Box 2.1

ANALYSIS OF BANKING SECTOR RESILIENCE TO HOUSING SHOCKS

Over the last year, real estate sector vulnerabilities have been subdued, in particular with house price imbalance indicators close to neutral. However, as shown in Chapters 1 and 3, monitoring of the real estate sector – which saw some resurgence in the housing segment in the second half of 2023 – must continue, so that any potential build-up of risks may be detected early.

This box complements these monitoring efforts by measuring how well banking sector solvency would withstand a significant materialisation of potential real estate risks. For this purpose, the FLESB (Forward-Looking Exercise on Spanish Banks) methodological framework for stress testing[1] is used to analyse the sensitivity of banking sector solvency to housing shocks.

Specifically, the exercise envisages marked falls in house prices and investment in housing that would place significant constraints on construction and real estate activity, with repercussions for other productive sectors and, consequently, for investment and employment, which would also impact household consumption. The time horizon considered is 2024-2025, and the order of magnitude of the impact assumed on house prices and investment in housing is based on that used in the first two years of the adverse scenario defined for the European Banking Authority's 2023 stress test.[2]

This is currently a very low probability scenario. At this juncture, with no significant real estate market imbalances, a severe adjustment in this market is unlikely in the absence of a broader macroeconomic crisis. So far, despite monetary policy tightening, the slowdown in house prices has been contained. For an adjustment as severe as the one assumed under the scenario to materialise, other productive sector shocks or instability affecting real estate investment would need to occur.

Indeed, both scenarios – a housing or a broad-based crisis – are also far removed from the current outlook. Yet despite its counterfactual nature, the exercise is useful to measure the impact on banking sector solvency, which is key to financial stability, materialised through various specific channels, and to identify the most appropriate macroprudential policy response should potential vulnerabilities be detected.

Chart 1 shows how house prices evolve under the baseline and the adverse scenario, with a difference between the two of 10.6 percentage points (pp) of average growth over the 2024-2025 horizon.[3] Compared with the past performance of this variable, the average fall in house prices under the adverse scenario is in line with that observed during the global financial crisis,[4] albeit more concentrated over time.

The impact of the adverse scenario on the construction and real estate sector, and on relevant macroeconomic variables, is presented in Chart 2. The estimated average annual impact on the real gross value added (GVA) of the construction and real estate sector is -3.3 pp over the exercise horizon, while its estimated indirect impact on activity is a decrease of 0.6 pp in average real GDP growth and an increase of 0.7 pp in the unemployment rate. The estimated impacts on the growth of lending to households for house purchase and of lending to firms are -1.5 pp and -2.2 pp, respectively.[5]

In this setting, the estimated impact on the aggregate CET1 ratio of Spanish deposit institutions is 0.2 pp at the end of the two-year exercise horizon.[6] This impact occurs through various channels (see Chart 3).

Falling house prices have a negative impact – known as the "wealth effect" – on the financial position of households

1 The FLESB is a top-down methodological framework, developed internally by the Banco de España, which applies the same scenarios, assumptions and models consistently across all banks analysed. The data sources available are highly granular, reaching down to the level of individual transactions and foreclosed assets in business in Spain. The main features of this framework were described in the November 2013 *Financial Stability Report* (FSR). Since then, the FSR has presented the main improvements and new developments included in the model, which is a dynamic framework in continuous development. The analysis presented here uses the historical information observed in the latest stress test, with data at end-2022.

2 In this case, however, in order to study the impact of the real estate sector shock in isolation, other shocks that could affect the macroeconomic and financial picture, such as changes in interest rates or in the international economic setting, are not considered.

3 The scenario also envisages an impact of -13.3 pp on land prices in terms of the difference in average growth between the baseline and the adverse scenario over the 2024-2025 horizon.

4 The comparison is with 2011-2013, the three worst years of the global crisis in terms of house price declines.

5 These impacts refer to the difference in the average changes (over the 2024-2025 horizon) in the loan stock between the adverse and the baseline scenario.

6 For purposes of comparison of the severity of these results with those obtained in other exercises conducted using the FLESB tool published in previous FSRs, it is important to note that in this case the horizon exercise is shorter (two years rather than three).

and firms, and on the value of their mortgage collateral. This effect weighs on consumption decisions, which are also influenced by the drag on activity and investment, particularly in the sectors directly affected. All of which drives up the probability of default (PD) of bank loans to households and firms.

