

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

This box presents the main results of the Banco de España's exercise to measure the Spanish banking system's resilience to the materialisation of systemic risks to the macro-financial environment over the 2024-2026 horizon. The exercise was carried out using the Forward Looking Exercise on Spanish Banks (FLESB) methodological framework,<sup>1</sup> assessing the banking system's solvency under various macro-financial scenarios. To be specific, three scenarios were considered: a baseline scenario and an adverse one, whose narrative and impacts are both in line with those used for the EU-wide stress test coordinated by the European Banking Authority (EBA) in 2023,<sup>2</sup> and an intermediate scenario designed by the Banco de España.

As on previous occasions, the exercise uses the dynamic balance sheet assumption,<sup>3</sup> so the size of banks' balance sheets is also projected based on macroeconomic scenarios.<sup>4</sup>

This box focuses on the impact on the banking system's solvency, although liquidity has also been analysed, and its results did not point to signs of tension in the banking sector or any significant change against the previous exercise.<sup>5</sup>

**Description of the scenarios**

The baseline scenario is in line with the economic forecasts made at end-2023 and assumes average GDP growth of 1.7% over the period 2024-26. Annual inflation is expected to stand at an average of 2.4% over the exercise horizon, while the 12-month EURIBOR and the yield on 10-year government bonds are expected to stabilise at 3.1% and 4.2%, respectively (see Charts 1 and 2).

The intermediate scenario portrays an environment in which inflation picks up above the baseline scenario (4.1% on

average), mainly owing to increases in energy and food prices. This leads to a tightening of monetary policy, with higher interest rates towards the end of the projection period. Specifically, interest rates are also higher than under the baseline scenario, with the average 12-month EURIBOR at 4.8% and the yield on 10-year government bonds averaging 5.0%. Under this scenario, economic growth is more moderate, averaging 0.5% between 2024 and 2026.

The adverse scenario envisages a situation of stagflation stemming from a worsening of geopolitical tensions and global value chain disruptions accompanied by a significant deterioration in macro-financial conditions. Under this scenario, GDP is projected to contract by an average of 2.1% over the projection horizon. Inflation would reach an average of 3.4%. Interest rates increase significantly, with the 12-month EURIBOR rate rising to an average level of 4.3% and the yield on 10-year government bonds averaging 7.3%, owing to the increase in risk premia.

Regarding house prices, the baseline scenario forecasts an average increase of 2.4%, while the intermediate scenario envisages more moderate growth of 2.2% (see Chart 2). Under the adverse scenario, house prices fall by an annual average of 6.1%. Stock market valuations, which are stable under the baseline scenario, fall by 7.5% and 10.1% in annual average terms under the intermediate and adverse scenarios, respectively.

As in previous exercises, the uneven impacts of the scenarios on different sectors are taken into account. In the intermediate scenario, the hospitality and recreation sectors are the hardest hit, along with the sectors that require most energy and other commodities. Under the intermediate scenario, the average annual decline for these sectors ranges from 1.5% to 2.3%. Under the adverse scenario, the negative impact is concentrated on

1 The FLESB is a top-down methodology. In other words, it applies the same scenarios, assumptions and models consistently across all of the banks analysed. The data sources available are highly granular, reaching down to the level of individual transactions and foreclosed assets in business in Spain. Business abroad is also modelled, with less granular data. The methodological framework is developed in-house by the Banco de España. The main features of this framework are outlined in the *November 2013 Financial Stability Report* (FSR). Over the succeeding years, the FSR has described the main improvements and new developments included in the model, since it is a dynamic framework under continuous development.

2 These scenarios are the most relevant for supervisory purposes. In this update, the baseline scenario for Spain and the other countries relevant to Spanish banks are in line with the December 2023 Eurosystem staff Broad Macroeconomic Projection Exercise, while the adverse scenario continues with the stagflation narrative and the high level of severity of the shocks employed in the 2023 EU-wide stress test's adverse scenario.

3 The dynamic balance sheet assumption is applied in the FLESB so that banks' loan portfolios are affected by the macroeconomic scenario's credit growth. This leads to higher or lower amounts of non-performing loans that affect banks' revenue and changes the risk-weighted assets (RWAs).

