2

FINANCIAL SECTOR RISKS AND RESILIENCE

Lending has begun to reflect the rise in funding costs and the moderation in growth, with the volume of lending to the private sector decreasing in Spain in 2022. This decline was attributable to lending for house purchase and lending to firms. However, credit quality showed no signs of impairment and the volume of troubled assets continued its downward trajectory.

This balance sheet resilience, coupled with stronger net interest income associated with higher interest rates, helped to improve the banking sector's ordinary profit. Yet the Spanish banking industry's aggregate solvency – measured using the average common equity tier 1 (CET1) ratio – declined as the increase in CET1 capital failed to fully offset the growth in assets. As a result, in 2022 there was no improvement in the Spanish banking system's standing in the European banking solvency ranking.

Assessment of the outlook for the coming months should be guided by prudence. For one thing, banks may require higher provisioning for balance sheet impairment due to the potential materialisation of some of the risks mentioned in Chapter 1, in particular the decline in firms' and households' ability to pay. Moreover, net interest income may be gradually eroded by the rising cost of liabilities (especially higher deposit remuneration). The recent turbulence in the global banking industry indicates a higher cost of funds that would prompt a less favourable performance from this earnings component. Similarly, the possible procyclical behaviour of some non-bank financial intermediaries at global level – those with more vulnerable liquidity or leverage positions and which are likely to make an effort to reduce the size of their balance sheets or demand higher risk premia – could further push up the cost of funds for banks and other intermediaries in the Spanish financial sector.

Against this background, it is essential that banks maintain a suitable flow of credit to solvent undertakings. To do so they must observe prudent provisioning and capital planning policies, to allow a portion of the current short-term increase in profits to be used to further bolster the sector's resilience in the face of unexpected contingencies.

2.1 Deposit institutions

2.1.1 Balance sheet structure, risks and vulnerabilities

Credit risk

In contrast to the two previous years, in 2022 lending to the resident private sector decreased in Spain. The stock of lending by deposit-taking institutions to the resident private sector in Spain declined by 0.7% in 2022 (see Chart 2.1.1). This stands in contrast to the significant lending growth recorded in 2020 (in part due to the policies introduced to mitigate the effects of the COVID-19 pandemic) and the stable levels in 2021.

In real terms,[1] credit to the resident private sector declined at similar rates to those observed in the years leading up to the pandemic. Specifically, the reduction in 2022 amounted to 5.8% year-on-year (exceeding the 4.7% in 2021). This was mainly attributable to the surge in inflation, which was not offset by stronger nominal credit growth. The analysis of the results of the Bank Lending Survey (BLS) (see Chapter 3) indicates that both supply and demand-side factors contributed to these developments.

In 2022, growth in new lending to the resident private sector failed to fully offset larger balance sheet outflows. The stock of lending declined despite the larger volume of new loans (up 8.9% on the previous year) and the increased drawdown on existing credit lines (up 12.9% year-on-year, a sharper rise than in 2021). All of these effects were more than offset by larger outflows (up 11.3% on 2021), which include repayments, write-offs, securitisations and portfolio sales (see Chart 2.1.2). As discussed in greater detail elsewhere in this report, the deterioration of global financing conditions could adversely affect both supply and demand for credit to the private sector, prompting more contractionary developments in such lending over the coming quarters.

In the case of households, lending decreased owing to the drop in the stock of loans for house purchase. Despite the volume of new lending to households increasing by 7.4%, the stock of loans to this sector was down by 0.2% year-on-year at December 2022, in contrast to the growth of 0.6% observed a year earlier (see Chart 2.2.1). This essentially owed to the decline in the stock of loans for house purchase. In housing loans, 2022 Q4 saw a marked contraction in both the outstanding stock and new lending volumes (as discussed in more detail in Chapter 1). Other lending to households held stable in the year.

The decline in business lending was driven by the sectors most and least affected by the health crisis. In 2022, the stock of lending to NFCs and sole proprietors declined by 1.5% year-on-year (see Chart 2.2.1). There was a marked drop in lending to the sectors hardest hit by the COVID-19 pandemic (down by 6.9% in 2022). However, lending to these sectors recorded the fastest growth in the first few quarters of the pandemic, partly driven by the economic support policies

1 The figures in this paragraph are for real lending, 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.

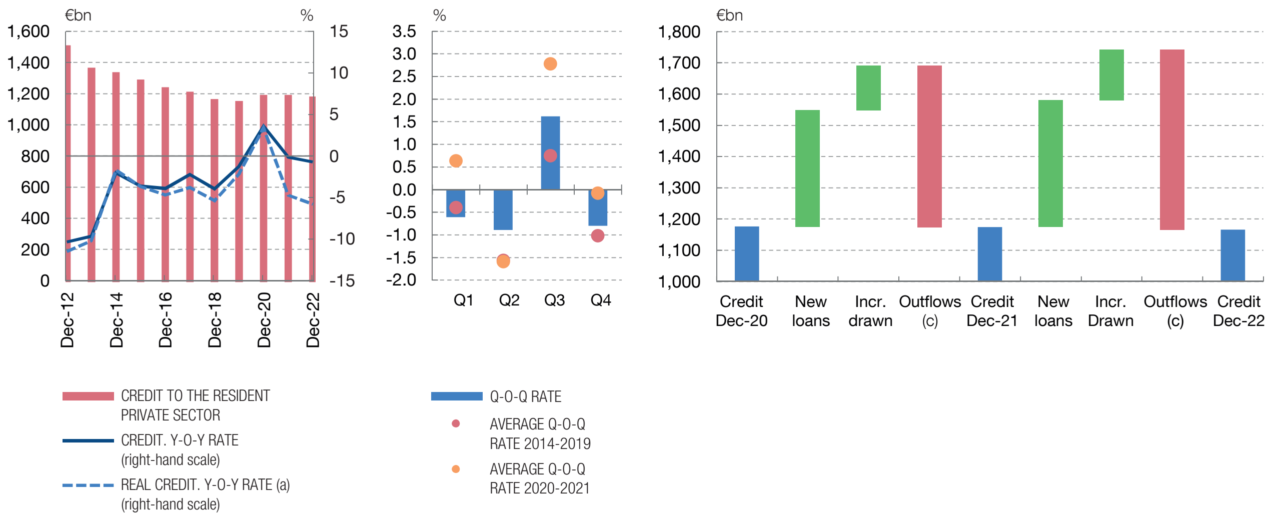
Chart 2.1

CREDIT TO THE RESIDENT PRIVATE SECTOR IN SPAIN DECLINED BY 0.7% IN 2022, ALTHOUGH NEW LENDING GREW

The decline in the stock of lending to the resident private sector in Spain in 2022 contrasted with the stable performance in 2021. These developments were shaped by larger outflows in comparison with the previous year, which offset the growth in new lending and the higher level of principal drawn on existing loans. In real terms the decline was more pronounced, similar to that observed in the years leading up to the pandemic.

1 VOLUME OF CREDIT AND Y-O-Y RATE OF CHANGE
Business in Spain, DI

2 FLOW OF CREDIT TO THE RESIDENT PRIVATE SECTOR (b)
Business in Spain, DI



SOURCE: Banco de España.

a The real change in credit is found taking into account its composition, deflating the portion of credit to households (not for business purposes) by the consumer price index and all other credit (to NFCs, financial corporations and sole proprietors) by the GDP deflator.
b The resident private sector includes households, NFCs and sole proprietors, and financial corporations.
c Outflows include repayments, write-offs, securitisations and portfolio sales.

introduced (such as the ICO guarantee programme). The current drop appears to reflect, at least in part, the progressive reduction of the extraordinary levels of debt incurred by these sectors during that period. However, the largest negative contribution to the stock of lending was made by the sectors least affected by the pandemic, despite their smaller year-on-year decline in 2022 (3.3%). The reason is that these sectors account for a larger share of total corporate loans. These declines in the outstanding stock of lending came despite new business loans growing 15.2% year-on-year, while the principal drawn on available credit lines rose by 23.3% (see Chart 2.2.2).

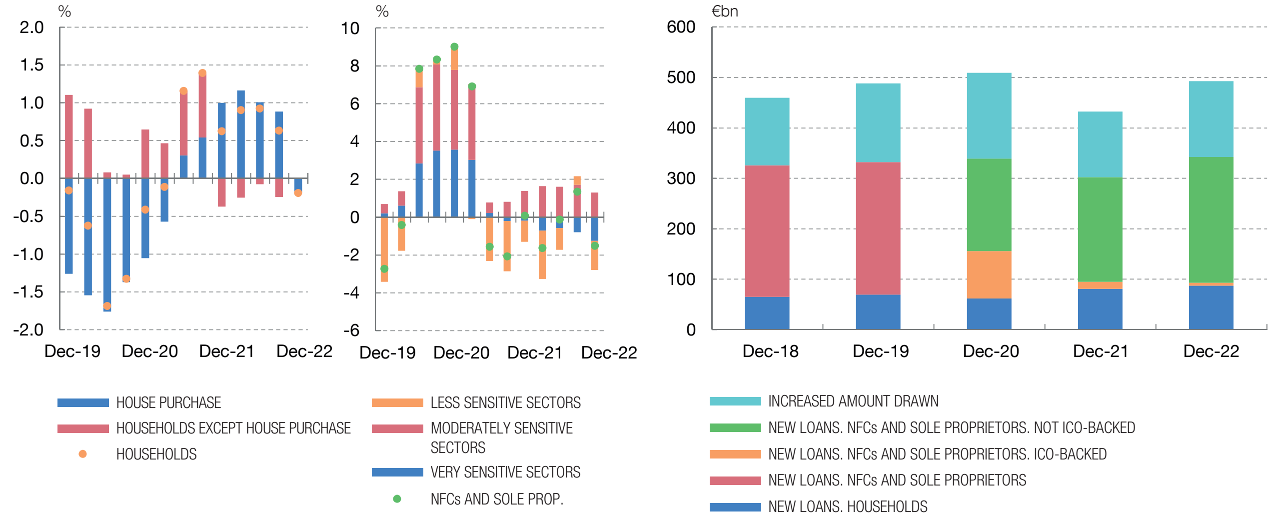
In 2022 Q4, the increase in the reference interest rate (EURIBOR) was passed through to average lending rates for households and firms more robustly. In the year to December 2022, the 12-month EURIBOR rose by a cumulative 352 bp, a speed and scale of growth not seen in previous episodes of increases since 2000. In average rate terms, the pass-through to the stock of loans to households for house purchase and to lending to NFCs currently stands close to 30%. The

Chart 2.2
IN 2022, THE STOCK OF CREDIT DECLINED BOTH TO HOUSEHOLDS (DUE TO LENDING FOR HOUSE PURCHASE) AND TO FIRMS, DESPITE BOTH SEGMENTS RECORDING GROWTH IN NEW CREDIT

The stock of loans to households declined by 0.2% year-on-year at December 2022, as a result of developments in lending to households, which recorded a negative year-on-year rate in 2022 Q4. Business lending contracted in year-on-year terms owing above all to the sectors hardest hit by the pandemic. There was growth in both new lending and the amount drawn on existing loans, both to households and firms.

1 CONTRIBUTIONS TO THE Y-O-Y RATE OF CREDIT TO HOUSEHOLDS (LEFT) AND TO NFCs AND SOLE PROPRIETORS (RIGHT)
Business in Spain, DI

2 VOLUME OF NEW LENDING IN THE YEAR. HOUSEHOLDS, NFCs AND SOLE PROPRIETORS (a)
Business in Spain, DI



SOURCE: Banco de España.

a Other financial corporations are not included in this chart.

pass-through to the stock of other lending to households was more limited (13%) (see Chart 2.3.1). Both in this segment and in lending to NFCs, the degree of pass-through was lower than that implied by the average sensitivity of lending rates to the interbank rate over the business cycle.[2] The containment of average deposit costs, discussed later, appears to have contributed at least partially to these developments.

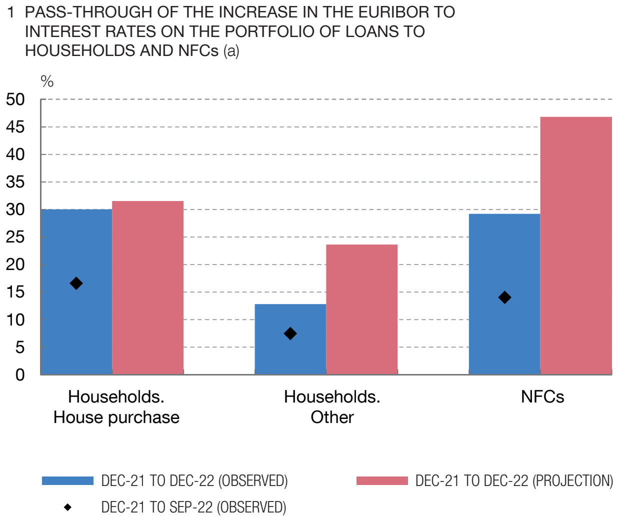
The increase in interest rates on new business loans was widespread across banks and maturities (the longer the term, the larger the increase). In 2022 Q4, as compared with the same quarter in 2021, the median interest rate on new loans to firms maturing in less than three months rose by 1.7 pp, while that on loans maturing in more than five years increased by 2.8 pp. Data reported to the Banco de España's Central Credit Register (CCR) show that a maturity spread has developed (the longer the loan maturity, the higher the interest rate), one that was practically non-existent

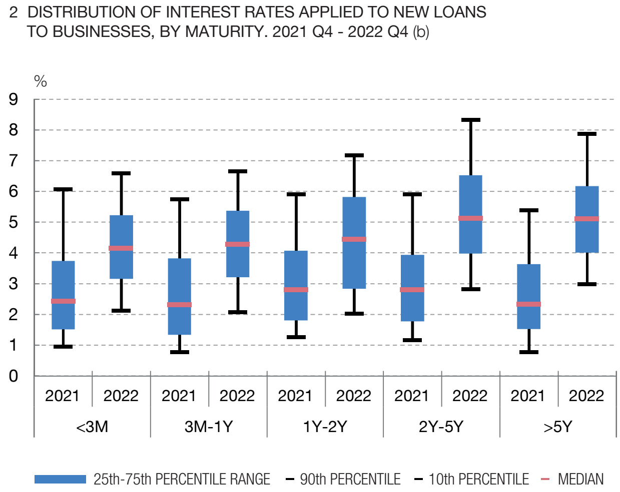
2 This sensitivity is measured through an econometric analysis using a vector autoregressive model that links developments in lending rates to the 12-month EURIBOR and other macroeconomic variables.

Chart 2.3

THE PASS-THROUGH OF THE INCREASE IN THE EURIBOR TO AVERAGE INTEREST RATES ON LOAN PORTFOLIOS ACCELERATED IN 2022 Q4, STANDING AT AROUND 30%. INTEREST RATES ON NEW LOANS TO BUSINESSES INCREASED ACROSS ALL MATURITIES

At December 2022, the pass-through of the increase in the 12-month EURIBOR to the stock of bank loans stood at close to 30% in loans to NFCs and credit to households for house purchase, a portion of which are subject to periodic review clauses, and around 13% in other lending to households. For their part, interest rates on new loans to businesses rose significantly across all maturities, and a maturity spread has formed that was practically non-existent in 2021.





