

# 2

## RISKS TO THE FINANCIAL SECTOR AND ITS RESILIENCE



## 2 RISKS TO THE FINANCIAL SECTOR AND ITS RESILIENCE

This chapter reviews the situation and risks of the Spanish financial system, paying special attention to the banking sector. Furthermore, it presents the results of the stress tests conducted for this sector and also its direct interconnections with non-residents and indirect interconnections with the rest of the financial sector. Since the last FSR the Spanish banking sector has continued the process of deleveraging against a background of low profitability and slightly improving solvency. The quality of the balance sheet has also improved due to decreasing NPLs and foreclosed assets. The stress tests on the banking sector show adequate resilience at aggregate level, underpinned by the aforementioned improvement in balance sheet quality. Under the adverse scenario, the stress test analysis incorporates also a limited ability to generate operating income by banks and lower credit growth than under the baseline scenario. The results are sensitive to the value adjustment assumptions applied to sovereign exposures.

### 2.1 Deposit institutions

#### 2.1.1 Balance sheet structure, risks and vulnerabilities

##### Credit risk

**Total lending by deposit institutions in Spain decreased by 1.2% year-on-year in June 2019.** This was a significant moderation in the rate of fall, since in the same month a year earlier the decrease was 2.8%. As a result, total loans stood at €1,159 billion (see Chart 2.1). The decrease in lending was apparent in all the larger lending banks and affected loans to non-financial corporations most (see Chart 2.2). However, the fact that the median of the distribution, which does not take into account size differences between banks, is positive and rising in the non-financial corporations segment, suggests that lending by smaller banks is expanding.

**Year-on-year growth of new loans to households and non-financial corporations moderated.** Lending between June 2018 and June 2019 amounted to €459 billion, of which more than 70% were new loans (see Chart 2.1). In recent months new loans have held steady, so the year-on-year growth rate of new loans decreased to 4.6% and the increase in loan principal drawn down declined to 12.6%.

**Financing extended by the banking sector to non-financial corporations through the purchase of their debt issues increased by €1.9 billion in 2019.**

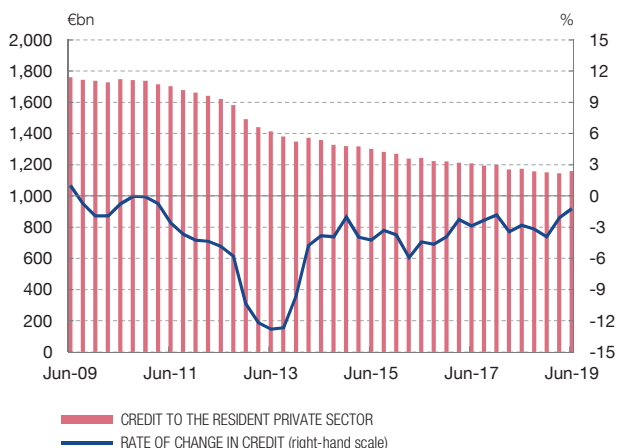
Chart 2.1

### CREDIT TO THE RESIDENT PRIVATE SECTOR

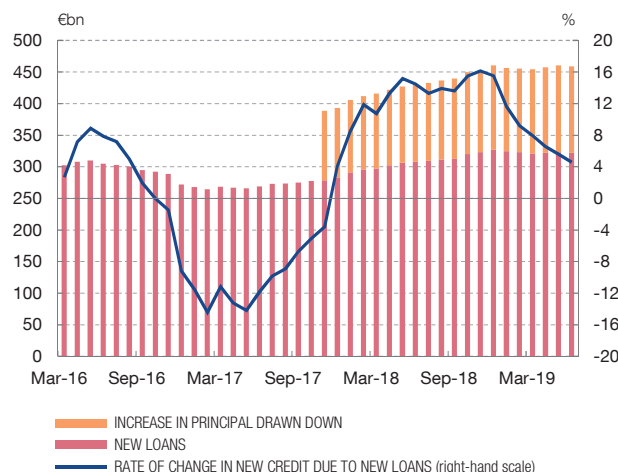
#### Business in Spain, ID

Total credit continued falling to stand at €1,159 billion in June 2019, although a slight pick-up in the past quarter had the effect of moderating its year-on-year rate of fall. New lending held steady in the past twelve months, which meant that its year-on-year change also moderated.

1 CREDIT VOLUME AND YEAR-ON-YEAR RATE OF CHANGE



2 NEW CREDIT VOLUME IN THE PAST 12 MONTHS AND YEAR-ON-YEAR RATE OF CHANGE (a)



SOURCE: Banco de España.

a Before December 2016 information was not available on the increase in the principal drawn down in existing loans. Consequently, the first data item for this series, accumulated over twelve months, is represented in November 2017. The rate of change shown only refers to new loans.

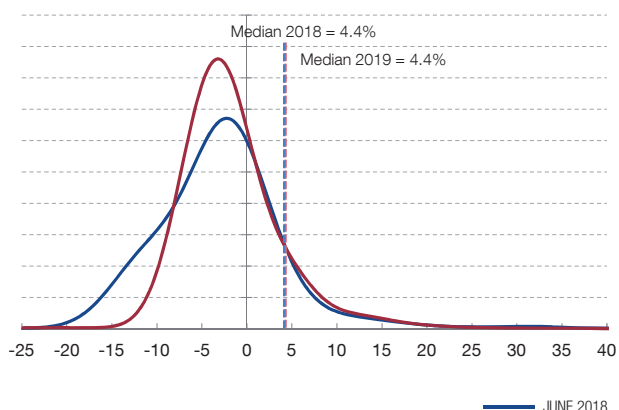
Chart 2.2

### DISTRIBUTION BY INSTITUTION OF THE CHANGE IN CREDIT TO THE RESIDENT PRIVATE SECTOR

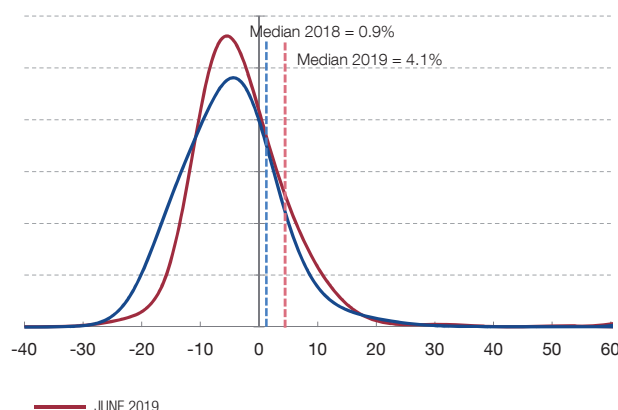
#### Business in Spain, ID

Credit to the resident private sector fell across the board in all the larger lending banks, although the median change at banks remained positive, both in total credit and, more particularly, in credit to non-financial corporations.

1 DISTRIBUTION OF THE YEAR-ON-YEAR RATE OF CHANGE (%) OF TOTAL CREDIT (a)



2 DISTRIBUTION OF THE YEAR-ON-YEAR RATE OF CHANGE (%) OF CREDIT TO NON-FINANCIAL CORPORATIONS (a)



SOURCE: Banco de España.

a The graph shows the density function (or frequency distribution) of the year-on-year change of credit for Spanish deposit institutions, weighted by the credit corresponding to each institution. This density function is approximated through a kernel estimator which allows a non-parametric estimate of the density function, yielding a continuous and smoothed graphical representation of that function.

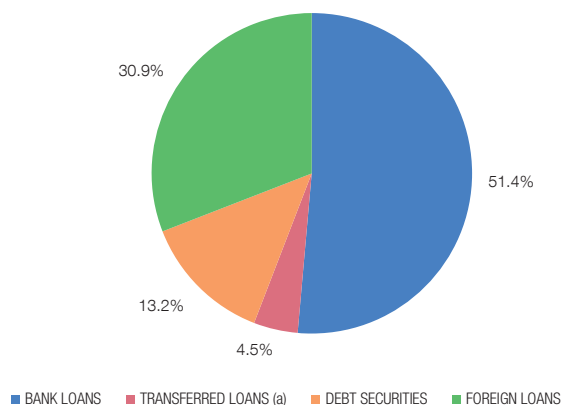
Chart 2.3

## PARTICIPATION OF THE BANKING SECTOR IN THE FINANCING OF NON-FINANCIAL CORPORATIONS

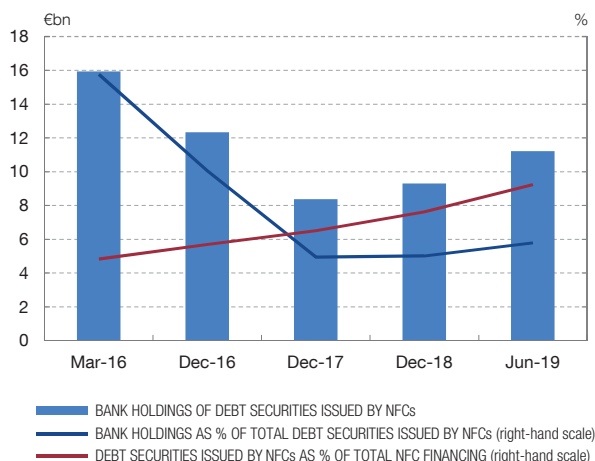
### Business in Spain, ID

Although the main source of financing of non-financial corporations is bank loans, the weight of debt securities has increased by more than 4 pp since March 2016 to stand at 13.2% in June 2019. The weight of debt securities issued by non-financial corporations that are held by deposit institutions decreased significantly at the beginning of the Eurosystem corporate bond purchase programme in June 2016, subsequently steadying at nearly 10% of the total debt issuance of these firms.

1 FINANCING SOURCES OF NON-FINANCIAL CORPORATIONS  
June 2019



2 BANK HOLDINGS OF DEBT SECURITIES ISSUED BY NON-FINANCIAL CORPORATIONS (NFCs)



SOURCE: Banco de España.

a Transferred loans include those removed from the balance sheet, those transferred to securitisation funds and other transfers.

As shown in Chapter 1 (see Chart 1.10), the balance of outstanding debt issued by Spanish non-financial corporations has expanded significantly between 2016 and 2019. Indeed, in June 2019 these securities represented 13.2% of total financing to non-financial corporations (see Chart 2.3). Deposit institutions can also finance these firms indirectly by acquiring those securities. Specifically, their holdings in June 2019 stood at €11 billion, up €3 billion compared to 2017. Hence, the weight of banks' holdings in total issues held steady at slightly below 10%.

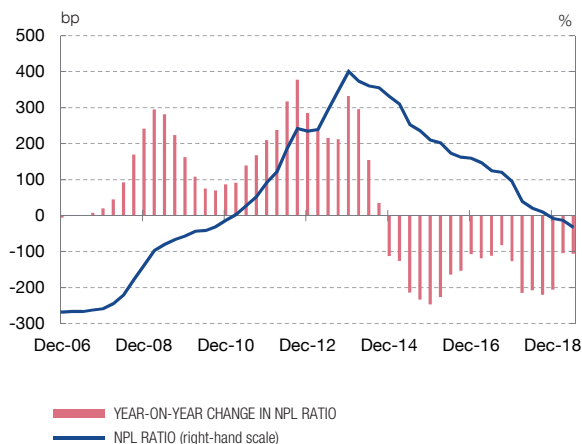
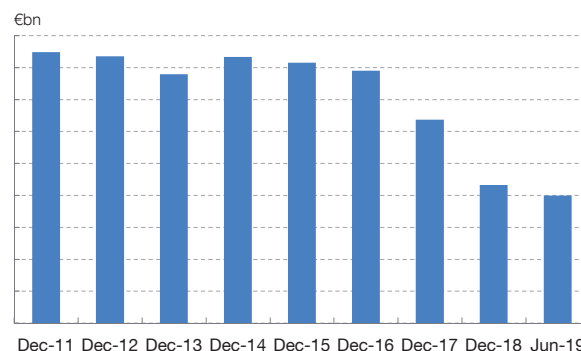
**The behaviour of lending was underpinned by the stabilisation of financing conditions.** The interest rates on new loans have remained at much the same level over the past 12 months for both households and non-financial corporations. At mid-2019, the approval rate of loans requested by non-financial corporations from banks with which they were not currently dealing stood at 31% of the total number of applications received, practically the same rate as a year earlier.

**Forborne loans continued to decrease over the past year** to stand at 5.4% of total credit to the resident private sector in June 2019. The year-on-year rate of change of these loans was -20.2%, a decline which was 2.7 pp smaller than a year earlier. This decrease was across the board in non-financial corporations (-21.3%) and households (-18.9%).

Chart 2.4

**NPL RATIO AND FORECLOSED ASSETS**

The NPL ratio of the resident private sector continued its decline of recent years to stand at 5.3% in June 2019, representing a fall of more than 1 pp with respect to the same month a year earlier. Foreclosed assets showed a further fall in June 2019 to stand below €40 billion.

1 NPL RATIO. RESIDENT PRIVATE SECTOR  
Business in Spain, ID2 FORECLOSED ASSETS  
Business in Spain. Consolidated data

SOURCE: Banco de España.

**The NPL ratio of the resident private sector in business in Spain continued to decrease to stand at 5.3% in June 2019.** As a result, the cumulative decrease from the high in December 2013 is 8.7 pp (see Chart 2.4). In year-on-year terms, NPLs decreased by 17.6%, a smaller drop than in 2018, with a portion of the decline this year being due to wholesale disposals of NPL portfolios by some banks. The improved credit quality is generally observed in the various sectoral portfolios, except that of consumer credit, where the NPL ratio increased by 0.5 pp to 5.6% in the 12-month period to June 2019.

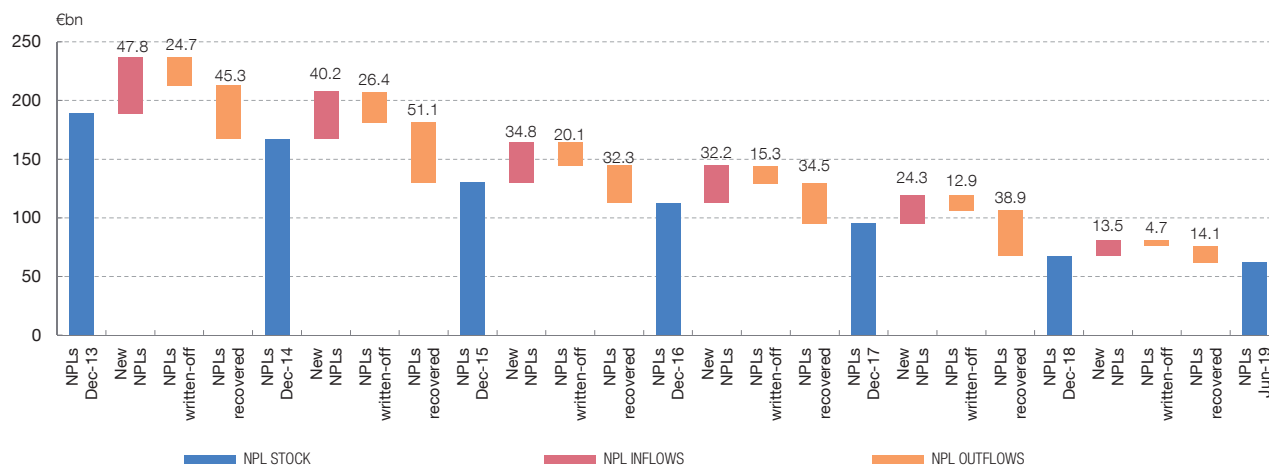
**However, from the standpoint of flows of the resident private-sector portfolio, the inflows of new NPLs quickened in the first half of 2019.** In the first six months of the year, inflows of NPLs reached €13.5 billion (see Chart 2.5). This behaviour represented an increase in NPL inflows with respect to the figure of €12.4 billion in the first half of 2018. However, the outflows of write-offs and recoveries were high enough to offset the behaviour of inflows, so the total volume of NPLs decreased in the first half of 2019.

**Foreclosed assets decreased by €3.3 billion in the first six months of 2019.** Thus the downward trend of recent years continued (see Chart 2.4). Foreclosed assets have fallen by 50% from the high of 2011. Looking at their composition, those from construction and real estate development loans continue to account for more than half, while the relative proportion of those from household loans for house purchase decreased to 26.2%.

Chart 2.5

**FLOW OF RESIDENT PRIVATE SECTOR NPLs (a)****Business in Spain, ID**

In the first half of 2019, NPLs decreased to €61.9 billion. The rate of fall was more moderate than in previous periods. The rates of change of outflows to write-offs and of recoveries were similar to those in 2018 as a whole, while the rate of inflows to new NPLs was higher.



SOURCE: Banco de España.

a Shown beside each bar is the amount, in € billion, of each NPL inflow or outflow. NPLs recovered include non-performing loans that become performing again, and foreclosed assets and NPLs sold to third parties. The chart shows annual inflows and outflows to December 2018 and the flows in the first half of 2019.

**The consolidated total assets of Spanish deposit institutions grew year-on-year by 3.4% in June 2019.** This was mainly a result of their operations abroad, where their financial assets (particularly loans) increased by 10.5% year-on-year, while the financial assets of business in Spain decreased by 1.9%. This geographical diversification of Spanish banks took their financial assets abroad to above 50% of their total financial assets in June 2019.