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

5 See *Box 2.2 of the Autumn 2023 FSR*.

## FORWARD-LOOKING ASSESSMENT OF THE SPANISH BANKING SYSTEM'S RESILIENCE (cont'd)

Chart 1  
Macroeconomic impact. Spain (a)

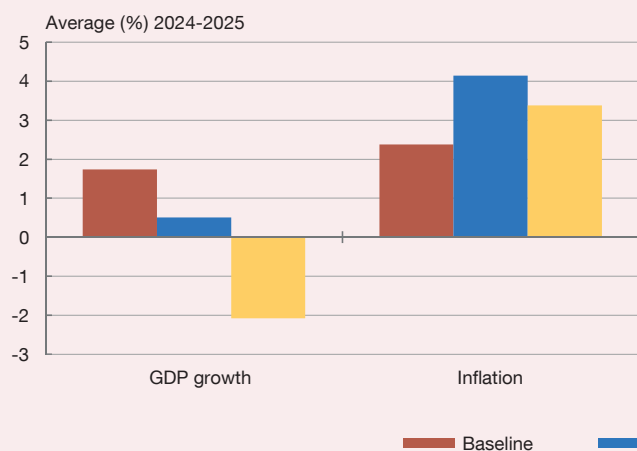
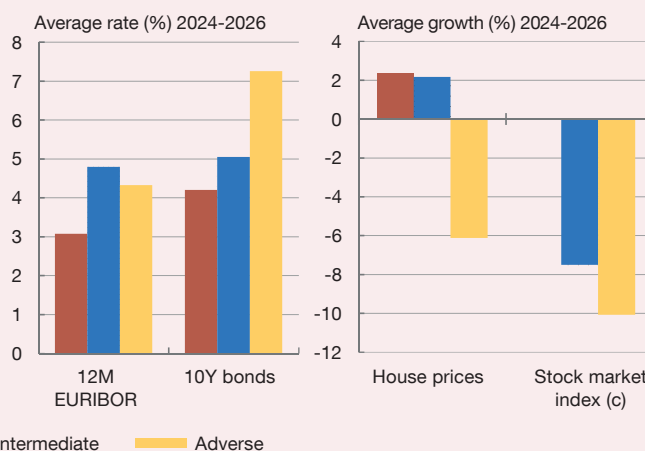


Chart 2  
Impact on markets in Spain (b)



SOURCE: Banco de España.

- a Inflation is calculated using the harmonised index of consumer prices (HICP).  
 b Changes in the valuations of equities are calculated drawing on the Madrid Stock Market General Index.  
 c Average stock market index growth under the baseline scenario is zero.

these latter sectors to a greater extent, with an average annual fall over the projection horizon in real gross value added of 9.4% for the aggregate of the most energy-intensive industries.

Lastly, these scenarios are applied not only to Spain, but also to those countries to which Spanish banks are significantly exposed (see Chart 3), following a narrative comparable to that applied in Spain. Under the intermediate scenario, the impact on international activity is contained, with low average growth rates from 2024 to 2026, but no falls are projected (the lowest growth countries would be Brazil, at 0.6%, and the United Kingdom, at 0.7%). The adverse scenario envisages sharper contractions in GDP, particularly in the United Kingdom, with an average decline of 2.5%, and Türkiye, with an average drop of 2.4%.

Inflation would follow the same dynamics as under the scenarios for Spain. Under the intermediate (adverse) scenario, it is highest in Brazil at 6.7% (4.9%) and Mexico at 5.1% (4.6%), excepting the exceptionally high values envisaged in Türkiye, which stand around 57% under both scenarios. Chart 4 shows average short and long-term rates under these international scenarios, with levels standing particularly high in those countries with

higher inflation, such as Brazil, Mexico and, most notably, Türkiye.