SOURCE: Banco de España.

a Pass-through is defined as the ratio between the cumulative change, in percentage points, of the interest rate 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.

b According to CCR data for the narrowly defined effective rate (NDER), i.e. the interest rate component of the annual percentage rate (APR), excluding, therefore, all fees and costs applied to new loans with a specific term identified in 2021 Q4 and 2022 Q4, respectively.

in 2021 (see Chart 2.3.2). All else being equal, longer-term loans are associated with higher risk. Therefore, this pattern appears to be consistent with higher risk premiums applied to borrowers, and may be testimony to banks exercising greater prudence in an uncertain environment.

Over the coming quarters, the pass-through of higher reference interest rates to average lending rates can be expected to continue and there is upside risk to reference interest rates. Based on time series modelling, in 2023 a stronger pass-through of past reference rate hikes to average lending rates is to be expected, especially in loans for house purchase. The global financial turbulence since March 2023 entails upside risks to the banking sector's funding costs via the risk premium channel, while higher risk premia would also pass through, at least partially, to lending rates.

There was a further decrease in the volume of non-performing loans (NPLs) to the resident private sector in 2022. In the twelve months to December 2022, these troubled assets declined by more than €9 billion (-18.5% year-on-year) (see Chart 2.4.1). The contraction was widespread across banks, affecting both loans to NFCs and sole proprietors (-13.7%) and loans to households (-24.3%). Further, the pace of decline increased in both segments (by 8.6 pp and 18.2 pp, respectively) in the year. In consumer credit (a segment associated with higher NPL ratios), NPLs likewise decreased in 2022, returning to their pre-pandemic levels (see Chart 2.4.2).

The NPL ratio stood at 3.5% in December 2022, its lowest level since December 2008. In 2022 this ratio was down by 0.8 pp for the overall resident private sector, with declines both in corporate lending (-0.7 pp to 4.7%) and in loans to households (-0.9 pp to 2.8%). Since the start of the pandemic, the NPL ratio has decreased by 1.6 pp for NFCs and by 1.4 pp for households. In the sectors hardest hit by the pandemic,[3] the NPL ratio fell by a lesser degree (0.3 pp in 2022, to 5.6%) (see Chart 2.4.3).

For their part, Stage 2 loans[4] were down by 12.2% year-on-year. In the year to December 2022, the proportion of Stage 2 loans declined by 0.9 pp to 7.1% of total lending to the resident private sector. However, such loans remain 24.5% up on pre-pandemic levels. By institutional sector (see Chart 2.4.3), in 2022 the relative share of Stage 2 exposures increased in lending to households (by 0.4 pp to 5.5%) and decreased in loans to NFCs and sole proprietors (by 2.6 pp to 9.8%). In the sectors hardest hit by the COVID-19 pandemic, which had recorded a very marked increase in Stage 2 loans up to mid-2021, the share of such exposures fell very sharply (by 3.4 pp to 14.6%), although they remained above the average level.

Forborne exposures also followed a downward trajectory in 2022. Their relative share declined in the year by 0.8 pp to 4.2% of total lending to the resident private sector, following a drop of 16.5% in volume since end-2021 (see Chart 2.4.2) when they reached pre-pandemic levels.

According to CCR data, the amount drawn on ICO-backed business loans declined in 2022, while their credit quality deteriorated. In terms of amount, these loans recorded a year-on-year decline of 11.3% at December 2022. The proportion of ICO-backed credit classified as Stage 2 fell by 0.8 pp to 19.6% of the total. However, NPLs increased by 78.8% in the year, causing the NPL ratio[5] to rise by 3.6 pp to 7.1% (see Chart 2.4.4). In 2022, the reduction in the aggregate size of this

3 Credit to the most severely affected sectors is proxied by credit to sectors whose turnover fell by more than 15% in 2020 and that can be identified in the FI-130 regulatory return; specifically, hospitality, manufacture of refined petroleum products, social services and entertainment, transportation and storage, and manufacture of transport equipment.

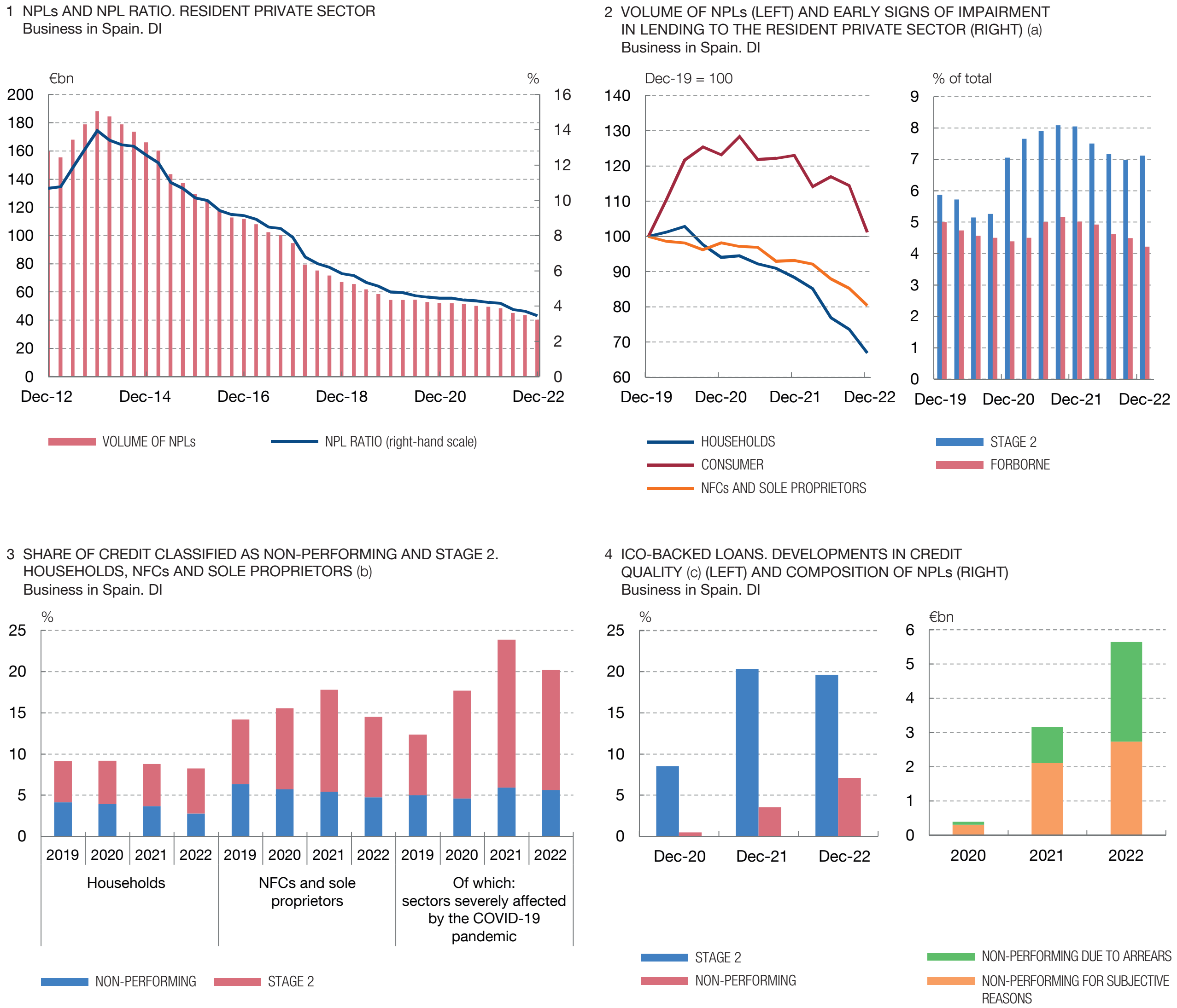
4 Pursuant to Circular 4/2017, a loan is classified as a Stage 2 exposure when credit risk has increased significantly since initial recognition, but no event of default has occurred.

5 Calculated on each date and for all ICO-backed loans as the ratio of the outstanding drawn balance classified as non-performing – either due to arrears or for subjective reasons – to the outstanding drawn amount.

Chart 2.4

THE PACE OF DECLINE IN NON-PERFORMING ASSETS ACCELERATED IN 2022, WHILE EARLY SIGNS OF IMPAIRMENT IN BUSINESS LENDING FADED

NPLs continued to decline in 2022, and at a faster pace than in previous years (-18.5%). This fed through to the NPL ratio, which was down significantly both for households (0.9 pp) and NFCs and sole proprietors (0.7 pp). Stage 2, forborne and restructured loans were also down in the year. However, in the household segment there was a moderate increase in Stage 2 exposures.



SOURCE: Banco de España.

a For Stage 2 and forborne loans, the share of each category out of total lending to the resident private sector is shown.
b Credit to the most severely affected sectors is proxied by credit to sectors whose turnover fell by more than 15% in 2020 and that can be identified in the FI-130 regulatory return; specifically, hospitality, manufacture of refined petroleum products, social services and entertainment, transportation and storage, and manufacture of transport equipment. Data for the month of December of each year.
c The proportion of ICO-backed loans to firms and sole proprietors that are classified as non-performing or Stage 2 is measured.

closed portfolio accounted for 0.8 pp of the increase in the NPL ratio.[6] Within non-performing ICO loans, those classified as non-performing due to arrears were up

6 Pandemic-related ICO loans constitute a closed portfolio because such loans will not be extended in the future. Thus, as progress is made towards repayment of the existing loans, the outstanding balance of the portfolio will necessarily decrease. For a given quantity of non-performing loans remaining on the balance sheet, this reduction process brings about an automatic increase in the NPL ratio, but also lowers exposure to the risk of additional NPL inflows in the future.

most sharply (177% year-on-year), while the increase in those classified as non-performing for reasons other than arrears was less pronounced (29.6% year-on-year). The credit quality of this portfolio deteriorated faster than that of business loans overall. This was in line with initial expectations for the ICO guarantee programme, which was particularly geared towards firms that went into the 2020-2021 health crisis with a weaker financial position and were expected to be more affected by it, in particular due to the nature of their sectoral activity (e.g. trade or hospitality). Various measures (fiscal and monetary measures in particular) have helped to safeguard firms' income since then. However, the protection is not absolute, resulting in a more marked deterioration of ability to pay among the most vulnerable firms.

The faster decline in NPLs in 2022 was driven both by smaller inflows and larger outflows. NPL inflows were down 15.2% on the previous year (see Chart 2.5.2). Annual outflows increased by 5% in the period. Within these, loans reclassified as write-offs declined slightly. Conversely, there was an increase in outflows to Stage 2 and in asset transfers (which accounted for 16.8% of total outflows compared with 13.3% in 2021).[7] Transferring impaired portfolios is a particular challenge during periods of high uncertainty. Therefore, the increase observed illustrates the need for banks to maintain a prudent provisioning policy.

The stock of Stage 2 exposures declined as a result of smaller inflows from, and larger outflows to, performing status. In 2022, the decrease in inflows from performing status (the lowest since 2019) outweighed the above-mentioned increase in inflows from non-performing. The resulting net effect was a reduction in inflows as compared with 2021 (see Chart 2.5.1). However, another portion of the reduction in Stage 2 credit was driven by a considerable increase in outflows to performing. On balance, these developments would be consistent with a slowdown in the build-up of latent risks.

Foreclosed assets decreased by 14.5% in 2022, to stand at €19.7 billion in December. This represented a continuation of the declining trend seen in recent years. Since the start of the COVID-19 pandemic, these exposures have fallen by more than €11 billion (36%), on top of the declines recorded in the years leading up to the health crisis.

Credit quality must be subject to forward-looking monitoring despite the recent favourable performance. The credit quality improvements seen in 2022 might be reversed by the risks to activity and inflation that have been identified, and,

7 Asset transfers refer to portfolio sales and securitisations. Outflows to foreclosed and to performing status also declined, although these accounted for a low share of total NPL outflows.

Chart 2.5

THE DECLINE IN NPLs AND STAGE 2 LOANS OWED TO BOTH SMALLER INFLOWS INTO, AND GREATER OUTFLOWS FROM, THESE CLASSIFICATIONS

NPL inflows declined and NPL outflows grew, with outflows to Stage 2 and loan transfers particularly standing out. Stage 2 loans decreased in 2022 as a result of smaller inflows from performing (how loans are classified at origination) and greater outflows, especially to performing.

1 INFLOWS AND OUTFLOWS OF NON-PERFORMING LOANS AND ADVANCES (a)
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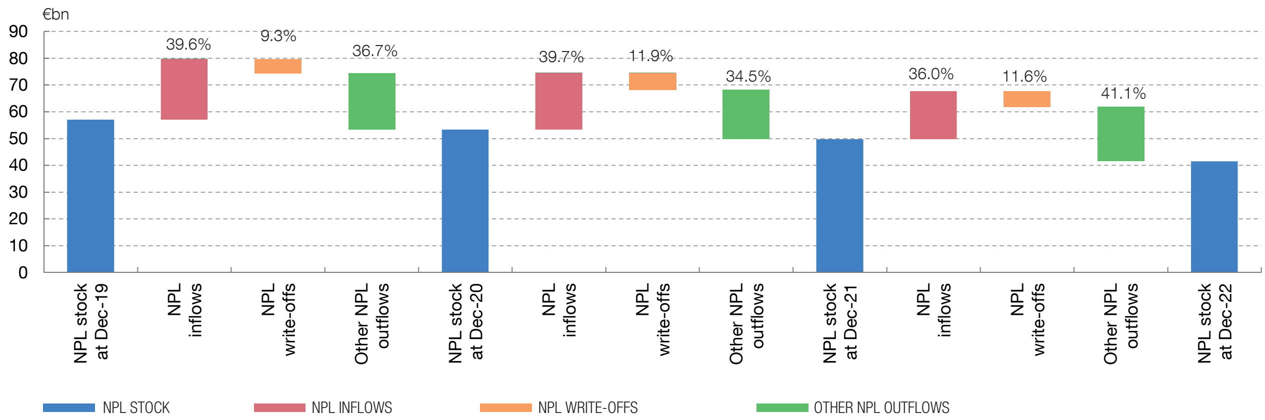

2 INFLOWS AND OUTFLOWS OF STAGE 2 LOANS AND ADVANCES (b)
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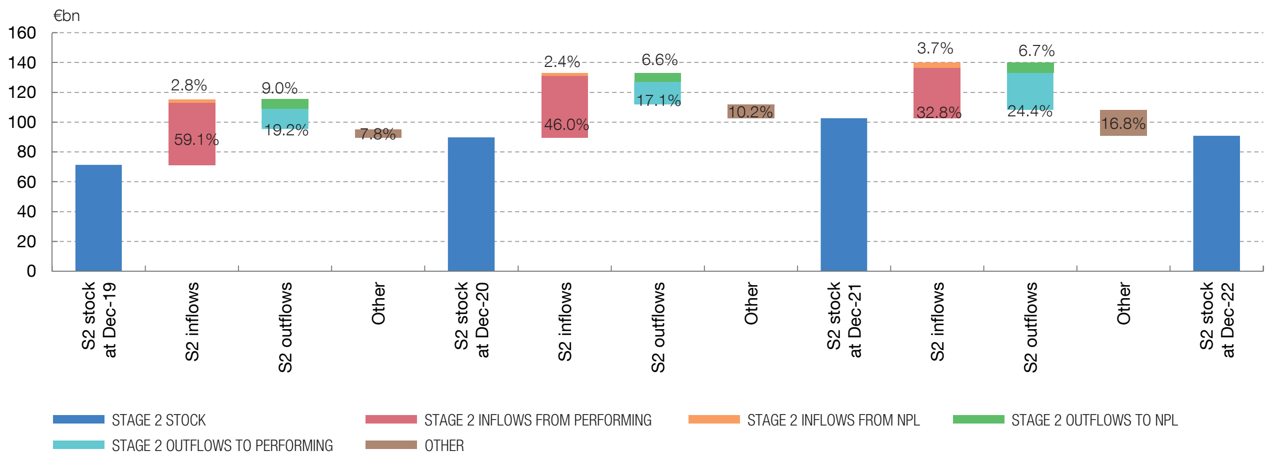


SOURCE: Banco de España.

a The stock of non-performing loans and advances in each year corresponds to the carrying amounts on the institutions' balance sheets. NPL inflows are movements of loans from performing status and Stage 2, along with loans acquired from third parties. NPL outflows include movements to performing status and Stage 2, along with asset foreclosures, portfolio sales and securitisations. The percentages that appear above the inflows and outflows over the course of a year represent the share of these in the stock of loans and advances in non-performing status as at December of the previous year.

b The volume of Stage 2 loans is measured using the carrying amount on the institutions' individual balance sheet. To be included as inflows and outflows, loans must end the year at a different stage of value impairment than at the start of the year or at the time of initial balance sheet recognition, if later. The percentages above the bars of the different Stage 2 inflows and outflows show their proportion in the stock of Stage 2 loans on balance sheets as at December of the previous year. The "Other" bar includes loans that, having been in Stage 2 at the previous year-end, are repaid or sold over the year under way.

in particular, the risk of a further tightening of financial conditions.[8] Therefore, these should be very much to the fore in provisioning and capital planning.

