

THE SPANISH BANKING SECTOR IN THE FACE OF MACRO- FINANCIAL RISKS

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Governor

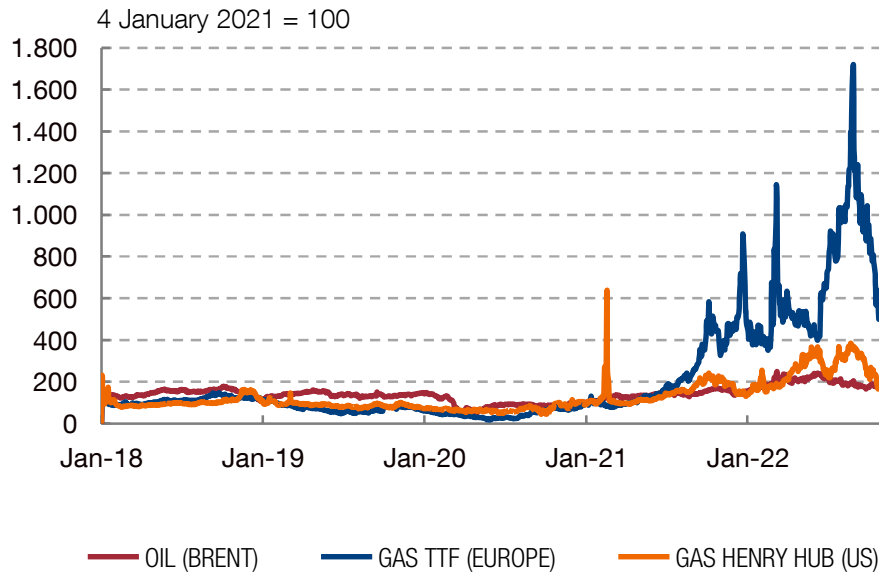
29TH FINANCIAL SECTOR MEETING - DELOITTE

Madrid

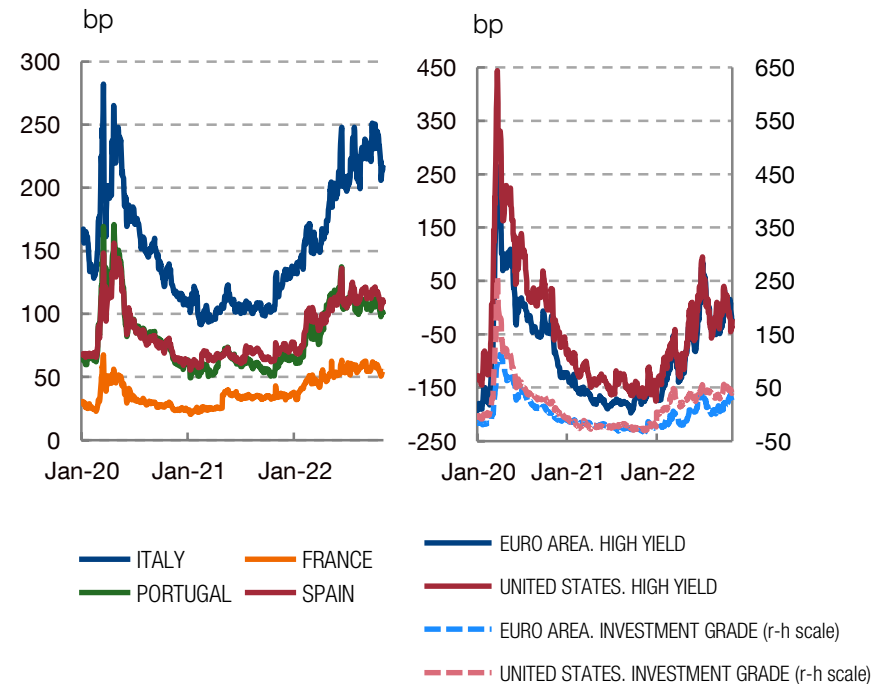
23 November 2022



1 NATURAL GAS AND OIL PRICES (a)



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

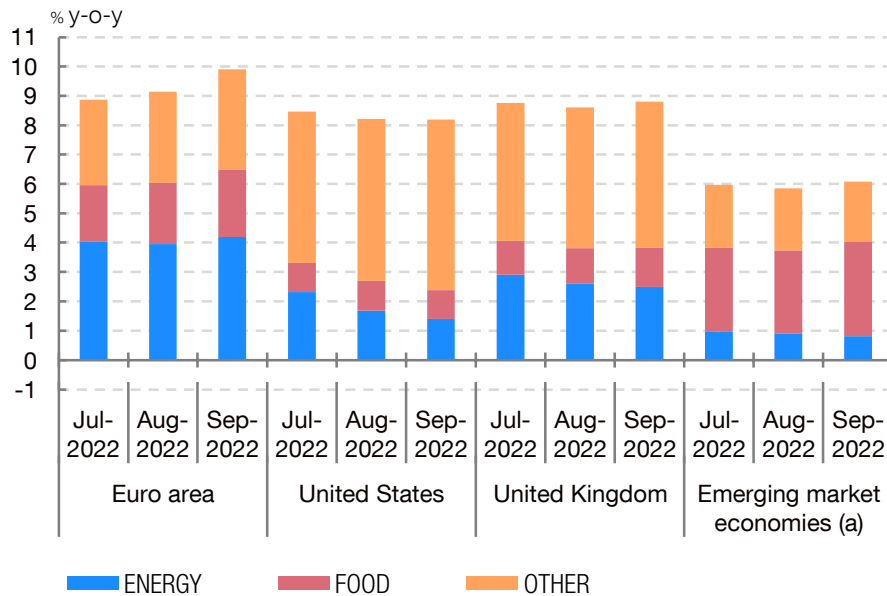


SOURCES: Refinitiv Datastream and Banco de España.

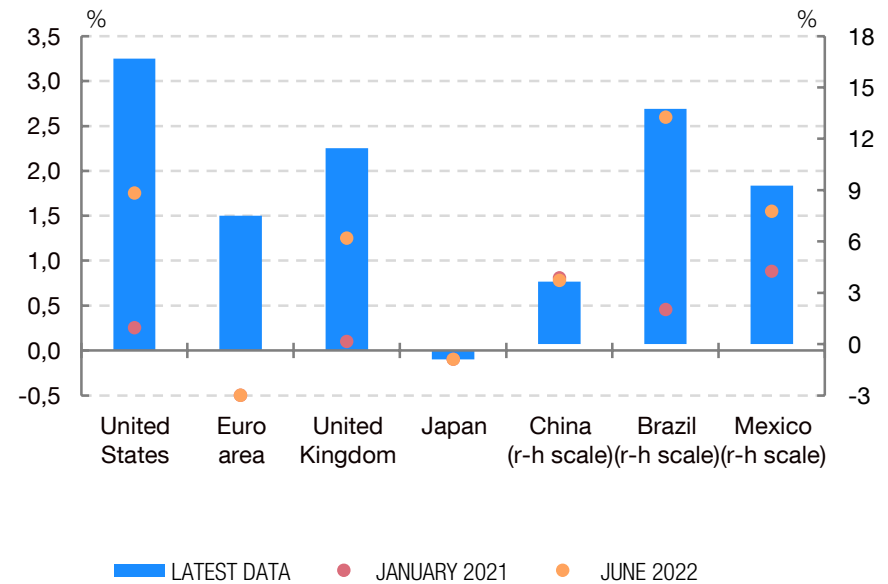
a The spot prices of the three markets are expressed in euro for ease of comparison.