**Loans abroad from Spanish banks are concentrated in Europe and Latin America.** In the last four years the relative weight of loans in the United Kingdom has decreased by nearly 5 pp, while that of loans in the rest of Europe has increased by more than 10 pp to 29.5%. The relative weight of loans in Latin America decreased to stand at 25.5% of total loans abroad in June 2019 (see Chart 2.6).

**Consolidated non-performing assets, including loans and debt securities, decreased by 12.4% year-on-year** (see Annex 1). Hence the total NPL ratio decreased to 3%, down 54 bp from June 2018. In the past four years, NPLs abroad have decreased in all jurisdictions except Turkey, where the NPL ratio was 5.9% in June 2019 (2.2% in June 2015). The highest decrease in the ratio was in Portugal, where it fell by 4.7 pp to 4% (see Chart 2.6).

### Liquidity and financing conditions

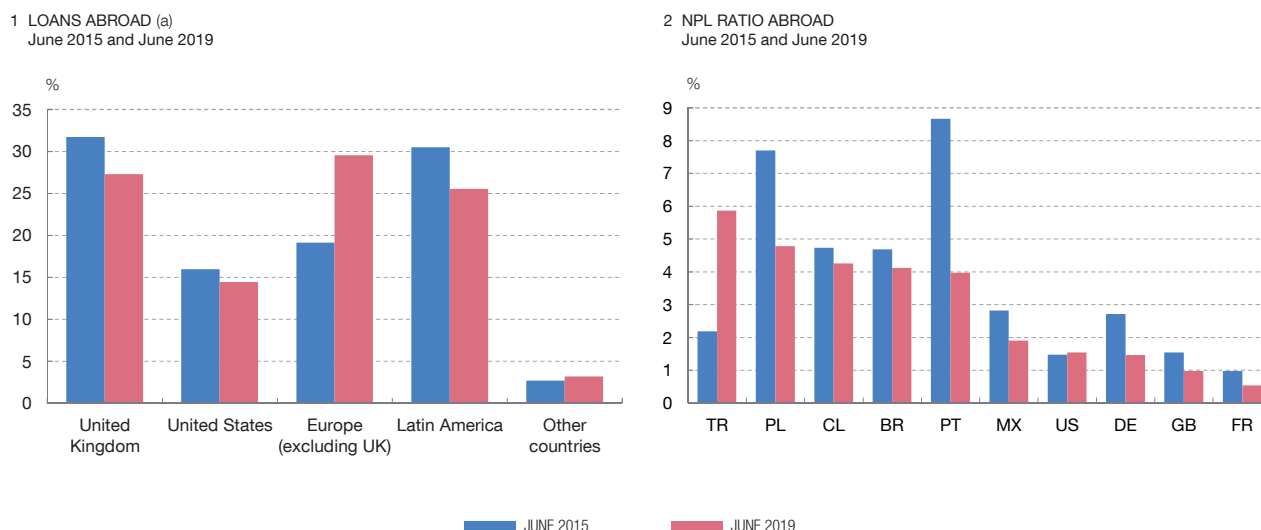
**In June 2019, the liquidity coverage ratio (LCR) of Spanish banks stood at 162.2%.** It thus amply exceeded the regulatory minimum requirement (100%)

Chart 2.6

## LOANS ABROAD

### Consolidated data

In the past four years, loans to Europe (excluding the United Kingdom) have increased to account for nearly 30% of loans abroad, while loans to the United Kingdom and Latin America have decreased by 5 pp. The NPL ratio abroad continues to be uneven across countries, with an across-the-board decline, except in Turkey where the ratio stood at 5.9% in June 2019.



SOURCE: Banco de España.

a The chart shows at each date the loans in each geographical area as a proportion of the total loans outside Spain.

and also the European average (149.2%). Specifically, the data of the European Banking Authority (EBA)<sup>1</sup> indicate that the ratio in Spain is higher than in the main EU countries. In the past 12 months the LCR has increased in Italy, Spain and France, while there has been a decrease in the liquidity of banks in Germany and, particularly, the United Kingdom (see Chart 2.7).

**The liquidity provided by the Eurosystem to the banking system will probably increase as a result of the monetary easing measures recently approved by the ECB.** In fact, the decision to reactivate net purchases from 1 November will entail a monthly increase in the Eurosystem balance sheet of €20 billion per month, following the stability prevailing since the beginning of this year. Meanwhile, the volume of refinancing operations has not varied significantly because the bulk of them relate to four long-term transactions known as TLTRO-II, which will not mature until June 2020<sup>2</sup> (see Chart 2.8). In March 2019 the Governing Council of the ECB decided to launch a new series of seven quarterly transactions between September 2019 and March 2021 (TLTRO-III), the initial conditions of which were improved

<sup>1</sup> See <https://eba.europa.eu/risk-analysis-and-data/risk-dashboard>.

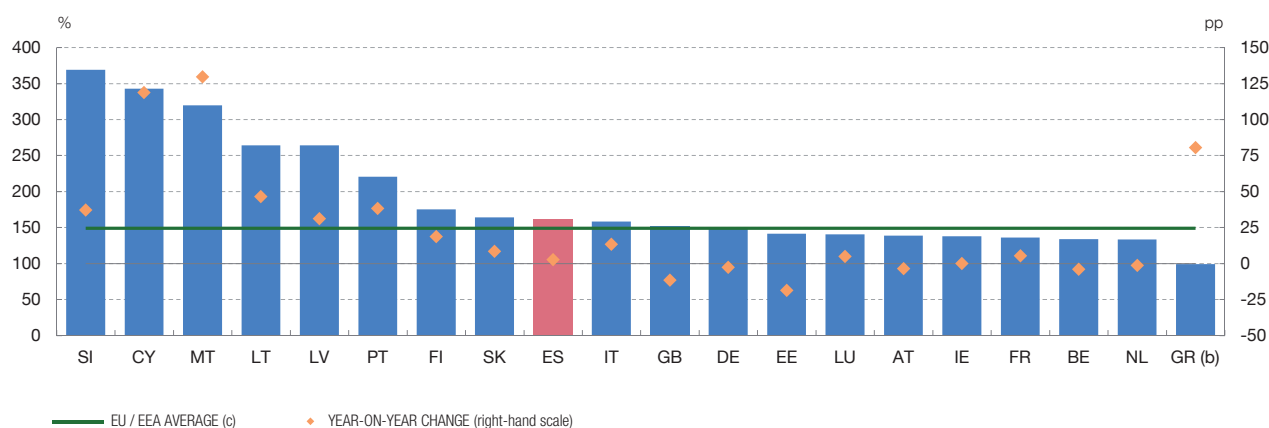
<sup>2</sup> Banks have the option of early redemption two years after the settlement of each transaction, which explains the decrease in the outstanding balance of these transactions from the €723 billion cited in the previous FSR.



Chart 2.7

**LIQUIDITY COVERAGE RATIO. EUROPEAN COMPARISON  
SSM COUNTRIES AND UNITED KINGDOM. June 2019 (a)**

The liquidity coverage ratio at European level was 149.2% in June 2019 (compared with 148.3% in June 2018). The EU countries as a whole had a ratio above the required minimum of 100%, except for Greece (where it has, however, increased significantly in the past year).



SOURCE: EBA.

- a The data refer to a sample of 150 institutions, and the LCR is calculated as the weighted average of the ratios of each country's institutions.
- b The sovereign debt crisis prompted Greek banks to use their LCR liquidity buffer, resulting in LCR levels below the required minimum of 100% (as from December 2017, when Greece reported for the first time on the LCR ratio, which has since stood below 100%). Article 4(3) of Commission Delegated Regulation (EU) 2015/61 of 10 October 2014 allows liquid assets to be monetised in periods of tension.
- c EBA data include Iceland.

at its meeting on 12 September. The first tender assigned a relatively small amount,<sup>3</sup> possibly because the banks participating in this first tender were not aware of these new conditions. Box 1.2 sets out in detail the measures approved by the ECB's Governing Council last September and their implications for financial stability.

**Activity on the unsecured money markets in the euro area continues to be very low.** The trading volume on the purely interbank market is very small and continues to decrease for the reasons analysed in previous FSRs<sup>4</sup> (see Chart 2.8). By contrast, deposits at banks placed by financial institutions without access to the ECB deposit facility are much larger, as reflected by the higher average volume of trading indexed to the €STR rate, which has grown to somewhat more than €37 billion in 2019, compared with €2.5 billion of interbank loans indexed to EONIA.<sup>5</sup> These banks have ample liquidity, partly as a result of the Eurosystem asset purchase programmes. This explains why the €STR rate, which also includes these transactions, is below the EONIA, which is calculated solely from loans between banks, and below

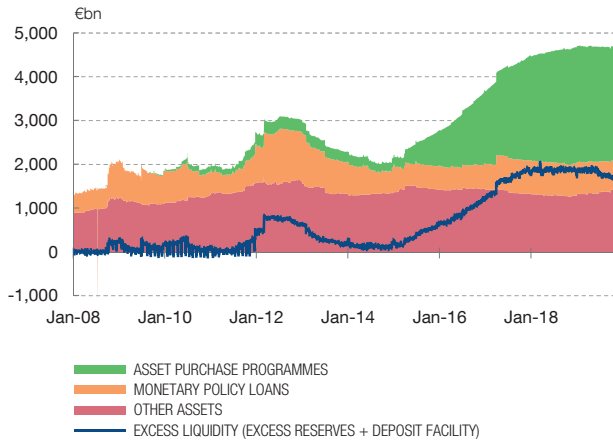
<sup>3</sup> €3,396 million granted to 28 banks.  
<sup>4</sup> Specifically, the excess liquidity in the system, the new regulatory framework and the preference for repo transactions secured by high-quality collateral.  
<sup>5</sup> The reference market for setting the €STR rate includes all bank deposits placed by financial institutions (not necessarily banks). By contrast, the EONIA is set using as a reference only interbank transactions.

Chart 2.8

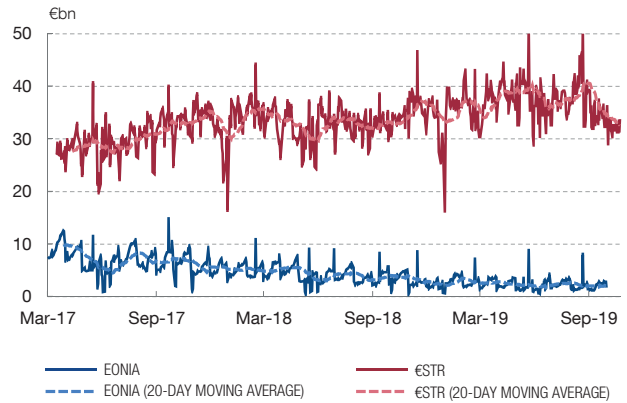
**WHOLESALE FUNDING**

Activity on the unsecured money markets in the euro area continues to be very low, while the secured money markets (repos) increasingly account for the bulk of the volume traded on the European markets. In the first three quarters of 2019, Spanish banks stepped up their aggregate issuance with respect to the same period of 2018.

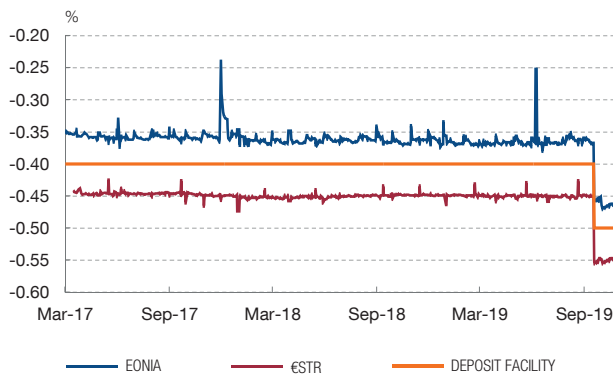
1 EUROSISTEM BALANCE SHEET AND EXCESS LIQUIDITY



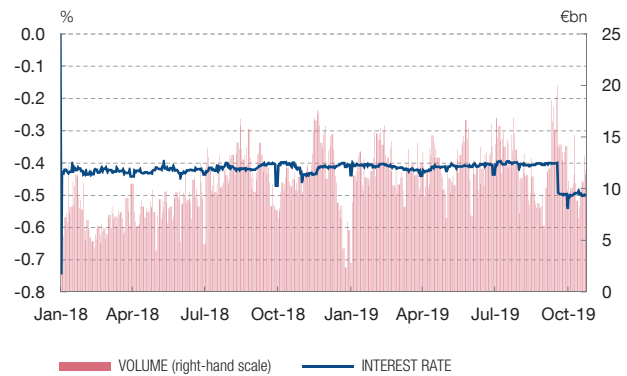
2 TURNOVER IN EU MONEY MARKETS



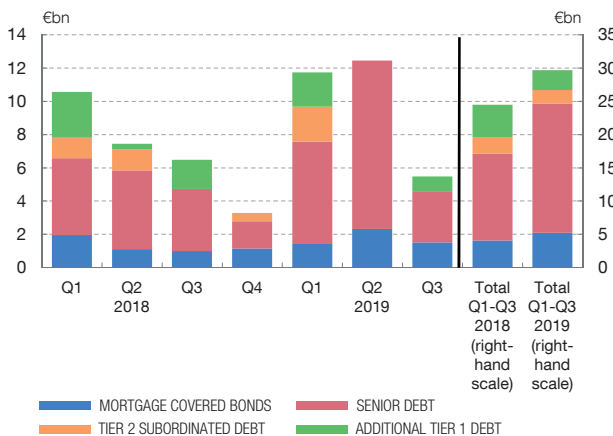
3 EU MONEY MARKET RATES



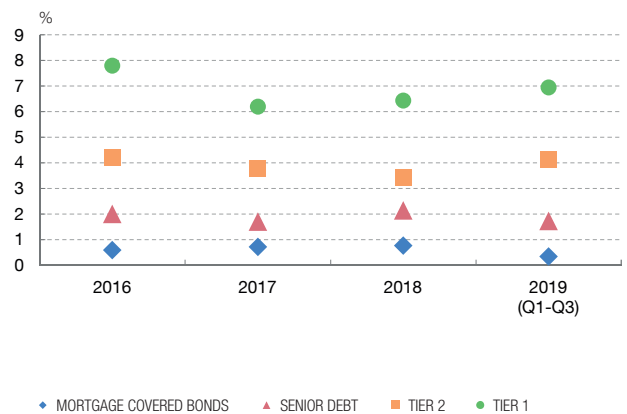
4 EUROPEAN REPO MARKET INTEREST RATES (GC POOLING EUR)



5 MAIN ISSUES OF SPANISH INSTITUTIONS IN MEDIUM- AND LONG-TERM WHOLESALE MARKETS (a)



6 AVERAGE COST OF ISSUANCE FOR DEPOSIT INSTITUTIONS IN MAIN EUROPEAN COUNTRIES



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

**a** Includes covered bonds, senior debt, subordinated debt eligible as tier 2 capital and debt eligible as additional tier 1 capital. Retained issues are not included.

even the deposit facility rate (DFR). In any event, both the EONIA and the €STR reflect in full the ECB's decision to lower the DFR by 10 bp<sup>6</sup> (see Chart 2.8).

**The September Governing Council meeting also decided to apply a two-step remuneration system to the reserves deposited by deposit institutions at the central bank.** This exempted them from paying the DFR (–0.5%) over an amount equal to six times the minimum reserve, which is remunerated at the rate on main refinancing operations (0.0%). Assuming that the reserves of Spanish banks in this deposit facility do not change, it is estimated that a moderate benefit will result from the introduction of this remuneration system. Meanwhile, for those banks with non-exempt surplus reserves, the positive effect will be partially mitigated by the decline in the deposit facility rate to –0.5%, which will somewhat reduce the net effect of the two measures announced.

**The secured money markets (repos) increasingly account for the bulk of the volume traded on the European money markets.** These markets are used by banks to manage their growing need for collateral derived largely from changes in banking regulation, against a background of low collateral availability due to scant security issuance and the ECB purchase programmes. In this respect, it should be noted that at mid-September tensions emerged in the US dollar repo market when a sharp rise in repo rates pushed the FED monetary policy reference rate to the high band of its target range (which it exceeded on some occasions). This event led the FED to intervene<sup>7</sup> in order to reduce repo rates to their normal levels and keep its official interest rate within the target range. The euro area was not affected and the repo rate in fact decreased in line with the cut in the DFR (see Chart 2.8).

**In the first three quarters of 2019, Spanish banks stepped up their issuance of debt instruments compared with the same period of 2018.** However, there was a certain unevenness by type of debt instrument, as follows. The volume of covered bonds and, in particular, senior debt, increased (see Chart 2.8) and, contrariwise, the issuance of subordinated debt, particularly that eligible as additional Tier 1 capital, decreased with respect to the same period a year earlier. As to the cost of issuance by type of instrument, this showed the opposite behaviour. The cost of subordinated debt, whether eligible as Tier 1 or Tier 2, increased, and that of senior debt and covered bonds decreased (see Chart 2.8).

**The outstanding balance of resident private-sector deposits continued to increase, driven by sight deposits.** The negative interest rate environment

<sup>6</sup> Decision of the ECB Governing Council of 12 September 2019.