8 See Box 2.2 of the Financial Stability Report Autumn 2022 for an analysis of the impact on provisions and capital of an adverse scenario in which these risks materialise.

At December 2022, the total consolidated assets of Spanish deposit-taking institutions stood at €4.04 billion, having grown 2.1% year-on-year (see Annex 1). Financial instruments[9] in Spain decreased by 7.7% year-on-year, while those stemming from business abroad (expressed in euro) increased by 9.6% to 53.7% of the total (up 4.3 pp on a year earlier). Much of the decline in financial instruments in Spain owed to the reduction in balances held with central banks (-31.9% year-on-year) and, to a lesser extent, to the drop in loans to the resident private sector (-2.5% in consolidated terms). Meanwhile, the increase in financial instruments abroad was due to the growth in lending to the resident private sector in third countries (up by 10.3% on December 2021) and in debt securities (16%), supported by a depreciating euro (see Chart 2.6.1).

Lending grew in 2022 in most of the relevant countries for Spanish banks' business. In particular, there was year-on-year credit growth in the United States (31.5%), Brazil (27.7%), Mexico (24.1%) and Türkiye (11.2%), and a slight decline in the United Kingdom (2.1%). The bulk of business in those countries is conducted in the local currency. The appreciation of these currencies against the euro[10] therefore contributed to that growth (with the exception of Türkiye, where business growth came despite the Turkish lira's continued sharp depreciation against the euro) (see Chart 2.6.2).

Deposit-taking institutions' exposure to debt securities likewise grew in 2022. These instruments represented 13.6% of total assets (14.2% of financial instruments) at December 2022, after increasing 11.7% in the year. Looking at business abroad, debt securities accounted for more than 15.4% of financial instruments at December 2022 (0.9 pp more than in the same month of 2021), with countries such as Italy, the United States and Mexico accounting for notably large proportions relative to their share in credit (see Chart 2.6.3). In business in Spain, debt securities also gained weight, accounting for 12.7% of financial instruments, with a year-on-year increase of 1.5 pp. At consolidated level, more than 80% of debt securities have a general government counterparty. In 2022, general government debt securities increased by 10.1%, while those with a private sector counterparty grew by 15.4%.

Lastly, NPL ratios broadly performed favourably in countries where Spanish banks have significant business. In year-on-year terms, the NPL ratio declined in the United Kingdom (by 0.3 pp to 1.3%), Mexico (by 0.7 pp to 3.1%) and Türkiye (by 2.7 pp to 6.3%). Conversely, this ratio held stable in the United States (3.5%) and rose sharply in Brazil (by 2.2 pp to 8.5%) (see Chart 2.6.4).

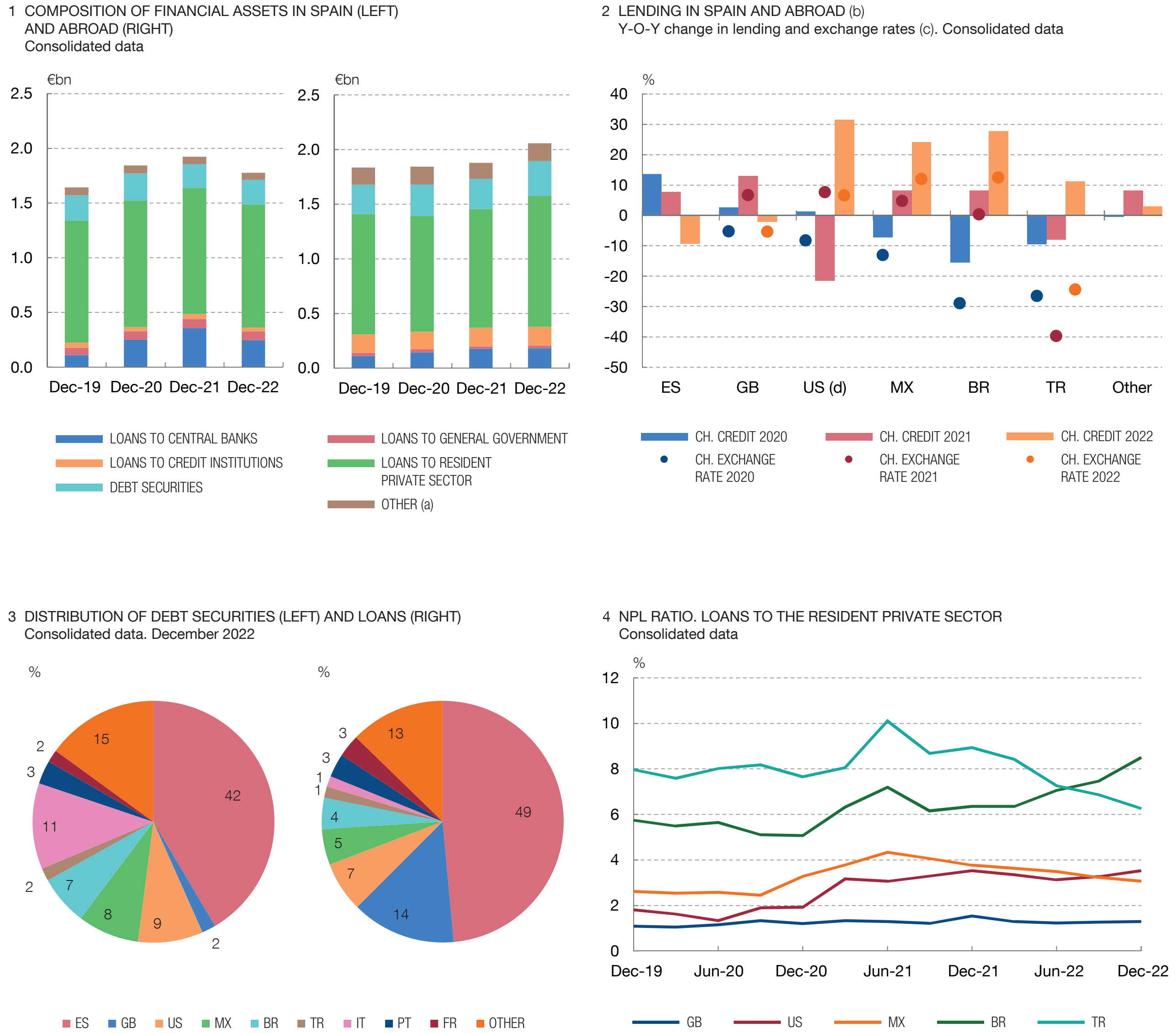
9 Overall, financial instruments (loans, derivatives, debt and equity securities and cash balances) represented 95% of the balance sheet of deposit-taking institutions at December 2022.

10 In 2022 the US dollar appreciated by 6.6%, the Brazilian real by 12.4% and the Mexican peso by 11.9%. Conversely, the pound sterling depreciated by 5.4% and the Turkish lira by 24.4%.

Chart 2.6

THE VOLUME OF BUSINESS ABROAD INCREASED IN 2022, PARTLY DUE TO EXCHANGE RATE DEVELOPMENTS, WHILE NPL RATIOS DECLINED IN THE BULK OF THE MOST IMPORTANT COUNTRIES, WITH THE EXCEPTION OF BRAZIL

The business abroad of Spanish deposit-taking institutions increased by 9.6% in 2022, chiefly due to the growth in loans and debt securities. This essentially owed to the growth in business in the United States, Mexico and Brazil, thanks in part to the exchange rate performance of these countries' currencies against the euro. NPL ratios declined across almost all relevant markets for the business of Spanish institutions, with the noteworthy exception of Brazil where there was a significant increase.



SOURCES: Datastream and Banco de España.

a The "other" ítem comprises balances of cash, derivatives and equity instruments.
b Includes total loans and advances (central banks, credit institutions, general government and resident private sector), both in the local and non-local business of each country.
c A positive sign for the change in exchange rate indicates appreciation of the currency against the euro.
d For the United States, the high negative change in 2021 owes to a sale made by one bank, while the large positive change in 2022 owes, in part, to a Spanish bank incorporating a new company with business in the region.

Liquidity and financing conditions

For the first time in recent years, the process of monetary policy normalisation is reducing both the Eurosystem balance sheet and banks' excess liquidity.[11] Excess liquidity was down by €676 billion since the last report (to €4.002 billion) (see Chart 2.7.1), a trend that is expected to continue over 2023. This reduction was mainly driven by European banks making early repayments on the monetary policy loans provided by the ECB (€1.014 billion).[12] A further significant reduction is expected in 2023, as banks make voluntary early repayments and further rounds of TLTRO III mature.[13] In addition, in March the Eurosystem began the process of reducing its portfolio of assets at a measured and predictable pace.

The reduction in balances held by European banks with central banks accelerated in 2022 Q4, albeit unevenly across countries. In particular, there were marked reductions by Spanish banks (-32%) and Italian banks (-39%) in the year to December 2022, compared with altogether more moderate decreases by French and Dutch banks and an increase by German banks. At end-2022, the overall balances held by these countries banks with central banks were down by 9% on a year earlier (see Chart 2.7.2).[14]

The recent tightening of policy interest rates has been passed through to money market rates. The path of the €STR (the interest rate on unsecured transactions), the 3-month EURIBOR (the interbank rate) and secured market interest rates (repo rates) have been consistent with the ECB's two 50 basis point (bp) hikes to policy interest rates in February and March. These interest rates, in particular the 3-month EURIBOR, may continue to rise until mid-2023, although the financial turbulence observed this year makes this trajectory more uncertain[15] (see Chart 2.7.3).

The repo market functioned without significant frictions in 2022 H2. For one thing, higher policy rates were speedily and fully passed through to repo rates (see Chart 2.7.4). Further, in 2022 the decline typically seen in the last stretch of the year was less pronounced than in 2021 and smaller than had been expected, reflecting

11 Excess liquidity is the sum of a commercial bank's holdings at the central bank, whether on the current account or in the deposit facility, above the reserve requirements.

12 This reduction owes to euro area banks making use of the three early repayment dates in the period: a notable €499 billion was repaid in the December window, compared with €296 billion in November and €62 billion in January. The repayments in February and March were also noteworthy, amounting to €37 billion and €120 billion, respectively.

13 At end-2023, only four of the ten TLTRO III operations will remain outstanding.

14 The data capture the balances with the ECB of resident banks in each of the countries, including foreign subsidiaries and branches. Germany's excess liquidity includes the operations of foreign-owned banks that have deposited with the ECB funds obtained from the sale of assets for its purchase programmes; as noted above, the ECB has not yet begun to reduce its holdings under these purchase programmes.

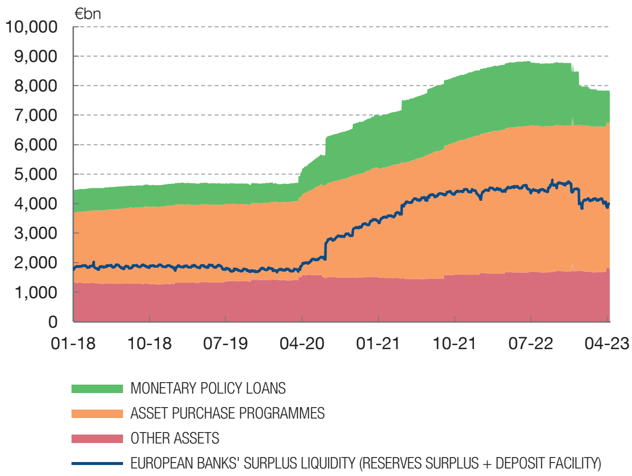
15 Expectations for the deposit facility rate based on the OIS curves. 3-month EURIBOR projections based on futures maturing in March, June, September and December 2023. Data at 10 April 2023.

Chart 2.7

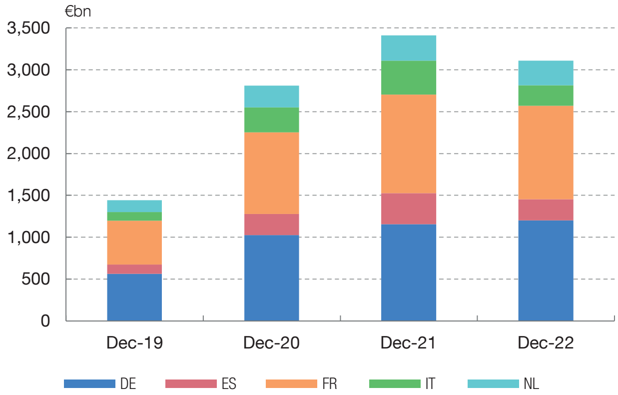
THE EUROSYSTEM'S BALANCE SHEET HAS DECREASED, CONSISTENT WITH THE MONETARY POLICY TIGHTENING, WHILE INTEREST RATE INCREASES HAVE PASSED THROUGH TO MONEY MARKET RATES

The balance sheet reduction has been driven mainly by early repayment of a considerable volume of monetary policy loans (TLTRO III). This trend will gather steam when the ECB ceases to reinvest maturing balances under purchase programmes. The deposits of banks with central banks have also declined, albeit unevenly across countries. The increases in monetary policy rates have passed through to €STR, repo and 3-month EURIBOR rates. This is expected to continue in 2023, albeit more moderately.

