally, the tightening stance of monetary policies and the lower global growth expected appear to be acting in the opposite direction.

**In the emerging market economies, the financial markets performed relatively favourably in recent months.** The improvement was particularly notable in Latin America (see Charts 1.2.a and 1.2.b) for various reasons. First, the region has reached comparatively higher interest rates than other geographical areas during the current contractionary monetary policy cycle, having raised them earlier and higher. This has allowed Latin American countries to contain the depreciation pressures on their currencies arising from monetary policy tightening in the advanced economies. The positive surprises in activity in Brazil and Mexico and the favourable commodity price developments have also contributed to this good performance.

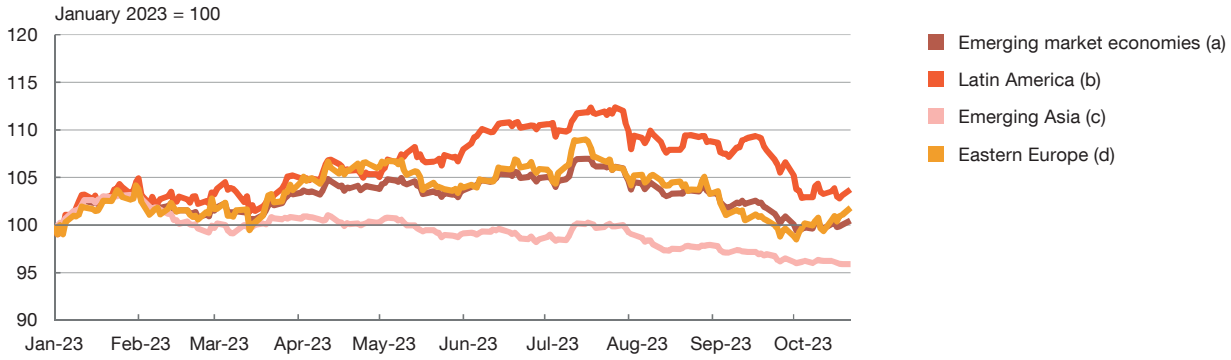
**Inflation rates continued to decrease of late in most emerging market economies.** However, the decrease has been slower in the last few months, owing to the recent rise in energy prices. Against this background, most central banks have paused their monetary tightening cycles and, in some countries, such as Brazil, Chile, Hungary and Poland, they have even started to cut their policy rates. However, in Russia and Türkiye interest rates were raised substantially to contain inflationary pressures.

**In any event, the risks to growth in the emerging market economies remain tilted to the downside.** The fact that their monetary policies are not synchronised with those of the advanced economies could lead to a depreciation of most of these countries' currencies against the dollar and less favourable capital flow trends. Lower than expected growth in the main advanced economies would reduce the external sector's contribution to GDP growth. Conversely, the recent rise in energy and food prices could particularly affect the disinflation process in the emerging market economies, given the greater relative weight of these components in their consumption baskets. Lastly, in some emerging market economies there are risks deriving from political tensions and economic policy uncertainty. The main

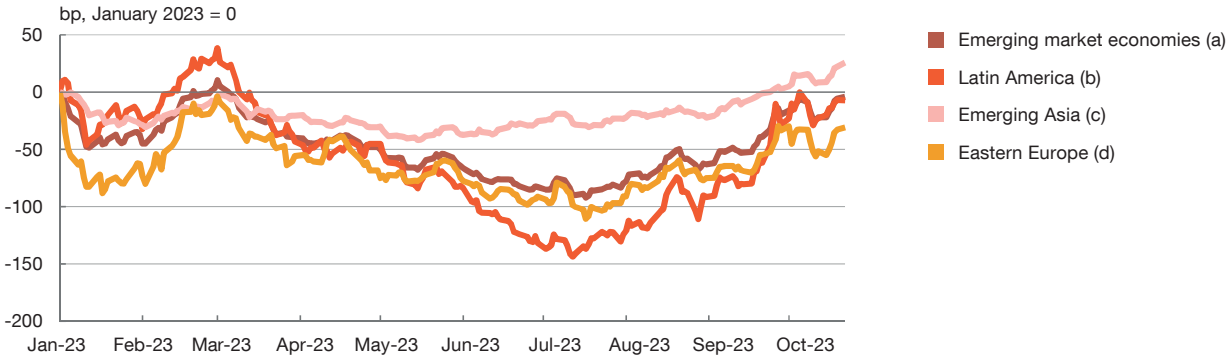
Chart 1.2

**The financial markets performed favourably in the emerging market economies**

1.2.a Exchange rates against the dollar. An increase indicates appreciation against the dollar




1.2.b Change in long-term governm ent bond rates in local currency




**SOURCES:** Refinitiv and national statistics.

**a** Average for the three regions represented.
**b** Simple average for Brazil, Mexico, Chile, Colombia and Peru.
**c** Simple average for China, South Korea, Malaysia, Philippines, Thailand, India and Indonesia.
**d** Simple average for Czech Republic, Hungary, Poland, Russia and Romania.

vulnerabilities of the emerging market economies to which the Spanish banking system is significantly exposed are reviewed below.

**Economic activity in Mexico has surprised on the upside, amid a favourable performance from its banking system.** The Mexican economy grew more than expected in 2023 H1. Despite headline inflation trending downwards recently, underlying inflation remains very high, above the headline figure. Against this backdrop, the central bank has maintained the policy rate at 11.25% since March 2023 (after a cumulative increase of 725 basis points (bp) since June 2021). The Mexican banking system's capital and liquidity levels are holding above the regulatory minimum and lending to the private sector remains buoyant. As regards other risks, a credit rating agency downgraded the rating for the State-owned oil company, PEMEX, highlighting that this could be detrimental for Mexico's sovereign debt rating.

**In the case of Brazil, headway has been made in the fiscal area, where its main economic vulnerabilities lie.** Brazil's economic activity also surprised on the upside in H1, while inflation continued to decrease, albeit not consistently. In August the central bank initiated a monetary easing cycle that has been reflected in two 50 bp policy rate cuts (to 12.75%), while setting an inflation target of 3% and making progress in fiscal reforms, with the approval of a new fiscal rule and a tax reform. This reinforcement of the country's institutional framework led to a favourable financial market performance and a one-notch upgrade in the sovereign rating, the first since 2009. Although the risks to the Brazilian economy may be considered more balanced now, some fiscal and financial risks persist. These include the use of the State-owned oil company to contain the rise in energy prices and to boost public investment, or of public banking to finance a new medium-term investment plan.

**Türkiye has pivoted towards more orthodox economic policies following the presidential elections.** Turkish economic growth remained strong in 2023 H1, fuelled by ever-more expansionary fiscal and monetary policies that exacerbated the existing imbalances, such as very high inflation (close to 40%) and a bloated current account deficit. However, following the May elections, the authorities have turned to fiscal adjustment measures and a more restrictive monetary policy, with interest rate hikes between June and September of 1650 bp (to the current 25%). Additionally, the central bank has introduced some measures to curb credit growth and initiated a regulatory streamlining process (for instance, with measures aimed at phasing out foreign exchange-protected deposits). Interventions in foreign exchange markets have also been reduced substantially to replenish international reserves and allow for an exchange rate adjustment, although this has led to a depreciation of the Turkish lira against the dollar of nearly 30% and a fresh pick-up in inflation in recent months. The adjustment programme faces notable challenges in the current highly uncertain macro-financial environment.

### 1.1.2 Spain

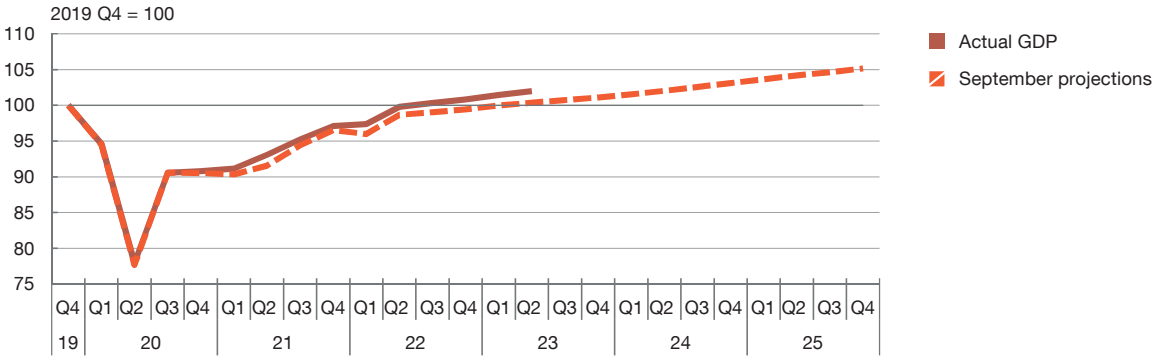
**Spain's economic growth has slowed substantially over the course of the year, owing to global economic activity losing momentum after the post-pandemic recovery and the cumulative impact of strong price increases and interest rate hikes.** After rising by 0.6% and 0.5% in Q1 and Q2, respectively, Spain's GDP grew at a slower pace between July and September, according to the latest Banco de España projections (see Chart 1.3.a).[1] The latest information suggests activity will remain relatively weak in Q4.

1 For further details, see "Macroeconomic projections for the Spanish economy (2023-2025)". In "Quarterly report and macroeconomic projections for the Spanish economy. September 2023". In *Economic Bulletin - Banco de España,* 2023/Q3. These projections were published on 19 September, when the revised series of the Quarterly National Accounts up to 2023 Q2, which were published by the National Statistics Institute (INE) on 22 September, were not yet available. When the projections were prepared, the year-on-year GDP growth for 2023 Q1 and Q2 stood at 0.5% and 0.4%, respectively, with both figures subsequently revised up by 0.1 pp. The growth projected at that time for Q3 was 0.3%.

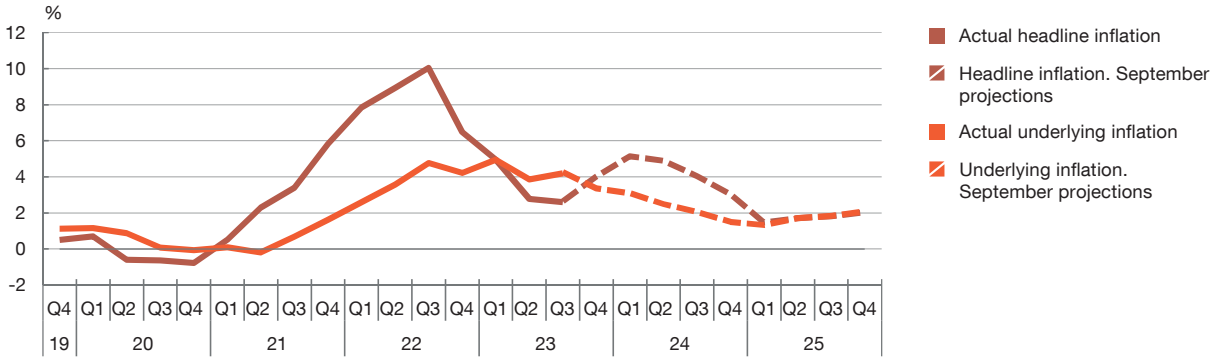
Chart 1.3

**Although the Spanish economy will slow down in 2023 H2, it will subsequently gain some momentum, while underlying inflation declines**

1.3.a Real GDP. Spain. Level (a)




1.3.b Headline and underlying inflation (a)




**SOURCES:** INE and Banco de España.

**a** The charts depict the actual GDP and (headline and underlying) inflation figures, respectively, up to 2023 Q2 and Q3, and from then on the September 2023 Banco de España macroeconomic projections. The latest GDP series available at the time these projections were drawn up was that published by the INE on 28 July 2023, which included the flash estimate for 2023 Q2. The definitive inflation figure for 2023 Q3 was not available at that date either. On 22 September 2023 the INE published revisions to the quarterly GDP profile from early 2020 to 2023 Q2 and subsequently published the final inflation data relating to September. Underlying inflation excludes the energy and food components.

**Overall, in 2023 GDP is set to grow by 2.3% according to the Banco de España projections published in September.**[2] This increase would be lower than that observed a year earlier (5.8%).

**In addition, the Spanish economy is showing greater momentum than the euro area as a whole.** This is mainly due to the greater relative importance of services linked to tourism within Spain's productive structure. In recent quarters, these sectors have shown greater rates of activity than others (such as manufacturing) that

2 Following the revision of the National Accounts data, automatically and without any additional consideration, the average GDP growth rate for 2023 would be 0.2 pp higher.

have been hampered by the slowdown in the Chinese economy (whose weight in the Spanish economy is comparatively low).

**Under the baseline projection scenario, from 2024 activity would gain momentum somewhat, despite some factors having a slight dampening effect.** The factors supporting this greater growth are related to the gradual recovery in the external environment and agents' confidence, the relative strength of the labour market and the more rapid roll-out of investment projects associated with the Next Generation EU (NGEU) programme. Nevertheless, other factors may dampen the Spanish economy's momentum once the pre-pandemic level is exceeded. Such elements include the still incomplete pass-through of monetary policy tightening to the cost of funding, the withdrawal of the government measures rolled out to tackle the energy crisis and the lower contribution to aggregate growth of foreign tourist expenditure. Indeed, some of these factors may have already started to make themselves felt in recent quarters. Thus, the outlook for GDP growth in 2024 (1.8% according to the latest projection exercise) is 0.5 pp lower than that set out in the previous financial stability report (FSR).

**The uncertainty surrounding the outlook for the Spanish economy under the baseline scenario is still very high, with downside risks to activity and balanced risks to inflation.** The main sources of risk arise from a potential worse performance of global economic activity (for instance, owing to a more pronounced slowdown in the Chinese economy) and to the effects of the cumulative monetary policy tightening being potentially more negative than those envisaged under the baseline scenario, which in turn would lead to lower inflation levels. In addition, the risk of a flare-up in geopolitical tensions, which are expanding across several areas of the planet, persists. Their materialisation would lead to greater inflation and a worsening of the economic outlook.

## 1.2 Financial markets and the real estate sector

### 1.2.1 Financial markets

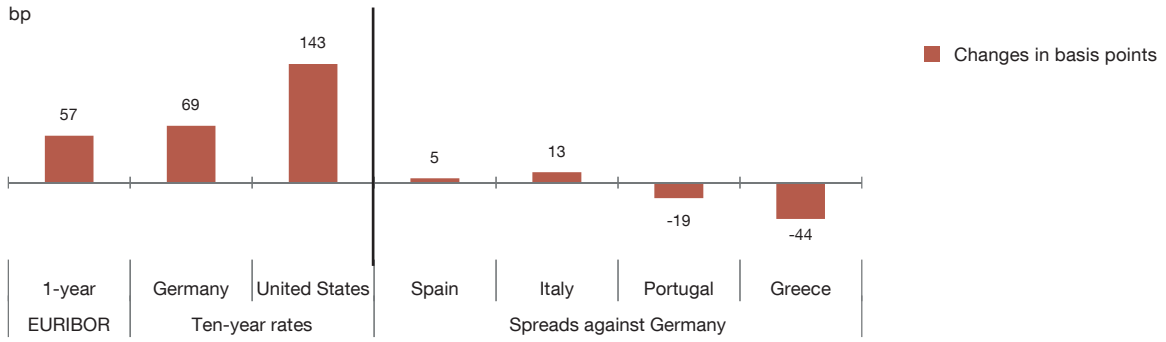
*The interbank market*

**Since the cut-off date for the last FSR, money market rates in the advanced economies have continued to rise as a result of monetary policy tightening.** Since April, the Governing Council of the European Central Bank (ECB) and the Federal Open Market Committee (FOMC) have raised policy rates by 100 bp (four 25 bp hikes) and 50 bp (two 25 bp raises), respectively. Thus, at end-October the main policy rates[3] stood at 4% in the euro area and in the 5.25% - 5.5% range in the

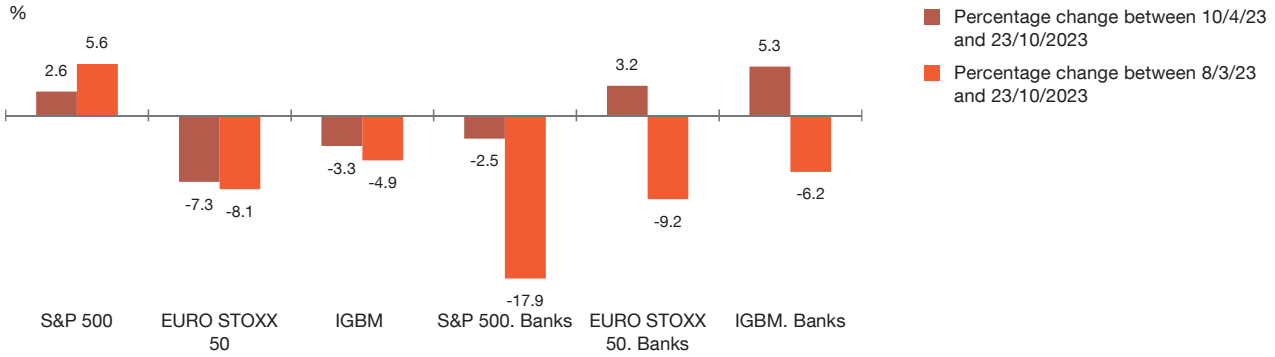
3 The deposit facility rate in the case of the ECB, and the federal funds rate in that of the United States Federal Reserve System.

Chart 1.4
**Financial conditions include higher interest rates**

1.4.a EURIBOR and 10-year sovereign debt. Change in basis points between 10/4/23 and 23/10/2023 (a)




1.4.b Stock market and sectoral bank indices (b)




**SOURCE:** Refinitiv Datastream.

**a** The date 10/4/23 relates to the cut-off date for the last FSR.
**b** The date 8/3/23 relates to the day preceding the start of the episode of turmoil in the banking sector.

United States, restrictive levels that could be close to the terminal rate for this monetary policy tightening cycle. They could remain at that level for a lengthy period according to the monetary authorities' communications, as well as current analyst forecasts and financial market expectations. In line with this, at the cut-off date of this report the 12-month EURIBOR stood at 4.1%,[4] i.e. 57 bp higher than in early April 2023 (see Chart 1.4.a).

### *Sovereign and corporate debt*

**Long-term yields on higher-rated sovereign debt also rose.** The rise in rates in the long-term debt securities market has been particularly steep since early September and has been influenced both by changes in inflation expectations and

4 As at 23 October.

the effects of inflation on the future course of monetary policies and by the increase in the long-term premium as a result of greater uncertainty about how interest rates will change. This increase seems to have been led by the US sovereign debt market, given its significant role in determining the prices of these assets globally. At the cut-off date for this report, ten-year sovereign bond yields stood at 2.9% in Germany, 4.9% in the United States and 4.6% in the United Kingdom, up by 69 bp, 143 bp and 117 bp, respectively, since the cut-off date of the last FSR. Secondary market liquidity, having deteriorated in some jurisdictions (such as Italy) from late September 2022, now stands, overall, at levels similar to those of April 2023 for European sovereign debt issuers overall.

**Sovereign and corporate risk premia have remained contained compared with the levels in early April.** Since early September, the increase in long-term risk-free rates, with a negative impact on debt sustainability, seems to have contributed to a slight increase in the long-term sovereign spreads against the German benchmark during this period in euro area countries with high levels of public debt. However, since the cut-off date of the last FSR, the Portuguese sovereign spread has dropped to 69 bp, widening the gap to the Spanish spread. The Greek risk premium, which is already below the Italian one, also decreased, and more markedly. This decrease was influenced, in part, by DBRS and Standard & Poor's upgrading its credit rating to investment grade.[5] For their part, since September the corporate spreads relative to the swap curve have also increased (more intensely in the high-yield segment) as a result of the increase in long-term interest rates. The levels reached are slightly higher than those recorded in early April in Europe and somewhat lower than in the United States, in line with the relatively better performance of the US economy compared with that of the euro area. As regards the issuance of debt securities by non-financial corporations, in the year to date investment grade and high-yield volumes stood at levels slightly above those for the same period in 2022, both in the United States and in the euro area.

### *Equities and exchange rates*

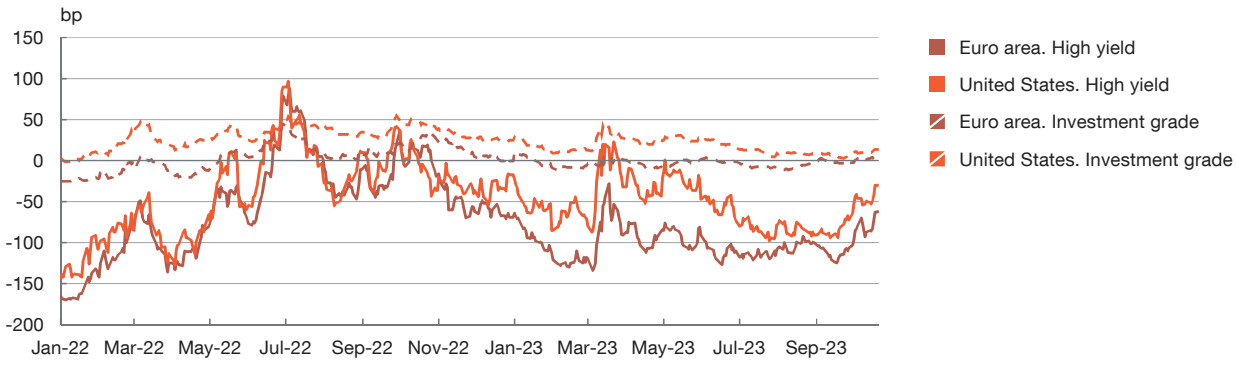
**The stock market indices of the main developed economies have shown high geographical and sectoral heterogeneity since the last FSR.** European stock market indices recorded declines in general, while US stock prices were supported by positive corporate earnings. However, the sharp increase in long-term interest rates, especially since September, seems to have affected the prices of equities negatively, particularly in some high-growth sectors, insofar as these increase the discount rate for future dividends. By contrast, the higher interest rates appear to be

5 Both DBRS and Standard & Poor's raised the Greek sovereign debt rating to investment grade on 8 September and 20 October, respectively, and Moody's raised its rating by two notches on 15 September, just one level below investment grade. Fitch will revise Greece's credit rating at end-2023; some analysts suggest it will be upgraded to investment grade.

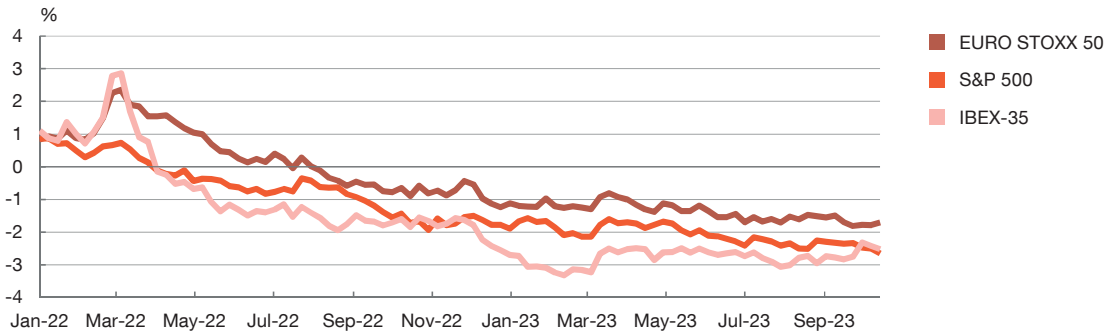
Chart 1.5

**By historical standards, corporate bond and equity risk premia are at low levels**

1.5.a Differentials between NFC bond yields and the swap curve. Deviations from a historical average (a)




1.5.b Equity risk premium. Deviations from a historical average (b)




**SOURCE:** Refinitiv Datastream.

**a** High yield: ICE Bank of America Merrill Lynch Non-Financial High Yield Index. Investment grade: ICE Bank of America Merrill Lynch Non-Financial Index. Deviations are calculated vis-à-vis the historical average between 1998 and 2023. The average is 454 bp for euro area high-yield bonds, 446 bp for US highyield bonds, 78 bp for euro area investment grade bonds and 131 bp for US investment grade bonds.

**b** The equity risk premium is calculated using a two-phase dividend discount model. For further details, see Russell J. Fuller, and Chi-Cheng Hsia (1984), "A simplified common stock valuation model", Financial Analysts Journal. The historical averages are calculated for the period 2006-2023. The average is 6.62% for the EURO STOXX 50, 5.00% for the S&P 500 and 7.89% for the IBEX 35.

boosting banks' profits and, accordingly, their stock market prices (see Chart 1.4.b). Nevertheless, in the United States uncertainty about regional banks' position remains after Moody's and Standard & Poor's downgraded some of their credit ratings in August. This had an adverse effect on the sector's stock prices – still well below the level prior to the turmoil in March –, while those of the European banking sector, which has not yet fully recovered, are closer to this level.

**On the foreign exchange markets, the US dollar has appreciated significantly against the main currencies since mid-July 2023.** This could be a reflection of the widening of the positive interest rate spread in the United States relative to other areas and of the relative improvement in the economic growth outlook for the United States compared with other advanced economies, such as the euro area.

*Risks to financial stability*

**The materialisation of certain macroeconomic risks could trigger corrections in financial asset prices, particularly for higher risk assets.** First, upside inflation surprises could lead the market to revise up its expectations on the future course of policy rates. This could boost long-term yields even more and lower the prices of risky assets, such as corporate bonds and shares. Second, a worse than expected economic outlook could also drive down asset prices through its adverse effect on firms' expected earnings and through its impact on risk premia. In addition, the relatively low equity and corporate risk premia (especially in the lower credit quality segment), which are below their historical average, drive up the probability of (i) such price corrections occurring and (ii) them being more pronounced, should adverse shocks materialise (see Chart 1.5).

**Dynamics with potentially adverse implications for financial stability could arise in the event of disorderly price corrections.** Thus, asset prices could fluctuate widely if fire sales were triggered by some investors, such as those specific open-ended investment funds that have a small share of liquid assets to cover potential investor outflows. Provisioning needs for derivatives transactions could also increase, raising the risk-free asset interest rate.

### 1.2.2 The Spanish real estate market

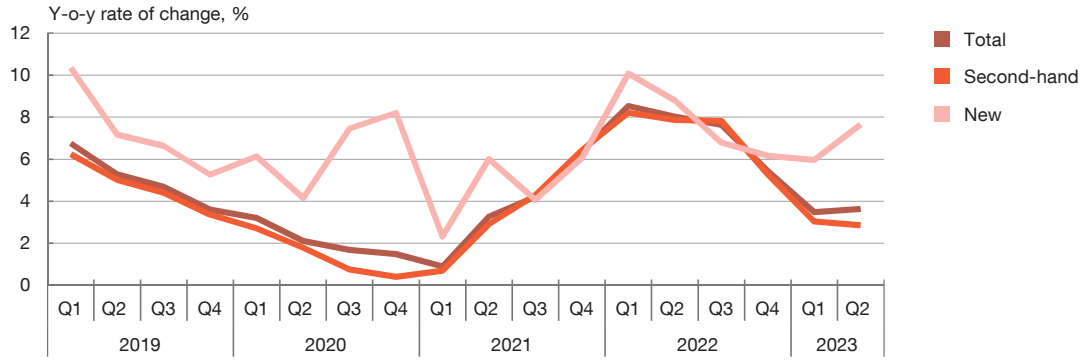
**A substantial slowdown in house prices remains, compared with the momentum observed in 2022, although a slight increase has been recorded in 2023 Q2.** According to the National Statistics Institute (INE), house prices picked up in Q2, recording year-on-year growth of 3.6%, 0.1 pp higher than three months earlier (see Chart 1.6), but 4.4 pp lower than in 2022 Q2. This increase is mainly explained by the rising path of new house prices, which could reflect, among other factors, the scarcity in the supply of housing and the pass-through of the past sharp increases in construction material costs. New house prices grew by 7.7% year-on-year, only 1.1 pp less than a year earlier. By contrast, second-hand house prices slowed, recording year-on-year growth of 2.9%, down 0.2 pp on the previous quarter and down 5 pp on 2022 Q2.

**House purchases have dropped from the high levels seen in 2022.** Transactions registered before notaries saw a year-on-year drop of around 15% in Q2 and it appears that the fall persisted, going by incomplete data for Q3 relating to August. However, these year-on-year declines are affected by the high volume of transactions in 2022 (see Chart 1.7.a). The average cumulative number of transactions so far in 2023 is slightly more than 13% above the level recorded in the same period in 2019.[6]

6 For more information on the factors behind recent trends in housing supply and demand, see Lucio San Juan (2023). "The housing supply and demand mismatch and its relationship with house prices". *Economic Bulletin - Banco de España,* 2023/Q2, 09.

Chart 1.6
**House prices continued to rise, although at a slower pace, driven by the new housing segment**

1.6.a House prices




SOURCE: INE.

The easing of the pace of growth in economic activity and rising borrowing costs are expected to continue to check momentum in house sales in coming quarters.

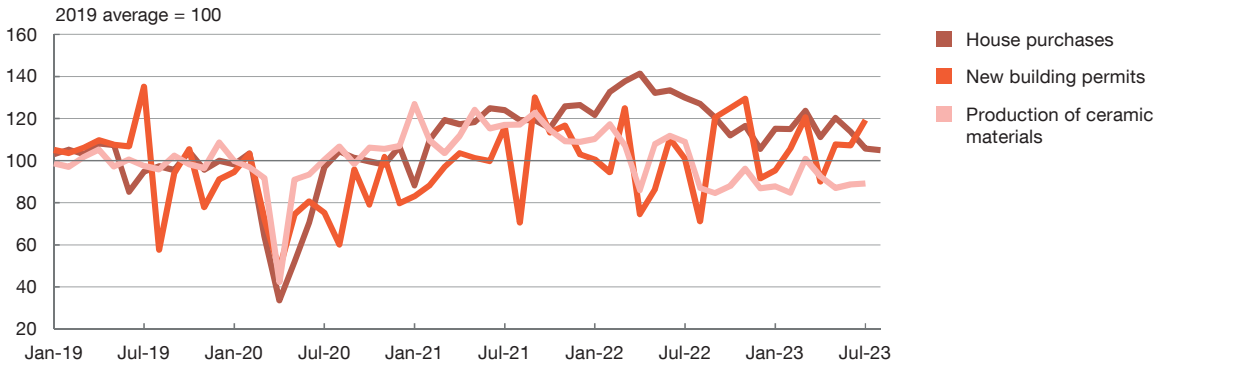
**The volume of new mortgages also dropped significantly in 2023 H1, although it remains above pre-pandemic levels.** New mortgage volume fell by 21.8% and 26.3% year-on-year in 2023 Q1 and Q2, respectively, compared with a drop of 5.5% in 2022 Q4. Once again, the extent of the year-on-year fall can be partly explained by the high levels of the previous year. New mortgage approval rates remained above pre-pandemic averages (see Chart 1.7.b). The sharper contraction in the volume of new lending relative to housing sales is a reflection not only of decreased reliance on borrowing to finance housing purchases, but also a fall in the average value of mortgages relative to house prices.

**The fall in the volume of new lending and the high rate of repayments have steepened the downward trend in the outstanding amount of mortgages.** Specifically, in 2023 Q2 the outstanding balance of mortgages stood 2.6% below that of the same period in 2022, as shown in Chart 1.7.b. This decline is the result of not only weaker new lending, but also the high mortgage repayments volume, driven by the incentives created by rising interest rates on variable rate loans and low interest rates on deposits in an environment in which fees for these types of transactions have, for the moment, been removed.[7] It is estimated that the total volume repaid in 2023 H1 represented 6% of the outstanding balance of mortgages, compared with 5% in the same period a year earlier.

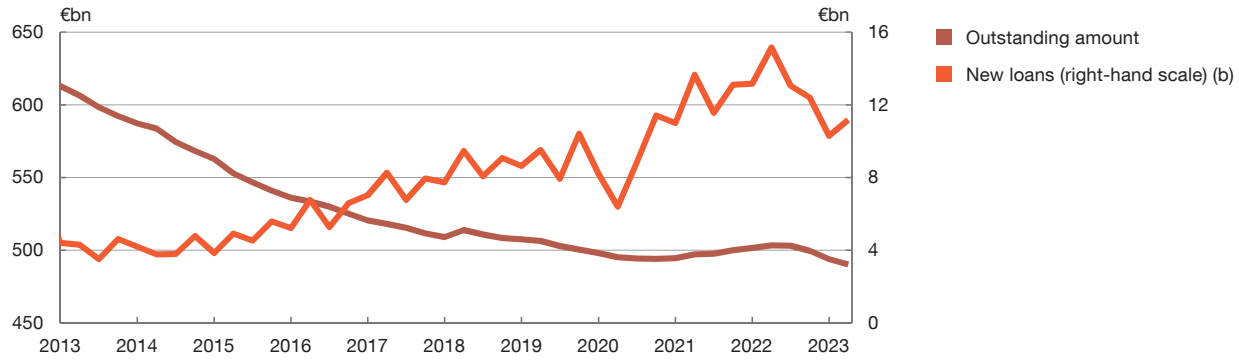
7 Royal Decree-Law 19/2022, of 22 November 2022, stipulates that early repayment fees shall be waived for variable-rate mortgages during 2023.

Chart 1.7
**Residential real estate activity and mortgage loans ease**

1.7.a Indicators of activity in the residential real estate sector (a)




1.7.b Volume of mortgages for house purchase




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

**a** Seasonally adjusted series. Latest observation: house purchases (August 2023) and manufacture of ceramic materials and new building permits (July 2023).
**b** Volume of loans granted in each quarter.

**Lending to the construction and development sector also continued to fall.** The year-on-year drop in Q2 was 4%, compared with 3.6% in Q1 and 7.7% at end-2022. As noted in previous FSRs, this portfolio has been in decline since the global financial crisis, limiting the banking sector's exposure to disruptions in this market.

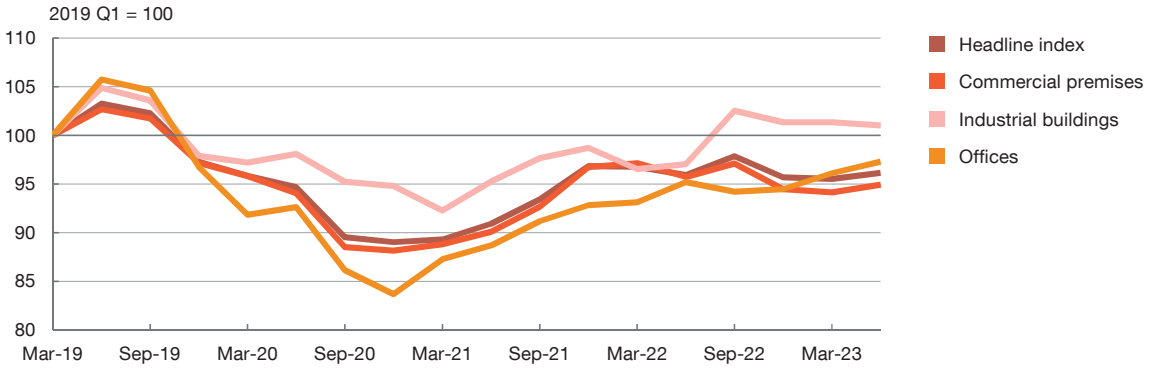
**Turning to construction permits, there was a rebound over the course of the year and production of inputs in the construction sector has been plateauing in recent months.** The easing of material supply problems, which has come at the same time as a halt in their rising costs, has fostered these developments. In any case, still-high material costs, scarce labour availability in the sector and rising borrowing costs continue to encumber housing starts, which remain at historically low levels.

**Commercial property prices picked up somewhat in 2023 H1, unevenly across segments.** The overall index for commercial property prices rose slightly in 2023 H1

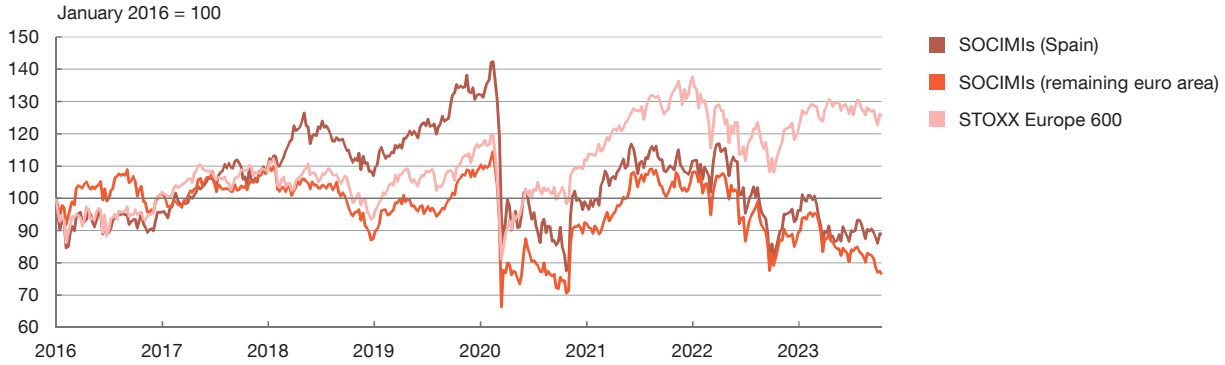
Chart 1.8

**The price of commercial property picked up slightly in 2023 H1, but the correction in the sector's stock prices continues**

1.8.a Commercial real estate sector price indices (a)




1.8.b Listed real estate investment companies (SOCIMIs) (b)




**SOURCES:** Datastream (Refinitiv) and Banco de España.

**a** Based on a hedonic regression model for each stratum. The aggregate index is the average weighted by the relative share of transactions carried out in each segment (4% for offices, 78% for commercial premises and 18% for industrial buildings). In 2022 properties in prime locations, i.e. those located in central areas of the main large cities (Barcelona, Bilbao, Madrid, Málaga, Palma and Valencia), represented 4% of transactions conducted in the commercial real estate segment as a whole.

**b** SOCIMI indices are based on a selection of firms of this type that are quoted on markets with a certain frequency and have a listed history going back to 2016. Most SOCIMIs in the group "SOCIMIs (remaining euro area)" are based in France. The Spanish SOCIMIs included under "SOCIMIs (Spain)" represent around 10% of the stock market value of SOCIMIs listed in the euro area.

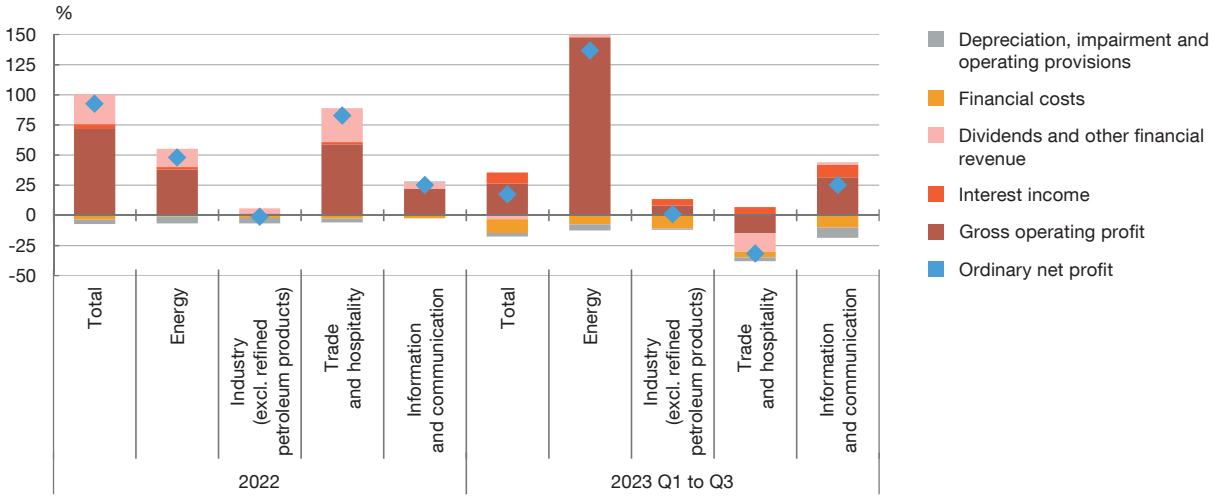
(by 0.5% since 2022 Q4), following the drop seen at end-2022. By segment, prices rose for commercial premises, especially for offices, while industrial building prices fell slightly in this period (see Chart 1.8.a).[8] The market price of Spanish listed real estate investment companies (SOCIMIs, by their Spanish acronym) has stabilised in recent months, although it remains well below levels seen in early 2022. This is consistent with the performance of European firms of this type (see Chart 1.8.b).

8 Offices and industrial buildings account for a much smaller share of the general index than commercial premises.

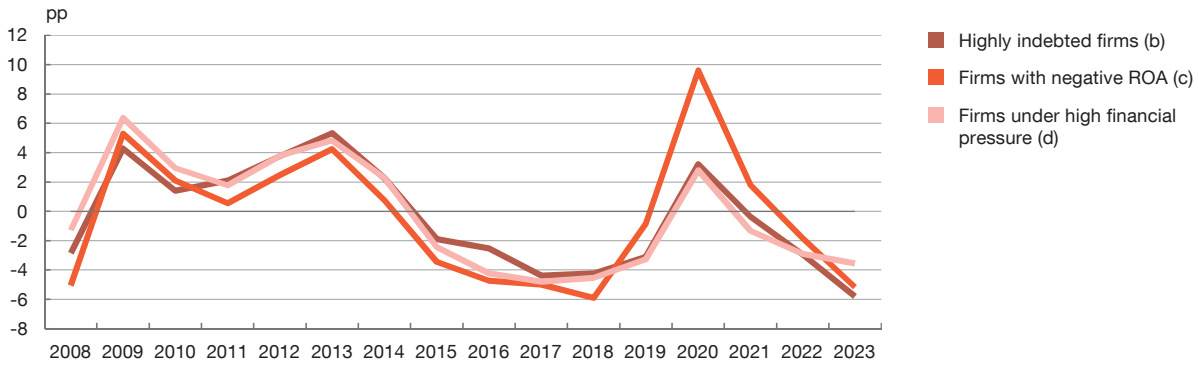
Chart 1.9

**Borrowing costs rise for firms, but the CBQ's indices of vulnerability have not increased since 2023 Q2**

1.9.a Year-on-year ordinary net profit growth (a). Contribution by components. CBQ




1.9.b Change in percentage of vulnerable firms vs 2008-2023 average, for H1 each year. CBQ




**SOURCE:** Banco de España.

**a** The ordinary net profit is defined as (gross operating profit + net financial revenue - net depreciation and amortisation, imparirment and operating provisions.)
**b** Highly-indebted firms are those with a ratio of net financial debt / (gross operating profit + financial revenue) higher than 10, or with positive net financial debt and zero or negative profits.
**c** Firms with negative ROA are defined as those whose (ordinary net profit + financial costs) / assets net of non-interest bearing liabilities ratio is less than zero.
**d** A firm is considered to be under high financial pressure when the ratio of (gross operating profit + financial revenue) to financial costs is below one.

# 1.3 Non-financial sectors

## 1.3.1 Non-financial corporations and households

### *Non-financial corporations*

**Non-financial corporations (NFCs) face rising financial costs as interest rate rises are passed through to borrowing costs.** The average interest rate of the outstanding stock of loans to NFCs stood at 4% in August 2023, 235 bp above the

figure seen at end-2021.[9] In the sample of firms in the Central Balance Sheet Data Office Quarterly Survey (CBQ),[10] the average cost of debt stood at 2.9% in 2023 Q2. Higher financial costs are a growing drain on corporate earnings, as shown in Chart 1.9.a, in spite of firms cutting their debt. The debt ratio of firms in the CBQ, measured in terms of surpluses, has fallen. This is largely the result of strong profits and, to a lesser extent, a reduction in outstanding debt. This ratio stood at 491% in 2023 Q2, similar to, but slightly below, the pre-pandemic figure.

**Firms also continue to cope with growing personnel costs stemming from rising wages, along with lower pressure from other production costs, which may not persist into 2023 H2.** According to CBQ data, average compensation rose by 6.5% in 2023 H1, nearly 4 pp more than the year before (2.7%). Employment also rose in this period, although slightly more slowly than in 2022. Conversely, other production costs eased (e.g. commodities and energy), such that inputs as a share of total production value dropped in 2023 H1, standing at levels similar to those seen two years earlier. However, according to the latest qualitative data from the Banco de España Business Activity Survey (EBAE, by its Spanish initials),[11] production costs bucked their falling trend, rising again in Q3 in line with the uptick in energy prices. Furthermore, firms have stated that labour availability issues have continued to push wage costs higher.

**Corporate earnings appear to have continued growing in 2023 H1, underpinned by growing activity, although they did so more slowly than in the previous year and unevenly across sectors and firm sizes.** According to the CBQ, the ordinary net profit for 2023 H1 rose by 17.7%, compared with growth of 101.8% a year earlier. The increase in surpluses holds across sectors, except in the industrial and wholesale and retail trade and hospitality sectors, which saw a decline owing to the poor performance of the oil refining sub-sector and some large wholesale fuel traders. The half-yearly Survey on the Access to Finance of Enterprises in the euro area shows that between October 2022 and March 2023 the proportion of Spanish SMEs reporting a decline in profits outweighed those reporting growth in profits by 20 pp. This gap, however, is smaller than it was six months earlier.

**More granular data show that the proportion of CBQ firms that are financially vulnerable has continued to fall.[12]** In 2023 H1 there was a decline in the percentage of both CBQ firms with a negative return on assets and those with high levels of debt.[13] Similarly, the percentage of firms under high financial pressure (those whose

9 These data are sourced from the individual confidential returns that banks submit to the Banco de España.

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

11 Alejandro Fernández Cerezo and Mario Izquierdo. (2023). "Encuesta a las empresas españolas sobre la evolución de su actividad: tercer trimestre de 2023". *Boletín Económico - Banco de España,* 2023/T3, 15.

12 These results are based on the CBQ sample, which, as noted earlier, comprises around 1,000 primarily large firms.

13 Firms with a ratio of net financial debt to (gross operating profit + financial revenue) higher than 10 or those with positive net financial debt and zero or negative earnings.

earnings do not cover their financial costs)[14] also fell among CBQ firms, in spite of the uptick in interest rates. These three indicators of vulnerability based on CBQ data, which are more representative of large firms, stood at historically low levels, between 3 pp and 5 pp below the average for the period 2008-2022, depending on each case (see Chart 1.9.b). The sectoral breakdown shows drops in the percentage of vulnerable firms in all sectors, except that of wholesale and retail trade and hospitality, which appears to be alone in recording moderate rises.

**In any case, there may be a slight rebound in levels of vulnerability in the second half of the year.** The most recent data from some leading indicators point to an easing of economic activity from Q3 onwards, which would negatively affect ordinary profit. The EBAE shows that the percentage of firms recording a downturn in their economic and financial situation[15] rose to 17% in Q3, 5 pp more than in the previous quarter. Smaller companies saw higher percentages, while, by sector, agriculture, trade and transport stand out, since those areas include a large share of smaller firms. Moreover, Banco de España simulations[16] suggest that the share of total corporate debt held by firms under high financial pressure would increase by between 6.5 pp and 10.3 pp relative to its 2021 level in response to a 450 bp hike in the three-month EURIBOR (in line with what has been seen so far). This pressure could be attenuated or amplified depending on the performance of revenues and other components of business costs.

### *Households*

**The strong performance of the labour market and economic activity, along with easing inflation, led to a significant recovery in household income in the first half of the year.** According to the National Accounts' sectoral accounts, families' gross disposable income rose by around 8% year-on-year in 2023 Q2 in nominal and four-quarter cumulative terms. This is 1.7% in real terms, meaning that households' purchasing power was slightly above pre-pandemic levels on aggregate.

**But the upward path in households' economic situation up to July has come to an end according to the most recent qualitative data.** Indicators on households' future financial situation in the European Commission's monthly consumer survey point to a correction. Specifically, in August and September households, especially in the lower income quartiles, were more pessimistic about the future financial situation, partially reversing the previous path of improvement (see Chart 1.10.a).

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14 That is, the ratio of (gross operating profit + financial revenue) to financial costs is below one.

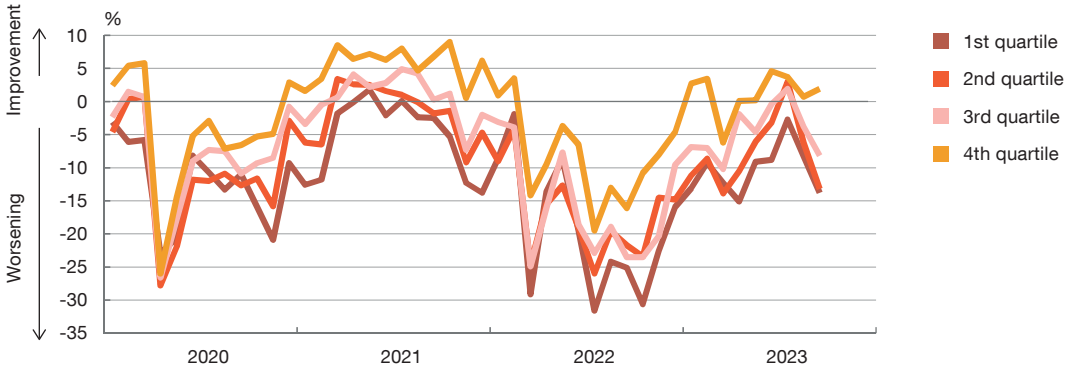
15 A firm is considered to have experienced a downturn in its economic and financial position if, in its response to this survey, it stated that sales and profits had declined while its debt had remained steady or increased.