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

3 RECENT INFLATION DEVELOPMENTS



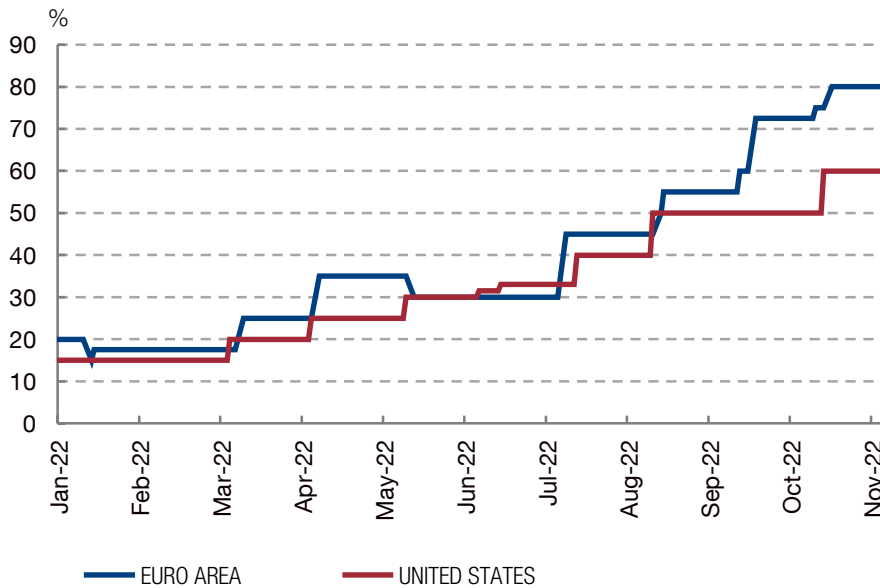
4 MAIN POLICY INTEREST RATES



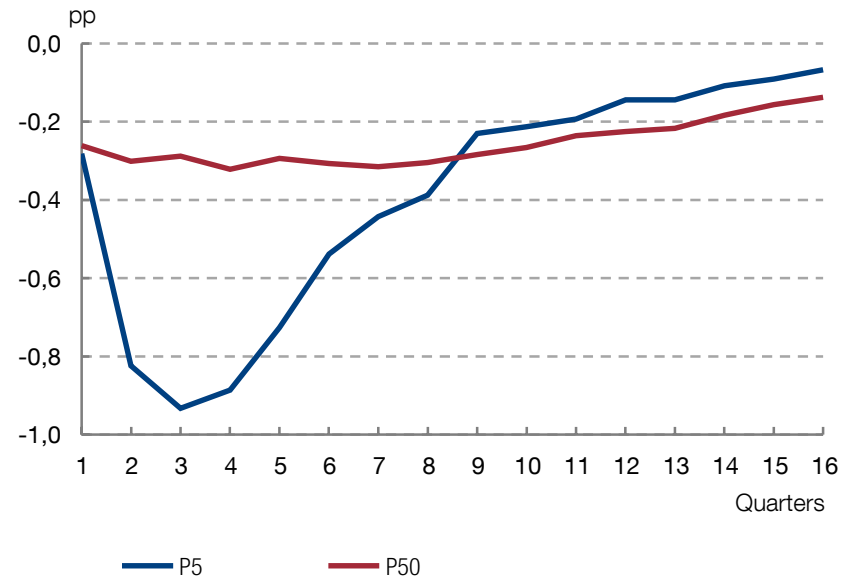
SOURCES: National statistics and national central banks.

a “Emerging market economies” comprises four geographical areas: China, Asia excluding China, LATAM-5 and eastern Europe.

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



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

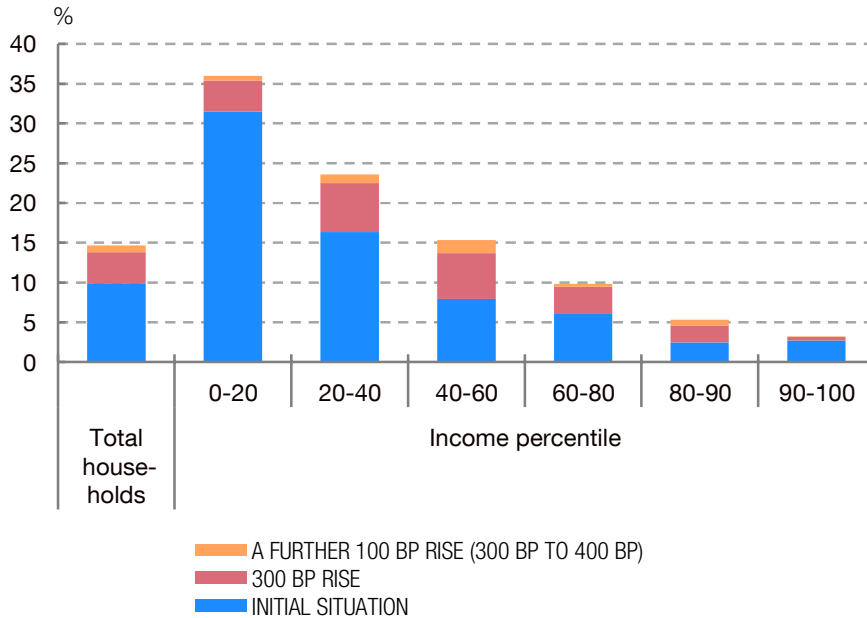


SOURCES: Bloomberg, INE and Banco de España.

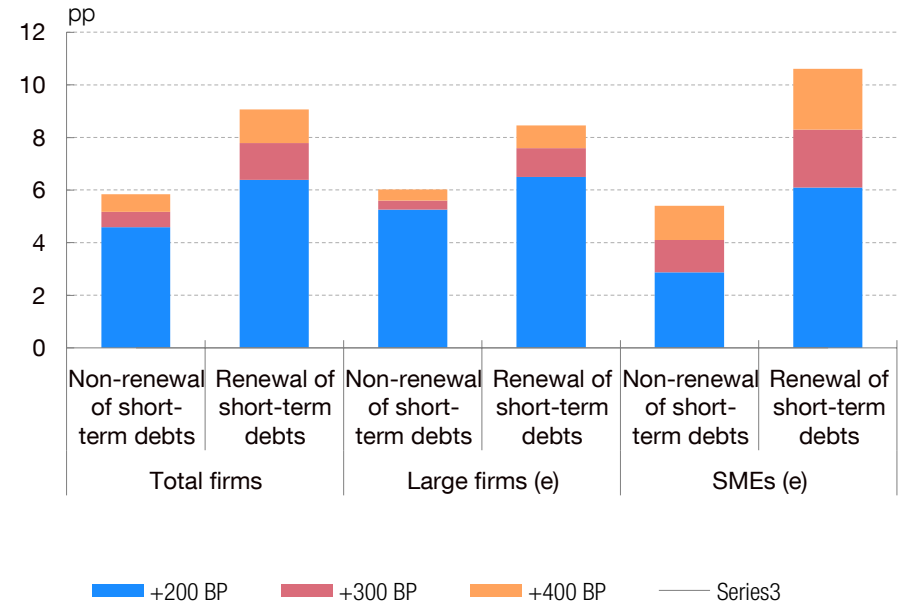
a These indicators are based on the responses to surveys conducted by Bloomberg on the probability of a recession one year ahead. The indices used are: US Recession Probability Forecast Index and Eurozone Recession Probability Forecast Index.

