2

MICROPRUDENTIAL SUPERVISION

SUPERVISION OF CREDIT INSTITUTIONS

Exercised within the SSM: (i) 10 Spanish SI groups supervised by the ECB, with key participation of the Banco de España; and (ii) 56 Spanish LSI groups supervised directly by the Banco de España, with indirect supervision by the ECB

2023 FOCAL POINTS

i) Strengthening resilience to macro-financial and geopolitical shocks; ii) addressing structural vulnerabilities: digitalisation and technology risks, governance, and iii) incorporating climate risks into risk strategy and management

2024 SUPERVISORY PRIORITIES

i) Increasing resilience to macro-financial and geopolitical shocks; ii) improving governance and climate risk management; and iii) making progress in digital transformation and operational resilience

MEANS OF SUPERVISION

Two means of supervision: (i) ongoing off-site, which keeps the institutions' risk profile up-to-date, with the SREP being the core element ; and (ii) on-site, which encompass inspections and model investigations

STRESS TESTS ON CREDIT INSTITUTIONS

They assess credit institutions' strength in the face of financial and economic shocks

ANTI-MONEY LAUNDERING

The Banco de España supervises certain AML/CFT obligations (due diligence, internal control and reporting) and cooperates closely with the CPMLMO

2.1 The Spanish banking sector

At 30 September 2023, the consolidated assets of the Spanish banking sector institutions totalled €4,161 billion, of which 90.4% corresponds to Spanish significant institutions (SIs), 5.2% to Spanish less significant institutions (LSIs) and the Official Credit Institute (ICO), and the remaining 4.4% to subsidiaries and branches in Spain of foreign credit institutions.

In 2023 (Chart 2.1), there was a reduction in the total consolidated credit balance of Spanish institutions. This was due to: i) the decline since the peak in 2022 in cash balances at central banks and demand deposits at other credit institutions, and ii) the significant contraction in lending in Spain across all segments. In the latter case, there was a decrease in loan origination due to the fall in demand for credit, and a tightening of the conditions applied to new loans, accompanied by a significant volume of early repayments. The decline in Spain was only partially offset by activity abroad.

For now, there is no significant deterioration in credit quality indicators, despite the uncertain economic environment. The NPL ratio remains at the same levels as at the end of 2022 (Chart 2.2). However, slight upturns in NPLs were observed in the consumer and mortgage segments, mainly in the latter part of the year.

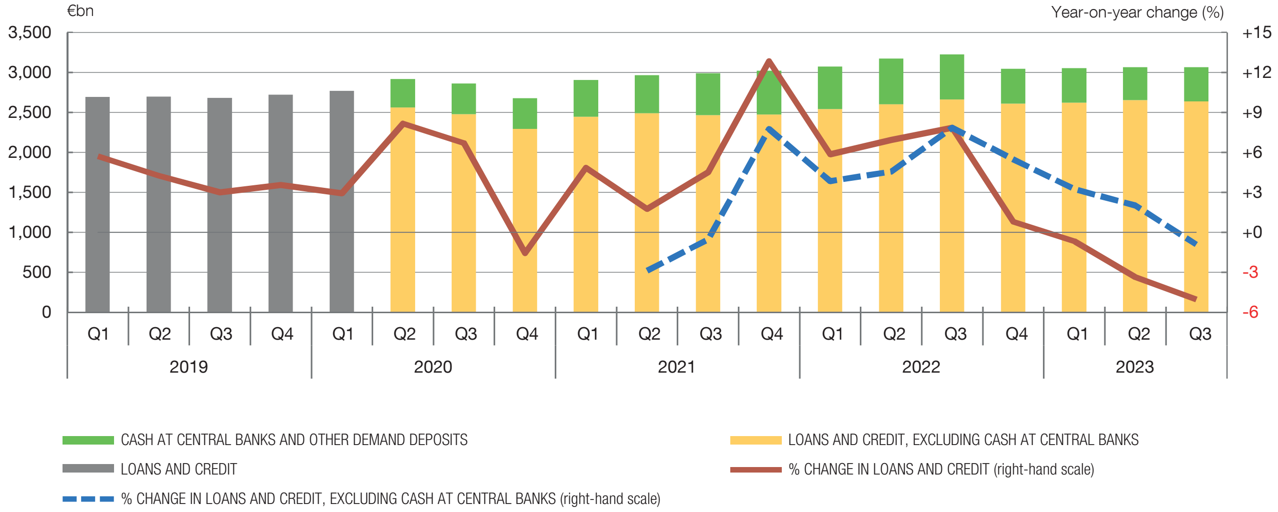
As for liquidity, after the decline observed in 2022 in the short-term ratios (LCRs), in 2023 the ratios have remained stable at comfortable levels. This positive performance was due mainly to an improvement in the commercial margin, helped by lower demand for credit, and occurred despite both early and ordinary TLTRO III (Targeted Longer-Term Refinancing Operations III) repayments (Chart 2.3).