16 Banco de España (2023). "Chapter 1. Risks linked to the macro-financial environment". In Banco de España, *Financial Stability Report.* Spring 2023.

Chart 1.10

**Households' perception of a path of improvement for the financial situation came to an end in July according to the latest data**

1.10.a Households' outlook for their economic situation over the next 12 months (a)




**SOURCE:** European Commission.

**a** The Consumer Confidence Indicator (European Commission) = percentage of households expecting their economic situation to improve significantly × 1 + percentage expecting their economic situation to improve somewhat × 1/2 - percentage of households expecting their economic situation to worsen somewhat × 1/2 - percentage expecting their economic situation to worsen significantly × 1.

**The improvement in families' purchasing power and more moderate growth in consumption allowed the saving ratio to rally in 2023 H1.** This rise in saving appears to be broad-based across income brackets, although it is more marked in higher income quartiles, according to the ECB's consumer expectations survey. The same survey also points to an increase since mid-2022 in the percentage of households planning to save in the following year, standing at around 50% at July 2023.

**However, rising interest rates have raised financial pressure on households that have a mortgage.** The average cost of the outstanding balance of the stock of loans for house purchase stood at 3.4% in August 2023, 234 bp above the figure recorded at end-2021. This increase covers the updating of variable-rate mortgages (which in June represented around 68%[17] of all outstanding mortgages) as well as the higher rates on new mortgages agreed in the previous year and a half.

**The debt burden of mortgage-indebted households[18] increased across all income brackets, although in a limited fashion, cushioned by rising nominal**

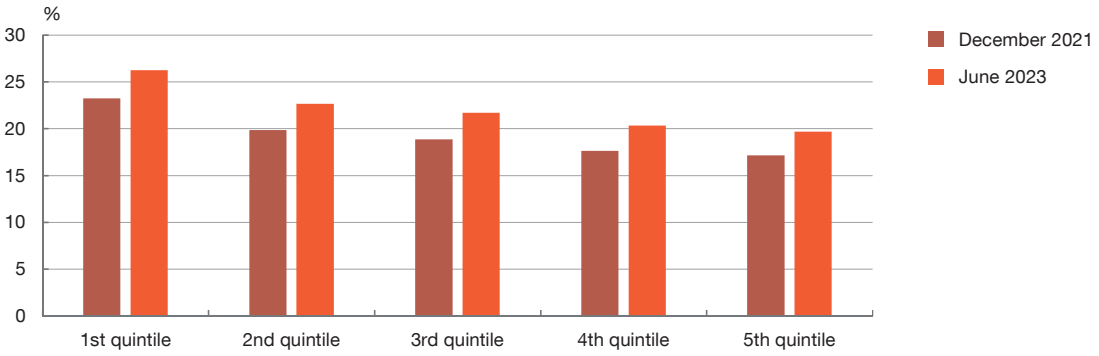
17 These data are sourced from the individual confidential returns the banks submit to the Banco de España and includes all variable-rate mortgages, even if the interest rate is fixed for a certain time.

18 In the two lowest income quartiles, where households are more vulnerable to inflation and interest-rate rises, the percentage of households that have a variable-rate mortgage is lower, around 10% and 20% for the lowest and second-lowest quintiles, respectively. This figure rises to 45% among the highest income brackets. The smaller share of variable-rate mortgages held by those in lower income brackets essentially shows there are fewer indebted households and not necessarily a lower share of variable-rate loans to borrowers. See "Chapter 3. The current episode of price pressures in the euro area, the monetary policy response and its effects". In Banco de España, *Annual Report 2022.*

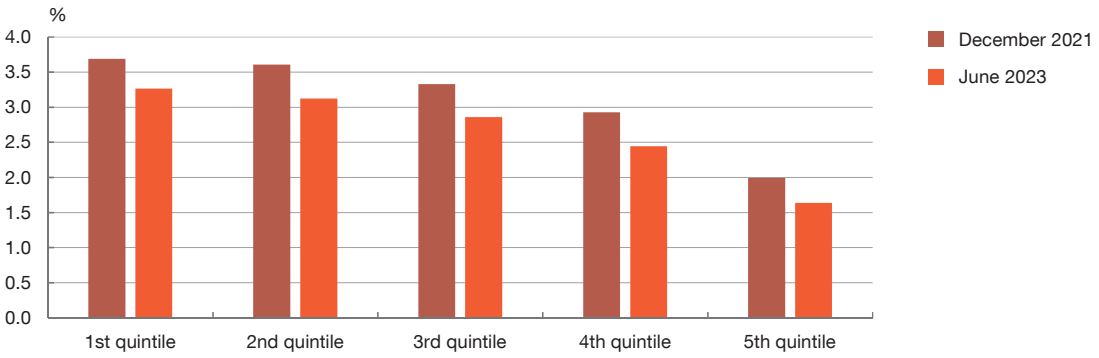
Chart 1.11

**The financial burden of mortgages grew across all income quintiles, although non-performing mortgages continued to fall**

1.11.a Loan service-to-income ratio of the mortgage portfolio at each date by income quintile (a)




1.11.b NPL ratio of the mortgage portfolio at each date by income quintile (b)




**SOURCE:** INE and Banco de España.

**a** The chart shows the loan service-to-income (LSTI) ratio of outstanding mortgages for two dates and in each income quintile. The LSTI ratio shows the relationship between the annual mortgage servicing cost and household income (proxied using average gross annual household income in the same postcode). The values shown correspond to the average LSTI ratio in each quintile, weighted by the oustanding loan amount. Data for household income broken down by postcode are not available for recent years. Therefore, the present values are calculated taking the latest income data and based on changes in the average net income per household in the INE's Living Conditions Survey.

**b** The income quintiles are calculated using the same method as for the chart above on the LSTI. The NPL ratio for each quintile is defined as the ratio of the outstanding balance of non-performing loans at each date to total mortgages to households in that quintile.

**incomes.** Estimations of the debt burden in Chart 1.11.a show a rise in the loan service-to-income ratio of around 2.8 pp between end-2021 and mid-2023 for mortgage-indebted households. This increase was slightly higher for indebted households in lower income quintiles. In any case, the non-performing mortgage loan ratio dropped across all income brackets (see Chart 1.11.b).

**The transmission of monetary policy to households' financial costs is still incomplete.** The increase in the average cost of mortgages represents around half of the rise in the 12-month EURIBOR in that same period, which suggests that the transmission to the average cost of the outstanding balance is not yet complete, given that nearly 70% of outstanding mortgages by volume are variable rate. It is estimated that slightly less than one-third of variable-rate mortgages will undergo a

100 bp revision in their interest rate between June 2023 and June 2024. In addition, according to Banco de España simulations,[19] the percentage of indebted households with a high net interest burden[20] would face upward pressure of 4.2 pp, to 14.6%, given a rise in the 12-month EURIBOR of 500 bp (slightly above that seen to date). Families between the 20th and 60th income percentiles would be those most affected by this shock. This pressure could be attenuated or amplified depending on changes in income and consumer prices. Box 1.2 analyses the use of the codes of good practice by mortgage lenders in 2023 H1.

### 1.3.2 General government in Spain

**Following the deterioration in 2022 Q4, Spain's general government deficit appears to have fallen slightly in 2023 H1.** The cumulative outstanding balance for the previous twelve months stood at 4.4% of GDP in June 2023 (latest available figure), 0.3 pp below that of December 2022.

**The upward revision of GDP figures since 2020 has led to a drop in the government debt ratio.** As a result of this statistical revision, the debt-to-GDP ratio fell by 1.9 pp in June 2023, from 113.1% to 111.2%.

**The Banco de España's latest projections, published in September and automatically adjusted to the new 2022 GDP level, still place the general government deficit at more than 3% of GDP and the debt-to-GDP ratio above 100% over the projection horizon, up to 2025** (see Chart 1.12.a).[21] These projections continue to point to a significant structural imbalance in Spain's public finances.

**Absent new measures, government debt will remain high.** As shown in Chart 1.12.b, the fall in the debt ratio from its peak in 2020 is solely due to robust growth in nominal GDP, since the absolute value of the debt continues to grow. According to current forecasts, this ratio will be around 16% higher in 2023 than its pre-pandemic level. In the next few years, the moderation in nominal GDP growth, the persistence of a slight primary deficit and rising debt servicing payments will together contribute to offsetting the downward trend in government debt.

**These levels of debt constitute a source of vulnerability for the Spanish economy, although there are some mitigating elements.** This is due to both the

19 Banco de España. (2023). "Chapter 1. Risks linked to the macro-financial environment". In Banco de España, *Financial Stability Report.* Spring 2023.

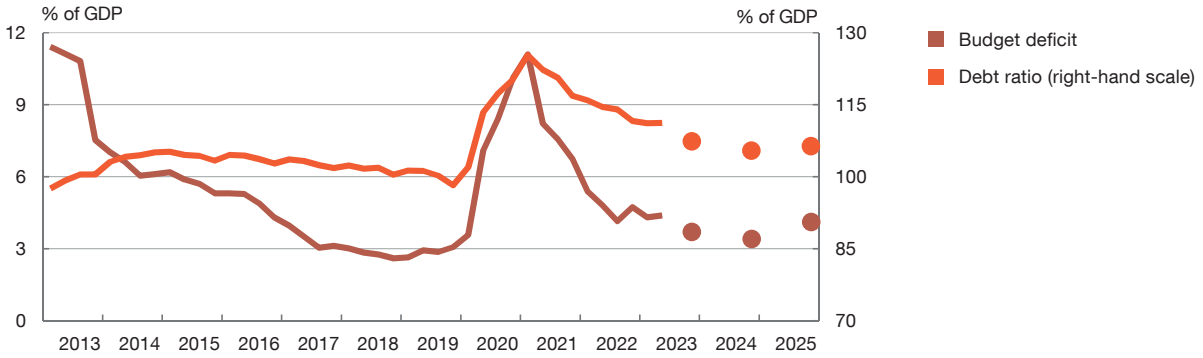
20 The net financial burden is considered high when it exceeds 40% of household income.

21 Banco de España. (2023). "Macroeconomic projections for the Spanish economy (2023-2025)". In "Quarterly report and macroeconomic projections for the Spanish economy (2023-2025). September 2023". In *Economic Bulletin - Banco de España,* 2023/Q3.

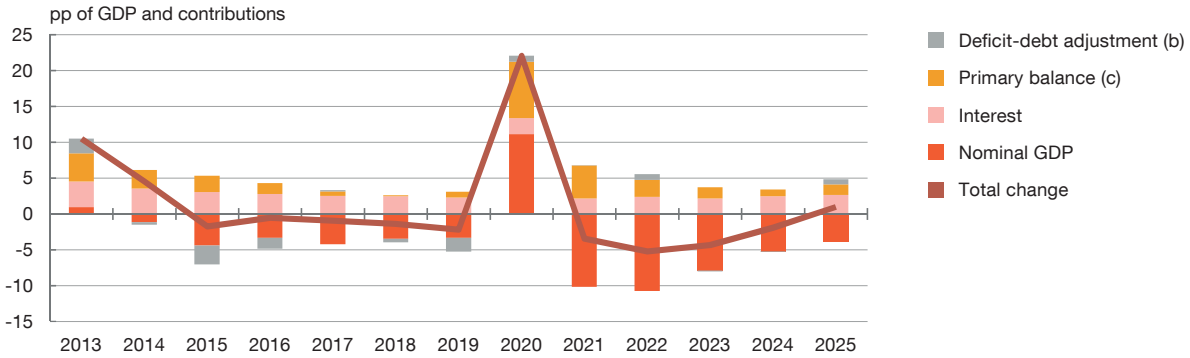
Chart 1.12

**Spain's public finances continue to be a source of vulnerability**

1.12.a General government's financial position (a)




1.12.b Drivers of change in the debt ratio




**SOURCES:** IGAE and Banco de España.

**a** The circles denote the Banco de España's macroeconomic projections published on 19 September 2023, adjusted, in the case of debt, to the new GDP level published by INE on 18 September.
**b** The deficit-debt adjustment shows changes in government debt – calculated in accordance with the excessive deficit procedure (EDP) – which are not the result of the primary balance plus interest. Specifically, this component includes net asset purchases (which must be funded), net liabilities taken on that are not included in EDP debt (such as commercial lending), valuation adjustments and reclassifications.
**c** The primary balance excludes interest costs.

lack of room for manoeuvre in response to possible adverse shocks in the future and greater sensitivity to changes in market rates triggered by such shocks. Conversely, the relatively distant maturity of the outstanding debt and the mechanisms in place at European level to limit unjustified tightening on sovereign debt markets (such as the Transmission Protection Instrument) act as buffer elements against such risks.

**In the short and medium term, the tightening of monetary policy will continue to progressively nudge debt interest spending higher.** Since spring 2022, interest rates on public sector issuances have continued to grow in line with expectations. At the same time, significant tightening of sovereign debt market has not materialised – the ten-year risk premium on Spanish debt over German debt has remained at

around 100 bp. In this context, the interest payment burden is still expected to rise gradually, from 2.2% of GDP (forecast for 2023) to 2.6% (in 2025), with further growth to come in later years.

**Over a longer time frame, the obligations stemming from population ageing, climate change-related challenges and digitalisation, along with higher defence spending (which the current, more unstable, geopolitical situation may demand), will also squeeze public finances.** Against that backdrop, it is important to make the best possible use of available resources and bolster the Spanish economy's potential growth, both via government programmes with a strong spillover effect on private initiatives as well as structural reforms, for which the efficient use of NGEU resources is crucial.

**In any case, removing public finances as a source of vulnerability for the Spanish economy may only be achieved by a sustained process of fiscal consolidation, which must be undertaken as soon as possible.** The current cyclical position of the Spanish economy and the expansionary effects of the NGEU programme warrant the launching of this process and the return to EU-wide fiscal rules in 2024, following their temporary suspension from 2020 to 2023, should mark its beginning.

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

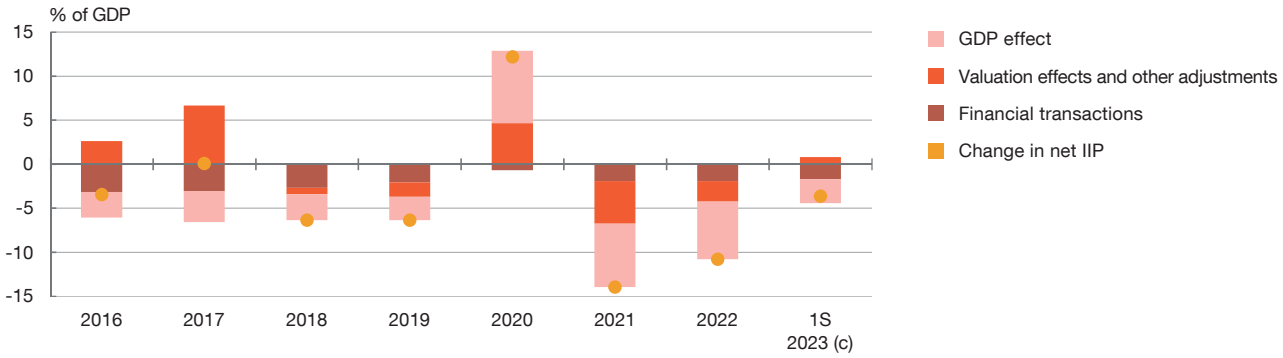
**In 2023 H1, capital inflows to Spain were very high, owing to the replacement of maturing Eurosystem refinancing operations.** Inflows (€127.3 billion, the highest half-yearly amount since before the global financial crisis) comfortably exceeded net purchases of foreign assets by resident agents (€64.9 billion). The main destination of international inflows were deposits (€80.6 billion) and especially short-term deposits (61.7 billion), followed by long-term general government debt securities (€36.2 billion). These robust inflows of deposits are linked to replacement of the ECB's targeted longer-term refinancing operations (TLTRO-III) as they matured. Although banks have funded the large majority of these maturities, cutting excess Eurosystem liquidity, a portion was financed via market operations, in particular by means of repurchase agreements and senior debt issuances.

**Spain's negative net international investment position (IIP) continued on its corrective trajectory in 2023 H1.** The IIP fell to 56.6% of GDP in June, its lowest level since 2004. However, this level is still around 20 pp above the threshold of 35% of GDP stipulated in the European Commission's macroeconomic imbalance procedure framework. The H1 fall (of 3.6 pp) can largely be explained by growth in nominal GDP (by 2.7 pp) (see Chart 1.13.a).

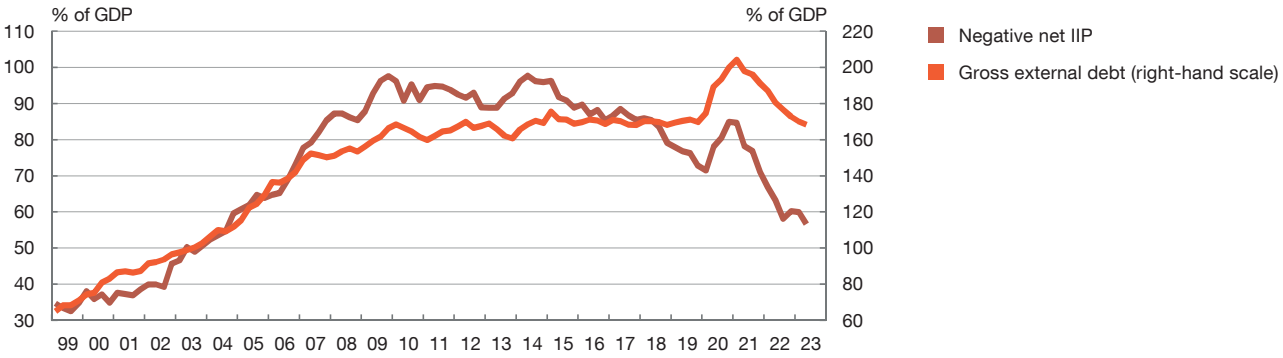
Chart 1.13

**GDP growth allows the correction of external imbalance ratios to continue**

1.13.a Determinants of the change in negative net IIP (a)




1.13.b Negative net IIP and gross external debt (a) (b)




**SOURCE:** Banco de España.

**a** Negative net IIP is the difference between the value of national liabilities to the rest of the world and resident sectors' foreign assets.
**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.

**Spain's gross external debt as a percentage of GDP continued to decline in 2023 H1, to stand at 168.3%.** As a result, the growth in nominal GDP meant that this ratio decreased by 4.4 pp relative to end-2022 (see Chart 1.13.b). Conversely, the absolute value of foreign debts continued to rise, reaching an all-time high of €2,373 billion. Although certain mitigating elements exist, such as the makeup of liabilities in terms of their maturity, agreed interest rate, issuer and currency,[22] the volume of foreign debt is a source of vulnerability for the Spanish economy, especially in a high interest rate environment.

22 There is a predominance of debt issued as long-term debt and by the public sector, denominated in euro and mainly at a fixed rate.

Box 1.1

## THE SLOWDOWN IN CHINA'S REAL ESTATE SECTOR AND ITS POTENTIAL CHANNELS OF DOMESTIC AND INTERNATIONAL TRANSMISSION

The main Chinese economic indicators have recorded negative surprises in recent months, after recovering early in the year thanks to the economic reopening once the country abandoned its zero-COVID policy. Specifically, consumption and investment have begun to show signs of exhaustion as growth drivers. Exports have also suffered in the face of weak global demand and geopolitical tensions.

The economic uncertainty has been exacerbated by the problems currently facing the country's real estate sector, which appear to be getting worse. These difficulties began to emerge in the summer of 2020, when the Chinese Government, seeking to curb speculative pressures and deleverage the sector, introduced its "three red lines" policy,[1] which compelled property developers to adopt financial sustainability standards, thus limiting their debt capacity.

As a result, some property developers experienced serious liquidity problems. In fact, in September 2021 concerns over the solvency of Evergrande, then one of China's largest property developers by size and debt, fuelled fears that the problems might spread to a broader swathe of the real estate sector, with the emerging threat of disorderly defaults posing a global systemic risk.

Since then, faltering confidence in the sector's solvency and its capacity to complete the construction projects under way have made it increasingly challenging for property developers to access financing. Indeed, there has been a significant decline in the financing raised by the sector both on the markets and from bank and non-bank financial intermediaries, as well as through "pre-sales" (off-plan sales where the buyer puts down a deposit for a large share of the housing unit's value) (see Chart 1).

The reappearance this summer of liquidity problems at some of the country's main property developers – notably including Country Garden, which had to request that its payment obligations be delayed – and the non-bank intermediaries that financed them revived the issue of ailing confidence in the sector. Indeed, housing sales have slowed markedly in recent months, all other sources of property developer financing have tightened sharply and the heavy declines in land sales, new construction starts and real estate investment all point to a downturn in the sector (see Chart 2). In this context, house prices have stagnated in recent quarters (see Chart 3).

The problems seem mainly concentrated among private developers, which find themselves in the most financial distress. According to the International Monetary Fund (IMF),[2] in 2023 a group of property developers jointly accounting for around 30% of total sector assets were at risk of insolvency (understood as those with negative equity). The situation facing property developers has already had ramifications for non-bank intermediaries, which are comparatively more exposed to this sector. Indeed, some financial institutions, such as Zhongrong Trust,[3] also appear to have struggled this summer.

The contribution of the real estate sector to the Chinese economy has grown notably in recent decades, and therefore its difficulties have led to a wave of pessimism over the potential ramifications for global growth and financial stability. It is estimated that the real estate sector accounts for around 15% of Chinese GDP and employment, although some studies suggest an even greater contribution factoring in its indirect effects on other sectors.[4]

The problems at property developers could feed through to the bank and non-bank financial intermediation sectors in particular. However, bank loans to property developers make up a small share of the total (5%-8%, depending on the year) and the banking sector appears to have limited its exposure to such loans in recent years (see Chart 4). Non-bank financial intermediaries are subject to less banking regulation and have therefore been able to build more exposure to higher-risk sectors, such as lending to

1 In particular, property developers' debt capacity was restricted based on three ratios: (i) the liability-to-asset ratio must not exceed 70% (excluding advance payments), (ii) net debt (debt less equity) must be lower than 100% of equity, and (iii) the cash-to-short-term debt ratio must be at least 100%.

2 IMF (2023). "Global Financial Stability Report 2023: Safeguarding financial stability amid high inflation and geopolitical risks".

3 Zhongrong Trust is a Chinese wealth management company that, through its investment activity, is an important source of non-bank financing. At end-2022 it had $87 billion worth of funds under management. It is, in turn, linked to Zhongzhi, a large Chinese private conglomerate with interests in the financial sector, mining and vehicles.

4 In Kenneth Rogoff and Yuanchen Yang. (2021). "Has China's housing production peaked?" *China and the World Economy 21 (1): 1-31,* the authors use input-output tables to assess the effects of a real estate sector shock considering not only the first-order effects but also the indirect effects of its interaction with other sectors, finding that the real estate sector accounted for around 29% of GDP in 2017.

Box 1.1

## THE SLOWDOWN IN CHINA'S REAL ESTATE SECTOR AND ITS POTENTIAL CHANNELS OF DOMESTIC AND INTERNATIONAL TRANSMISSION (cont'd)

Chart 1
Sources of financing for property developers (a)

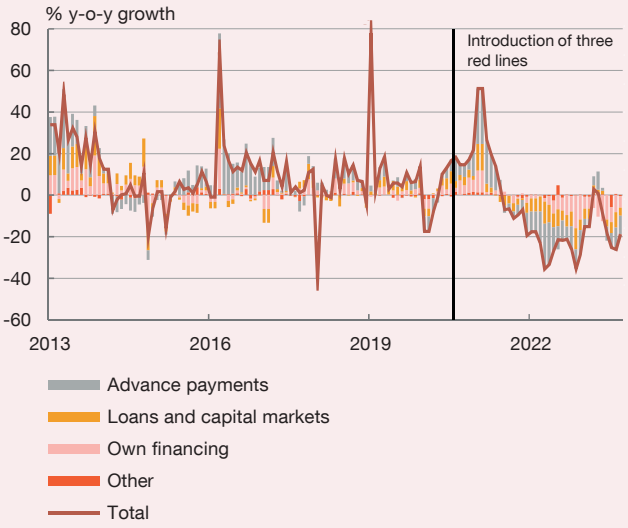



Chart 2
Real estate market situation: Volumes


Chart 3
Real estate market situation: Prices

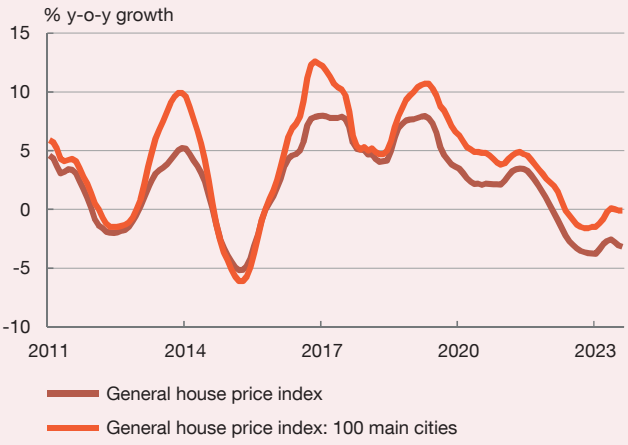
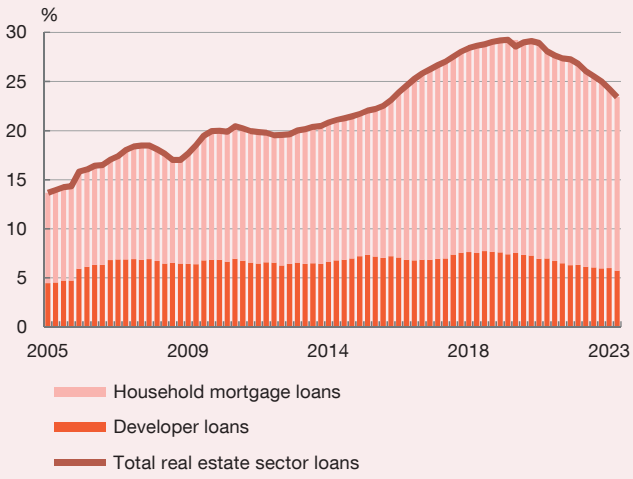



Chart 4
Real estate sector loans as a percentage of total loans. Banking Sector




**SOURCES:** CEIC and Refinitiv Eikon.

**a** "Loans and capital markets" includes domestic and foreign loans, along with other foreign funds received for construction and fixed asset investment. "Own financing" refers mainly to extra-budgetary funds received by ministries, local governments, firms and institutions. "Other" includes other sources of financing such as capital raised through bond issuance by firms or financial institutions, funds raised from individuals through donations and funds transferred by other units.

property developers and local public debt. However, non-bank financial intermediation accounts for 5% of the Chinese financial system, a figure that regulators have succeeded in bringing down in recent years (see Chart 5) by introducing more stringent measures to mitigate the financial risks posed by this industry.[5]

5 See Jacopo Timini. (2017). "China's economic imbalances and the role of the financial sector". *Economic Bulletin - Banco de España,* 4/2017, Analytical Article for a description based on a longer time horizon.

Box 1.1

**THE SLOWDOWN IN CHINA'S REAL ESTATE SECTOR AND ITS POTENTIAL CHANNELS OF DOMESTIC AND INTERNATIONAL TRANSMISSION** (cont'd)

The situation in the real estate sector may also affect households via a number of channels. The solvency and strength of household balance sheets will largely depend on house price developments in the event of a significant real estate correction. In the past, however, Chinese housing market corrections have largely been felt in terms of transaction volume (i.e. the number of properties sold), whereas prices tend to be more stable (see Charts 2 and 3). Indeed, since 2011 no price correction episode has exceeded 5%, far less than the corrections seen in the United States and Spain following the 2008 financial crisis. However, as noted above, the real estate sector could account for as much as 15% of total employment. Therefore, a significant correction in construction and housing sales could have an impact on households by substantially reducing their income.

As for household mortgage loans, the risk of widespread defaults seems limited for the time being. First, because banks have reduced their exposure to such loans in recent years (see Chart 4), just as they have to property developers. Second, macroprudential controls in China and the widespread adoption of the pre-sales system have kept loan-to-value (LTV) ratios relatively contained.[6] This, coupled with steady house price growth in recent decades, has given household wealth a sizeable boost thanks to assets growing in value more than liabilities (see Chart 6). However, household debt has risen significantly in recent decades, standing close to the average for advanced economies (see Chart 7).

According to some estimates, under a severe scenario of defaults among households and property developers, the overall banking system would be materially affected but would remain resilient. The IMF estimates that, under a scenario in which 10% of exposures to distressed property developers and 10% of mortgage loans to households become non-performing, 15% of banks would no longer meet minimum capital requirements.[7]

The bulk of these would be small banks and "domestic systemically important institutions", while larger banks[8] – which tend to have higher capital adequacy ratios than their smaller counterparts (see Chart 8) – would show resilience. In any event, for the time being non-performing loan (NPL) ratios remain subdued, although they are somewhat higher among rural institutions (see Chart 9).

The slowdown in the real estate sector could also aggravate the funding strains on local governments, with ramifications for the financial sector owing to "local government financing vehicles" (LGFVs). These LGFVs, which finance local government infrastructure and construction projects, buy up land from municipal governments and often use it as collateral to raise financing through bank credit or via bond issuance. The exponential growth in the debt of LGFVs, which the IMF estimates to represent around 45% of GDP in 2022, has raised concerns about their high leverage given their limited revenue-generating capacity and their reliance on local governments.

In China, land sales represent an important share of local government revenue, especially in smaller municipalities where such revenue can represent more than 40% of the total (see Chart 10). The real estate market downturn is likely to reduce that revenue, possibly aggravating the financial strains on local governments and limiting their fiscal policy headroom, as well as posing additional risks to the Chinese financial system.

For instance, estimates suggest that a substantial share of LGFVs would not be viable without central government support and restructuring. According to the IMF, the upshot of banks ultimately absorbing half of the debt restructuring costs would be considerable bank losses, particularly among local banks whose capital ratios might fall below the minimum requirements.

The Chinese Government has launched a package of measures to counter the potential adverse impacts on the country's economy and preserve financial stability.

These include restructuring the debt of the most distressed property developers and providing liquidity to help them complete projects already under way. Further, in order to

6 The average LTV ratio for primary homes stands at 63%, compared with 38% for second homes. See Kaiji Chen, Qing Wang, Tong Xu and Tao Zha. (2020). "Aggregate and distributional impacts of LTV policy: evidence from China's micro data". NBER Working Paper Series, 28092, National Bureau of Economic Research.

7 IMF (2022). "Global Financial Stability Report 2022: Navigating the high inflation environment".

8 Including those classified as "global systemically important banks".

Box 1.1

## THE SLOWDOWN IN CHINA'S REAL ESTATE SECTOR AND ITS POTENTIAL CHANNELS OF DOMESTIC AND INTERNATIONAL TRANSMISSION (cont'd)

Chart 5
Financing from non-bank financial intermediaries as percentage of total

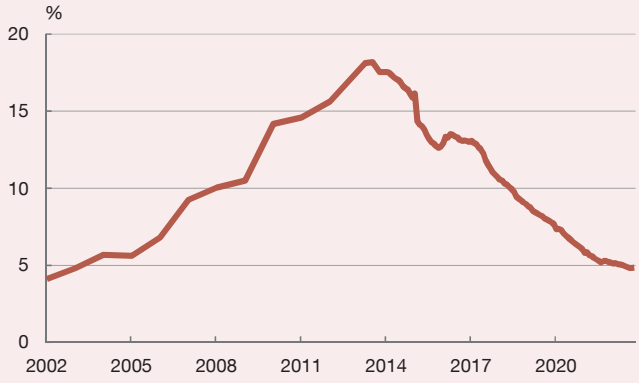



Chart 6
Household financial accounts (a)

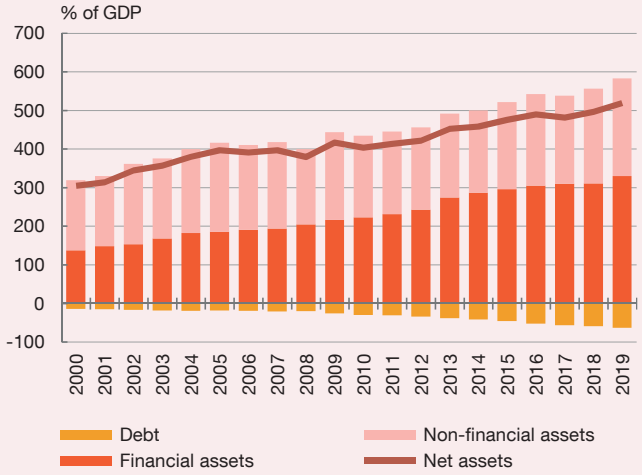



Chart 7
Household debt (b)

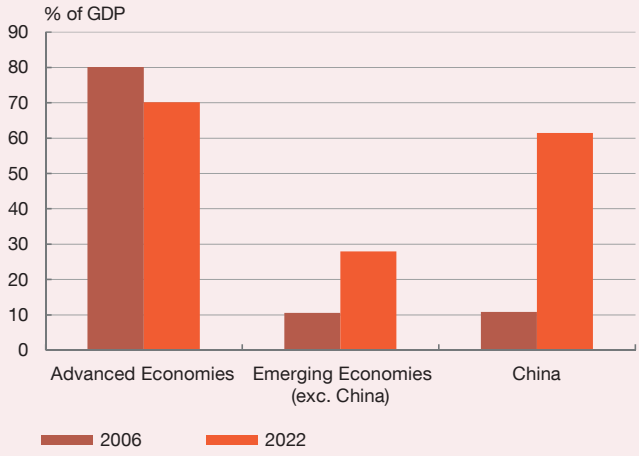
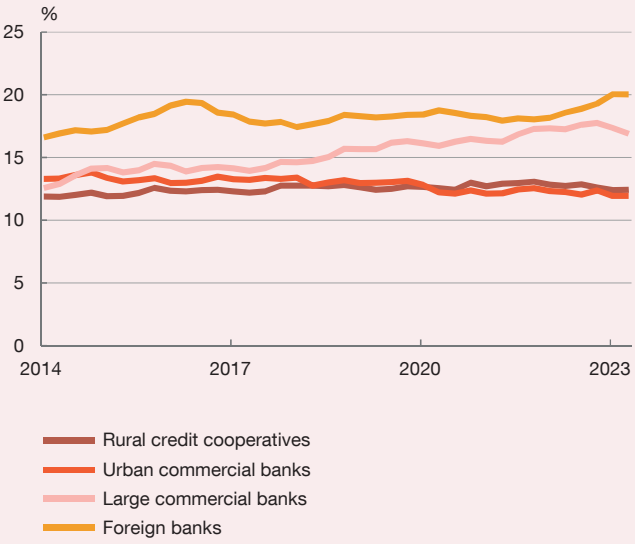



Chart 8
Total capital ratio (c)




**SOURCES:** CEIC and IMF.

**a** Virtually all of households' non-financial assets are homes and just a small share is comprised of other assets such as vehicles or agricultural equipment. See "China's National Balance Sheet – 2020", *Center for National Balance Sheet, National Institution for Finance and Development, Chinese Academy of Social Sciences*.
**b** The group of advanced economies comprises the United States, Japan, United Kingdom, Germany, France, Italy, Canada and Spain, weighted by GDP valued at purchasing power parities. The group of emerging economies excluding China comprises India, Russia, Indonesia, Brazil and Mexico.
**c** In China, rural credit cooperatives tend to be small, while urban commercial banks tend to be medium sized.

boost housing demand by improving households' access to financing, in September 2023 the Chinese Government implemented some of the most substantial easing of housing market regulations since 2015, such as lowering the minimum down payments for house purchases and reducing the regulatory floor for mortgage rates. The Government may reassess these measures based on sector developments in order to stave of potential medium and long-term imbalances.

Other measures, such as cutting the main monetary policy rates, also seem geared towards anchoring the sector

Chart 9
NPL ratios

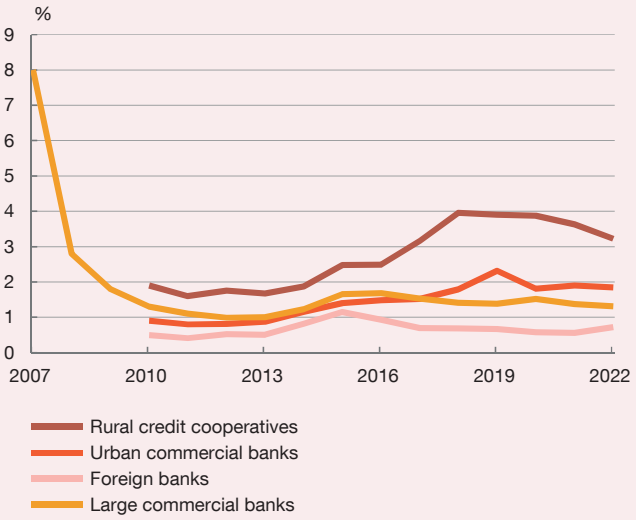



Chart 10
Local government: revenue from land sales (2020) (a)


**SOURCES:** CEIC and Kenneth Rogoff and Yuanchen Yang (2022).

**a** Kenneth Rogoff and Yuanchen Yang (2022) classify cities into three tiers based on their size and economic importance. Large cities such as Beijing, Shanghai, Guangzhou and Shenzhen are tier 1. Other medium-sized but historically more economically developed cities, such as the provincial and regional capitals, are tier 2. All other cities belong to tier 3. For a full list, see Kenneth Rogoff and Yuanchen Yang. (2022). "A tale of tier 3 cities". IMF Working Paper WPIEA2022196.

and the economy as a whole. In any event, the outcome of these measures remains highly uncertain, with no estimates as to their effectiveness or economic impact.

These risks could be transmitted through to the global economy via several channels.

First, the trade channel, since the European economy has significant exposure to Chinese demand, both directly (through exports) and indirectly (through sales of goods to countries that export to China). In the case of the euro area, according to Eurostat data, in 2022 China accounted for 16% of non-EU imports and 7.3% of exports.

Second, China is one of the largest buyers of energy and metal commodities. Therefore, a slowdown in Chinese growth is likely to drive down prices, particularly in the case of precious metal commodities which are more sensitive to activity in the Chinese real estate sector.

Lastly, a third channel, that of financial exposures, is less significant due to the Chinese capital account not being fully open. The indirect channels include the potential for greater uncertainty and a deterioration of global confidence, which could trigger a flare-up of risk aversion in international markets, with stock markets declining and risk premia rising.

A significant slowdown in the Chinese economy would have a limited impact on economic growth in Spain and the euro area, except in the most severe scenarios. Estimates by the Banco de España, assessing the impact of a Chinese economic slowdown transmitted through the three above-mentioned channels (trade, commodities and confidence),[9] suggest that a

9 These channels are assessed using a NiGEM global econometric model, simulating a permanent 1 pp drop in Chinese growth, 80% of which is attributable to investment (the trade channel). Shocks of 6.9% in the price of oil and of 7.8% in the price of industrial metals are also introduced, consistent with said 1 pp drop in Chinese growth (the commodities channel). Lastly, it is assumed that the deterioration in confidence and the increase in uncertainty prompted by the slowdown takes the form of a stock market correction of 10% in the Chinese, European, Japanese and US markets, an increase of 50 basis points (bp) in the equity risk premium and of 60 bp in long-term interest rates in emerging market economies (the confidence channel). Bing Xu, Moritz Roth and Daniel Santabárbara. (2019). "Global impact of a slowdown in China". *Economic Bulletin – Banco de España,* 4/2019, Analytical Article.

1 percentage point (pp) reduction in Chinese growth could reduce growth by around 0.2 pp in Spain and 0.3 pp in the euro area. For its part, the OECD, in its September 2023 report,[10] estimates that an abrupt slowdown in China, based on a tail scenario in which GDP declines by 2 pp together with a rapid tightening of global financing conditions, could reduce euro area growth by around 0.8 pp.

10 OECD (2023). "OECD Economic Outlook, Interim Report September 2023. Confronting Inflation and Low Growth".

Box 1.2

## USE IN 2023 OF THE CODES OF GOOD PRACTICE INTRODUCED BY ROYAL DECREE-LAWS 6/2012 AND 19/2022

Seeking to protect vulnerable households or those at risk of becoming vulnerable due to the rise in inflation and the subsequent interest rate increases to mitigate it, Royal Decree-Law 19/2022 on the application of codes of good practice (CGPs) and other facilities for mortgagors was ratified in November 2022.

This legal rule introduced two main changes.[1] First, it reformed the CGP[2] in force since 2012 to broaden the definition of eligible vulnerable households. Second, it established a new temporary code (in force until December 2024) aimed at protecting households that, while not yet vulnerable, are potentially vulnerable[3] due to the changing economic environment. Lenders sign up to the CGPs voluntarily, but the codes are binding thereafter. For a more detailed analysis of the content of Royal Decree-Law (RDL) 19/2022 and its economic and financial implications, see the special feature in the Spring 2023 FSR.

This box sets out the empirical evidence available for 2023 thus far in relation to the reformed version of the 2012 CGP (ref. CGP 2012) and the temporary CGP (NCGP 2022). Admittedly, only a short period of time has elapsed and the analysis will become more complete with time. However, an understanding of the initial measurable effects is useful.[4]

### CGP applications and transactions

Chart 1 shows developments in applications and the rate of successful applications[5] for the old CGP 2012 (OCGP 2012) up to 2022, and for ref. CGP 2012 and NCGP 2022 in the first seven months of 2023. In 2022, the cumulative volume of outstanding debt linked to forbearance applications under OCGP 2012 amounted to €589 million (corresponding to around 5,800 loans), while to July 2023 the aggregate for ref. CGP 2012 and NCGP 2022 was €5,367 million (close to 42,800 loans). Applications under ref. CGP 2012 accounted for 54% (€2,910 million, approximately 23,100 loans), with the rest (46%) made under NCGP 2022 (€2,458 million, around 19,700 loans). This reveals significant momentum in terms of mortgagors resorting to the CGPs (in the first seven months of 2023 ref. CGP 2012 recorded more applications than OCGP 2012 in all of 2022 and around the same number that the latter recorded annually in the post-global financial crisis years, when it was introduced), due to both the broader definition of vulnerable households and potentially vulnerable households also becoming eligible for the first time under NCGP 2022.

According to the empirical analyses conducted,[6] unemployment and disposable income are the main determinants of a mortgagor's probability of default and, therefore, of applying for measures under the CGPs. The positive labour market performance, with agents' income underpinned by a declining jobless rate and rising employment, presumably helped prevent a higher number of applications. In any event, financial pressure tends to act on ability to pay with some lag.

Turning to successful application rates, these were similar for ref. CGP 2012 (9%) and NCGP 2022 (8.9%) in the first seven months of 2023. Both are lower than recorded by the OCGP 2012 in its last few years in force. However, one conditioning factor is the brief time period elapsed. Indeed, the final acceptance of applications, once the eligibility criteria have been verified, can take several months since it typically entails a process of interaction

1 RDL 19/2022 also envisages additional support measures for mortgagors, such as a temporary waiver of fees for converting a mortgage loan from a variable interest rate to a fixed one, among others.

2 This code was approved in March 2012 to mitigate the effects of the global financial crisis on vulnerable mortgagor households. See Royal Decree-Law 6/2012 (in Spanish only).

3 Both the notion of "vulnerable household" and "potentially vulnerable household" are precisely defined for each CGP and are based on socio-economic indicators such as household income and loan-to-income ratio. See the special feature in the Spring 2023 FSR.

4 The analysis in this box is based on data for deposit-taking institutions, so it does not include specialised lending institutions. However, the number of loans linked to forbearance applications under the CGPs for this type of lending institution is very low (accounting for approximately 1% of all applications).

5 The ratio of the outstanding amount of loans for which measures in the CGPs have been implemented to the outstanding amount of loans for which an application has been made in the period. It is possible that some applications are made in one period and measures are implemented in a later period. In any case, the rate of successful applications when looking at the cumulative volume of accepted applications shows a similar trend.

6 For Spain, see José María Casado and Ernesto Villanueva. (2018). "Spanish household debt defaults: results of the Spanish Survey of Household Finances (2002-2014)". Financial Stability Review, Banco de España, 35 pp. 149-168; and Jorge E. Galán and Matías Lamas. (2023). "Beyond the LTV ratio: Lending Standards, Regulatory Arbitrage, and Mortgage Default". Journal of Money, Credit and Banking. https://doi.org/10.1111/jmcb.13041.

Chart 1
Applications under the CGPs and successful application rate (a)

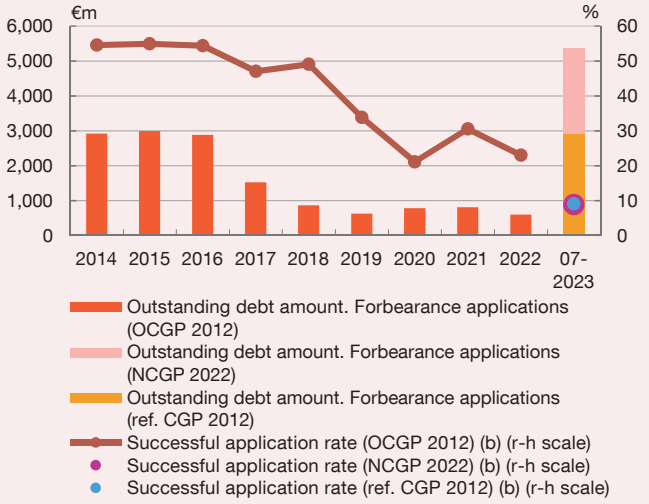



Chart 2
Potential scope of the new CGPs within the eligible population. 2023 H1. (a) (c) (d)

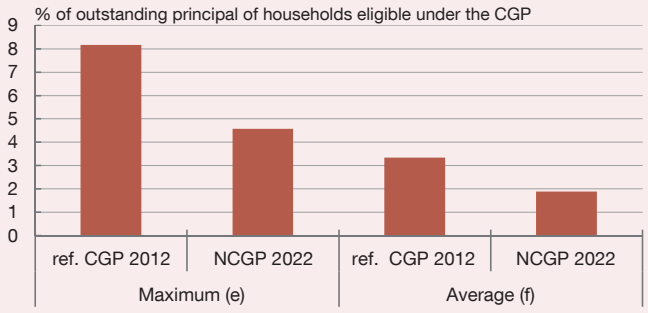



Chart 3
Mortgage loan credit status (a) (g)

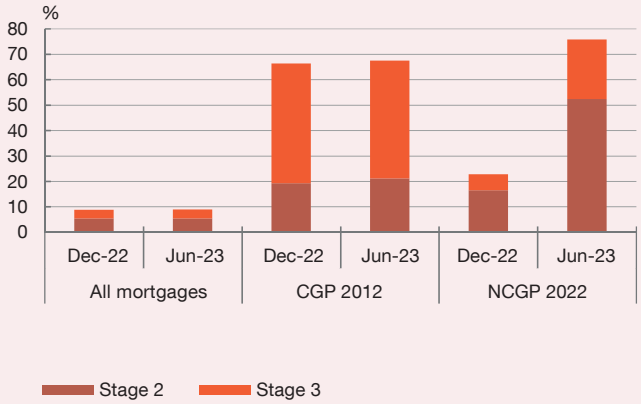
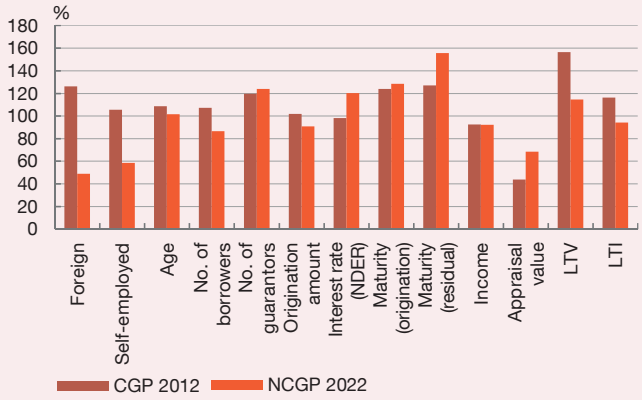



Chart 4
Characteristics of loans forborne under CGP 6 2012 and NCGP 19 2022. June 2023 (a) (h)




**SOURCES:** Banco de España, CCR and EFF (2020).

**a** This chart includes four variants of the CGP, as follows. OCGP 2012: the CGP approved under RDL 6/2012 until its reform by RDL 19/2022; Ref. CGP 2012: the CGP approved under RDL 6/2012 following its reform by RDL 19/2022; CGP 2012: the CGP approved under RDL 6/2012, ignoring the temporary differences before/after its reform; NCGP 2022: the CGP approved under RDL 19/2022.
**b** Ratio between the outstanding debt associated with forbearance implemented and that associated with forbearance applications in the period. Some forbearance may have been requested in one year and implemented the next. In any event, the rate of successful applications as a proportion of cumulative applications shows a similar pattern.
**c** Eligible households under ref. CGP 2012 will, generally speaking, also be eligible under NCGP 2022, having the option to choose between one or the other. Accordingly, to construct the denominator, it is assumed that households eligible for the more structural mechanism will have chosen this option. Households eligible under the temporary mechanism are all those that satisfy the eligibility conditions excluding those that are eligible for (and indeed are assumed to opt for) the structural mechanism.
**d** Assuming that the 500 bp increase in the mortgage reference rate is fully passed through to the cost of variable-rate debt.
**e** To construct the numerator, it is assumed that the maximum number of households whose applications under the CGPs are ultimately implemented is equal to the total number of applications received for each mechanism.
**f** To construct the numerator, it is assumed that the number of households that are eligible to benefit from either of the two CGPs is proportional to the average percentage of successful applications under the OCGP 2012 in the period 2014-2022.
**g** Percentages shown in terms of the outstanding amount drawn for all outstanding loans at each date. In the case of the CGP 2012, the credit status of loans subject to measures under the code at each date is reported. In the case of the NCGP 2022, the credit status at December 2022 of loans benefitting from the code in the 2023 reference period is reported, even if they were not yet subject to those measures at end-2022.
**h** For each loan, its average value weighted by the loan amount has been calculated and relativised using the average value of the stock of mortgage loans not benefiting from any CGP. Thus, a value above 100 would indicate that, in that particular category, the weighted average for mortgages under CGP 2012 or NCGP 2022 is higher than that for all other mortgage loans. The characteristics are measured at June 2023. The average reference values for mortgage loans as a whole (i.e. those taking base = 100) are as follows: foreign (%) 7.8; self-employed (%) 19.4; age (oldest borrower, years) 39.11; origination amount (€) 185,384.4; maturity at origination (years) 28.1; residual maturity (years) 17.0; LTV (%) 77.77; LTI (ratio of income) 3.97; income (in 2020, €); 43,253; interest rate (NDER, %) 3.25; appraisal value (€) 239,148.

between borrower and lender. In fact, the rejection rates[7] in this period for ref. CGP 2012 and NCGP 2022 (both around 40%) are lower than those recorded in recent years for OCGP 2012 (around 60%), with the vast majority (around 90%) owing to failure to meet the objective eligibility requirements. In any event, acceptance rates have been on a rising trend in recent months.[8]

To approximate the potential impact of these programmes, Chart 2 shows (as a percentage of the total principal of potentially eligible households) the outstanding principal of households that could have benefited from either of the two mechanisms in the first six months of 2023 assuming a 500 basis point (bp) increase in the mortgage reference rate (some 30 bp more than the increase since the start of 2022).[9] In the first two columns, it is assumed that all applications received are ultimately successful. Under this assumption, around 8.2% of the outstanding principal of households eligible for the structural mechanism would benefit from measures under ref. CGP 2012, while this figure would stand at 4.6% in the case of NCGP 2022.[10]

Not all households applying for forbearance measures under either of the mechanisms will ultimately benefit from them. In fact, a significant percentage of rejections has already been observed. Accordingly, an adjustment is made to the percentage of applications that will ultimately be accepted. To do this, aggregate annual information on the percentage of applications ultimately leading to measures under the OCGP 2012 has been used, given that the successful application rates under ref. CGP 2012 and NCGP 2022 remain low due to the short time they have been in force. Thus, in the last two columns of Chart 2 it is assumed that the number of households eligible to benefit from the CGPs is proportional to the average percentage of successful applications in the period 2014-2022. Under this assumption, and given a 500 bp increase in the reference interest rate, the percentage of outstanding principal of eligible households (see footnote 9) that would have benefited from the structural and temporary mechanisms amounts to 3.3% and 1.9%, respectively.