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

7 IMPACT OF HIGHER INTEREST RATES ON THE PERCENTAGE OF INDEBTED HOUSEHOLDS WITH A HIGH NET INTEREST BURDEN (a) (b)



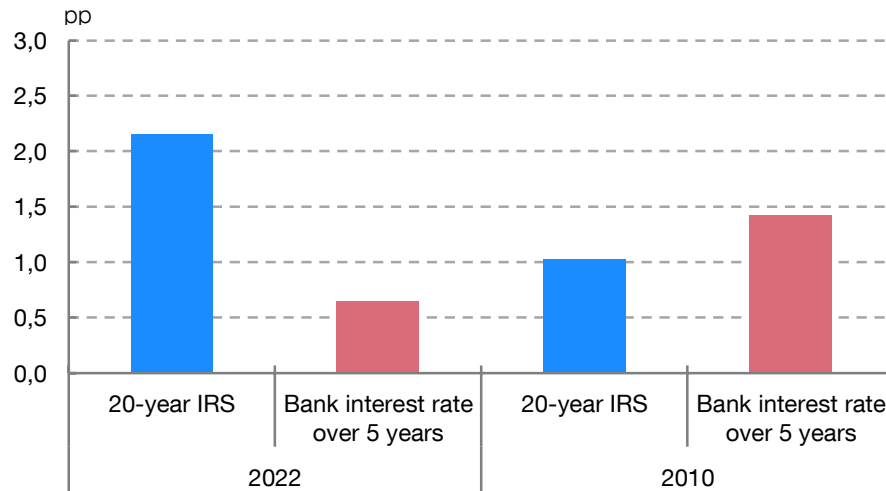
8 ESTIMATED INCREASE IN THE WEIGHT OF DEBT OF FIRMS UNDER HIGH FINANCIAL PRESSURE OWING TO THE RISE IN INTEREST RATES (c) (d)



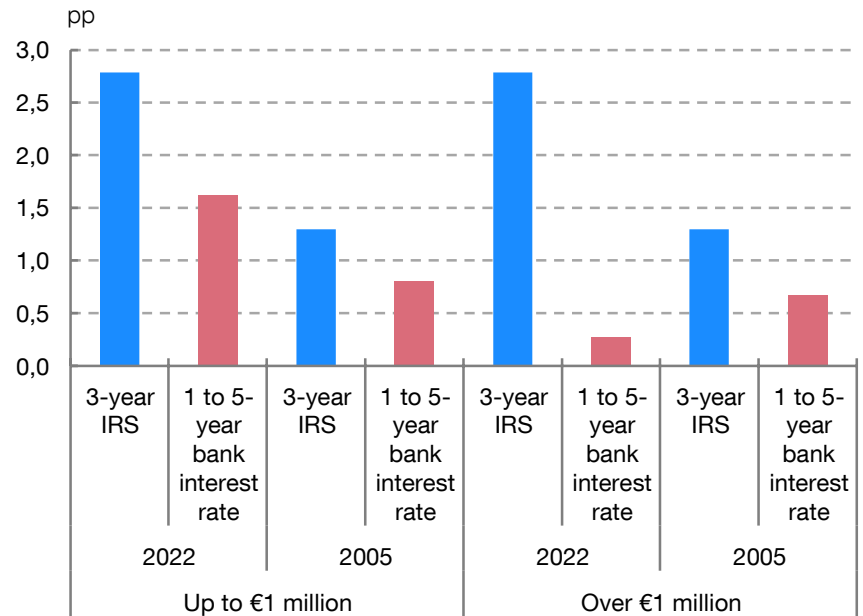
SOURCES: Banco de España and Survey of Household Finances (2017).

- a The impact of the interest rate increases reflects the change in net interest burden (Debt servicing costs - Interest income from deposits). Interest rate increases are assumed to be fully passed through to variable borrowing costs.
- b The net interest burden is considered to be high when it exceeds 40% of household income.
- c Firms are considered to be under high financial pressure when their ratio of (Gross operating profit + Financial revenue) to Financial costs is below one.
- d In the case of non-renewal of short-term debts, the rise in interest rates is fully fed through to the interest rate on long-term and variable-rate debts and loans. A pass-through of 15% is assumed for sight deposits and of 76% for time deposits for up to one year. The renewal of short-term debts differs from the previous case in that the rise in interest rates is also passed through to short-term debts and loans.
- e Size is defined according to European Commission Recommendation 2003/361/EC.

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



10 CUMULATIVE CHANGE IN THE COST OF MEDIUM-TERM LOANS TO NFCs AND IN THE MARKET INTEREST RATE (a) (c)



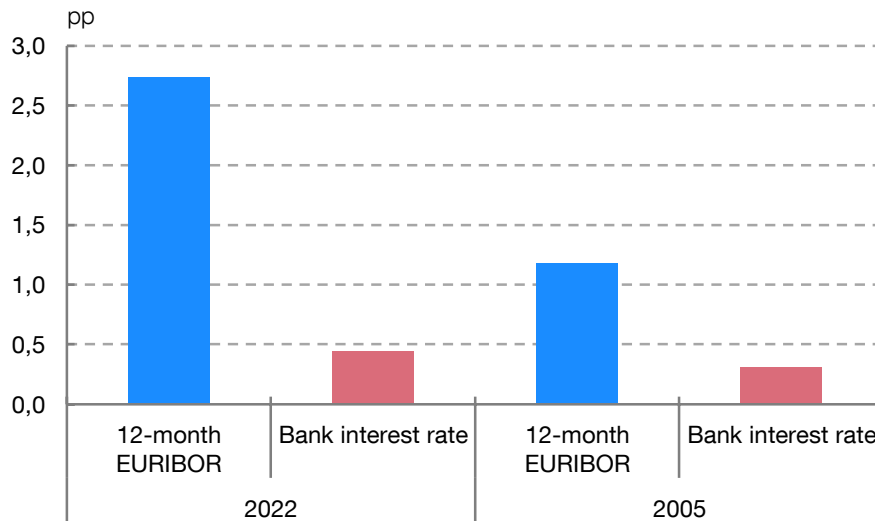
SOURCES: Banco de España and Refinitiv Datastream.

a Bank lending interest rates are narrowly defined effective rates (NDEs), i.e. they exclude related charges, such as repayment insurance premia and fees. They are also trend-cycle interest rates, i.e. they are adjusted for seasonal and irregular components (small changes in the series with no recognisable pattern in terms of periodicity or trend). Also, the bank rate term does not necessarily indicate the maturity of the lending transaction, but rather the frequency with which the interest rate on the arranged loan is revised.

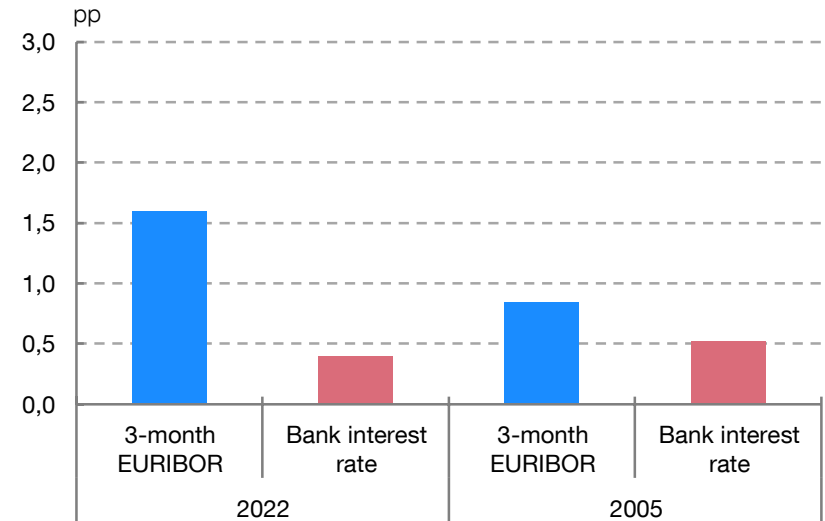
b The cumulative change in interest rates is shown for two cycles between month 0 and month 9 in 2022 and between month 0 and month 7 in 2010. In 2022 month 0 corresponds to December 2021 and in 2010 to September 2010.

c The cumulative change in interest rates is shown for two cycles between month 0 and month 9. In 2022 month 0 corresponds to December 2021 and in 2005 to September 2005.