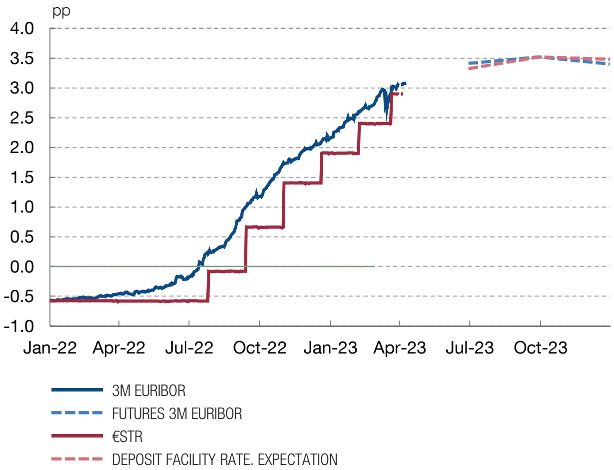
1 EUROSYSTEM BALANCE SHEET AND EUROPEAN BANKS' SURPLUS LIQUIDITY



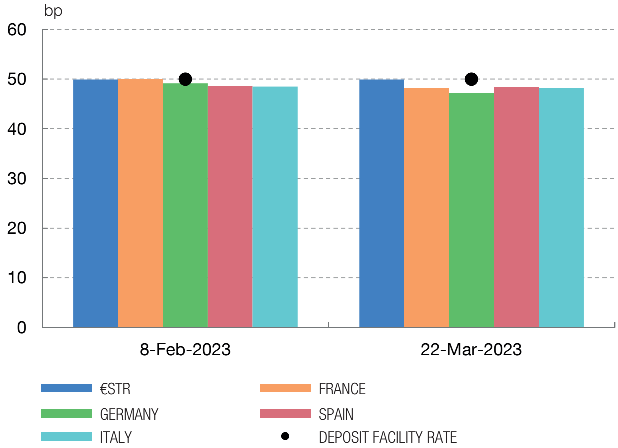
2 BANK DEPOSITS WITH CENTRAL BANKS
Monetary financial institutions. Business in the euro area



3 EURIBOR AND €STR RATES (a)



4 CHANGE IN REPO RATES (b)



SOURCES: Bloomberg, Dealogic, Refinitiv, Money Market Statistical Reporting and Banco de España.

a Futures (at 10.4.2023) for the 3-month EURIBOR maturing in June, September and December 2023 and March 2024. Expectations for the deposit facility rate are calculated based on an internal model using the OIS (overnight indexed swap) curve. Latest estimation data: 10.4.2023.

b Shown is the daily change in the repo rate after the deposit facility rate increases announced in February and March. The repo rate is calculated as the weighted average overnight rate for transactions secured with sovereign collateral issued by each country, based on Money Market Statistical Reporting.

among other factors the impact of the measures introduced by the ECB and the German Finance Agency[16] to address collateral scarcity.

16 The ECB announced that it would increase the limit for securities lending against cash from €150 billion to €250 billion. Further, the announcement of new early repayment options for TLTRO III operations meant that part of the collateral used in those operations could be released. For its part, the German Finance Agency (Deutsche Finanzagentur, DFA) increased the amount of German collateral available for repo market trading across 18 German sovereign bonds.

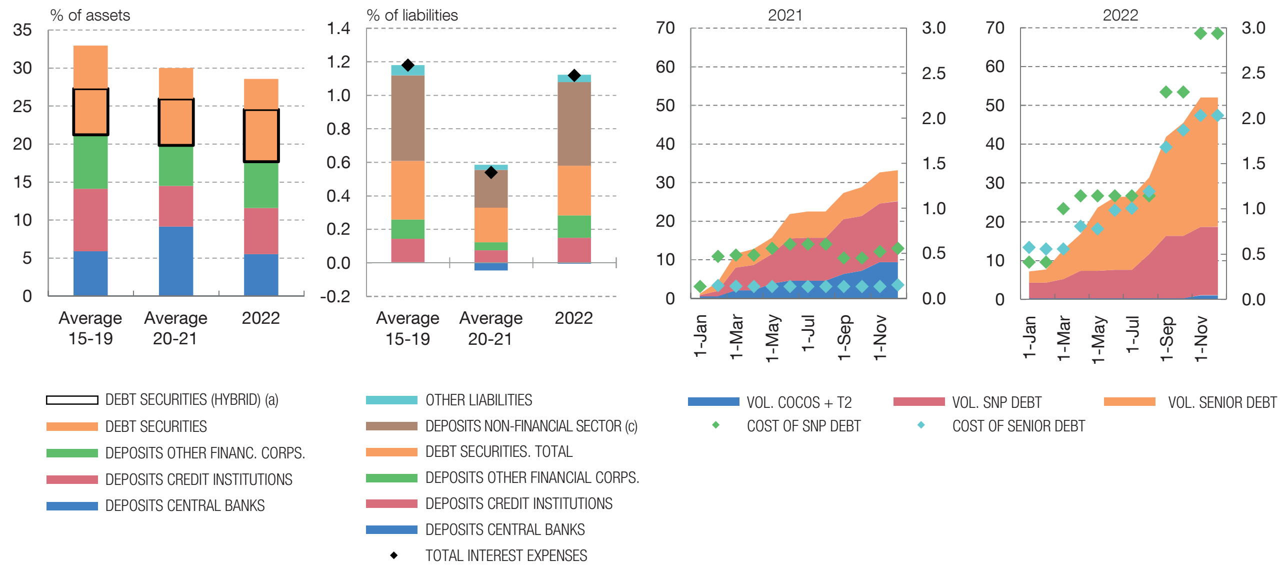
Chart 2.8

THE SHARE OF THE FINANCIAL SECTOR'S DEPOSITS AND MARKETABLE DEBT INSTRUMENTS IN ASSETS DECLINED IN 2022, WHILE THE AVERAGE COST OF BANK LIABILITIES INCREASED. IN ADDITION, BOTH THE COST AND VOLUME OF NEW DEBT ISSUANCES INCREASED MARKEDLY

The share of the financial sector's deposits and marketable debt instruments in the Spanish banking sector's balance sheet continued to decline in 2022, while the total cost of liabilities stood close to pre-pandemic levels, owing to the rise in interest rates in 2022 and the ECB's withdrawal of liquidity. Funding costs in the primary market for senior debt instruments increased over the course of the year, with a greater volume of issuances than in the previous year.

1 FINANCIAL SECTOR DEPOSITS AND MARKETABLE DEBT INSTRUMENTS (LEFT-HAND PANEL) AND INTEREST EXPENSES ON FUNDING (RIGHT-HAND PANEL)
Consolidated data

2 ANNUAL CUMULATIVE VOLUME AND COST OF ISSUANCES, BY TYPE OF INSTRUMENT (b)



SOURCES: Bloomberg, Dealogic, Refinitiv and Banco de España.

a Convertible and non-convertible debt securities, other than certificates of deposit, covered bonds and hybrid contracts with embedded derivatives.
b The volume (million euro) of issuances accumulated monthly over the course of each year is shown. The cost of issuances on the primary market for bonds issued in euro is calculated as the volume-weighted average in each period of the year. The cost of Tier 2 and CoCos issuances on the primary market is not included owing to the low volume of issuance in 2022.
c Includes household deposits and non-profit institutions serving households, non-financial corporations and sole proprietors, and general government.

In 2022, the overall share of the financial sector's deposits and marketable debt instruments declined further; however, in line with deposits from the non-financial sector, their cost increased. The decline in Eurosystem funding was only partially offset by an increase in funding through deposits from credit institutions and other financial corporations and in debt security funding (see Chart 2.8.1). The average cost of bank liabilities increased significantly, in relative terms, on account of the general increase in interest rates on financing from the ECB, interbank markets and marketable debt instruments, and likewise on deposits taken from the non-financial sector. The average cost of bank liabilities held slightly below pre-pandemic levels (see Chart 2.8.1).

The Spanish banking sector increased the volume of its debt issuances in 2022. Spanish banks stepped up their issuances of both senior and, in particular, secured senior debt in the year, a trend that gained momentum in the last quarter of the year. Further, banks increased their senior non-preferred debt issuances to thus comply with the subordination requirements set by the resolution authorities for 2023. Moreover, the volume of subordinated debt issuances (Tier 2 and CoCos) (see Chart 2.8.2) fell sharply, on account of their relatively higher cost and because Spanish banks had already secured the volumes required under prudential regulations in their previous years' issuances. In 2023, the Spanish banking sector as a whole plans to issue €33 billion in MREL-eligible instruments, somewhat less than the volume issued in 2022, allowing the sector to cover any maturities that may arise and also to contend with the increase in requirements entailed in the end of the transitional period (for most banks) in order to be fully compliant with MREL targets. Meanwhile, the outlook for the CoCos market is subject to some uncertainty following the triggering of redemption clauses in Credit Suisse CoCos issues. This market is not likely to normalise until progress is made towards the global standardisation of these instruments.

Compared with 2021, Spanish banks bore a higher issuance cost in 2022, and face upside risks to these costs over the coming quarters (see Chart 2.8.2). This in part owes to higher risk-free rates (see Box 2.1 for a detailed analysis), which will foreseeably contribute to the cost of issuance rising further in 2023. The higher cost of senior non-preferred debt may also be attributable to the increase in the number of issuing banks (possibly including some from which investors are demanding higher risk premiums). Overall, the banking sector's cost of issuance is subject to greater upside risk due to investors growing more risk averse since the stress episodes of March 2023, associated in particular with SVB and Credit Suisse.

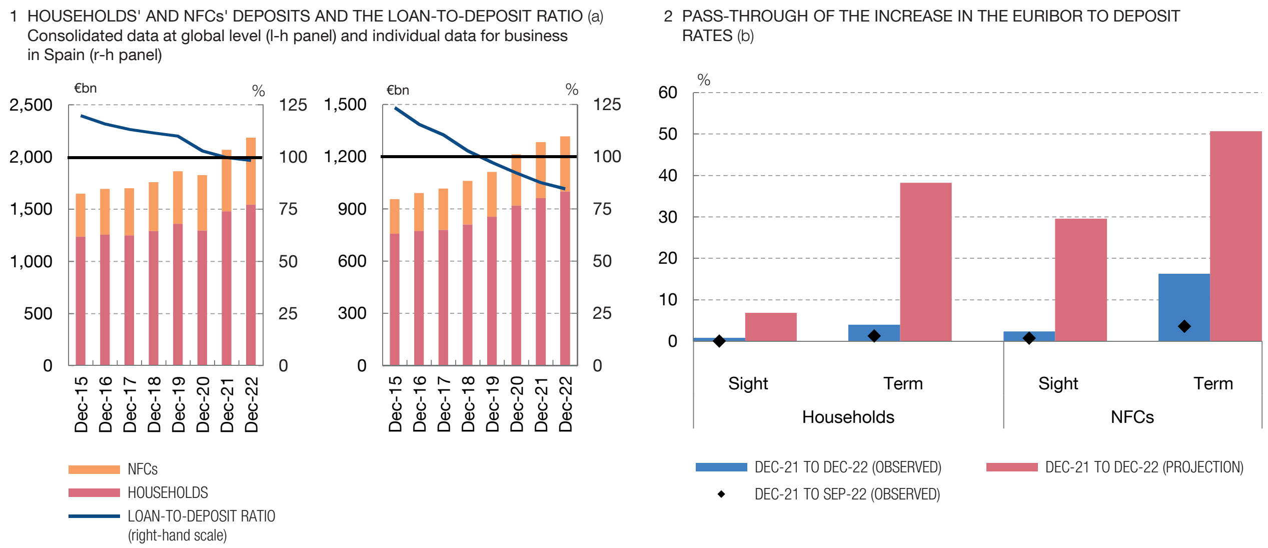
In 2022, Spanish banks' secondary market funding costs rose further for senior debt instruments, but not for debt instruments more akin to capital instruments. The secondary market yields demanded on senior debt have risen in tandem with a widening spread between secured and unsecured debt. Conversely, prior to the banking sector turbulence of March 2023, the cost of instruments issued to satisfy regulatory requirements (CoCos, Tier 2 and senior non-preferred) had declined in step with banks' improving share prices (particularly since 2022 Q4). The stock market prices and valuations of these hybrid instruments declined considerably during the turbulence, with a subsequent partial reversal. In particular, the losses suffered by the holders of Credit Suisse AT1 debt (CoCos) had a differential and sizeable adverse impact on these instruments (see Box 1 for a more detailed analysis). Nonetheless, over the coming quarters, the upside risks to the cost of bank funding may also be reflected in this secondary market segment.

The deposits of households and NFCs continued to grow in 2022, with remuneration holding at low levels. At consolidated level, these deposits grew by 5.6% year-on-year. The growth was lower for business in Spain (3.5%), with a clear moderating trend that accentuated in the early months of 2023, when deposits from

Chart 2.9

HOUSEHOLDS' AND NFCs' DEPOSITS CONTINUED TO GROW IN 2022, DESPITE THE LIMITED PASS-THROUGH OF THE INCREASE IN THE EURIBOR TO DEPOSIT RATES

Households' and NFCs' deposits continued to grow in 2022, both at consolidated level and in business in Spain. The pass-through of the increase in the EURIBOR to deposit rates was limited, although it accelerated in Q4. This trend could continue in the coming months, as liquidity in the Eurosystem dries up and banks' financing needs increase.



SOURCE: Banco de España.

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

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

firms recorded significant declines. Households' deposits were again the main source of retail financing, accounting for 70.6% on a consolidated basis and 75.9% for business in Spain. At end-2022, the loan-to-deposit ratio held at levels close to 100% in consolidated terms, compared to 84.5% for business in Spain (see Chart 2.9.1).

In Spain, the pass-through to households' and NFCs' deposit rates of the current increase in the EURIBOR has been lower than expected based on past experience.[17] The increase in the 12-month EURIBOR over the course of 2022 has not passed through to a significant degree to the remuneration of either households' deposits or NFCs' current accounts. Only the interest rates on NFCs' fixed-term deposits rose (albeit moderately) in 2022 Q4, with the level of pass-through reaching 16% (see Chart 2.9.2). This prompted a slight increase in the

17 In line with footnote 2, and in this case based on the average interest rates on the outstanding balances of deposits, an econometric analysis has been conducted using a vector autoregressive model to explain the changes as a function of the 12-month EURIBOR and other macroeconomic variables.

share of fixed-term portfolios in this customer segment between September and December 2022 (+1.5 pp to 10.4%). The percentage of households' fixed-term deposits continued to decline (to 6.2%). There is also a degree of cross-bank heterogeneity in the rate of pass-through by customer category and type. Monetary policy has passed through more forcefully to average loan rates, albeit still to a limited extent (see Chart 2.3), furthered by banks' continued access to low cost funding in the form of deposits. As a result, average net interest margins between loans and deposits have widened, helping to explain the growth in net interest income in 2022 (see Section 2.1.2).

The pace of pass-through increased for certain deposits of NFCs in the latter stages of 2022, a trend that may become more pronounced and widespread over the coming months. Factors such as the gradual reduction in, and increased cost of, Eurosystem liquidity facilities, the ECB balance sheet downsizing and the developments seen in deposits (with depositors seeking better remunerated financial instruments and making use of the savings buffers built up during the pandemic) may cause deposit rates to rise more quickly. Certain particularities of the current cycle of rate increases, such as deposit rates starting out from zero, could make for a lower degree of pass-through than seen in the past. The tensions observed in global financial markets since March 2023 may anticipate an additional uptick in the cost of households' and firms' deposits, although this would not prevent such funding from at least partly counterbalancing the sharper growth in the cost of other liability instruments.