### Aggregate results of the exercise

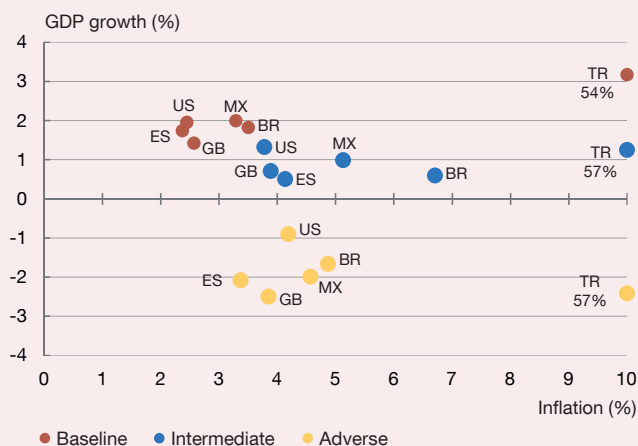
This section presents the results of the stress test, in terms of the CET1 ratio, broken down by groups of banks. First, it focuses on the significant institutions (SIs) supervised by the ECB within the framework of the Single Supervisory Mechanism (SSM), which are further divided into those with the most significant international activity<sup>6</sup> (the “International group”) and other banks under the direct supervision of the ECB (the “Other SSM group”). A third group comprises smaller banks supervised directly by the Banco de España that have no significant international activity (the less significant institutions group, “LSI group”).

Chart 5 shows the different developments in the aggregate CET1 ratio between 2023 (starting point) and 2026 (end of the horizon) under each of the three scenarios, distinguishing between these groups of institutions. The initial CET1 ratio of the International group was 12.5% in 2023, which rises to 14.7% and 13.3% under the baseline and intermediate scenarios, respectively, while the adverse scenario envisages a fall to 10.2%.

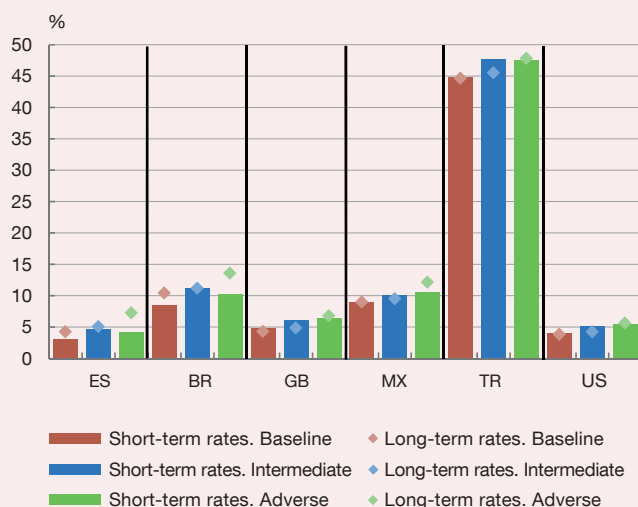
<sup>6</sup> The International group includes the three in which such activity is most important and longest-running.

**FORWARD-LOOKING ASSESSMENT OF THE SPANISH BANKING SYSTEM'S RESILIENCE (cont'd)**

**Chart 3**  
Distribution by country of real GDP growth and inflation under baseline, intermediate and adverse scenarios. Average for 2024-2026 (a) (b)



**Chart 4**  
Average short and long-term rates by country in 2024-2026 under the baseline, intermediate and adverse scenarios



SOURCE: Banco de España.

- a The range of the horizontal axis has been limited owing to the extreme values of inflation in Türkiye (an average of 54% under the baseline scenario and 57% under the intermediate and adverse scenarios).
- b Inflation is calculated using the HICP.

The Other SSM group began with a slightly higher CET1 ratio, at 13.1% in 2023. Under the baseline and intermediate scenarios this increases to 14.6% and 13.3%, respectively, while it falls to 8.9% under the adverse scenario. This latter figure represents the lowest of any of the groups of banks, in spite of the ratio starting above that of the International group.

Lastly, LSIs have higher CET1 ratios, standing at 20.2% at the outset of the exercise and increasing over the exercise horizon under the baseline, intermediate and adverse scenarios to 24.5%, 24.1% and 21.0%, respectively.

These results reflect the strong aggregate resilience of the Spanish banking sector under these scenarios, together displaying sound solvency, even in a macro-financial environment that is as negative as that envisaged by the

adverse scenario. However, as mentioned above, the impacts differ across bank groups.