### Credit quality of CGP loans

As regards the risk profile of such loans, the information available in the Central Credit Register (CCR) can be used to compare the credit quality of mortgage loans under the CGPs between December 2022 and June 2023, distinguishing in this case between vulnerable debtors (combining OCGP 2012 and ref. CGP 2012, shown here as CGP 2012, despite the eligibility criteria not being exactly the same) and potentially vulnerable households (NCGP 2022).

Chart 3 shows the credit risk classification of the total stock of mortgage loans and of loans under each programme. As can be seen, in December 2022 the mortgages benefiting from the NCGP 2022 and, above all, those benefiting from the CGP 2012 had higher percentages of Stage 2 and Stage 3 (non-performing loans (NPLs)) credit than the overall stock of mortgages. This is to be expected given that they are geared towards vulnerable and potentially vulnerable households. Furthermore, a significant portion of the loans benefiting from NCGP 2022 were reclassified to Stage 2 or to Stage 3 in the period from December 2022 to June 2023. However, much of the increase in the volume of Stage 3 credit under the CGPs is accounted for by loans classified as non-performing for subjective reasons (i.e. for reasons other than objective non-payment). Loans may be reclassified to a higher category if suitable progress is made in their repayments.

Specifically, for mortgage loans forborne[11] under the 2012 CGP (totalling €1,201 million at June 2023), the percentage

7 The ratio of the outstanding amount of loans for which an application under the CGPs has been rejected to the outstanding amount of loans for which an application has been made in the period. It is possible that some applications are made in one period and rejected in a later period.

8 For instance, the cumulative successful application rates to June stood at 7.7% for ref. CGP 2012 and 7% for NCGP 2022, compared with 9% and 8.9%, respectively, to July.

9 Eligible households under ref. CGP 2012 will, generally speaking, also be eligible under NCGP 2022, and can choose one or the other. Accordingly, to construct the denominator of this proportion, it is assumed that households eligible for the more structural mechanism will have chosen this option. Households eligible under the temporary mechanism are all those that satisfy the eligibility conditions excluding those that are eligible for (and indeed are assumed to opt for) the structural mechanism.

10 The outstanding principal of households eligible for the structural mechanism amounts to some €22 billion, while that figure for those eligible for the temporary mechanism is €30 billion. These estimates are based on information drawn from the Spanish Survey of Household Finances (EFF by its Spanish acronym) for 2022, since no granular information is available on households that have applied for measures under the CGP 2022.

11 This box uses the terms forbearance and forborne loans in line with the terminology in RDL 6/2012. The consideration of a loan as forborne for loan loss provision purposes depends on specific legislation which is separate from RDL 6/2012. See the Special Feature of the Spring 2023 FSR.

in Stage 2 increased slightly during 2023 H1 to 21.1% (from 19.2%). Conversely, the percentage of Stage 3 loans declined to 46.4% in June 2023 (vs 47.1% in December 2022). In any event, a significant share of these are NPLs for subjective reasons (63.7% of total Stage 3 loans in December 2022 and 57.1% in June 2023).

Meanwhile, most (77.2%) of the mortgage loans forborne under NCGP 2022 during 2023 H1 (amounting to just over €150 million in June 2023) were classified as performing in December 2022, while just 24.2% remained performing in June 2023. Conversely, the percentage of such loans in Stage 2 grew to 52.3% in June 2023 (from 16.5% in December 2022) and the percentage in Stage 3 rose to 23.5% (from 6.3% in December 2022). Again, much of this increase in NPLs was accounted for by those classified as non-performing for subjective reasons. Thus, in December 2022 subjective NPLs represented 84% of Stage 3 loans under NCGP 2022, compared with 98% in June 2023.

Other attributes available in the CCR have also been used to study the characteristics of loans forborne under CGP 2012 and NCGP 2022 as compared with the total stock of mortgages at June 2023 (see Chart 4).

The exercise shows similar levels of household income (proxied by average household income in the postcode of the property used as collateral, according to the INE's Atlas of household income distribution) for mortgages forborne under each of the two above-mentioned CGPs. These levels are somewhat lower than those for other mortgage loans, which is to be expected given that household income above a certain level would disqualify borrowers from the programmes.

Furthermore, the mortgages benefiting from one of the two CGPs are arranged on homes of lower value as compared with the overall stock of loans (this is particularly true of CGP 2012). The eligibility criteria also include an upper limit on the value of the property. Conversely, only in the case of the NCGP 2022 is the loan amount below the average for all mortgage loans. In addition, loans under the two CGPs have longer initial and residual maturities. Lastly, mortgages forborne under CGP 2012 have higher loan-to-income (LTI) and loan-to-value (LTV) ratios, but those under NCGP 2022 also have a somewhat higher LTV ratio than the total stock of mortgages.

### Conclusion

The volume of forbearance applications under the CGPs was relatively high in the first half of 2023, based on past experience with the OCGP 2012. The percentage of measures implemented remains low, possibly due, at least in part, to the short period of time elapsed. Rejection rates are lower than recorded in recent years for OCGP 2012, and therefore the measures may prove more effective in the medium term. Further, as compared with the average for total mortgage loans, there have been some indications of higher credit risk among the loans ultimately benefiting from the codes, which is consistent with the borrowers' lower solvency profile.

In any event, the reformed CGP framework came into force just a short time ago, which limits the conclusions that can be drawn from the data. Further monitoring will be required over the coming quarters to determine more clearly the impact of the measures on the stock of mortgages.

# 2

## FINANCIAL SECTOR RISKS AND RESILIENCE

Against the current backdrop of monetary policy tightening, to June 2023 the outstanding amount of bank lending to the resident private sector in Spain fell and the pace of new lending slowed. Credit quality in Spain, however, remains considerably resilient and there are no noteworthy signs of impairment. Meanwhile, the cost of bank borrowing continues to grow progressively. Nevertheless, the pass-through of higher interest rates to retail deposits is weak and smaller than in the case of loans. In addition, wholesale bank funding markets have stabilised after the stress of last March. All this has helped banks improve their ordinary profit and solvency.

Looking ahead, the Banco de España's stress tests reflect the banking sector's high overall resilience to an adverse scenario – consistent with that of the European Banking Authority's (EBA) EU-wide stress test – that combines a severe recession with further inflationary pressures and interest rate increases. However, the materialisation of the risks identified in the scenario would have a material impact on profitability and deplete some of the existing capital reserves, albeit unevenly across banks. It is therefore necessary to continue with a prudent capital and provisioning policy that takes advantage of the recent sound financial performance.

The non-bank financial intermediation sector has returned to growth after contracting in 2022 and no significant changes in its structure are detected at national or European level. Of note in Spain are flows towards fixed-income investment funds, which are considerably bigger than those observed in other European countries.

## 2.1 Deposit institutions

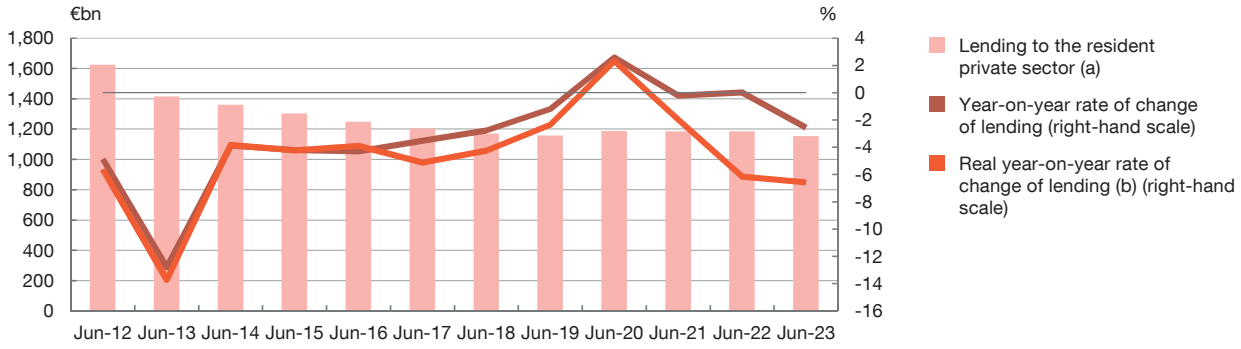
### 2.1.1 Balance sheet structure, risks and vulnerabilities

*Credit risk*

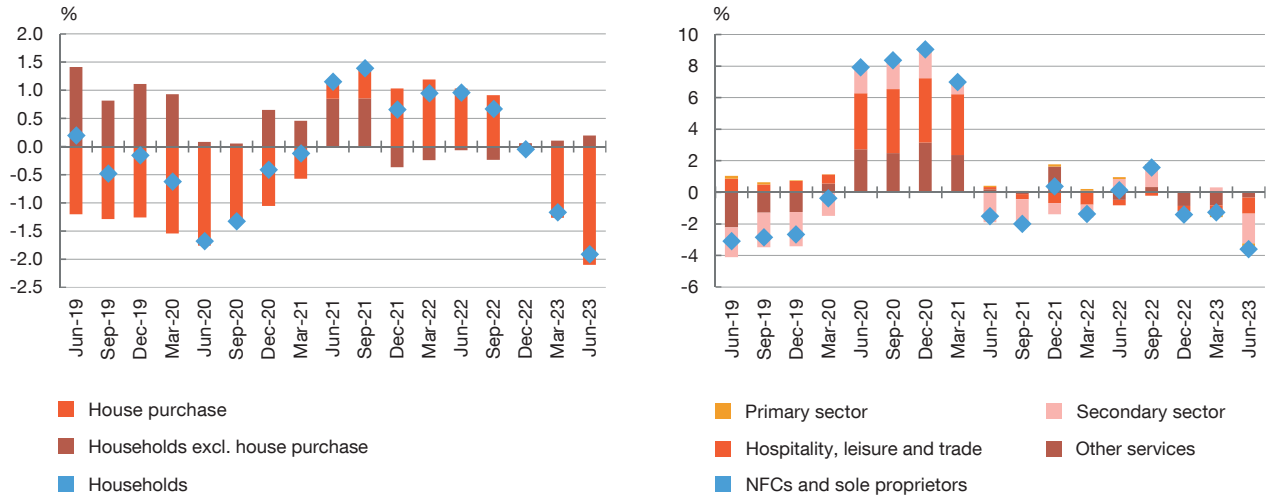
**The volume of bank lending to the resident private sector continued to fall in Spain in 2023 H1.** The outstanding amount fell by 2.6% year-on-year in June 2023 (see Chart 2.1.a), steepening considerably from the 0.7% year-on-year contraction recorded in December 2022. The decline affected lending to households and non-financial corporations (NFCs) alike, but was sharper in the case of the latter. In real

Chart 2.1
**Lending to the resident private sector contracted in H1**

2.1.a Volume of lending and rate of change. Business in Spain. ID




2.1.b Contributions to the year-on-year rate of change of lending to households (l-h panel) and NFCs and sole proprietors (r-h panel). Business in Spain. ID




**SOURCE:** Banco de España.

**a** The resident private sector includes households, NFCs and sole proprietors, and financial corporations.
**b** To obtain the real rate of change of lending time series, the composition of lending was taken into account, deflating the portion of lending to households (not for business purposes) by the consumer price index and other lending (to NFCs, financial corporations and sole proprietors) by the GDP deflator.

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terms,[1] bank lending to the resident private sector fell year-on-year by 6.6%, up slightly on the December 2022 figure (6.2%).

**The reduction in the outstanding amount of lending to households in June 2023 was driven by the contraction in loans for house purchase.** The volume of lending to households decreased by 1.9% relative to June 2022, while it remained steady at end-2022 (see Chart 2.1.b, left-hand panel). This decline is essentially due

1 The figures for real lending in this paragraph are obtained by deflating the portion of lending to households (not for business purposes) by the consumer price index and other lending (to NFCs, financial corporations and sole proprietors) by the GDP deflator. All other references to lending in this chapter relate to nominal lending.

to the 2.6% decrease in its main component (loans for house purchase), which was not offset by the 1% growth in other lending to households. Changes in new lending and the repayment of existing loans explain these declines, as analysed in more detail in Chapter 1.

**The outstanding amount of business lending recorded its steepest drop since June 2019 in June 2023, owing essentially to the fall in lending to industry and hospitality, leisure and trade.** The decline in the outstanding amount of lending to NFCs and sole proprietors steepened further, recording a year-on-year decrease of 3.6% at end-2023 H1 (see Chart 2.1.b, right-hand panel). The considerable year-on-year decreases in lending to industry (-6%) and to hospitality, leisure and trade (-4.1%) contributed notably to this decline. The decrease in this portfolio's outstanding amount is mainly explained by repayments of outstanding debt.

**New lending grew in 2022 despite higher interest rates, but a widespread reduction in bank credit growth was observed in 2023 H1.** New lending to households, NFCs and sole proprietors grew 1.4% in the 12 months to June, in contrast with the growth of 13% in the 12 months to the end of 2022 (see Chart 2.2.a). The contraction in new lending to households, which shrank 8.7%, is noteworthy, while new lending to NFCs and sole proprietors grew by 4.9%.[2] The principal drawn down against available credit lines (cumulative 12-month figure) grew by 10.7% year-on-year in June 2023, which could reflect borrowers accommodating to lower growth in new lending and expectations of a possible further tightening of financing conditions in coming quarters. The distributions among banks of year-on-year growth in new lending to both households and NFCs have shifted towards lower values in recent half-year periods (see Chart 2.2.b).

**The pass-through of the increase in the main reference interest rate (EURIBOR) to average bank loan portfolio rates continued in 2023 H1**. The 12-month EURIBOR stood above 4% in June 2023, after increasing by a cumulative 451 basis points (bp) since the start of the current policy interest rate hike episode in December 2021 and 100 bp since December 2022. Against this backdrop, the pass-through[3] of the increase in the key policy rates to the average rates[4] for banks' household and NFC loan portfolios continued in 2023 H1, nearing 50% in the case of loans for house purchase and lending to firms and 30% in lending to households for other purposes. The degree of pass-through is so far still lower than in past interest rate hike cycles (see Chart 2.3). Compared with Europe, the degree of pass-

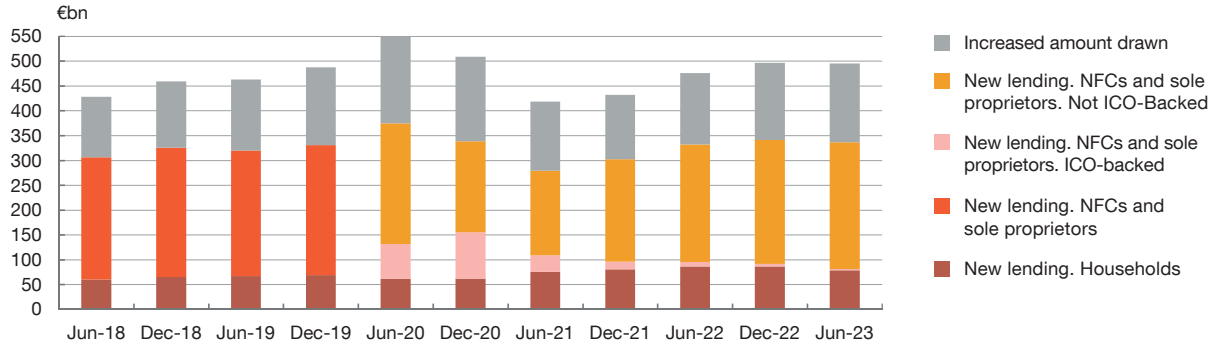
2 In the 12 months leading up to June 2023, new lending guaranteed by the Official Credit Institute (ICO) aimed at mitigating the effects of the war in Ukraine accounted for 1% of total new lending to NFCs and sole proprietors.

3 Pass-through is defined as the ratio between the cumulative change (in pp) in the interest rates applied to loans and the change in the 12-month EURIBOR in the reference period.

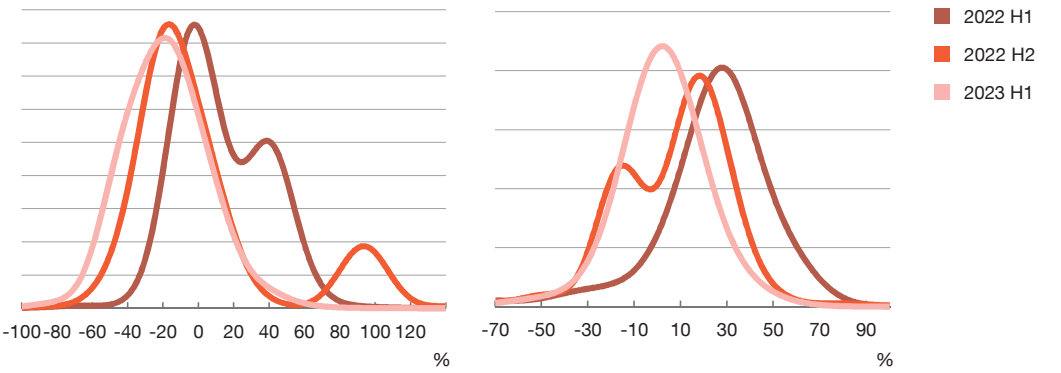
4 Average rates for the entire outstanding amount of the corresponding portfolios, including variable and fixed-rate loans. The latter contribute to a lower pass-through of changes in the EURIBOR.

Chart 2.2
**Most banks curbed lending in H1**

2.2.a Cumulative 12-month volume of new lending. Households and NFCs and sole proprietors (a) Business in Spain. ID




2.2.b Distribution among banks of the year-on-year rate of change of half-yearly new lending flows to households (l-h panel) and NFCs and sole proprietors (r-h panel) (b). Business in Spain. ID




**SOURCE:** Banco de España.

**a** Excluding other financial corporations.
**b** The chart depicts the density function of the year-on-year rate of change of the half-yearly new lending flows to households (l-h panel) and NFCs and sole proprietors (r-h panel) for Spanish deposit institutions, weighted by the flow of half-yearly new lending for that purpose. The density function is estimated using a kernel estimator, which enables non-parametric estimation and provides a continuous, smoothed graphic representation of the function.

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through to average bank lending rates in Spain is relatively higher than in other jurisdictions,[5] partly because of the higher share of variable-rate loans.[6]

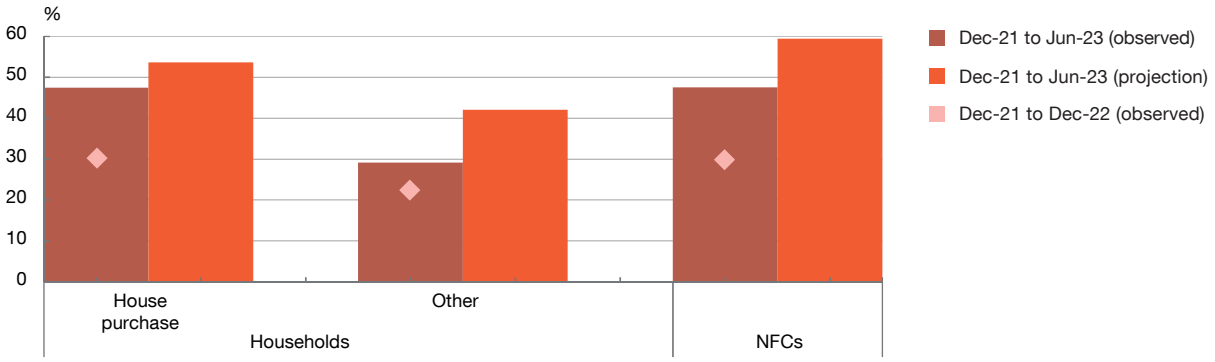
**The NPL ratio stood at 3.4% at end-2023 H1, remaining on its downward trend.** The NPL ratio was down 1.9 percentage points (pp) and 0.4 pp on June 2019 (before the pandemic) and June 2022, respectively (see Chart 2.4.a). These declines were driven by improvements in the NPL ratio for households (down 1.7 pp and 0.3 pp on June 2019 and 2022, respectively) and for the non-financial corporate sector (down

5 For example, on ECB bank interest rate statistics, the degree of pass-through for the euro area as a whole in June 2023 was 43% for loans to firms and 13.3% for loans for house purchase.
6 See, for example, Banco de España. (2023). *Financial Stability Report*, Spring 2023, Chart 10 of Box 1.

Chart 2.3

**Pass-through of monetary policy tightening to bank loans continued in 2023 H1**

2.3.a Pass-through of the increase in the EURIBOR to average interest rates on the outstanding amount of loans (a)




SOURCE: Banco de España.

a Pass-through is defined as the ratio between the cumulative change (in pp) in the interest rates applied to loans and the change in the 12-month EURIBOR in the reference period. Changes in commercial interest rates are projected using a multivariate structural VAR model based on interest rates data reported to the ECB.

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2.6 pp and 0.6 pp on June 2019 and 2022). However, the volume of non-performing loans to households showed some signs of deterioration, growing by 2.9% in 2023 Q2 (see Chart 2.4.b, left-hand panel). Meanwhile, the NPL ratio of ICO-backed loans increased by 4.2 pp over the last 12 months, to stand at 8.3% in June 2023 (see Chart 2.4.a). While the volume of ICO-backed non-performing loans at that date increased year-on-year (58.6%, versus 81.7% in December 2022), the increase in the NPL ratio is also explained by a decrease in the volume of loans in this category (-21.8%, versus -11.2% at end-2022), the result of the gradual repayment of this portfolio.[7]

**Similarly, the share of Stage 2 loans fell moderately to 6.9% of lending to the resident private sector at June 2023.** This figure represents respective decreases of 0.24 pp and 0.19 pp since June and December 2022; however, these troubled loans still account for a higher share of lending to the resident private sector than before the pandemic (5.9% in June 2019).

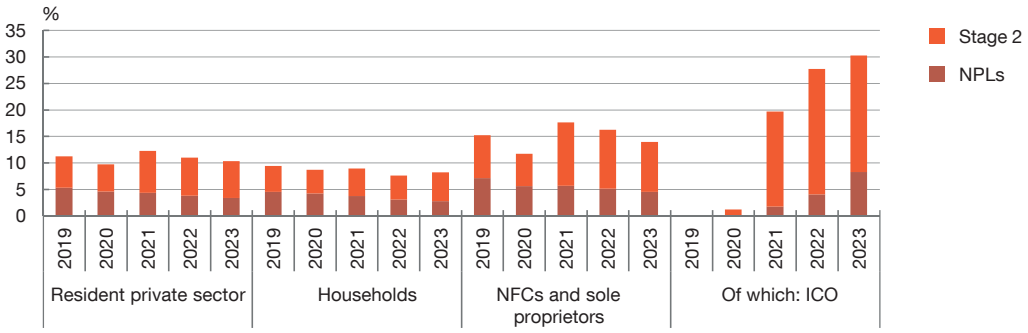
**In the 12 months to June 2023, Stage 2 loans performed unevenly across institutional sectors, with the proportion of Stage 2 loans in lending to households growing**. The share of Stage 2 loans in this portfolio increased by 0.9 pp in that period, standing at 5.4% in June 2023. However, they decreased in volume by 4.3% (2.2% for the consumer credit segment) in 2023 Q2 (see Chart 2.4.b, right-hand panel). Meanwhile, for the non-financial corporate sector, the proportion

7 As a reference, had the volume of credit at June 2022 remained constant, the NPL ratio would have been 6.5% rather than 8.3%.

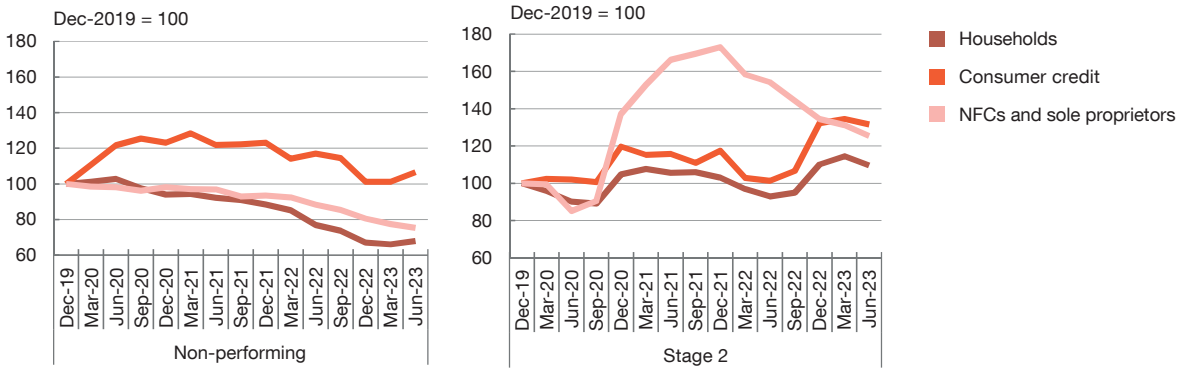
Chart 2.4

**There are no significant signs of a deterioration in credit quality, despite lending to households performing worse**

2.4.a Share of lending classified as non-performing and in Stage 2. June of each year. Business in Spain. ID




2.4.b Volume of NPLs (l-h panel) and Stage 2 loans (r-h panel) Business in Spain. ID

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**SOURCE:** Banco de España.

of Stage 2 loans fell by 1.7 pp (to 9.4%) in the 12 months to June 2023. Within this sector, the share of Stage 2 ICO-backed loans fell by 1.7 pp year-on-year (to 22.0% at June 2023). As with the NPL ratio of ICO-backed loans, the share of these troubled loans remains high partly because of the public guarantee scheme's closure and the repayment of these loans.[8]

**The volume of loan refinancing, restructuring and roll-over in lending to households has slowed down, whereas renegotiation has picked up.** Of the outstanding amount of loans to households in June 2022, 1.2% was renegotiated, refinanced, restructured or rolled over[9] between July 2022 and June 2023 (see Chart 2.5.a), a similar proportion to that observed pre-pandemic (1.1% between

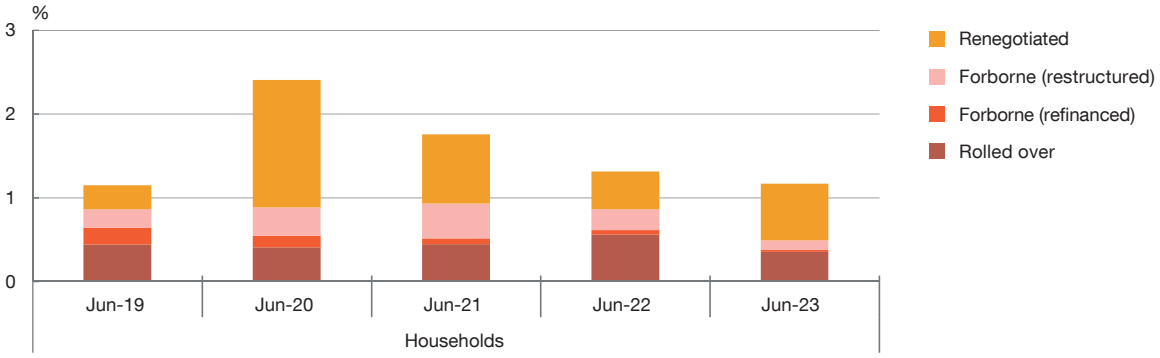
8 As a reference, had the volume of credit at June 2022 remained constant, the ratio of Stage 2 loans would have been 17.2% rather than 22%.

9 Refinancing is granted to facilitate the compliance of borrowers in financial difficulties with one or more (refinanced) transactions; restructuring is where the contractual terms are amended to facilitate payment of the debt due to the borrower's difficulty to pay; renegotiation is where the financial conditions are amended without the borrower being in financial difficulties; and a roll-over is a loan arranged to replace another previously extended by the bank without the borrower being in financial difficulties.

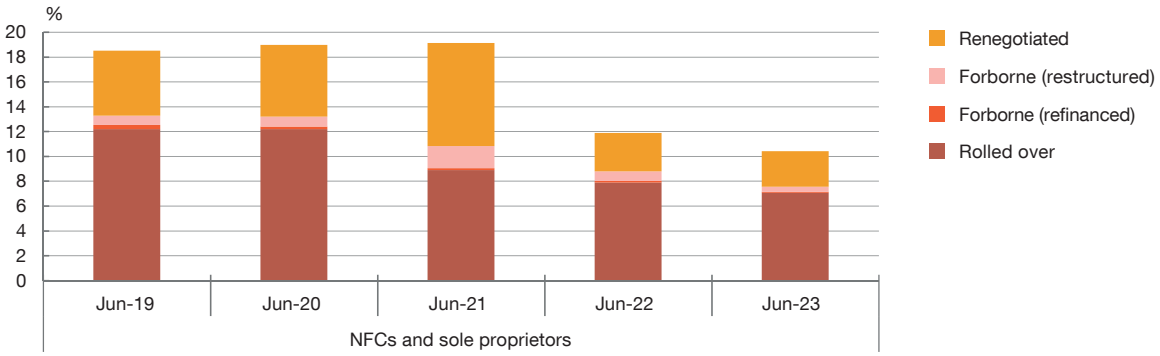
Chart 2.5

**No increase in modifications of loan terms and conditions has been observed to June**

2.5.a Cumulative 12-month flow of renegotiations, refinancing, restructuring and roll-overs (a). Households. Business in Spain. ID.




2.5.b Cumulative 12-month flow of renegotiations, refinancing, restructuring and roll-overs (a). NFCs and sole proprietors. Business in Spain. ID.




**SOURCE:** Banco de España.

**a** The sum of the monthly flows from July to June as a percentage of the portfolio in June of the previous year is used to construct the cumulative 12-month flow.

July 2018 and June 2019). However, it is noteworthy that renegotiation amounted to 0.7% in the last 12 months, exceeding the pre-pandemic figure (0.3%). The increase in renegotiations is consistent with changes in the type of mortgage (from floating to fixed-rate) – prompted by the recent interest rate hike environment – and with the expected effect of the measures under Royal Decree-Law 19/2022, which lower the costs associated with amending such conditions.

**The flow of transactions amending the terms and conditions of lending to the non-financial corporate sector has also slowed.** The decline in the 12 months to June 2023 was moderate; however, it is more pronounced when compared with prior years (e.g. 10.4% in June 2023, versus 11.9% in June 2022 and 18.5% in June 2019) (see Chart 2.5.b). The lower percentage of rolled-over and renegotiated lending in the last 12 months than reported pre-pandemic (7.1% versus 12.2% and 2.9% versus 5.2%, respectively) is also noteworthy. This significant deceleration could be at least

partly explained by the stock of ICO-backed loans, which would afford NFCs some protection against the higher interest rate scenario, rendering these measures less necessary. The decline in roll-overs would also be influenced by the incentives to deleverage in a higher interest rate environment.

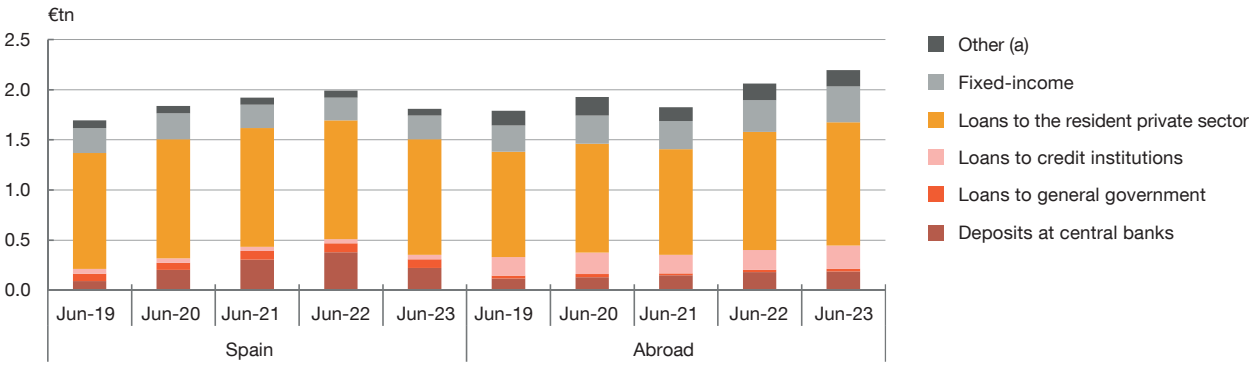
**The outstanding amount of forborne exposures continued to fall.** Compared with June 2022, their relative share of total lending to the resident private sector fell by 0.8 pp to 3.9% at June 2023, while their volume decreased by 18.6%. Compared with December 2019 (before the pandemic), the volume of forborne exposures shrank by 21.3%, thus continuing the downward trend observed since the end of the global financial crisis.

**Foreclosed assets also fell to the end of 2023 H1.** In June 2023 they fell 18.4% year-on-year, to stand at a level equivalent to 1.5% of total lending to the resident private sector at that date. Since December 2019, this type of asset has decreased by more than 43.4%, continuing the pre-pandemic downward trend.

**The growth of financial assets abroad partially offset the smaller balance sheet in business in Spain.** At June 2023, the total consolidated assets of Spanish deposit-taking institutions stood at €4,148 billion, having fallen 1.2% compared with June 2022 (see Annex 1). Financial assets[10] in Spain fell 8.6% year-on-year, while those stemming from business abroad (expressed in euro) increased by 6.4%. As a result, they accounted for 55% of the total, up 3.8 pp on June 2022. Much of the

Chart 2.6
**Growth in financial assets abroad partially offset the decrease in financial assets in Spain**

2.6.a Breakdown of financial assets in Spain and abroad, by asset type



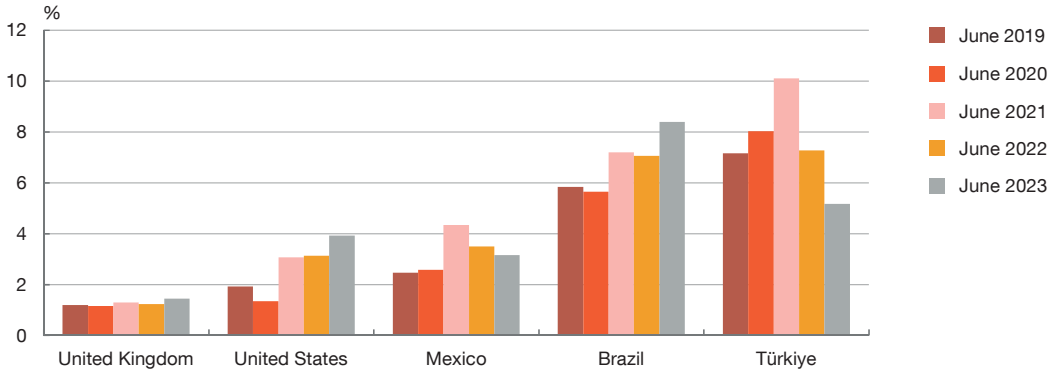

**SOURCE:** Banco de España.

**a** "Other" comprises cash balances, derivatives and equity instruments.

10 Overall, financial assets (loans, derivatives, debt and equity securities and cash balances) represented 95.3% of the balance sheet of deposit-taking institutions at June 2023.

Chart 2.7
**Heterogeneous NPL ratio developments in business abroad**

2.7.a NPL ratio for the Spanish banking sector in foreign countries of significant importance (a)




**SOURCE:** Banco de España.

**a** Data corresponding to the loan portfolios of Spanish deposit institutions in foreign countries of significant importance.

decline in financial assets in Spain (92%) owed to the reduction in balances held with central banks (-41.1% year-on-year) and, to a lesser extent, to the decrease in loans to the resident private sector and general government (-2.6% and -2.9% year-on-year, respectively). Conversely, debt securities have increased moderately. Meanwhile, the increase in financial assets abroad was driven by lending to the resident private sector, debt securities and interbank loans, against the backdrop of an appreciating euro that partly mitigated this growth (see Chart 2.6). Box 2.1 analyses in more detail the adjustments at consolidated level in debt security holdings in the recent period.

**NPL ratios performed unevenly in the countries where Spanish banks have significant business.** In year-on-year terms, NPL ratios increased significantly to June 2023 in Brazil (1.3 pp, to 8.4%), while this increase was smaller in the United States (0.8 pp, to 3.9%) and the United Kingdom (0.2 pp, to 1.3%). By contrast, NPL ratios fell in Türkiye (2.1 pp, to 5.1%) and Mexico (0.4 pp, to 3.2%) (see Chart 2.7).

### *Liquidity and financing conditions*

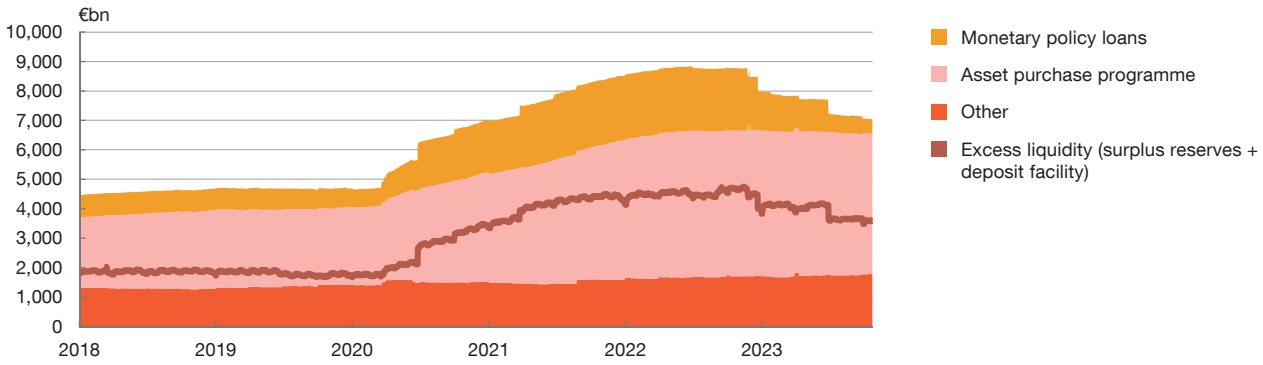
**The Eurosystem's balance sheet has continued to decrease as a result of monetary policy normalisation.** Since the cut-off date for the last Financial Stability Report, excess liquidity[11] fell by €412 billion to €3,590 billion (see Chart 2.8.a), continuing the trend that began at end-2022. The decline owes mainly to the decrease in the volume of monetary policy lending received by banks. Thus,

11 For the purposes of this report, excess liquidity means the balance that commercial banks hold at the central bank (mostly in the deposit facility).

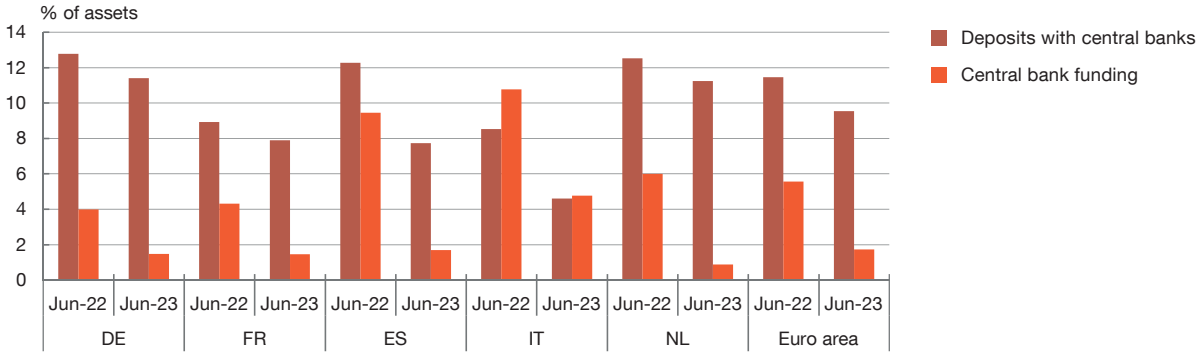
Chart 2.8

**Monetary policy normalisation has reduced the direct exposure to the Eurosystem on European banks' balance sheets**

2.8.a Eurosystem balance sheet and European banks' excess liquidity




2.8.b Comparison of the position of European banks with central banks. Monetary financial institutions, business in the euro area (a)




**SOURCE:** ECB.

**a** The data reflect the balances with the ECB and national central banks of the banks resident in each country, including foreign subsidiaries and branches. A portion of Germany's excess liquidity reflects the operations of foreign institutions, which have deposited with the ECB funds obtained from the sale of assets to ECB purchase programmes.

at end-June banks repaid €506 billion[12] of one of the largest TLTRO III operations previously granted by the Eurosystem[13] and at end-September they repaid a further €101 billion. By contrast, banks have increased the loans received via the three-month longer-term refinancing operations and the one-week main refinancing operations by €5 billion and €6 billion, respectively. Meanwhile, the gradual reduction in the balance of the asset purchase programme (APP) has started (€144 billion, to €4,751 billion), thus achieving the goal of reducing it at a measured and predictable pace.[14]

12 €477 billion corresponds to the maturity of TLTRO III.4 and €29 billion to early repayments of other outstanding TLTRO III operations.

13 In June 2020 the European Central Bank injected €1.3 trillion of liquidity (versus the €371 billion repaid in TLTRO II).

14 The ECB Governing Council decided to discontinue reinvestments of redemptions under the APP as of July 2023. By contrast, reinvestments under the pandemic emergency purchase programme are expected to continue until at least late 2024.

**Recourse to Eurosystem refinancing operations by European banks decreased significantly, and was partially offset by a reduction in their excess liquidity.** The above-mentioned maturity of monetary policy loans reduced the central bank funding[15] of euro area banks as a whole, which fell from 5.5% of their assets in June 2022 to 1.7% a year later. In the case of Spanish banks, which resorted to Eurosystem refinancing operations more (9.4% of assets in June 2022), the decrease was larger, bringing this figure to the European average in June 2023. This drop in Eurosystem funding was largely offset by reductions in the excess liquidity held by banks in the form of deposits at central banks. As a percentage of euro area banks' assets, these deposits decreased by 2 pp, to 9.5% in June 2023. In Spain, the drop was more pronounced, with central bank deposits decreasing from 12.3% of assets in June 2022 to 7.7% a year later (see Chart 2.8.b).

**Money market rates have responded to the increases in policy interest rates.** The most important money market interest rates, such as the €STR (for unsecured transactions) and the EURIBOR (for the interbank and mortgage market), as well as repo rates (secured market interest rates) have followed a path consistent with the European Central Bank's (ECB) four 25 bp hikes to policy interest rates since May (see Chart 2.9.a).

**It should be noted that the substantial TLTRO repayments do not seem to have prompted significant shifts in money market rates or to have hindered the smooth functioning of the repo market.** Indeed, after the repo market collateral scarcity in early 2023, it has functioned without significant frictions in the rest of the year to date, aided by the increase in government debt issuance and the collateral released as a result of the repayment of the loans received under TLTRO III.

**Spanish banks' secondary market funding costs have also remained relatively stable in 2023 to date.** In 2023 Q1, financial market uncertainty induced by the collapses of Silicon Valley Bank (SVB) and Credit Suisse drove up the rate of return[16] required for instruments issued to comply with regulatory requirements, especially for Additional Tier 1 (AT1) capital. However, coordinated central bank and supervisory authority action enabled a swift exit from the crisis, lowering funding costs, which generally returned to their previous levels, except for AT1 (see Chart 2.9.b).

**Spanish banking sector debt issuance continued to grow in 2023 H1, driven by improved stock prices and high investor demand.** Spanish banks issued 75% more debt in 2023 H1 than in the same period of 2022, thus capitalising on foreseeably more favourable financing conditions than in coming quarters. First, the volume of

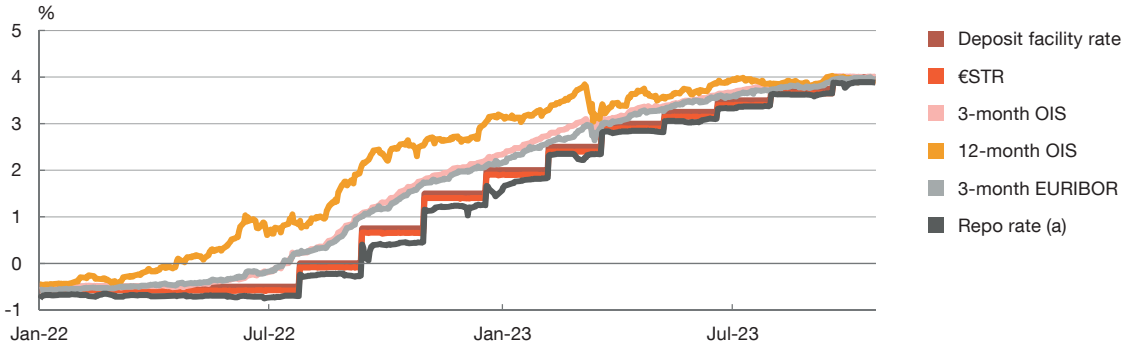
15 Central bank funding includes the set of funds provided by central banks to banks, recognised on the liabilities side of their balance sheets under "deposits from central banks", in accordance with the terminology of the confidential returns relating to euro area statistical requirements.

16 The interest rate required for banks to obtain funding through each type of instrument can be approximated by banks' secondary market funding costs (i.e. the rate of return required by investors). It is obtained as the yield traded on the secondary market for each debt instrument issued by listed Spanish banks.