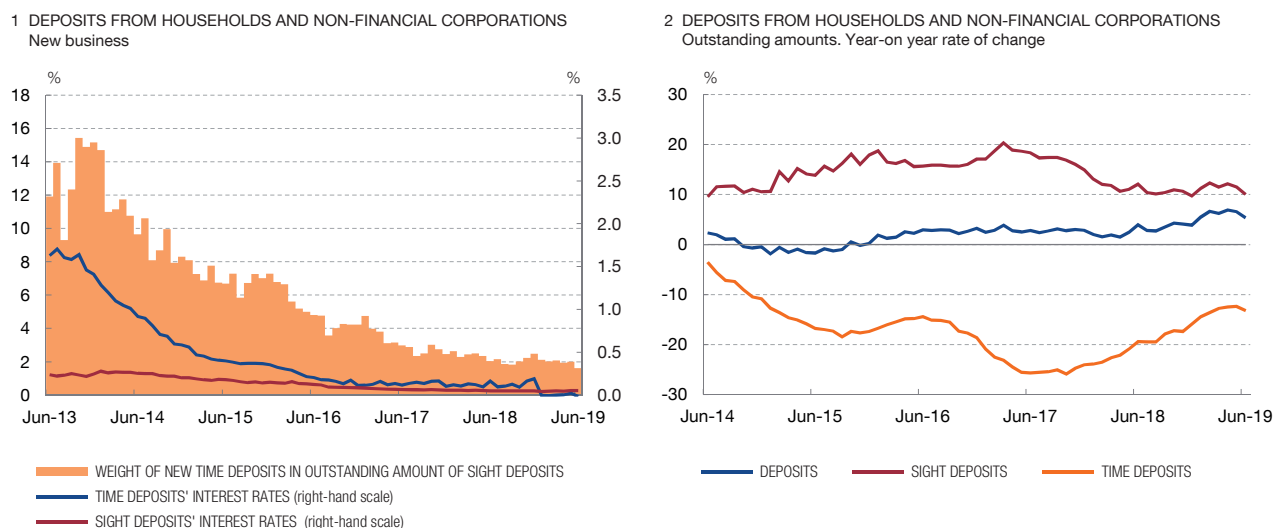
<sup>7</sup> The interventions were made through a series of overnight repos and three transactions with a maturity of 14 days.

Chart 2.9

## RETAIL FUNDING

### Business in Spain, ID

Interest rates on new time deposits by the resident private sector have decreased significantly in recent years to levels near 0%. This trend in deposit yields has been accompanied by a lower volume of new time deposits, whose relative weight has fallen with respect to the outstanding balance of sight deposits. Furthermore, the outstanding balance of time deposits has also declined, albeit more slowly than in previous years, while sight deposits continue to grow.



SOURCE: Banco de España.

has caused the remuneration of new time deposits by the resident private sector to decrease significantly since 2015 and converge with the interest rates on sight deposits, at around 0%.<sup>8</sup> It is therefore not surprising that the volume of new time deposits has also fallen and in June 2019 it stood below 2% of the outstanding balance of sight deposits, compared with relative weights above 15% in 2013 (see Chart 2.9). Thus the outstanding balance of time deposits was down to 16.3% of the total in June 2019, compared with 53.2% in June 2013, showing year-on-year rates of change below -10% since end-2014, as against growth rates above 10% for sight deposits (see Chart 2.9).

## 2.1.2 Profitability and solvency

### Profitability

**In the first half of 2019, the consolidated profit attributable to the parent entity of the Spanish banking system as a whole was down 11.5% year-on-year.**

<sup>8</sup> Rates have even turned negative in the case of non-financial corporations. However, the negative rates seem to be rather exceptional, since the volume of new time deposits is very low (less than €5,000 million per month) in comparison with new demand deposits (more than €200,000 million), and they relate to specialised operations.

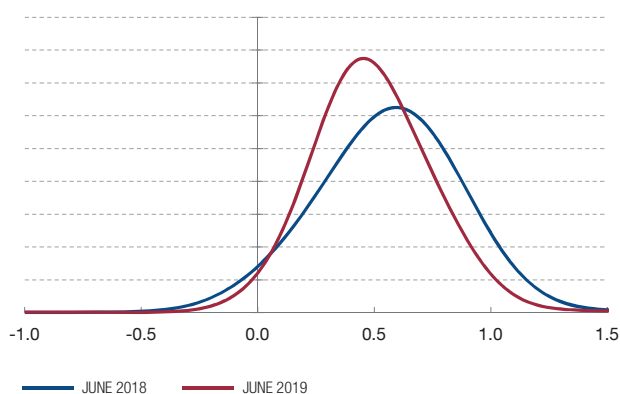
Chart 2.10

## PROFITABILITY DISTRIBUTION

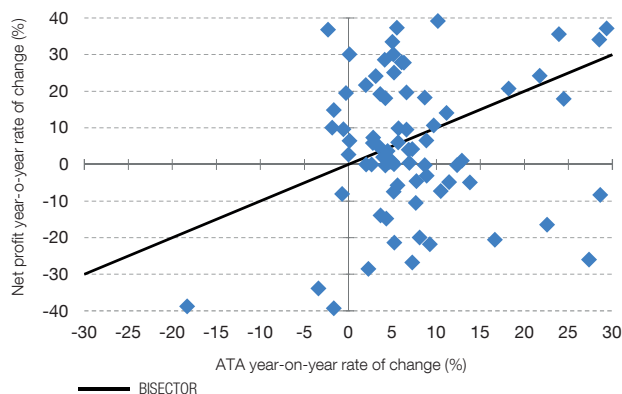
### Consolidated data

The fall in ROA between June 2018 and June 2019 was broad-based across institutions. Most institutions posted year-on-year growth in ATA, although for a large number this did not translate into an increase in profit, or the increase was insufficient to maintain the return on assets.

1 ROA DISTRIBUTION (%) (a)



2 CHANGES IN ATA AND NET PROFIT. JUNE 2019



SOURCE: Banco de España.

a The chart shows the density function (or frequency distribution) of the return on assets for Spanish deposit institutions, weighted by average total assets. This density function is approximated using a kernel estimator, which makes possible a non-parametric estimation of the density function, providing a continuous, smoothed graphic representation of this function.

Consequently, the returns on assets (ROA) and on equity (ROE)<sup>9</sup> fell by 8 bp and 1 pp, to 0.49% and 6.6%, respectively. As seen in Chart 2.10, the decrease in the ROA was broadly based across institutions, although it was larger in the case of the more profitable ones. Chart 2.10 also shows that in many institutions the decline in the ROA was a result of the fact that the increase in their assets in the period was not accompanied by a sufficient improvement in profit to sustain the rate of return.

**The decline in profit is explained by a significant reduction in gains on financial assets and liabilities, while extraordinary operating expenses and, for the first time since 2012, impairment losses increased** (see Chart 2.11). Gains on financial assets and liabilities were down 33% (6 bp in terms of ATA), which resulted in a slight decline (0.3%) in gross income. Operating expenses rose by almost 4%, leading to a fall in net operating income of 4.5%. The increase in operating expenses over the past year has been largely due to agreements to reduce staff at certain

<sup>9</sup> To calculate the ROA and ROE ratios used in this section, the numerators are net profit attributable to the parent entity, while the denominators are four-quarter averages of total assets (ROA) and of own funds (ROE). The EBA's definition of the ROA and ROE uses net profit after tax in the numerators and, for the denominators, the average of the current and the preceding year's total assets (ROA) and total equity (ROE). As a result, there may be small differences between them. However, international comparisons use the EBA's definition (Chart 2.13), to ensure that the ratios are calculated in the same way across jurisdictions.

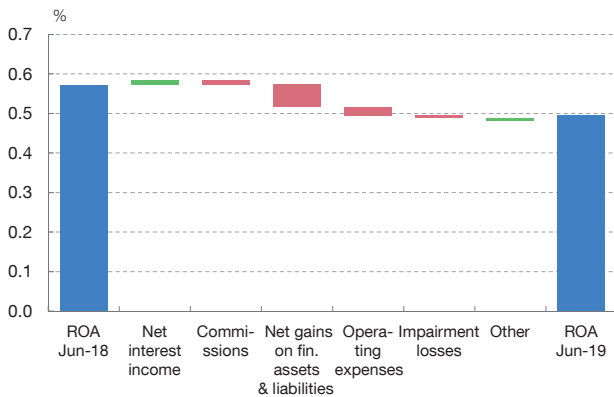
Chart 2.11

**COMPONENTS OF PROFITABILITY**

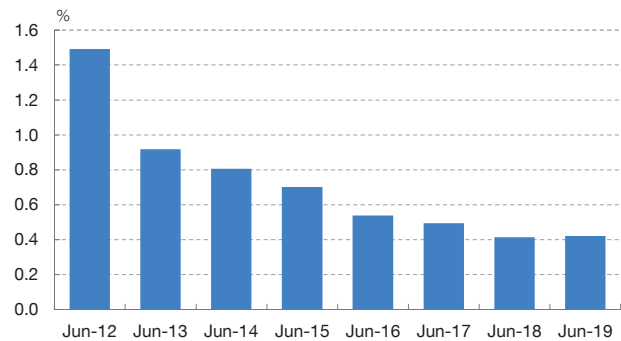
**Consolidated data**

The fall in net gains on financial assets and liabilities, the increase in operating expenses and the increase in impairment losses were the main determinants of the fall in profit in the first half of 2019. Impairment losses increased after six years of continuous decline.

1 BREAKDOWN OF THE CHANGE IN PROFIT (a)  
Consolidated profit attributable to the controlling entity as a percentage of ATAs



2 FINANCIAL ASSET IMPAIRMENT LOSSES AS % of ATA



SOURCE: Banco de España.

a The red (green) colour of the bars indicates a negative (positive) contribution of the corresponding item to the change in consolidated profit in June 2019 with respect to June 2018.

institutions. In addition, impairment losses, which had been falling uninterruptedly since 2013, rose by 3.9%. Meanwhile, net interest income posted an increase of close to 3%, while net fees and commissions remained relatively steady.

**In business in Spain, operating expenses have remained flat since late 2013.**

As a result, the efficiency ratio and the ratio of operating expenses to total assets have deteriorated at most institutions. Specifically, Chart 2.12 shows that the efficiency ratio at the individual level, without taking into account compensation for dismissals, has increased (worsened) by around nine percentage points since 2014, to stand at 56.2%. The ratio of operating expenses to total assets has also increased at most institutions. As regards its composition, Chart 2.12 shows that the weight of personnel costs has fallen while that of IT and communications, outsourced services and depreciation has increased, reflecting to some extent the digitalisation and technological transformation being undertaken by institutions. Operating expenses are one of the most important levers that institutions can directly control in order to increase the profitability of their business.

**In June 2019, Spanish institutions continue to post consolidated profitability above the European average.** EBA data for June 2019 (the latest published),<sup>10</sup> show that Spain is above major European jurisdictions (see Chart 2.13), with the exception

10 See <https://eba.europa.eu/risk-analysis-and-data/risk-dashboard>.

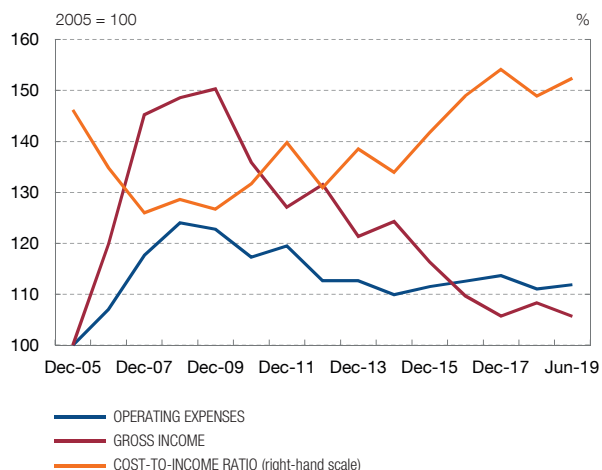
Chart 2.12

**OPERATING EXPENSES AND COST-TO-INCOME RATIO**

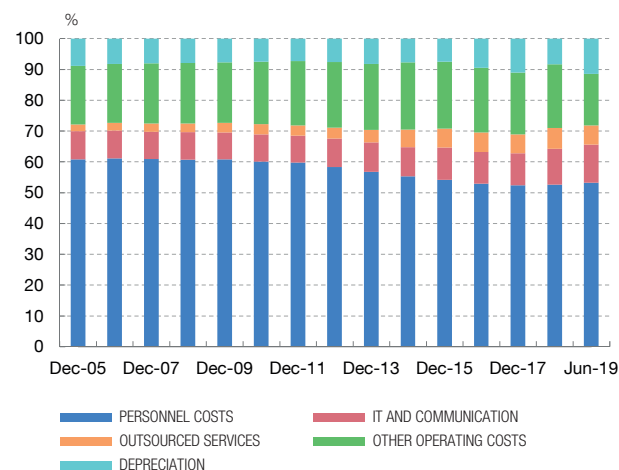
**Business in Spain, ID**

The cost-to-income ratio (excluding compensation for dismissal) at the individual deposit institution level for business in Spain has increased (deteriorated) since 2014. This increase has been accompanied by a higher ratio of operating expenses to total assets for deposit institutions. During these years the weights of IT and communication costs, outsourced services and depreciation in total operating expenses have increased, while the weight of personnel costs has fallen.

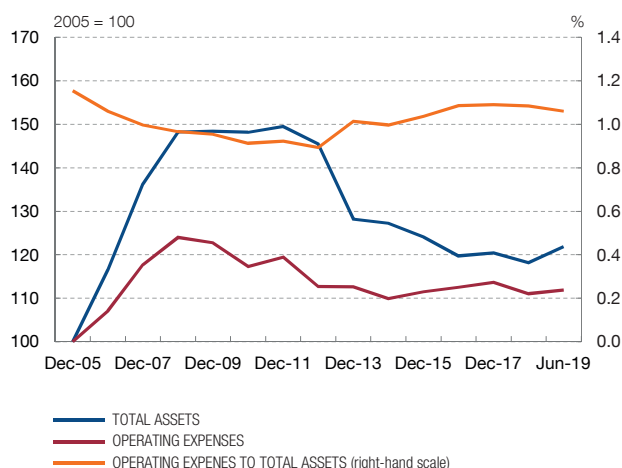
1 COST-TO-INCOME RATIO (a)



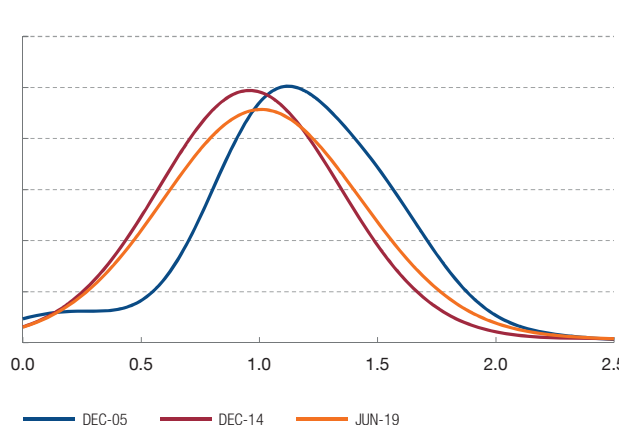
2 OPERATING EXPENSES



3 RATIO OF OPERATING EXPENSES TO TOTAL ASSETS



4 WEIGHT DISTRIBUTION OF OPERATING EXPENSES TO TOTAL ASSETS (b)



SOURCE: Banco de España.

- a The cost-to-income ratio is defined as the ratio of operating expenses to gross income. The June 2019 data have been annualised.
- b This panel shows the density function (or frequency distribution) of operating expenses as a percentage of total assets for deposit institutions. This density function is approximated using a kernel estimator, which makes possible a non-parametric estimation of the density function, providing a continuous, smoothed graphic representation of this function.

of Italy. The efficiency ratio at consolidated level of the Spanish institutions was among the lowest (best) in Europe. Box 1.2 analyses in detail the impact of the new monetary policy measures announced by the ECB in September 2019 on the net interest income of deposit institutions, beyond the moderate positive impact associated with the two tier system of ECB deposit facility rates. An analysis of the comparative profitability of European and US banks and how this is valued by the market can be found in Box 2.1.