In 2022 TLTRO III was repaid for an amount representing 55% of the total requested. In 2023 repayments continued, mainly in the first half of the year, up to an additional 34%. This was achieved by reducing balances deposited in the ECB deposit facility, by increasing debt issuance and liabilities vis-à-vis the financial system, and by mobilising the debt portfolio through repos. The outstanding balance of TLTRO III in the third quarter of 2023 was 11% of the initially requested amount, and the bulk of the remaining repayment will occur in March 2024.

Moreover, Spanish institutions maintain growing levels of profitability (12.3% ROE at September 2023), above pre-pandemic levels for the third consecutive year (Chart 2.4), despite the temporary bank levy, which in 2023 amounted to €1,236 million. Profit from ordinary business increased in 2023, due to the greater contribution of net interest income.

Chart 2.1
LOANS AND CREDIT. DEVELOPMENTS IN CONSOLIDATED BALANCES (a)

Credit stagnation. In 2023, the credit balance in households and companies in Spain contracted. There was a decline in demand in a context of investor uncertainty, a tightening of the financial conditions applied to new transactions (basically interest rates) and the use of borrowers' non-interest bearing deposits to make early repayments.

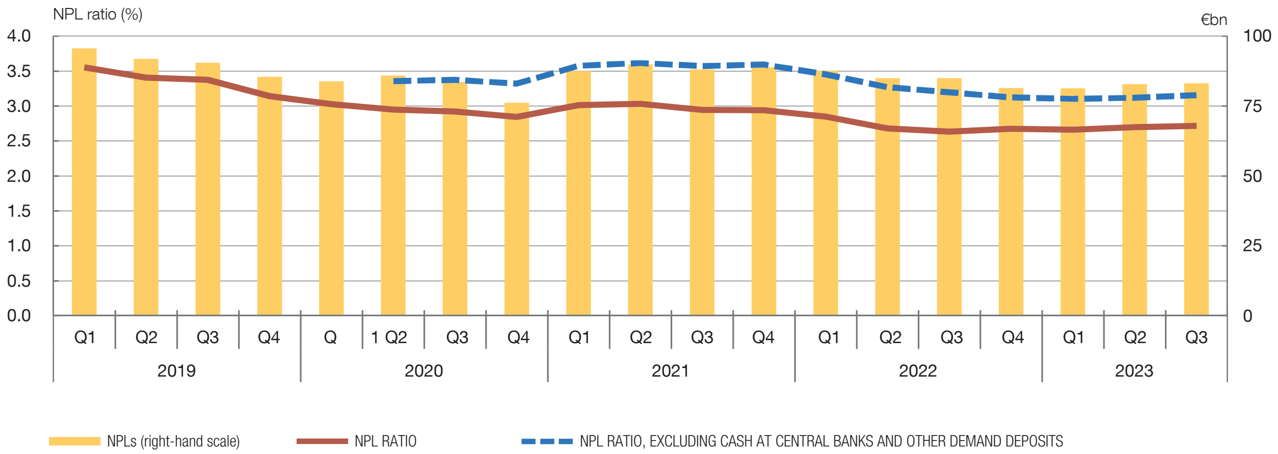


SOURCE: Banco de España (supervisory statistics on credit institutions).

a Loans and credit include cash balances at central banks and other demand deposits, broken down since Q2 2020.