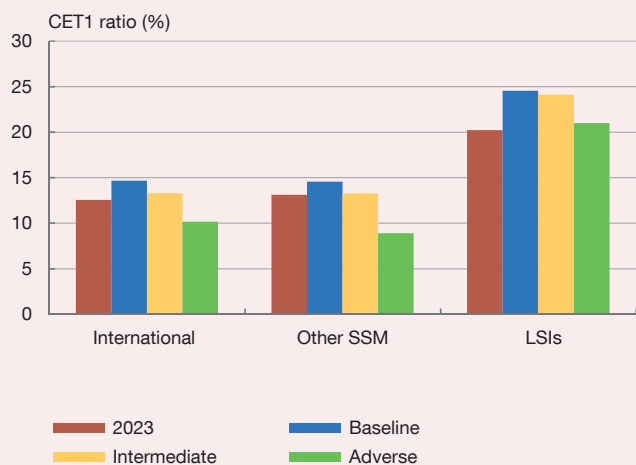
The main factors that determine the change in the CET1 ratio are broken down for each scenario in Chart 6,<sup>7</sup> with their weight expressed as a fraction of RWAs.

The International group shows capital growth, mainly on the back of earnings from net operating income and net income abroad, under the baseline and intermediate scenarios. In the adverse scenario, banks' capacity to generate capital is affected and, while the use of provisions makes a positive contribution, it fails to offset the negative impact of asset impairment and sovereign exposure. A closer look at this latter scenario reveals that capital generation is cut significantly (4.1% of RWAs) and, in conjunction with the use of provisions (1.3% of RWAs), is

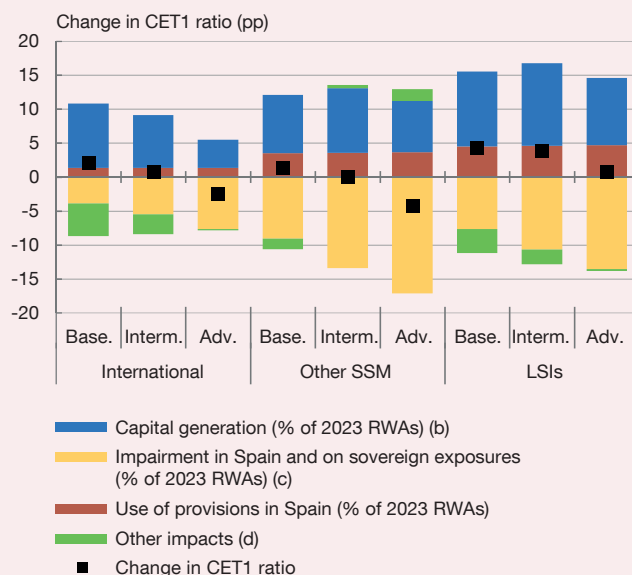
7 The chart shows the effects of the estimated losses, specifically the impairment losses on loans and foreclosed assets of business in Spain and the impact on capital of a potential deterioration of sovereign exposures at the consolidated level. It also shows the impact of the scenarios on loss-absorbing items, namely the use of existing provisions and capital generation through net operating income in Spain and net profit/loss of foreign operations. Both the losses and the loss-absorbing items are presented as a percentage of the RWAs existing at December 2023. The other impacts are also shown, which cover other items that affect CET1 capital (the numerator of the solvency ratio) such as other gains or losses and tax effects, and the change in RWAs (the denominator of the solvency ratio).

**FORWARD-LOOKING ASSESSMENT OF THE SPANISH BANKING SYSTEM'S RESILIENCE (cont'd)**

**Chart 5**  
CET1 ratio observed in 2023 and results in 2026 of the baseline, intermediate and adverse scenarios



**Chart 6**  
Impact of risk materialisation scenarios on bank solvency (a)



SOURCE: Banco de España.

- a The impacts are defined as the expected changes in the CET1 ratio in 2026 and in different financial flows in 2024-2026 (e.g. capital generation) stemming from the materialisation of adverse changes in the macro-financial conditions envisaged in the scenarios in this box.
- b The generation of loss-absorbing capital is determined by net operating income in Spain and by the net profit/loss generated abroad for banks with significant international activity.
- c Impairment losses on loans and foreclosed assets in operations in Spain and impact on capital of the potential impairment of sovereign exposures at consolidated level.
- d Other consolidated gains and losses, tax effects, exchange rate effects, distribution of profit, coverage of losses on ICO-backed loans by the Government and changes in RWAs.

not enough to offset the losses arising from impairment (-7.7% of RWAs) and other impacts (-0.2% of RWAs).