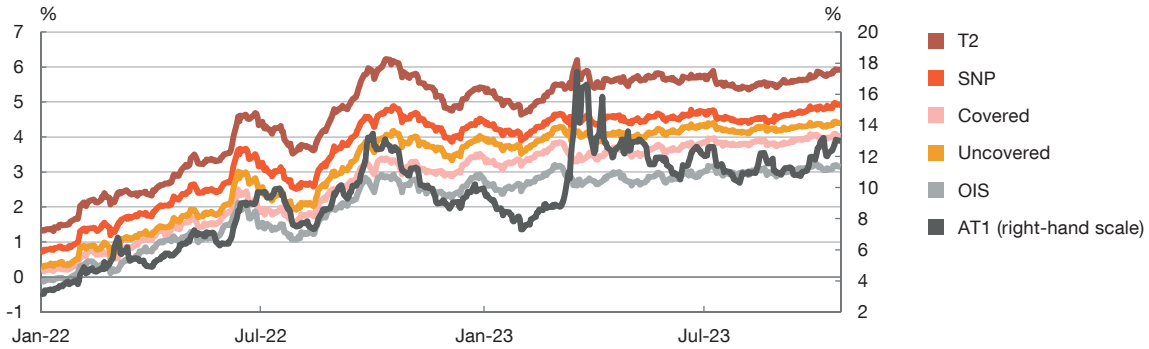
Chart 2.9

**Money market rates and the cost of bank debt increased due to the key policy interest rate hikes**

2.9.a Risk-free rates




2.9.b Cost of wholesale bank debt. Secondary market. Spanish banks (b)




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

**a** The repo rate is calculated as the average weighted by the volume of each operation issued in Spain, France, Germany and Portugal (only overnight operations whose effective value exceeds €1 million and collateralised by public debt).
**b** The rate of return is calculated as the volume-weighted average of the yield traded on the secondary market for the different types of bonds of listed Spanish banks. The OIS curve is calculated for the same average maturity as the uncovered debt issued in the period.

senior debt issuance (in its secured and unsecured segments) remained high, partially replacing the repaid TLTRO III financing (see Chart 2.10). Second, unlike in 2022, banks issued subordinated debt (Tier 2 and AT1) in early 2023, taking advantage of the higher demand for risky assets. These issues halted abruptly in March on account of the greater uncertainty linked to the crisis surrounding Credit Suisse,[17] SVB and other US banks. However, Tier 2 issuance resumed from May, boosted by high demand for riskier instruments against a backdrop of lower volatility,[18] which also helped the subsequent reopening of the AT1 market.

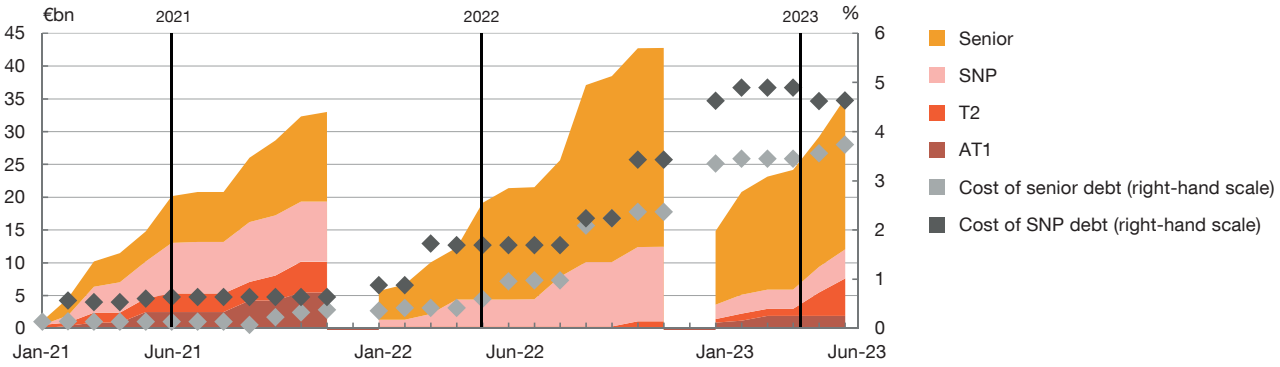
17 On that date, the Swiss authorities decided to protect shareholders to the detriment of AT1 bondholders, thus modifying the creditor hierarchy.

18 On 19 March, a joint ECB, Single Resolution Board (SRB) and European Banking Authority (EBA) statement clarified that in the EU "common equity instruments are the first ones to absorb losses, and only after their full use would Additional Tier One be required to be written down. This approach has been consistently applied in past cases and will continue to guide the actions of the SRB and ECB banking supervision in crisis interventions. Additional Tier 1 is and will remain an important component of the capital structure of European banks."

Chart 2.10

**Banking sector debt issuance has continued growing, underpinned by high investor demand**

2.10.a Volume (12-month cumulative) and cost of issuance on primary market (a)




SOURCES: Dealogic and Banco de España.

a The chart depicts the cumulative monthly volume of issuance over the course of each year. Issuance costs for euro-denominated bonds on the primary market are calculated as the volume-weighted average in each period of the year. The primary market cost does not include T2 and AT1 issues, due to their low volume in 2022.

**Larger banks increased their issuance of senior non-preferred (SNP) instruments.** This will help them comply fully with the minimum requirement for own funds and eligible liabilities after the transition period ends on 1 January 2024.

**Spanish banks' issuance costs have risen further in 2023 to date, albeit less so than in 2022.** Banks' sound earnings performance in the first two quarters of 2023 and low volatility and risk aversion on the markets, once the March banking crisis was over, were conducive to issuance costs holding steady (see Chart 2.10).

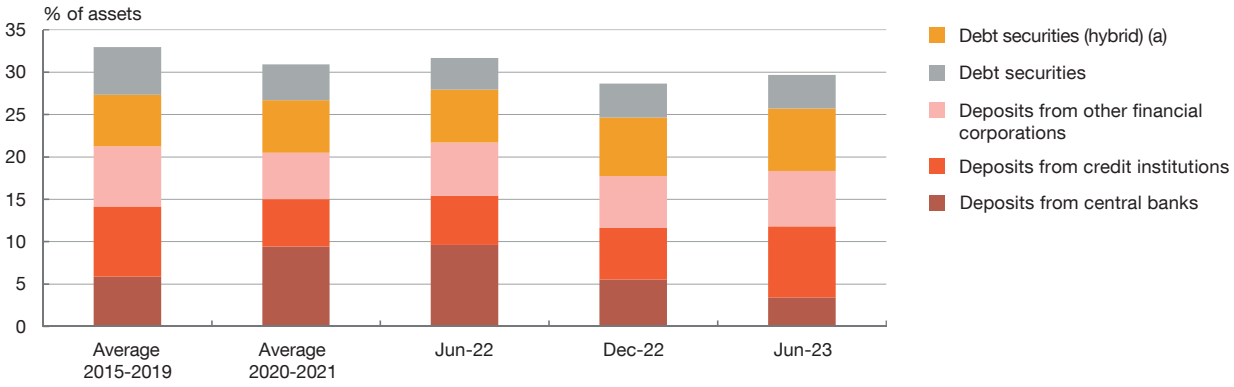
**The reduction in Spanish banks' central bank funding was also offset by greater recourse to interbank funding.** At consolidated level, the monetary normalisation process reduced central bank funding as a share of total assets by 6.2 pp between June 2022 and June 2023. In the same period, the share of deposits from credit institutions grew by 2.6 pp, while debt securities did so by 1.4 pp. These developments failed to offset the fall in monetary policy loans. Therefore, wholesale funding as a percentage of assets fell from 31.7% in June 2022 to 29.7% in June 2023, below the average values for the period 2015-2019 (see Chart 2.11).

**In this setting, banks' cost of liabilities rose considerably in 2023 H1, to 2.3% of total liabilities, 1.5 pp more than in the same period of 2022.** Policy interest rate hikes have prompted a gradual increase in the cost of the different sources of bank funding since December 2021. In June 2023 and in annualised terms, it represented 2.3% of banks' consolidated liabilities, versus 0.7% in 2022 H1. In June 2023, despite their average cost remaining at low levels, the remuneration of retail deposits

Chart 2.11

**Lower Eurosystem funding has prompted greater use of both debt issuance and the interbank market**

2.11.a Deposits from the financial sector and debt securities issued. Consolidated data



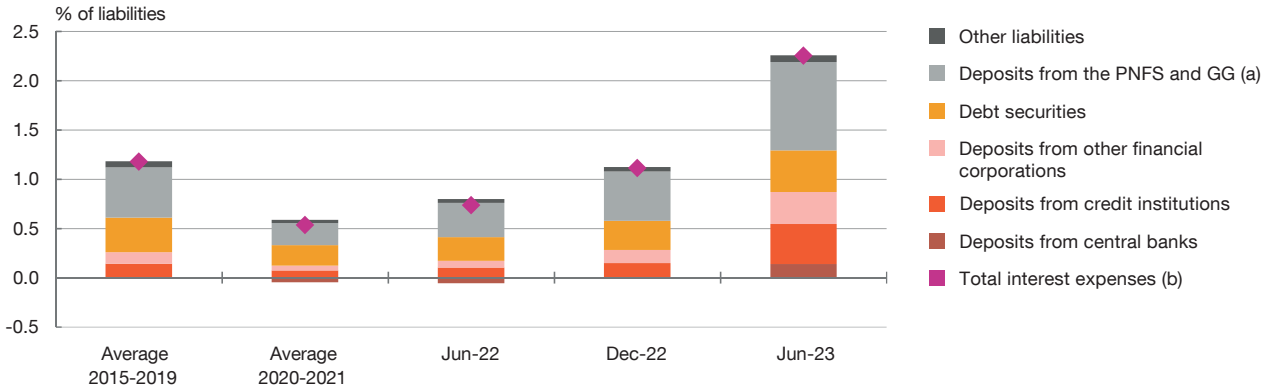

**SOURCE:** Banco de España.

**a** Convertible and non-convertible debt securities issued, other than certificates of deposit, covered bonds and hybrid instruments with embedded derivatives.

Chart 2.12

**The average cost of liabilities rose significantly in 2023 H1**

2.12.a Interest expenses on funding. Annualised data at consolidated level




**SOURCE:** Banco de España.

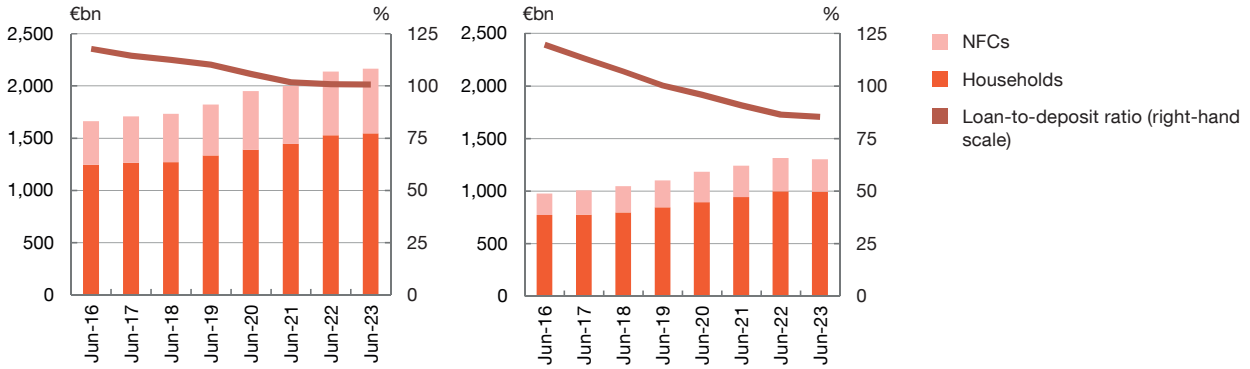
**a** PNFS = private non-financial sector, GG = general government.
**b** Excludes expenses associated with interest rate hedge derivatives.

accounted for 40% of banks' total funding costs due to their preponderance in bank funding. The cost of interbank deposits and deposits from other financial corporations also rose considerably, as did the cost of central bank funding, which grew despite the considerable decline in volume terms (see Chart 2.12).

**Deposits from households and NFCs grew at consolidated level, but fell in business in Spain**. Spanish banks' business abroad underpinned the growth in deposits from these agents, although they grew at a significantly lower rate than in prior years (1.3% year-on-year in June 2023, versus 6.8% a year earlier). Thus, the loan-to-deposit ratio held at a very similar level to that of June 2022 (100.7%). In business in Spain,

Chart 2.13
**Deposits from households and NFCs fell in Spain**

2.13.a Volume of deposits from households and NFCs and loan-to-deposit ratio (a)
Consolidated data at global level (l-h panel) and individual data for business in Spain (r-h panel)




**SOURCE:** Banco de España.

**a** The loan-to-deposit ratio considers loans to, and deposits from, households and NFCs.

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deposits from households and NFCs fell by 0.4% and 3.2%, respectively, and by 1% overall, bringing the upward trend of recent years to an end. Despite this drop, the loan-to-deposit ratio in business in Spain only fell by 1 pp, to 85.3%, owing to the greater contraction in lending (see Chart 2.13).

**The pass-through of key policy rate hikes to households' and NFCs' term deposits in Spain quickened in 2023 H1.** The pass-through[19] of the cumulative increase in the 12-month EURIBOR was particularly notable in the case of NFC term deposit rates, reaching 41% in June 2023, versus 16.3% six months earlier. For household term deposit rates, the pass-through amounted to 23.1%, versus barely 4% in December 2022. Sight deposit rates remained at very low levels, with pass-through reaching 2.3% and 7.8% for the household and NFC portfolios, respectively. Pass-through remains lower than expected based on past experience,[20] and comparatively lower than in the euro area as a whole.[21] However, the average deposit rate could continue to rise in the coming months, given the reduction in, and increase in the cost of, Eurosystem funding (see Chart 2.14).

19 Pass-through is defined as the ratio between the cumulative change (in pp) in the interest rates applied to deposits and the change in the 12-month EURIBOR in the reference period.

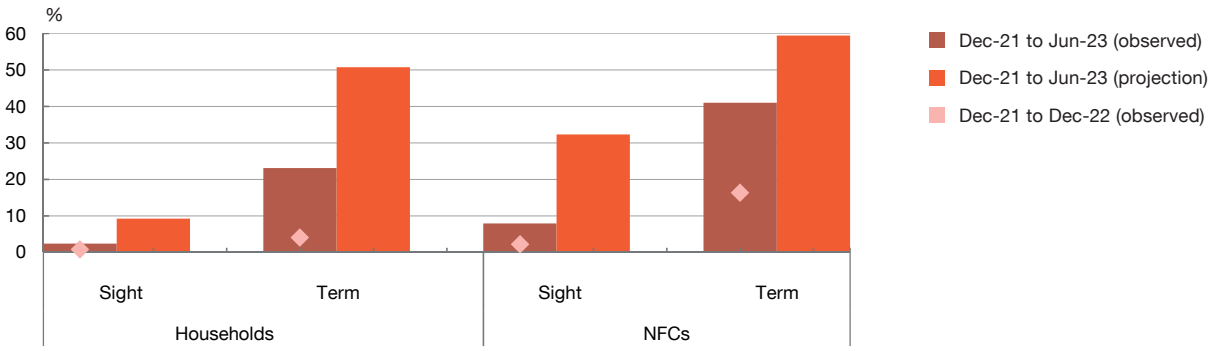
20 The factors that potentially explain the lower pass-through in the current rate hike episode than in past episodes include the EURIBOR's negative starting level, excess liquidity in the system, banks' specific characteristics and the overall sector's market structure. For further details on the effect of these factors, see Alejandro Ferrer, Gergely Ganics, Ana Molina and José María Serena. (2023). "The EURIBOR surge and bank deposit costs: an investigation of interest rate pass-through and deposit portfolio rebalancing". *Financial Stability Review – Banco de Espana,* 44; Banco de España. (2023). *Annual Report 2022,* pp. 160-163 and 167-168; and ECB. (2023). *Financial Stability Review,* Box 4.

21 For example, on ECB bank interest rate statistics, the degree of pass-through for the euro area as a whole in June 2023 was around 24% for deposits from firms and around 8% for deposits from households, while in Spain these figures stood at 15% and 4%, respectively.

Chart 2.14

**Monetary policy tightening was passed through to the cost of deposits from households and NFCs more markedly in H1**

2.14.a Pass-through of the increase in the EURIBOR to deposit rates (a)




SOURCE: Banco de España.

a Pass-through is defined as the ratio between the cumulative change (in pp) in the interest rates applied to deposits and the change in the 12-month EURIBOR in the reference period. Bank deposit rates are projected using a multivariate structural VAR model based on interest rates data reported to the ECB.

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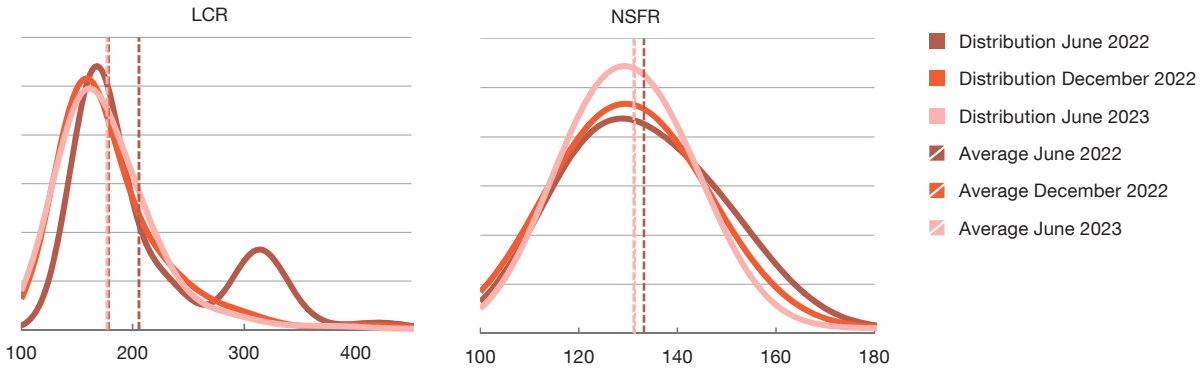
Chart 2.15

**Spanish banks have a comfortable liquidity position**

2.15 Distribution of the LCR and NSFR (a)




SOURCE: Banco de España.

a The charts depict the density functions of the LCR and NSFR for Spanish deposit institutions, weighted by their respective volumes of assets. The density functions are estimated using a kernel estimator, which enables non-parametric estimation and provides a continuous, smoothed graphic representation of the function. The vertical lines depict the average LCR and NSFR for the Spanish banking system as a whole on each of the dates considered.

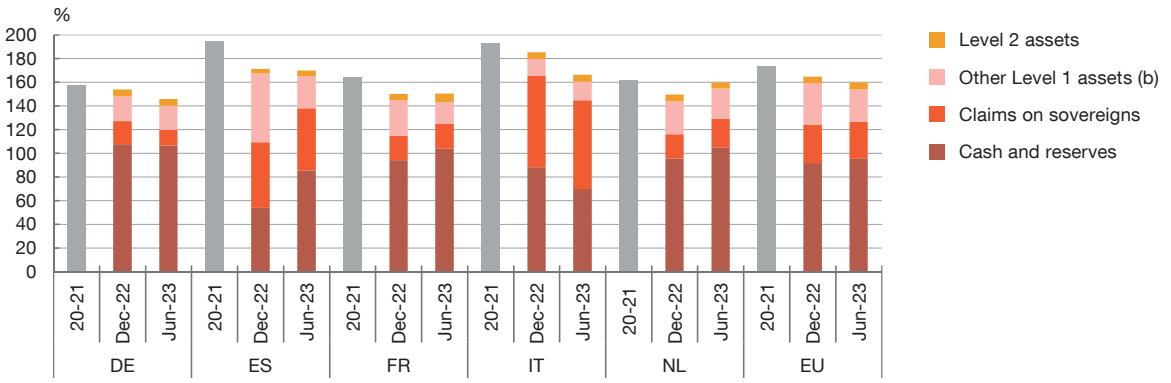
**Yield spreads between sight and term deposit rates led to a slight shift in the relative importance of these funding sources, although sight deposits remain preponderant.** In June 2023 households' and NFCs' term deposits increased by 55.6% year-on-year at the expense of sight deposits, which fell by 5.1%. Even so, sight deposits continued to account for 89.6% of the total, in contrast to the level of around 45% observed in the early years of the global financial crisis.

**The maturity of a significant volume of TLTROs and debt instruments' lower valuations have reduced Spanish banks' liquidity buffers, although they remain**

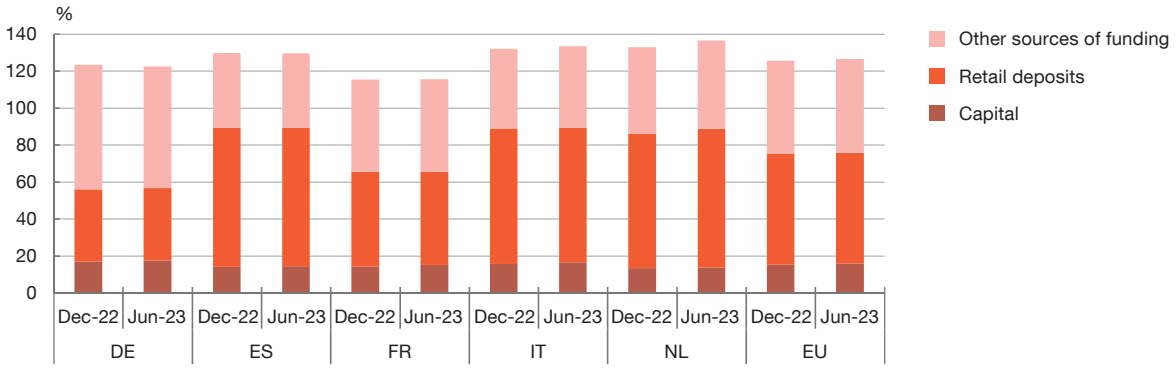
**at comfortable levels.** Spanish banks' average liquidity coverage ratio[22] (LCR) stood at 176.9% in June 2023, a level similar to that of December 2022 but lower than the 205.6% of June 2022, albeit well above the minimum regulatory requirement (100%). Meanwhile, the net stable funding ratio[23] (NSFR) – which measures longer-term net financing capacity – held steady, amounting to 131.1% in June 2023, compared with 133.2% in June 2022, and also had considerable headroom over the minimum requirement of 100%. Analysis of the distribution among banks of these ratios shows a shift in both, from the upper tail in June 2022 to lower values in June 2023 (see Chart 2.15).

Chart 2.16
**The main European banks also had ample headroom over minimum liquidity ratio requirements**

2.16.a LCR and composition of liquid assets (a)




2.16.b NSFR and composition of the sources of stable funding




**SOURCE:** EBA.

**a** The grey bars denote the average LCR for December 2020-December 2021. In this period the EBA data do not break down the liquid assets by type.
**b** According to the EBA definition, this category includes, among others, claims on central banks, regional governments and local authorities and Level 1 extremely high quality covered bonds.

22 The LCR measures the availability of sufficient liquid assets to cover large outflows of funds in the short term. It is defined as the ratio between a bank's unencumbered liquid assets and potential net liquidity outflows during a 30 calendar-day stress period. A level over 100% indicates that the bank holds sufficient liquid assets to cover potential liquidity outflows in a stress scenario.

23 The NSFR considers the availability of funds for a bank to fund its activity over a one-year time horizon. It is defined as the ratio of a bank's available stable funding to its required stable funding for a period of one year. A level over 100% indicates that the bank has sufficient stable funding to satisfy its financing needs over one year, both in normal conditions and in a stress scenario.

**The LCR of the main European banks also remained at comfortable levels in early 2023, albeit with cross-country differences in liquid asset structure.** On EBA data, European banks' overall LCR stood at 159.9% in June 2023, down slightly from December 2022 (164.6%). None of the main jurisdictions' LCRs were below 145% (see Chart 2.16.a). With regard to the structure of the liquid assets that would enable banks to withstand these outflows, cash and central bank reserves are the main source of liquidity in the European aggregate and would cover 95.6% of the net outflows considered in the LCR. They are followed by claims on sovereigns and other Level 1 assets, which would cover a further 31% and 27.4% of the net outflows, respectively. As a result, there is a considerable liquidity surplus above total net outflows. The main Spanish banks' sources of liquidity are somewhat more evenly distributed, with cash and reserves also in first place (85.3%), followed by claims on sovereigns (52.6%) and other Level 1 assets[24] (27.4%).

**The main European banks' NSFR held at the same levels as in prior quarters, with retail deposits as the main source of stable funding.** The aggregate NSFR of the main European banks held at its December 2022 level (126%) in June 2023. Retail deposits stand out as the main source of European banks' stable funding, covering 59.9% of the stable funding required over a one-year time horizon. For Spanish banks, retail deposits covered 74.8% in June 2023, the highest proportion – alongside the Netherlands – among the main European jurisdictions (see Chart 2.16.b).

### 2.1.2 Profitability and solvency

*Profitability*

**Spanish banks' net consolidated profit in 2023 H1 increased by 25% compared with the same period a year earlier, driven mainly by the sound performance of net interest income (see Annex 2).** Excluding the temporary levy on banks and other extraordinary items in both years,[25] year-on-year growth would have been 33%. The temporary levy on banking sector profits to be paid by banks in 2023[26] was already fully accounted for in June 2023 as "other operating expenses". This

24 This category includes all Level 1 assets other than coins and banknotes, central bank reserves that can be drawn down in times of stress and claims on sovereigns. In particular, the assets in this category include claims on central banks, regional governments and local authorities and Level 1 extremely high quality covered bonds.

25 In 2022 H1 extraordinary losses were recognised as a result of the offices purchased by one bank (€0.2 billion). In 2023 H1 banks recorded the full amount of the extraordinary levy to be paid in 2023, estimated at €1.3 billion according to the press release issued by the Ministry of Finance on 21 February 2023.

26 According to the regulations governing the levy, payment obligations in 2023 are calculated, for each consolidated group for corporate income tax purposes in Spain, as 4.8% of net interest income and net fee and commission income in 2022. The payment must be completed in September 2023, with an advance payment of 50% of the total in February. Extrapolating the information provided by the Ministry of Finance on the February payment to the entire year, the levy to be paid in 2023 would amount to €1,274 million. The payment obligations in 2024 will work in the same way, based on profits obtained in 2023.

amount represents 8.2% of Spanish institutions' consolidated net profit in the first half of 2023 (4.1% of profit in annualised terms).

**The improvement in net profit prompted an increase in the return on assets (ROA), which rose to 0.8%, compared with 0.6% in June 2022; meanwhile the return on equity (ROE) stood at 12.1%, 2.1 pp higher than a year earlier.** Spanish deposit-taking institutions' aggregate profitability rose well above their cost of equity (COE), which stood at around 6.5% in the first half of the year.[27] Including a higher inflation risk premium in the COE could raise it to 8.5%, still clearly below the ROE level. Without the impact of the above-mentioned levy and extraordinary profit, ROA would increase by 6 bp in June 2023 and by 1 bp in June 2022, while ROE would stand at 13.1% (3 pp more than in the first half of last year) (see Chart 2.17.a).

**Ordinary profit from business abroad at major institutions with an international presence increased by 10.8% year-on-year in 2023 H1**. Profit grew very significantly in Mexico (44.7%), with its share in these institutions' overall profit rising to 35.1%, up 7.3 pp on a year earlier (see Chart 2.17.b). These earnings, together with growth in the United Kingdom and Türkiye, allowed institutions to offset the declines in business in Brazil (-39.7%) and the United States (-38.8%).

**Spanish banks' COE has risen very slightly since the beginning of 2023, but ROE has grown much more**. The rise in the real risk-free rate since early 2022 has been more than offset by declines in the stock market risk premium and the Spanish banking sector risk premium, which has led to a decrease in COE of around 2.2 pp since December 2021, with an increase of only 0.2 pp after December 2022 (see Chart 2.18). This decline in COE stands in contrast to the aforementioned 2 pp increase in ROE so far in 2023 (excluding extraordinary profit, ROE was already clearly increasing from early 2022).

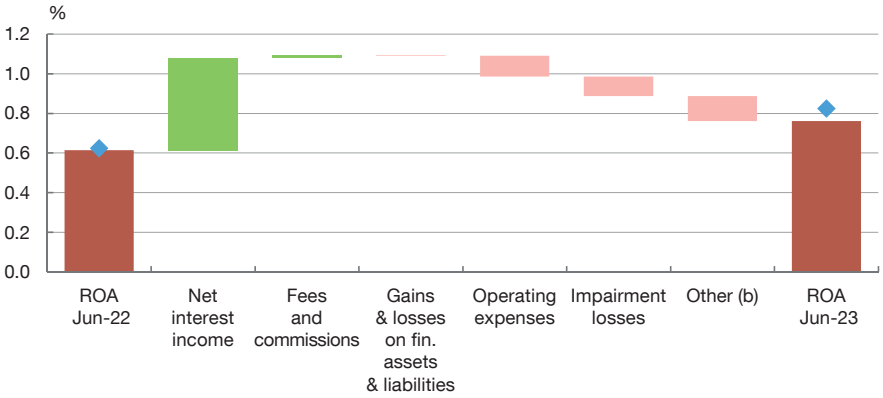
**The current context of rising monetary policy interest rates resulted in year-on-year growth in banks' net interest income at consolidated level of 27% in the first half of 2023.** The improvement in net interest income, somewhat larger in business in Spain than in business abroad, owed mainly to the price effect of higher interest rates, which has so far been passed on to a greater extent to market lending rates than to market deposit rates (see Chart 2.19). Credit growth abroad also contributed, albeit much more modestly than in previous years, to the improvement in net interest income at consolidated level, while the quantity effect was negative for business in Spain due to the contraction in lending. Higher interest rates increased income from deposits at

27 COE is unobservable and its estimation may vary significantly depending on the model used. Even allowing for the uncertainty surrounding these COE estimates, ROE would stand at the higher end of the confidence band. See Luis Fernández Lafuerza and Javier Mencía. (2021). "Estimating the cost of equity for financial institutions". Financial Stability Review - Banco de España, 40, pp. 49-66.

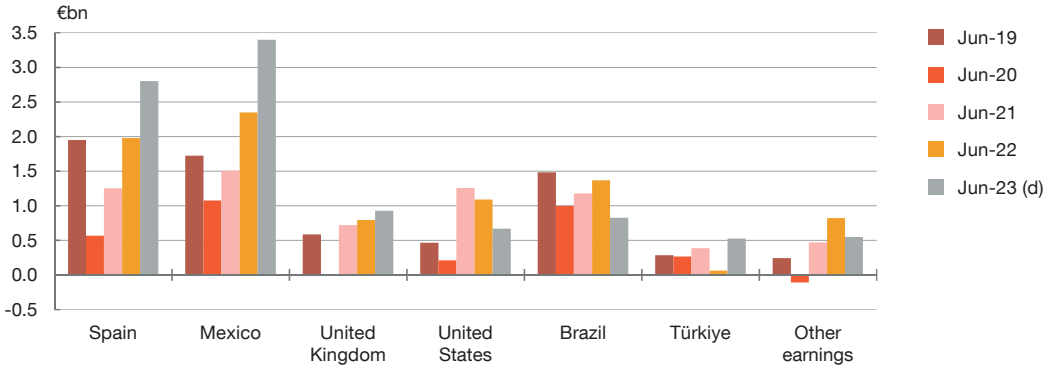
Chart 2.17

**Consolidated profit grew 25% in 2023 H1 thanks to the strong performance of net interest income and, most notably, business in Mexico and Spain**

2.17.a Breakdown of the change in profit. Consolidated net profit as a percentage of ATAs (a)




2.17.b Geographical distribution of ordinary profit attributable to the parent of banks with the most significant international activity (c). Consolidated data




**SOURCES:** Banco de España and banks' financial reporting.

**a** The red (green) colour of the bars denotes a negative (positive) contribution of the corresponding item to the change in consolidated profit in June 2023 compared with June 2022. The blue diamonds denote the ROA excluding extraordinary losses in June 2022 from the purchase of offices by a bank (-€0.2 billion) and the impact of the 2023 temporary levy on the banking sector in June 2023 (-€1.3 billion).
**b** Includes, among other items, the extraordinary losses and temporary levy on the banking sector mentioned in the previous note.
**c** Among the banks with significant international activity, this group includes the three in which such activity is most important and longest-running, with profit measured excluding non-recurring items in the period considered. The category "Other earnings" includes earnings in other countries and those of the banks' corporate centres.
**d** At June 2023 ordinary attributable profit had the following geographical distribution, from most to least important: Mexico (35%), Spain (29%), United Kingdom (10%), Brazil (8%), United States (7%), Türkiye (5%) and other earnings (6%).

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central banks, which accounted, in annualised terms and at consolidated level, for around 28 bp of ROA in June 2023, up from 9 bp 12 months earlier.

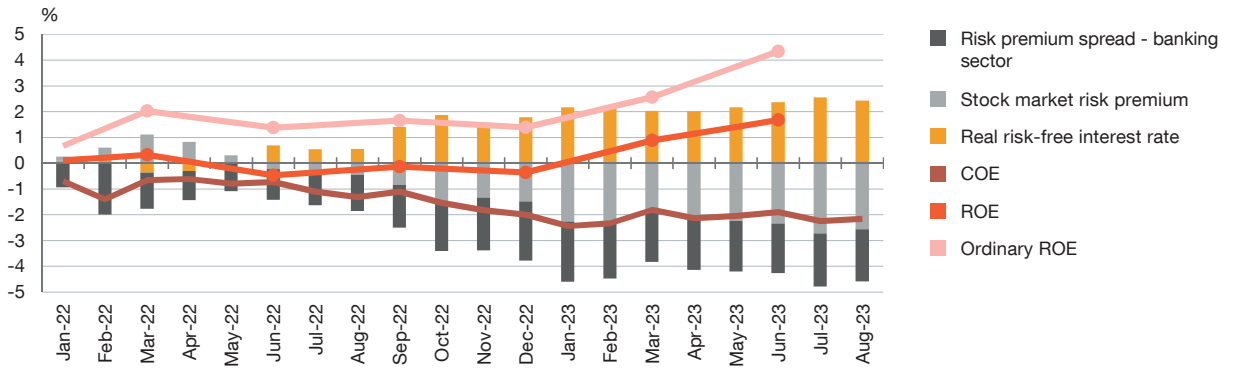
**Net interest income could fare worse in the coming quarters.** A sharper decline in lending in Spain and poorer performance globally due to the economic slowdown could lead to a more negative quantity effect, while the contribution of the price effect could weaken as higher interest rates are gradually passed through to bank deposit rates. Additionally, the setting by the ECB of a 0% rate for the remuneration of the minimum reserves held by institutions[28] would, as from 2023 Q4, put further

28 For more details, see the ECB press release of 27 July 2023

Chart 2.18

**The moderation in risk premia has led to a reduction in COE**

2.18.a Change in COE, its components and ROE since December 2021 (a)



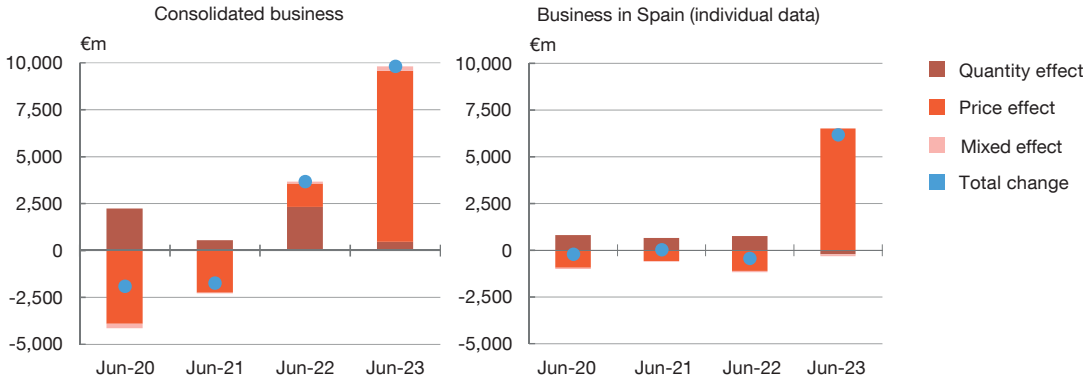

**SOURCES:** Banco de España, Datastream and *Consensus Economics.*

**a** The chart shows the changes in ROE, COE and its components relative to December 2021. The cost of bank equity is estimated based on a dividend discount model, see Luis Fernández Lafuerza and Javier Mencía. (2020). "Recent developments in the cost of bank equity in Europe". *Economic Bulletin - Banco de España,* 4/2020, Analytical Articles. The cost of equity can be decomposed into components relating to the real risk-free rate, the European stock market risk premium and banking sector risk premium (the product of the Spanish banking stock market's beta minus one and the European stock market risk premium). The real risk-free rate is proxied by the inflation-linked French government bond rate.

Chart 2.19

**The increase in net interest unit margins is driving up net interest income**

2.19.a Breakdown of the change in net interest income (a)




**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 values of the initial period. The mixed 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.

pressure on their net interest income, which could be reduced by around €560 million per year, with an impact on consolidated ROA of somewhat more than 1 bp.

**Consolidated net operating income grew by 23% in the first half of 2023 compared with the same period of 2022 thanks to the strong performance of net interest income, despite the notable increase in operating costs in a high-inflation environment.** These costs grew by 9.1% year-on-year. Net fee and commission income, which grew by 2.6% year-on year, also contributed, albeit more

modestly, to generating gross income, while income on financial assets and liabilities fell by 1%.

**Gross operational risk losses rose until end-2023 H1, while their composition remained relatively stable.** Gross operational risk losses grew by 8.5% year-on-year in June 2023. Losses due to inappropriate conduct and business practices remained the main component (37.8%) of these losses, followed by those resulting from external fraud cases faced by institutions (27%). In this regard, of note is the establishment of a joint company[29] promoted by the three largest Spanish banks with the aim of exchanging information to help prevent financial fraud.

**Impairment losses increased by 26.8% year-on-year at consolidated level, driven by significant growth in such losses recognised on banks' international activity.** For business in Spain, impairment losses fell by 2.8% in the first half of 2023 compared with those recognised a year earlier, in line with the credit quality developments discussed in the preceding section.

**The Spanish banking sector proved to have a significant advantage over the European banking sector in generating earnings via net interest income in the first months of 2023, but also had a higher cost of credit risk.** EBA data show that, to June 2023, the main Spanish banks' aggregate ratio of net interest income to assets was in line with the median of the European banking systems and well above the European Union (EU) weighted average.[30] Income from fees and commissions and operating expenses relative to total assets also behaved in line with the European median. However, the impact of the extraordinary levy on banks (which has worsened Spanish banks' relative position in terms of net operating income compared with previous years) and, especially, the higher cost of the risk assumed, place Spanish banks' ROA below the 25th percentile of the distribution, although it remains slightly above the EU weighted average. The differences between the European median and the European average, and the increase in the dispersion of profitability at the high end of the distribution observed in the past year, owe to the strength of the income statements of banks in smaller and, particularly, eastern European countries (see Chart 2.20).

**Despite the strong profit obtained by the Spanish banking sector, the current macro-financial setting requires that institutions exercise prudence when managing their profit.** In this regard it should be noted that 44% of the profit obtained in 2022 was used to pay dividends or buy back shares, while just over 32% was used

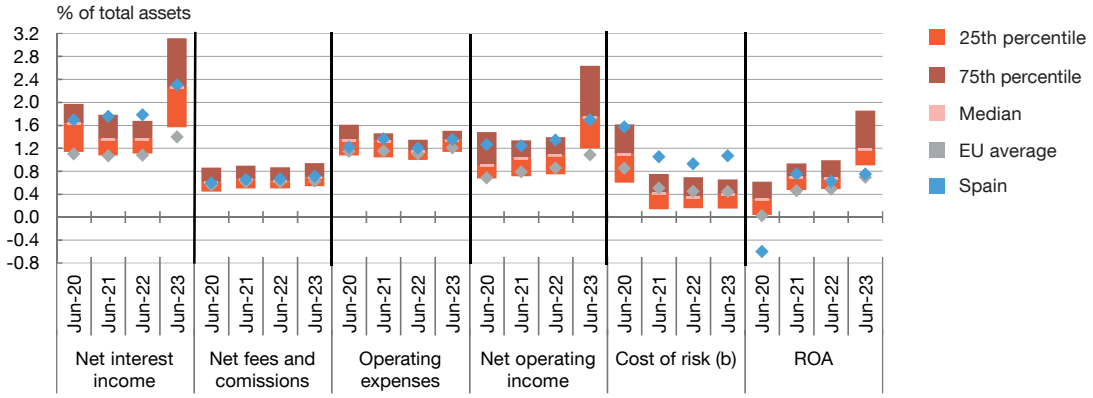
29 In July 2023 the three largest Spanish banks announced the creation of FrauDfense, which aims to bring together their anti-fraud initiatives.

30 The percentiles and the median have been calculated using the values published by the EBA for the various European countries, which in turn are based on a sample of each country's main institutions. The EU average is the average weighted by size of all the European institutions considered in the exercise.

Chart 2.20

**Compared with European banks, Spanish institutions have generated higher net interest income, albeit with a greater cost of risk**

2.20.a European comparison of the main profitability variables (a). Consolidated data




SOURCE: EBA

a Percentiles calculated based on the aggregate financial ratios published in the European Banking Authority's Risk Dashboard for each of the EU banking systems.
b The cost of risk is defined as impairment loss charges divided by gross lending.

to build up voluntary reserves and 23% to offset the negative impact of "other comprehensive income" on equity. The tightening of financing conditions for firms and households could lead to a deterioration in credit quality in the coming quarters, while the increase in banks' retail funding costs could sharpen. In consequence, banks should follow a prudent provision and capital planning policy that allows them to use the higher profits to boost sector resilience.

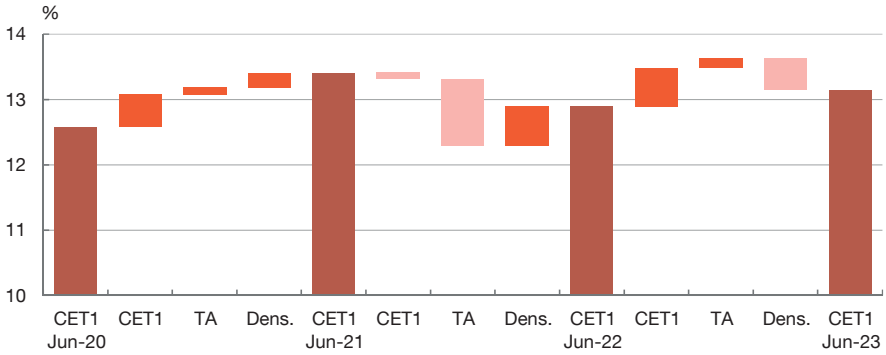
### *Solvency*

**The Common Equity Tier 1 (CET1) ratio increased by 25 bp to June 2023 with respect to the same month of the previous year, to stand at 13.1%.** This increase owed mainly to the positive contribution of CET1 capital (the numerator of the ratio), which grew year-on-year by 4.6% and more than offset the negative contribution of risk-weighted assets (RWAs) (the denominator of the ratio),[31] which grew year-on-year by 2.7% (see Chart 2.21.a). The CET1 ratio is thus 50 bp higher than at end-2019, before the pandemic. By component, of note was the contribution to RWA growth of the higher RWA density, now standing at 37.4%. The increase in RWA density is mainly due to changes in RWA composition owing to the notable contraction in exposures to central banks and general government, whose risk

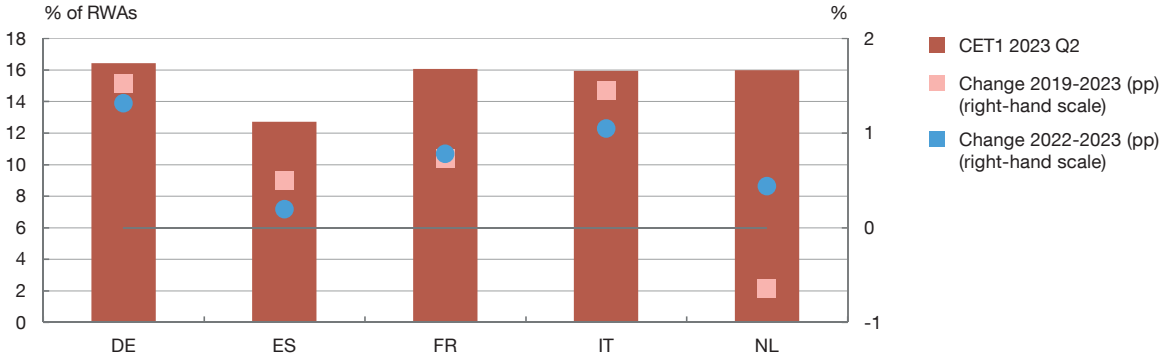
31 RWAs may be decomposed into two components as the product of total assets and RWA density. Therefore, the contribution of RWAs would be the sum of the contribution of its two components: total assets and RWA density.

Chart 2.21
**Spanish banks' CET1 ratio has improved since June 2022**

2.21.a Breakdown of the change in the CET1 ratio between 2020 and 2023 (a). Consolidated data




2.21.b European comparison of the CET1 ratio. Consolidated data. June 2023




**SOURCES:** EBA and Banco de España.

**a** The CET1 is broken down into the change in CET1, total assets (TA) and density (Dens.), where density is calculated as the ratio of RWAs to total assets. Therefore, the CET1 ratio is calculated as CET1 to TA x Dens. The orange (pink) bars denote positive (negative) contributions from components.

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weightings are zero or very low. Nevertheless, RWA density is almost 5 pp lower than at end-2019.

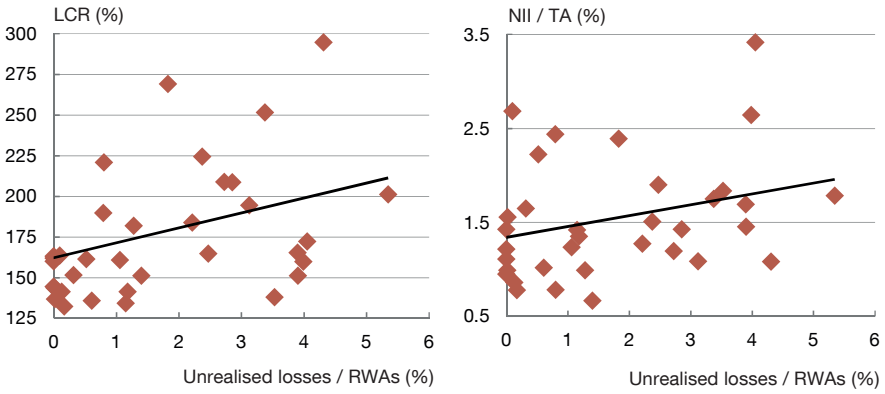
**Spanish banks' CET1 ratio remains below those observed in the banking systems of other large European economies.** At end-2023 H1, the CET1 ratio for Spain was smaller than that observed for countries such as Germany, France, Italy and the Netherlands (see Chart 2.21.b). Despite the improvement in the year-on-year ratio for Spain, it was lower than those of its peers, leading to a widening of the gap between them.

**The EBA's ad hoc analysis of the main European banks' bond portfolio found unrealised losses relative to RWAs were moderate, on average, although there is some heterogeneity across institutions.** Based on the sample of institutions participating in the 2023 stress test, the EBA conducted an ad hoc analysis of

Chart 2.22

**Unrealised losses on the debt securities portfolio would have a limited impact on European banks as a whole**

2.22.a Unrealised losses as a percentage of RWAs against LCR (l-h panel) and against net interest income to total assets (r-h panel) (a). Consolidated data. December 2022




**SOURCES:** EBA and Capital IQ.

**a** Unrealised losses on the debt securities portfolio are obtained from the results of the ad hoc exercise conducted by the EBA and the ECB. They are calculated as the fair value less the book value of the debt securities portfolio at amortised cost as at December 2022, net of derivative-hedged positions. The sample contains 37 banks that participated in the 2023 stress test and that also have information in Capital IQ, from which the information on RWAs, total assets (TA) and net interest income (NII) is obtained.

unrealised losses[32] on bond portfolios at amortised cost,[33] also considering the derivatives held by banks to hedge these positions. The exercise showed that unrealised losses in December 2022 (and February 2023) on bond portfolios at amortised cost relative to RWAs are small on average (1%), but there is some dispersion (between -0.1% and 5.3%).[34] It is important, however, to bear in mind that, even in a liquidity stress scenario, the full realisation of these losses is highly unlikely insofar as a bank has alternative liquidity sources and capacity to generate earnings.

**There is a positive correlation between unrealised losses on debt securities recorded at amortised cost (as a percentage of RWAs) and LCRs and/or net interest income generation capacity (see Chart 2.22).** In particular, the institutions with higher unrealised losses in this portfolio (as a percentage of RWAs) have high LCRs. Therefore, despite a higher exposure, these banks would be under less pressure to liquidate these assets and thus realise the unrealised loss, as they

32 See EBA. (2023). *Ad-hoc analysis on bank bonds holdings*.

33 Bonds classified at amortised cost for accounting purposes do not need to be continuously measured at market value, as banks are expected to hold them to maturity. This significantly reduces the sensitivity of banks' bottom line to changes in interest rates, as it does not reflect unrealised losses or gains in these instruments due to interest rate rises or cuts.

34 This ad hoc analysis also provides the unrealised losses at February 2023, as an update to the holdings two months earlier. In any event, the February data do not entail significant quantitative or qualitative changes to the conclusions obtained from the December 2022 data.

would have better alternatives to obtain liquidity. A positive association can also be seen in the case of net interest income generation (relative to total assets), highlighting the greater profit-generating capacity of institutions with greater unrealised losses.