Chart 2.2
NPLs AND NPL RATIO (a)

Stability in NPL balances and ratios. Throughout 2022 there was a slight contraction, accentuated by the sale of damaged portfolios and an effort to write down impaired portfolios. In the last months of 2023, on the other hand, minor deteriorations can be discerned in certain segments (consumer and mortgages).

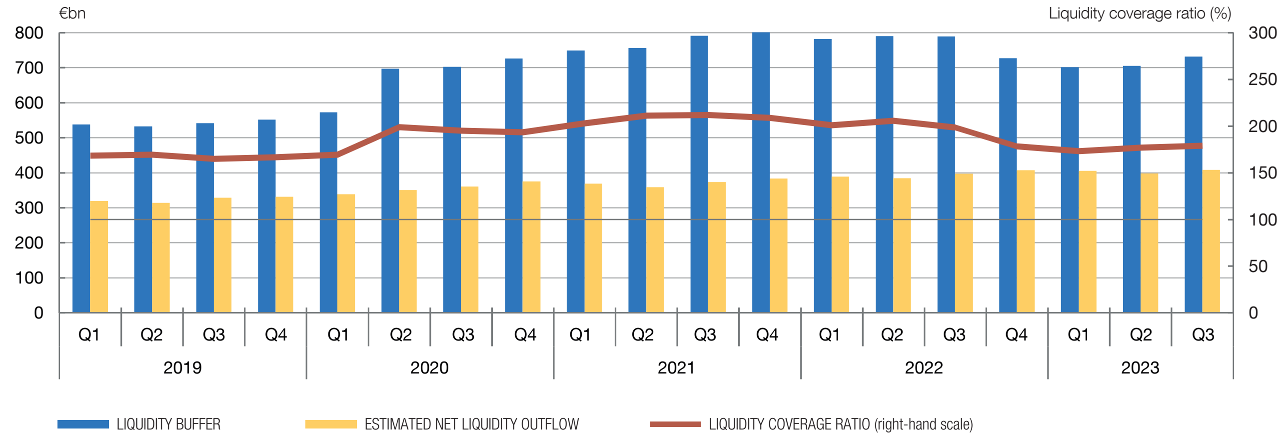


SOURCE: Banco de España (supervisory statistics on credit institutions).

a NPL ratio calculated including cash balances at central banks and other demand deposits and, since Q2 2020, also excluding these balances.

Chart 2.3
LIQUIDITY COVERAGE RATIO

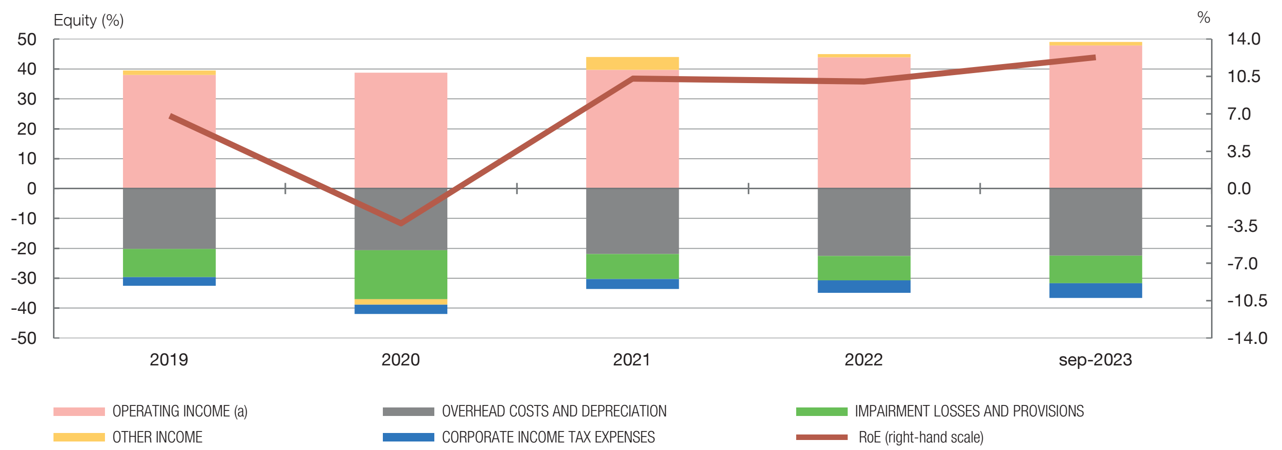
The liquidity coverage ratio exceeded pre-pandemic levels in 2023, with a slight upward trend, albeit lower than the ratios observed in 2020 and 2021.