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



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

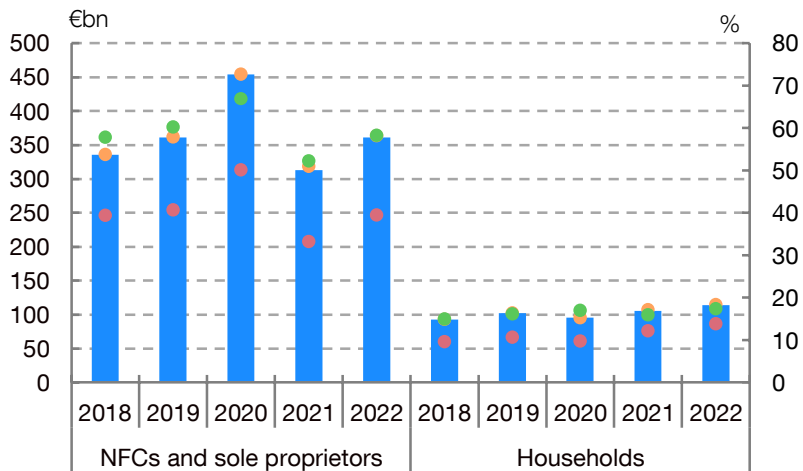


SOURCE: Banco de España.

a Bank lending interest rates are narrowly defined effective rates (NDEs), i.e. they exclude related charges, such as repayment insurance premia and fees.

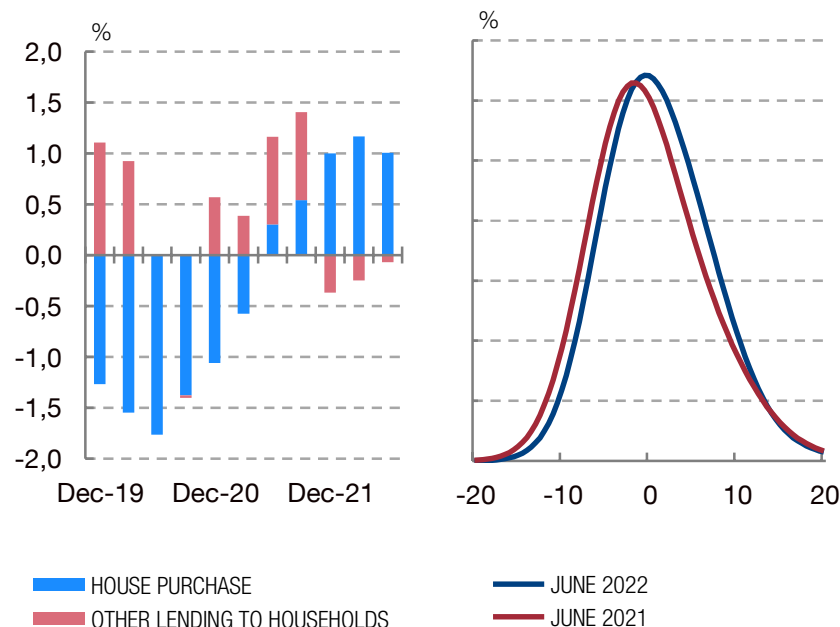
b The cumulative change in interest rates is shown for two cycles between month 0 and month 9. In 2022 month 0 corresponds to December 2021 and in 2005 to September 2005.

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



- NEW LENDING IN LAST 12 MONTHS (a)
- NEW LOANS AS A SHARE OF LOAN STOCK (b) (r-h scale)
- TOTAL NEW LENDING AS A SHARE OF LOAN STOCK (a) (b) (r-h scale)
- TOTAL DERECOGNITIONS AS A SHARE OF LOAN STOCK (b) (c) (r-h scale)

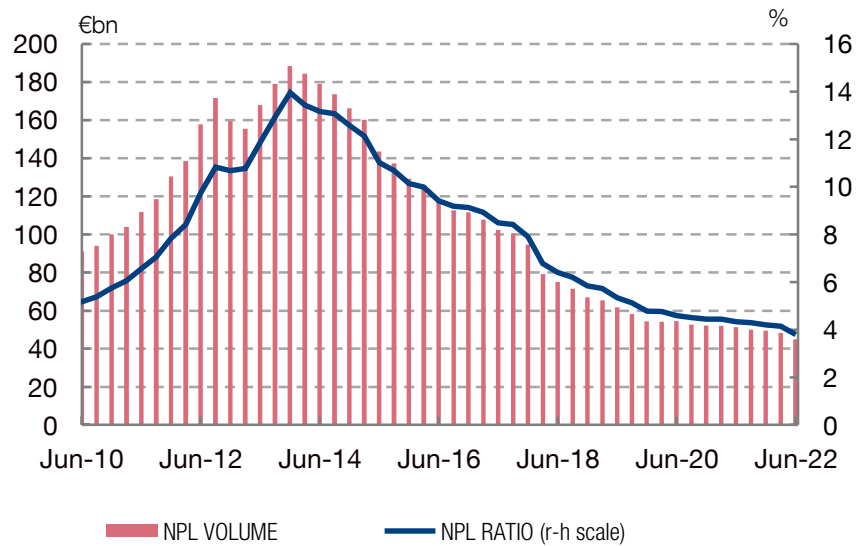
14 CONTRIBUTIONS TO THE Y-O-Y RATE OF CHANGE OF LENDING TO HOUSEHOLDS (L-H PANEL) AND DISTRIBUTION OF BANKS BY THE Y-O-Y RATE OF CHANGE OF LOANS FOR HOUSE PURCHASE (R-H PANEL) (d)
Business in Spain, ID



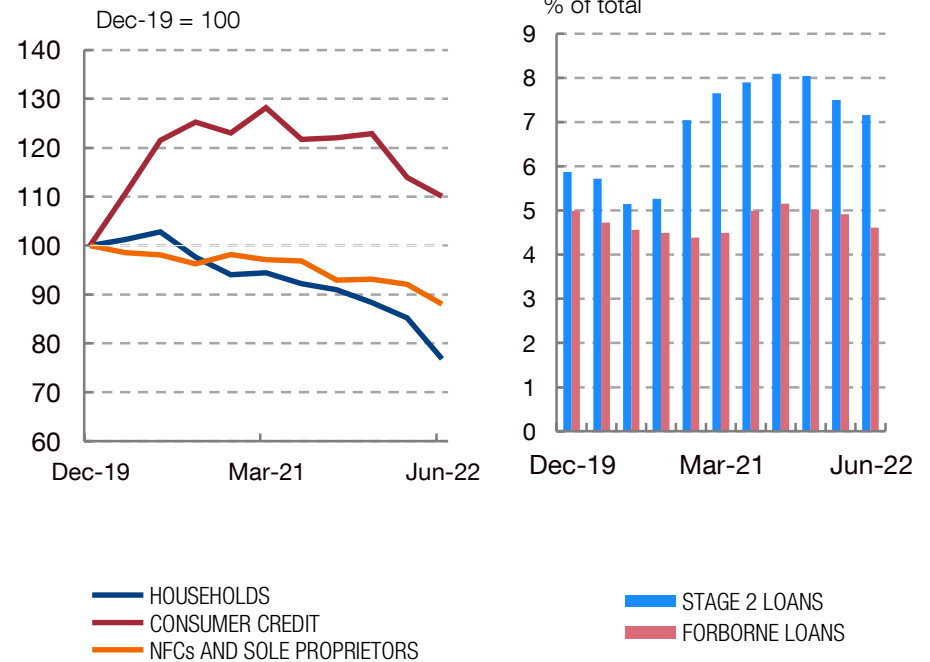
SOURCE: Banco de España.