*Results of the EU-wide stress test published by the European Banking Authority*

**The EBA's EU-wide stress test shows that the aggregate CET1 capital ratio of participating institutions increases by 1.4 pp under the baseline scenario and declines by 4.6 pp under the adverse scenario.** As a result, the group of participating institutions would retain their overall resilience under this scenario, since they finish the exercise with an aggregate solvency ratio of 10.4%, above the regulatory minimum (see Chart 2.23). Of note among the factors conducive to a higher overall resilience of participating institutions are higher initial CET1 ratios (15% of RWAs on average in 2022) and a better initial situation in terms of income, profitability and asset quality than in previous years.[35]

**On average, the participating Spanish institutions saw a 2.8 pp increase in the CET1 ratio under the baseline scenario and capital consumption of 2.4 pp under the adverse scenario, faring better than the EU aggregate in both cases.** As in the stress tests coordinated by the EBA in 2021 and 2018, the participating Spanish institutions had a lower capital ratio at the outset (12.4%) than European banks overall (15%), but experience a smaller negative impact under the adverse scenario and have a greater capacity to generate capital revenue under the baseline scenario. As a result, the ratios obtained at the end of the exercise for Spanish banks are closer to the European average. In particular, their ratio under the adverse scenario is 10%, compared with the European average of 10.4%.

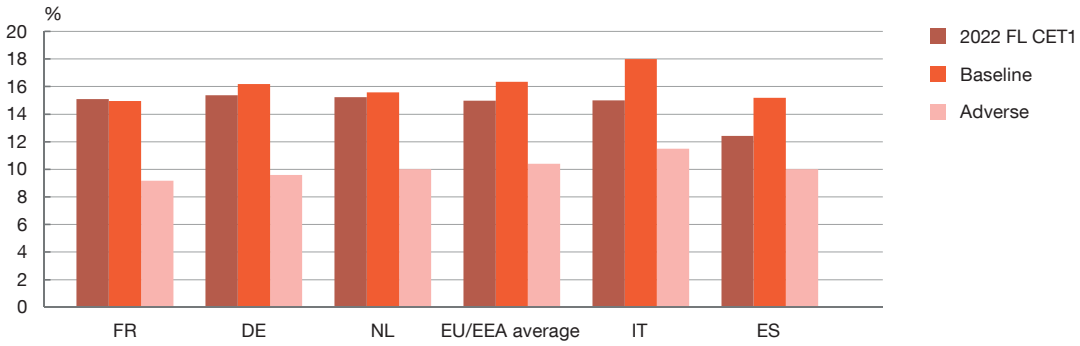
**The results of the top-down stress tests conducted by the Banco de España also show that the Spanish banking sector as a whole is highly resilient**. Using the methodological framework of the Forward Looking Exercise on Spanish Banks (FLESB),[36] the CET1 ratio for significant and less significant Spanish institutions as a whole would increase by an estimated 1.3 pp under the baseline scenario and decrease by an estimated 3.3 pp under the adverse scenario. Additional adverse shocks are applied to credit risk under the FLESB framework compared with the EBA exercise, based in particular on an estimate of potential unrealised losses arising from the economic tensions in the period 2020-2022. This largely explains

35 These results were published in July 2023 (see the results of the EBA's 2023 EU-wide stress test). The exercise covered 70 EU credit institutions, representing around 75% of EU bank's total assets, of which 8 are Spanish institutions (BBVA, Bankinter, CaixaBank, Kutxabank, ABANCA, Sabadell, Santander and Unicaja).

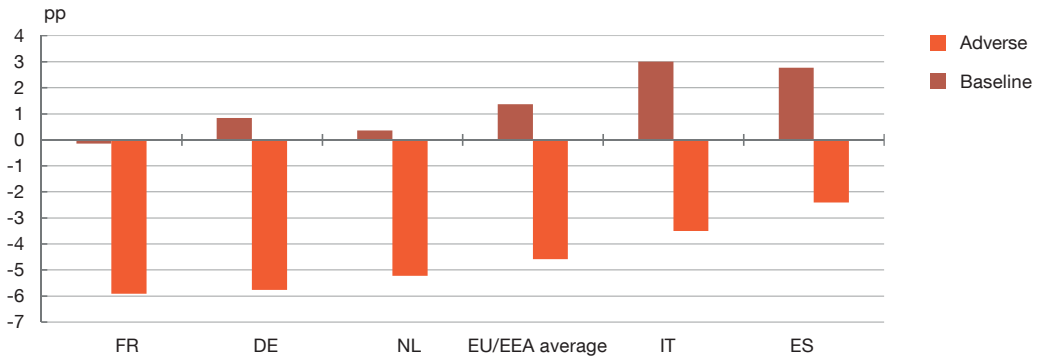
36 The FLESB is a top-down methodology developed internally by the Banco de España, which applies the same scenarios, assumptions and models consistently across all of the banks analysed.

Chart 2.23
**The EBA stress test shows Spanish banks' capital consumption is below average**

2.23.a Initial FL CET1 ratio and results of the EBA's stress test




2.23.b Change in the FL CET1 ratio at the end of the exercise's horizon




SOURCE: EBA.

the worse outcome, although there are other methodological differences.[37] Box 2.2 presents the results of this Banco de España exercise in detail.

## 2.2 Non-bank financial sector and systemic interconnections

### 2.2.1 Non-bank financial sector

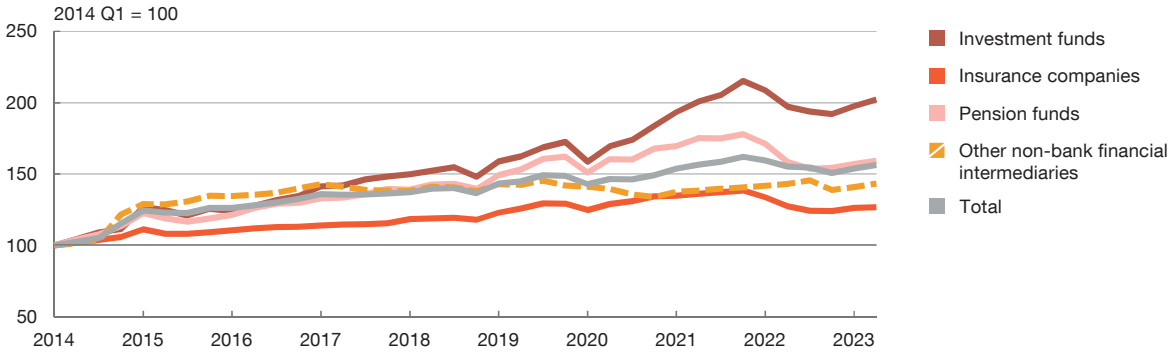
**The asset volume of the European non-bank financial sector has stabilised in 2023, with growth in certain sectors.** The decrease in the volume of this sector's assets that began in early 2022 came to a halt at the end of last year, and some growth has been observed recently, both in Spain and in the euro area as a whole (see Chart 2.24). This recovery stems from financial markets faring better in this

37 In particular, the EBA exercise assumes a static balance sheet, while its size may oscillate dynamically in the FLESB depending on the scenario. As for the sample, the FLESB covers both significant and non-significant Spanish banks, whereas, as mentioned above, the sample of Spanish institutions in the EBA exercise is limited to eight significant institutions.

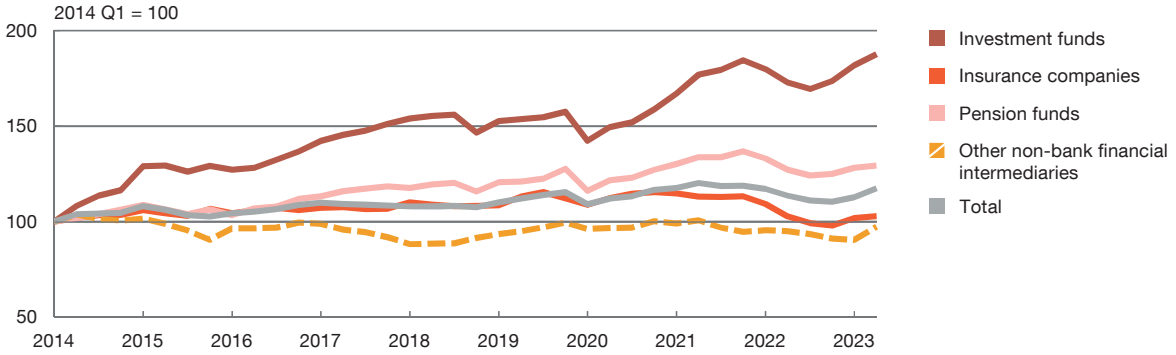
Chart 2.24

**The non-bank financial sector's total assets have stabilised after the downward trend that commenced in early 2022**

2.24.a Euro area (a)




2.24.b Spain (a)




**SOURCES:** Banco de España (Financial Accounts) and ECB (Quarterly Sector Accounts, Balance Sheet Items).

**a** In 2014 Q1 the total assets of money market and non-money market investment funds, insurance companies, pension funds and other non-bank financial intermediaries in the euro area amounted to €8,626 billion, €6,618 billion, €1,767 billion and €15,392 billion, respectively. For the equivalent sectors in Spain, total assets amounted to €203 billion, €285 billion, €117 billion and €571 billion, respectively, in 2014 Q1.

period, which has driven up the value of the assets under management and, to a lesser extent, from net purchases of these assets. This is the case of Spanish investment funds in particular (see Chart 2.24.b), which have seen a notable increase in investment flows in 2023 and whose investment portfolio composition has shifted towards fixed-income securities (mainly sovereign debt), as detailed below.

**The bouts of financial stress in autumn 2022 and early 2023 were short-lived, but significant vulnerabilities persist in the sector.** The turmoil does not appear to have eroded the normal functioning of these intermediaries or of the markets in which they participate. That said, the presence of potential vulnerabilities in this sector and their financial stability implications should be kept in mind. These include the pro-cyclical nature of their customers' net contributions and the overlap between the asset holdings of different financial sector segments, which could fuel bouts of tension and sharpen their effects. The dependence of certain banking systems on

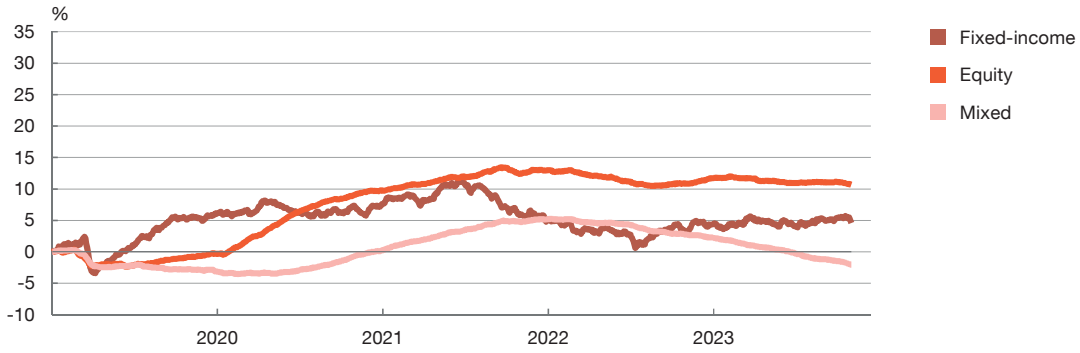
non-bank financial intermediation (NBFI) is also noteworthy.[38] In the case of Spain, the relatively limited size of the NBFI segment (compared with other jurisdictions) is a mitigating factor, but the Spanish financial system is nevertheless interconnected with international NBFI.

### *Investment funds*

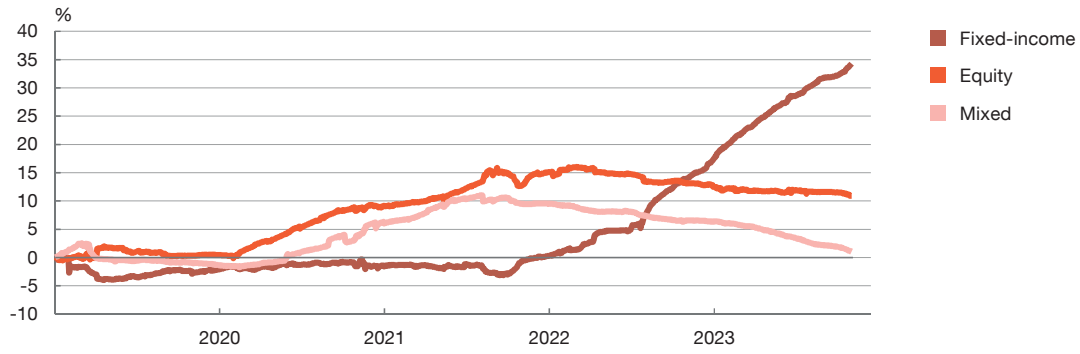
**Capital inflows to Spanish investment funds have increased significantly, boosted by flows into fixed-income funds, while they have remained more stable for the rest of the euro area.** According to Refinitiv, during the first nine

Chart 2.25
**Capital inflows to Spanish fixed-income investment funds have risen significantly**

2.25.a Fund flows in the euro area excluding Spain, as a % of asset volume at the start of 2020 (a) (b)




2.25.b Fund flows in Spain, as a % of asset volume at the start of 2020 (a)



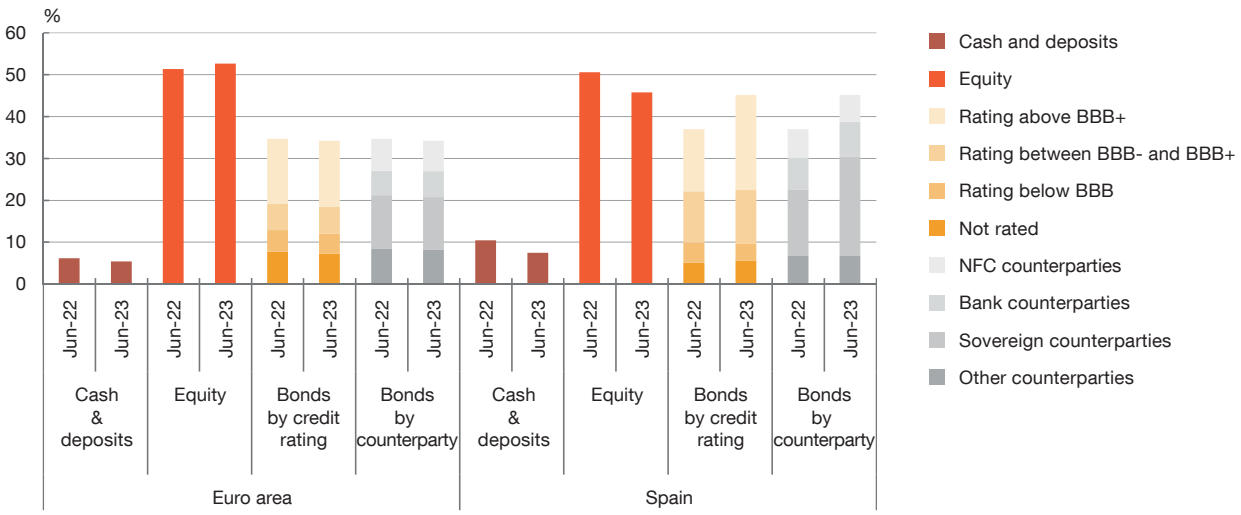

**SOURCES:** Refinitiv and Banco de España.

**a** Cumulative change in investment fund net capital inflows and outflows since 15 January 2020. This change is expressed as a percentage of the assets of the funds at the start date. The series draw on a representative sample, prepared by Refinitiv, of funds domiciled in euro area countries.
**b** Includes funds domiciled in Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands and Portugal.

38 See *BIS Quarterly Review*, September 2023 (pp. 33-45 in particular). The feature analyses the sources of bank funding (traditional deposits, repos, interbank lending) and finds that during the turmoil in March bank funding rotated from the non-financial sector to non-bank financial institutions. It also analyses the cases of Switzerland and the United States.

Chart 2.26
**The share of public debt in Spanish investment fund portfolios has increased**

2.26.a Characteristics of investment fund portfolios (a) (b) (c)




**SOURCES:** Banco de España (Financial Accounts) and ECB (Quarterly Sector Accounts, Securities Holdings Statistics by Sector).

**a** All the variables are measured as a percentage of total financial assets.
**b** Only non-money market investment funds are considered to calculate the level of cash and deposits. For the other variables, both non-money market investment funds and money market funds are considered.
**c** "Equity" includes listed and unlisted shares, other ownership interests and investment fund units. "Bonds" includes short and long-term debt securities.

months of 2023 cumulative capital inflows amounted to almost 20% of the assets managed by fixed-income funds at end-2022. This stands in contrast to the worse relative performance of equity and mixed fund flows (see Chart 2.25).

**Fixed-income fund growth is boosted by their high yield to maturity in a higher interest rate setting.** The relatively low Spanish deposits rate, which has had a more muted response to the monetary policy tightening,[39] also helps explain the increase of flows in this category. In the rest of the euro area, the recovery in capital inflows to fixed-income funds has been much more modest.

**The composition of Spanish investment funds' portfolio is changing, with government debt gaining importance.** This redistribution has come hand in hand with a substantial increase in the share of instruments with an investment grade rating, with instruments with the highest credit rating (above BBB+) increasing the most (see Chart 2.26). Lastly, the cash holdings and deposits of funds domiciled in Spain have continued to decline, gradually converging to euro area fund levels, which have remained stable.

39 See Alejandro Ferrer, Gergely Ganics, Ana Molina and José María Serena. (2023). "The EURIBOR surge and bank deposit costs: an investigation of interest rate pass-through and deposit portfolio rebalancing", *Financial Stability Review – Banco de España,* 44, pp. 9-38.

*Specialised lending institutions*

**Lending by specialised lending institutions (SLIs) increased in the past 12 months, with their NPL ratios holding steady.** The annual growth rate of lending by SLIs stood at 4.5% in June 2023. In the consumer segment, in which these institutions specialise, growth reached 10.3%. In the 12 months to June 2023, the NPL ratio remained stable at 6.3% overall, and at 4.1% in the consumer segment.

**Pre-tax profit of SLIs as a whole fell year-on-year in June by 14.7%.** The notable growth in impairment losses (69.1%) and the fall in net interest income (-7.3%) are behind this decline. Profit as a percentage of total assets stood at 1.9% in June 2023, a much higher figure in any event than the banking sector's.

*Insurance companies and pension funds*

**The volume of insurance sector premia grew significantly year-on-year (23.7%) in the first half of 2023.** First, the volume of life insurance premia increased sharply by 52.8%, while in the non-life business[40] they rose by 6.7%. The volume of life insurance premia as a percentage of the total has grown significantly (from 36.6% in 2022 to 45.2% in 2023). Insurance companies are also increasing the placement of investment products to retail customers that cannot find the desired remuneration in bank deposits.

**The profitability and solvency of the insurance sector remained largely unchanged in the first half of 2023 compared with a year earlier.** Specifically, ROE fell slightly to stand at 5.9% in 2023 Q2, down 0.5 pp on a year earlier. The solvency capital requirement (ratio of eligible own funds to mandatory capital for solvency purposes) was 234.1% in 2023 Q2, 1.1 pp less than at end-2022.

**Pension fund contributions decreased from mid-2022, although their total assets and annual average returns increased.** Gross contributions to pension funds fell by more than 19% in the last 12 months, largely owing to the lower limit on tax deductions for contributions to individual pension schemes. Total pension scheme assets increased by 2.6% in June 2023, compared with the same month a year earlier. Although long-term (25 years) profitability continued its downward trend, standing at 2.3% in June 2023 (14.9% below the June 2022 value), pension funds' annual average returns regained positive levels, rising from -6% in June 2022 to 3.7% in June 2023.

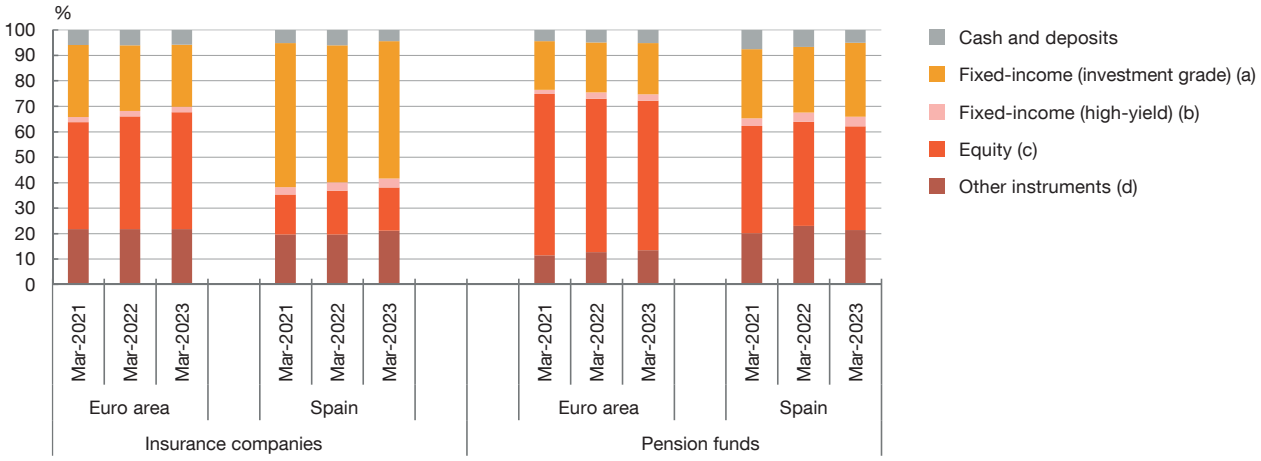
**The composition of insurance company and pension fund assets has remained relatively unchanged over the past two years, both in Spain and in the euro**

40 Non-life business includes car, multi-risk and other insurance.

Chart 2.27

**A European comparison shows that the share of fixed-income securities is greater for Spanish insurance companies and pension funds**

2.27.a Composition of insurance company and pension fund balance sheets




**SOURCES:** Banco de España (Financial Accounts) and ECB (Quarterly Sector Accounts, Securities Holdings Statistics by Sector).

**a** Investment grade fixed-income securities include short and long-term debt securities rated BBB- or higher.
**b** High-yield fixed-income securities include short and long-term debt securities rated below BBB-.
**c** Equity includes listed shares, unlisted shares, other equity and investment fund shares.
**d** Other instruments include fixed-income securities for which no credit rating has been found; loans; insurance, pensions and standardised guarantees; financial derivatives; and other accounts receivable excluding trade credits.

**area**. Fixed-income (mainly investment grade) securities continue to account for a higher share of insurance companies' assets in Spain (69% compared with the euro area average of 35%). However, over the last two years there has been an increase, albeit very moderate, in the share of equity instruments, to 17% of Spanish insurance companies' investment portfolio (see Chart 2.27). Conversely, in the pension fund sector fixed-income securities as a share of total assets have increased moderately, both in the investment grade segment (by 1 pp) and in riskier segments (by 1 pp). These instruments account for a higher proportion of total financial assets in Spanish funds (41%), compared with the rest of the euro area (28%), but there are fewer structural differences than in the insurance sector (see Chart 2.27).

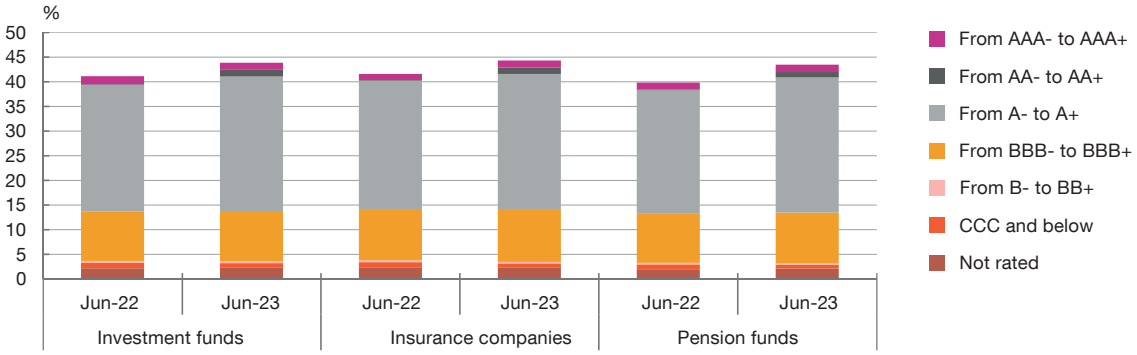
## 2.2.2 Systemic interconnections

**Common holdings of the banking sector and the other resident financial sectors increased year-on-year in 2023 Q2.** In particular, the greatest increase (by almost 4 pp) (see Chart 2.28) was seen in the common holdings of banks and investment funds, followed closely by the increases in the common holdings of banks and insurance companies and banks and pension funds (approximately 3.5 pp). Most of this growth has been in the highest-rated securities (A- to AAA+), with the largest increase recorded in the A- to A+ category, which predominantly comprises government debt instruments. Thus, the possible risk stemming from the

Chart 2.28

**Common holdings of banks and other financial sectors increased moderately**

2.28.a Share of common holdings of banks and other financial sectors in the banking sector's securities portfolio (a)



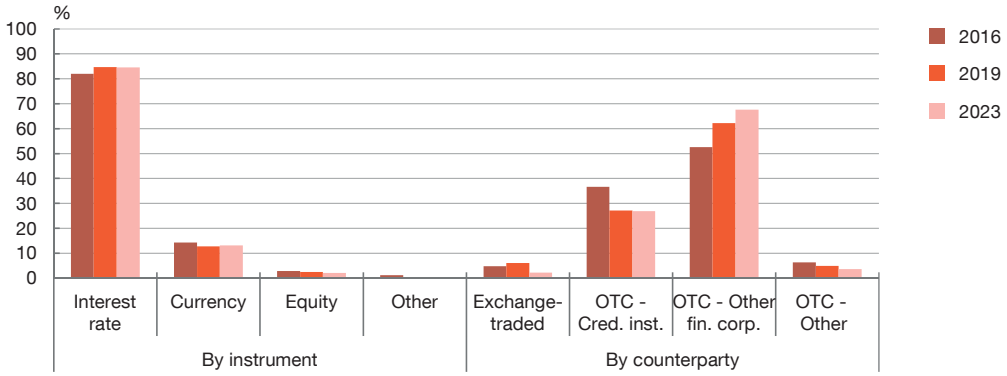

**SOURCE:** ECB (Securities Holdings Statistics by Sector).

**a** The banking sector's portfolio includes securities also held by other sectors in their portfolios. The bars show the share of the common holdings of banks and other Spanish financial sectors in the banking sector's securities portfolio, broken down by credit rating.

Chart 2.29

**Interest rate derivatives account for the bulk of such exposures for banks**

2.29.a Breakdown by instrument and counterparty. Notional volume. Consolidated data (a)




**SOURCE:** Banco de España.

**a** Exposure relating to exchange-traded derivatives is calculated as the difference between total exposure to derivatives and exposure to OTC (bilateral agreements) counterparties.

increase in common holdings is offset by the fact that this increase in concentrated in securities with the highest credit ratings.

**Banks' exposure to derivatives markets remained relatively stable in the 12 months to June 2023.** The share of derivatives instruments on banks' balance sheets remained broadly the same as in 2022 (3.8% of banks' assets in June 2023 in the case of asset derivatives and 3.6% in the case of liability derivatives). By instrument, interest rate derivatives continue to account for the bulk of these exposures (see Chart 2.29). This type of derivatives may be used for hedging fixed-

income and other securities held by banks, thus mitigating losses in the event, for example, of an interest rate hike. The over-the-counter (OTC) segment, in which the parties enter into agreements directly, outside a regulated exchange (although these contracts may subsequently be cleared at a clearing house), accounts for a large proportion of these instruments' counterparties, with non-bank financial intermediaries also gaining importance among OTC derivatives' counterparties.

**The crypto-currency market has expanded in 2023 to date, but has not regained its pre-2022 correction level and remains small compared with the financial system as a whole.** The MVIS CryptoCompare Digital Assets 100 Index, comprising 100 of the main traded crypto-assets, has risen by around 45% since the beginning of the year, underpinned by the considerable increase in the trading price of some of the main unbacked crypto-currencies (such as Bitcoin and Ethereum). Although the size of these markets has increased over time, albeit with fluctuations, the risks for financial intermediaries arising from their exposure to these assets remain contained given their few interconnections with the traditional financial system.[41]

41 See the reference in Section 3.2 to the recent ESRB analysis of the risks linked to crypto-assets and the Special Chapter on crypto-assets in the spring 2022 *Financial Stability Report*.

Box 2.1

## ADJUSTMENTS TO THE SPANISH BANKING SECTOR'S FIXED-INCOME PORTFOLIO IN THE FACE OF RISING INTEREST RATES

In the current setting of rising interest rates, banks are likely to slightly restructure their balance sheets, as they seek to maximise profitability and adequately manage their risks.[1] Specifically, monetary policy tightening may lead to a decline in lending to the private sector, offset somewhat by a shift towards fixed-income securities, particularly government debt. Moreover, the fixed-income portfolio readjustment resulting from this balance sheet restructuring is likely to vary across banks, depending on their pre-existing asset/liability structures and debt portfolios.[2]

The serious financial difficulties faced by some medium-sized US banks in March 2023[3] sparked growing concern over the interest rate risks associated with banks' fixed-income portfolios, and the interplay between such risks and liquidity risks.

Although no such episodes have materialised in the European Union, where risks are more contained,[4] it is important to track the extent to which banks are exposed to these risk factors, particularly given the uncertainty over how long the current restrictive monetary policy cycle might last.

With this backdrop in mind, this box looks at the recent changes in the composition of Spanish banks' fixed-income portfolios, as well as the main determinants of the sales and purchases of fixed-income instruments observed. All of this in a setting in which financial tensions in the European banking sector as a whole have been kept in check. The analysis shows evidence of optimisation in these transactions, thus making unrealised losses a less likely prospect, and no signs of stress have been detected in this portfolio. It is nonetheless important to remain vigilant since the monetary adjustment process is ongoing, and the optimisation of banks' fixed-income portfolios is thus also likely to continue. More broadly, the way fixed-income portfolios are managed could vary in macro-financial environments that differ significantly from the current one.

### Composition of banks' fixed-income portfolios

In June 2023 the overall book value of Spanish deposit-taking institutions' debt securities stood at €589.8 billion, representing 14.2% of their total consolidated assets (see Chart 1). Debt holdings have increased significantly in recent years, with year-on-year growth standing at 8.6% in June 2023. This contrasts with the modest growth at consolidated level in lending to households and non-financial corporations (1.2% over the same period), and the decline in such lending in Spain. In cumulative terms, debt holdings have grown by more than 15% since June 2019, 2.3 pp higher than the growth in total assets over this period. At June 2023, government debt securities accounted for around 80% of such holdings, a figure that has held relatively stable in recent years.

In terms of the accounting treatment of fixed-income portfolios, recent times have seen an increase in holdings measured at amortised cost, rising from 42% of the total in June 2019 to 60% in June 2023.[5] This shift can be seen in most portfolios, and in holdings of government debt in particular.[6] This trend has gathered pace in 2022 and 2023

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1 For example, Anil Kashyap, Jeremy Stein and David Wilcox. (1993). "Monetary policy and credit conditions: Evidence from the composition of external finance". *American Economic Review,* 83, pp. 78-98.

2 For example, Karol Paludkiewicz. (2021). "Unconventional monetary policy, bank lending, and security holdings: The yield-induced portfolio-rebalancing channel". *Journal of Financial and Quantitative Analysis,* 56, pp. 531-568, or Philip R. Lane. (2023). "The banking channel of monetary policy tightening in the euro area", speech, 12 July 2023.

3 See Box 1 of the Spring 2023 *Financial Stability Report* for further details of the March 2023 episode, linked to the collapse of the US institution Silicon Valley Bank (SVB) and the Swiss entity Credit Suisse. Later, in May this year, another two medium-sized US banks (Signature Bank and First Republic) were also taken over by the authorities and subsequently sold off. The financial difficulties faced by these banks drew significant comparisons with those faced by SVB.

4 See the ECB press release of 28 July 2023. The sound liquidity position of Spanish and other European banks is described in the body of Chapter 2 (see Charts 2.15 and 2.16), which also details the sector's healthy profits, driven by rising net interest income (see Chart 2.17).

5 When a fixed-income security is carried at amortised cost, any fluctuations in its value will not be reflected in the accounting valuation of the asset or the bank's income statement until it has been sold, potentially generating unrealised gains or losses. By contrast, when a fixed-income security is recognised at fair value, such variations immediately impact the bank's balance sheet in the form of the unrealised gains (or losses) generated. Financial assets recognised at fair value generally tend to be short-term instruments.

6 The classification and recognition of debt securities at amortised cost or fair value does not depend on subjective managerial intentions, which may change regularly or frequently in order to cater to or address changing market circumstances, but rather must be backed by a specific business model aimed at recovering the principal and interest, which is not expected to change frequently, and the characteristics of the instruments themselves must also be factored in.

(with year-on-year increases of 5.8 pp and 5.3 pp, respectively), revealing its importance as a mechanism for managing market risk.

Specifically, government debt holdings measured at amortised cost accounted for 7% of banks' total assets at June 2023, as compared with 4.2% four years earlier. This trend has also been true of holdings of debt securities issued by credit institutions, non-financial corporations and, more recently, other financial corporations, although these portfolios account for a much less significant share of banks' total assets: 0.5%, 0.5% and 0.4%, respectively, at June 2023 (see Chart 1).

### Determinants of the likelihood of buying or selling debt instruments among banks

An econometric exercise drawing on data on the ten Spanish significant institutions[7] was conducted to analyse the determinants of purchases and sales of debt instruments by banks amid rising interest rates. Specifically, the likelihood of buying or selling debt instruments is analysed based on granular data from the European Central Bank's Securities Holdings Statistics Group.

Data on holdings in December 2021 (before the monetary policy interest rate hiking process began) are used to identify purchases and sales and are compared with holdings in March 2023. Each debt instrument on the start date is analysed to see whether, by the end date, it had been sold or purchased or was still held. To this end, two dependent dichotomous variables are defined: one for sales and one for purchases.[8]

There are two types of explanatory variables. First, variables at instrument/bank level are considered, such as the accounting treatment (amortised cost or fair value) afforded by each bank to each debt instrument and the associated unrealised loss (as a percentage of the bank's exposure to the instrument).[9] Second, a series of variables that capture bank characteristics have been considered, including unrealised losses at bank level (as a percentage of the portfolio at amortised cost), the size of a bank's assets, the liquidity of its portfolio, its CET1 ratio and return on equity. The analysis also incorporates instrument-level fixed effects, to control for heterogeneity in the specific features of debt securities that do not change over time.

Chart 2 shows the impact of changes in the determinants on the likelihood of selling or buying debt instruments. The estimations suggest that the larger the unrealised loss, at both instrument and bank level, the less likely such assets are to be sold. This could be attributed to the need to recognise this additional loss if the assets are sold. Instruments recognised at amortised cost being less likely to be sold (although the effect is not significant on the average for the period analysed) is also consistent with the business model whereby the assets are held with a view to recovering the associated contractual cash flows.

These findings confirm a sales optimisation strategy that should be borne in mind when assessing analyses of unrealised losses such as the one conducted by the European Banking Authority (EBA) in 2023.[10] Banks' capacity, provided the accounting requirements are met, to optimise their sales in the face of shocks means that they are less likely to realise significant unrealised losses.

Meanwhile, in terms of bank characteristics, no patterns that might constitute a clear warning signal have been identified. A sounder solvency position appears to be associated with fewer sales. Conversely, the better a

7 In the case of sales, one of the significant institutions was not included in the analysis, as the unrealised losses on its holdings could not be calculated on a granular basis in some periods. In any event, no signs of stress were observed in the data on unrealised losses available at a more aggregate level.

8 These variables take a value of 1 if, in the case of sales, a specific bond that featured in a bank's portfolio on the start date is no longer present on the end date (otherwise, they take a value of 0), and, in the case of purchases, if it was not present on the start date but does feature on the end date (otherwise, they take a value of 0). Any bonds maturing before the end date of the analysis that are eliminated from the database are not flagged as sales.

9 By definition, instruments at fair value have zero unrealised losses, and only the amortised cost portfolio may take a value of 1.

10 EBA. (2023). "Ad-hoc analysis of unrealised losses on EU banks' bond holdings".

Box 2.1

## ADJUSTMENTS TO THE SPANISH BANKING SECTOR'S FIXED-INCOME PORTFOLIO IN THE FACE OF RISING INTEREST RATES (cont'd)

Chart 1
Breakdown by accounting portfolio of the book value of the debt securities held by banks. Consolidated data (a)

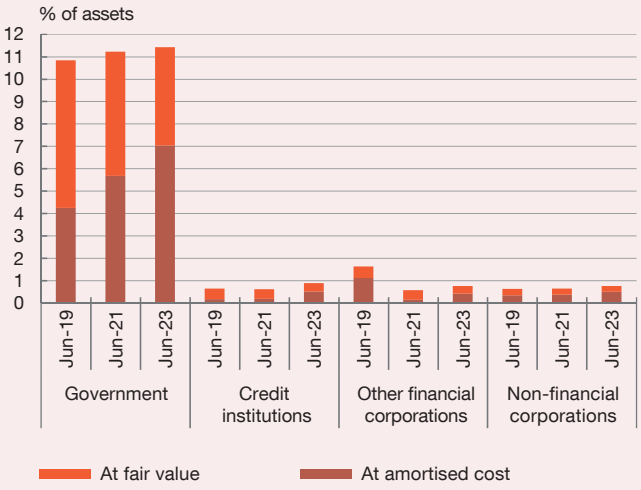



Chart 2
Determinants of banks' bond purchases and sales between 2021 Q4 and 2023 Q1 (b)

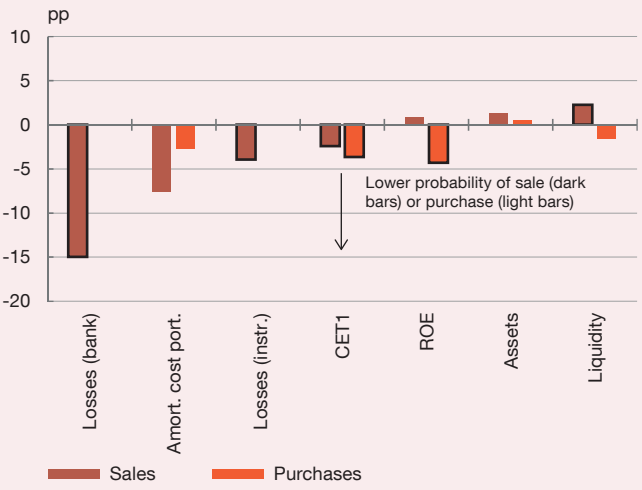
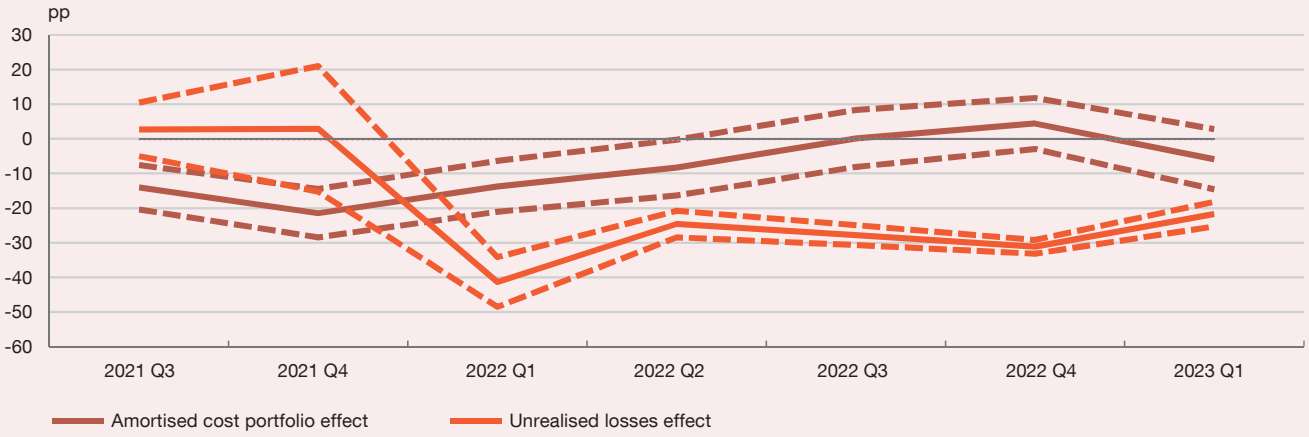



Chart 3
Sales. Impact of inclusion in the amortised cost portfolio and of unrealised losses on the probability of sale (c)




**SOURCES:** Banco de España and Securities holdings by reporting banking groups (SHS-G; European Central Bank).

**a** The chart does not include central bank debt securities as these represent a residual share of banks' overall debt holdings.

**b** Change in the likelihood of a bank selling or purchasing bonds in the event of a one standard variation shock to different explanatory variables, based on a linear regression model for two dates. The start date of the analysis is 2021 Q4 and the end date is 2023 Q1. Two dependent variables are considered: "sale" and "purchase", where "sale" is equal to 1 if the bond held on the start date is sold, and 0 otherwise. The variable "purchase" is 1 where the bond was purchased in the period considered. The explanatory variables are unrealised losses at bank level (as a % of the value of the amortised cost portfolio), a binary variable indicating whether the instrument is classified in the amortised cost portfolio (here, a change in the likelihood of sale/purchase is shown where this variable is equal to 1), and unrealised losses at instrument level (% of the value of the exposure to the instrument). Also included as bank explanatory variables are the CET1 ratio, the ROE, the natural logarithm of the assets and a liquidity ratio. The models include fixed bond-level effects. Significant variations in the likelihood of sale/purchase are bordered by a black line.

**c** Changes in the probability of sale over time are estimated when the amortised cost instrument dummy variable is 1 and in the event of a one standard deviation shock to a bank's unrealised losses. These changes in the probability of sale are estimated using the sales probability model used in Chart 2, but with a fixed initial start date of 2021 Q2 (the first period available) and an end date that varies across all of the quarters from 2021 Q3 to 2023 Q1. The dotted lines represent the 95% confidence intervals for the explanatory variables.

bank's liquidity position, the more likely it is to sell an instrument (see Chart 2).

These findings are not consistent with delaying sales to prevent an adverse impact on solvency or being forced to accelerate such sales due to liquidity considerations. Moreover, all these effects are less significant than the impact of unrealised losses.

Lastly, it should be noted that none of the banks displayed any signs of financial stress during the period studied, which could limit the extent to which their financial metrics influence their fixed-income portfolio management. This influence could be greater in stressed scenarios.

The exercise was also fleshed out with estimations for different periods, considering a set of pairs of reference dates. The first date is fixed (June 2021), and the second date can fall any time between September 2021 and March 2023. This captures the periods before and after the start of the interest rate hikes.

Chart 3 shows how the impact of unrealised losses and inclusion in the amortised cost portfolio on the probability of sale changed over this period. At the start of the sample, before the monetary policy tightening process began, securities in the amortised cost portfolio were less likely to be sold. Over time, however, this effect becomes immaterial. Conversely, unrealised losses can be seen to have a greater impact when explaining decisions (not) to sell, particularly since 2022 Q1, when market rates began to rise.

At the start of the sample (late 2021), unrealised losses were very small. It is therefore natural that their impact on banks' selling decisions was limited, with the amortised-cost fixed effect capturing the nature of a portfolio designed to pool securities that are intended to be held to maturity. As unrealised losses grow with rising interest rates, they create a more compelling incentive for banks not to sell debt securities, but also a greater incentive to discriminate between different amortised cost instruments with different levels of loss.

As for the determinants of debt instrument purchases (see Chart 2), the estimations suggest that bonds are less likely to be purchased and recognised at amortised cost, as opposed to fair value (although, as in the case of sales, the estimated effect is not statistically significant on the average for the period studied). As regards the extent to which bank characteristics influence purchases, banks with a more profitable business or a sounder solvency position appear less likely to purchase these instruments.[11] This last finding should be compared with the finding for sales, where it was found that more solvent banks were less likely to sell. Thus, net variations in holdings (in terms of positions purchased versus positions sold) could be similar across banks with more or less capital.

### Conclusions

This box looks at evidence on how banks have been adjusting their fixed-income portfolios in the face of rising interest rates. This new environment may create incentives for increasing such exposures, whether by purchasing new securities in a bid to improve profitability or solvency, or by avoiding the sale of securities carrying unrealised losses. In turn, the fact that such securities are increasingly recognised at amortised cost limits the potential losses in the event of additional interest rate hikes.

Banks' capacity to optimise their debt portfolios should be borne in mind to ensure a more comprehensive assessment of the existence of unrealised losses and liquidity risks. It should also be borne in mind that optimisation at individual bank level does not guard against the build-up of systemic risks, and macroprudential oversight of such developments must therefore continue, even though so far no warning signals have been detected. Moreover, the way in which fixed-income portfolios are managed could change in a scenario of greater financial stress.

11 It is worth clarifying that, when estimating the likelihood of purchasing debt, unrealised loss variables are not included since, by definition, securities cannot be impaired on the date on which they are purchased.

Box 2.2

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

As in previous years, the Banco de España has used its own methodological framework, known as the Forward Looking Exercise on Spanish Banks (FLESB),[1] to examine the Spanish banking system's resilience in the face of risks to the macro-financial environment. The framework has some methodological differences compared with the exercises conducted by the European Banking Authority (EBA).[2]

This year's exercise uses the macroeconomic scenarios defined for the EBA's 2023 stress tests,[3] with the time horizon 2023-2025: (i) a baseline scenario, which closely reflects the economic forecasts,[4] and (ii) an adverse scenario in which the risks identified materialise, significantly worsening the macro-financial environment. As in previous exercises, this one has been carried out under a dynamic balance sheet assumption, and banks' exposures therefore also change in line with the developments assumed in the macroeconomic scenarios.[5]

In addition to the solvency exercise, the results of the liquidity assessment, in which stressed fund outflow rates are applied to the LCR ratio, are also reported.

### Description of the scenarios

The baseline scenario reflects how the economic environment is expected to develop on the date on which it is prepared, and envisages average real growth of the Spanish economy over the projection horizon of 2% (see Chart 1). By contrast, the adverse scenario envisages a cumulative contraction of the economy over the same horizon, at an average rate of 1.8% over the projection horizon. One of the main drivers of the contraction in the adverse scenario is the increase in the price level (measured by the harmonised index of consumer prices (HICP)) by an average of 4.4% a year between 2023 and 2025, which eats into households' purchasing power.[6] Energy and food prices lie behind this surge in inflation.

Interest rate levels in the baseline scenario are higher than those assumed in previous exercises, particularly for shorter terms, due to the monetary policy tightening that has already taken place since 2021 in response to rising inflation. The adverse scenario assumes an additional tightening of financial conditions as a result of somewhat higher risk premia. Specifically, in 2023-2025 the 12-month EURIBOR and the interest on Spanish 10-year government bonds are on average around 120 basis points (bp) higher than in the baseline scenario (with the short-term rates reaching 4.7% and the long-term rates 6.1%) (see Chart 2). Against this backdrop, stock market prices fall by 43.4% in cumulative terms, in contrast to the stability seen in the baseline scenario.

The scenario also considers different sector-specific trajectories for real gross value added (GVA), in line with the sectoral growth assumptions in the EBA exercise.[7] The impact of rising energy and other commodity prices and of value chain disruptions differs from sector to sector, and the impact of the adverse scenario on real GVA growth therefore varies across the different sectors (see Chart 3). The biggest impacts can be seen in the most energy and commodity-intensive sectors, such as manufacturing and transport.

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1 The FLESB is a top-down methodology. In other words, it 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 methodological framework is developed in-house by the Banco de España. The main features of this framework are outlined in the November 2013 *Financial Stability Report* (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 Under the FLESB framework, adverse credit risk shocks are applied in addition to those envisaged in the EBA exercise; specifically, based on an estimation of potential latent impairment deriving from the economic turmoil in the period 2020-2022. Moreover, the EBA exercise assumes a static balance sheet, while its size may oscillate dynamically in the FLESB depending on the scenario. The EBA exercise also considers a specific operational risk shock not envisaged in the FLESB exercise. As for the sample of banks, the EBA exercise is restricted to significant institutions, while the FLESB covers all of the significant institutions as well as less significant institutions.

3 See EBA 2023 EU-wide stress test exercise.

4 Growth under the baseline scenario is in line with the December 2022 macroeconomic projections for Spain and other countries relevant to Spanish banks.

5 In the scenarios in which activity contracts, declines are also projected in lending to the non-financial private sector in different portfolios (households and firms) and different countries.

6 In terms of cumulative growth, the baseline scenario assumes a 6.2% increase in GDP, while in the adverse scenario the Spanish economy contracts by 5.4% over the three years of the projection horizon. Cumulative inflation in the adverse scenario reaches 13.7%.

7 The FLESB methodology has a higher level of sectoral granularity than that included in the EBA scenarios, with a total of 61 sectors. Link regressions have been used to complete the sectoral disaggregation of the scenarios.