The Other SSM group also shows positive performance under the baseline and intermediate scenarios, mainly owing to capital generation and the use of provisions. However, loss-absorbing capacity is constrained under the adverse scenario. Thus, under this scenario, capital generation (7.6% of RWAs), the use of provisions (3.6% of RWAs) and other impacts (1.7% of RWAs) are not sufficient to offset heavy impairment losses (-17.2% of RWAs), resulting in the CET1 ratio falling by slightly more than 4 pp.

The last group of banks, the LSI group, sees an increase in their CET1 ratios in all scenarios, owing to their ability to generate capital and the use of provisions, which are enough to offset asset impairment. Under the adverse scenario, the generation of new loss-absorbing capital (9.9% of RWAs) and the use of provisions (4.7% of RWAs)

more than offset impairment losses (-13.6% of RWAs) and other impacts (-0.3% of RWAs).

Compared with the 2023 FLESB, the initial CET1 ratio was higher for all groups of banks (up 0.2 pp for the International group and the Other SSM group, and 2 pp for the LSI group). In addition, the CET1 ratios at the end of the horizon are also higher, above both the results of the baseline scenarios of both exercises and the adverse scenarios that follow the same narrative. The 2024 intermediate scenario is not analysed because its assumptions cannot be compared to those of the 2023 adverse scenario.

Under the baseline scenario, there are increases in the CET1 ratio at the end of the horizon with respect to the 2023 exercise of 1.2 pp for the International group, 0.5 pp for the Other SSM group and 3.1 pp for the LSI group. Under the adverse scenario the CET1 ratios are 0.7 pp higher for both the International and Other SSM groups and 3.7 pp higher for the LSI group.

**FORWARD-LOOKING ASSESSMENT OF THE SPANISH BANKING SYSTEM'S RESILIENCE (cont'd)**

The factors that explain this improvement, aside from the increase in the starting CET1 ratios (very high for the LSI group), include greater capital generation (especially funds deriving from positions abroad for the International group and from net interest income for the LSI group) and slightly lower losses, in both credit and sovereign holdings (with a notable decrease in the credit loss of the Other SSM group).

Starting from a higher level of interest rates than in the previous exercise contributes to the generation of income in all years of the horizon, particularly under the baseline scenario. The update of the financial information relating to business abroad, with a broadly positive recent performance, also helps to better estimate of earnings. The re-optimisation of sovereign debt portfolios by banks in 2023 in light of the new higher interest rate environment has resulted in lower sovereign debt losses.

As an additional exercise, results were also obtained for a more up-to-date baseline scenario based on the September 2024 macroeconomic projections. These projections envisage more positive developments in activity than were expected in winter 2023. In this setting, the banks' overall CET1 ratio at the end of the exercise would stand at 15.4%, 32 basis points (bp) higher than under the baseline scenario considered in the main exercise.

**Analysis of the channels of impact**

The main channel with a negative impact on Spanish banks' solvency is the increase in the provisions for credit portfolio impairment under both the intermediate and the adverse scenarios (see Chart 7).<sup>8</sup> The intermediate scenario shows an estimated increase in the median credit provisions in Spain of 3.3 pp of RWAs compared with the baseline scenario. Under the adverse scenario, the increase relative to the baseline scenario in the median credit impairment provisions is 6.1 pp of RWAs (in the 2023 exercise it was higher, 7.4 pp).

As in previous exercises, a valuation haircut was applied to Spanish banks' sovereign bond portfolios owing to the

significant interest rate hike in both the intermediate and the adverse scenarios (see Chart 7). The differential losses relative to the baseline scenario amounted to 0.1 pp of RWAs in the intermediate scenario and 0.6 pp in the adverse scenario (the same as under the adverse scenario in the 2023 exercise).

These haircuts are not homogeneous across banks, as those with more sovereign debt holdings accounted for at fair value would incur more significant losses under these scenarios.<sup>9</sup> Spanish banks' sovereign debt fair value exposure is in line with that of the previous exercise, declining by only 0.2 pp (30.8% at December 2023, compared with 31% observed a year earlier). These losses are also affected by the share of holdings of instruments with longer maturities and of sovereign bonds from countries facing higher haircuts on their government debt due to their macro-financial situation.