SOURCE: Banco de España (supervisory statistics on credit institutions).

Chart 2.4
RoE BY COMPONENTS. ANNUAL CHANGE

Following the consolidation of the recovery in return on equity (RoE) to the levels prior to the pandemic in 2021-2022, the continued interest rate rises since mid-2022 have greatly bolstered Spanish institutions' net interest income, significantly increasing their RoE.



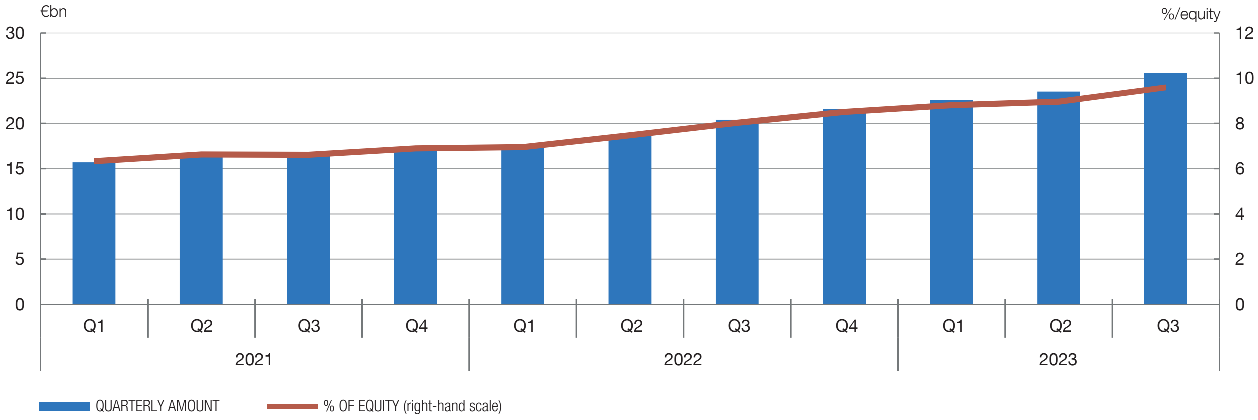
SOURCE: Banco de España (supervisory statistics on credit institutions).

a Operating income is the sum of net interest income, net fee and commission income, net income from financial operations, net foreign exchange differences and other net operating income.

In this respect, recent interest rate developments have led to strong growth in net interest income (Chart 2.5), due to: (i) the combination of the rapid rise in rates with high, albeit declining, volumes of floating-rate lending; and (ii) the slower repricing of deposits, especially from individuals, in a context of high liquidity in the system and lower demand for credit.