Spanish deposit-taking institutions have a comfortable liquidity position to contend with any outflows of funds prompted by financial stress episodes. The liquidity coverage ratio (LCR)[18] – which measures the availability of sufficient liquid assets to cover large outflows of funds in the short term – of Spain's main banks stood at 171% at December 2022, well above the required minimum threshold and up 13 percentage points (pp) on pre-pandemic levels. The main European banks also have significant liquidity buffers, with an average LCR of 165% (see Chart 2.10.1), albeit somewhat below the Spanish average. The net stable funding ratio (NSFR)[19] – which measures the funds available to finance banks' activity over a one-year horizon – stood at 130% at December 2022 for Spain's main banks. This is in line with their European peers and significantly above the minimum requirement of 100%. Among the stable funding sources included in the numerator of the ratio, retail deposits cover 75% of the total funding needs for Spanish banks and 60% for the set of European peers (see Chart 2.10.2).

18 The LCR is defined as the ratio between a bank's unencumbered 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.

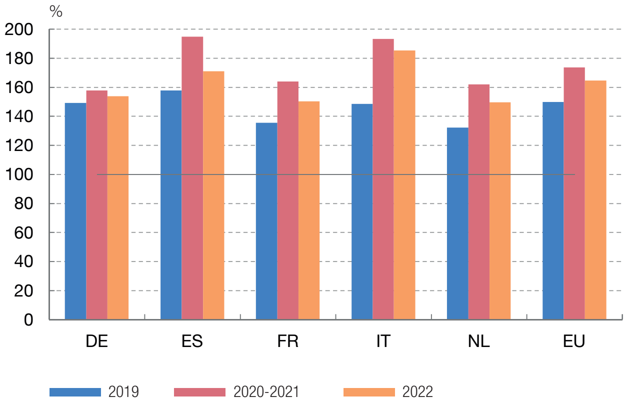
19 The NSFR is defined as the ratio of a bank's available stable funding to its required stable funding for a period of one year. A level over 100% indicates that the bank has sufficient stable funding to satisfy its financing needs over one year, both in normal conditions and in a stress scenario.

Chart 2.10

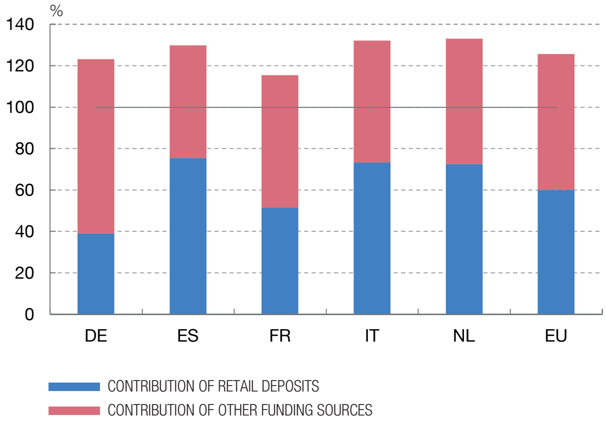
SPANISH BANKS AND THEIR EUROPEAN PEERS HAVE AMPLE LIQUIDITY BUFFERS TO CONTEND WITH ANY OUTFLOWS OF FUNDS PROMPTED BY FINANCIAL STRESS EPISODES IN THE SHORT AND MEDIUM TERM

In December 2022 Spanish banks had one of the highest aggregate liquidity coverage ratios (LCR) among their European peers, 71 pp above the required minimum threshold of 100% and 13 pp up on pre-pandemic levels. The longer-term financing capacity, measured through the net stable funding ratio (NSFR), was also comfortable for both Spanish banks and those in the main European countries.

1 LIQUIDITY COVERAGE RATIO: EUROPEAN COMPARISON



2 NET STABLE FUNDING RATIO: EUROPEAN COMPARISON (a)



SOURCE: EBA.

a The sum of the bars represents the level of the net stable funding ratio (NSFR). The blue and pink bars denote the share that retail deposits and other funding sources represent over the required stable funding.

2.1.2 Profitability and solvency

Profitability

Spanish banks posted consolidated net profit of €25.45 billion in 2022, spurred on by strong growth in net interest income. In year-on-year terms, consolidated net profit was 1.5% lower than in 2021 (see Annex 2), although this was due to the extraordinary income recorded in that year. Excluding extraordinary items in both years,[20] net profit in 2022 would be 18.3% higher than in 2021.

The profitability of the Spanish banking sector improved in 2022, rising above the estimated cost of equity. Return on assets (ROA) in the Spanish banking sector stood at 0.64% in 2022 (compared with 0.66% in 2021, see Chart 2.11.1), while

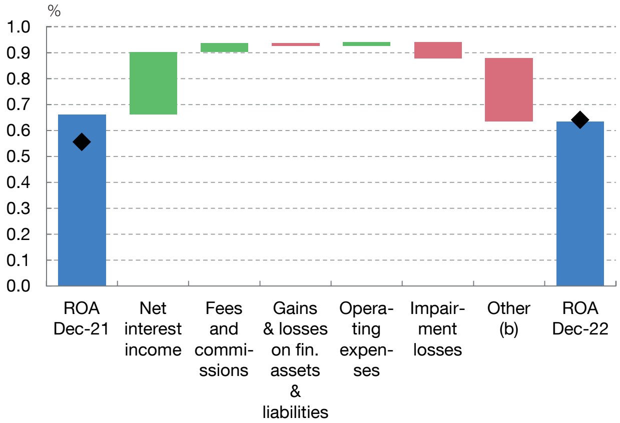
20 In 2021 extraordinary gains were recognised as a result of two mergers: the first, with a net value of €2.9 billion, stemming from negative goodwill (€4.3 billion) and a corporate income tax benefit (€0.6 billion), less extraordinary operating expenses as a result of the labour agreement and other integration costs (€2 billion); and the second, with a value of €1.3 billion, stemming from negative goodwill. Other extraordinary items in 2021 came from the spin-off of an insurance company (€0.9 billion), from the earnings of a US bank up to its sale on 1 June 2021 (€0.3 billion), and from restructuring costs at the two main banks (–€1.2 billion). The extraordinary losses recognised in 2022 were as a result of the offices purchased by one bank (€0.2 billion).

Chart 2.11

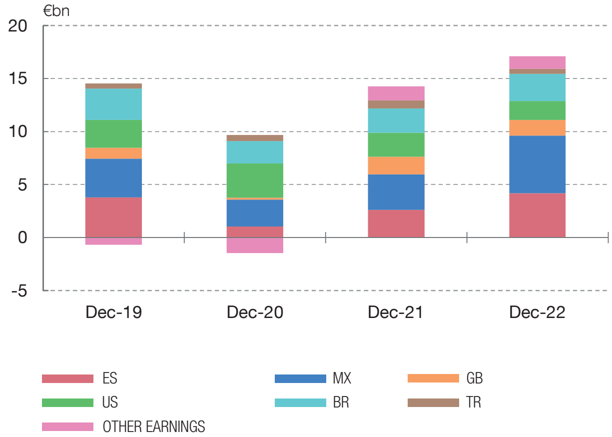
THE SPANISH BANKING SYSTEM'S CONSOLIDATED ORDINARY PROFIT IMPROVED IN 2022 WITH RESPECT TO 2021, DRIVEN MAINLY BY THE STRONG GROWTH IN NET INTEREST INCOME, AND PROFIT ABROAD SAW SIGNIFICANT GROWTH

Spanish banks' consolidated net profit stood at €25.45 billion in 2022, down on the profit obtained in 2021 owing to the extraordinary gains generated in that year. Discounting the effect of these non-recurring items, profit was 18.3% higher in 2022 than a year earlier, as a result of the significant increase in net interest income and strong business in Latin America.

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



2 GEOGRAPHICAL DISTRIBUTION OF ORDINARY PROFIT ATTRIBUTABLE TO THE PARENT OF BANKS WITH SIGNIFICANT INTERNATIONAL ACTIVITY (c)



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 December 2022 compared with December 2021. The black diamonds denote the ROA excluding extraordinary items. Specifically: in December 2021, extraordinary gains as a result of two mergers (€4.2 billion), the spin-off of an insurance company (€0.9 billion) and extraordinary restructuring costs (–€1.2 billion); and in December 2022, the net impact from the purchase of offices by a bank (–€0.2 billion).

b Including, among others, the aforementioned extraordinary items.

c Among the banks with significant international activity, this group includes the three in which such activity is more important and more extended in time, and non-recurring items in the period considered are excluded. The category 'Other earnings' includes the results of the banks' corporate centres.

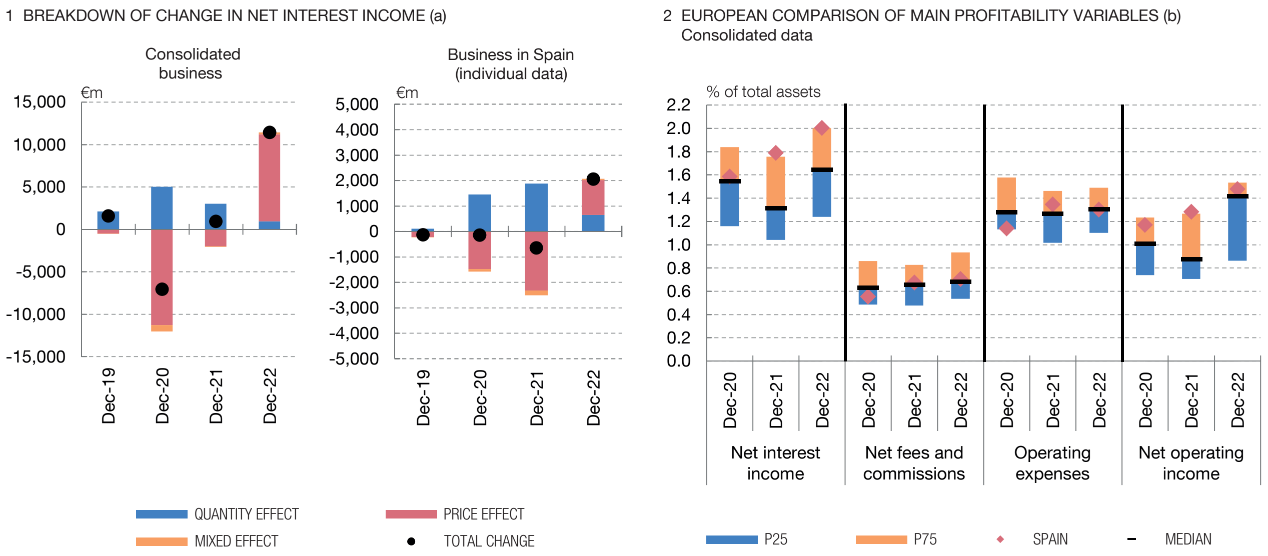
return on equity (ROE) stood at 10.1%, down 35 bp compared with a year earlier. However, excluding extraordinary items, ROA stood at 0.64% at end-2022 (compared with 0.56% in 2021) and ROE at 10.2% (up 140 bp on the 8.8% of a year earlier). Meanwhile, Spanish banks' average cost of equity fell to around 7.5% in 2022, and to below 7% in the last stretch of the year and the opening months of 2023, significantly lower than their return on capital in the year, reflecting the good stock market performance of bank shares in the 12-month period. The recent turmoil in the banking sector and the fall in bank stock prices have driven up banks' cost of equity, although it remains below 7%.

For Spain's main banks with an international presence, ordinary profit from business abroad rose significantly, driven by the strength of their business in Latin America. In 2022, profits abroad grew by 15.7% year-on-year, thanks to strong business in Mexico (where profits rose by 61%) and in Brazil, which offset the fall in profits in Türkiye, the United States and the United Kingdom. Accordingly, the ordinary profit obtained by Spanish banks with significant business abroad exceeded pre-pandemic levels (see Chart 2.11.2).

Chart 2.12

SPANISH BANKS' NET INTEREST INCOME IMPROVED SUBSTANTIALLY IN 2022, AGAINST A BACKDROP OF RISING INTEREST RATES. THE NET OPERATING INCOME OF SPANISH BANKS COMPARES FAVOURABLY WITH THAT OF OTHER EUROPEAN BANKS

Spanish banks' consolidated net interest income rose by 17.1% in 2022, driven chiefly by the price effect associated with the current environment of monetary policy tightening, which has had a larger impact on interest income. In business in Spain, net interest income also rose markedly, interrupting the downward pattern observed in recent years. When compared with their main European peers, Spanish banks are amongst those with the highest net interest income over assets.



SOURCES: EBA and 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 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 effects on interest income and interest expenses.

b Percentiles calculated based on the aggregate financial ratios published in the European Banking Authority's Risk Dashboard for each of the EU banking systems.

Consolidated net interest income improved substantially in 2022 (see Annex 2), mainly owing to the higher relative increase in lending rates. Net interest income rose by 17.1% year-on-year, driven by higher interest income, which more than offset the increase in income expense. The main reason for this improvement is the price effect, which has impacted lending rates more than deposit rates. Albeit to a lesser extent, the volume effect also made a positive contribution to the increase in consolidated net interest income (see Chart 2.12.1), partly as a result of the appreciation against the euro of some of the currencies of the countries in which Spanish banks operate. Net fees and commissions also increased significantly, up 7.9% year-on-year.

In business in Spain, net interest income also rose in 2022, likewise underpinned by the price effect, interrupting the downward pattern observed in recent years. In this case, the contribution of the volume effect was smaller than in previous years (see Chart 2.12.1).

The strong growth in net interest income and net fees and commissions drove gross income up 11% in year-on-year terms. The positive performance of these items offset the other operating losses and the decline in net trading income (6.1%) in 2022. Operating expenses rose slightly (1.7%), although excluding the extraordinary expenses booked in 2021 (see footnote 20) this rate of growth would be higher (5.7%), against a backdrop of high inflation affecting certain items such as labour costs.

Net operating income increased by 19.7% year-on-year, in accordance with the positive trend observed across Europe. A European comparison shows the main Spanish banks standing out in terms of the strength of their net interest income (above the 75th percentile in the country distribution) and in terms of their net fee and commission income and operating expenses (in line with the European median) (see Chart 2.12.2).

Gross operational risk losses fell by 21% compared with 2021. As in previous years, the chief reasons for these losses are inappropriate conduct and business practices. Losses owing to inappropriate anti-money laundering and cyber risk policies and practices have not increased, even though the high geopolitical tensions have raised the associated risks. Yet concern remains about the increase in these risks, whether as a result of customer fraud or, more directly, their impact on banks' operations and systems.

Impairment losses at the consolidated level rose significantly in 2022, driven by higher provisions in banks' business abroad. Impairment losses increased by 19.7% year-on-year in 2022 (see Chart 2.13.1). Spanish banks' cost of risk – defined as the ratio of impairment loss charges to lending – is higher than that of other European banks, although the gap has narrowed since its pandemic peak (see Chart 2.13.2). Together with the better net interest income performance described above, this suggests that Spanish banks' higher profitability comes partly at the cost of assuming higher risks.