- a New lending is the sum of new loans extended and increases in principal owing to drawdowns against existing credit lines.
- b Considering the loan stock at June of the previous year.
- c Derecognitions include repayments, write-offs, securitisations and portfolio sales.
- d The chart depicts the density function of the year-on-year rate of change of loans for house purchase for Spanish deposit institutions, weighted by the amount of loans for house purchase. The density function is estimated using a kernel estimator, which enables non-parametric estimation and provides a continuous, smoothed graphic representation of the function.

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



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

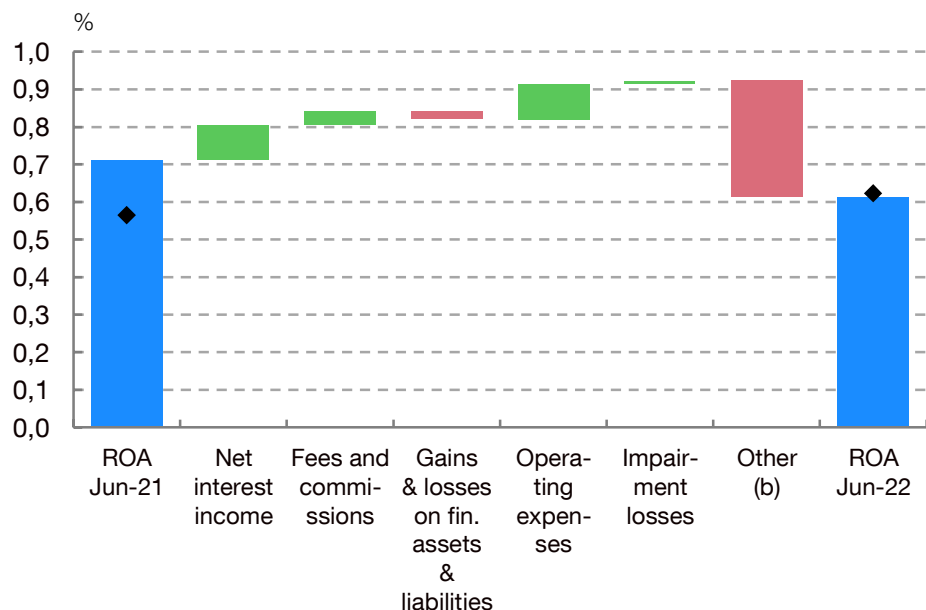


SOURCE: Banco de España.

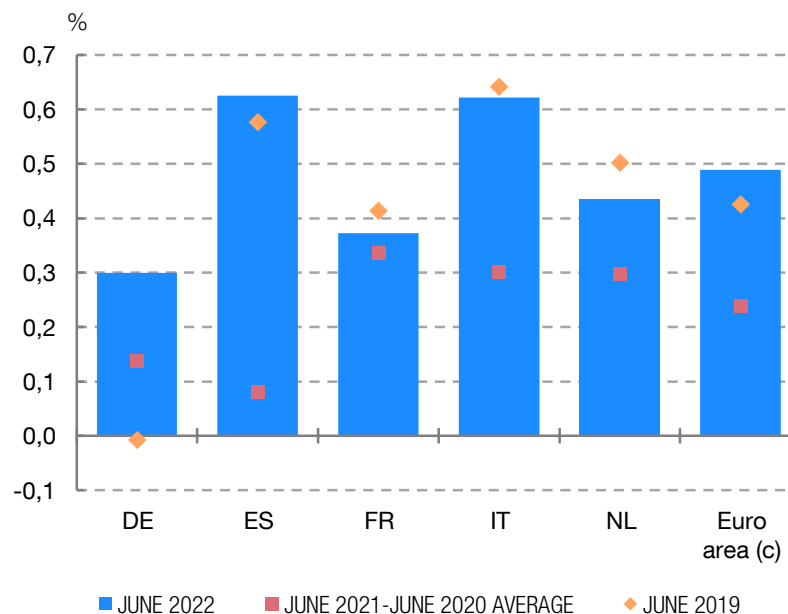
a. Stage 2 and forborne loans, as their respective share of total credit to the resident private sector.

THE INCREASE IN NET INTEREST INCOME AND IN FEES AND COMMISSIONS EXPLAIN THE IMPROVEMENT IN BANKS' PROFITABILITY

17 BREAKDOWN OF CHANGE IN PROFIT
Consolidated net profit as a percentage of ATAs (a)



18 RETURN ON ASSETS (ROA)
Consolidated data



SOURCES: Banco de España and EBA.

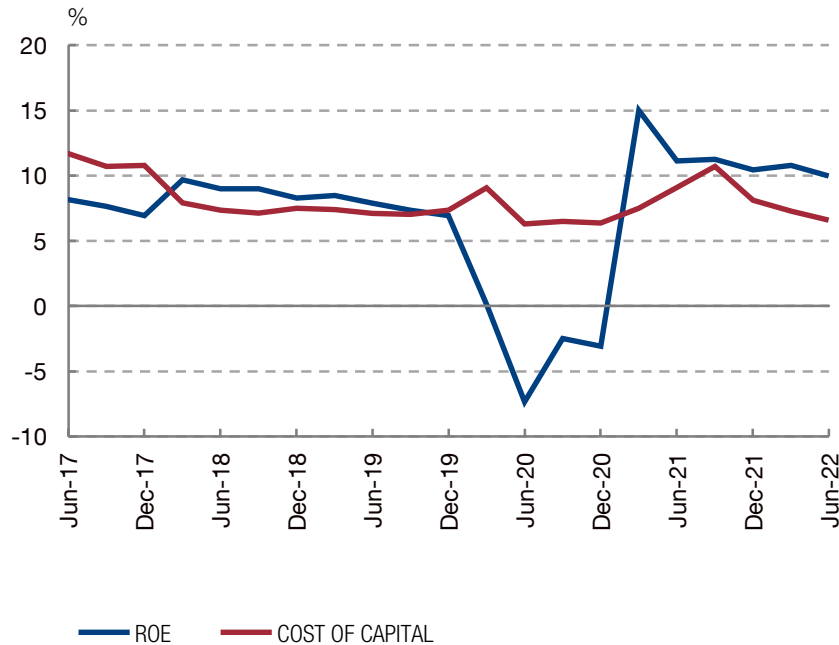
a The red (green) colour of the bars denotes a negative (positive) contribution of the corresponding item to the change in consolidated profit in June 2022 compared with June 2021. The black diamonds denote the ROA excluding extraordinary items. Specifically: in June 2021, extraordinary gains as the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

b Including, among others, the aforementioned extraordinary items.

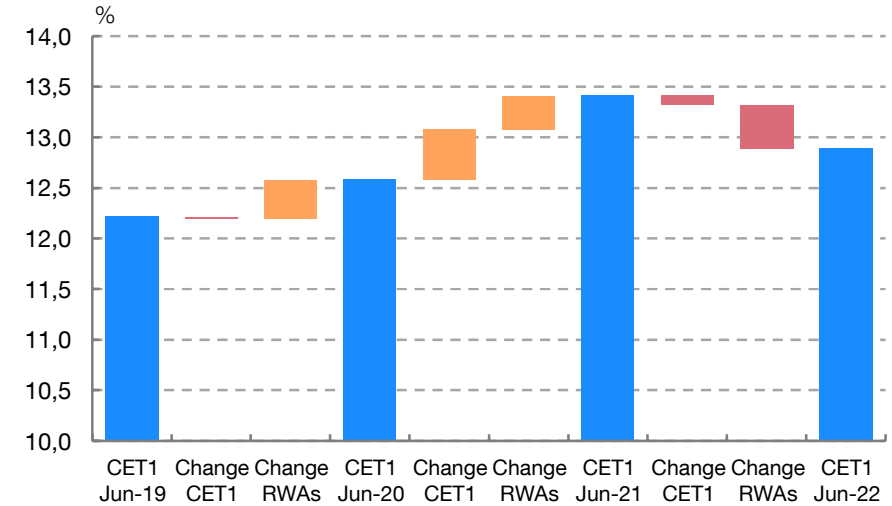
c The average ROA of the euro area is calculated using the individual ROA data for each country contained in the EBA's Risk Dashboard, weighting each country by its total assets (a figure also drawn from the Risk Dashboard).