Lastly, the increase in net interest income is another important impact channel whose effect has diminished relative to last year. On this occasion, the initial interest rates are substantially higher and closer to those included in the scenarios, meaning that the changes in spreads are smaller. Under the intermediate scenario, growth in net interest income is 1.2 pp of RWAs in median terms relative to the baseline scenario (see Chart 7). Under the adverse scenario, this impact is practically zero, unlike the previous year, when an increase of 0.65 pp was posted. The results are also uneven across institutions, depending on the composition of their assets and their profitability in relation to the structure and cost of liabilities.

**Sensitivity analysis**

Under the framework of the FLESB tool, several sensitivity analyses in addition to those of the main exercise have been conducted, as in prior years.

First, the impact of the ICO guarantee scheme, which was initiated to mitigate the effects of the COVID-19 pandemic on firms,<sup>10</sup> was analysed. Given the uncertainty about the

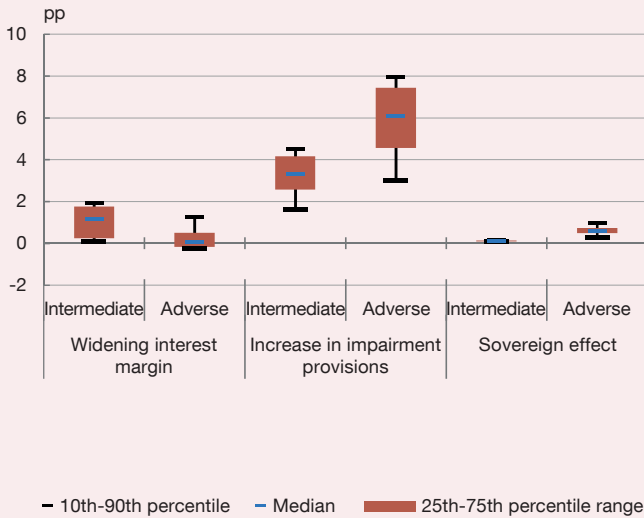
<sup>8</sup> The loan portfolio represents 62.5% of the sample banks' exposure in Spain. Within operations in Spain as a whole, loans to firms and households account for 45.1% and 54.9%, respectively.

<sup>9</sup> Various bank investment portfolios are classified at fair value, and the value of such assets is recognised based on their realisable market value. This is done on the understanding that, as part of its investment strategy, the bank may sell these assets before maturity. Conversely, assets expected to be held to maturity, for example with the purpose of collecting interest payments, are measured at amortised cost, and their value reflects the unamortised unimpaired portion of their nominal amount.

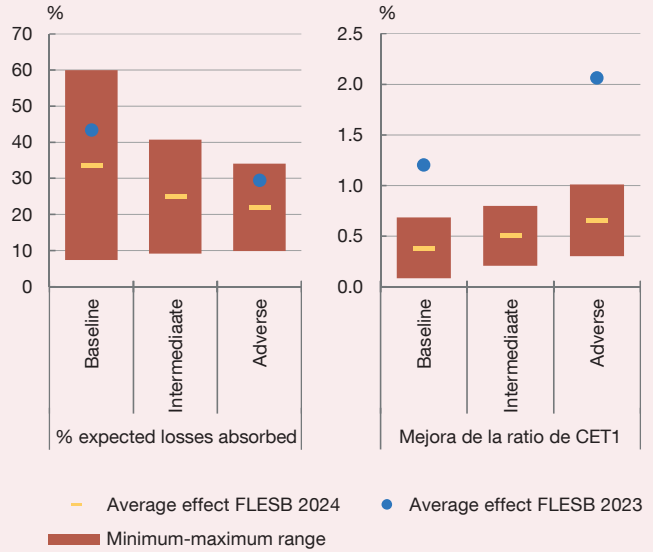
<sup>10</sup> The guarantee scheme reduces impairment losses on business lending, which has a positive effect on bank solvency.