In business in Spain, impairment allowances continued along the downward path observed in recent years, decreasing by 20.7% in 2022. As a result, the ratio of impairment losses to operating income in Spain is among its lowest levels in recent years (see Chart 2.13.1). In any event, in the coming quarters the current geopolitical and inflationary tensions, together with monetary policy tightening, could undermine bank customers' ability to pay, which would require banks to step up their provisioning efforts.

Banks increased their distributions in 2022, once the prudential recommendations on limiting dividend payments and share buy-backs were lifted.[21] Dividend payments exceeded €7.2 billion in 2022, with a pay-out ratio of

21 These recommendations were not extended beyond September 2021. See Recommendation of the European Central Bank of 15 December 2020 on dividend distributions during the COVID-19 pandemic and repealing Recommendation ECB/2020/35.

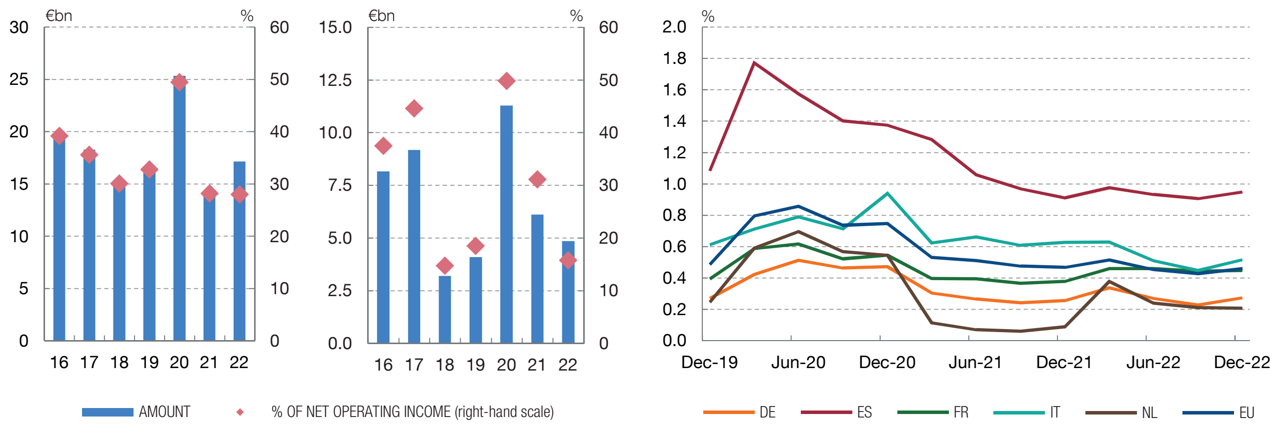
Chart 2.13

IMPAIRMENT LOSSES AT THE CONSOLIDATED LEVEL ROSE SIGNIFICANTLY, AND DECREASED IN BUSINESS IN SPAIN. IN COMPARATIVE TERMS, THE SPANISH BANKING SECTOR NOTABLY HAS A HIGHER LEVEL OF IMPAIRMENT CHARGES THAN ITS EUROPEAN PEERS

The impairment losses of Spanish banks at the consolidated level rose by 19.7%, driven by higher provisions in banks' business abroad, although the ratio of impairment losses to net operating income held stable compared with 2021. In business in Spain, however, impairment losses continued to decline notably following the sharp rise posted in 2020. Spanish banks' cost of risk is higher than that of other European banks.

1 IMPAIRMENT LOSSES
Global consolidated data (L-H) and individual data for business in Spain (R-H)

2 COST OF RISK: EUROPEAN COMPARISON (a)



SOURCES: EBA and Banco de España.

a The cost of risk is defined as impairment loss charges divided by gross lending.

40%, similar to pre-pandemic levels. The sharp increase in share buy-backs made by some banks stands out, the aim being to subsequently cancel the repurchased shares and reduce share capital,[22] thus providing additional remuneration for shareholders and driving up earnings per share (see Chart 2.14.1).

In 2022, Spanish banks' cost of equity fell more sharply than that of other euro area banks. For Spanish banks the cost of equity[23] went from 8.6% at December 2021 to 6.6% at December 2022, whereas for the euro area banks it fell from 8.1% to 7.7% over the same period. The reason for the decline was, first, the Europe-wide drop in the equity risk premium, which fell by some 1.5 pp (prompting a drop of 1.8 pp in the cost of equity of Spanish banks and of 1.9 pp at euro area banks), thus largely offsetting the impact of the increase of almost 1.8 pp in risk-free interest rates. The correlation between the returns required by investors from the banking sector and

22 Banks' capital policies can also envisage other actions, such as the sale of own shares or issue of new shares, that fully or partly offset the effects of share buy-backs on their equity. But in 2022, in contrast with previous years, the plans of the listed banks – especially of the big four – explicitly included the aim of remunerating shareholders.

23 Estimated using a dividend discount model; see L. Fernández Lafuerza and J. Mencía. (2020). "Recent developments in the cost of bank equity in Europe". *Economic Bulletin* - Banco de España 4/2020, Analytical Articles.

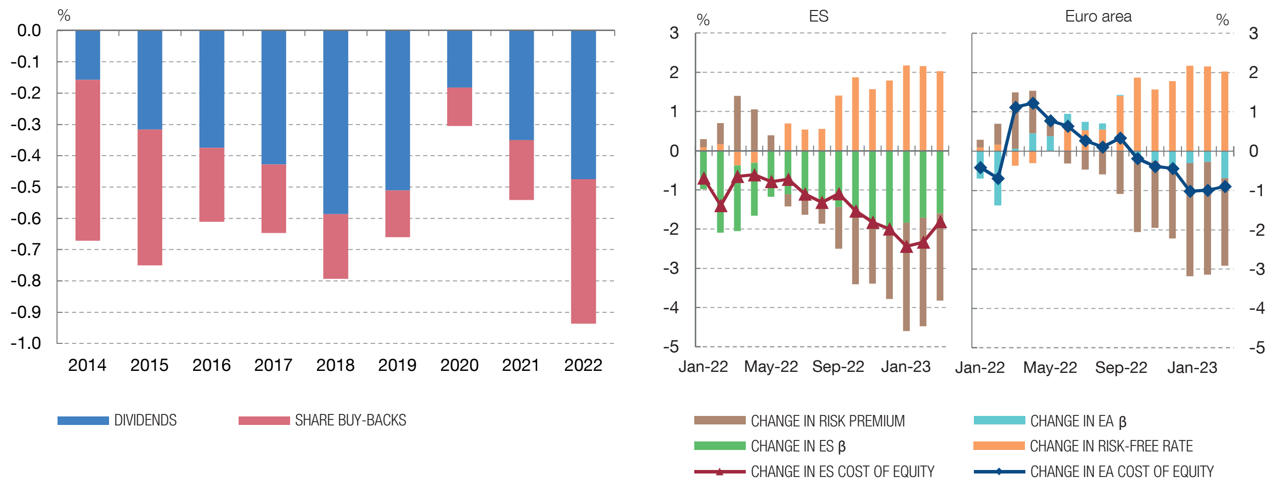
Chart 2.14

THE DIVIDEND PAYMENTS AND SHARE BUY-BACKS OF LISTED BANKS INCREASED NOTABLY IN 2022, WHILE THE COST OF EQUITY OF SPANISH AND OTHER EUROPEAN BANKS FELL, MAINLY OWING TO THE LOWER EQUITY RISK PREMIUM

Dividends and share buy-backs increased sharply in 2022, once the recommendations limiting dividend distributions in the wake of the COVID-19 pandemic were lifted. The cost of equity of euro area banks fell slightly in 2022, essentially owing to the drop in the equity risk premium, and despite the increase in risk-free rates. Spanish banks' cost of equity fell more sharply, due to the decline in the correlation with the equity market. The upside risks to banks' cost of equity have risen notably since the financial turmoil of March 2023.

1 DIVIDENDS AND SHARE BUY-BACKS AS A PERCENTAGE OF RISK-WEIGHTED ASSETS. Consolidated data

2 CHANGE IN THE COST OF EQUITY AND ITS DECOMPOSITION FOR SPANISH (LEFT-HAND PANEL) AND EURO AREA (RIGHT-HAND PANEL) BANKS. With respect to December 2021 (a)



SOURCE: Banco de España, drawing on data from Datastream and Consensus Economics.

a The different colours of the bars denote the contribution of the corresponding item to the change in the cost of equity. The risk-free rate used is the yield of the inflation-linked bond issued by the French government, and the stock market, the EURO STOXX. Calculations based on a dividend discount model. See L. Fernández Lafuerza and J. Mencía. (2020). "Recent developments in the cost of bank equity in Europe". *Economic Bulletin* - Banco de España 4/2020, Analytical Articles.

those demanded from the European equity market overall also contributed to a decline in the cost of equity of around 2 pp for Spanish banks and 0.3 pp for euro area banks (see Chart 2.14.2). The cost of equity of both Spanish and euro area banks began to rise in February and March 2023, mainly owing to the higher equity risk premium.

The fall in the cost of equity cushioned the increase in the overall cost of deposits in 2022. Compared with the 2020-2021 average, interest expenses on Spanish bank deposits rose by 58 bp in the year (see Chart 2.8.1). This increase in the cost of deposits contrasts with the estimated fall of 26 bp in the cost of equity over the same period, resulting in a more contained increase in banks' total funding costs.

Against a backdrop of tighter global financial conditions, the risk of higher growth in all funding costs has risen. Although bank share prices have been highly volatile, falls in share prices in March 2023 translated into increases in the cost of equity required in the financial market, thus checking the previous favourable performance. Moreover, further increases in risk premia will drive up all funding costs, but foreseeably in particular the cost of equity and of unsecured wholesale debt, along with the cost of more senior debt.

Expected revenue from the extraordinary temporary levy on banking sector profits amounted to €637.1 million in February 2023.[24] According to the regulations governing the levy, payment obligations in 2023 will be 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, but 50% of the total must be paid earlier, in February. Extrapolating the information on the payments to the full year, they would be equivalent to 5% of net consolidated profit obtained in 2022. The payment obligations in 2024 will work in the same way, based on profits obtained in 2023.

Solvency

CET1 ratios fell by 25 bp in 2022 after climbing in the two previous years (see Chart 2.15.1). This change may be broken down into the contribution of CET1 (in the numerator) and the contribution of RWAs (in the denominator), which in turn may be broken down as the product of total assets and RWA density (the RWAs to total assets ratio), making a total of three factors. In 2022 CET1 ratios declined on account of the growth in total assets (2.6%) and the increase in RWA density (53 bp), thus reflecting a relative increase in risk. In turn, CET1 capital rose by 2.1% between 2021 and 2022, insufficient to prevent a reduction in the ratio.

CET1 ratios and voluntary buffer levels (including the Pillar 2 guidance, P2G) are uneven across banks (see Chart 2.15.2). The two magnitudes are highly correlated, with a higher CET1 ratio associated with a higher voluntary buffer level. The correlation coefficient is over 0.99 and the linear regression coefficient is equal to 1; excluding the upper decile of the CET1 ratio distribution, these values would be 0.92 and 1.05, respectively. The higher voluntary buffer observed at the less significant institutions possibly reflects a more prudent attitude in view of their greater difficulties to secure funding in the form of capital and subordinated debt, especially at times of financial stress.

The change in CET1 ratios in 2022 was also uneven across banks. The three largest banks, which at December 2022 accounted for 76% of RWAs, saw their (RWA-weighted) average CET1 ratio fall by 33 bp in 2022. This was particularly due to the

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24 See press release of the Ministerio de Hacienda y Función Pública, of 21 February 2023. Article 2 of Law 38/2022 contains the specific regulations on this levy, which applies to banks that operate in Spain and whose interest income plus fee and commission income for 2019, determined according to the accounting regulations applicable, amount to €800 million or more.

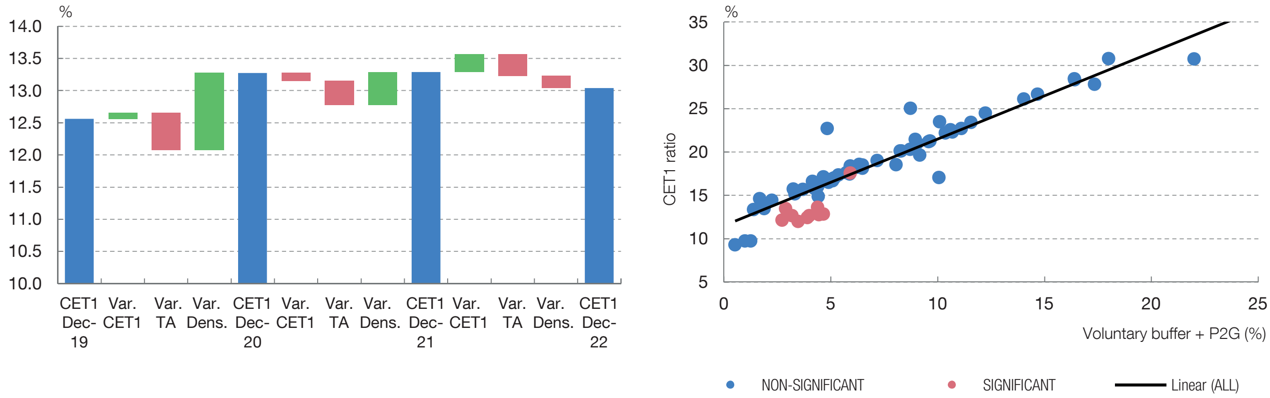
Chart 2.15

THE INCREASE IN TOTAL ASSETS AND RWA DENSITY IN 2022 TRIGGERED AN AGGREGATE DECLINE IN CET1 RATIOS, WHICH ARE HIGHLY HETEROGENEOUS ACROSS BANKS

The CET1 ratio of the Spanish banking sector fell by 25 bp in 2022, on account of the growth in assets and the increase in RWA density, and despite the increase in the volume of CET1. The CET1 ratio is highly heterogeneous at the individual bank level, showing a clear positive correlation with the voluntary buffer level plus the Pillar 2 guidance (P2G) on RWAs.

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

2 VOLUNTARY BUFFER PLUS P2G COMPARED WITH THE CET1 RATIO AT DECEMBER 2022, % of RWAs (b)
Consolidated data



SOURCE: Banco de España.

a The CET1 ratio can be broken down as the change in CET1, total assets (TA) and density (Dens.), where the density is calculated as the RWAs to total assets ratio. Thus, the CET1 ratio is calculated as CET1 over TA x Dens. The red (green) colour of the bars denotes a negative (positive) contribution to the change in the CET1 ratio.

b The red dots represent the banks directly supervised by the SSM. To better view the data, banks with a CET1 ratio in the top decile (a CET1 ratio of 34% and which include eight banks, all of which are non-significant) have been omitted, but this does not affect the overall conclusions. The trend line shown takes into account the full sample.