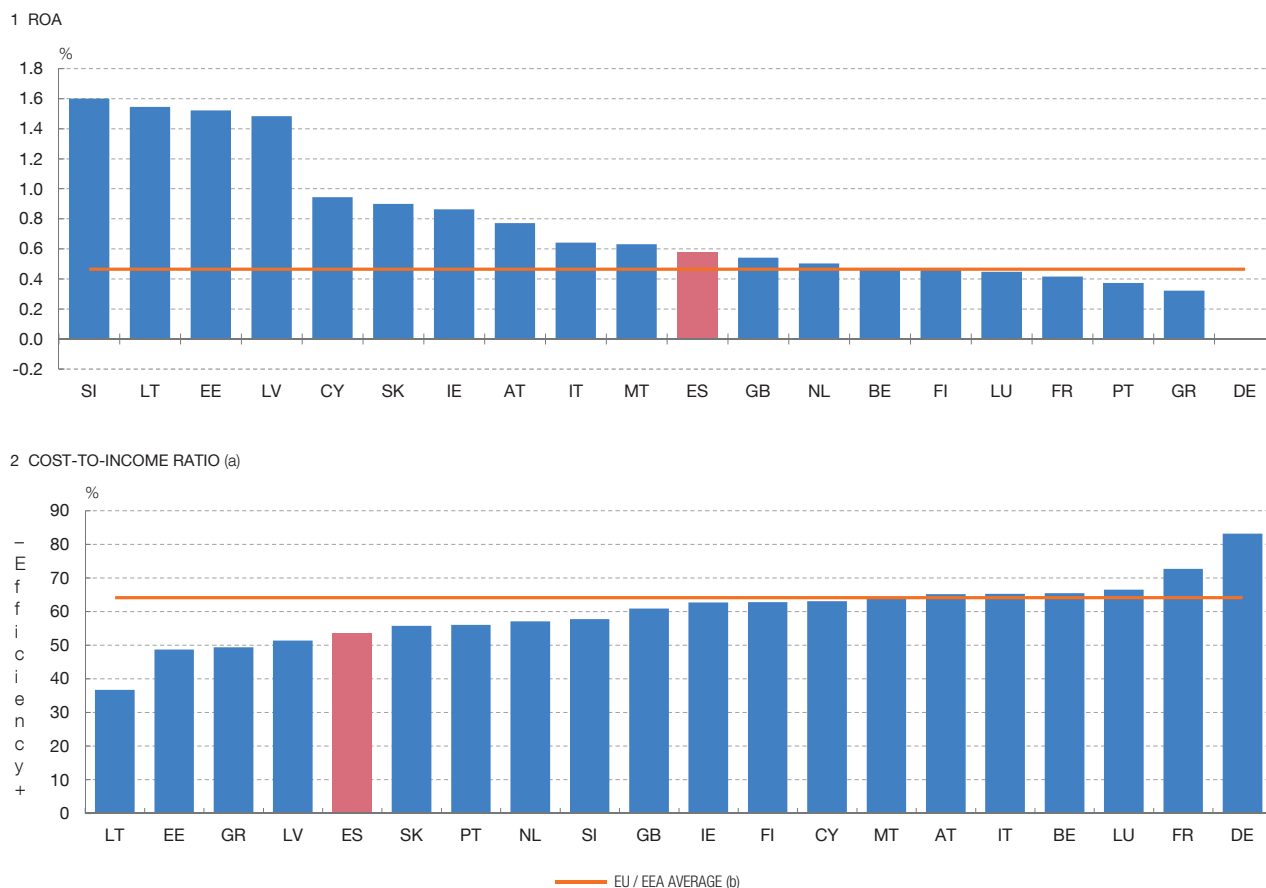
Chart 2.13

## EUROPEAN COMPARISON OF PROFITABILITY AND EFFICIENCY MEASURES

SSM COUNTRIES AND UNITED KINGDOM. June 2019

### Consolidated data

The return on assets of the main Spanish deposit institutions stands above the European average (0.47%) and is higher than in the main EU economies. Their cost-to-income ratio, meanwhile, is among the lowest (best) in the EU, standing slightly above 50%.



SOURCE: EBA.

- a The cost-to-income ratio is defined as the ratio of operating expenses and depreciation to net operating income.
- b EBA data include Iceland.

## Solvency

**The ratio that measures the highest quality capital, common equity Tier 1 (CET1), increased by 36 bp over the 12 months to June 2019, to stand at 12.2%.** Similarly, the Tier-1 and total capital ratios rose by 37 and 32 bp,<sup>11</sup> to stand at 13.6% and 15.4%, respectively (see Chart 2.14). This improvement in institutions' solvency occurred in a context of rising risk-weighted assets (1.1% year-on-year), and despite the negative impact of the introduction of IFRS 16 on criteria for the recognition,

<sup>11</sup> The fully-loaded CET1 ratio stood at 11.9% in June 2019, having increased by 0.5 pp since June 2018. As the Basel III regime had been almost completely implemented by June 2019, the difference between the CET1 ratio (applying the phase-in schedule laid down by the regulation) and its fully loaded version (applying the rules in force at the end of the implementation period) is small.

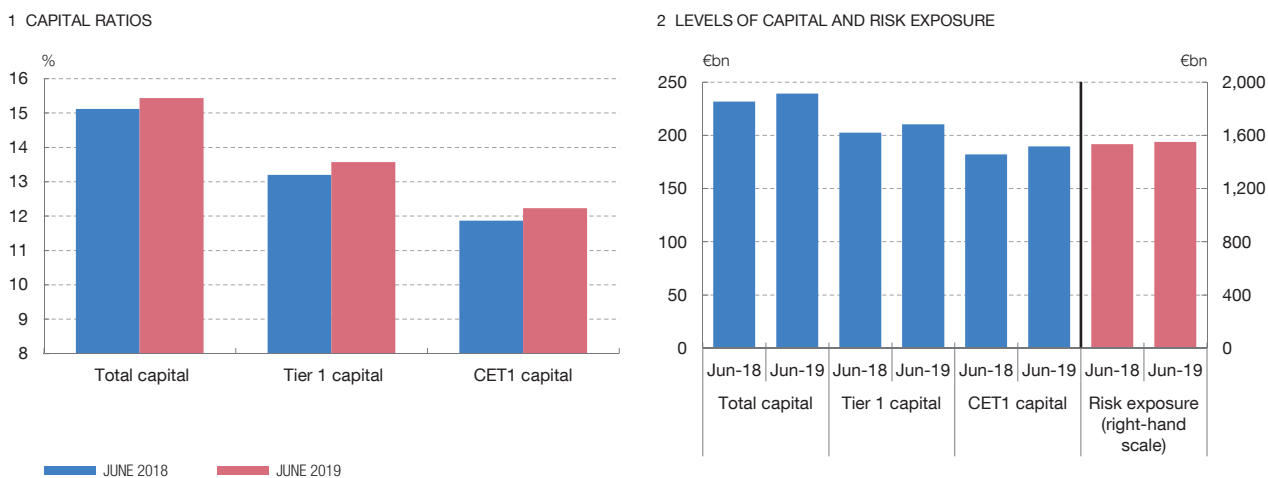


Chart 2.14

**CAPITAL AND RISK WEIGHTED ASSETS**

**Consolidated data**

Between June 2018 and June 2019, the CET1 ratio increased by 36 bp to stand at 12.2%, while the Tier 1 and total capital ratios increased by similar magnitudes. Risk weighted assets grew by 1.1% over the same period.



SOURCE: Banco de España.

valuation and presentation of lease agreements which is estimated as -9 bp of CET1 on average in the sector.

**The two largest institutions in the Spanish banking system were mainly responsible for the improvement in the CET1 ratio.** It can be seen in Chart 2.15 how, over the past year, more institutions increased their CET1 ratio than reduced it, although the difference is not large. As regards the composition of the CET1, capital and reserves account for more than 90% of the eligible items. Indeed, the increase in reserves, explains most of the recorded increase in solvency. Minority interests represent 6%, while transitional adjustments, as a consequence of the practically complete implementation of the CRR/CRD IV, have a weight of only 2%. Most of the deductions correspond to goodwill and other intangible assets (see Chart 2.15).

**Notwithstanding these developments, in June 2019 Spanish institutions had, on average, lower levels of solvency relative to other European countries.** Chart 2.16 presents a Europe-wide comparison of two solvency measures, the CET1 ratio (panel 1) and the leverage ratio (panel 2), based on the latest data published by the EBA.<sup>12</sup> Spanish institutions have a CET1 ratio almost 3 pp below the European average, although above the regulatory minimum requirement. As regards the leverage ratio, Spain was above the largest European jurisdictions, but still in the lower half of the ranking.

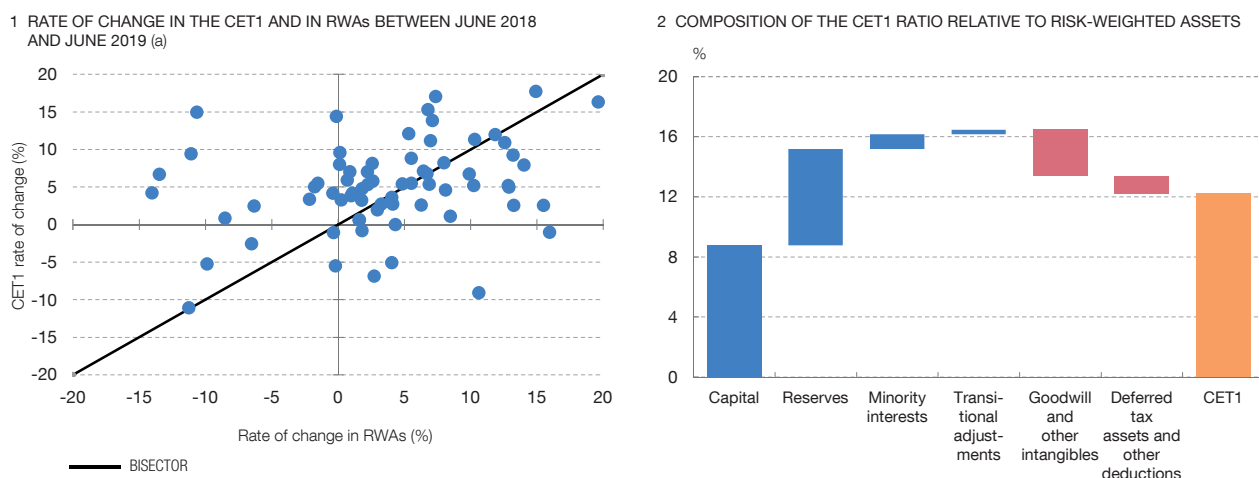
<sup>12</sup> See <https://eba.europa.eu/risk-analysis-and-data/risk-dashboard>.

Chart 2.15

## CHANGE AND COMPOSITION OF THE CET1 CAPITAL RATIO

### Consolidated data

In terms of institutions, although there is no great difference, the number of those whose CET1 ratio increased over the past year is greater than the number of those whose ratio declined. The main components of the CET1 are capital instruments and reserves, which represent more than 90% of their eligible items.



SOURCE: Banco de España.

a The points above the bisector show growth (declines) in the volume of CET1 over the past year higher (lower) than the growth (decline) in the volume of RWAs; accordingly, they would correspond to increases in the CET1 ratio between June 2018 and June 2019. The opposite occurs for points below the bisector.

**One reason why the CET1 ratio of Spanish institutions is lower than that of their European peers is the greater use by Spanish banks of the standardised approach (SA) to calculate their capital requirements.** Under the SA, institutions that do not apply their own internal models (IRB) all use the same risk weights for the different portfolios which are generally higher than those in IRB models. Previous editions of the FSR have explained in detail how, in comparison with the use of internal models, use of the SA is associated with a higher risk-weighted assets (RWAs) density.<sup>13, 14</sup>

**On the other hand, there do not appear to be significant differences between Spanish banks and those of other European countries as regards the densities obtained using IRB models.** The average RWA density in IRB portfolios can be compared for the institutions of the main European banking sectors that participated in the transparency exercise published by the EBA in 2018 using the data obtained in that exercise (to June 2018). The Spanish institutions that use internal IRB models to manage credit risk are distributed relatively homogeneously among the European institutions in terms of RWA density (see Chart 2.17). In short, the analysis of densities

13 See FSR of May 2018 and FSR of May 2017.

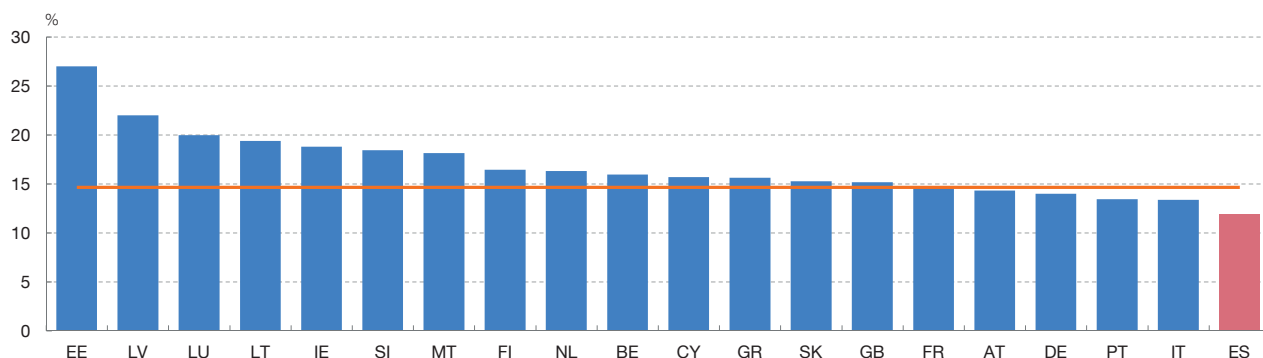
14 The RWA density of a portfolio is defined as the ratio of the volume of risk-weighted assets to the gross volume of such assets (without applying risk weights).

Chart 2.16

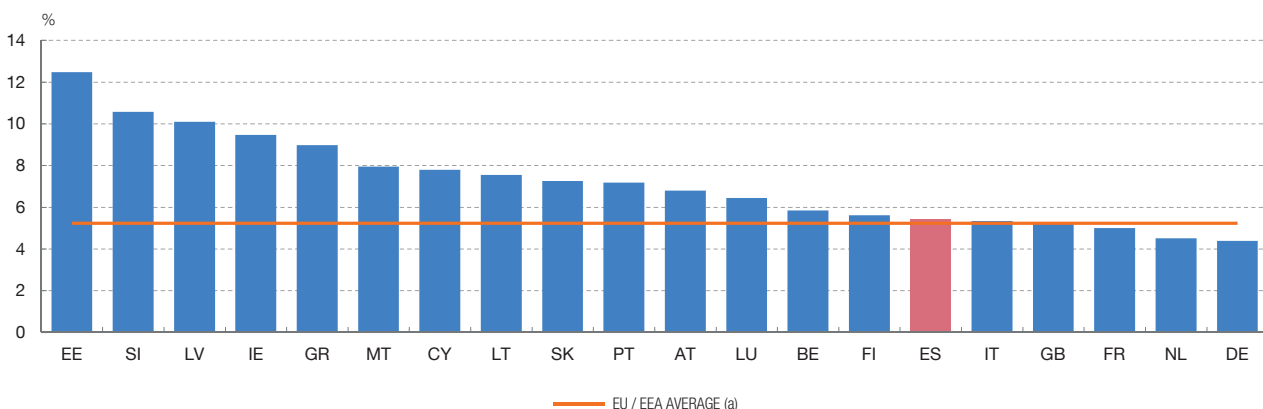
**EUROPEAN COMPARISON OF SOLVENCY MEASURES**  
**SSM COUNTRIES AND UNITED KINGDOM. June 2019**  
**Consolidated data**

The CET1 ratio for the main Spanish deposit institutions is in last place, while their leverage ratio stands slightly above the European average, and above the main EU countries.

1 CET 1 RATIO



2 LEVERAGE RATIO



— EU / EEA AVERAGE (a)

SOURCE: EBA.

a EBA data include Iceland.

in the private sector credit portfolio of institutions that use IRB models does not help to explain the relative position of Spanish institutions in the European solvency ranking.

**The Basel III framework reform agreed in 2017 introduces restrictions on IRB models, in particular an output floor to capital requirements.** Among other important measures, the Basel III reform introduces restrictions on the models used by institutions to value the risks they incur (limits on their use and on the parameters estimated in the method based on internal credit risk ratings), improvements to the risk sensitivity of the standardised approach for credit risk and, in particular, an output floor. This quantification of risk is a key element in determining RWAs, which are the basis for calculating institutions' capital requirements.

**The aim of the output floor is to place a limit on the benefits a bank can obtain by using IRB models, so that its impact is greater in jurisdictions where this**

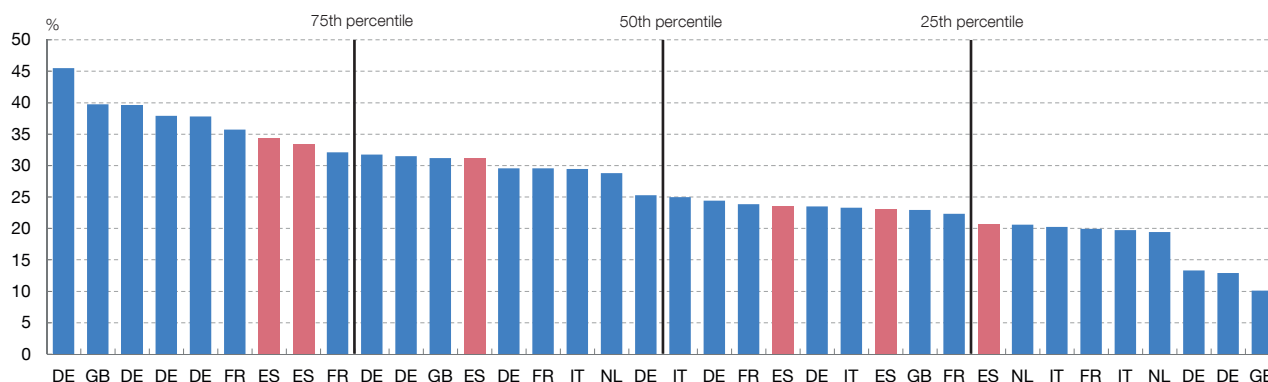
Chart 2.17

**EUROPEAN COMPARISON OF RWA DENSITY IN THE IRB PORTFOLIO (a)**

**MAIN SSM COUNTRIES AND UNITED KINGDOM. June 2018**

**Consolidated data**

The density of the RWAs in IRB portfolios is highly heterogeneous, both among the main banking sectors of the EU and at the level of the institutions that use internal models for credit risk management. Spanish institutions that use IRB models are distributed relatively uniformly across the various RWA density ranges.