Chart 2.5
NET INTEREST INCOME

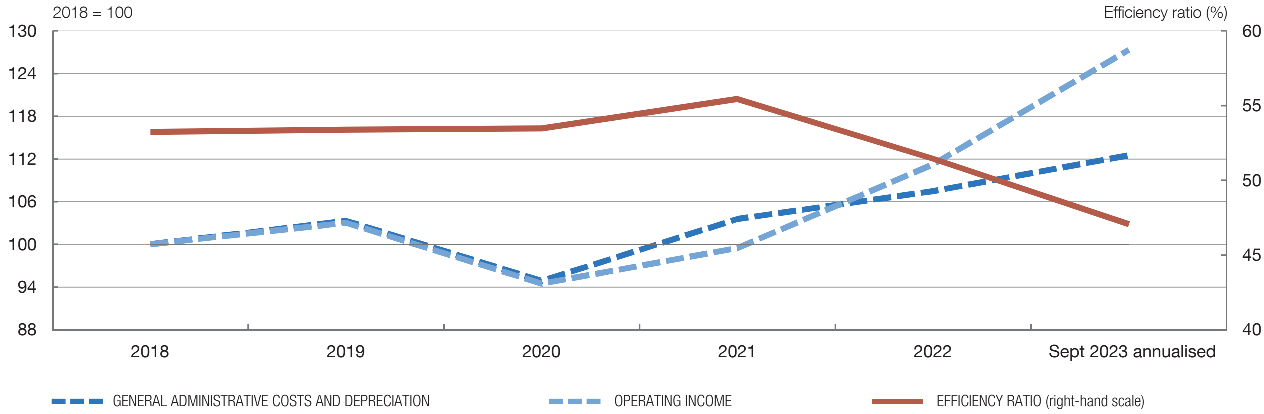
Since the start of the ECB interest rate rise in June 2022, the growth in net interest income has accelerated due to the faster rate of interest rate appreciation of assets than liabilities.



SOURCE: Banco de España (supervisory statistics on credit institutions).

Chart 2.6
EFFICIENCY RATIO

Significant improvement in the efficiency ratio due to the higher increase in operating income relative to overhead costs.



SOURCE: Banco de España (supervisory statistics on credit institutions).

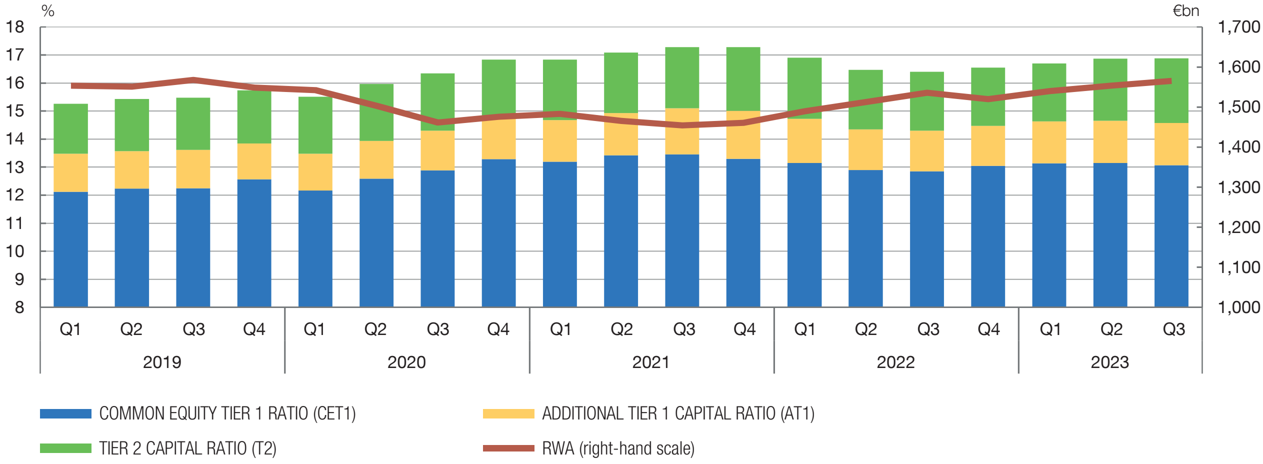
The efficiency ratio, in turn, performed favourably due to the improvement in operating profit that exceeded the increase in overhead costs, which are growing mainly as a result of higher inflation (Chart 2.6). At the same time, loan impairments have remained moderate despite the context of high macroeconomic uncertainty.