The EBA also contemplates a global scenario, which covers other countries where Spanish banks have a significant presence (Chart 4). The narrative of the adverse scenario includes the possibility of heightened geopolitical tension, and even the outbreak of fresh waves of COVID-19, which would create an environment of stagflation and global value chain disruption. In the countries in which Spanish banks have their most significant operations, real GDP see sharp average falls under this scenario, ranging between -2.8% and -1.5%, while average inflation exceeds 4%, and is exceptionally high in Türkiye (27.1%).

The adverse scenario also includes a global increase in short and long-term interest rates (Chart 5), with rising sovereign risk premia across different countries, and a depreciation of emerging economies' currencies against the euro.

Chart 1
Baseline and adverse scenarios for Spain. Macroeconomic impact (a)

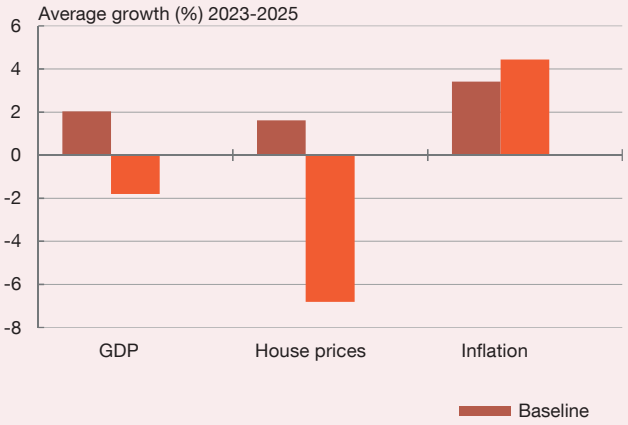
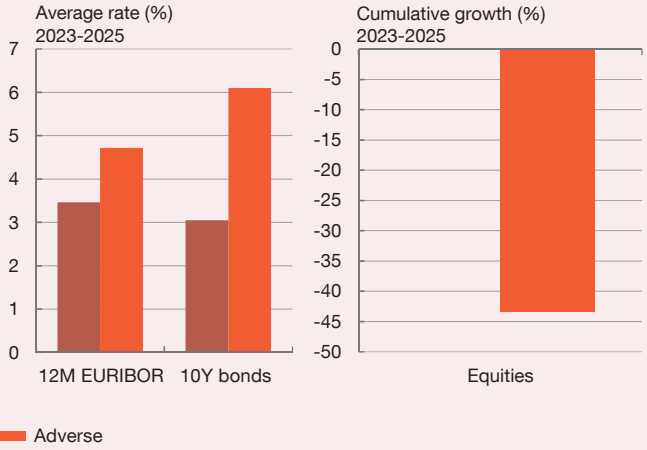


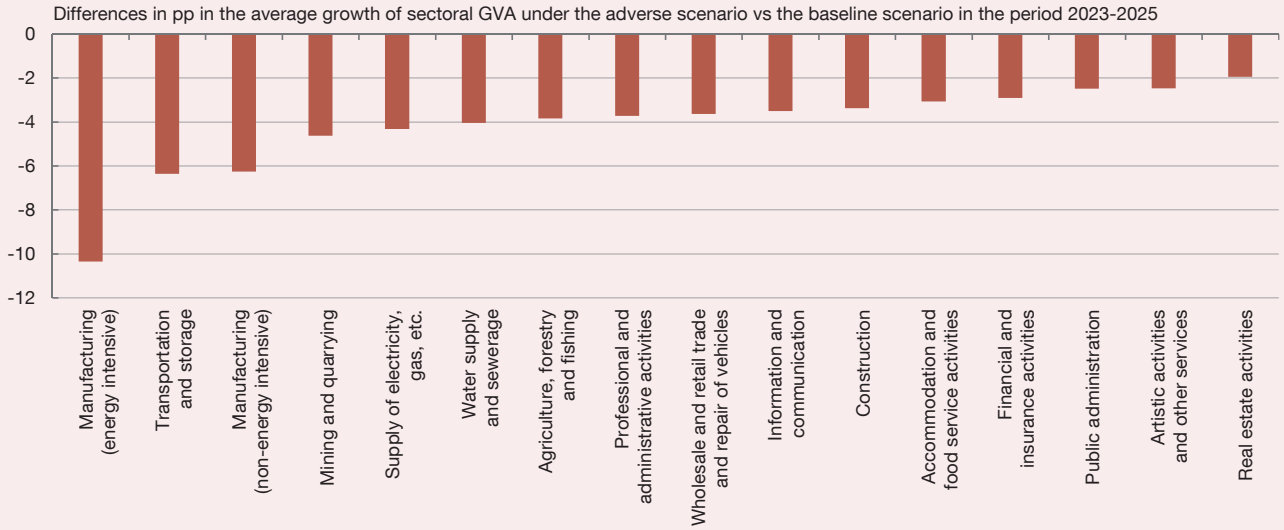

Chart 2
Baseline and adverse scenarios for Spain. Impact on financial environment (b)




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.

Chart 3
Effect of the adverse scenario on average growth of real GVA in the period 2023-2025




SOURCE: Banco de España.

## Aggregate results of the exercise

Chart 6 shows the CET1 ratio in 2022 and the aggregate results of the exercise at the end of the time horizon (2025) under the baseline and adverse scenarios. For ease of interpretation, the results are broken down into three groups of banks, which differ in terms of size, business model and risk profile: (i) the banks supervised by the Single Supervisory Mechanism (SSM) that have the most significant international activity;[8] (ii) the other banks directly supervised by the SSM; and (iii) the smaller banks supervised directly by the Banco de España that have no significant international activity (less significant institutions, or LSIs).

The group of banks with a significant international presence has a CET1 ratio of 12.3% at the start of the exercise (lower than those of the other two groups), with this figure rising to 13.4% under the baseline scenario and falling to 9.5% in the adverse scenario at the end of the exercise.

The other banks supervised by the SSM have a CET1 ratio of 12.9% in 2022, which at the end of the stress testing exercise rises to 14.1% under the baseline scenario (increase in solvency), but decreases to 8.2% under the adverse scenario.

Lastly, the banks supervised directly by the Banco de España, which have a CET1 ratio of 18.2% in 2022, improve their solvency under the baseline scenario, with their CET1 ratio rising to 21.4% in 2025, but see a slight decline (to 17.3%) in the adverse scenario.

These results show that the Spanish banking sector would be resilient to the impacts under the scenarios, displaying satisfactory levels of aggregate solvency, particularly given the highly negative macro-financial impact assumed in the adverse scenario. Nonetheless, the impact measured by groups of banks is uneven, as analysed in greater detail below.

Chart 4
Distribution by country of average real GDP growth and average inflation in 2023-2025 under the baseline and adverse scenarios (a) (b)

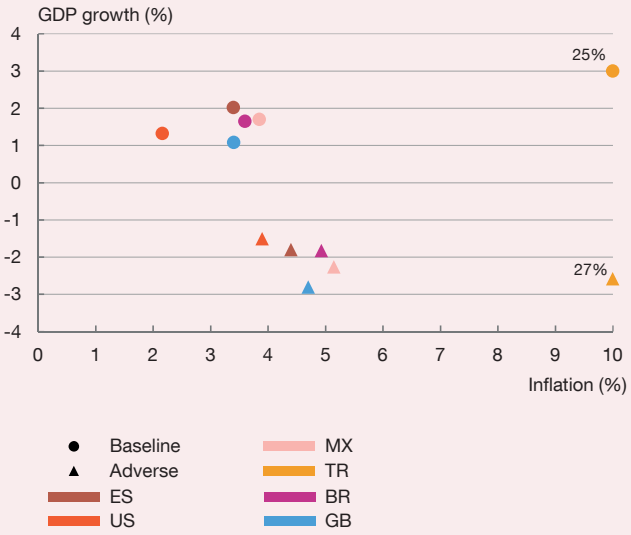
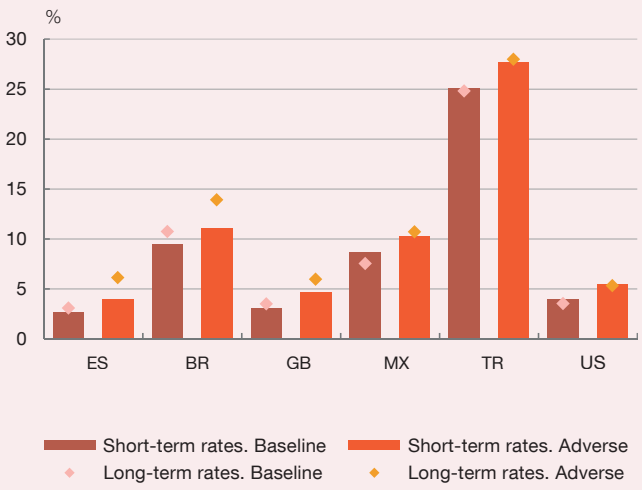



Chart 5
Average short and long-term rates by country in 2023-2025 under the baseline and adverse scenarios




**SOURCE:** Banco de España.

**a** The range of the horizontal axis has been limited owing to the extreme values of inflation in Türkiye (an average of 24.8% under the baseline scenario and 27.1% under the adverse scenario).
**b** Inflation is calculated using the harmonised index of consumer prices (HICP).

8 Among the banks with significant international activity, this group includes the three where this activity is most important and longest-standing.

Chart 7 breaks down the main factors determining the impact of the scenarios on the CET1 ratio over the time horizon.[9] Under the baseline scenario, for the Spanish banks with the most significant international activity, capital generation through net operating income in Spain and net profit/loss of foreign operations (6.5% of RWAs) and the available provisions to cover impairment losses in Spain (1.5% of RWAs) more than offset the volume of impairment losses in operations in Spain and sovereign exposure valuation adjustments (4.5% of RWAs overall).[10] Operations outside of Spain make a particularly positive contribution to sustaining profitability and solvency in this scenario. Other impacts make a negative contribution (-2.5% of RWAs), owing in part to taxes and 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 8.8% of RWAs for this group of banks, and are not offset by the use of provisions (1.5% of RWAs) and capital generation (3.9% of RWAs). The contribution made by operations outside Spain is much smaller in the adverse scenario than in the baseline scenario, owing to the sharp contraction of economies that are key for Spanish banks' business and to exchange rate depreciation.

Chart 6
CET1 ratio observed in 2022 and results in 2025 of baseline and adverse scenarios

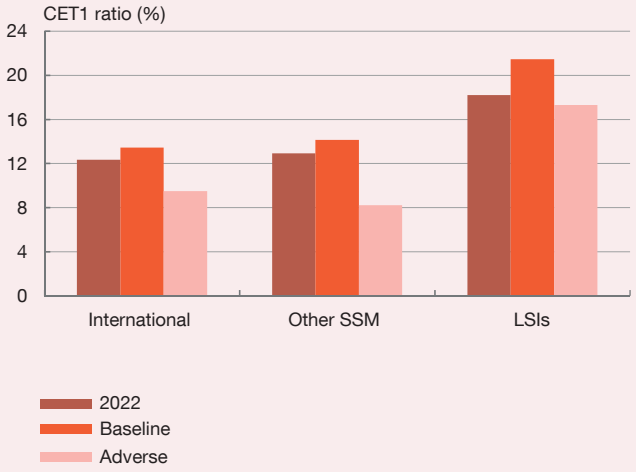
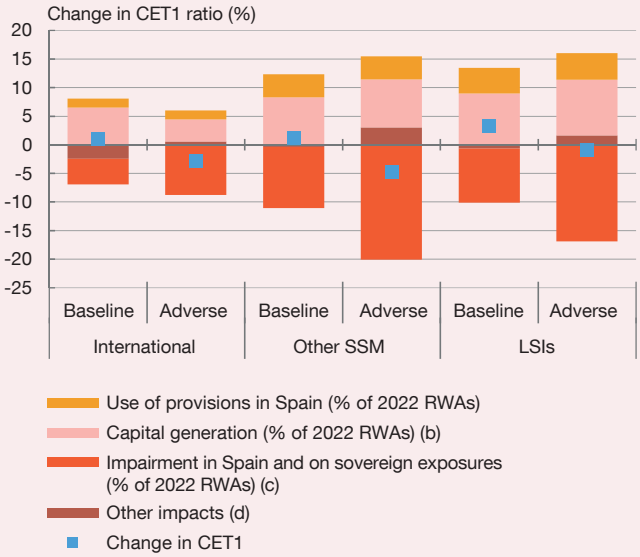



Chart 7
Impact of the risk materialisation scenarios on bank solvency (a)




**SOURCE:** Banco de España.

**a** The impacts are defined as the expected changes in the CET1 ratio in 2025 and in different financial flows in 2023-2025 (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.

9 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 in Spain and net profit/loss of foreign operations, 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 2022. 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).

10 The group of Spanish banks with the most significant international activity differs from the other two in that it incorporates the net profit/loss of foreign operations in its capital generation (also capturing the higher impairment provisions outside of Spain under the adverse scenario). Thus, because of these banks' internationally diversified business model, the impairment losses, use of provisions and other effects in Spain have a lower relative weight in total RWAs.

The CET1 ratio for the other banks subject to SSM supervision increases by 1.2 pp in the baseline scenario, and decreases by 4.7 pp in the adverse scenario. Under the baseline scenario, the use of provisions (4.0%) and capital generation (8.3%) more than make up for the impairment losses (10.7% of RWAs), and the contribution of other impacts is negative but moderate (-0.4% of RWAs).

Under the adverse scenario, for this group of banks, higher interest rates enable them to earn more net interest income, thereby supporting capital generation (8.4% of RWAs) through net operating income. However, the sum of the positive contributions from these rates, the use of provisions (4%) and other impacts (3%), including some deleveraging, is not enough to offset the large impairment losses (20.1% of RWAs). These losses increase substantially owing to stagflation and high interest rates, which constrain Spanish households' and firms' ability to service their debts with deposit-taking institutions.

Lastly, the results for the CET1 ratio of the banks directly supervised by the Banco de España show that they are more resilient in terms of capital generation and impairment losses, and therefore perform better, with a 3.3 pp increase in their CET1 ratio in the baseline scenario and a reduction of only 0.9 pp in the adverse scenario. Under the baseline scenario, the generation of new loss-absorbing resources (8.9% of RWAs) and the use of provisions (4.5% of RWAs) outweigh the impairment losses (9.5% of RWAs) and other impacts (-0.7% of RWAs).

In the adverse scenario, thanks to the increase in net interest income driven by rising interest rates, new capital generation is highly positive (9.7% of RWAs) and, combined with the use of provisions (4.6% of RWAs) and the deleveraging that lifts other impacts into positive territory (1.6% of RWAs), largely offsets the impairment losses (16.9% of RWAs).

Comparing the aggregate results with those in last year's FLESB, the reduction in capital is bigger in this year's adverse scenario (3.3 pp vs 2.3 pp). Moreover, the CET1 ratio at the end of the exercise is lower (9.5% vs 10.5%).

In terms of the channels of impact, as compared with the previous exercise, less capital is generated (5.4% versus 7.1% of RWAs, a 1.7 pp difference), faced with a global scenario less favourable than the one analysed the 2022 exercise, reducing both the net profit of foreign operations and the net operating income in Spain. The pre-existing credit provisions in Spain also decline (2.3% versus 2.8%, a 0.5 pp difference), while the other effects (including deleveraging, exchange rate fluctuations, etc.) make a more positive contribution (1.3% versus 0.7%, a difference of approximately 0.6 pp).

Aggregate financial impairment losses in Spain and unrealised losses on sovereign debt are lower than in the previous exercise (12.2% vs 12.9%, a difference of -0.7 pp). This is due to the fact that the lower sovereign losses, with the bulk of the valuation adjustment having been made in 2022, more than offset the rise in credit losses owing to the more unfavourable macroeconomic scenario in Spain. Moreover, such credit losses are partially mitigated by the dissipation during 2022 of part of the potential latent impairment built up during the health crisis.

The outcome in terms of how the different groups of banks are ranked by impact on their final CET1 ratios is similar to last year, the biggest impact being felt by the other banks directly supervised by the SSM, while the banks supervised directly by the Banco de España were least affected.

As an additional exercise, results were also obtained for a more up-to-date baseline scenario based on the September 2023 macroeconomic projections. These projections envisage more positive developments in activity than were expected in winter 2022. In this context, the banks' overall CET1 ratio at the end of the exercise would stand at 14.2%, 24 basis points (bp) higher than under the EBA's baseline scenario.

### Analysis of the channels of impact

The main negative channel of impact for Spanish institutions' solvency is the increase in provisions for credit portfolio impairment.[11] As shown in Chart 8, under the adverse scenario the sharp contraction in real GDP and higher interest rates lead to median estimated credit

11 The loan portfolio represents 64.3% of the sample banks' exposure in Spain. Loans to firms account for 45.6% of loans within operations in Spain as a whole, while those to households account for 54.4%.

impairment provisions in Spain that are 7.4 pp higher than under the baseline scenario. This impact is uneven across banks owing to initial differences in their loan quality, the sectoral composition of their loans and the degree of coverage from the ICO guarantees.

As in last year's exercise, where the interest rate hike factored into the adverse scenario was also higher than that factored into the baseline scenario, there is a negative adjustment through the correction in the value of sovereign bond holdings. Specifically, in the adverse scenario the additional median loss relative to RWAs on sovereign bond holdings is 0.6 pp (see Chart 8), although this figure varies across institutions. Losses on this type of exposure are more significant for institutions with a higher proportion of government debt classified at fair value.[12] However, most institutions have seen a reduction in this portfolio, leading to a smaller expected loss compared with the autumn 2022 exercise. Such losses are also affected by the share of instruments with longer terms to maturity and the holdings of sovereign bonds from countries facing higher haircuts on their government debt due to their macro-financial situation.

Lastly, of note among the scenarios' main channels of impact is the increase in net interest income. This increase represents a positive channel of impact under the adverse scenario, given the higher interest rates assumed. For operations in Spain, median net interest income is estimated to be 0.65 pp higher in the adverse scenario than in the baseline scenario (see Chart 8), a slightly smaller increase than in the 2022 stress test, as the difference in interest rates between the baseline and the adverse scenario is not as marked. In this case, the cross-bank heterogeneity depends on where banks get their funds and assets from and on the return on and profitability of such funds and assets.

### Additional sensitivity analyses

The FLESB methodology allows additional sensitivity analyses to be carried out by adjusting certain parameters. In line with the other exercises conducted since 2020, this exercise estimates the effect on bank solvency of the ICO public guarantee scheme that was launched in response to the COVID-19 pandemic to mitigate its economic impact on the corporate sector. Given the uncertainty about the credit quality of the guaranteed loans and their performance, this effect is estimated considering a range of assumptions.[13] Under an intermediate assumption, the public guarantee scheme would increase the CET1 ratio by 1.2 pp in the baseline scenario and 2.1 pp in the adverse scenario (see Chart 9). This measure is beneficial for the solvency of Spanish institutions, but it should be noted that the scheme will have a higher fiscal cost the more impairment losses it is able to absorb.

Additionally, given the higher interest rate environment, the sensitivity analysis has been updated to estimate potential losses of value of the sovereign bond portfolio, under the assumption that institutions had classified all their government debt holdings (in Spain and abroad) at amortised cost before the interest rate rises had taken place in the scenario (see Chart 10). In this hypothetical case, the CET1 ratio would be 0.16 pp and 1.15 pp higher in the baseline and adverse scenarios, respectively, than in the main exercise, which considers the actual share of debt at amortised cost in banks' portfolios at end-2022.

With this strategy, banks would limit short-term losses of value from interest rate hikes. However, this would also mean holding relatively low-yield instruments on their balance sheet for longer, an additional effect that has not been examined. The improvement in the CET1 ratio obtained is lower than in last year's exercise, as institutions have in fact gradually increase their amortised cost portfolio as a percentage of the total.

At the opposite extreme, if the banks were to classify all their sovereign bond holdings at fair value, the decline in value of public debt holdings would lead to the CET1 ratio being 1.71 pp and 5.54 pp lower, under the baseline and adverse scenario, respectively, than in the main exercise. It should be borne in mind that even under a liquidity stress

12 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 on the understanding 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.

13 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 previous section's findings are based on the impact of the ICO guarantees at the midpoint of this range.

Chart 8
Distribution among banks of the impact (relative to 2022 RWAs) of the adverse scenario on impairment provisions, sovereign losses and net interest income (a). SIs

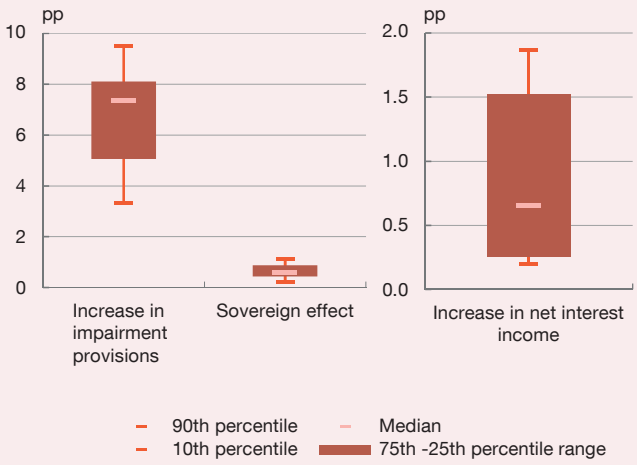



Chart 9
Effect of the ICO guarantee scheme (b) (c)

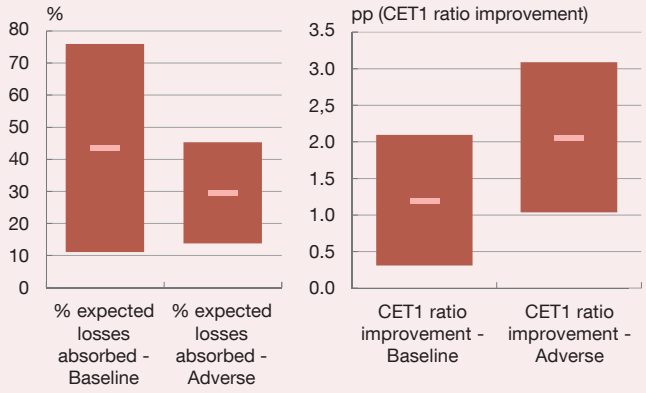
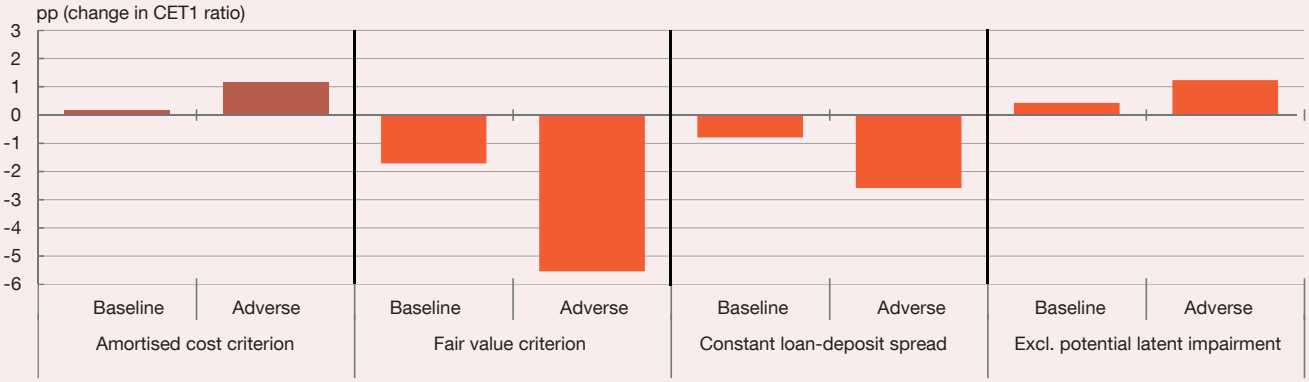



Chart 10
Sensitivities to other modelling assumptions (d)




**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 higher net interest income in operations in Spain, in losses due to higher provisions in operations in Spain and in the effect of sovereign exposures in consolidated operations. These measures are cumulative over the horizon 2023-2025 relative to 2022 RWAs for the baseline and adverse scenarios, and the institutions considered are SIs. The boxes 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 line denotes the mid-range effect.

**d** Shown are the differences in the average CET1 capital ratios of SIs and LSIs projected for 2025 in the sensitivity exercises compared with those projected 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 exclusion from the exercise of the effect of the potential latent impairment built up during the period 2020-2022 in the corporate credit portfolio as a result of the extraordinary crisis over this period.

scenario it is highly unlikely that banks would realise all the unrealised losses, due to hedging and to the possibility of using reserve holdings of liquid assets with no unrealised losses and of receiving central bank funding.[14] The sensitivity figure is high and represents some vulnerability, but it is considerably mitigated by Spanish banks' sound liquidity position.[15]

Another sensitivity analysis conducted consisted of estimating the effect of banks keeping the interest rate spread constant, in contrast to the estimation in the main exercise, in which the spread widened in a context of interest rates hikes, based on past experience. Thus, the CET1 ratio would decrease by 0.8 pp and 2.6 pp under the baseline and adverse scenarios, respectively. Therefore, widening net interest margins are an important mitigating factor under adverse scenarios that include a rise in interest rates.

The exercise considers a smaller impact – in terms of higher probabilities of default (PDs) – than in previous FLESBs[16] of the materialisation of latent corporate loan impairment (stemming from the COVID-19 crisis). Eliminating this effect would be equivalent to a complete lack of latent impairment. This assumption would improve the CET1 ratio by 0.42 pp and 1.23 pp, under the baseline and adverse scenario, respectively, compared with the results of the main exercise.

### Results of the liquidity exercise

As part of the FLESB, each bank's liquidity position is analysed using the LCR. To conduct this analysis, the baseline scenario considers the regulatory LCR set by the Basel Committee on Banking Supervision and the EBA, while the adverse scenario is calibrated by the Banco de España on the basis of outflows of funds observed in recent liquidity crises. Chart 11 shows the main coefficients determined by the defined scenarios.

The LCR measures whether unencumbered high-quality liquid assets (HQLAs)[17] are sufficient to cover net funding needs in the event of a cash-flow strain lasting the next 30 calendar days.

In this exercise, the reference date used as a starting point is June 2023, in order to capture the possible effects stemming from the financial turbulence in early 2023. The analysis time horizon, in keeping with the definition of the LCR, is the 30 days following that date. The starting coefficients for the aforementioned baseline and adverse scenarios are applied to this analysis time horizon.

Charts 12 and 13 show the results obtained from this analysis and indicate that Spanish banks' liquidity position was fairly sound, since all the banking groups exceed the minimum LCR requirements set for 2023 (100%) under both scenarios. Particularly notable is the liquidity position of the less significant institutions, which even under the adverse scenario have a ratio of 228%.

### Conclusion

The FLESB highlights that Spanish banks' overall solvency levels would remain satisfactory under a markedly adverse scenario. Capital would be significantly depleted, but the set of banks analysed exhibit considerable resilience, due to their initial capital levels, their ability to generate profits and their pre-existing provisions. The short-term liquidity position, measured by an LCR to which further stress is applied, also proves to be sound in these exercises.

The loss on banks' sovereign portfolio is lower than last year, because a considerable valuation adjustment already took place in 2022 in response to interest rate hikes and since banks have also reduced the percentage of their exposure in the fair value portfolio. Meanwhile, although interest rate hikes will, with a high degree of certainty, have a positive impact on net interest income, they would also have negative impacts on other balance sheet and income statement items, such as the balance of non-performing loans and impairment charges.

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14 In the EBA's ad-hoc analysis of unrealised losses on EU banks' bond holdings, hedges reduce losses by 23% under the adverse scenario. However, this is the European average, rather than being specific to Spanish banks.

15 The main body of Chapter 2 of this report details developments in Spanish banks' LCR and NSFR.

16 Unlike in the exercises performed between 2020 and 2022, the additional shocks to credit risk in the 2023 FLESB, based on impairment that did not arise in 2020 thanks to economic policy measures, are reduced on two counts. First, the possibility of some of these risks having already materialised is considered. They are therefore reduced because of PD forecasting errors in 2021 and 2022 (forecast below the actual figure), which would be indicative of the impairment having already partially materialised. Second, they are revised down on the basis of the pace of repayment of ICO-backed loans, which is indicative of the deleveraging of the extraordinary debt taken on to meet extraordinary liquidity needs in 2020.

17 The LCR is the percentage resulting from dividing the bank's HQLAs by net liquidity outflows (difference between expected liquidity inflows and outflows).

However, despite the results of the exercise, some caveats must be added, such as heterogeneity in the individual bank's results around group aggregates. Banks and macroprudential and microprudential supervision must continue to assess the challenges and uncertainty facing the sector and remain vigilant to respond swiftly should potential risks materialise.

Chart 11
Percentage of outflows of funds by type of deposit and by scenario (a)

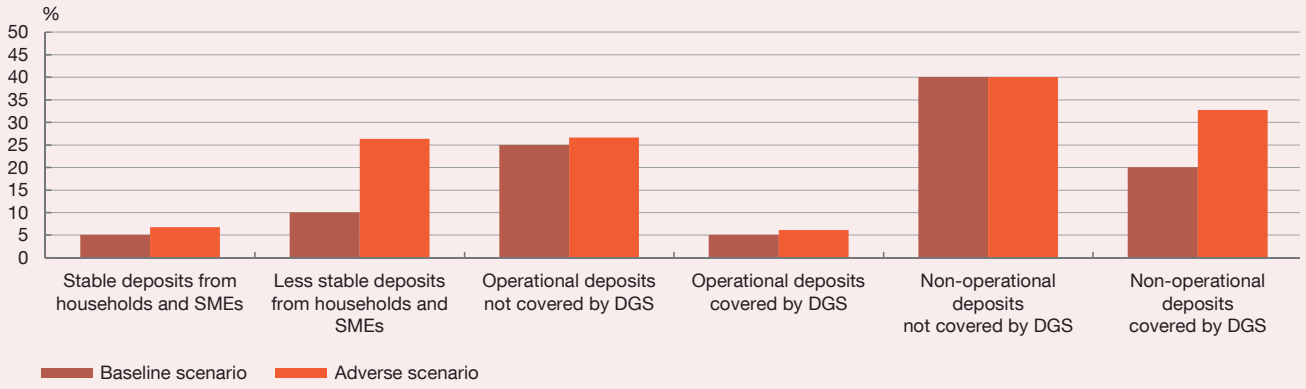



Chart 12
Impact on LCR. Institutions under SSM supervision

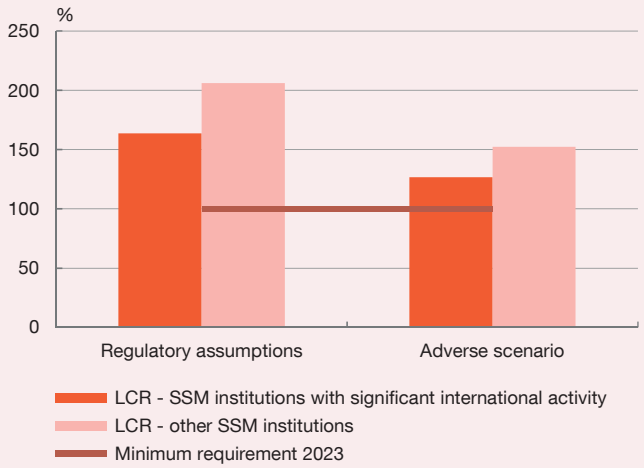
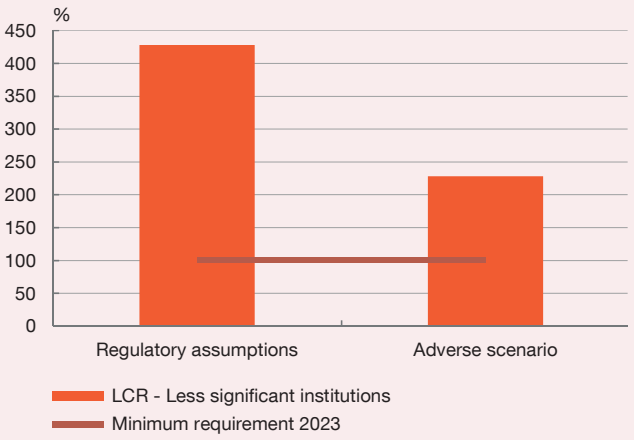



Chart 13
Impact on LCR. Less significant institutions




**SOURCE:** Banco de España.

**a** Certain activities require customers to make or mantain deposits in a bank to improve their ability to access and use the payment and settlement systems o make payments by other means; these deposits are considered operational. Both operational and non-operational deposits are held by the corporate sector.

# 3

## SYSTEMIC RISK AND PRUDENTIAL POLICY

Contemporaneous indicators of systemic financial stress have fallen significantly since the turmoil in the banking sector in March, which had more impact in the United States than in the euro area. Meanwhile in Spain the volume of bank lending has continued to decline, as funding costs have risen following the interest rate hikes made by the European Central Bank (ECB). This, together with high nominal growth, has helped to keep the Spanish credit-to-GDP gap, which is now in negative territory, on its downward path. The other complementary indicators used to calibrate the countercyclical capital buffer (CCyB) have also behaved moderately. These developments are consistent with the absence of signs of cyclical imbalances in the Spanish economy. Accordingly, it has been considered advisable to hold the CCyB rate at 0%.

In the real estate sector, the decline in loans for house purchase has gathered pace and the narrowing of interest rate spreads on new loans has begun to reverse. These factors, together with a slight tightening of credit standards, have helped to reduce the real estate market alert identified in previous FSRs. Nevertheless, the fact that house prices rose somewhat in Q2 – growing at a slightly faster pace than the Consumer Price Index (CPI) in year-on-year terms – means that continued sector monitoring is required.

Notable among the latest European regulatory and supervisory developments are the incorporation of the Basel III framework into European legislation, which is now complete, and the legislative proposals on bank crisis management and deposit insurance and the development of the digital euro. In the United States, in the wake of the banking sector turmoil in March, a significant prudential banking review is under way. Also, the Basel Committee has published a report on the implications for banking regulation and supervision of the turmoil experienced in the spring.

## 3.1 Analysis of risk indicators and systemic vulnerabilities

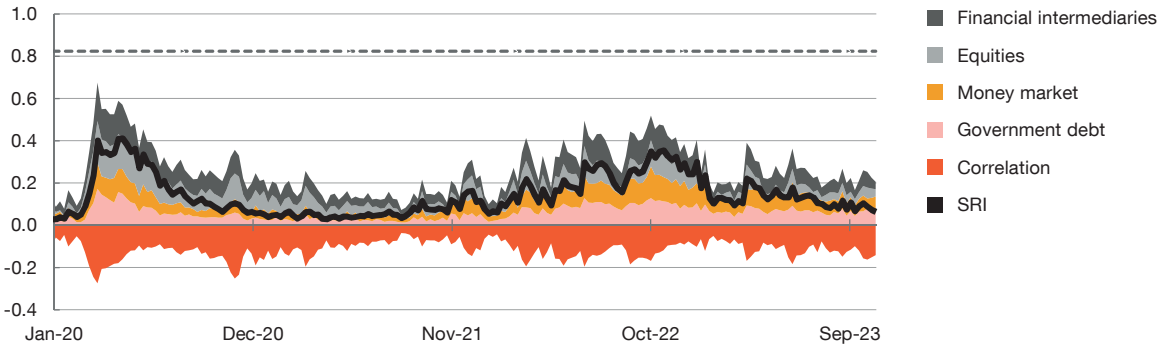
**Following the global banking sector turmoil in March 2023, systemic stress in the financial markets has declined significantly.** The Banco de España's systemic risk indicator (SRI), which draws on Spanish financial market information,[1] has fallen sharply since the spring and currently stands at levels similar to those seen before

1 This indicator comprises information on the four most representative segments of Spain's financial markets (the money, government debt and equity markets and financial intermediaries) 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 Financial Stability Report 5/2013.

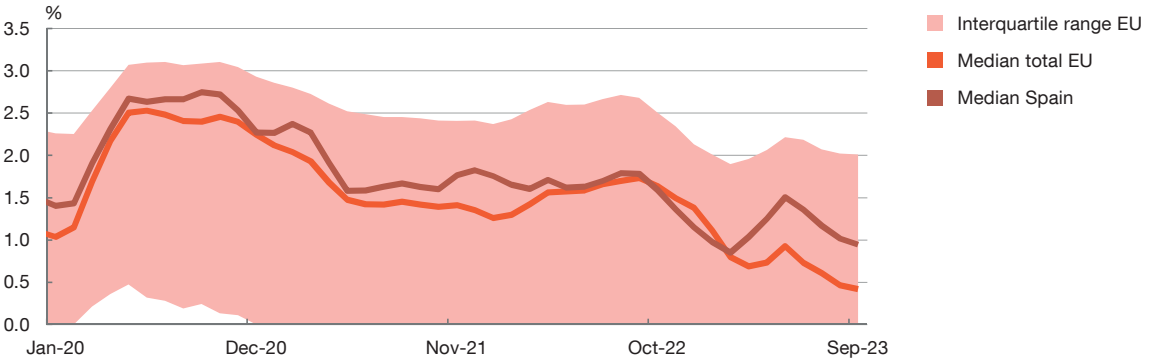
Chart 3.1

**Financial market stress has declined since March 2023**

3.1.a Systemic risk indicator (a)




3.1.b SRISK systemic risk indicator distribution (b)




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

**a** The systemic risk indicator (SRI) aggregates 12 individual stress indicators (including volatilities, interest rate spreads and maximum historical losses) from four segments of the Spanish financial system. The effect of cross-correlations is taken into account to calculate the SRI, such that it registers higher values when the correlation between the four markets is high and lower values when the correlation is low or negative. 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 18 October 2023.

**b** The SRISK indicator is expressed as a percentage of each bank's total assets. 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; for more details see Carmen Broto, Luis Fernández Lafuerza and Mariya Melnychuk. (2022). "Do buffer requirements for European systemically important banks make them less systemic?". Documentos de Trabajo - Banco de España, 2243. The SRISK indicator for the months of 2023 Q3 is calculated based on 2023 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 75th and 25th percentiles of the SRISK distribution for EU banks. Data updated as at 30 September 2023.

the start of the war in Ukraine (see Chart 3.1.a). All four financial segments captured by the SRI show lower stress levels. The systemic risk indicator (SRISK) has also declined,[2] after moving significantly higher in March (more so for Spanish banks than in the EU overall), and now stands below its end-2019 pre-pandemic levels (see Chart 3.1.b).

2 Christian Brownlees and Robert F. Engle. (2017). "SRISK: A Conditional Capital Shortfall Measure of Systemic Risk". *The Review of Financial Studies,* Vol. 30, 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 is, therefore, a systemic risk metric, since the high cost of making up a capital shortfall for the banking sector could distort financial intermediation.

**Liquidity risk in the banking sector has risen worldwide.** Although the general systemic risk indicators suggest no alert, the present environment of tightening financial conditions entails greater liquidity risk. Indeed, the financial system shocks observed in recent quarters revealed stress in both market liquidity and funding liquidity.[3] For instance, the sovereign bond market stress in the United Kingdom in late 2022 exemplified market liquidity risk, while the runs on deposits at a number of US regional banks in March 2023[4] exemplified funding liquidity risk.

**Spanish banks also face higher funding liquidity risk, in line with the European financial system overall.** The Banco de España has developed a composite indicator to monitor this liquidity metric, covering three key dimensions: margin risk, redemption risk and rollover risk.[5] The last two are currently the most important ones, as they are more directly impacted by the effect of the interest rate hikes. Indeed, they are the main drivers of the recent deterioration in this indicator (see Chart 3.2).

**The Spanish credit-to-GDP gap has moved into negative territory and remains on a downward path.** This is on account of the growth in nominal GDP and the decline in lending. The credit-to-GDP gap thus continues to move further below the 2 percentage point (pp) reference threshold that signals the possible existence of credit cycle imbalances (see Chart 3.3). The output gap, which measures the difference between the actual level of economic activity and its potential growth, has been relatively steady in the recent periods, although it has moved closer to positive values. The worsening of global financial conditions is already having an adverse impact on economic growth in many European countries. Ultimately this will foreseeably also affect the Spanish economy, keeping the credit-to-GDP gap on its downward path and the output gap potentially around zero.

**Nor do the indicators for monitoring sectoral credit cycles show signs of imbalance.**[6] However, since the start of the monetary policy rate hiking cycle, both the volume and the intensity of households' consumer credit have risen slightly, although they remain below pre-pandemic levels.

**The indicators of imbalances in house prices remain moderate and close to their equilibrium value, despite a slightly upward trend (see Chart 3.4).** Despite

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3 Liquidity can be defined in terms of "funding liquidity", related to banks' ability to obtain market funding, and "market liquidity", which is the ease with which financial assets can be sold on the markets with no significant impact on their price.

4 Some of these funds were captured by larger banks and by money market funds, so they remained in the financial system.

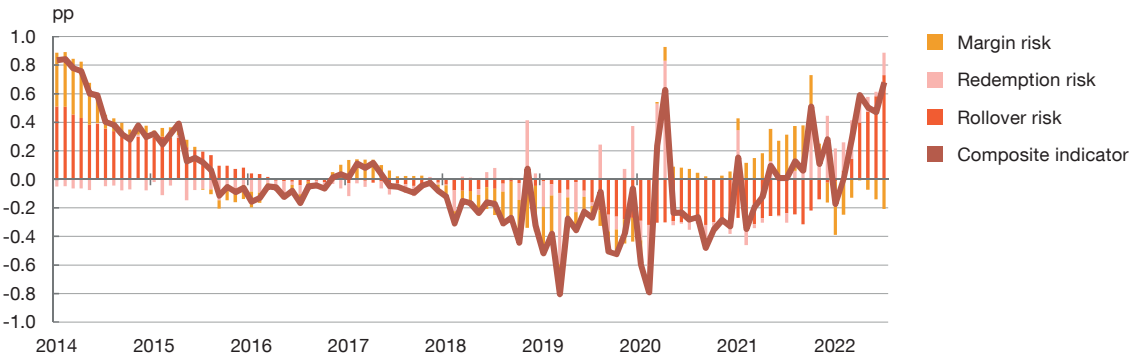
5 Margin risk is the risk of a change in value of the collateral provided and, therefore, in the haircut or margin; redemption risk is the risk of depositors withdrawing their funds; and rollover risk is the risk of maturing short-term funding being replaced or rolled over at a higher cost.

6 For a detailed description of the indicators used to monitor sectoral credit cycles, see Carmen Broto, Esther Cáceres and Mariya Melnychuk. (2022). "Sectoral indicators for applying the Banco de España's new macroprudential tools". *Financial Stability Review,* 42. Also, Box 3.1 of the Spring 2022 *Financial Stability Report.*

Chart 3.2

**The interest rate rises are putting pressure on banks' funding liquidity risk**

3.2.a Composite indicator of funding liquidity (a)



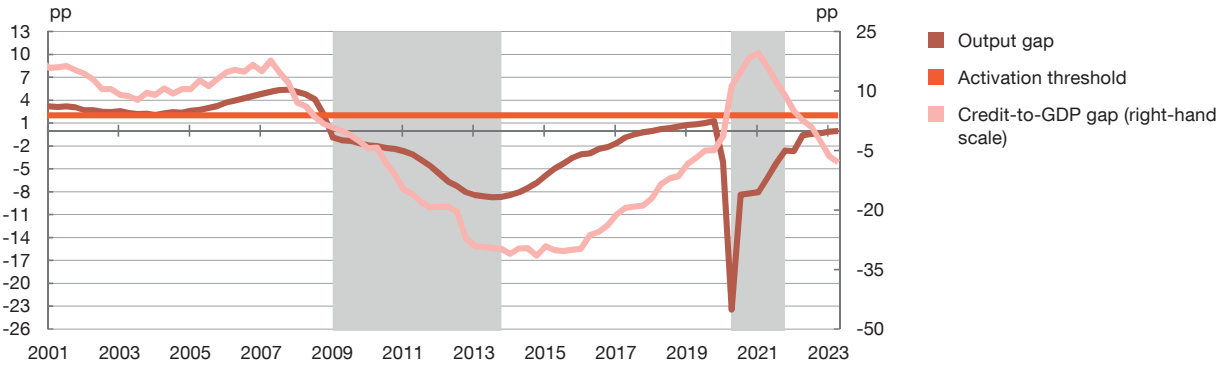

**SOURCE:** Banco de España.

**a** The funding liquidity indicator draws on thirteen indicators grouped into three dimensions: (i) margin risk (encumbered assets ratio, re-use of collateral); (ii) redemption risk (monthly change in deposit rates for households and firms); and (iii) rollover risk (level of deposit rates for households and firms, percentage of market funding, EURIBOR-OIS spread). The composite index measures the number of standard deviations from the mean of the indicators that make up each of the three dimensions (all the dimensions have the same weight). Higher composite indicator levels denote lower liquidity. The chart also shows the contribution that each dimension makes to the composite indicator. Data available up to June 2023.

Chart 3.3

**The credit-to-GDP gap continues on its downward path, while the output gap remains steady**

3.3.a Credit-to-GDP gap and output gap (a)



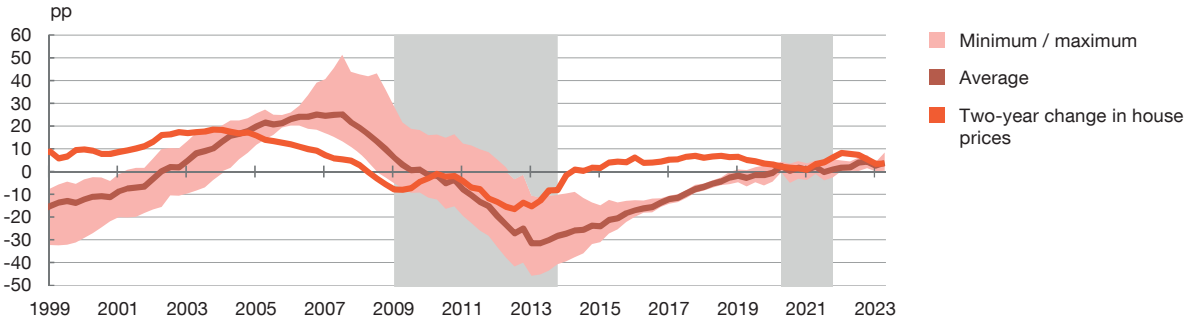

**SOURCES:** Banco de España and INE.

**a** The output gap represents the percentage difference between observed GDP and its quarterly potential level. Values calculated at constant 2010 prices. See Pilar Cuadrado and Enrique Moral-Benito. (2016). "Potential growth of the Spanish economy", Documentos Ocasionales, 1603, Banco de España. The credit-to-GDP gap is calculated as the percentage point difference between the observed ratio and its long-term trend calculated by applying a one-sided Hodrick-Prescott filter with a smoothing parameter of 25,000. This parameter is calibrated to the financial cycles historically observed in Spain. See Jorge E. Galán. (2019). "Measuring credit-to-GDP gaps. The Hodrick-Prescott filter revisited", Documentos Ocasionales, 1906, Banco de España. Data available up to June 2023. The grey shaded areas show two financial crisis periods identified in Spain since 2009: the systemic banking crisis (2009 Q1 to 2013 Q4) and the crisis triggered by the COVID-19 pandemic (2020 Q1 to 2021 Q4). The orange horizontal line denotes the reference threshold for activation of the CCyB, equal to 2 pp for the credit-to-GDP gap.

slowing sharply compared with 2022, house price growth headed up again in 2023 Q2, outpacing the CPI in year-on-year terms. House price developments will, therefore, have to be closely monitored, until there is more evidence of the degree of persistence of this upturn. In this respect, activity indicators are experiencing a

Chart 3.4
**The indicators of house price imbalances remain close to a neutral value**

3.4.a Indicators of house price imbalances (a)




SOURCES: Banco de España and INE.

a The pink shaded area denotes the minimum and maximum values of four indicators of house price imbalances: (i) the real house price gap; (ii) the house price-to-household disposable income ratio gap; (iii) the ordinary least squares (OLS) model that estimates house prices based on long-term trends in household disposable income and mortgage rates; and (iv) the error correction model that estimates house prices based on household disposable income, mortgage rates and fiscal effects. The long-term trends for indicators (i) to (iii) are calculated using a statistical one-sided Hodrick-Prescott filter with a smoothing parameter equal to 400,000. All four indicators have an equilibrium value of zero. The vertical grey shaded areas denote two periods of financial crisis in Spain since 2009: the last systemic banking crisis (2009 Q1 to 2013 Q4) and the crisis triggered by the COVID-19 pandemic (2020 Q1 to 2021 Q4). Data updated as at June 2023.

significant loss of momentum. Specifically, as shown in Chapter 1, house purchases and new mortgage loans are down sharply on last year.

**The supply of new lending to firms and households has shrunk in recent quarters and there are also signs of greater demand weakness.** The data obtained from the bank lending survey (BLS) and the econometric models developed by the Banco de España to decompose credit growth into supply and demand factors point to a significant contraction in the supply of credit to households and non-financial corporations (NFCs) in 2023 (see Box 3.1). According to the BLS, this is primarily on account of tighter credit standards and conditions as a result of banks' increased risk perception, higher funding costs and balance sheet constraints.[7] Moreover, demand for new lending has also weakened in 2023, especially among households, whose contribution to credit growth is now estimated to be negative.