SOURCE: EBA.

a Weighted density of the main credit portfolios (businesses, retail and secured by real estate) of the institutions participating in the EBA's transparency exercise that use advanced IRB models for credit risk management.

**type of model is used more intensively.** It should be noted that the new output floor replaces the existing Basel II floor with a more robust, risk-sensitive floor, based on the revised Basel III standardised approaches. Thus, the output floor attempts to place a limit on the benefit a bank can obtain by using internal models to calculate its minimum capital requirements, helping to improve the comparability, credibility and transparency of the capital ratios and in short, to help ensure a level playing field for banks, in terms of the calculation of capital requirements.

**Analysis of the reforms shows that the greater impact in Europe stems from the output floor to capital requirements** (see Chart 2.18). In order to assess the impact of these measures on banks' capital requirements, the Basel Committee on Banking Supervision (BCBS) and the EBA have both performed quantitative impact studies (QISs) of the new prudential regulations. The latest regular monitoring report of the BCBS presents these aggregate impacts for internationally active banks in three geographical areas: Europe, the Americas and the rest of the world.

**The largest impacts of the floor to capital requirements for the sample of countries and banks used, are concentrated in Sweden, Denmark and Germany, according to the July 2019 EBA report.<sup>15</sup>** Other countries in which the

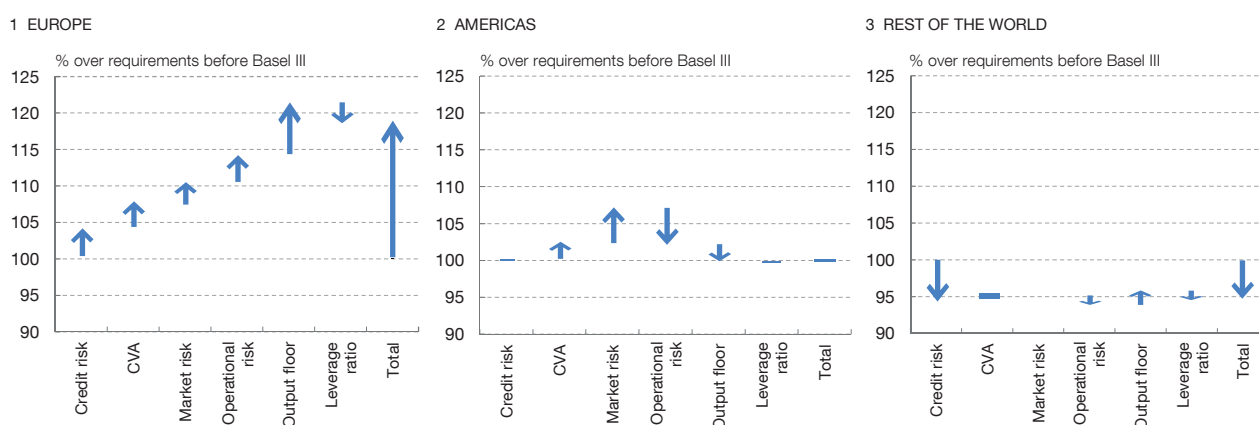
<sup>15</sup> Report in response to the request for advise issued by the European Commission in which the impact of the Basel III reforms is studied.

Chart 2.18

## IMPACTS ON MINIMUM REQUIREMENTS OF THE APPLICATION OF BASEL III

### Change to current requirements (a)

Analysis of the impact of the Basel III framework reform shows that the greatest impact in Europe arises from the output floor, which is designed to limit the benefits that a bank can obtain by using IRB models, to ensure a level playing field for all banks.



SOURCE: Basel Committee on Banking Supervision.

a The length and direction of each arrow indicate the size and sign of the relative change in the capital requirements as a consequence of the impact of Basel III on the corresponding items indicated on the horizontal axis. The point of each arrow indicates the relative change resulting from accumulation of the impacts of Basel III on the corresponding item on the horizontal axis, and on all the items to the left of the latter.

floor to requirements accounts for a significant proportion of the impact of the Basel III reform are Finland, Ireland, the Netherlands, France and Belgium. Such impacts tend to be concentrated among a relatively small set of banks where the difference between the capital calculations under internal models and those resulting from the application of the standardised approach is greatest. These estimated impacts may be smaller, since they assume that institutions keep other capital buffers that they currently have unchanged, e.g. Pillar 2 capital requirements (P2R and P2G), combined requirements and voluntary buffers.

### 2.1.3 Forward-looking assessment of the Spanish banking system's resilience

The methodology used for the Banco de España's stress tests, known by the acronym FLESB (Forward Looking Exercise on Spanish Banks), was applied to the 2019-2021 horizon to measure Spanish banks' resilience in terms of solvency and liquidity. The Banco de España designed FLESB using a top-down approach, under which a set of models developed internally are applied to the information available from regulatory and supervisory reports.<sup>16</sup>

<sup>16</sup> The bottom-up methodology is an alternative approach to banking sector stress tests in which the banks themselves make the estimates applying their own models and databases. The EBA's biennial stress test uses a constrained bottom-up approach, under which banks apply a bottom-up approach that is partially restricted by the methodological guidelines set by the EBA.

Among other developments, a more comprehensive analysis of sovereign exposures has been incorporated this year.

**The baseline scenario for the solvency exercise consists of the Banco de España's macroeconomic projections published in 2019 H1.** Under the adverse scenario there is a downturn in economic activity and a correction of the value of financial assets in line with the identification of risks in this FSR. It should be borne in mind that the adverse scenario does not reflect Spanish authorities' economic expectations. Rather, it is based on hypothetical assumptions for assessing the banking sector's resilience. In other words, it is a highly unlikely scenario. Likewise, it is important to note that the Banco de España's latest projection exercise revised growth forecasts downwards and, therefore, the baseline scenario used in the exercise is slightly optimistic. Lastly, these scenarios are global in scope, as they include projections not only for the Spanish economy, but also for the countries that are relevant for Spanish banks.

**The baseline scenario assumes a moderate slowdown in GDP in the period 2019-2021 and the adverse scenario considers a recession in 2019-2020.** Specifically, under the baseline scenario GDP would accumulate growth of 5.9% in three years, against a 1.7% decline under the adverse scenario (see Chart 2.19). This is a difference of 7.6 pp, which is stricter in terms of severity than the 7.4 pp difference in the 2018 FLESB exercise, whose scenarios were the same as those applied in the EU-wide stress test conducted by the EBA. The changes in the unemployment rate and in house prices under the scenarios are consistent with this behaviour of GDP. Thus, the unemployment rate drops to 12.3% under the baseline scenario, but rises to 16.5% under the adverse scenario. House prices decrease by 15.5% under the adverse scenario, against cumulative growth of 14.4% under the baseline scenario. Finally, the 3-month interbank interest rate exhibits a 70 bp difference between the baseline and adverse scenarios for 2021, reflecting the widespread increase in interest rates<sup>17</sup> which would result from materialisation of the risk of a rise in risk premia, and also entailing a decline in the value of fixed-income and equity instruments.

**For the liquidity analysis, the scenarios are defined in terms of fund outflow coefficients applied to the liquidity coverage ratio (LCR).** Specifically, the baseline scenario uses the regulatory coefficients for 30-day fund outflows set by the BCBS and the EBA. The Banco de España defines the adverse scenario by introducing additional stress in these coefficients, based on past experience in Spain.<sup>18</sup> The reference date is December 2018.

<sup>17</sup> In these types of exercises, it is assumed that economic policies, particularly monetary policy, do not react.

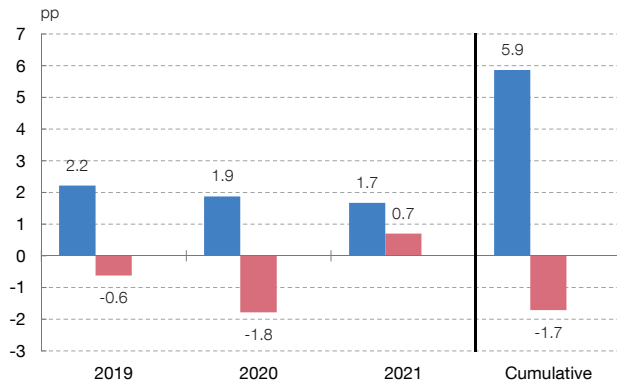
<sup>18</sup> The same fund outflow coefficients that were considered last year were used for the adverse scenario. See *FSR, Banco de España, November 2018, page 74*.

Chart 2.19

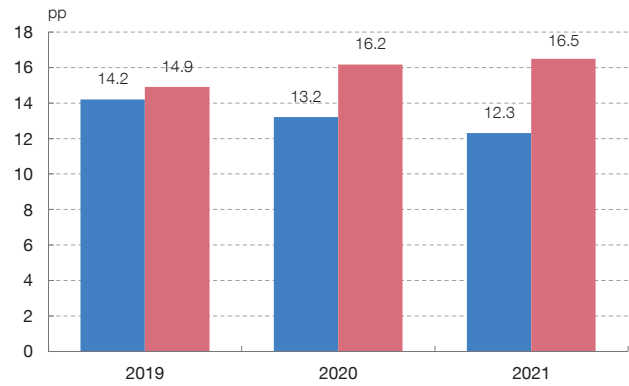
**MACROECONOMIC SCENARIOS**

The difference in the nature of the scenarios is reflected in the changes in the macro variables that define them. The baseline scenario assumes a growth path with a slight slowdown and a small rise in the interest rate. By contrast, under the adverse scenario there is a pronounced contraction of activity accompanied by a significant increase in the interest rate.

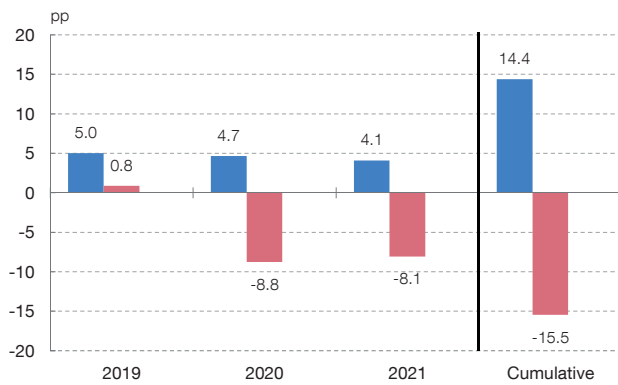
1 FORECASTED YEAR-ON-YEAR RATE OF CHANGE IN GDP UNDER BASELINE AND ADVERSE SCENARIOS



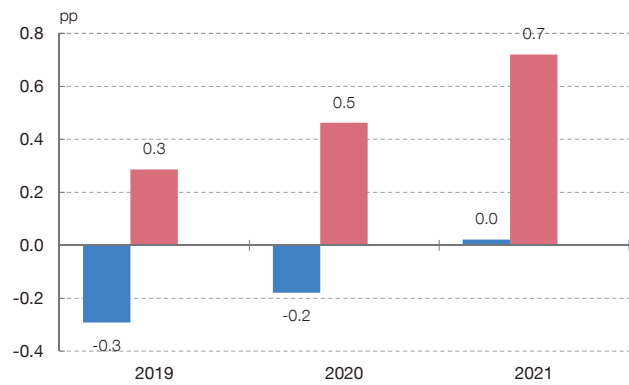
2 FORECASTED UNEMPLOYMENT RATE UNDER BASELINE AND ADVERSE SCENARIOS



3 FORECASTED YEAR-ON-YEAR RATE OF CHANGE IN HOUSE PRICES UNDER BASELINE AND ADVERSE SCENARIOS



4 FORECASTED 3-MONTH INTERBANK RATE UNDER BASELINE AND ADVERSE SCENARIOS



■ BASELINE ■ ADVERSE

SOURCE: Banco de España.

Results yielded by the FLESB methodology. Solvency

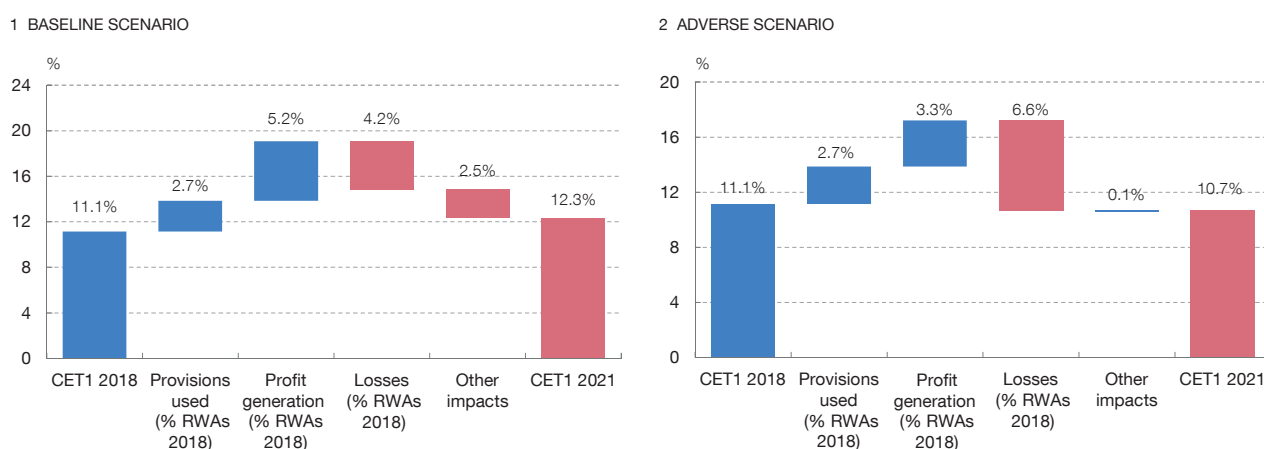
The 57 banks taking part in the exercise are divided into three groups based on supervisory scope and international activity. The first group consists of the Spanish banks under the direct supervision of the Single Supervisory Mechanism (SSM) with significant international activity, the second group consists of the other significant Spanish banks under direct SSM supervision and the third group comprises other banks. The banks in the third group are smaller, less complex, supervised directly by the Banco de España and do not engage in significant international activity.<sup>19</sup> This segmentation, which reflects the differences in banks'

19 For further information see FSR, Banco de España, November 2018, page 76.

Chart 2.20

**IMPACT ON CET1 FL RATIO  
INSTITUTIONS WITH SIGNIFICANT INTERNATIONAL ACTIVITY**

Banks with significant international exposure maintain a solid level of solvency even at the end of the adverse scenario. To this contributes a contained volume of losses and robust profit generation, both of which are favoured by geographical diversification.



SOURCE: Banco de España.

business models and sources of risk, coincides with that used in the FLESB exercises of previous years.

**The group of banks supervised by the SSM with significant international activity<sup>20</sup> shows a 1.2 pp improvement in their CET1 ratio under the baseline scenario and a 0.4 pp fall under the adverse scenario.** Chart 2.20 shows the results for the first group of banks. In this case, estimates of the performance of business outside Spain are also incorporated in the impact on solvency. As can be seen, the gross losses in Spain under the baseline scenario (4.2% of RWAs) are absorbed by the use of existing provisions (2.7% of RWAs) and by profit generation (5.2% of RWAs). The other impacts have a negative effect on the solvency ratio (2.5%), due to loan growth, which flows through to higher RWAs, and to the effect of taxes and profit distributions. The severity of the macroeconomic conditions under the adverse scenario prompts greater losses (6.6%), which cannot be fully absorbed by use of existing provisions (2.7%) or by profit generation (3.3%), so solvency decreases. Note that, under this scenario, the other impacts have a slightly positive contribution (0.1%), since loans diminish and the tax burden and distributions decrease largely owing to the absence of profits.

**For the other banks supervised by the SSM, the baseline scenario produces an improvement of 0.7 pp in the CET1 ratio and the adverse scenario prompts a fall of 2.7 pp.** Chart 2.21 shows that this group starts from a more favourable

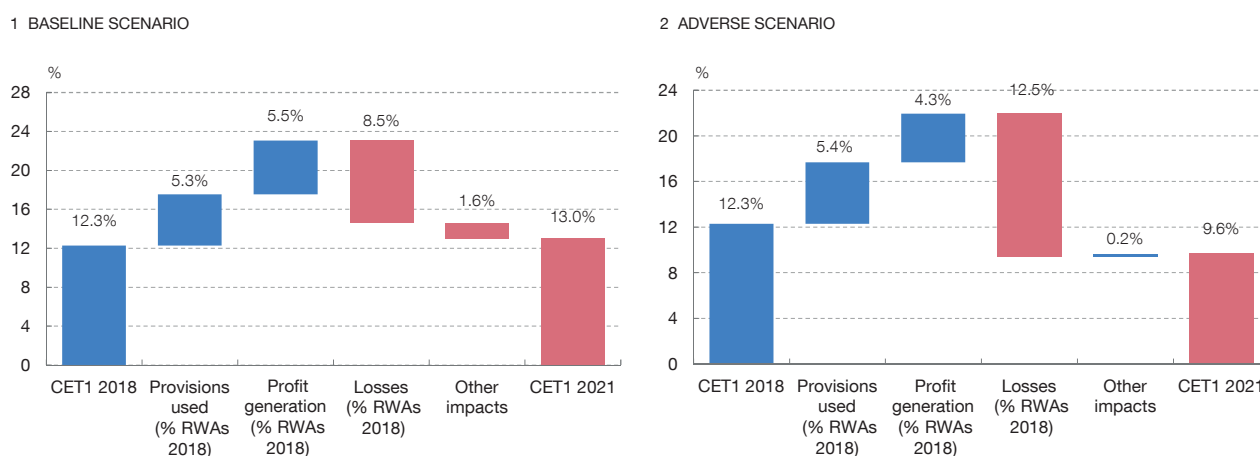
<sup>20</sup> See FSR, Banco de España, November 2017, footnote 7 of Chapter 2.