As regards solvency, Spanish institutions maintain record high levels (16.9% total capital ratio at September 2023) with a slight improvement in 2023 owing to the contribution of profit and the moderate increase in risk-weighted assets (RWA) (Chart 2.7). This growth in RWA was due to the dynamism of foreign activity, as domestic activity declined.

Chart 2.7

CAPITAL RATIOS (a)

Stability of capital ratios at record high. Slight improvement in 2023 since the generation of retained earnings exceeded the moderate increase in risk-weighted assets.



SOURCE: Banco de España (supervisory statistics on credit institutions).

a The ratios are presented in order from higher to lower quality: CET1, T1 (sum of CET1 + AT1) and total capital (CET1 + AT1 + T2), measured with respect to risk-weighted assets (RWA).

If we distinguish between SIs and LSIs, while SIs had total aggregate capital levels of 16.6% at September 2023 and an optimised inter-tier composition (12.6% CET1, 1.6% AT1 and 2.4% T2), aggregate capital levels at LSIs were much higher (20.4% at September 2023) and consisted almost exclusively of CET1, the highest quality capital.

In relation to operational risk, the number and diversity of events continue to increase, although total losses remain within the levels recorded in recent years. The proliferation of events arose mainly in the conduct and customer, technology and fraud risk categories, in an environment of greater potential risk due to digitalisation and outsourcing processes, remote working and other salient factors, such as the new conduct regulations and rulings.

In short, the impact of the pandemic has been overcome, with higher levels of profitability and solvency, but signs of a slowdown in economic activity are beginning to emerge, calling for caution. Institutions are attaining high profitability levels as a result of: i) the improvement in the net interest income related to a faster transmission of monetary policy to assets than to liabilities; ii) the moderate increase in wage and overhead costs in response to the inflationary process; and, in particular, iii) the continued stable loan impairments.

In view of the situation of macro-financial uncertainty, it would be desirable for institutions to take advantage of this current favourable situation and apply prudent policies in their capital planning and returns and in their credit risk coverage. High growth in net interest income is unlikely to be sustained in the medium term, especially considering the reduction in credit in the domestic market, and there is a possibility of increased impairment of loan portfolios.

2.2 Restructuring of technology risk supervision

One of the initiatives of the Banco de España's Strategic Plan is to become a benchmark in the supervision of technology risk, an objective that is fully aligned with the growing importance that the supervision of this risk has acquired both for the Single Supervisory Mechanism (SSM), and for the other international regulatory and supervisory bodies, such as the European Banking Authority (EBA), the European Systemic Risk Board (ESRB), the Basel Committee on Banking Supervision (BCBS) and the Financial Stability Board (FSB), etc.

In the framework of the SSM, technology risk has emerged in recent years as one of the main supervisory priorities. The relevance of this risk has been increased by the institutions' rapid digitisation, more pronounced following the pandemic, and by the rise in cyber incidents, which is especially relevant in the current geopolitical environment. Also, the increasing use of outsourcing of critical technology services to external providers poses an added challenge for supervisors.

In this context, at the European level, the supervisory panorama for technology risk is changing significantly and poses major challenges, including most notably:

— Authorities' difficulties in recruiting and retaining experts capable of supervising institutions' technology risk. The general shortage of expertise in the market is compounded by the difficulty in competing on working conditions with the private sector.

— The new supervisory powers stemming from the EU's digital finance strategy, including the Digital Operational Resilience Act (DORA), the new Directive on Security of Network and Information Systems (NIS2), the Markets in Crypto-Assets Regulation (MiCA) and the Artificial Intelligence Regulation.

To cover the functions derived from this new scenario, which are added to those traditionally carried out by the IT auditors of the Directorate General Banking Supervision (DG.SUP), it is necessary to standardise working procedures to achieve an adequate harmonised level of knowledge of our institutions' technological situation, strengthen our presence in national and international working groups and promote the exchange of knowledge in innovation, new technologies and operational resilience among the entire group of experts.