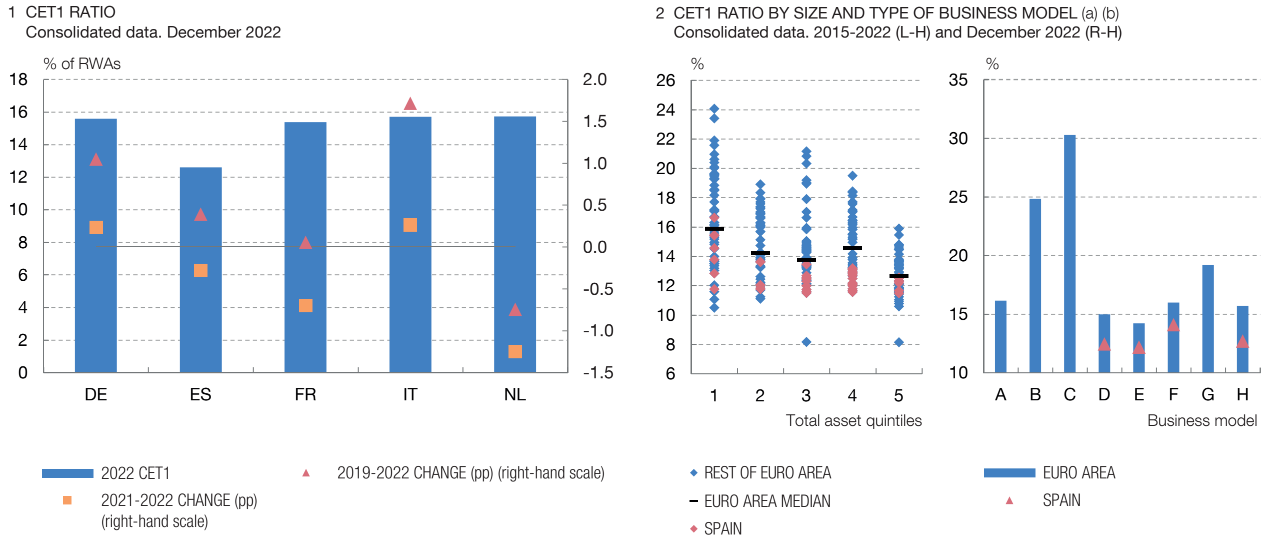
growth in their RWAs on account of their business expansion abroad. By contrast, the banks representing the other 24% of RWAs at December 2022 saw their (RWA-weighted) average CET1 ratio increase by 8 bp year-on-year in 2022.

Spanish banks' CET1 ratios remain lower than those of some of their European peers, at the low end of the CET1 ratio distribution for different bank sizes and business models. The CET1 ratio for Spain at end-2022 was lower than that for countries such as Germany, France, Italy or the Netherlands. However, compared with France and the Netherlands, the Spanish ratio saw a smaller decline in the year. Also, like those of Germany, France and Italy, Spain's CET1 ratio is above its pre-pandemic level (see Chart 2.16.1). CET1 ratios are highly heterogeneous across European banks, although in general the larger banks tend to operate with lower ratios. Grouped by bank size, Spanish banks lie at the low end of the CET1 ratio distribution (see Chart 2.16.2).[25] In addition, the business model also affects banks'

25 It has also been documented that larger global banks' capital ratios have fallen to pre-pandemic levels; see Basel III capital ratios for largest global banks fell to pre-pandemic levels in H1 2022, latest Basel III monitoring exercise shows. BIS press release, 28 February 2023.

Chart 2.16
THE SPANISH BANKING SECTOR'S CET1 RATIO REMAINS AT THE LOWER END OF THE CET1 RATIO DISTRIBUTION AT THE EUROPEAN LEVEL

The Spanish banking sector's CET1 ratio declined less than in other European economies and thus remained above pre-pandemic levels. At the European level, larger banks operate with lower CET1 ratios. Grouped by size and type of business model, Spanish banks are also at the lower end of the distribution of this metric.



SOURCES: EBA, ECB and Capital IQ.

a Each dot in the left-hand panel denotes a bank and a year.
b The information by type of business model for the euro area and Spain is sourced from the ECB and the Banco de España, respectively. The following categories are considered: corporate/wholesale lenders (A), custodians and asset managers (B), development/promotional lenders (C), diversified lenders (D), global systemically important banks (E), retail and consumer credit lenders (F), small market lenders (G) and universal and investment banks (H).

CET1 ratio levels. By business model, Spanish banks' CET1 ratio levels are lower than the euro area aggregates (see Chart 2.16.2).

The CET1 ratio levels of Spanish banks are clearly above average requirements and, on aggregate, provide significant loss-absorbing capacity. Whether supervised by the ECB or directly supervised by their national central banks, all banks are subject to capital (and liquidity) requirements under the strict Basel III framework. As Chart 2.15.2 shows, banks also operate with ample margin over these requirements on account of their voluntary capital buffers (envisaged in the supervisory guidance). All of which provides the banking sector overall with significant loss-absorbing capacity, even in the face of highly adverse macro-financial scenarios.[26] Nevertheless, the prevailing high uncertainty requires especially diligent monitoring by the

26 For the latest results of the Banco de España's stress tests, see *Financial Stability Report Autumn 2022.*

supervisor, to ensure that this resilient solvency position does not wane over time. This is particularly important in view of the heightened probability of risk scenarios materialising, such as those linked to the financial turmoil and the increase in risk premia observed since March 2023. These differ from the main risk scenarios envisaged in previous quarters, linked to energy supplies and inflationary pressures.

2.2 Non-bank financial sector and systemic interconnections

2.2.1 Non-bank financial sector

Vulnerability analysis

Some recent stress episodes have highlighted the vulnerability of certain financial intermediaries, in particular in terms of their liquidity position. These episodes have affected both bank and non-bank financial intermediaries:

i) First, the difficulties experienced by certain energy firms with central counterparties in commodity derivatives trading (for more details, see Section 2.2.2 below) when they struggled to meet margin calls prompted by soaring energy prices and energy price volatility in 2022.

ii) Also, in the second half of 2022, the increase in UK government debt yields affected the liability-driven investment (LDI) strategies used by certain UK pension funds to boost the return on their investments, on occasions with resource to synthetic leveraging.[27] The higher government debt yields made it more difficult for the LDI funds to maintain their operations. This prompted forced sales of UK sovereign debt, which generated high volatility in the government debt yield curve in the closing months of 2022.

iii) Lastly, in March 2023, doubts concerning the robustness of Silicon Valley Bank (SVB) and Credit Suisse trigged a run on funds at both institutions, resulting in the resolution of SVB and the takeover of Credit Suisse by UBS (see Box 1 for details on these individual crises and their systemic implications).

For the time being this stress has been constrained to certain institutions and segments, but greater systemic effects could arise, in particular through the

27 For example, the funds invested in LDI funds were used to purchase government debt, and this in turn was used as collateral in repos to obtain more funds with which to acquire other assets offering higher returns. In addition, the LDI funds used interest rate derivatives to match their asset/deposit maturities.

non-bank financial intermediation (NBFI) segment. The empirical evidence available flags the procyclical behaviour of various NBFI segments, in particular investment funds; were significant market risks to materialise, this could be reinforced through forced asset sales to reduce their leveraging and increase their liquidity.[28] It is also important to note that, in several cases, the economic authorities' actions helped contain the events described: the steps taken by the fiscal and prudential authorities of various countries (such as the United Kingdom and Sweden) to protect energy firms' liquidity; the bond purchases made by the Bank of England to stabilise the UK government debt market; the measures adopted by the US authorities guaranteeing all SVB deposits and providing an emergency liquidity facility to other medium-sized banks; and the steps taken by the financial authorities and in Switzerland to facilitate the takeover of Credit Suisse by UBS.

Developments in insurance companies, investment funds and pension funds

Insurance companies, investment funds and pension funds saw their assets decrease in size in 2022, in Spain and in the euro area overall. This decrease of around 10% in asset size since the start of 2022 is the largest since the global financial crisis (see Chart 2.17.1). It is important to note that this decrease in asset size stems from changes in stock market values and from sales of assets held by these non-bank financial intermediaries. In 2022, the euro area overall saw increasing sales of debt securities and shares, which moderated only in the last quarter, whereas in Spain the year saw significant net acquisitions of long-term debt securities, while holdings of listed shares fell slightly (see Chart 2.17.2).

Investment funds

Investment funds in the euro area overall, excluding Spain, saw net capital outflows in 2022, while Spanish funds performed more favourably. The euro area overall, excluding Spain, recorded net capital outflows, especially from fixed-income funds (see Chart 2.18.1). This pattern moderated towards the end of the year, when flows in fixed-income funds recovered somewhat. In the case of Spanish investment funds, capital outflows were concentrated at mixed investment funds (that is, funds that invest both in bonds and shares), but these were more than offset, especially in Q4, by

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28 See, for instance, Y. Timmer. (2018). "Cyclical investment behavior across financial institutions". *Journal of Financial Economics,* volume 129, issue 2, pp. 268-286. The author finds that investment funds sell more debt than other institutional holders when past returns are negative. The ECB draws a similar conclusion: ECB. (2022). "Liquidity mismatch in open-ended funds: trends, gaps and policy implications". *Financial Stability Review,* November. In this case, funds' forced sales are triggered by liquidity mismatches.

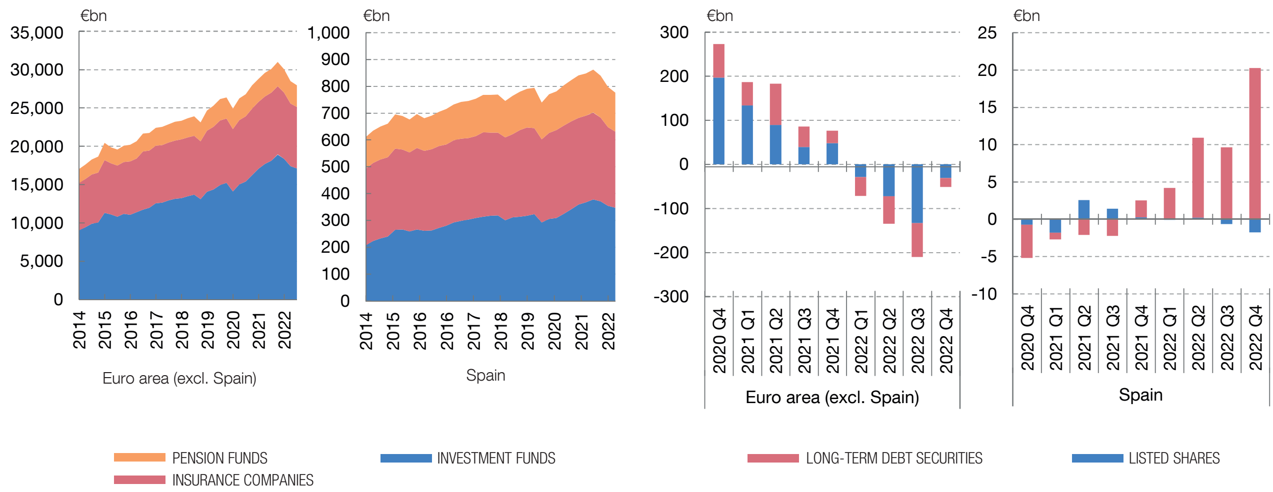
Chart 2.17

THE TOTAL ASSETS OF PENSION AND INVESTMENT FUNDS AND INSURANCE COMPANIES DECLINED IN 2022, BOTH IN THE EURO AREA OVERALL AND IN SPAIN. THE POSITIVE NET ACQUISITIONS OF LONG-TERM DEBT SECURITIES BY THESE INTERMEDIARIES IN SPAIN STOOD IN CONTRAST TO THE DEVELOPMENTS OBSERVED IN OTHER COUNTRIES

In 2022 H2 the total assets of funds and insurance companies continued their decline which began in H1, both in Spain and in the euro area overall, making for a cumulative drop of around 10% over the past year in both cases. In the euro area overall, these non-bank financial intermediaries made net sales of shares and long-term debt securities, whereas Spain saw high net acquisitions of long-term debt securities.

1 TOTAL ASSETS OF NON-BANK FINANCIAL INTERMEDIARIES IN THE EURO AREA (EXCL. SPAIN) AND IN SPAIN (a)

2 NET ACQUISITIONS OF LISTED SHARES AND LONG-TERM DEBT SECURITIES BY NON-BANK FINANCIAL INTERMEDIARIES IN THE EURO AREA (EXCL. SPAIN) AND IN SPAIN (b)



SOURCES: Banco de España, ECB and Securities Holding Statistics by Sector.

a The following non-bank financial intermediaries are considered: money and non-money market investment funds, insurance companies and pension funds.

b Net quarterly transactions at market value by non-bank financial intermediaries (investment funds, pension funds and insurance companies).

subscriptions to fixed-income funds (see Chart 2.18.1).[29] These capital inflows into fixed-income funds are at least partly responsible for the above-mentioned sharp increase in Spanish investment funds' purchases of debt securities (see Chart 2.17.2).

Debt securities gained weight in investments funds' portfolio holdings in 2022. Equities fell slightly as a proportion of total holdings of marketable instruments in euro area investment funds (excluding Spain), and posted a somewhat sharper fall as a proportion of Spanish funds' holdings (see Chart 2.18.2). This difference is related to the significant capital inflows into Spanish fixed-income funds described above. Also important to note is that, while euro area funds (excluding Spain) saw their cash and deposits holdings grow, these holdings fell in Spanish funds, resulting in a certain degree of convergence. Lastly, both euro area funds (excluding Spain) and Spanish funds saw a decline in the market value of their higher risk debt securities (those rated BBB or lower).

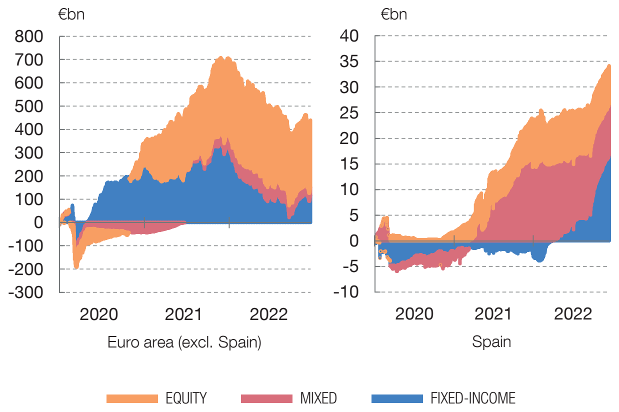
29 The data on investment funds' capital inflows/outflows are obtained from Refinitiv and may differ from other official statistics.

Chart 2.18

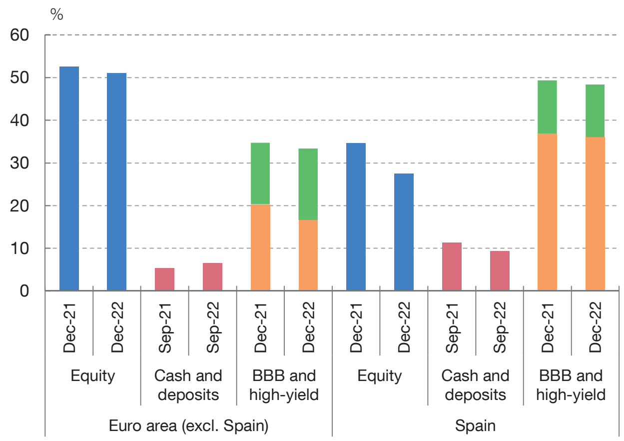
FIXED-INCOME FUNDS IN OTHER EUROPEAN COUNTRIES RECORDED CAPITAL OUTLOWS IN 2022, WHILE A MORE FAVOURABLE PATTERN WAS OBSERVED IN SPAIN. HIGHER RISK SECURITIES HAVE LOST GROUND ACROSS THE BOARD

Investment funds in other euro area countries recorded net capital outflows in 2022, particularly in the case of fixed-income vehicles, although these flows have recently recovered. In Spain, this segment saw significant net suscriptions in the final stretch of the year, offsetting the capital outflows from other vehicles. Higher risk debt securities, rated BBB or lower, declined slightly in the euro area as a whole and in Spain.