Chart 2.21

### IMPACT ON CET1 FL RATIO OTHER SSM INSTITUTIONS

Despite a significant increase in losses under the adverse scenario, mainly owing to greater exposure to real estate risk, other SSM institutions adequately contend with this scenario and maintain at the end of the year a CET1 ratio above the minimum thresholds required.



SOURCE: Banco de España.

solvency position than banks with significant international activity, since its initial CET1 ratio is 12.3%. However, it evolves less favourably during the year both under the baseline scenario, where the CET1 ratio rises by 0.7 pp in 2020 (compared with 1.2 pp for the first group), and under the adverse scenario, where it falls by 2.7 pp (compared with 0.4 pp). Under the adverse scenario, there is a highly significant increase in the volume of losses (12.5% of RWAs), such that the available loss absorbing elements are clearly insufficient to cover them by the use of provisions (5.4% of RWAs) and by profit generation (4.3% of RWAs). This weaker relative performance is because these banks do not benefit from the international diversification of the first group, which proved to be a robust source of profit generation during the past crisis. The concentration of their business in Spain, where the adverse scenario envisages a notable fall in economic activity and in real estate prices, has a significant impact on them through their exposures to credit risk and to foreclosed assets.

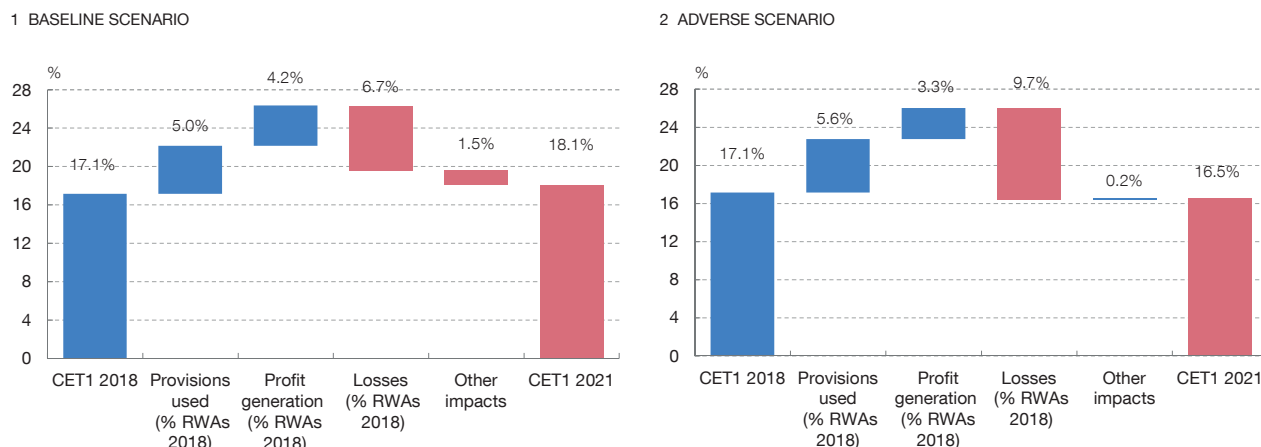
**The banks under direct national supervision<sup>21</sup> increase their CET1 ratio by 1 pp under the baseline scenario, while under the adverse scenario it falls by 0.6 pp.** These banks perform more strongly than those of the previous group despite the fact that their operations are also concentrated in Spain, because are less exposed to credit risk and to the real estate sector. Chart 2.22 shows that under

<sup>21</sup> This FSR considers a sample of 45 LSIs (less significant institutions, according to the SSM's supervisory classification), which includes the savings banks and credit cooperatives along with other less significant institutions (OLSI).

Chart 2.22

**IMPACT ON CET1 FL RATIO  
LESS SIGNIFICANT INSTITUTIONS**

The group of banks under direct national supervision maintains a very high level of solvency under the adverse scenario. A more conservative profile contributes to this, translating into a less significant volume of losses than that observed for the other SSM banks, albeit with comparatively lower profit generation.



SOURCE: Banco de España.

the adverse scenario the volume of losses (9.7% of RWAs) exceeds that of the instruments which can absorb them, namely provisions (5.6%) and profit generation (3.3%), with a positive contribution (0.2%) from other impacts. The final CET1 ratio at the end of the exercise is 16.5%, the highest of the three groups, influenced by an initial CET1 ratio of 17.1%.

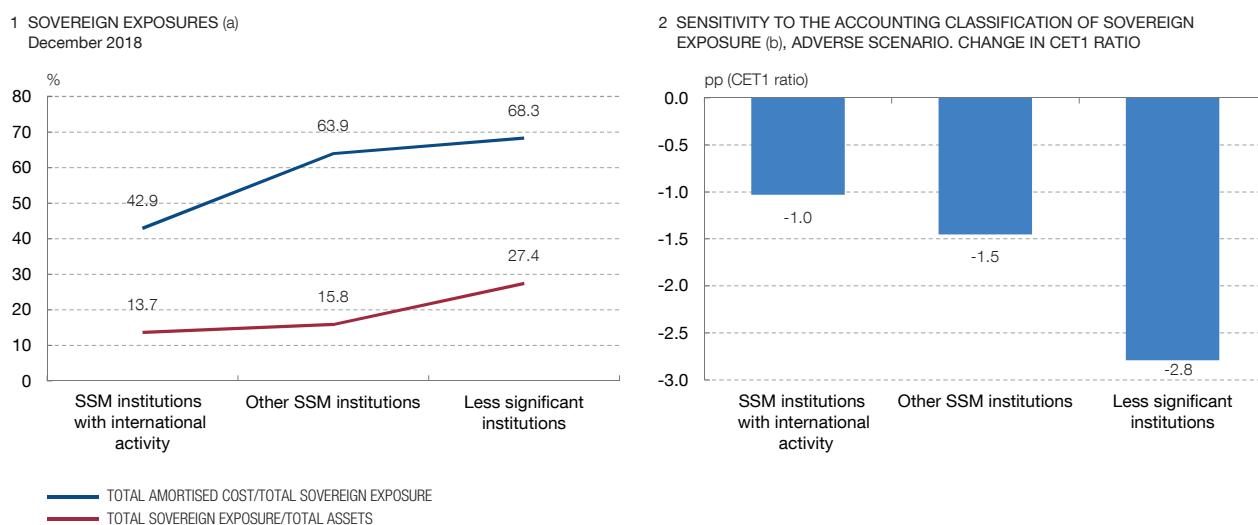
**Consequently, at aggregate level the Spanish deposit institutions in the aforementioned three groups have an adequate solvency position in the event of materialisation of the risks identified under the adverse scenario.** Compared with the previous year's exercise, there is a lower impact under the adverse scenario, despite it being slightly more severe. This is mainly due to the lower losses, made possible by the improved credit quality of the assets and the lower exposure to real estate risk. It should, however, be noted that the aggregate profit generation of all the groups is slightly lower than a year earlier, evidencing the tight profit environment in which Spanish banks are currently operating.

**Despite these results, banks must not relax in their efforts to raise their solvency level.** It should be taken into account that there is a certain degree of heterogeneity among the banks comprising each group. Also, there is a possibility that a bank may undergo an idiosyncratic shock additional to the systemic shock envisaged under the adverse scenario, and a chance that the risk may materialise in an economic downturn even more severe than that considered here. Indeed, the current macroeconomic projections of the Banco de España are somewhat more pessimistic than the baseline scenario used for the FLESB exercise. Stress tests

Chart 2.23

### ANALYSIS OF SENSITIVITY TO THE ACCOUNTING CLASSIFICATION OF SOVEREIGN EXPOSURES

Banks under direct national supervision are, by far, the ones most sensitive to the accounting classification of sovereign exposure. They are followed by the other SSM banks and, lastly, by banks with significant international activity. This greater sensitivity is the result of the greater weight of sovereign exposures in total assets, as well as the greater weight of exposures recognised at amortised cost.



SOURCE: Banco de España.

- a The percentage of sovereign exposure that is recognised at amortised cost (i.e. not recognised at fair value) and the ratio of sovereign exposure to total assets are shown for each group of banks as at December 2018.
- b The additional consumption in pp of the CET1 ratio that would result under the adverse scenario if the sovereign exposure recognised at amortised cost were re-classified at fair value is shown for each group of banks for the period 2019-2021.

supplement, but cannot replace, other risk analysis tools of the Banco de España, including most notably the microprudential supervision of deposit institutions. All this advises that banks pursue a prudent, responsible policy of strengthening their capital insofar as the profits generated in a favourable macroeconomic setting so allow.

#### Sensitivity analyses. Sovereign exposures

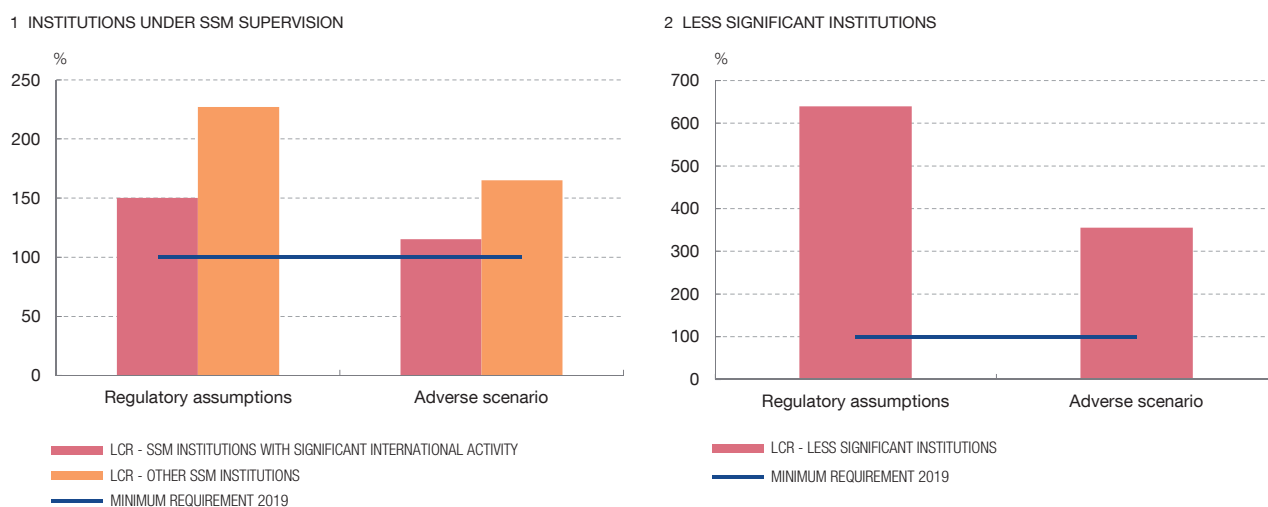
**Based on this stress test, a complementary sensitivity analysis was conducted.** Its purpose was to assess how the solvency test results are affected by the accounting classification of the sovereign debt portfolio, i.e. by their treatment as exposures at amortised cost or at fair value.

**The sovereign debt held by banks may be accounted for at fair value or at amortised cost.** In the first case, the changes in its market value are taken immediately to the bank's P/L or equity. By contrast, in the second case the valuation of the securities on the balance sheet is not subject to continual review, since the bank intends to hold them to maturity. This is extremely important for stress tests when one of the risks crystallising under the adverse scenario is a decrease in the value of these assets. Hence, this sensitivity test reproduces the results of the exercise under the assumption that all the sovereign exposure is classified at fair value.

Chart 2.24

### IMPACT ON THE LCR

The ample liquidity starting point of all the groups of banks allows them to maintain a LCR above the minimum threshold of 100% under the adverse scenario, for which fund outflow coefficients that are even more stringent than those defined in the original rules are applied.



SOURCE: Banco de España.

**If all the sovereign exposure were measured at fair value, there would be a general decrease in the CET1 ratio under the adverse scenario.** Specifically, Chart 2.23 shows an additional decrease of 1 pp in the CET1 ratio of the banks with international operations, of 1.5 pp in the other SSM banks and of 2.8 pp in those under direct national supervision. The extent of the additional impacts depends on two factors. First, the relative weight of the sovereign exposure in total assets (13.7%, 15.8% and 27.4%, respectively). Second, the relative weight of the portfolios measured at amortised cost in the total sovereign exposure (42.9%, 63.9% and 68.3%, respectively). It is these exposures measured at amortised cost which are affected by the sensitivity analysis when they are reclassified to the fair value portfolio.

#### Results yielded by the FLESB methodology. Liquidity

**The aggregate LCR for each group of banks stands above the minimum requirement (100%) under the adverse scenario.** As also occurred last year, the liquidity position of the less significant institutions was particularly notable, since, even under the adverse scenario, they had a ratio of 355% (see Chart 2.24). In general, this was due to the substantial portfolio of low-return but high-liquidity assets held by them.

#### 2.1.4 Changes in operational risks

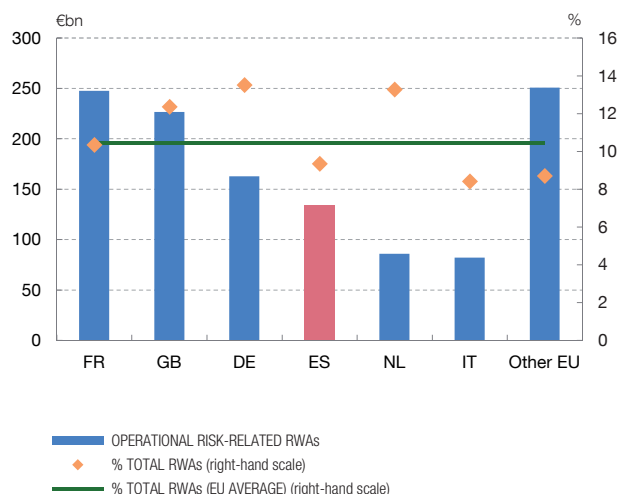
**Operational risk represents 9.3% of the volume of RWAs of Spanish deposit institutions.** In June 2018, the Spanish banking sector was ranked fourth by volume

Chart 2.25

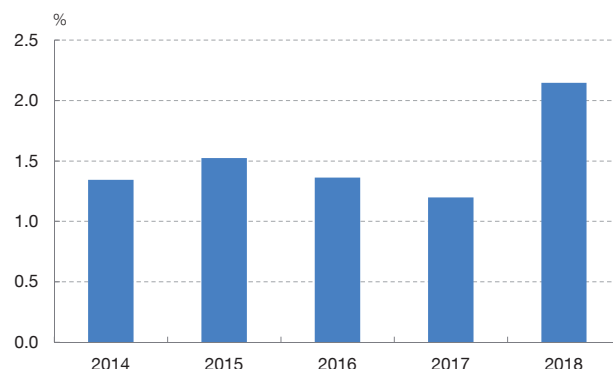
**OPERATIONAL RISK**  
**MAIN SSM COUNTRIES AND UNITED KINGDOM**  
**Consolidated data**

Operational risk-related RWAs at European level stood below 15% of total RWAs in June 2018. Spain was ranked fourth by volume of RWAs, although operational risk-related RWAs as a proportion of total RWAs stood at 9.3 %, which is lower than the European average (10.5%), and that of the largest European countries. The five highest operational risk losses recorded in Europe, as a percentage of CET1, remained relatively stable between 2014 and 2017 (between 1.2% and 1.5%), albeit rising substantially in 2018 (2.1%).

1 OPERATIONAL RISK-RELATED RWAs  
 June 2018



2 FIVE HIGHEST OPERATIONAL RISK LOSSES AS A PERCENTAGE OF CET1



SOURCE: EBA.

of RWAs linked to operational risk (€134 billion) according to the data of the EBA's latest transparency exercise (Chart 2.25). The operational risk of Spanish banks stands at 9.3%, relative to total RWAs, which is lower than the European average (10.5%) and that of the largest countries. The deterioration of solvency associated with an operational risk event may be high according to historical experience. Indeed, for European banks affected by the largest operational events, it has held at above 1.25 pp of CET1 over the last five years and rose to 2.1 pp in 2018.

**The potential materialisation of costs associated with legal risks continues to contribute to the operational risk of Spanish deposit institutions.** Proceedings linked to past lawsuits such as those on floor clauses, with an estimated cost of more than €2.2 billion for the sector until June 2019, have already taken place, but there is a possibility of further litigation. For instance, in 2018 credit card-related claims filed with the Banco de España increased considerably, as did litigation on the terms and conditions of revolving credit agreements, in particular, regarding deferred payment cards. This suggests a potential increase in litigation in this segment of the banking business.

**The CJEU has still not issued a ruling on the question of the use of the mortgage loan reference index (IRPH by its Spanish abbreviation) as a benchmark in variable-rate mortgage loan agreements.** As a prior step to the ruling, the Advocate General's conclusions on this matter were published on 10 September, however, they do not determine the CJEU's final ruling.