**There are signs of lower leverage among households and firms in 2023 H1.** The average loan-to-value (LTV) ratio on new mortgages arranged with households has fallen, as has the share of new mortgage loans with an LTV ratio over 80% (i.e. those that pose greater credit risk) (see Chart 3.5.a). The role of mortgage lending in house purchases has also declined: 43.3% of all house purchases were made with a mortgage in June 2023, compared with almost 50% a year earlier. In the case of firms, since 2021 the net credit flow has been most concentrated on those with a

7 See Banco de España Nota de Prensa Estadística (available only in Spanish) of 24 October 2023, and ECB press release also of 24 October 2023.

lower level of leverage at the start of the rate hiking cycle. Specifically, the debt-to-asset (DTA) ratios of NFCs that held bank credit in 2021 (the most recent date for which this information is available)[8] are taken. These DTA values are then averaged by the bank credit held by each firm in 2021, 2022 and 2023, which enables assessment of the extent to which credit shifted to firms with higher or lower DTA levels before the start of the present rate hiking cycle. The results point to a gradual decline in the average DTA ratio (see Chart 3.5.a). The decrease is also patent if the proportion of firms receiving credit with a DTA ratio over the 75th percentile in the period 2000-2023 is considered.

**Signs are also emerging of a reversal of the squeeze on interest rate spreads on loans to households and firms observed since the start of the monetary policy tightening cycle (see Chart 3.5.b).** Indeed, interest rate spreads on loans to firms actually widened in 2023 Q1, whereas so far the narrowing in mortgage spreads has simply steadied. However, a more granular analysis suggests that interest rate spreads on fixed-rate mortgages are now widening. All these signs are consistent with a more forceful transmission of monetary policy tightening to interest rates on lending.

**The indebtedness of households with new mortgages has eased slightly.** The Banco de España has developed new loan-to-income (LTI) indicators that measure the ratio of the principal of new mortgages in its Central Credit Register (CCR) to borrowers' income at the time the loan is granted. As the CCR still lacks solid granular data on household income, average household income in the same postcode area is used as a proxy.[9] The results show that the average LTI ratio estimated using this method has been steady since 2021 (see Chart 3.6.a). Also, the estimated percentage of new mortgage lending granted in the highest LTI brackets (LTI>5) has fallen slightly, from 32% in December 2021 to 28.6% in June 2023.

**The cost of servicing new mortgage debt is increasing on account of the interest rate rises, although for most households it remains moderate.** The loan service-to-income (LSTI) ratio, which measures the relationship between the cost of servicing new mortgage debt and borrowers' income at the time the loan is granted, is estimated using a similar procedure to that described above for calculating the LTI ratio. The available estimates, based on the CCR's credit information and the data on average income by postcode, show that the LSTI ratio is rising (see Chart 3.6.b). This increase, seen in both 2022 and 2023 H1, largely reflects the effect of the interest rate rises on the affordability of mortgage debt. Nevertheless, the estimates

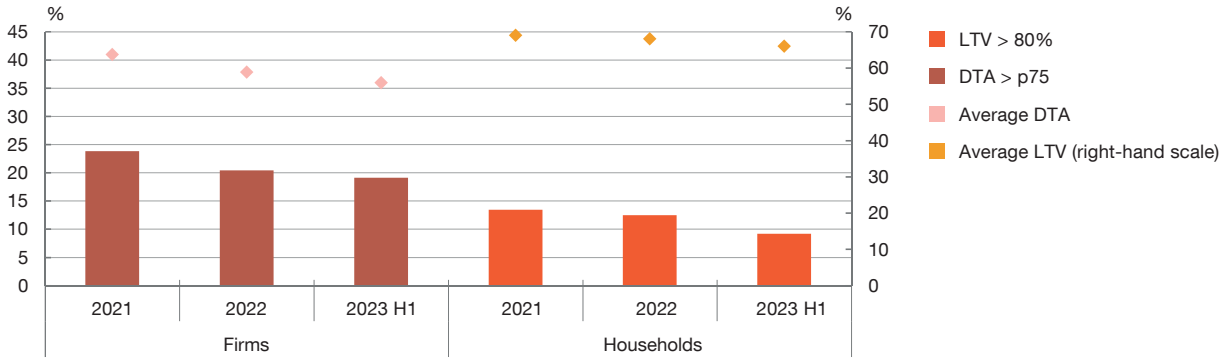
8 Data on firms' assets (the denominator of the DTA ratio) are taken from the Central Balance Sheet Data Office which still lacks comprehensive data for 2022 and thereafter.

9 Given the proxy used, increases in the LTI ratio should be interpreted as a higher level of debt vis-à-vis the average income in the geographical area of the borrowers. Accordingly, the real LTI ratio may deviate somewhat from this value, as the income of new mortgagors may differ from the average values by postcode.

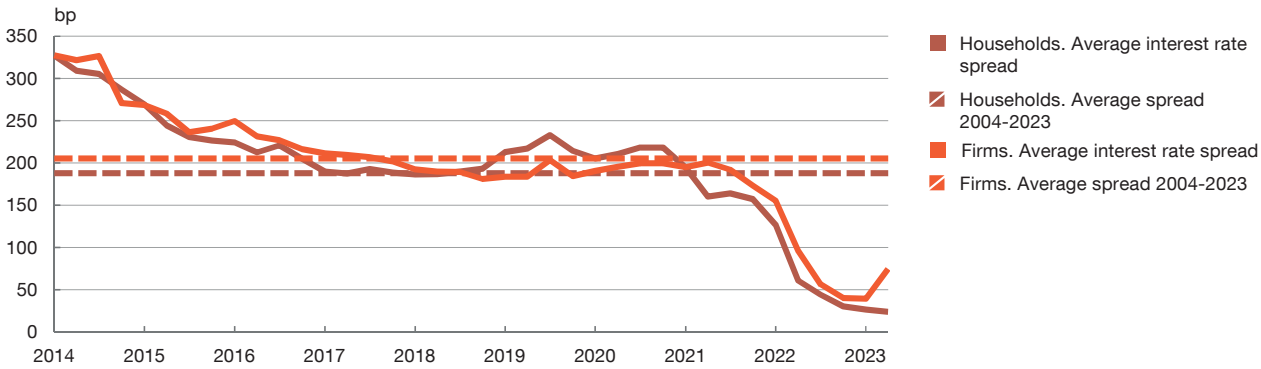
Chart 3.5

**There are signs of lower leverage among households and firms, and of an easing of the squeeze on interest rate spreads**

3.5.a Leverage in lending to households and NFCs (a)




3.5.b Interest rate spreads on new loans (b)




**SOURCES:** Banco de España and Colegio de Registradores.

**a** The LTV ratio is the amount of the mortgage principal relative to the appraisal value of the property. The average values in the LTV are weighted by the capital of each mortgage and calculated for new mortgages. The DTA ratio is the amount of a firm's bank debt relative to its total assets. For 2021, debt refers to the total bank debt of the firms with new loans in that year, and total assets refer to the value at end-2020. For 2022 and 2023, the DTA value for each firm is the 2021 value. The average value and proportion of the DTA over the 75th percentile (p75, calculated for the period 2000-2023) are weighted by the total bank debt of each firm in the year indicated. Data up to 2023 Q2.

**b** Average spread, weighted by the loan capital, of the interest rate of new mortgages in each quarter over the euro IRS swap 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. For firms, the spread is calculated based on loans in six maturity intervals (floating and initial rate fixation period of up to 3 months, between 3 months and 1 year, between 1 and 3 years, between 3 and 5 years, between 5 and 10 years, and over 10 years). Each interval is compared with the midterm IRS rate (1 year for floating rate and a fixation period of under 1 year, and 20 years for fixation periods of over 10 years). Data up to 2023 Q2.

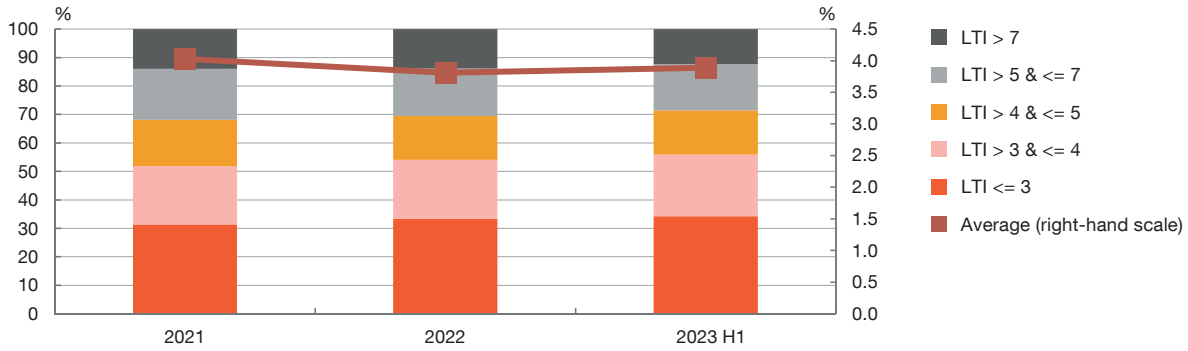
indicate that, for 74.3% of new mortgage volume, the LSTI ratio is still below 30%, which is deemed a prudent level.

**In view of these macro-financial indicators and the still high uncertainty, the Banco de España has decided to hold the CCyB rate at the minimum level of 0%.** The war in Ukraine and the fresh conflict in the Middle East continue to pose significant risks for economic activity and inflation in the coming quarters. In addition, the monetary policy tightening, which has still not been fully passed through to the different agents, will foreseeably have to last for longer, to correct in full the excess of persistent inflation, with the resulting negative impact for borrowers' real income

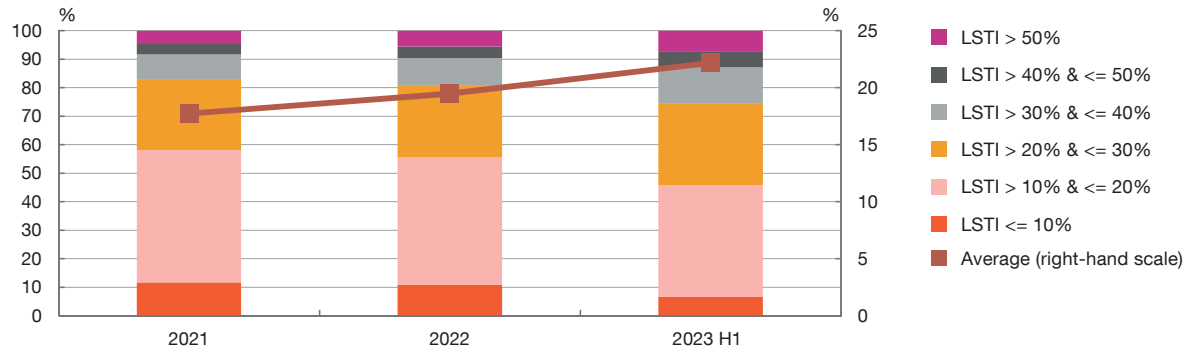
Chart 3.6

**The indebtedness of households with new mortgages has eased slightly, but the cost of servicing new mortgage debt has increased**

3.6.a LTI ratio of new mortgages (a) (c)




3.6.b LSTI ratio of new mortgages (b) (c)




**SOURCE:** Banco de España.

**a** The LTI ratio for each new mortgage is estimated as the ratio of the initial mortgage amount to average annual gross household income in the postcode area where the main (eldest) mortgagor resides.
**b** The LSTI ratio for each new mortgage is estimated as the ratio of the mortgage instalments over the next 12 months to average annual gross household income in the postcode area where the main (eldest) mortgagor resides.
**c** The average value of the LTI and LSTI ratios (right-hand axis) are calculated, respectively, as the weighted average of the value of the ratios in each mortgage divided by their relative weight in the total mortgage portfolio for which the information needed to calculate the ratio is available.

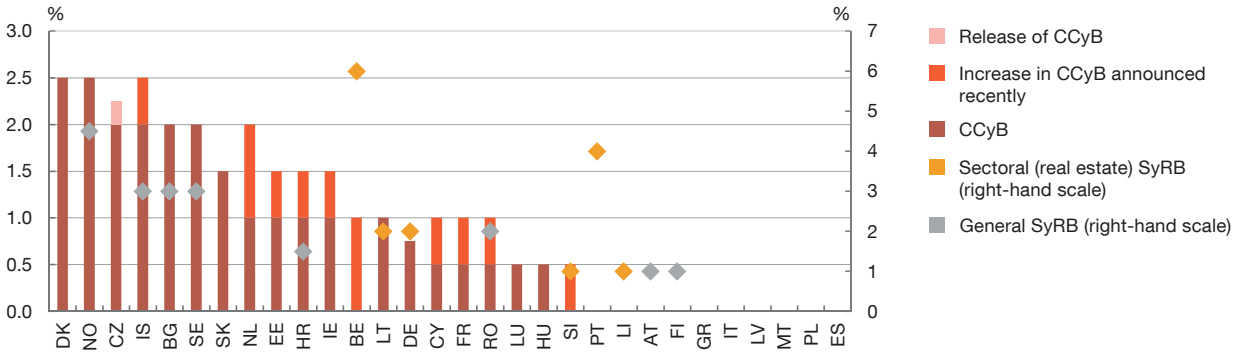
and financing conditions. In this setting, holding the CCyB rate at 0% is considered the correct macroprudential response.

**Despite the macro-financial uncertainty and the incipient signs of a credit contraction in the euro area overall, a number of European countries have decided to raise their CCyB rates.** Belgium has announced that it will activate its CCyB rate at 1%, while other countries have continued to raise their CCyB rates (see Chart 3.7). Indeed, since the last FSR was published, six EU/European Economic Area (EEA) national authorities have announced decisions to raise their CCyB rates and expect these increases to come into force shortly. By contrast, the Czech Republic has released part of its CCyB – reducing its buffer rate by 25 basis points – as cyclical risks

Chart 3.7

**A growing number of European countries are raising their macroprudential capital buffers**

3.7.a Macroprudential capital buffers in European countries (a)




**SOURCE:** ESRB.

**a** The chart includes the latest CCyB rates announced by European countries (EU/EEA). The recently announced increases correspond to: (i) the announcements made by six countries (the Netherlands, Croatia, Ireland, Cyprus, Belgium and Slovenia) since the Spring 2023 FSR was published on 19 April 2023, and (ii) the earlier announcements made by four countries (Iceland, Estonia, France and Romania) still pending entry into force (CCyB rate increases are applicable 12 months after being announced). It also shows the general and real estate sector-specific SyRB rates of the countries that have activated them. The values of the general SyRB rates of Austria and Romania refer to the maximum of the ranges established (0.25 to 1 and 0 to 2, respectively). Data at September 2023.

Table 3.1

**Spanish systemically important institutions and their capital buffers**

| Legal Entity Identifier (LEI) | Institution | Designation (a) | Capital buffer rate in 2023 (%) | Capital buffer rate in 2024 (%) |
|---|---|---|---|---|
| 5493006QMFDDMYWIAM13 | Banco Santander, SA | G-SII and O-SII | 1.00 | 1.25 |
| K8MS7FD7N5Z2WQ51AZ71 | Banco Bilbao Vizcaya Argentaria, SA | O-SII | 0.75 | 1.00 |
| 7CUNS533WID6K7DGFI87 | CaixaBank, SA | O-SII | 0.50 | 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.

have eased. Meanwhile, systemic risk buffers (SyRBs) have been activated in some countries, including most recently in Finland and Portugal. In many cases, the sectoral SyRB is being used to address real estate market vulnerabilities.[10]

**In September 2023 the Banco de España announced that it was raising the minimum capital buffers required in 2024 for two of the four banks designated as other systemically important institutions (O-SIIs)** (see Table 3.1). Box 3.2

10 Noteworthy is the case of Belgium, which has reduced its sectoral SyRB on retail exposures secured by residential real estate from 9% to 6% as a result of the improvement in LTV ratios and the decline in housing overvaluation.

describes in detail the Spanish regulatory framework for setting O-SII buffers, how it has been adapted to the new ECB framework and the implications for systemic risk in the Spanish banking sector.

## 3.2 Regulatory and supervisory developments relevant to financial stability

### 3.2.1 European and domestic arena

**The European Parliament and the Council reached a provisional agreement in June to incorporate the Basel III reforms that were still pending into European law,**[11] **and to implement other measures to strengthen the European prudential framework and ensure that the banking sector can adequately withstand new challenges.**[12] This agreement includes amendments to the Capital Requirements Directive (CRD) and the Capital Requirements Regulation (CRR). The reforms will boost the resilience of EU banks and will also contribute to the green transition. The reforms aim, among other things, to ensure that banks using internal models to calculate their capital requirements measure risks in a more consistent way. Among other things, the reforms establish:

(i) technical improvements in the measurement of credit, market and operational risk;

(ii) greater proportionality when applying the rules;

(iii) changes to improve banks' management of environmental, social and governance (ESG) risks;

(iv) harmonisation of the minimum requirements applicable to branches of third-country banks and to the supervision of their activities in the EU.

This package of regulatory changes, known as "CRR III/CRD VI", will be phased in from 2025, subject, as regards the Directive (CRD VI), to its transposition into the national law of the EU Member States.

11 Council of the EU press release "Banking sector: Provisional agreement reached on the implementation of Basel III reforms", 27 June 2023.

12 On December 2022 data, the European Banking Authority (EBA) estimates that the impact of implementing the Basel III agreement in Europe – applying the discretion of not taking historical losses into account when calculating the minimum requirements for operational risk – would be an average increase of 12.6% in Tier 1 minimum required capital across European banks. Also, implementation of the Basel III framework taking into account the most significant shortfalls in European banks, in addition to the aforementioned discretion, would have a lower impact of 9% (see EBA Report on Basel III Monitoring (data as of 31 December 2022) and Annex – analysis of EU specific adjustments).

Figure 3.1
**Regulatory developments relevant to financial stability**


**The European Commission published in the spring a proposal to review and strengthen the existing bank crisis management and deposit insurance framework.** This Crisis Management and Deposit Insurance (CMDI)[13] proposal aims to ensure that medium-sized banks that are resolved through the total or partial sale of their business have sufficient funds to undertake such resolutions. Accordingly, the proposed amendments allow for deposit guarantee schemes, which are funded entirely by banks, to be used in such resolution proceedings. Specifically, they establish that, in the event of insolvency, losses be absorbed by all deposits, whether or not they are covered by these schemes. Moreover, the proposal also broadens the scope of bank resolution to the detriment of liquidation.

13 European Commission press release "Commission proposes reform of bank crisis management and deposit insurance framework", 18 April 2023.

**The EU continues to work towards a climate-neutral economy, as envisaged by the "Fit for 55" package of proposals.**[14] In July,[15] EU co-legislators adopted the recast Energy Efficiency Directive[16] which addresses, along with other proposals, the energy aspects of the EU's green transition. In addition, the launched a public consultation on draft templates for preparing a climate risk scenario analysis.[17] These templates will be used to collect climate risk-related data from EU banks, to inform the one-off "Fit for 55" scenario analysis to be conducted by the EBA, the European Insurance and Occupational Pensions Authority (EIOPA) and the European Securities and Markets Authority (ESMA), with the support of the ECB and the European Systemic Risk Board (ESRB). This analysis seeks to assess the resilience of the financial system using a micro (bottom-up) and macroprudential (top-down) approach.[18] The climate scenarios (one baseline and two adverse[19]) have been calibrated by the ESRB and the exercise will be conducted throughout 2024.

**Meanwhile, a public consultation[20] was launched in Spain on the draft royal decree regulating the content of disclosures on the financial impact of climate risks on financial institutions, listed companies and other large corporations.** Article 32 of Law 7/2021 of 21 May 2021 on climate change and the energy transition (LCCTE) includes a series of disclosure requirements for firms, for the purpose of collecting data on their exposure to climate risk and their carbon emissions, and on the mitigation strategies and targets they have adopted. The LCCTE, which includes financial institutions within its scope (including credit institutions supervised by the Banco de España and the ECB), aims to safeguard the proportionality and regulate the content of the information to be provided. The draft royal decree defines the content of the disclosures required under the LCCTE, which cover aspects relating to corporate governance, the strategic approach for climate risk management, the estimated impact of physical and transition risks and the climate risk methodologies (metrics and scenarios) and management and control processes. Box 3.3 describes

14 "Fit for 55" refers to the target of reducing net greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels.

15 Press release "European Green Deal: Energy Efficiency Directive adopted, helping make the EU 'Fit for 55'", 25 July 2023.

16 Directive of the European Parliament and of the Council on energy efficiency and amending Regulation (EU) 2023/955. The recast directive is available here.

17 EBA press release "The EBA consults on draft templates and template guidance to prepare its one-off Fit-for-55 climate risk scenario analysis", 20 July 2023.

18 In Spain, AMCESFI's first *Biennial Report on Climate Change Risks to the Financial System* published in September 2023, presents the results of the different top-down analyses conducted by the Spanish authorities to measure the resilience of different financial segments to the materialisation of various physical and transition risk scenarios.

19 The baseline scenario assumes implementation of the measures envisaged in the "Fit for 55" package. The first adverse scenario assumes delays in the adoption of those measures, thus requiring them to be more drastic to meet the 55% target for reducing greenhouse gas emissions. The second adverse scenario assumes that the late implementation takes place amid the materialisation of systemic risk in the financial sector.

20 Public consultation on the draft royal decree regulating the content of disclosures on the estimated financial impact of climate change-related risks for financial institutions, listed companies and other large corporations.

in greater detail these disclosures required of credit institutions under Pillar 3 (market transparency).

**The European Markets in Crypto-Assets Regulation (MiCA)[21] was finally approved in May.** It defines a harmonised framework for crypto-asset markets, issuers of crypto-assets and crypto-asset service providers across the EU, and aims, inter alia, to protect crypto-asset holders and preserve financial stability, and to support innovation. Issuers of crypto-assets will be subject to disclosure and transparency requirements on entry into force of the MiCA regulation, which also requires the authorisation and registration of crypto-asset service providers, the implementation of security measures and compliance with anti-money laundering rules.[22] The regulation will apply from 30 December 2024, with the exception of some provisions which will become applicable earlier. Within that time, the EBA will need to complete the implementing regulations at the second level (regulatory and implementing technical standards) and third level (guidelines). In Spain, the responsibility for authorising and supervising these entities will fall to the Banco de España (in the case of the issuance of crypto-assets backed by other assets, unless they are deemed significant, in which case the EBA will assume supervisory responsibility) and the Spanish National Securities Market Commission (CNMV) (all other crypto-assets and crypto-asset service providers).

**In addition to the progress made by European regulators, the ESRB has analysed the systemic implications of crypto-asset markets and has proposed policy options to address the risks stemming from crypto-assets and decentralised finance (DeFi).**[23] In a recent report, the ESRB concludes that, while this past year has been turbulent for crypto-assets and DeFi, the impact on the financial system is limited, since the crypto-asset market is currently very small and has few interlinkages with the traditional financial sector and the real economy. However, given the exponential growth potential of crypto-assets and their high volatility, they must be monitored as they may pose systemic risks in the future. In this context, the ESRB proposes that the EU's capacity to monitor possible contagion channels be improved by promoting standardised reporting and disclosure requirements.

**The digital euro project has moved forward significantly in 2023.** In June, the European Commission issued[24] two legislative proposals to set out a legal framework

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21 Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on markets in crypto-assets, and amending Regulations (EU) No 1093/2010 and (EU) No 1095/2010 and Directives 2013/36/EU and (EU) 2019/1937.

22 See Box 3.2 of the Spring 2023 FSR for a more detailed description of the MiCA regulation and, at the global level, of the development of prudential standards on banks' exposures to crypto-assets by the Basel Committee on Banking Supervision (BCBS).

23 Press release "ESRB publishes report on cryptos and decentralised finance", 25 May 2023.

24 European Commission press release "Single Currency Package: new proposals to support the use of cash and to propose a framework for a digital euro", 28 June 2023.

for the digital euro, as a complement to euro banknotes and coins, and to regulate its legal tender status.[25] Once this legal framework for the digital euro is adopted by the European Parliament and the Council, it will be for the ECB to decide if and when to issue the digital euro. The ECB recently announced the conclusion of the investigation and design phase and its intention to move to the so-called "preparation phase", which will last two years and will involve working on the digital euro rulebook and selecting providers that could develop the necessary platform and infrastructure.[26]

### 3.2.2 International arena

**The BCBS has issued public consultations[27] on the revision to the Basel Core Principles for Effective Banking Supervision (BCPs) and on the new standard for banks' disclosure of crypto-asset exposures.**[28] BCPs are the global standards for the design and implementation of the prudential supervision of banks, and are used by the International Monetary Fund to evaluate the supervisory frameworks of domestic financial systems. The BCBS aims to adapt the BCPs to reflect the lessons learnt and the structural changes affecting the banking system since the last update in 2012. The revision to the BCPs encompasses, among other topics, macroprudential supervision. Specifically, the BCBS proposes amending the following principles:

(i) Principle 3 – Cooperation and collaboration and Principle 13 – Home-host relationships, to emphasise the importance of close cooperation, both domestically and internationally, between supervisors;

(ii) Principle 8 – Supervisory approach and Principle 9 – Supervisory techniques and tools, to clarify the role of the supervisor in assessing and mitigating risks; and

(iii) Principle 16 – Capital adequacy, to give supervisors the ability to require banks to maintain additional capital.

Moreover, the BCBS has presented a proposed standard for the Pillar 3 disclosure of banks' crypto-asset exposures (the prudential treatment for which was developed in 2022). The new standard is expected to be implemented in 2025.

25 For an explanation of what the digital euro is and what it means for the Eurosystem if adopted, see the Banco de España Blog post. "The digital euro: what is it and what's in it for us", 19 October 2023.

26 ECB press release "Eurosystem proceeds to next phase of digital euro project", 18 October 2023.

27 "Basel Committee consults on revisions to the Core principles for effective banking supervision", 6 July 2023.

28 "Disclosure of cryptoasset exposures – BCBS Consultative Document", 17 October 2023.

**The BCBS has also studied the banking turmoil that arose in March, to assess the regulatory and supervisory implications.** Considered the most significant episode of banking stress since the great financial crisis, the failure of banks such as Silicon Valley Bank and Credit Suisse eroded trust in the financial system worldwide and required the deployment of urgent public support measures to stop the instability from spreading to other banks and even other jurisdictions. The BCBS has recently released a report assessing the main implications for banking regulation and supervision of this crisis, which was particularly marked by shortcomings in liquidity and interest rate risk management practices in some banks and jurisdictions. The aspects highlighted in this report include:

(i) Banks' own risk management practices and governance arrangements, as the first and most important source of resilience;

(ii) The importance of strong and effective supervision, with an appropriate quantity and quality of resources and a willingness not only to identify weaknesses, but also to take prompt corrective action;

(iii) The need to continuously monitor structural changes to the banking sector and adapt supervisory approaches to overseeing risks, especially for banks that are rapidly growing in size or adopting novel business models;

(iv) The need to maintain effective and timely cross-border supervisory cooperation;

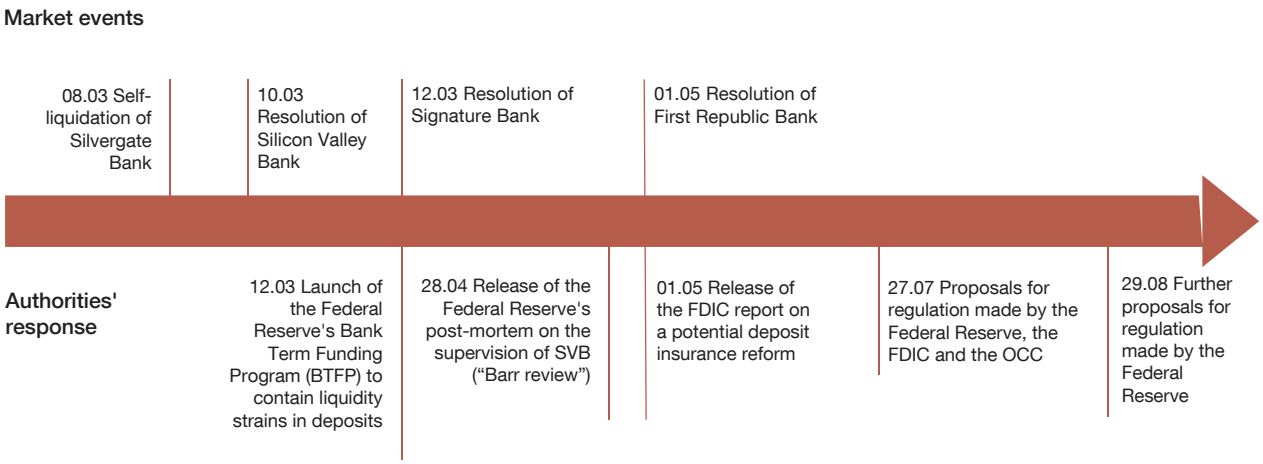
(v) The importance of a full and consistent implementation of Basel standards;

(vi) The importance of a robust design and calibration of regulatory standards for internationally active banks, without forgetting that other banks focused on domestic business can also pose cross-border contagion risks;

(vii) The need for a balanced approach between Pillar 1 and Pillar 2 standards, which should be pursued as complements, and not substitutes, and for proportionate regulatory approaches commensurate with a bank's risk profile and systemic importance.[29]

29 *BCBS Report on the 2023 banking turmoil,* 5 October 2023. For an insight from Banco de España authors, see J. Alonso Olmedo, R. Anguren, M. C. Manzano and J. Mochón. (2023). "Las crisis bancarias de 2023: causas y papel de los gestores bancarios, supervisores y reguladores". *Revista de Estabilidad Financiera - Banco de España,* forthcoming.

Figure 3.2
**Timeline of events following the tensions in the US banking sector in 2023**




SOURCE: Devised by authors.

**The events of March have led the US federal banking authorities to launch a review of the regulatory and supervisory framework.** The circumstances surrounding the turmoil at Silicon Valley Bank, Signature Bank and First Republic Bank have been subject to study by the Federal Reserve, the Federal Deposit Insurance Corporation (FDIC) and the Office of the Comptroller of the Currency (OCC) (see Figure 3.2). According to the Federal Reserve's post-mortem on Silicon Valley Bank (dubbed the "Barr review"[30]), the key factors behind the crisis were the bank's failure to manage its risks; the difficulty, on the part of the supervisors, to gauge the possible impact of the vulnerabilities; and the fact that, when they did identify vulnerabilities, they did not take sufficient steps to ensure that the bank addressed those problems soon enough. The report finds that the regulations and stance of supervisory policy prevailing in recent times impeded effective supervision of these banks by reducing requirements, allowing complexity and promoting a less assertive supervisory approach. For its part, the FDIC released a report[31] on Signature Bank, in which it identified that the root cause of the bank's failure was poor management, owing to the pursuit of rapid growth without developing and maintaining risk management controls appropriate for its size, complexity and risk profile. Signature Bank also failed to be responsive and timely in addressing the supervisory recommendations.

30 "Federal Reserve Board announces the results from the review of the supervision and regulation of Silicon Valley Bank, led by Vice Chair for Supervision Barr", 28 April 2023.

31 "FDIC Releases Report Detailing Supervision of the Former Signature Bank, New York, New York", 28 April 2023.

**Against this backdrop, the US banking authorities have made several proposals for regulation aimed at strengthening capital requirements for the banking system.**[32] A public consultation has been launched on a proposal to increase the strength and resilience of the banking system, which would implement the final components of the Basel III agreement. The proposal would modify large-bank capital requirements to better reflect underlying risks and increase the consistency of how banks measure their risks. Thus, it seeks to further strengthen the banking system by applying a broader set of capital requirements to more large banks (those with $100 billion or more in total assets) and standardising aspects of the capital framework related to credit risk, market risk, operational risk and financial derivative risk. The Federal Reserve has also proposed adjustments to the calculation of the capital surcharge for global systemically important banks (G-SIBs).

**A further proposal, again in the United States, has been submitted for public consultation that would require large banks to maintain a minimum amount of long-term debt.**[33] The requirement would apply to banks with total assets of $100 billion or more but that are not G-SIBs, and would help improve financial stability by increasing their resolvability and resiliency. Maintaining a minimum amount of long-term debt to absorb losses would increase the funds available in the event of bank failure and, by reducing the risk of losses for uninsured depositors, it could reduce the speed and severity of bank runs and limit the risk of contagion. Additionally, the proposal would prohibit large banks from engaging in certain activities that could complicate their resolution, and would disincentivise them from holding long-term debt issued by other banks, to reduce interconnectedness and contagion in the banking system.

**The Bank of England has announced updates on the timetable to implement the remaining elements of the Basel III standards in the United Kingdom.**[34] Following a consultation paper published by the Prudential Regulation Authority (PRA), the implementation date of the final Basel III elements has been postponed by six months, to 1 July 2025. As a result, the transitional period will be reduced to ensure full implementation by 1 January 2030. The PRA intends to split the publication of the near-final Basel III policy statements into two: the policies on market risk, credit valuation adjustment risk, counterparty credit risk and operational risk will be published by the end of 2023, while those on credit risk, the output floor and reporting and disclosure requirements will be published in 2024 Q2.

32 "Agencies request comment on proposed rules to strengthen capital requirements for large banks", 27 July 2023.

33 "Agencies request comment on proposed rule to require large banks to maintain long-term debt to improve financial stability and resolution", 29 August 2023.

34 "Timings of Basel 3.1 implementation in the UK", Bank of England news release of 27 September 2023.

Box 3.1

## DECOMPOSITION INTO SUPPLY AND DEMAND FACTORS OF THE RECENT DEVELOPMENTS IN BANK LENDING TO HOUSEHOLDS AND FIRMS IN SPAIN

Developments in bank lending to households and firms may stem from changes in demand on the part of these agents or from changes in banks' readiness to provide credit, or most likely from a combination of both with a varying degree of intensity. However, to provide economic policy guidance it is essential to be able to identify both factors. These considerations are especially important for monetary and macroprudential policy.

The monetary policy stance particularly affects the different demand components, but it also influences the supply of bank credit. Accordingly, the measure of these two factors is key to assess the effectiveness of past monetary policy decisions and substantiate future ones.

Macroprudential policy focuses more on the supply of bank credit, to ensure that it is resilient to adverse scenarios and to limit its fluctuations over the economic and financial cycle. But it may also affect demand for bank credit. Sustained expansionary credit supply conditions may lead to an excessive build-up of macro-financial risks and imbalances. In such circumstances, it might be appropriate to activate macroprudential measures. By contrast, contractionary credit supply conditions would tilt the macroprudential stance towards deactivation or non-activation of measures.

The fact that credit supply and demand factors are not directly observable hampers this decomposition. Indeed, various methodologies have been developed to endeavour to separate the two factors, notably those based on soft indicators and on theory-based econometrics applied to historical data.

In this box these methodologies are combined to achieve a more robust assessment of the relative influence of supply and demand factors on developments in bank lending to households and firms in the most recent period, which is when significant decreases in the stock of bank credit have begun to be observed in Spain. Using more than one methodology also provides a measure of the level of uncertainty as to the relative contribution of these factors: the more similar the estimates obtained, the lower the uncertainty.

### The bank lending survey

The bank lending survey (BLS) presents a qualitative assessment by a sample of European banks of credit supply and demand developments. The survey indicates that, since early 2022, Spanish banks' credit standards have tightened continuously in all segments (see Chart 1).

Surveys conducted among borrowers also indicate that they have had greater difficulties accessing bank loans in this period. The Survey on the Access to Finance of Enterprises (SAFE) in the euro area shows a deterioration, since early 2022, in the perceived availability of bank credit among Spanish small and medium-sized enterprises (SMEs). Similarly, the ECB's Consumer Expectations Survey reflects, also since the start of last year, an increase in households' perceived difficulties in accessing credit.[1]

On the demand side, the BLS shows that both firms' and households' demand fell in 2022 and in the first three quarters of 2023. Similarly, the SAFE shows that loan applications by SMEs and large firms have fallen since late 2021.

### Econometric methods

The informational content of this kind of survey data is well tried and tested,[2] but there are also potential limitations. For instance, owing to possible errors of perception among respondents, or the limited incentives to reveal all the information available.[3]

Methods can be employed to exclude – or at least mitigate – these possible survey data biases and extract more

1 For more details, see *Report on the financial situation of households and firms*, First half of 2023, Banco de España, *Nota de Prensa Estadística* (available only in Spanish), Banco de España, of 24 October 2023, and *ECB press release* of 24 October 2023.

2 For instance, for the euro area BLS, see: Carlo Altavilla, Matthieu D. Pariès and Giulio Nicoletti. (2019). "Loan supply, credit markets and the euro area financial crisis". *Journal of Banking & Finance,* Vol. 109, 105658; and Gabe de Bondt, Angela Maddaloni, José-Luis Peydró and Silvia Scopel. (2010). "The Euro Area Bank Lending Survey Matters: Empirical Evidence for Credit and Output Growth". ECB Working Paper No 1160. And for the United States, for example, Cara Lown and Donald P. Morgan. (2006). "The Credit Cycle and the Business Cycle: New Findings using the Loan Officer Opinion Survey". *Journal of Money, Credit and Banking,* Vol. 38(6), pp. 1575-1597.

3 Banks' responses to bank lending surveys may, for example, be biased towards tighter credit conditions. See Petra Köhler-Ulbrich, Hannah. S. Hempell and Silvia Scopel. (2016). "The euro area bank lending survey", ECB Occasional Paper No 179, or for the United States, William Bassett and Marcelo Rezende. (2015). "Relation between Levels and Changes in Lending Standards Reported by Banks in the Senior Loan Officer Opinion Survey on Bank Lending Practices", *FEDS Notes.* Board of Governors of the Federal Reserve System. The evidence on the informational content of the BLS for specific European countries is generally positive, albeit with some mixed conclusions. See Koen J. M. van der Veer and Marco M. Hoeberichts. (2016). "The level effect of bank lending standards on business lending". Journal of Banking & Finance, Vol. 66, pp. 79-88; or Andrea Nobili and Andrea Orame. (2015). "Estimating the effects of a credit supply restriction: is there a bias in the Bank Lending Survey?". Banca d'Italia Occasional Paper No 266.

Box 3.1

## DECOMPOSITION INTO SUPPLY AND DEMAND FACTORS OF THE RECENT DEVELOPMENTS IN BANK LENDING TO HOUSEHOLDS AND FIRMS IN SPAIN (cont'd)

Chart 1
Bank lending, supply and demand (a)

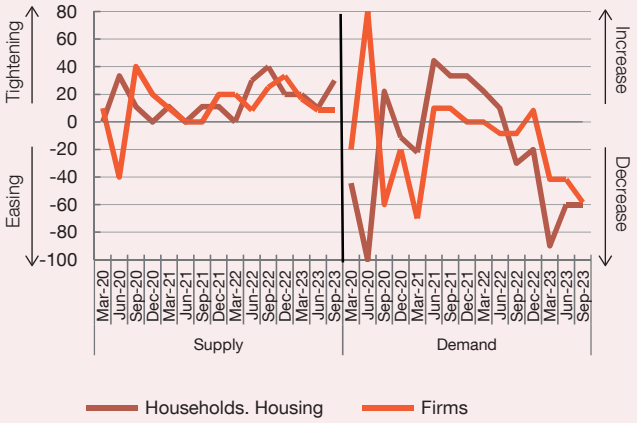
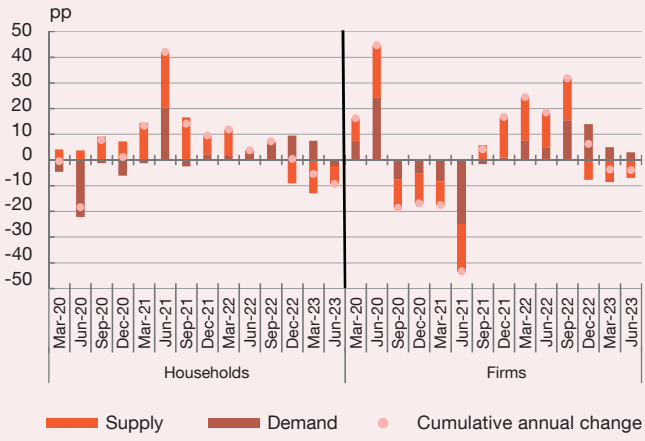



Chart 2
Macroeconomic decomposition by supply and demand factors of new lending to households and firms (b)




**SOURCES:** ECB and Banco de España.

**a** For supply, the chart shows the percentage of banks that have tightened their credit standards or conditions, minus the percentage that have eased their credit standards or conditions. For demand it shows the percentage of banks reporting an increase in demand, minus the percentage reporting a decrease. For more details, see *Nota de Prensa Estadística* (available only in Spanish), Banco de España, of 24 October 2023, and *ECB press release* of 24 October 2023.

**b** Cumulative annual change. Supply and demand effects estimated using a S-VAR model applied to data on new lending taken from the euro area statistical returns. The model is estimated by means of Bayesian inference, using a Gibbs sampling algorithm and Minnesota priors, drawing on 5,000 MCMC (Monte Carlo Markov Chain) samples out of a total of 50,000 iterations.

information. But it is useful to complement this approach with econometric models[4] that combine a theoretical framework with the use of observed data on credit volumes and interest rates, as well as bank and borrower characteristics, to ascertain if a specific change observed is due to supply or demand factors. These econometric methods also have limitations.[5] For this reason, different data sources and methodologies must be combined to obtain more robust conclusions.

Two of these econometric methodologies are used here: a macroeconometric approach that uses aggregated data, and a microeconometric approach that uses loan-level data for the portfolio of loans to non-financial corporations (NFCs).

### Macroeconometric analysis of lending to households and firms

Drawing on aggregated data on credit volume and interest rates, a structural vector autoregressive (S-VAR) model[6] is used to analyse supply and demand shocks in lending to households and NFCs. Using this model, the correlation between the change in lending and the lending-deposit spread can be estimated simultaneously, making it possible to identify whether certain behaviour is more responsive to shifts in the credit demand or the credit supply curve.[7] Intuitively, an increase (decrease) in demand should simultaneously raise (reduce) the credit volume and widen (narrow) the spread, whereas an increase (decrease) in credit

4 Econometrics is the set of statistical and computational techniques used to describe and test hypotheses on the economic and financial system.

5 In general, for estimates to be obtained these models must be fed with specific technical assumptions. If these assumptions are not appropriate to the observed data, the results will be biased or uninformative.

6 These models have been developed extensively in the literature for decomposing supply and demand factors and are based on the proposal of Olivier Blanchard and Danny Quah. (1989). The Dynamic Effects of Aggregate Demand and Supply Disturbances, *The American Economic Review,* Vol. 79(4), pp. 655-673.

7 To identify structural credit supply and demand shocks, sign restrictions are imposed, in accordance with economic theory, in the associated coefficients. For more details, see Pana Alves, Fabián Arrizabalaga, Javier Delgado, Jorge E. Galán, Eduardo Pérez Asenjo, Carlos Pérez Montes and Carlos Trucharte. (2021). "Box 1. Developments in lending to households and firms in Spain: Analysis of the supply and demand-side factors involved". In "Recent developments in financing and bank lending to the non-financial private sector", *Economic Bulletin - Banco de España,* 1/2021, Analytical Articles.

supply should raise (reduce) the credit volume but narrow (widen) the spread, in keeping with a parallel shift in the demand or credit supply curve, respectively. The analysis is conducted by separately modelling lending to households and lending to NFCs.[8]

Chart 2 depicts the decomposition of the supply and demand factors, in cumulative annual terms, of the growth in new lending to households and NFCs from 2020 Q1 to 2023 Q2. Credit flows contract in both segments from 2023 Q1, in contrast to the high growth observed in previous quarters.[9] This change in trend is mainly on account of supply factors, which have made a negative contribution in both credit segments since 2022 Q4.

Under this methodology, demand for credit has also slowed since 2023 Q1, albeit less sharply, particularly in the household segment, which contributed negatively to growth in new lending in 2023 Q2.

These results are qualitatively consistent with those reported by banks in the BLS for recent quarters. However, the econometric results identify the contractions in supply and demand with a greater lag than the BLS results, which better anticipate these declines and, in the case of demand, identify a steadier trend.

### Microeconometric analysis of lending to non-financial corporations

Supply and demand effects can also be identified and measured drawing on data at borrower-bank level. This section is based on the methodology developed by Amiti and Weinstein (2018),[10] which enables individual borrower and bank factors to be isolated from aggregate macro-financial developments. This methodology is based on weighted regressions where the explanatory variable is the change in the volume of lending from a bank to a borrower between two given periods, and the determinants are a set of borrower and bank fixed effects.[11]

Specifically, with this methodology, the change in lending can be decomposed into the sum of three elements: a common component, which may respond to aggregate supply and demand factors (defined as the median effect of all banks and borrowers at any given time); a demand component, which incorporates the particular decisions of each NFC vis-à-vis the median NFC (calculated as the borrower fixed effect relative to the median of all NFCs at any given time); and, lastly, a supply factor, which incorporates the particular decisions of each bank relative to the median bank (defined as the idiosyncratic supply effect of each bank measured with respect to its median value).

Chart 3 shows the results of this decomposition applied to the series of annual rates of change in the stock of lending to NFCs (not including sole proprietors) obtained from the Banco de España's Central Credit Register (CCR) from 2020 to mid-2023.[12] A recurrently negative common component can be observed. The supply factor (differential relative to the median) was predominantly positive during the health crisis that began in 2020, possibly linked to the raft of measures the authorities implemented to mitigate the impact of the pandemic and, in particular, to the public guarantee programme. However, from mid-2021, this component has gradually shrunk, to reach negative levels in the last six

8 Using data on new lending to households (which include sole proprietors) and NFCs, and on the spread between weighted average interest rates on new lending to each sector and average aggregate deposit rates for households and NFCs. The new lending data do not include renegotiations, overdrafts or credit card balances. Drawing on quarterly data from the euro area statistical returns from 2003 Q1 to 2023 Q2.

9 These changes may differ from those described in Chapter 2, mainly because this exercise considers the cumulative change over the last four quarters, rather than the year-on-year change in the 12-month cumulative amount.

10 The methodology used is described in detail in M. Amiti and D. E. Weinstein. (2018). "How Much Do Idiosyncratic Bank Shocks Affect Investment? Evidence from Matched Bank-Firm Loan Data". *Journal of Political Economy,* Vol. 126, pp. 525-587.

11 Where data exist on a variable in several time periods for a group of economic agents, each agent's fixed effects capture the portion of that variable (e.g. the difference between that agent's loans and the median volume of loans of all the agents) that does not vary over time for each of them. In other words, the time-invariant characteristics of each agent that influence the changes in that variable. An agent-time fixed effect captures the value of the variable for that agent at a given time.

12 The factors depicted in Chart 3 for each month analysed are defined as the average for that month and the previous two months, for smoothing purposes. The Amiti-Weinstein procedure could likewise be applied to households, but very few households have more than one bank relationship, compared with NFCs (two-thirds of which have relationships with more than one bank, accounting for close to 77% of existing credit, as opposed to a quarter of households). The supply shock can only be estimated for borrowers with more than two bank relationships, since a borrower fixed effect can only be introduced if the borrower has relationships with at least two banks at some time during the period analysed. This part of the box therefore focuses on NFCs.