BANKING SECTOR PROFITABILITY HAS IMPROVED AND EXCEEDS THE COST OF CAPITAL. SOLVENCY HAS DECLINED, BUT REMAINS HIGHER THAN BEFORE THE PANDEMIC

19 ROE AND COST OF CAPITAL IN THE BANKING SECTOR



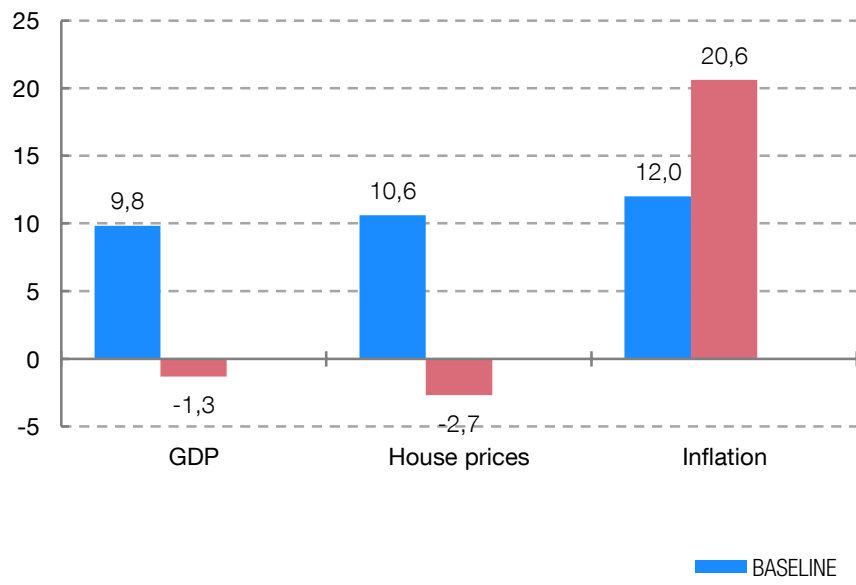
20 BREAKDOWN OF CHANGE IN THE CET1 RATIO BETWEEN JUNE 2019 AND JUNE 2022. CHANGE IN NUMERATOR AND DENOMINATOR
Consolidated data



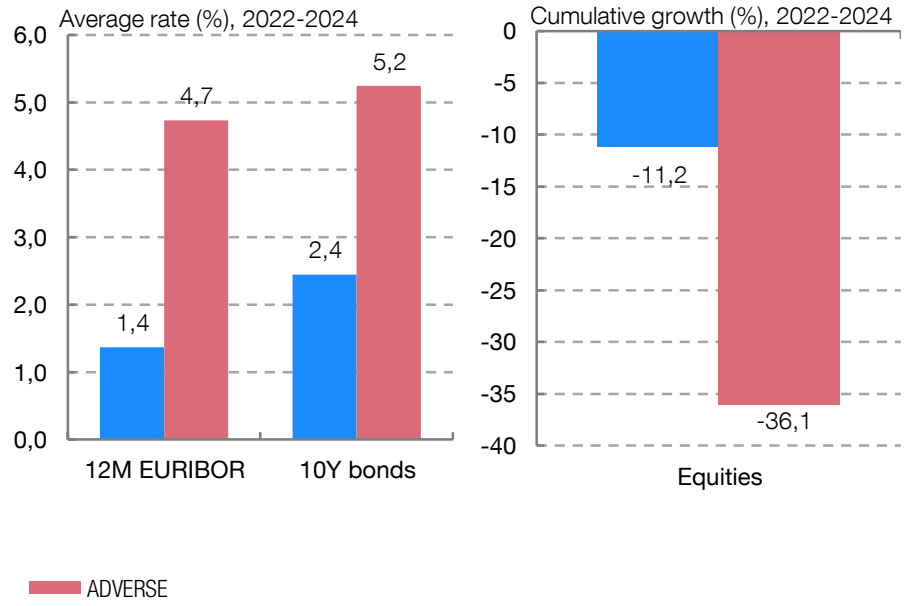
SOURCE: Banco de España.

IN THE STRESS TESTS, THE ADVERSE MACROECONOMIC SCENARIO ASSUMES A LARGE-SCALE MATERIALISATION OF THE RISKS BOTH IN SPAIN ...

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



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



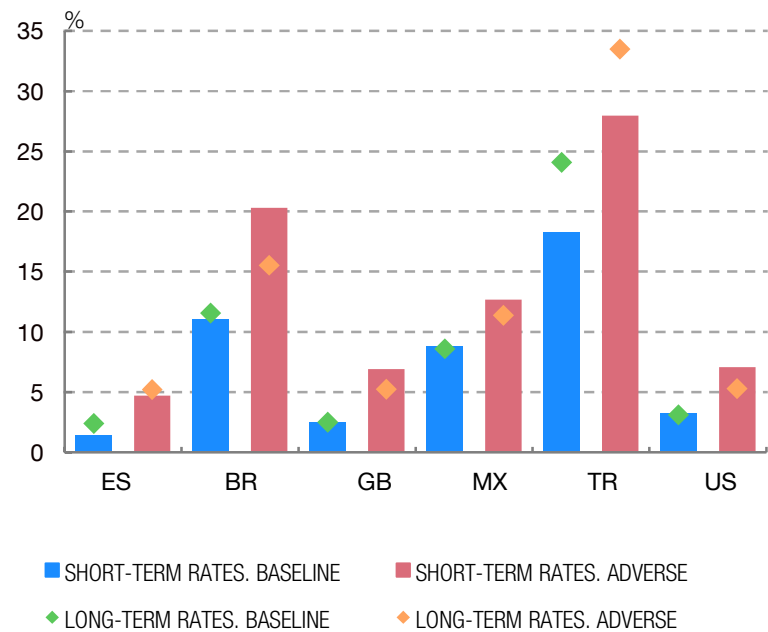
SOURCE: Banco de España.

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.