Chart 4 shows the average increase in the PDs estimated under the adverse scenario compared with the baseline scenario, analysed relative to the average impact assumed on house prices. The largest increases in PD are in the real estate and construction sectors, while the credit quality of household mortgages and all other portfolios deteriorates to a significantly lesser degree.

Although household mortgage loans account for a large share of total lending by Spanish banks to the non-financial private sector (around 45%), the modest increase in their PD means that this transmission channel has a small impact on banks' solvency. Overall, the increase in PDs

Chart 1
House prices

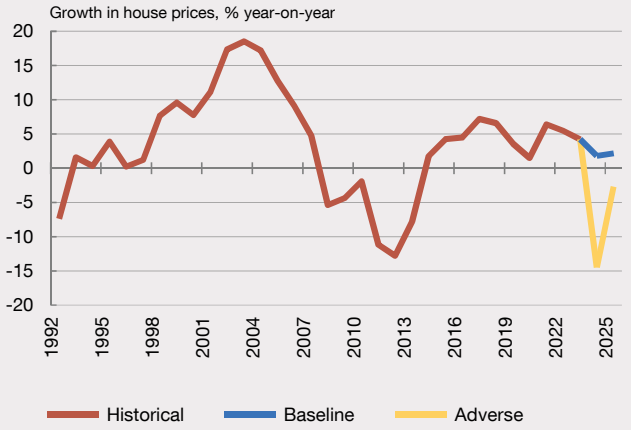
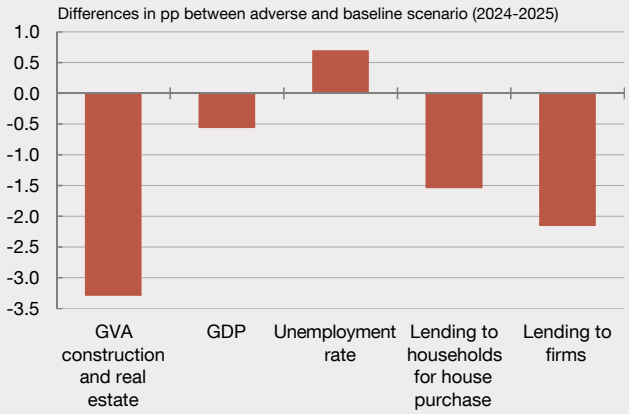


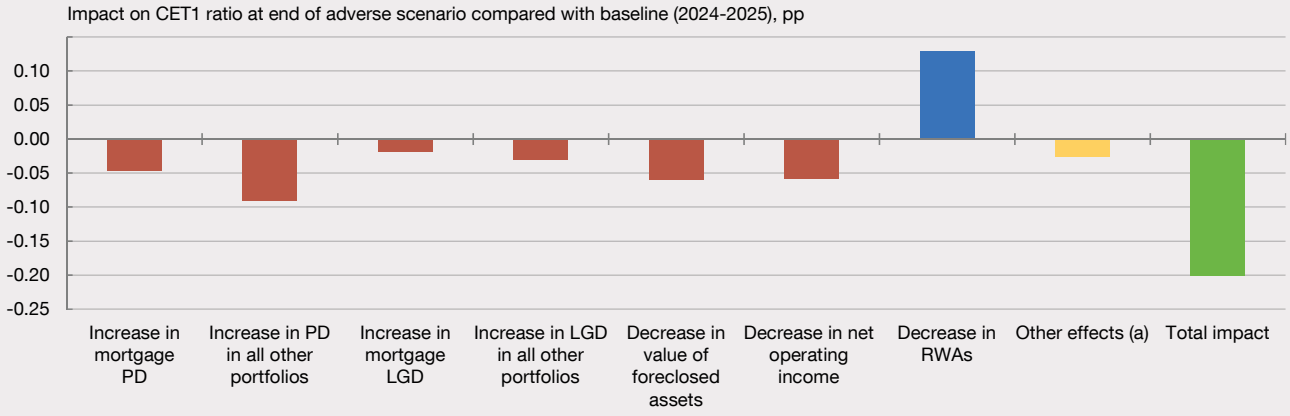
Chart 2
Macroeconomic impact of adverse scenario (a)



SOURCES: INE and Banco de España.

a As in other scenarios used for the FLESB stress tests, the real GVA of the construction and real estate sector and real GDP are used. For the unemployment rate, the differences in average levels in the period 2024-2025 between the baseline and the adverse scenario are shown, and for all other variables the differences in the average rates of change over that period.