Box 3.1

## DECOMPOSITION INTO SUPPLY AND DEMAND FACTORS OF THE RECENT DEVELOPMENTS IN BANK LENDING TO HOUSEHOLDS AND FIRMS IN SPAIN (cont'd)

Chart 3
Supply and demand developments in bank lending to NFCs (a)

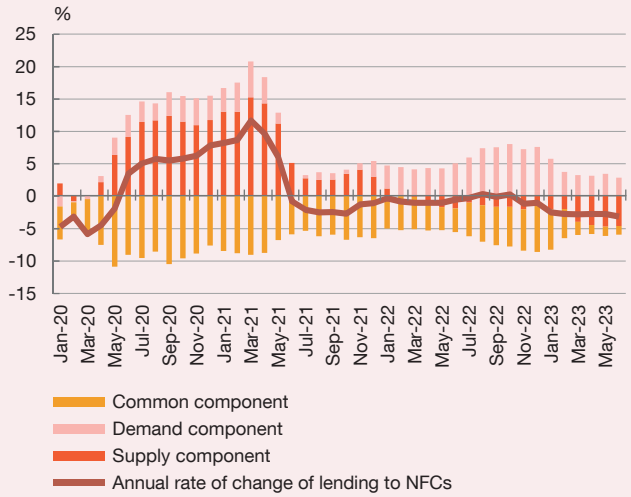



Chart 4
Distributions of bank loan supply to NFCs by year (b)

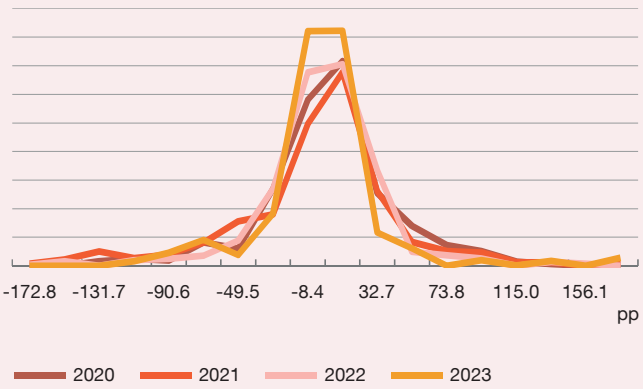



Chart 5
Distributions of bank loan supply to NFCs by capital ratio (c)

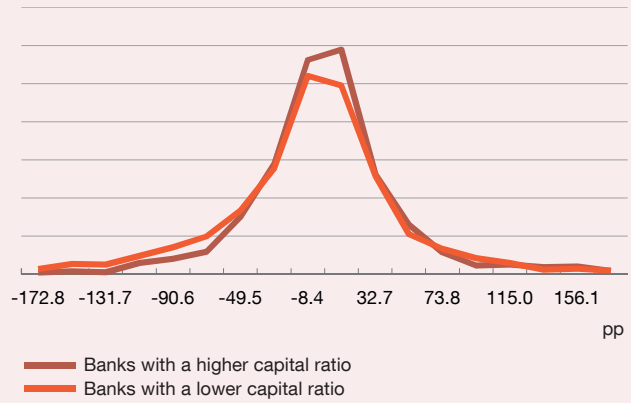
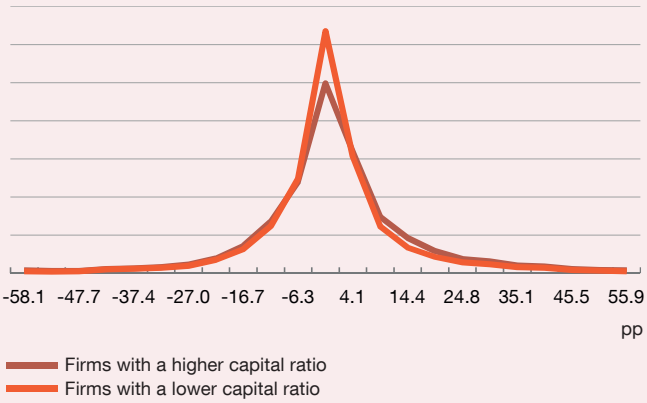



Chart 6
Distributions of bank loan demand of NFCs by capital ratio (d)




**SOURCES:** ECB and Banco de España.

**a** Breakdown of the annual rate of change in bank lending to NFCs, where the supply and demand components are relative to the median and the common component captures the sum of the median supply and demand values. Firm-bank level data are used. The bars represent the average of the components estimated for the last three dates.
**b** Kernel distributions of the supply component for December in the period 2020-2022 and for June 2023.
**c** Kernel distributions of the supply component by the bank's capital ratio (own funds as a percentage of assets): banks with a higher capital ratio (those above the third quartile of the capital ratio distribution), and banks with a lower capital ratio (those below the first quartile of the capital ratio distribution).
**d** Kernel distributions of the demand component by the NFC's capital ratio (own funds as a percentage of assets): firms with a higher ratio (those above the third quartile of the capital ratio distribution), and firms with a lower capital ratio (those below the first quartile of the capital ratio distribution).

months. Lastly, the demand component remained markedly positive in 2022, but has been declining steadily since early 2023.[13]

Using this methodology, each bank's contribution to the supply component at any given time can be obtained. Chart 4 shows the distribution of the supply factor across banks is

13 The common component may also incorporate supply or demand effects provided that they are common to all banks or NFCs, respectively. Moreover, supply and demand components are relative to the median. Thus, if they are positive, supply or demand is above the median (and below the median, if they are negative).

the farthest to the right in 2020 and that it subsequently moves to the left, i.e. towards less positive, or more negative, values.

The bank characteristics that explain the changes observed in the supply component can also be determined with this method. For example, as illustrated by Chart 5, the line showing the distribution of banks with a higher capital ratio (measured as own funds as a percentage of assets), in the top quartile of the distribution, is below that of banks with a lower capital ratio in the negative part of the distribution. This means that banks with higher capital ratios are less likely to present negative values in the cross-bank distribution of credit supply, underscoring the importance of banks having strong capital positions to maintain their supply of credit above the median.

Moreover, demand factors can be linked to firm-level characteristics obtained from the Banco de España's Central Balance Sheet Data Office. Thus, in an exercise similar to that conducted with banks, firms can be classified between those with high or low capital ratios (own funds as a percentage of assets). Comparison of the demand distributions for both groups of firms shows that the line depicting strongly capitalised firms is above that of the less capitalised firms in the positive part of the distribution (see Chart 6). That is to say, the demand for credit of firms with higher capital ratios is more likely to be above the median.

The above exercises show the usefulness of the microeconometric approach in identifying expansionary or contractionary behaviour in credit demand and supply in specific segments, which would potentially favour the adoption of far more targeted measures.

This method has its limitations, such as not allowing demand and supply components to be separated from the aggregate factor, or only being able to include borrowers that have several bank relationships in order to identify different effects. Nonetheless, through these distributional analyses, it serves as a useful complement to macroeconometric and survey approaches.

## Conclusion

The BLS and econometric methods presented here both identify a contraction in the supply of credit to both households and firms in recent quarters. According to the BLS, this is attributable to banks' greater risk perception and their higher funding costs. This contraction in supply was also anticipated in the BLS in 2022, whereas econometric methods have only identified it more recently.

In addition, according to both the methods used, households' demand for bank loans appears to have declined in 2023 Q2, as a result of rising interest rates. Again, the BLS signalled this decline at an earlier stage. In the case of demand for credit by firms, the findings of the econometric methods are somewhat less robust than those of the BLS regarding the shift to a contractionary trend. However, both the methods used identify a clear trend towards weakening demand in this sector in recent quarters.

In short, the contractionary behaviour of credit supply identified using different methods, added to other indicators (such as the negative credit-to-GDP gap discussed in the main body of this report), reinforces the diagnosis of weakness drawn from recent developments. The methods used also identify demand weakness, although the signs as to its intensity are uneven, and have tended to converge more only in the most recent period in 2023. If interest rates remain higher for longer, weakening demand signals will foreseeably continue to emerge over the coming quarters under the different methods applied. It should also be borne in mind that this assessment (except under the microeconometric method) refers to new lending, not to the stock of lending. The latter is declining against a backdrop of extraordinary debt repayments, which would associate it more with demand factors than with supply factors.

Box 3.2

## REVISION OF THE ECB'S FLOOR METHODOLOGY FOR ASSESSING CAPITAL BUFFERS FOR OTHER SYSTEMICALLY IMPORTANT INSTITUTIONS AND ITS IMPLICATIONS FOR SPANISH BANKS

This box describes the increase in capital requirements applicable to two of Spain's other systemically important institutions (O-SIIs) from 2024 and estimates its impact on their contribution to the systemic risk of the Spanish banking sector.

Among other macroprudential policy responsibilities, the Banco de España is called on to identify global and domestic systemically important institutions and to set their macroprudential capital buffers.[1] An institution is deemed to be systemic if, in a situation of difficulty, it is considered to have the potential to cause significant disruption to the wider financial system and the real economy. During the 2008 global financial crisis, such banks were classified as "too big to fail".[2]

In the case of O-SIIs – institutions that are systemically important at the domestic level – every year the Banco de España calculates a score for each bank following the EBA Guidelines on O-SIIs.[3] These scores are based on a set of four indicators relevant to the banking business: size, importance (substitutability of the services provided to customers and impact on payment infrastructure), complexity (including cross-border activity) and interconnectedness.[4] Banks with a score equal to or higher than 350 basis points (bp) are automatically designated as O-SIIs.[5]

Based on these scores, the Banco de España sets the buffer rates applicable to O-SIIs, which must be met with Common Equity Tier 1 (CET1) capital. Prior to 2023 these were calculated following the ECB's floor methodology, which was approved by its Governing Council in December 2016 in order to foster convergence in the setting of O-SII buffers in banking union countries.[6]

In December 2022 the ECB approved a revision of its floor methodology for assessing capital buffers for O-SIIs, effective as of 1 January 2024.[7] The revised framework introduced a more stringent calibration for higher scored institutions than under the previous arrangements, with the O-SII minimum buffer rates ranging between 0.25% and 1.5% (depending on the score obtained), compared with the previous requirements of between 0.25% and 1%.

As a result of these higher minimum buffer rates set by the ECB, the Banco de España has revised its own methodology for determining O-SII buffer rates accordingly. The Banco de España's new framework is consistent with the minimum requirements set by the ECB, except in the case of O-SII scores over 5,500 bp, for which it envisages a buffer rate of 1.75% (see Table 1). This higher requirement for the top bucket introduces an additional disincentive to attaining such high systemic importance.

The Banco de España's revised framework helps narrow the gap between the O-SII buffers for Spanish banks and those of their banking union peers, as it raises the buffer rates by 0.25 percentage points (pp) for Banco Santander, S.A. and Banco Bilbao Vizcaya Argentaria, S.A., while keeping those for CaixaBank, S.A. and Banco de Sabadell S.A. unchanged (see Chart 1).[8]

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1 In 2011 and 2012, the Basel Committee on Banking Supervision developed a regulatory framework (which was subsequently incorporated into EU and Spanish legislation) to establish higher capital surcharges for systemically important institutions, with the aim of strengthening their solvency and encouraging their management bodies to internalise the impact of their decisions on the wider financial system. An institution's designation as systemic makes it more likely it will receive public support in the event of financial difficulties. This requirement therefore also helps offset the possible competitive advantage these banks may have on the funding markets compared with smaller institutions.

2 In addition to the regulatory framework for setting the additional buffers for these institutions, a specific treatment is also in place from a resolution perspective. In this respect, the EU adopted Bank Recovery and Resolution Directive 2014/59/EU, which requires banks to prepare resolution plans and empowers national authorities to ensure an orderly resolution of failing banks at a minimal cost for taxpayers.

3 EBA Guidelines EBA/GL/2014/10 of 16 December 2014 on the criteria to determine the conditions of application of Article 131(3) of Directive 2013/36/EU (CRD) in relation to the assessment of O-SIIs. The calculation methodology contained in these Guidelines was incorporated into Banco de España Circular 2/2016.

4 The EBA Guidelines set out the information to be used when calculating the scores. The data used by the Banco de España mainly come from the consolidated financial reporting statements (FINREP).

5 According to the EBA Guidelines, relevant authorities may raise or lower the 350 bp threshold by 75 bp, but it was not modified in Banco de España Circular 2/2016.

6 ECB. (2016). "Governing Council statement on Macroprudential Policies", 15 December. And Banco de España. (2017). Box 3.1 of the *Financial Stability Report, 05/2017*.

7 ECB. (2022). "Governing Council statement on macroprudential policies", 21 December.

8 See the press release "The Banco de España updates the list of other systemically important institutions and sets their macroprudential capital buffer rates for 2024", the Banco de España blog post "The Banco de España raises the capital buffers for systemic banks" and the Spanish macroprudential authority's "Opinion on the macroprudential measure adopted by the Banco de España on other systemically important institutions (O-SIIs) for 2024", all published on 29 September 2023.

Box 3.2

## REVISION OF THE ECB'S FLOOR METHODOLOGY FOR ASSESSING CAPITAL BUFFERS FOR OTHER SYSTEMICALLY IMPORTANT INSTITUTIONS AND ITS IMPLICATIONS FOR SPANISH BANKS (cont'd)

Chart 1
Relationship between systemic scores and O-SII buffers (a)

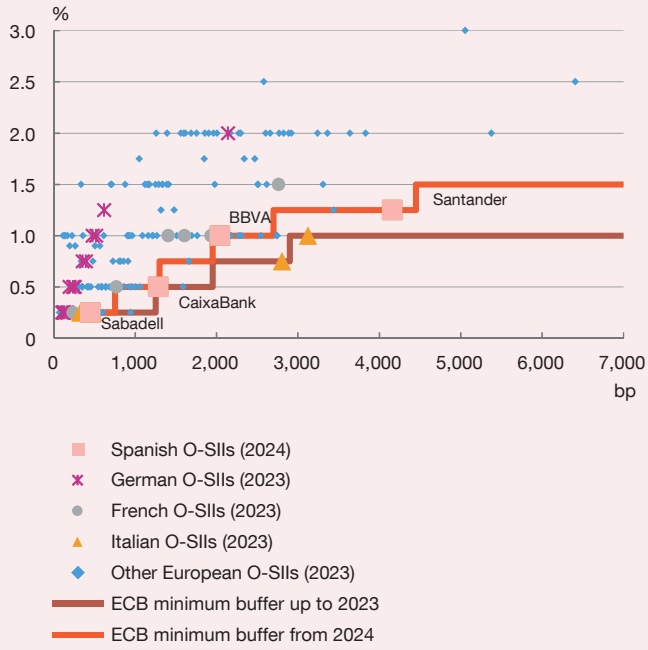
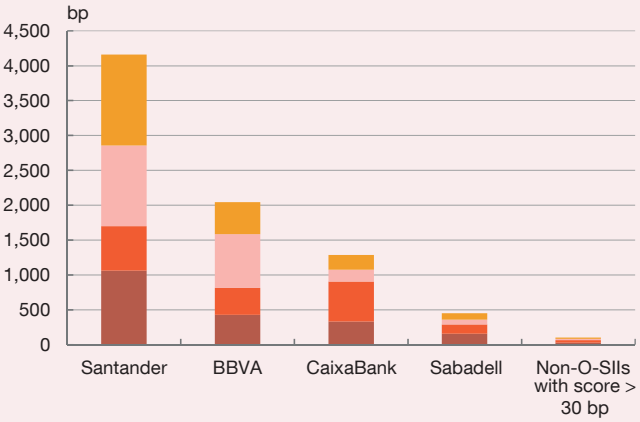






Chart 2
Breakdown by indicator of the O-SII scores in 2024 (b)



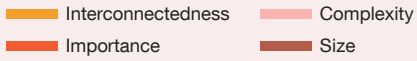
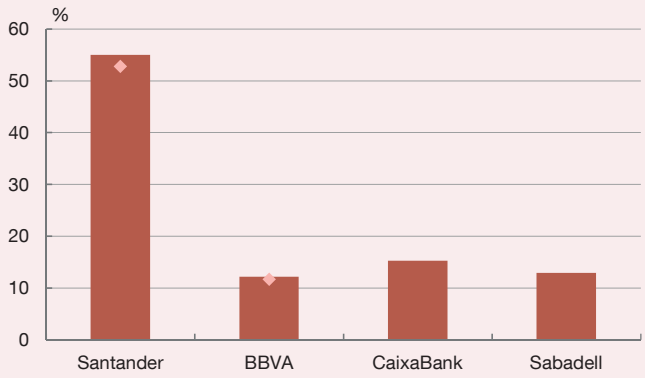




Chart 3
Systemic risk contribution of Spanish O-SIIs relative to the total contribution of the Spanish banking sector. Data for 2020-2022 (c)



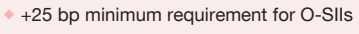
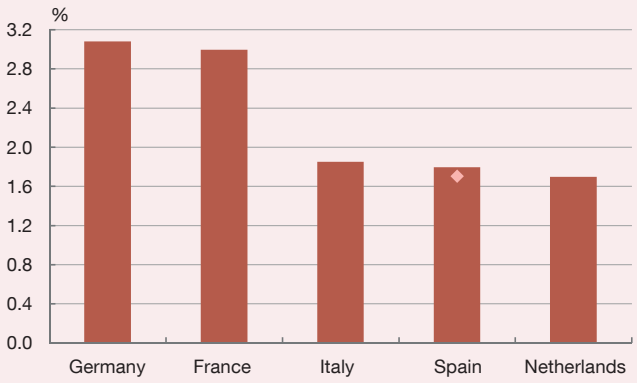
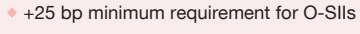




Chart 4
Systemic risk contribution measured as a percentage of total assets. European comparison. Data for 2020-2022 (d)




**SOURCE:** Banco de España.

**a** The Spanish banks' scores are taken from the 2024 O-SII exercise, whereas those of non-Spanish institutions refer to the 2023 exercise. The x-axis indicates the O-SII score and the y-axis denotes the O-SII buffer required.
**b** The last column presents the average scores of the 16 institutions that, although below the designation threshold (350 bp), have a score above 30 bp.
**c** The bars denote each bank's contribution to systemic risk (based on the 2023 requirements, before the 2024 increase) as a percentage of the Spanish banking sector's total consolidated assets. The diamonds represent these contributions after applying the revision for 2024.
**d** The bars denote the contributions to the systemic risk of the national banking systems, expressed as a percentage of the total consolidated assets of each country's banking sector. The diamond represents the contribution after applying the revision for 2024. Only institutions listed on the stock market have been considered.

Table 1
Comparison of the ECB and Banco de España methodologies for setting O-SII capital buffers

| | Revised ECB methodology | | Revised Banco de España methodology | |
|---|---|---|---|---|
| Bucket | Score (bp) | Minimum buffer rate | Score (bp) | Buffer rate |
| 1 | Up to 750 | 0.25 | Up to 750 | 0.25 |
| 2 | 750-1,299 | 0.50 | 750-1,299 | 0.50 |
| 3 | 1,300-1,949 | 0.75 | 1,300-1,949 | 0.75 |
| 4 | 1,950-2,699 | 1.00 | 1,950-2,699 | 1.00 |
| 5 | 2,700-4,449 | 1.25 | 2,700-4,449 | 1.25 |
| 6 | Above 4,450 | 1.50 | 4,450-5,500 | 1.50 |
| 7 | — | — | Above 5,500 | 1.75 |

**SOURCES:** ECB and Banco de España.

The breakdown of the Spanish O-SII scores by component or category shows that, in the case of the two smaller O-SIIs (CaixaBank and Sabadell), size tends to be the main contributor in relative terms to systemic importance (see Chart 2). Moreover, in the case of CaixaBank, its high relative score in the importance category captures its stronger focus on private sector loans and deposits and on payment transactions. By contrast, Santander and BBVA have more complex business models that are interconnected with other Spanish and international financial institutions, thus contributing to their higher relative scores in the interconnectedness and complexity categories.

### Impact analysis

The impact on systemic risk of the introduction of the O-SII buffers can be approximated using the SRISK indicator.[9] This metric estimates the market value of institutions' capital shortfall in the event of a severe stock market downturn, i.e. the capital that banks would need to rebuild after a severe financial crisis to re-establish compliance with prudential requirements.

Based on this methodology, the introduction of the O-SII buffers in 2016 is estimated to have reduced the contribution of O-SIIs to systemic risk. Specifically, according to the elasticities obtained from econometric models, raising the O-SII buffer rate by 1 pp leads to a relative reduction of 16.4% in each bank's SRISK value.[10] This would appear to confirm that the O-SII buffers are fulfilling their objective of reducing these banks' systemic importance.

In the case of the additional increases envisaged for 2024, raising the O-SII buffer rates by 0.25 pp for Santander and BBVA is expected to lead to a relative decrease of 2.25% and 0.5%, respectively, in their systemic risk contribution (see Chart 3). Further, considering the impact on the Spanish banking system as a whole, a 0.25 pp increase for both these banks will entail a moderate reduction of around 9 bp in terms of the sector's total consolidated assets (see Chart 4).

However, the regulatory change could entail costs in the short term for the economy as a whole. To comply with the capital requirements, both banks may have to set aside a larger share of their profits, issue additional capital on the markets and/or curb lending to customers, which could reduce the supply of credit to the private sector. The Banco de España's estimates nevertheless suggest that the costs of the higher requirement will be small. First, Santander and BBVA have sufficient capital headroom above the regulatory requirements to cover the additional amount from the outset, without having to resort to any of the above options in the short term. Second, even if they were to resort to such measures, the adverse impact on lending and economic activity would be very low, given the limited size of the increase required.

9 For more details, see Christian Brownlees and Robert F. Engle. (2017). "SRISK: A conditional capital shortfall measure of systemic risk". *The Review of Financial Studies,* Vol. 30.

10 For more details on the SRISK indicator and an empirical application demonstrating the usefulness of these buffers in reducing banks' systemic importance, see Carmen Broto, Luis Fernández Lafuerza and Mariya Melnychuk. (2022). "Do buffer requirements for European systemically important banks make them less systemic?". Documentos de Trabajo, 2243, Banco de España.

Box 3.3

## DISCLOSURE OF ESG RISKS UNDER THE PILLAR 3 FRAMEWORK. SPANISH BANKS

In recent years, the risks associated with environmental, social and governance (ESG) factors have gained importance in the financial industry in general and, in particular, in the banking sector.[1] The disclosure of consistent and comparable data on these risks is essential to enable supervisors, investors and other users of this information to understand and correctly assess credit institutions' exposure to ESG risks.

In 2023 H1 European credit institutions began to make their first disclosure of ESG risks, under the prudential disclosure (Pillar 3) framework.[2] These disclosures were made using the templates and following the instructions contained in the EU regulations (hereafter, the Regulation).[3]

The Regulation, applicable to certain types of EU credit institutions,[4] includes qualitative and quantitative information on ESG risks (see Figure 1). The qualitative information addresses each of the ESG aspects and requires that banks disclose how they are incorporating these risks into their strategy and business model, and what are the internal governance and control procedures established in this respect. The quantitative information focuses on climate risks (both transition and physical risks),[5] and also includes mitigating measures.

In the case of **transition risk,** different indicators are reported for exposures to non-financial corporations (NFCs) held in the banking book[6] and for loans collateralised by immovable property. For exposures to NFCs in the banking book, banks shall disclose the amount of their exposures to sectors that highly contribute to climate change,[7] a concept that covers a considerable number of sectors, including oil, gas, mining and transportation, with different greenhouse gas (GHG) emission levels.

Exposures to counterparties excluded from the Paris-aligned benchmarks[8] (essentially, companies whose activity is related to the extraction and distribution of fossil fuels) shall also be disclosed at sector level, as shall exposures aligned with the goal of mitigating climate change under the Taxonomy Regulation[9] (mainly investments in low carbon activities or in activities that facilitate the transition).

These metrics are complemented with a breakdown by sector of GHG emissions, and with measures to align banks' own decarbonisation targets for key sectors with the Paris Agreement goals.

Banks shall disclose information on the energy efficiency of the portfolio of loans collateralised by immovable property.

As for **physical risk,** banks shall disclose information on exposures that are sensitive to impact from chronic and acute climate change events, with a breakdown by affected sectors and geographical areas.

1 EBA. (2023). "Report on the role of environmental and social risks in the prudential framework". This recently published report highlights the importance of environmental and social risks and how they are captured in the current prudential framework. The report makes recommendations for specific improvements, to accelerate their incorporation into minimum capital requirements.

2 Pillar 3 or prudential disclosure is one of the three pillars that make up the prudential banking regulations, together with Pillar 1 (minimum capital requirements) and Pillar 2 (supervisory review).

3 Commision Implementing Regulation (EU) 2022/2453 of 30 November 2022 amending the implementing technical standards laid down in Commission Implementing Regulation (EU) 2021/637 as regards the disclosure of environmental, social and governance risks.

4 Pursuant to current legislation, only large European credit institutions, classed as such under Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms, and that have issued securities that are admitted to trading on a regulated market of any Member State are required to make these disclosures. In the future, this requirement will be extended to all banks, taking into account the principle of proportionality.

5 Transition risks are those associated with the transformation to a more sustainable economy, as a consequence of policy, technology and market changes. Physical risks are those associated with the impact of extreme weather events, such as heat waves or flooding (acute events), or gradual long-term shifts in climate patterns, such as changing precipitation patterns or rising sea levels (chronic events).

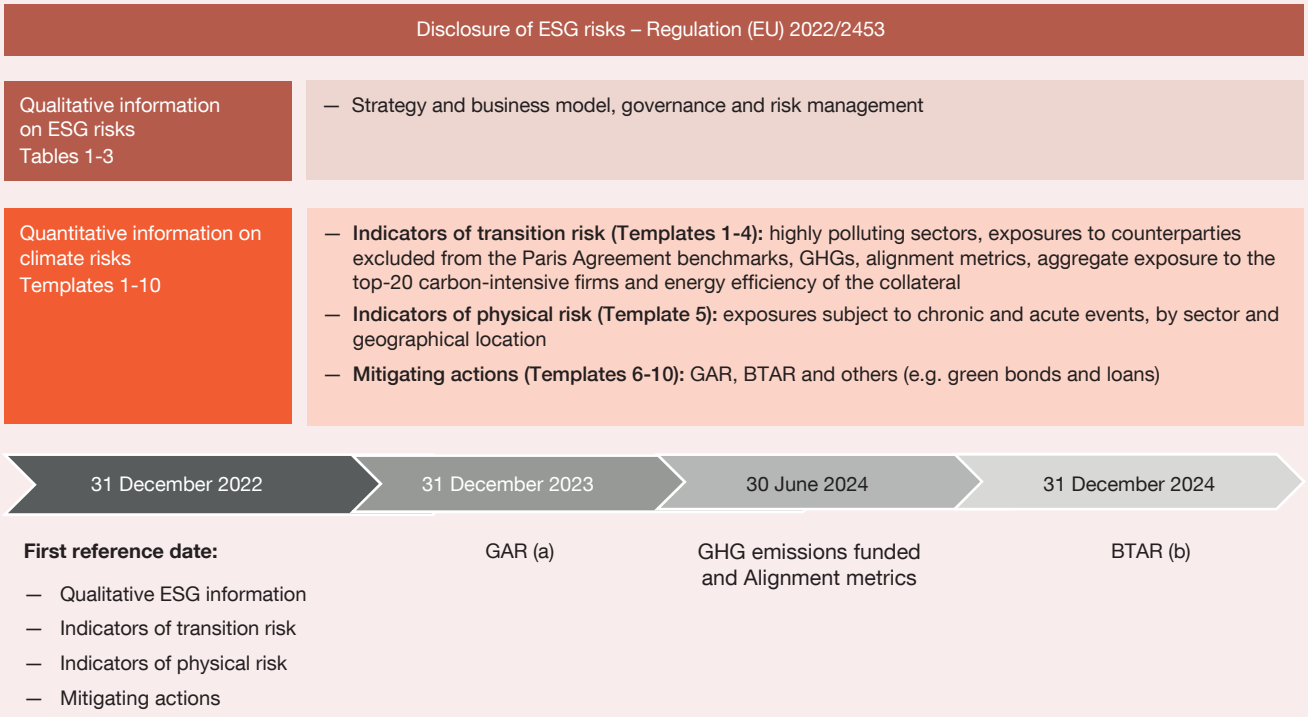
6 These include exposures to NFCs, in the form of loans and debt and equity instruments as defined in the FINREP supervisory reporting framework, that banks hold in their banking book, i.e. excluding assets held in the trading book.

7 These sectors are defined in Recital 6 of Commission Delegated Regulation (EU) 2020/1818 of 17 July 2020 supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council as regards minimum standards for EU Climate Transition Benchmarks and EU Paris-aligned Benchmarks. They include all sectors that contribute significantly to climate change, listed in Sections A to H and Section L of Annex I of Regulation (EC) No 1893/2006 of the European Parliament and of the Council of 20 December 2006 establishing the statistical classification of economic activities NACE Revision 2.

8 These counterparties are defined in Article 12 of Commission Delegated Regulation (EU) 2020/1818 of 17 July 2020. Specifically, companies that derive: (i) 1% or more of their revenues from exploration, mining, extraction, distribution or refining of hard coal and lignite; (ii) 10% or more of their revenues from the exploration, extraction, distribution or refining of oil fuels; (iii) 50% or more of their revenues from the exploration, extraction, manufacturing or distribution of gaseous fuels; or (iv) 50% or more of their revenues from electricity generation with a GHG intensity of more than 100g $CO_2$ e/kWh.

9 Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 (the European Taxonomy Regulation).

Figure 1
Disclosure of ESG risks




**SOURCE:** Banco de España.

**a** The Green Asset Ratio (GAR) provides information on the level of alignment of a credit institution's balance sheet with the Taxonomy Regulation. Counterparties not subject to the Non-Financial Reporting Directive must be included in the denominator of the ratio but not in the numerator.
**b** The Banking Book Taxonomy Alignment Ratio (BTAR) provides information on the level of alignment of a credit institution's balance sheet with the Taxonomy Regulation. Counterparties not subject to the Non-Financial Reporting Directive must be included both in the denominator and the numerator of the ratio.

Lastly, the Regulation also includes information on mitigation actions for both transition and physical risk, such as the Green Asset Ratio (GAR), which shows the percentage of banks' assets that are aligned with the Taxonomy Regulation.

The first disclosure reference date set in the Regulation is December 2022, although several transitional stages are envisaged, as depicted in Figure 1.

In the case of climate change data, the information disclosed by the ten Spanish credit institutions that are subject to the Regulation[10] can be summarised as follows.

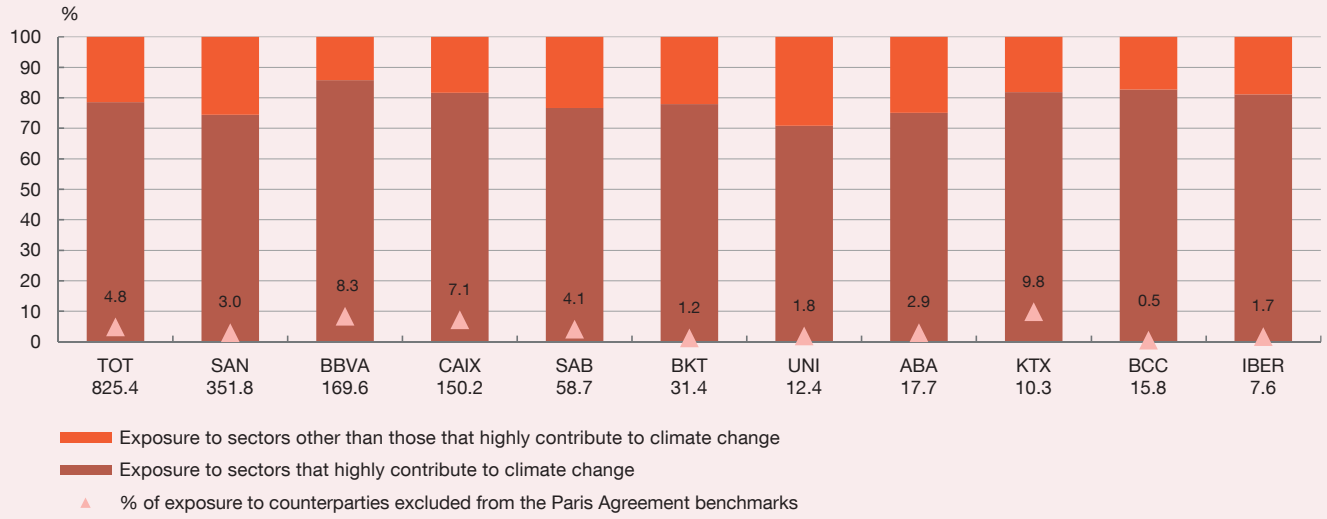
## Transition risks

Chart 1 analyses, at both the aggregate and bank level, the transition risk of exposures to NFCs in the banking book.

Of the total exposure analysed (€825.4 billion in banks' consolidated balance sheets), approximately 80% is to sectors that highly contribute to climate change.[11] Despite all the caveats arising from the lack of granular data on the situation of individual firms, these sectors must strive harder to decarbonise their activities. Exposures to counterparties excluded from the Paris Agreement are significantly smaller, amounting to €39.9 billion (4.8% of the exposures analysed).

10 Banco Santander, BBVA, CaixaBank, Banco Sabadell, Bankinter, Unicaja, Abanca, Kutxabank, Banco de Crédito Social Cooperativo and Ibercaja.
11 This figure differs significantly from that mentioned in Margarita Delgado. (2019). "Energy transition and financial stability. Implications for the Spanish deposit-taking institutions". *Financial Stability Review* – Banco de España, 37, pp. 9-40. This is because, as mentioned above (see note 6), the definition of "carbon-intensive sectors" according to the Commission Implementing Regulation (EU) 2022/2453 is particularly broad compared with other taxonomies, such as that used in the article mentioned here, that differentiate more clearly between polluting sectors.

Chart 1
Transition risk of exposures to NFCs (a)
Consolidated data at 31 December 2022




**SOURCE:** Banco de España.

**a** Chart 1 indicates (x-axis) the name of each bank and their total exposure amount, in billions (consolidated data at 31 December 2022).

Charts 2 and 3 analyse transition risk associated with the collateral for loans secured by immovable property (residential and commercial) and for the foreclosures portfolio. This risk is measured in terms of the energy efficiency of the collateral. The data comprise the energy performance certificate (EPC)[12] (Chart 2) and energy consumption in kWh/m$^2$ (Chart 3) of the collateral. Only loans granted within the EU have been analysed, as the data are considered to be of higher quality. Lending analysed under this criterion totals €631.4 billion.

A high percentage of buildings do not yet have an EPC. For loans collateralised with residential immovable property (84% of the total collateralised portfolio analysed), 64% of the collateral lacks an EPC. In the case of mortgages on commercial immovable property (14% of loans in this portfolio), 81% of the collateral has no EPC.[13]

For collateral securing residential immovable property with an EPC, label E is clearly the most prevalent, both at the aggregate level (20% of total collateral in this portfolio) and for each individual bank analysed. The higher EPC labels (A, B and C) account for 4% of total loans collateralised by residential immovable property. Label E is also the most common in the case of commercial immovable property, although the gap here with the other labels is not as wide, with the higher EPC labels accounting for 8% of the total.

Chart 3 – which incorporates both real and estimated EPC data – shows the effort made by banks to estimate the energy consumption of a significant portion of their immovable property without a certificate. The effort made is particularly evident in the residential sector, with information (real or estimated) on energy efficiency unavailable for just 15% of the immovable property analysed.

### Physical risks

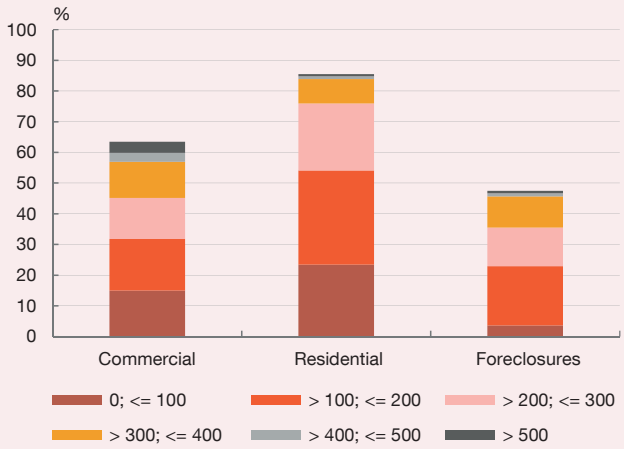
As a last step, the physical risk metrics used by the banks are analysed. It is worth noting that, in line with the high degree of flexibility permitted by the Regulation, the banks have used different methodologies and data sources to identify this risk, which could affect the comparability of information. This, together with the absence of previous such reports, means that the information should be interpreted with due caution.

12 The EPC is an official document that has been compulsory since 2013 in the sale and rental of property, with some exceptions such as garages, storerooms or plots and warehouses not used as office space. This certificate rates a building in terms of its annual consumption of energy from non-renewable sources in kWh/m$^2$ and its $CO_2$ emissions. The rating scale comprises seven letters, from A (most efficient) to G (least efficient).

13 The pattern observed in foreclosed properties, which account for a small share of the total portfolio analysed, is similar to that of loans collateralised with residential immovable property.

Chart 2
Energy efficiency of immovable property used as collateral in loans granted in the EU by Spanish banks. EPC (a) (b) (c)


Chart 3
Energy efficiency of immovable property used as collateral in loans granted in the EU by Spanish banks. kWh/m² (d)




**SOURCE:** Banco de España.

**a** The Energy Performance Certificate (EPC) is an official document that has been compulsory since 2013 in the sale and rental of property, with some exceptions such as garages, storerooms or plots and warehouses not used as office space. This certificate rates a building in terms of its annual consumption of energy from non-renewable sources in kWh/m², and its $CO_2$ emissions. The rating scale comprises seven letters, from A (most efficient) to G (least efficient).
**b** In Chart 2, the percentage of immovable property without an EPC in each portfolio analysed is as follows: 81% of commercial, 64% of residential and 69% of foreclosures.
**c** In Chart 2, the share of each energy efficiency label of immovable property (rated from A to G) is calculated relative to the total (with and without an EPC).
**d** In Chart 3, the percentage of immovable property with no estimated energy consumption in kWh/m² relative to the total is as follows: 37% for commercial, 15% for residential and 53% for foreclosures.

Chart 4
Exposures to NFCs subject to physical risk

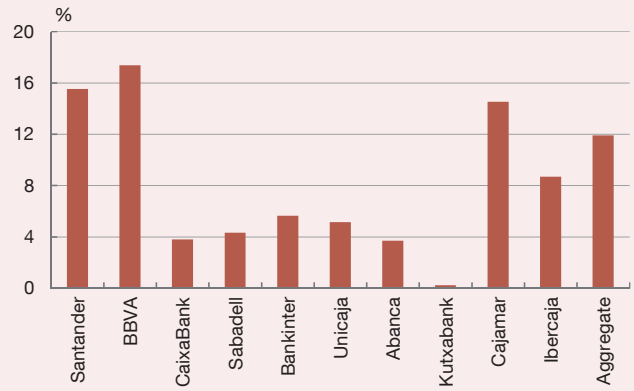
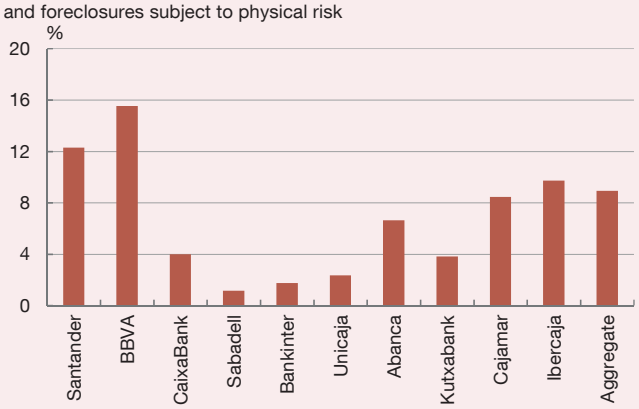



Chart 5
Loans collateralised by residential and commercial immovable property and foreclosures subject to physical risk




**SOURCE:** Banco de España.

Chart 4 compares the physical risk reported by the banks for their exposures to NFCs in the banking book with the total exposure reported for this portfolio, while Chart 5 shows an equivalent comparison for the portfolio of loans collateralised by immovable property and the foreclosures portfolio. As can be seen, the overall exposures to physical risk stand at 11.9% and 8.9%, respectively. These charts also show notable dispersion among banks, with higher values observed both at the most systemically important institutions and at some smaller banks in the reporting group.

It should be emphasised that this analysis is preliminary and needs to be interpreted with caution. First, because it is the first time that banks have disclosed information in this format, opening up a greater possibility of errors.

Second, because this information provides an as-yet incomplete vision of exposures to climate risks. A significant part of the data to be disclosed under the Regulation is not available owing to the transitional stages mentioned above.

It should also be borne in mind that the risk exposure categories used are relatively broad, and that there may be considerable heterogeneity in terms of the risks of impact across individual corporations and immovable properties within each category (such as differences between corporations in emission-intensive sectors as regards the level of emissions and the ability to adapt their productive process).

With the application of the Corporate Sustainability Reporting Directive, banks will foreseeably have higher quality data on their counterparties, which will enhance the quality of their Pillar 3 disclosures. With time, the analysis can also be rounded out with the other aspects envisaged in the Regulation and with future developments in the indicators, thus enabling more comprehensive and qualified assessments.

In any event, these disclosures provide previously unavailable quantitative information that points to the importance of climate risk exposures and also to the need for further headway in improving databases to ensure the proper management of such risks.

Annex 1

## Consolidated balance sheet
## Deposit institutions

| Assets | Jun-23 | Change Jun-23/Jun-22 | % of total assets Jun-22 | % of total assets Jun-23 |
|---|---|---|---|---|
| | €m | % | % | % |
| Cash and balances at central banks | 430,918 | -25.5 | 13.8 | 10.4 |
| Loans and advances to credit institutions | 276,245 | 14.9 | 5.7 | 6.7 |
| General government | 110,701 | -0.3 | 2.6 | 2.7 |
| Other private sectors | 2,327,413 | 1.4 | 54.7 | 56.1 |
| Debt securities | 589,809 | 8.6 | 12.9 | 14.2 |
| Other equity instruments | 32,774 | -0.2 | 0.8 | 0.8 |
| Investments | 21,529 | -4.4 | 0.5 | 0.5 |
| Derivatives | 153,667 | -1.9 | 3.7 | 3.7 |
| Tangible assets | 58,182 | -3.1 | 1.4 | 1.4 |
| Other | 146,648 | -5.7 | 3.7 | 3.5 |
| **TOTAL ASSETS** | **4,147,886** | **-1.2** | **100.0** | **100.0** |
| MEMORANDUM ITEMS | | | | |
| Financing to private sector | 2,391,346 | 1.8 | 56.0 | 57.7 |
| Financing to general government | 587,845 | 5.6 | 13.3 | 14.2 |
| Total NPLs | 83,409 | -2.7 | 2.0 | 2.0 |
| Total NPL ratio | 2.3 | -1 (b) | | |

| Liabilities and equity | Jun-23 | Change Jun-23/Jun-22 | % of total assets Jun-22 | % of total assets Jun-23 |
|---|---|---|---|---|
| | €m | % | % | % |
| Balances from central banks | 141,026 | -64.9 | 9.6 | 3.4 |
| Deposits from credit institutions | 348,220 | 42.0 (b) | 5.8 | 8.4 |
| General government | 141,670 | 7.5 | 3.1 | 3.4 |
| Other private sectors | 2,433,797 | 1.5 | 57.1 | 58.7 |
| Marketable debt securities and subordinated debt | 470,650 | 12.3 | 10.0 | 11.3 |
| Derivatives | 144,473 | -4.3 | 3.6 | 3.5 |
| Provisions (including provisions for pensions) | 22,249 | -7.6 | 0.6 | 0.5 |
| Other | 183,604 | 5.1 | 4.2 | 4.4 |
| **TOTAL LIABILITIES** | **3,885,690** | **-1.5** | **94.0** | **93.7** |
| MEMORANDUM ITEMS | | | | |
| Eurosystem net lending (a) | 88,092 | -69.6 | 6.9 | 2.1 |
| Own funds | 303,890 | 4.3 | 6.9 | 7.3 |
| Minority interests | 12,208 | 6.8 | 0.3 | 0.3 |
| Valuation adjustments | -53,902 | 2.2 | -1.3 | -1.3 |
| **TOTAL EQUITY** | **262,197** | **4.8** | **6.0** | **6.3** |
| **TOTAL LIABILITIES AND EQUITY** | **4,147,886** | **-1.2** | **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 2023 data.
**b** Difference calculated in basis points.

Annex 2

## Consolidated income statement
## Deposit institutions

| | Jun-23 | | Jun-22 | Jun-23 |
|---|---|---|---|---|
| | €m | % change Jun-23 / Jun-22 | % ATA | % ATA |
| Interest income | 94,677 | 71.6 | 2.71 | 4.61 |
| Interest expense | 48,578 | 157.2 | 0.93 | 2.37 |
| Net interest income | 46,099 | 27.0 | 1.78 | 2.25 |
| Return on equity instruments | 872 | 13.5 | 0.04 | 0.04 |
| Net financial income | 46,972 | 26.7 | 1.82 | 2.29 |
| Share of profit or loss of entities accounted for using the equity method | 1,839 | 6.8 | 0.08 | 0.09 |
| Net fees and commissions | 15,045 | 2.6 | 0.72 | 0.73 |
| Gains and losses on financial assets and liabilities | 2,528 | -1.0 | 0.13 | 0.12 |
| Other operating income (net) | -2,442 | 122.6 | -0.05 | -0.12 |
| Gross income | 63,942 | 16.5 | 2.69 | 3.12 |
| Operating expenses | 28,143 | 9.1 | 1.27 | 1.37 |
| Net operating income | 35,799 | 23.0 | 1.43 | 1.74 |
| Impairment losses | 9,753 | 26.8 | 0.38 | 0.48 |
| Other provisioning expense (net) | 1,893 | 41.3 | 0.07 | 0.09 |
| Other gains or losses (net) | -2,252 | -7.0 | -0.12 | -0.11 |
| Profit before tax (including discontinued operations) | 21,900 | 24.1 | 0.87 | 1.07 |
| Net profit | 15,622 | 25.0 | 0.61 | 0.76 |
| *MEMORANDUM ITEM* | | | | |
| Profit attributable to the controlling entity | 14,779 | 26.2 | 0.57 | 0.72 |

**SOURCE:** Banco de España.

The Banco de España publishes various types of documents providing information on its activity (economic reports, statistics, research papers, etc.), which can be consulted in the Institutional Repository at https://repositorio.bde.es/?locale=en.

Most of these documents are available in PDF format and can be downloaded free of charge from the Banco de España website at http://www.bde.es/webbde/en/secciones/informes/.

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## SYMBOLS AND ABBREVIATIONS

| | |
|---|---|
| APP | Asset purchase programme |
| ATAs | Average total assets |
| BCBS | Basel Committee on Banking Supervision |
| BCP | Basel Core Principales |
| BIS | Bank for International Settlements |
| BLS | Bank Lending Survey |
| bn | Billion |
| bp | Basis points |
| CBQ | Banco de España Central Balance Sheet Data Office Quarterly Survey |
| CCR | Banco de España Central Credit Register |
| CCyB | Countercyclical capital buffer |
| CET1 | Common Equity Tier 1 |
| CGP | Code of Good Practice |
| CMDI | Crisis Management and Deposit Insurance |
| COE | Cost of equity |
| COVID-19 | Coronavirus disease 2019 |
| CPI | Consumer Price Index |
| CRD | Capital Requirements Directive |
| CRR | Capital Requirements Regulation |
| DeFi | Decentralised Finance |
| DFR | Deposit facility rate |
| DGS | Deposit Guarantee Scheme |
| 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 |
| EEA | European Economic Area |
| EFF | Encuesta Financiera de las Familias (Spanish Survey of Household Finances) |
| EPC | Energy performance certificate |
| ESG | Environmental, social and governance |
| ESMA | European Securities and Markets Authority |
| ESRB | European Systemic Risk Board |
| €STR | Euro short-term rate |
| EU | European Union |
| EURIBOR | Euro Interbank Offered Rate |
| FDIC | Federal Deposit Insurance Corporation |
| FLESB | Forward-looking exercise on Spanish banks |
| FOMC | Federal Open Market Committee |
| FSB | Financial Stability Board |
| FSR | Financial Stability Report |
| GAR | Green Asset Ratio |
| GDP | Gross domestic product |
| GHG | Greenhouse gas |
| 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 |
| HQLAs | High Quality Liquid Assets |
| 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) |
| LCCTE | Law 7/2021 on climate change and the energy transition |
| LCR | Liquidity Coverage Ratio |
| LGFV | Local government financing vehicle |
| IRS | Interest-rate swap |
| LSIs | Less significant institutions |
| LSTI | Loan-service-to-income |
| LTI | Loan-to-income ratio |
| LTP | Loan-to-price ratio |
| LTV | Loan-to-value ratio |
| m | Million |
| MiCA | Markets in Crypto-assets Regulation |
| MREL | Minimum Requirement for own funds and Eligible Liabilities |
| NBER | National Bureau of Economic Research |
| NBFI | Non-bank financial intermediation |
| NDERs | Narrowly defined effective rates |
| NFCs | Non-financial corporations |
| NGEU | Next Generation EU |
| NPLs | Non-performing loans |
| NSFR | Net Stable Funding Ratio |
| OCC | Office of the Comptroller of the Currency |
| OECD | Organisation for Economic Co-operation and Development |
| OIS | Overnight Interest Swap |
| OPEC | Organization of the Petroleum Exporting Countries |
| OPEC+ | Expanded Organization of the Petroleum Exporting Countries |
| O-SIIs | Other systemically important institutions |
| OTC | Over-the-counter |
| PD | Probability of default |
| PEPP | Pandemic emergency purchase programme |
| PMI | Purchasing Managers' Index |
| pp | Percentage points |
| PRA | Prudential Regulation Authority |
| Q | Quarter |
| q-o-q | Quarter-on-quarter |
| Repo | Repurchase agreement |
| ROA | Return on assets |
| ROE | Return on equity |
| RWAs | Risk-weighted assets |
| SAFE | Survey on the access to finance of enterprises |
| SCR | Solvency Capital Requirement |
| SHSG | Securities Holdings Statistics Group |
| SIs | Significant institutions |
| SLIs | Specialised lending institutions |
| SMEs | Small and medium-sized enterprises |
| SNP | Senior non-preferred |
| SOCIMI | Spanish real estate investment trust |
| SRI | Systemic risk indicator |
| SRM | Single Resolution Mechanism |
| SSM | Single Supervisory Mechanism |
| TLTROs | Targeted longer-term refinancing operations |
| VAR | Vector autoregression |
| WEO | World Economic Outlook |
| 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 | France | 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 | Türkiye |
| CY | Cyprus | HU | Hungary | MX | Mexico | US | United States |
| CZ | Czech Republic | | | | | | |