1 INVESTMENT FUND FLOWS IN THE EURO AREA (EXCL. SPAIN) AND IN SPAIN (a) (b)



2 LIQUIDITY AND HOLDINGS OF HIGH-YIELD FIXED-INCOME AND EQUITY INVESTMENT FUNDS. EURO AREA (EXCL. SPAIN) AND SPAIN (c) (d)



SOURCES: Banco de España (Cuentas Financieras), ECB (Securities Holdings Statistics by Sector, Quarterly Sector Accounts) and Refinitiv.

a Cumulative change in investment fund net capital inflows and outflows since 15 January 2020, drawing on a representative sample, prepared by Refinitiv, of funds domiciled in euro area countries. The data for Spain in the right-hand panel refer to funds domiciled in Spain included in this sample. Data up to end-2022.

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

c The term "high-yield" refers to sub-investment grade credit ratings (from BBB+ to BBB—). The orange and green bars indicate the weight of BBB and high-yield holdings, respectively. Only non-money market investment funds are considered in the calculation of the level of cash and deposits.

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

Insurance companies

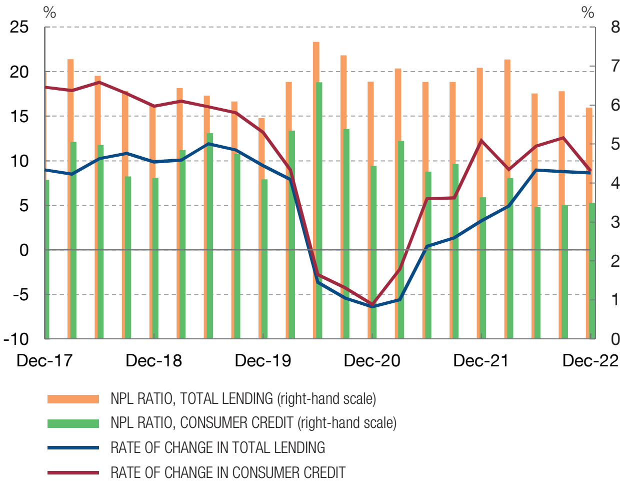
Income from direct insurance premiums rose by 4.6% in 2022, in line with the normalisation of general economic activity. Income from non-life premiums grew by 5.2%, while income from life premiums rose by just 3.7%. Overall, income from insurance premiums has returned to pre-pandemic levels (see Chart 2.19.2).

There were no signs of risk in the profitability or solvency of the insurance sector in 2022. The good performance of income from non-life products in the year offset the increase in claims. Meanwhile, income from the life insurance business improved as a consequence of the higher interest rates, which lifted the rate of return on some of the assets in which insurance companies hold their investments. Overall, insurance sector profitability improved in 2022, with ROE at 13.3% (compared with 12.4% in 2021). The solvency ratio (SCR) stood at 235.3%, down slightly compared with 2021 (240.7%).

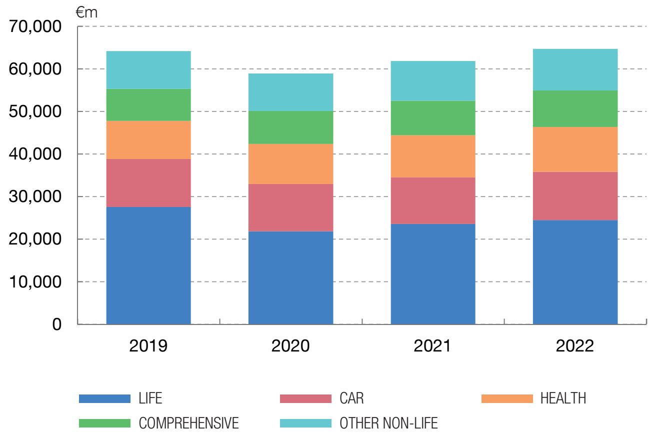
Chart 2.19
LENDING BY SPECIALISED LENDING INSTITUTIONS INCREASED IN THE LAST YEAR, WHILE THE NPL RATIO EDGED DOWNWARDS. INCOME FROM INSURANCE PREMIUMS ROSE IN THE SAME PERIOD

Lending by specialised lending institutions (SLIs) to the resident private sector rose by 8.6% in the last year, similar to the change in their consumer credit. The NPL ratio in total SLI lending declined by 1 pp, while the NPL ratio in their consumer credit hardly changed. Income from insurance premiums rose in 2022, in line with the normalisation of economic activity.

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



2 INCOME FROM INSURANCE PREMIUMS



SOURCE: Banco de España.

a The analysis was performed with the group of SLIs existing in December 2022 and thus excluded the effects of corporate transactions carried out in recent years.
b The total NPL ratio is higher than the NPL ratio for the consumer segment because of one large SLI specialising in high-risk mortgage loans.

Pension funds

Contributions to pension funds and their total assets and returns all declined in 2022. Gross contributions to pension funds fell by more than 25% in the year, partly owing to the lower limit on tax deductions for contributions to individual pension schemes.[30] Total pension scheme assets also fell, by 9.6% year-on-year. In addition, market volatility, whipped up by the war in Ukraine and higher inflationary pressures, triggered a pronounced fall in pension funds’ average annual returns, down from 8.5% at December 2021 to –9.7% at December 2022. Nevertheless, despite falling by 79 bp, long-term returns (25 years) remained in positive territory, standing at 2.5% at December 2022.

Specialised lending institutions

Lending by specialised lending institutions (SLIs) increased in 2022, while their NPL ratios declined. In 2022, lending by SLIs rose by 8.6% year-on-year. In

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

particular, consumer credit, which is their traditional business segment, grew by 8.8% on December 2021, 3.4 pp less than a year earlier. NPL ratios in SLI lending to the resident private sector stood at 5.9% (1 pp less than at December 2021), while NPL ratios in their consumer credit fell by 0.1 pp to 3.5% (see Chart 2.19.1).

2.2.2 Systemic interconnections

Securitisations originated by Spanish banks are an important source of interconnections with other financial intermediaries, which act as holders of these instruments. The outstanding amount of securitisations originated in Spain amounted to €132 billion in 2022 Q4, 14% of the European total. This percentage is similar to that of countries such as Italy, the Netherlands and France, and is topped only by the volume originated in the United Kingdom (see Chart 2.20.1). Mortgage-backed securities account for the bulk of the total in Europe, amounting to some 60% in recent years (see Chart 2.20.2), while in Spain they account for 75% of securitisations issued by Spanish banks.

The materialisation of bank credit risk could affect holders of instruments outstanding. Approximately 50% of all securitisations in the period 2019-2022 were distributed to investors, with the remainder retained by banks to obtain liquidity in the Eurosystem's refinancing operations.[31] Holders of placed securitisations may be exposed to collateral value deterioration, in the event of credit quality deterioration of the underlying loans. According to loan-level analysis, the average LTV ratios of the assets used as collateral in securitisations held steady at around 70% in the period 2005-2021, with a decrease in the percentage of loans with LTV ratios over 100%.

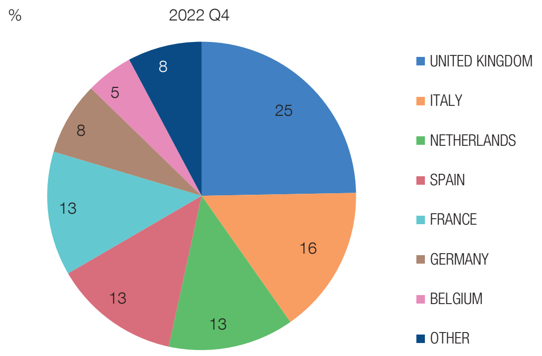
Central counterparties (CCPs), which have a growing presence in derivatives markets, are a further important source of interconnections between financial sectors. Their growing prominence (see Chart 2.21.1) has been encouraged by the authorities, with a view to assimilating one of the lessons learned after the global financial crisis, when many of these operations were conducted bilaterally between counterparties, with a lack of transparency and insufficient buffers to accommodate price fluctuations in the underlying assets. CCPs have now acquired a central role, which demands that their risks be closely monitored and that their activity be appropriately regulated and supervised. Thus, in 2022, a number of energy firms experienced difficulties accessing commodity derivatives operations with CCPs, as they were unable to meet their margin calls when certain commodity prices shot up.

31 On the retention rate, see AFME (2022), *AFME Securitisation Data Report Q3 2022*. Partially reflecting this retention rate, at end-2021 the banking sector was the main holder of securitisations, mostly high credit quality. Those held by other sectors are generally lower credit quality. For more details, see ESRB (2022), *Monitoring systemic risks in the EU securitisation market,* July.

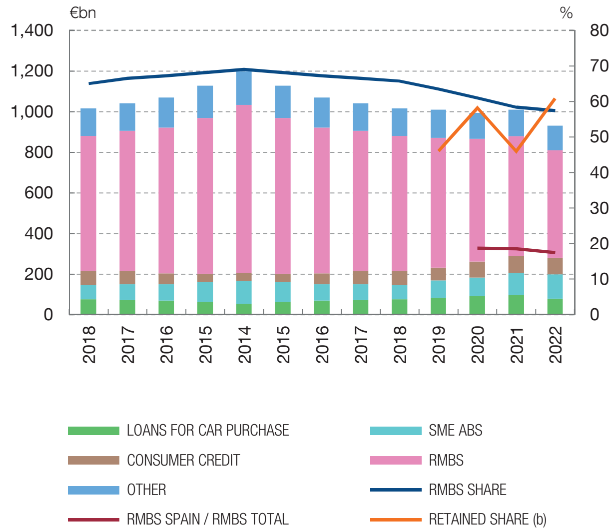
Chart 2.20
SECURITISATIONS REPRESENT A SOURCE OF POSSIBLE INTERCONNECTION BETWEEN THE BANKING SECTOR AND OTHER SECTORS, AND MAINLY COMPRISE MORTGAGE-BACKED SECURITIES IN THE CASE OF SPAIN

The outstanding amount of securitisations with Spanish collateral accounts for 13% of total securitisations in Europe, a very similar proportion to that of Italy and Germany, and topped only by the United Kingdom. Mortgage-backed securities represent the bulk of outstanding securitisations in Europe, accounting for a very sizeable share of loan-backed securities originated in Spain.

1 ORIGIN OF COLLATERAL OF OUTSTANDING SECURITISATIONS



2 DISTRIBUTION OF OUTSTANDING SECURITISATIONS IN EUROPE, BY TYPE OF COLLATERAL (a)



SOURCE: Association for Financial Markets in Europe.

a RMBS: Residential mortgage-backed securities. SME ABS: Asset-backed securities backed by SME loans.
b Retained share of issuances in the corresponding year.

Some of these market tensions ultimately passed through to banks exposed to these firms, albeit with no systemic consequences.[32]

Crypto-asset market prices have a positive, albeit limited, correlation with market prices of traditional risk-bearing financial assets such as equities. This correlation was particularly high during the stress episodes of 2020 and 2022, associated respectively with the onset of the COVID-19 pandemic and the start of the war in Ukraine (see Chart 2.21.2). The possibilities of diversifying the risk in traditional assets through investment in crypto-assets are therefore limited; indeed, on the contrary, crypto-assets could be a potential contagion channel. Nevertheless, it is important to note that, so far, the pass-through of stress episodes in crypto-assets (for example, the collapse of FTX) to other financial assets and, in general, to traditional financial intermediaries, has been very contained and has not been systemic. After falling sharply in 2022, the market prices of the main crypto-assets recovered rapidly in the opening months of 2023, which suggests that this market

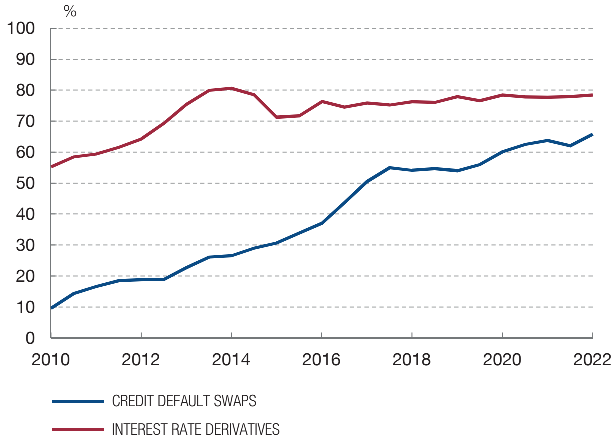
32 For more details, see Section 2.2.2 of Chapter 2 of the Banco de España's Financial Stability Report Autumn 2022.

Chart 2.21

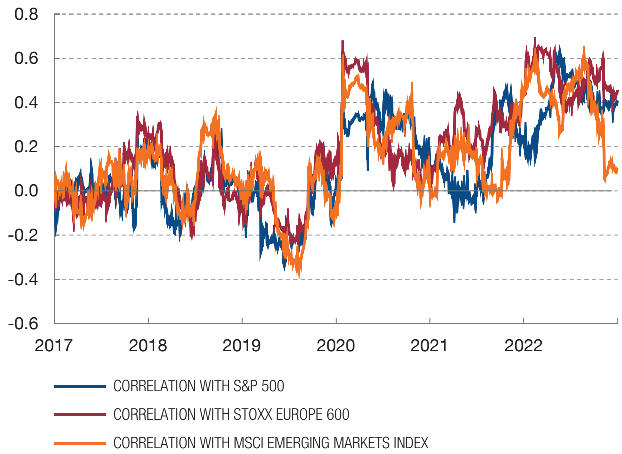
THE GROWING IMPORTANCE OF CENTRAL COUNTERPARTIES AND THE EMERGENCE OF CRYPTO-CURRENCIES REPRESENT OTHER, ALBEIT VERY DIFFERENT, SOURCES OF INTERCONNECTIONS BETWEEN FINANCIAL INTERMEDIARIES

The percentage of CCP traded derivatives has risen since the financial crisis; this has raised the systemic importance of these intermediaries, which help accumulate resources that can absorb shocks and thus reduce the risk of contagion. Crypto-assets are another example of interconnections, and their price in the most recent period has been positively correlated with that of other traditional risk-bearing financial assets.

1 DERIVATIVES CLEARED THROUGH CENTRAL COUNTERPARTIES



2 CORRELATION IN THE DAILY RETURNS ON A CRYPTO-ASSET INDEX AND ON EQUITY INDICES - EUROPE, UNITED STATES, EMERGING ECONOMIES (b)



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

a Percentages calculated drawing on traded notional amounts.
b The crypto-asset index used to calculate the correlations is the MVIS CryptoCompare Digital Assets 100 Index, which comprises the 100 main (backed and unbacked) crypto-assets, based on their market value. Correlation is calculated using three-month rolling windows of the daily returns on each index.

still has the potential to grow and to become more systemic. Indeed, the turmoil in medium-sized banks in the United States highlighted the extent of the interconnections between stablecoins and these banks, through the deposits in which a significant share of their reserve assets were held. Chapter 3 analyses the latest regulatory developments in crypto-assets.