**Other operational risks indicated in the previous FSR in relation to Brexit and to the changeover in European settlement systems and benchmark indices are still present.** The Brexit process continues to raise issues about the operations of Central Counterparties (CCPs) which were considered in Box 1.1. The consolidation of TARGET2 and TARGET2-Securities planned for 2021 continues to pose a technological challenge and the transition from EONIA to €STR should be completed in 2020.

**The reform of the Euribor introduces methodological improvements to make it more robust and to have it properly reflect financing conditions in the interbank market.** Under the European Union Benchmarks Regulation, compulsory conditions affecting the Euribor are imposed so that it can be used in financial instruments and contracts after 31 December 2021. In this respect, the reform of the Euribor towards a hybrid methodology<sup>22</sup> developed by EMMI, its administrator, was authorised last July by the Belgian authority, FSMA; accordingly, it may be used from 1 January 2020 in new and existing contracts and instruments. As a result, the gradual implementation of the new methodology will have to be concluded in the course of 2019 Q4.

**Euribor indices are based on the voluntary contribution of a panel of banks.** In this respect, one potential risk would be if a significant number of institutions decided to refrain from participating. To cover for that eventuality, Article 28 of the Regulation requires banks that use any benchmark index to have detailed plans on the measures to be taken if the benchmark index should cease to be provided, indicating one or several alternative indices. For this reason, a working group comprising representatives of large European banks is addressing the transition from EONIA, which is scheduled to be phased out by January 2022, to the €STR and for the introduction of reserve indices for all the indices used.<sup>23</sup>

**Lastly, the growing importance of risks related to cybersecurity for the financial sector needs to be underlined in this area.** Technological innovation and the changes in the expectations of customers who expect tailored products

<sup>22</sup> According to this methodology, the 18 banks which contribute to the panel will supply information in the following order: i) use of data on transactions, ii) performance of estimations if sufficient data are not available, iii) use of other market data.

<sup>23</sup> On 14 March 2019 the WG-RFR published its recommendation for a methodology based on OIS quotes to set up an €STR-based rate structure as an alternative to Euribor-linked contracts.

and continuous multi-channel availability of new services have compelled financial institutions to develop their technological systems. This has frequently compelled them to adopt technologies which have not been tested sufficiently and to become increasingly reliant on services provided by third parties, which blurs the perimeter of the organisation that needs to be protected. Furthermore, the concentration of cloud-based services in the hands of a small number of unregulated, unsupervised suppliers is increasing and they are becoming critical points in financial infrastructure.

**The costs associated with the materialisation of cyber risks include both the direct economic impact and indirect damage associated with a loss of confidence and the interconnections between institutions.** Direct economic loss, as a result of the materialisation of these cyber risks, would be associated with institutions' incapacity to provide services to their customers or failure to meet their contractual and legal obligations with the subsequent impact on reputation and increase in litigation. Preventing these incidents also entails increased spending on infrastructure and the need to have skilled employees. If the high level of interconnectedness between the various industry participants is considered, cyber risks may ultimately affect the stability of the system as a whole.

**A set of European rules geared towards preventing and mitigating cyber risks already exists, although it is somewhat fragmented and, thus, potentially less effective when applied.** The set of rules includes the Directive on the Protection of Critical Infrastructures, the General Data Protection Regulation (GDPR), the Network Information Security Directive (NISD) and the Revised Payment Service Directive (PSD2).

**As a result of the multiple rules on cyber risks, financial institutions have to notify numerous authorities about cybersecurity incidents.** Specifically, if an incident of this type were to affect a Spanish institution deemed to be a critical infrastructure and were to have an impact on the payment users' personal data, the institution would have to notify the following national and European authorities: i) by virtue of the NISD, the National Institute of Cybersecurity Response Centre (INCIBE-CERT by its Spanish abbreviation) (Ministry of the Economy and Enterprise) must be notified and since it is a critical infrastructure, the National Centre for the Protection of Critical Infrastructures (CNPIC by its Spanish abbreviation) (Ministry of the Interior) would take control; ii) under the PSD2 and GDPR rules, respectively, the institution would have to inform the Banco de España and the Spanish Data Protection Agency; iii) according to banking supervision regulations the SSM would have to be notified, if the institution is significant. These notification obligations have different time frames and involve sending different forms, which increases the risk of a lack of coordination and the administrative workload related to the incident.

## 2.2 Non-banking financial sector and systemic interconnections

### 2.2.1 Non-banking financial sector

**The non-banking financial sector analysed in this section has shown a more expansionary profile in recent years.** In the low-interest rate setting prevailing in recent years, the performance of the specialised lending institutions, insurance companies, investment funds and pensions funds analysed in this subsection, generally shows an increase in activity with broadly positive profitability levels.

#### Specialised lending institutions

**Specialised lending institutions (SLIs) concentrate specifically on granting credit and cannot take deposits from the general public.** They are particularly significant in the consumer credit segment which accounts for around 50% of their total portfolio. Many SLIs, representing 80% of these institutions' total lending, are part of national banking groups. At aggregate level they represent 4% of lending to the private sector and 23% of consumer credit.

**Over recent years, in contrast with the decline observed in deposit institutions, the credit granted by SLIs has grown steadily at year-on-year rates that have held at around 10%.** For instance, in June 2019 total lending to the resident private sector grew by 11% compared with June 2018 and quickened slightly with respect to previous quarters (Chart 2.26).

**Having posted significant declines, these institutions' non-performing loans are now showing positive year-on-year changes.** This is the result of SLIs specialising in riskier business segments such as consumer loans. However, the non-performing loans ratio remains contained for the moment, owing to the robust increases in the ratio's denominator (credit).

**These institutions' profitability is substantially higher than that of deposit-taking institutions' business in Spain.** The income statements of SLIs have remained stable in recent years, of note are the weight of net interest income and the growth of fee and commission income, which have offset the considerable rise in impairment losses in recent quarters.

#### Insurance companies

**The main insurance companies in Spain have increased their assets in recent years, whereas their return on investment has held relatively stable.**



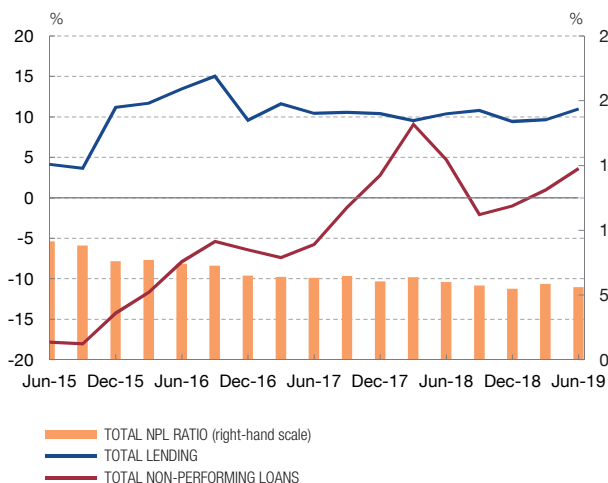
Chart 2.26

### SPECIALISED LENDING INSTITUTIONS

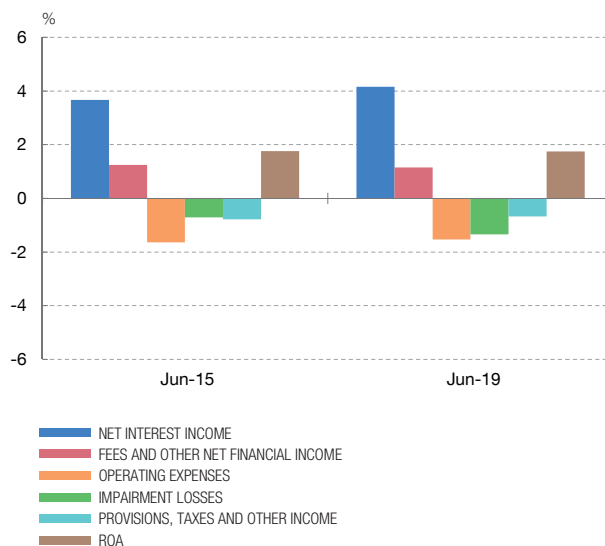
#### Business in Spain. ID

Over recent years, in contrast with deposit institutions, the credit granted by SLIs has grown steadily at year-on-year rates that have held at around 10%. Non-performing loans declined considerably and then posted positive year-on-year changes.

1 LENDING AND NON-PERFORMING LOANS OF RESIDENT PRIVATE SECTOR  
Rate of change and NPL ratio



2 INCOME STATEMENT  
% of total assets



SOURCE: Banco de España.

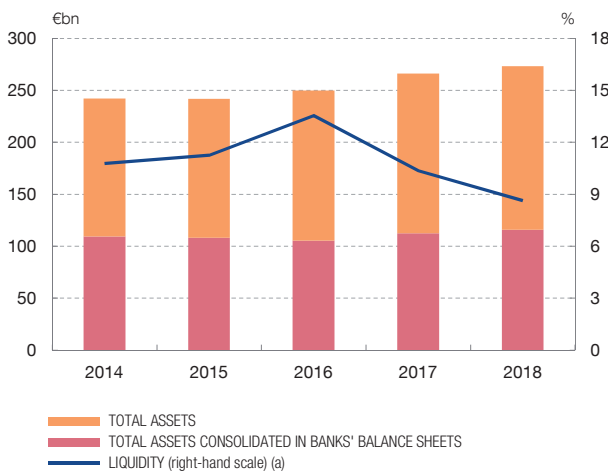
Chart 2.27

### INSURANCE COMPANIES

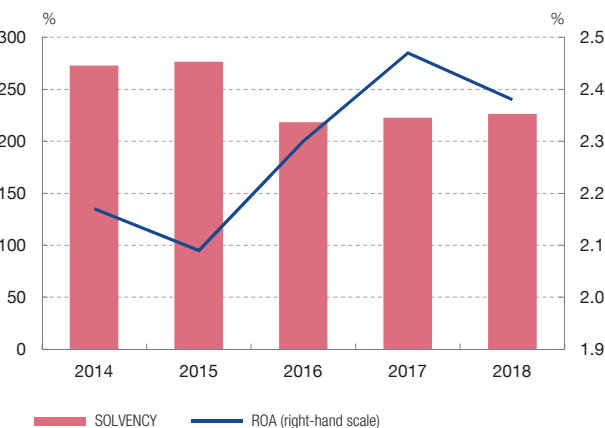
#### Consolidated data

In Spain, the insurance sector's volume of assets has increased in recent years. The sector's solvency has remained relatively stable, whereas the return on assets held at above 2%.

1 ASSETS AND LIQUIDITY



2 SOLVENCY AND PROFITABILITY



SOURCE: SNL Financial and information published by entities.

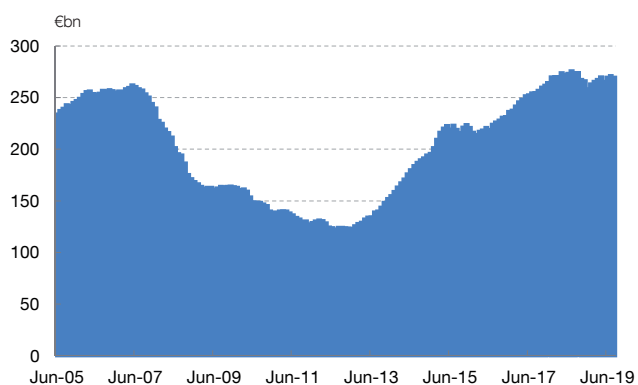
a Liquidity is defined as the ratio of cash and liquid deposits to total liabilities.

Chart 2.28

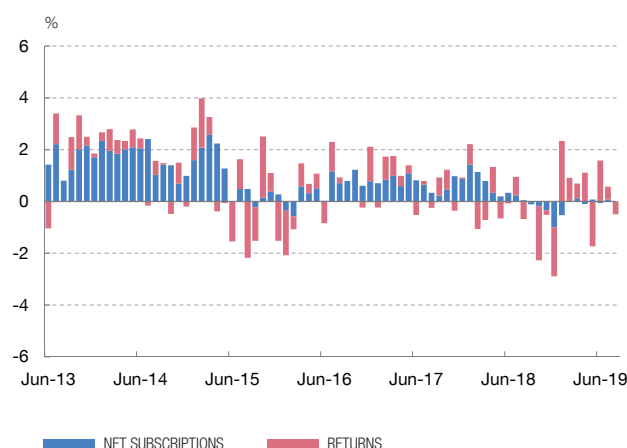
## INVESTMENT FUNDS

In the year to date, investment funds' net asset values have increased slightly as a result of positive returns, since net subscriptions have remained flat.

1 NET ASSET VALUE OF INVESTMENT FUNDS



2 CONTRIBUTION OF RETURNS AND NET SUBSCRIPTIONS TO CHANGE IN NET ASSET VALUE OF INVESTMENT FUNDS



SOURCES: Inverco and CNMV.

Since 2015, the insurance sector's<sup>24</sup> volume of assets has grown constantly and to a greater extent than the assets consolidated in the balance sheets of banks and, consequently, the latter's significance in this sector has declined (Chart 2.27). This greater size was not accompanied by an improvement in the sector's liquidity, which has fallen. Solvency levels have remained stable.<sup>25</sup> Finally, the sector's return on assets (ROA), which dipped somewhat last year, remains above 2%, whereas ROE slightly exceeded 15% last year, which is considerably higher than the banking sector's profitability ratios.

### Investment funds

**In the year to date, investment funds' assets have increased slightly as a result of positive returns.** Since the second half of 2018, net subscriptions of investment funds, which had grown since 2013, have remained flat or declined slightly. In 2019, as a result of the positive returns in six of the first eight months of the year, investment funds' net assets have increased by 4.3% (Chart 2.28).

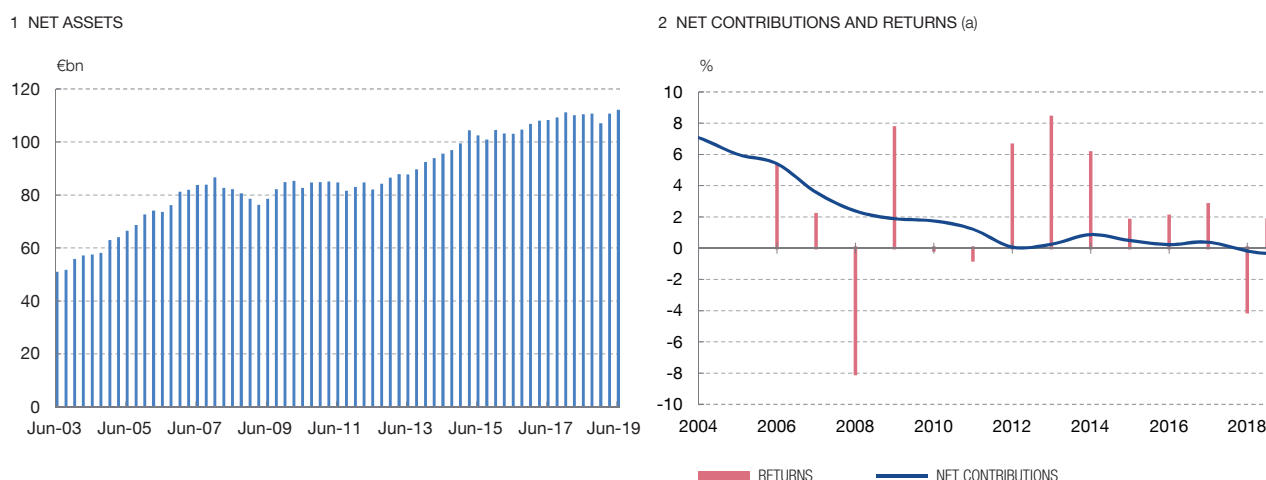
<sup>24</sup> The information analysed here, which is drawn from SNL Financial's database, relates to Spain's main insurance companies, which represent approximately 84% of the insurance sector's assets.

<sup>25</sup> The decrease in the solvency ratio in 2016 is due to the change in regulation associated to the implementation of the Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009.

Chart 2.29

## PENSION FUNDS

Pension funds' net assets grew in 2019 compared with the slowdown experienced in 2018. Net contributions remained negative which extended their decreasing trend, while returns started to pick up after posting negative values in 2018.



SOURCES: Inverco and CNMV.

a The data available on net contributions do not relate to total pension plans. The series is based on a sample which varies between 85.2% and 99.18% of total pension funds (95.16% on average in the period).

## Pension funds

**Also in this case, it is the pick-up in returns which explains the increase in pension funds' assets in 2019.** Pension funds' assets stood at historical highs (Chart 2.29). Net contributions to pension funds (adjusted for the value of benefits) have shown negative values since end-2018 (-0.2% of net assets at end-2018), and a clearly decreasing pattern over time. However, these funds' assets climbed steadily during 2019 (1.6% in year-on-year terms) due to a higher contribution from profitability.

### 2.2.2 Systemic interconnections

**This FSR analyses the direct interconnections of the resident financial system with non-resident financial institutions and examines indirect interconnections through exposures to marketable securities.**<sup>26</sup> Direct interconnections between resident financial sectors and changes in them in recent years, shown in the 2019 Spring FSR, have remained stable. Their analysis is not updated in this issue.

<sup>26</sup> Direct interconnections refer to financial instruments issued by a financial institution and held by another financial institution belonging to the same or another financial sector. Indirect interconnections arise where different financial institutions hold exposures to the same sectors, markets or instruments.