With these objectives in mind, a new approach to the organisation of IT auditors has been implemented since the end of 2022, the most noteworthy change being the creation of the SSM Coordination and Supervisory Strategy Department, with a sub-directorate whose main objective is to improve the coordination of technology risk supervision. Two technology risk groups report to this sub-directorate: the first group is in charge of on-site inspections for both SIs —within the framework of the SSM— and LSIs; the second is a horizontal group which, among other tasks, deals with the TIBER-ES advanced cybersecurity testing framework, assessing regulatory Sandbox projects, ensuring adequate participation in the main national and international working groups and providing support to the other departments of DG.SUP. The sub-directorate is responsible for ensuring unity of action between the two groups through the application of uniform technical criteria, encouraging the exchange of experience, knowledge and new developments from the fora in which this risk is discussed.

Governance has also been designed (including the creation of several committees or a technology risk coordinator) with the aim of facilitating the exchange of information between this sub-directorate and the IT auditors in the teams responsible for supervising institutions. It should be noted that the presence of at least one IT auditor in each of the Joint Supervisory Teams (JSTs) of Spanish institutions is unique in the SSM.

2.3 Supervisory priorities

The SSM establishes a set of supervisory priorities for SIs with a medium-term horizon of three years, reviewable annually, following a process that revolves around the identification of risk sources and vulnerabilities specific to the banking sector. Thus, risk-based supervision is strengthened and supervisory effectiveness and efficiency are enhanced. The priorities take into account the findings of the Supervisory Review and Evaluation Process (SREP) and progress made on previous years' priorities. This materialises in a multi-year plan of supervisory activities, with specific annual plans.

The Banco de España uses a similar process to set the supervisory priorities for LSIs on an annual basis.

2.3.1 Supervisory priorities in 2024

The supervised institutions have suffered several macro-financial and geopolitical shocks over the last few years and have shown resilience. Nevertheless, the challenges ahead are not minor ones, and include a potential deterioration of credit quality, potential rises in banks' funding costs and increases in the risk premium that could lead to higher market volatility.

On the other hand, pre-existing challenges related to more structural aspects remain relevant, including the development and implementation of digital transformation strategies, mechanisms for tackling technology risk or challenges stemming from climate change.

The new supervisory priorities are a continuation of the priorities set last year, albeit with some adjustments. The SSM priorities for the SIs are set out in Figure 2.1, and more details can be found at this link.

Figure 2.1
SI SUPERVISORY PRIORITIES FOR 2024-2026

1 MACRO-FINANCIAL AND GEOPOLITICAL SHOCKS

Credit and counterparty risk	Although both companies and households have shown resilience in the current economic environment and NPL ratios are at historically low levels, there are signs that point to a deterioration — Institutions should continue to strengthen credit risk management through the early identification and mitigation of any build-up of risks, with a particular focus on sectors that may be most adversely affected in the current economic environment
Funding and interest rate risk	The interest rate environment has changed significantly over the past two years. Rising interest rates may lead to higher funding costs, impacting asset and liability management and liquidity — Banks should develop credible funding plans, diversifying their funding structures, and have effective contingency plans to withstand short-term liquidity shocks — Banks should ensure the management of their interest rate risk positions reflects prudent assumptions about customers' behaviour and develop mitigation strategies adapted to their risk profile

2 GOVERNANCE AND CLIMATE RISK

Governance	The crisis in some banks in the US and Switzerland has highlighted the importance of governance and risk control and of effective supervision — Institutions should continue to make progress in improving the functioning and capabilities of governing bodies, in view of the need to boost the development of areas such as the composition of boards (e.g. ensuring a sufficient number of independent directors and knowledge in areas such as technology), their functioning (e.g. increasing time allocated to discussions or improving nomination processes), collective suitability and their supervisory capacity — Banks should have appropriate risk data aggregation and risk reporting frameworks
Climate and environmental risk management	In a context of rising global greenhouse gas emissions, the delay in the implementation of measures to protect the climate is expected to further increase physical and transition risks and, possibly, losses for institutions — Banks should incorporate climate and environmental risks into their business strategy and their governance and risk management framework, in order to mitigate them and inform the public, aligning their practices with regulatory requirements and supervisory expectations