**FORWARD-LOOKING ASSESSMENT OF THE SPANISH BANKING SYSTEM'S RESILIENCE (cont'd)**

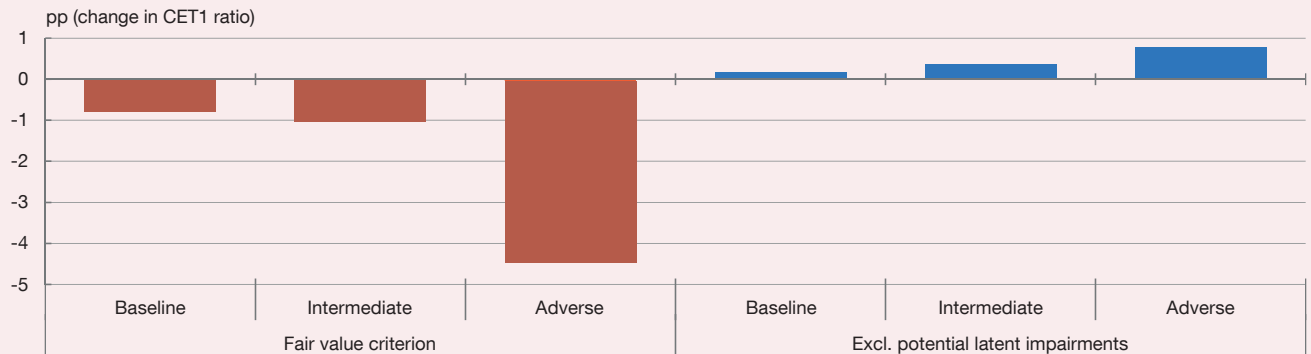
**Chart 7**  
Distribution among banks of impacts (relative to 2023 RWAs) of the intermediate and adverse scenarios on financial impairment provisions, sovereign losses and the interest margin (a). SIs



**Chart 8**  
Effect of ICO-guarantee scheme (b) (c)



**Chart 9**  
Sensitivities to other modelling assumptions (d)



**SOURCE:** Banco de España.

- a Shown is the distribution among banks of the differences between the intermediate and adverse scenarios compared with the baseline scenario in earnings due to the widening of the net interest margin in operations in Spain, in losses due to the higher provisions in operations in Spain and in the effect of sovereign exposures in consolidated operations. These measures are cumulative in the horizon 2024-2026 relative to 2023 RWAs for the baseline and adverse scenarios, and the institutions considered are SIs. The bars represent the values between the 25th and 75th percentiles, while the lines show the 10th, 50th (median) and 90th percentiles.
- b Shown is the range of the measure's impact on the expected loss of the corporates portfolio (left-hand panel) and on the CET1 ratio (right-hand panel), depending on the assumptions regarding the credit quality of loans extended to firms and sole proprietors in Spain under the ICO guarantee scheme. The minimum effect assumes that the expected loss is equal to the average of the corporate lending portfolio, while the maximum effect assumes that NPL inflows are primarily concentrated among guaranteed loans. The red line denotes the mid-range effect.
- c The main analysis (the results of which are set out in Charts 6 and 7 of this box) incorporates an intermediate assumption about the effect of the guarantee scheme.
- d Shown are the differences in the average CET1 capital ratios of SIs and LSIs projected for 2026 in the sensitivity exercises compared with those projected in the main solvency exercise. The sensitivity exercises consider the following impacts: i) the effect of reclassifying all sovereign bond exposures at fair value, and ii) the effect of excluding from the exercise the impact of potential latent losses accumulated during the period 2020-2023 in the corporate credit portfolio as a result of the extraordinary crises that arose in this period.

**FORWARD-LOOKING ASSESSMENT OF THE SPANISH BANKING SYSTEM'S RESILIENCE (cont'd)**

credit quality of the guaranteed loans and their performance, this effect is estimated considering a range of assumptions<sup>11</sup> (see Chart 8). Under these assumptions, ICO-backed exposures have a higher probability of default (in varying degrees) than other firms.