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



24 AVERAGE SHORT AND LONG-TERM RATES BY COUNTRY IN 2022-2024. BASELINE AND ADVERSE SCENARIOS

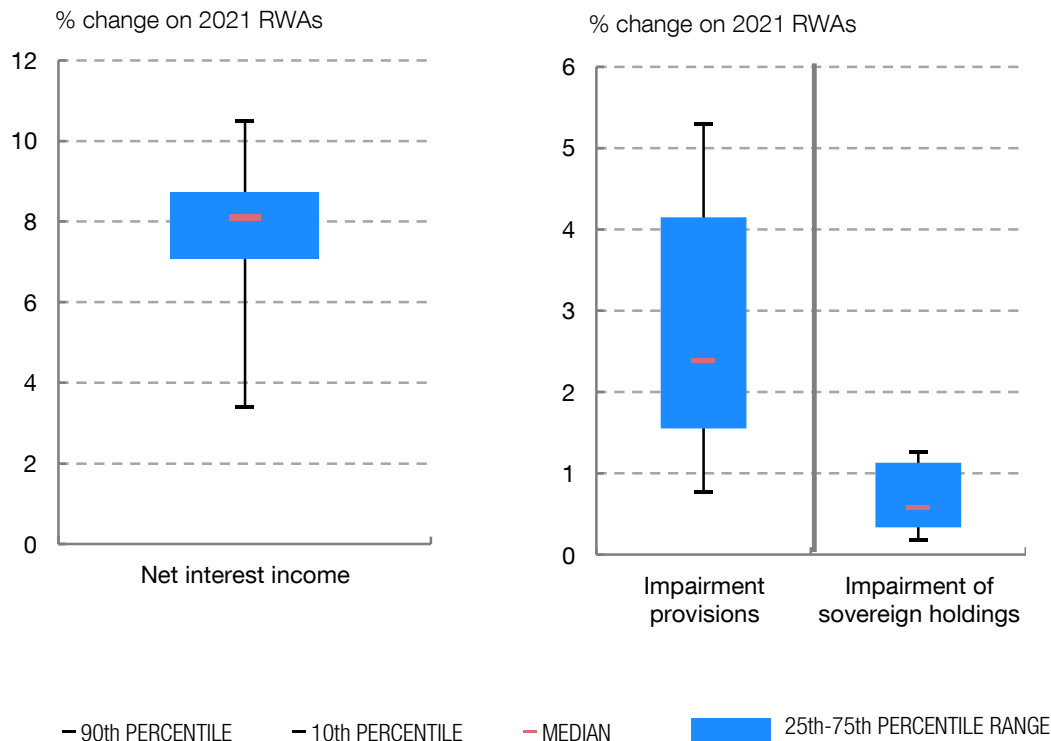


SOURCE: Banco de España.

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

THE RESULTS POINT TO HIGHER INTEREST RATES HAVING OPPOSING EFFECTS ON PROFITABILITY

25 DISTRIBUTION AMONG BANKS OF THE IMPACT ON NET INTEREST INCOME AND IMPAIRMENT PROVISIONS UNDER THE BASELINE SCENARIO RELATIVE TO 2021 RWAs (a). SIs

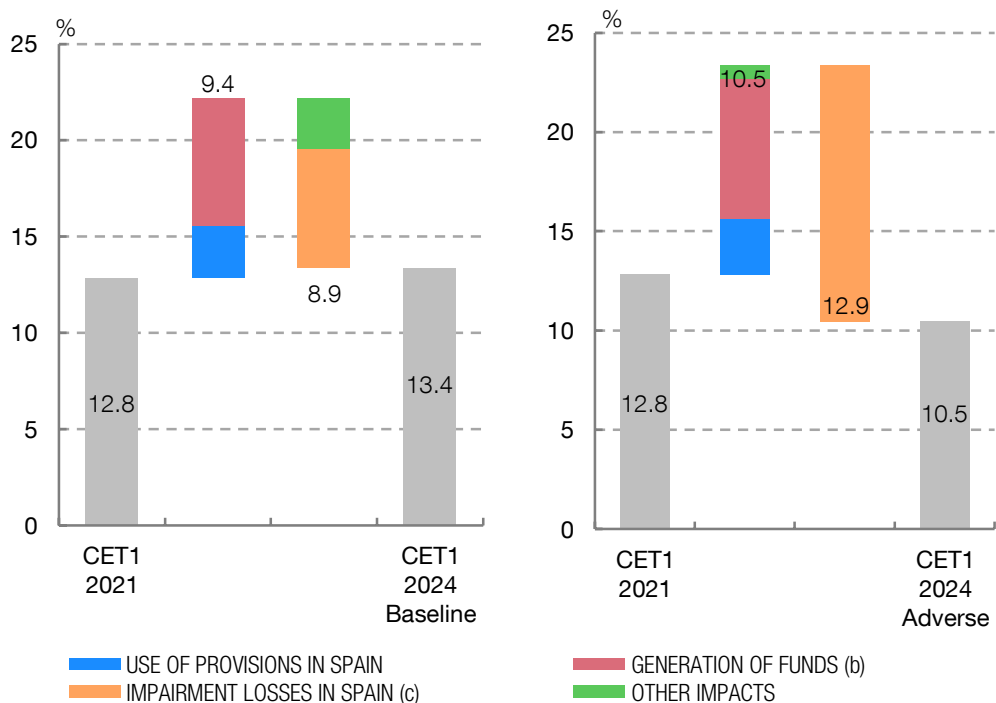


SOURCE: Banco de España.

a Shown is the distribution among banks of earnings due to the widening of net interest income in operations in Spain and losses due to the higher impairment losses in operations in Spain and on sovereign exposures in consolidated operations under the baseline scenario. These measures are cumulative in the horizon 2022-2024 relative to 2021 RWAs, 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.

THE EFFECTS ARE PREDOMINANTLY POSITIVE UNDER THE BASELINE SCENARIO, BUT NEGATIVE UNDER THE ADVERSE SCENARIO. IN ANY EVENT, THE LEVEL OF RESILIENCE IN THE BANKING SECTOR IS HIGH

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

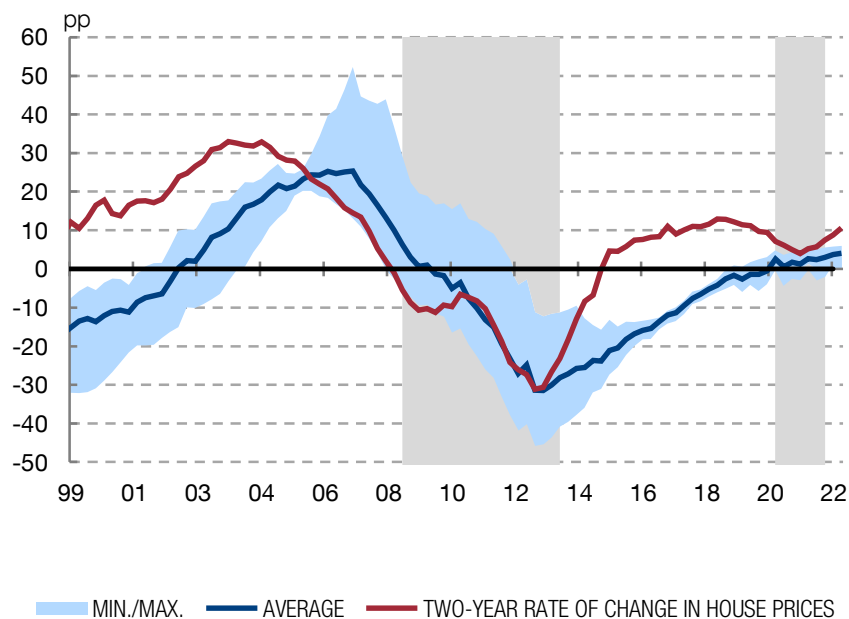


SOURCE: Banco de España.