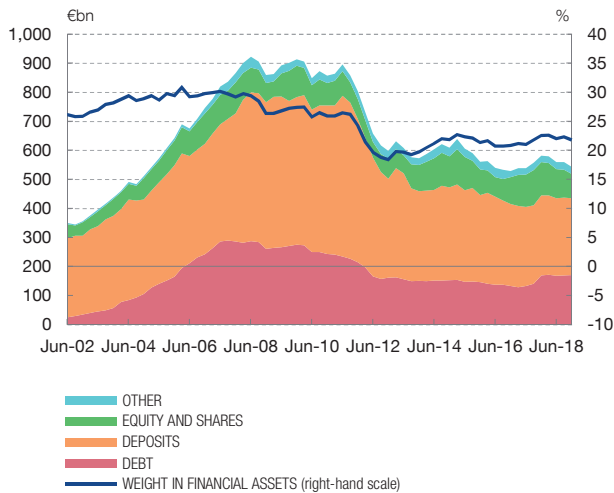
Chart 2.30

**OMFI INTERCONNECTIONS WITH NON-RESIDENT AGENTS**

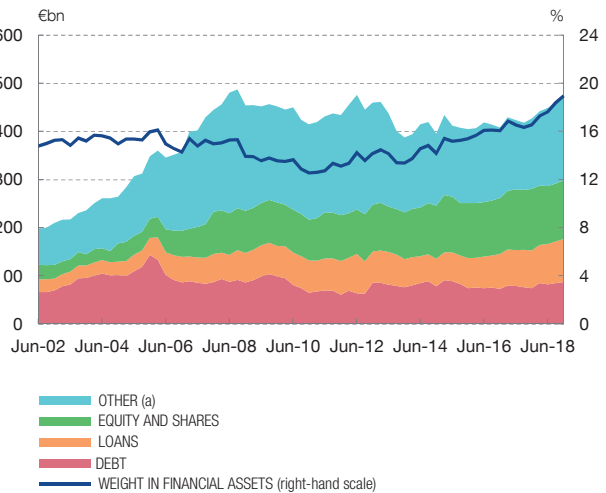
**Business in Spain, ID**

OMFI's liabilities vis-à-vis the rest of the world fell considerably in absolute terms after the crisis and their relative weight in financial assets has also decreased by 4.6 pp since June 2011. The level of assets vis-à-vis the rest of the world has remained more stable but its weight in total financial assets has increased by 6.2 pp since the same date.

1 OMFI's LIABILITIES VIS-À-VIS THE REST OF THE WORLD



2 OMFI's ASSETS VIS-À-VIS THE REST OF THE WORLD



SOURCE: Banco de España.

a Includes interbank loans, among others.

**Direct interconnections with non-resident financial agents**

**The liabilities of resident financial institutions vis-à-vis the rest of the world fell considerably after the crisis and stabilised as from 2013.** Chart 2.30 shows the assets and liabilities of other monetary financial institutions<sup>27</sup> (OMFI) vis-à-vis the rest of the world. At present, liabilities vis-à-vis the rest of the world represent 22% of the total financial assets of OMFI, which is 8 pp lower than before the global financial crisis. In June 2019, assets vis-à-vis the rest of the world represented 19% of total financial assets, their highest value in the series, after the upward trend which began in 2013.

**The cross-border interconnections of banks and investment funds take the form of holdings in marketable securities issued by non-resident institutions of identical financial sectors.** Non-residents also own a significant portion of marketable securities issued by resident banks. Chart 2.31 shows, using the ECB's

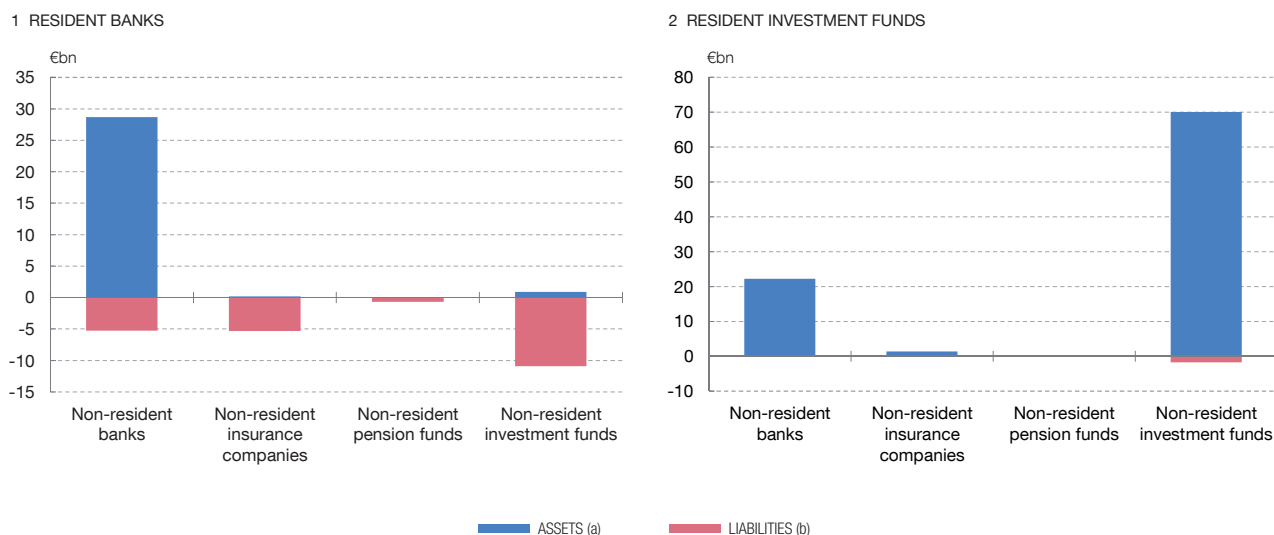
<sup>27</sup> OMFI's include banks, specialised lending institutions (SLIs), the ICO and money market investment funds. This information is from the Financial Accounts of the Spanish Economy which gathers data from the the individual balance sheets of institutions in this sector which are resident in Spain. Consequently, it does not include exposures through subsidiaries which are not resident in Spain.

Chart 2.31

## DIRECT CROSS-BORDER INTERCONNECTIONS DUE TO HOLDING OF MARKETABLE SECURITIES

December 2018

The most significant direct cross-border interconnections by volume are due to resident investment funds' holdings of marketable securities issued by non-resident investment funds (€70 billion), followed by resident banks' holdings of marketable securities issued by non-resident banks (€29 billion). Resident investment funds scarcely have cross-border interconnections through their liabilities, whereas the latter are significant for resident banks.



SOURCE: ECB (Securities Holding Statistics by Sector).

a It shows resident institutions' asset holdings of marketable securities issued by non-resident sectors.

b It shows marketable securities issued by resident institutions which are held by non-resident sectors.

database on the marketable securities holdings<sup>28</sup> of different financial sectors in the euro area, the total volume of direct interconnections with non-resident financial sectors of banks and investment funds resident in Spain in December 2018. The main direct cross-border connections are established through the holdings of resident banks (€29 billion) and resident investment funds (€70 billion) in instruments issued by non-resident institutions. However, certain significant interconnections in the opposite direction are observed, such as instruments issued by banks domiciled in Spain which are held by non-resident investment funds (€11 billion).

### Indirect interconnections

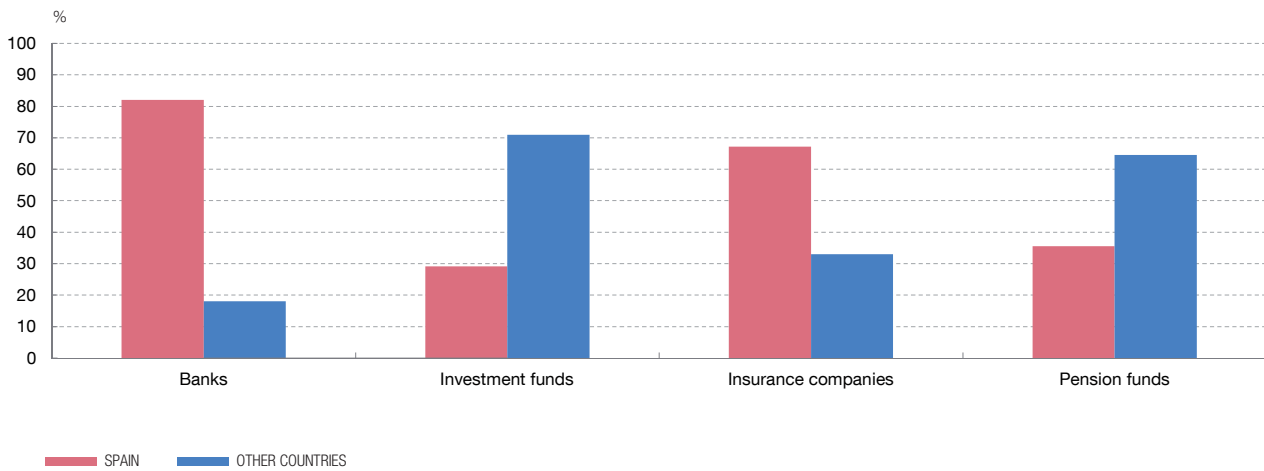
**More than 70% of the marketable securities holdings of banks and insurance companies resident in Spain are concentrated in Spanish issuers.** Using once again the data compiled by the ECB, Chart 2.32 shows the weight that the most

<sup>28</sup> This database excludes data on loans and deposits. Furthermore, it only includes the marketable securities holdings of financial institutions resident in Europe. Consequently, the holdings of these institutions' subsidiaries outside Europe are not included either.

Chart 2.32

**MAIN MARKETABLE SECURITIES ISSUERS IN DOMESTIC FINANCIAL SECTORS HOLDINGS**  
**December 2018**

The relevance of the Spanish issuers in the resident financial sectors portfolios is larger in banks and insurance companies.



SOURCE: ECB (Securities Holding Statistics by Sector).

exposed issuers from Spain and other geographical areas represent as a percentage of the total holdings of resident financial sectors. The importance of Spanish issuers is particularly significant for banks (accounting for more than 80% of their holdings) and insurance companies (around 70%). The most geographically diversified sectors are investment funds and pension funds.

**The various financial sectors resident in Spain hold a significant volume of common exposures which may be considered a contagion mechanism.**<sup>29</sup> As a result of these common positions, all the sectors would be affected simultaneously by the same shock arising at one securities issuer. More importantly, a potential problem in one financial sector could push it into forced selling of assets which are also present in one or more other sectors. This could trigger substantial falls in the prices of these assets and, therefore, valuation losses for the other holding sectors, with the related implications for financial stability.

**More than 45% of the positions held in the marketable securities portfolios of banks, funds and insurance companies overlap with other financial sectors.** Chart 2.33 shows that the most significant common positions by marketable securities volume are those held by the banking sector with other financial sectors (approximately €285 billion). However, in order to assess this result properly, it should

<sup>29</sup> The metrics used in this section are similar to those shown in the ECB's "Financial Stability Report" of November 2018 (section 3.2, particularly Chart 3.24 and the related sections).

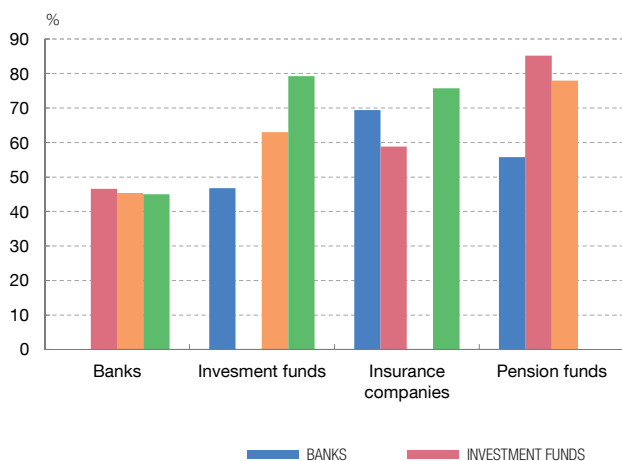
Chart 2.33

**PORTFOLIO OVERLAP IN MARKETABLE SECURITIES (a)**

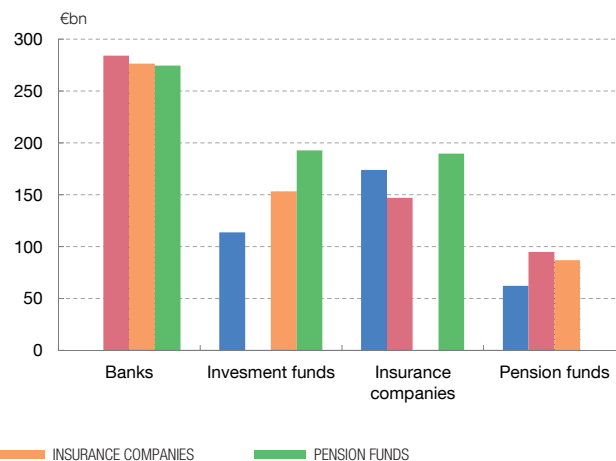
December 2018

The banking sector has the highest overlap of exposures with other sectors, by volume of exposures. The degree of overlap, in relative terms, in the non-banking sector is greater than that in the banking sector but of a lower volume. Similarly, the investment fund and insurance company sectors have similar levels of overlap both in terms of volume and as a percentage of their total portfolios.

1 COMMON HOLDINGS AS A PERCENTAGE OF TOTAL PORTFOLIO



2 VOLUME OF COMMON HOLDINGS



SOURCE: ECB (Securities Holding Statistics by Sector).

a The chart shows common holdings of marketable securities, which means ownership of identical securities issued by the same issuer. For example, of the common holdings between banks and investment funds, banks hold €284 billion, which represents 47% of their total portfolio; for their part, investment funds hold €114 billion, which represent 47% of their total portfolio. The market value of the holdings reported by the entities is considered (or, if appropriate, fair value).

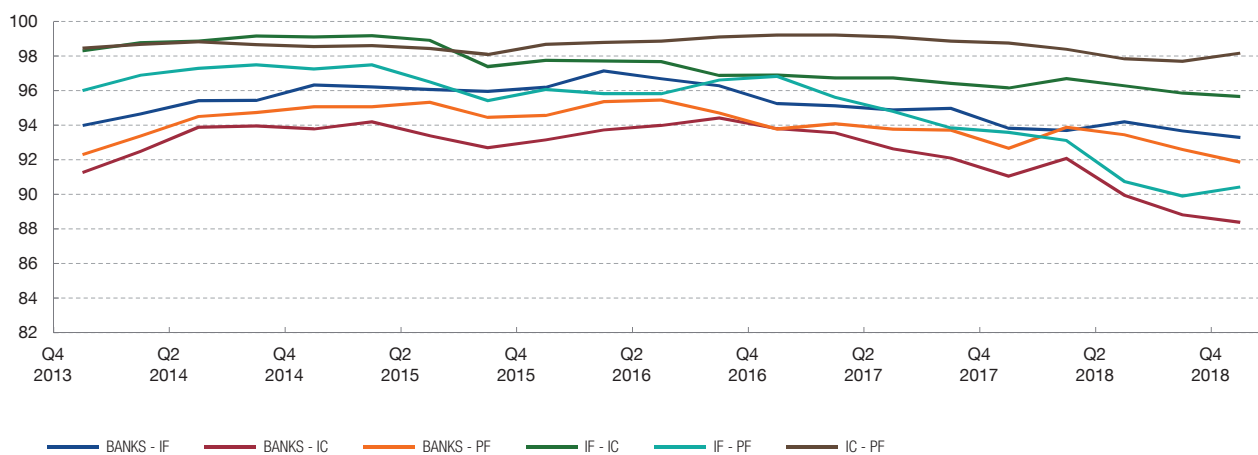
be considered that banks' assets mainly comprise loans, which are not included in this analysis. The common marketable securities holdings among non-bank financial sectors are of a smaller volume, but they are more significant relative to each sector's total securities portfolio. In particular, the proportion of common positions in the securities portfolio of pension funds which overlaps with insurance companies and investment funds exceeds 75%.

**The correlation of the holdings by issuer of the various financial sectors makes it possible to estimate the degree to which there is a similar distribution of securities in the portfolios.** As at each date, the weights represented by the different individual issuers (e.g. a specific sovereign or non-financial corporation) in each financial sector's investment portfolio were measured. These data were used to calculate the correlation coefficient of these weights between each pair of financial sectors (e.g. banks and investment funds). An advantage of this measure is that it does not depend on the size of the portfolios and, therefore, is not affected by the differences in each sector's total volume of holdings. A positive correlation between the portfolios of two sectors would indicate that the holdings whose volume is higher than the average of the total portfolio in one of the sectors are also above average in the portfolio of the other sector.

Chart 2.34

### CORRELATION OF PORTFOLIOS OF MARKETABLE SECURITIES

The correlation between financial sectors' portfolios at the level of individual securities has followed a declining trend. At the level of the issuer, the correlation is greater and the declining trend is much more contained.



SOURCE: ECB (Securities Holding Statistics by Sector).

**This correlation is generally very high, above 85%, in all the sector pairs.** Chart 2.34 shows changes in the correlation between 2014 Q1 and 2018 Q4. There are two significant points to be underlined. On one hand, the correlation holds at high values and is relatively stable between banks and pension funds and, to a certain degree, also between insurance companies and pension funds. On the other, correlations of other sectors (e.g. banks and insurance companies, and investment funds and pension funds) show a slightly declining trend in recent years.