Considering an average point in the range of assumptions on the differential quality of ICO loans, the percentage of loss assumed by these guarantees under the baseline scenario would be 33.6%. This is lower than the 43.5% estimated under this assumption in 2023 mainly due to a reduction of the guaranteed portfolio. The percentage of loss covered by the guarantees is 24.9% under the intermediate scenario and 21.9% under the adverse scenario, both below the 29.5% estimated last year for the adverse scenario. By absorbing part of the losses, the scheme appears to positively contribute to bank solvency, increasing the CET1 ratio by 0.4% under the baseline scenario (1.2% in 2023), by 0.5% under the intermediate scenario and by 0.7% under the adverse one (2.1% in 2023). If the probability of default on the ICO portfolio were the same as for other firms, less capital than that included in the main exercise would be saved, declining to a CET1 increase of declining to a CET1 increase of 0.1%, 0.2% and 0.3% under the baseline, intermediate and adverse scenarios, respectively.

The lower impact of the ICO guarantees estimated in the sensitivity exercise is consistent with the gradual reduction in the size of this portfolio and with the progressive fading of the latent credit impairment associated with the COVID-19 health crisis, which is in the increasingly distant past.

Second, an analysis has been conducted of the sensitivity of sovereign bond portfolio losses in value based on the assumption used for its accounting classification (see Chart 9). In particular, the recognition of all sovereign exposures at fair value would increase losses associated with interest rate hikes under the adverse scenario. The CET1 ratio would thus be 0.78 pp lower under the baseline scenario (compared with 1.71 pp in 2023), 1.02 pp under

the intermediate scenario and 4.41 pp under the adverse scenario (compared with 5.54 pp in 2023).

It is important to note that it is highly unlikely for banks to materialise all the latent loss under a given scenario. This is because they have mechanisms to cover such losses and other options to obtain liquidity (excess reserves, sale of assets originally classified at fair value, central bank liquidity lines, etc.) and they can therefore avoid reclassifying at fair value their exposures at amortised cost. However, the outcome of this sensitivity analysis indicates some degree of vulnerability of the banking sector in scenarios where it would have to sell a significant fraction of these sovereign debt holdings classified at amortised cost.

Lastly, estimates have been made eliminating the effect of potential latent impairments<sup>12</sup> arising from the COVID-19 crisis (see Chart 9). These effects are lower than in previous exercises, with the CET1 ratio increasing by 0.16 pp, 0.37 pp and 0.76 pp under the baseline, intermediate and adverse scenarios, respectively. As noted earlier, as we move away from the 2020 health crisis, these effects gradually fade within the framework assumptions, as the exposures more closely linked to this episode (e.g. ICO-backed exposures) are progressively amortised and it is possible to determine whether defaults have materialised on them over a longer time frame.

## Conclusions

This exercise shows that Spanish banks' aggregate solvency levels would remain satisfactory under the scenarios considered, the severity of which is high in the case of the adverse scenario. The impact in terms of capital consumption would be significant, but both initial capital levels and banks' capacity to generate capital and absorb losses would underpin the banking sector's overall resilience.

However, although the results of the exercise are positive, there are some caveats. These are in part associated with

11 The bottom end of the range assumes that the expected loss on guaranteed loans is equal to the average for the corporate credit portfolio; the top end assumes that the guaranteed loans are concentrated among riskier debtors. The previous section's findings are based on the impact of the ICO guarantees at the midpoint of this range.

12 From the COVID-19 pandemic, the estimates of the main exercise take into account additional credit risk shocks based on impairment that did not materialise in 2020 thanks to the economic policy measures adopted. In subsequent years, the estimation of these latent impairments is reduced by two factors: (i) the possibility of some of these risks having already materialised is considered (their amount is reduced on the basis of the downward forecast errors in the probabilities of default in 2021, 2022 and 2023), and (ii) a downward adjustment is made based on the pace of repayment of ICO-backed loans, which is indicative of the reduction in debt taken on to meet extraordinary liquidity needs in 2020.

**FORWARD-LOOKING ASSESSMENT OF THE SPANISH BANKING SYSTEM'S RESILIENCE (cont'd)**

the uncertainty inherent to these exercises and, as the results are presented in aggregate form, with the existing heterogeneity across banks. The sector's positioning should be prudent when considering provisioning and

capital plans and should be accompanied by macro- and microprudential authorities' oversight. Thus, a framework is in place that helps absorb potential unexpected losses deriving from the materialisation of systemic risks.