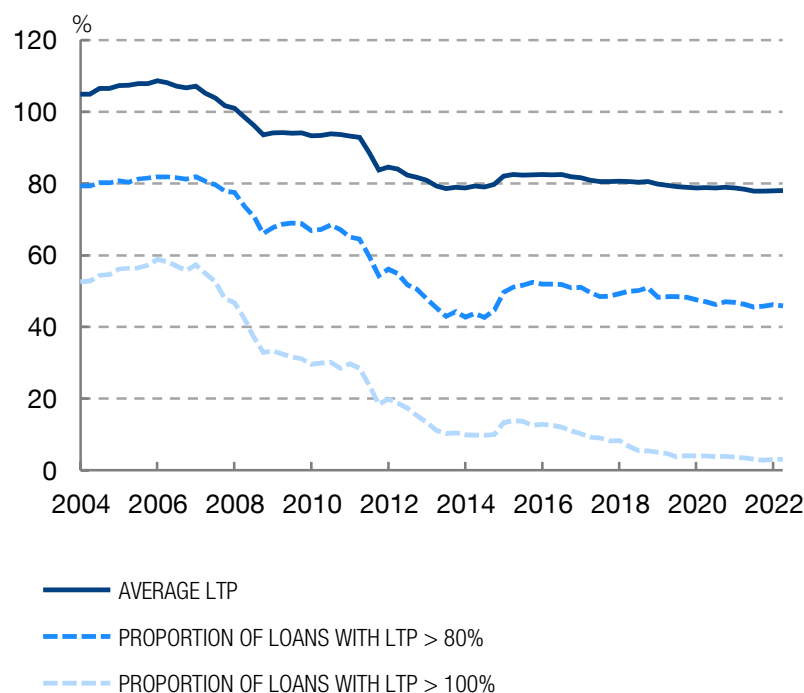
- a The net effect of positive (negative) flows is indicated by the figure above (below) the bar in question. The initial and final CET1 ratios are presented as "fully-loaded". Other impacts include, among others, the change in RWAs between 2021 and 2024 and the effect of ICO guarantees. Aggregate results,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

LOW LEVEL OF THE VULNERABILITY RELATED TO INCIPIENT SIGNS OF REAL ESTATE IMBALANCES

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



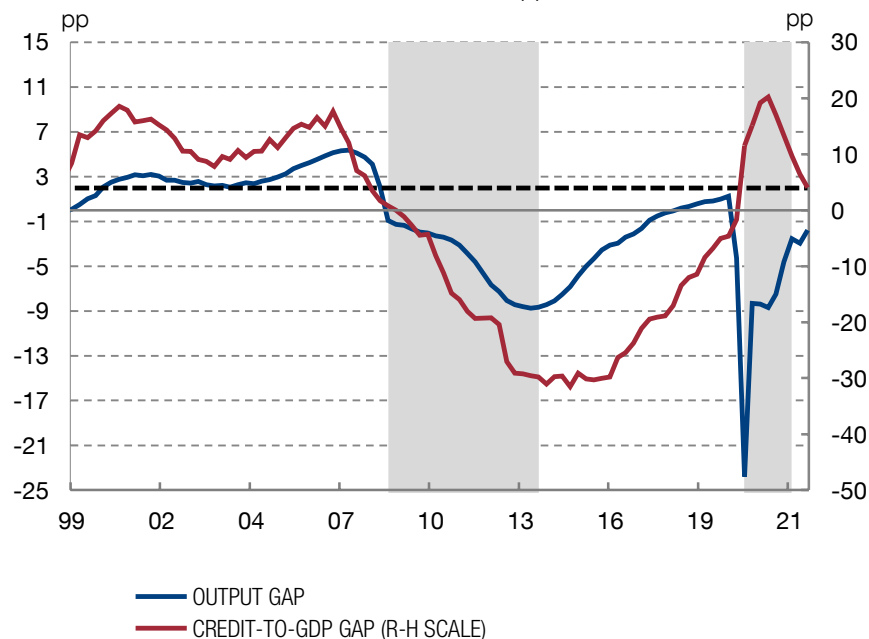
28 LTP RATIO (c)



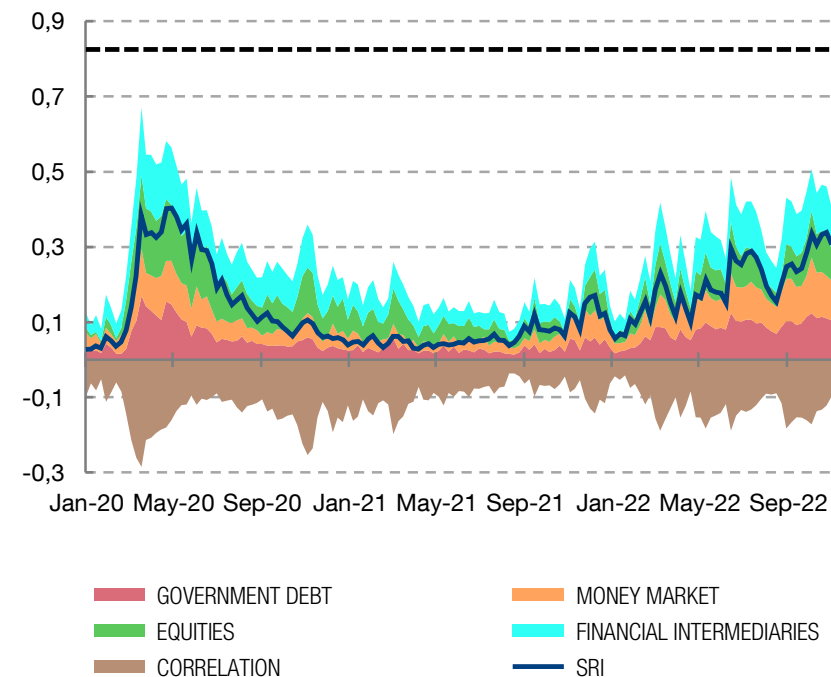
SOURCES: Banco de España, INE and Colegio de Registradores.

- a The areas shaded in grey represent the periods of the two financial crises in Spain since 2009: the last systemic banking crisis (2009 Q1-2013 Q4) and the crisis triggered by the COVID-19 pandemic (2020 Q1-2021 Q4). Data updated as at June 2022.
- b The shaded area represents the minimum and maximum values of the four indicators of imbalances in house prices. The indicators are: (i) the real house price gap; (ii) the house price-to-household disposable income ratio gap; (iii) the ordinary least squares (OLS) model which estimates house prices based on long-term trends in household disposable income and mortgage interest rates; and (iv) the error correction model which estimates house prices based on household disposable income, mortgage interest rates and fiscal effects. The long-term trends are calculated for all indicators (i) to (iv) using a statistical one-sided Hodrick-Prescott filter with a smoothing parameter equal to 400,000. Indicators (i) to (iv) and the two-year rate of change in house prices have an equilibrium value of 0.
- c The LTP ratio is the amount of the mortgage principal relative to the registered property price. The average values are weighted by the capital of each mortgage. The indicator is calculated for a sample of new mortgages. Data up to 2022 Q2 (not all loans for this last quarter are yet available).

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



30 SYSTEMIC RISK INDICATOR (b)



SOURCES: Datastream, INE and Banco de España.

- a. The output gap is the percentage difference between observed GDP and potential quarterly GDP. Values calculated at constant 2010 prices. See P. Cuadrado and E. Moral-Benito (2016), "Potential growth of the Spanish economy", *Occasional Paper* No 1603, Banco de España. The credit-to-GDP gap is calculated as the difference, in percentage points, between the observed ratio and the long-term trend calculated using a statistical one-sided Hodrick-Prescott filter with a smoothing parameter equal to 25,000. This parameter is calibrated to the financial cycles historically observed in Spain. See J. E. Galán (2019), "Measuring credit-to-GDP gaps. The Hodrick-Prescott filter revisited", *Occasional Paper* No 1906, Banco de España. Data available up to June 2022. The areas shaded in grey represent the periods of the two financial crises in Spain since 2009: the systemic banking crisis (2009 Q1-2013 Q4) and the crisis triggered by the COVID-19 pandemic (2020 Q1-2021 Q4). The horizontal dotted line represents the credit-to-GDP gap reference threshold (2 pp) for activation of the CCyB.
- b. The systemic risk indicator (SRI) aggregates 12 individual stress indicators (volatilities, interest rate spreads, maximum historical losses, etc.) from four segments of the Spanish financial system. In calculating the SRI, the effect of cross-correlations is taken into account, whereby the SRI registers higher values if the correlation between the four markets is high, and lower values where there is less or negative correlation. For a detailed explanation of this indicator, see Box 1.1 of the May 2013 FSR. The dotted line represents the SRI's historical maximum. Data updated as at 2 November 2022.

THANK YOU FOR YOUR ATTENTION