Chart 3
CET1 ratio impact channels



SOURCE: Banco de España.

a The negative impact of the other effects is mainly due to the combined impact of the interaction of impairment of the different credit risk parameters.

under the adverse scenario leads to a decline in the CET1 ratio of 0.14 pp (-0.05 pp for the increase in mortgage PDs and -0.09 pp for all other portfolios).

Moreover, under the house price correction scenario, the loss given default (LGD) of loans collateralised by real estate increases. This effect is directly linked to the decline in the value of such collateral since, in the event of default, the value that banks could recover from the real estate would be lower. Its impact on banks' solvency – estimated at -0.02 pp for mortgages and -0.03 pp for all other portfolios – is also limited. The Spanish banking system's resilience to this impact is mainly explained by the fact that loan-to-value (LTV) ratios are relatively low in outstanding mortgage amounts (the median was approximately 40% at December 2023). Naturally, the impact tends to be greater for newer mortgages, as they typically have higher LTV ratios.

Similarly, the foreclosed assets on banks' balance sheets give rise to losses due to value adjustments. However, these assets account for only 1.2% of the exposures on which the stress-testing exercises focus,[7] and under the adverse scenario the estimated impact of the value adjustment on the CET1 ratio is just -0.06 pp.

Lastly, banks' profits also decrease owing to weaker net operating income generation resulting from the decline in performing loans, particularly in the construction and real estate sectors. This decline is due to a decrease in the amount of credit extended and an increase in defaults, which naturally also affects interest income. This channel leads to a decrease of 0.06 pp, adding to the above-mentioned negative effects.

The effects that contribute positively to the solvency ratio notably include the decline in risk-weighted assets (resulting in an effect of +0.13 pp in the CET1 ratio at the end of the exercise compared with the baseline scenario), owing to the reduced volume of lending under the adverse scenario.

These impact channels appear to affect banks unevenly, as Chart 5 shows. Banks with a negative impact on their CET1 ratio of less than 0.2 pp account for close to 60% of the system's total consolidated assets, but there are banks where the impact is greater. This is the case for banks with impacts of between 0.4 pp and 0.6 pp, which account for 20% of total assets, and for those at the tail of the impact distribution (0.6 pp to 0.8 pp and 0.8 pp to 1.6 pp), which account for around 4.5% and 1.7% of total system assets, respectively.

Chart 4
Effect of the adverse scenario on the probability of default (a)

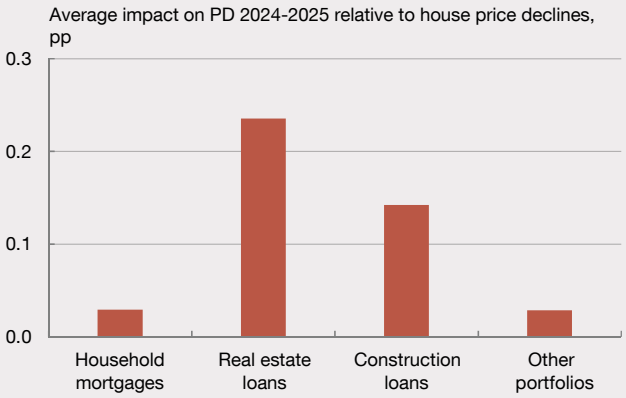


Chart 5
Share of banks' assets with negative impact on capital, according to the fall in CET1 under the adverse scenario compared with the baseline scenario (b)

SOURCE: Banco de España.

a Average increase in PD in 2024-2025 by portfolio, analysed relative to the average impact on house prices. The estimate includes the PDs of loan portfolios of SIs and LSIs. The PDs are estimated for each bank and portfolio, but the impact shown is that of the aggregate average of each portfolio weighted by the number of borrowers.
b The horizontal axis shows the percentage point fall in the CET1 ratio under the adverse scenario compared with the baseline scenario at the end of the stress test exercise, in different impact ranges (from low to high).

7 These exposures consider total credit extended to the private sector and foreclosed assets held in Spain together with the debt securities portfolio in banks' total assets.

In any event, this sensitivity exercise suggests that a significant adjustment in house prices and in investment in housing, isolated from other macro-financial shocks, would not have a critical impact on the aggregate solvency of Spanish banks. The notable cross-bank heterogeneity of the effects also underscores the importance of individual monitoring of real estate risk exposures to complement this aggregate analysis.