3 DIGITAL TRANSITION AND TECHNOLOGY RISK

Digital transition	While cost containment may be a challenge in the current inflationary environment, institutions should manage this situation without undermining investments in digital transformation, which are expected to strengthen institutions' competitive position — Banks should develop and execute sound digital transformation plans to strengthen the sustainability of their business model and mitigate the risks of using innovative technologies
Technology risk	Cyber risk and data security are still the main operational risk factors for credit institutions. There was an increase in the number of cyber incidents reported to the ECB by SSM institutions in the first half of 2023. Also, the increased complexity of value chains forces institutions to improve their understanding and control of their third-party relationships. The ECB has established an outsourcing register that has identified vulnerabilities, including a high dependence on certain non-European suppliers — Banks should have robust mechanisms in place to address outsourcing risk and make further progress in building robust operational resilience frameworks

SOURCE: Banco de España.

Certain specific tasks that will be carried out to meet the objectives set out in the action priorities established by the SSM for the SIs are described below:

1 **Increase resilience to macro-financial and geopolitical shocks**

In order to strengthen credit and counterparty risk management, supervisory activity will maintain the status quo and will continue to monitor the persistent shortcomings among those identified in 2020 as part of the supervisory response to the pandemic situation, i.e. shortcomings relating to restructured transactions, subjective NPLs and provisioning policies. Also, reviews will be performed on International Financial Reporting Standard 9 (IFRS 9) and on internal models of the most sensitive portfolios at the current time. As for counterparty risk, the JSTs will monitor exposures and risk management in order to assess progress on the shortcomings identified in 2022.

Secondly, in relation to funding and interest rate risk, specific asset and liability management reviews will be performed, and the short-term resilience to liquidity shocks, the credibility and strength of liquidity contingency plans and funding plans will be assessed.

2 **Accelerate the effective remediation of shortcomings in governance and climate and environmental risk management**

In relation to improving the functioning of management bodies, shortcomings will continue to be addressed through specific reviews and on-site inspections, and supervisory expectations on governance and risk management will be updated. Moreover, with regard to risk data aggregation and reporting, guidance on this matter is expected to be published in 2024 and specific reviews and on-site inspections will be carried out.

In relation to climate and environmental risk, reviews will continue to be performed of compliance with supervisory expectations, the publication of information and the reputational and litigation risks stemming from disclosure of transition targets and/or net-zero commitments. Also, progress will be made on preparatory work for the development of a framework for the review of banks' transition plans and their ability to deliver on the environmental, social and governance mandates of the Capital Requirements Directive (CRD-VI), and certain on-site inspections will be carried out. In the longer term, available tools will continue to be used to ensure that institutions meet supervisory expectations, including, if necessary, periodic coercive payments or additional capital requirements.

3 **Further progress with digital transformation and building robust operational resilience frameworks**

The ECB will publish its supervisory expectations on digital transformation, with a focus on strengthening the assessment methodology. Also, in order to further progress with digital transformation, specific reviews will be combined with on-site inspections.

As regards technology risk, in order to progress towards building robust operational resilience frameworks, the ECB will continue to perform outsourcing reviews and assess cyber resilience. Similarly, a cyber resilience stress test will be conducted in 2024 in the system as a whole.

Bearing in mind the SSM risks and priorities, the Banco de España also identified the risks particularly affecting Spanish LSIs. On this basis, the following priorities were established:

— **Credit risk.** Attention will be paid to the identification of shortcomings in granting, monitoring, accounting classification and loan-loss provisioning policy, to possible concentration of risk in vulnerable sectors and to possible increases in NPLs due to the rise in interest rates.

— **Liquidity risk management policies and procedures.** Although Spanish LSIs have high liquidity levels, as a result of events in 2023 in some US banks, the SSM has included liquidity among its priorities for 2024 and has planned activities for all national competent authorities (NCAs), and, therefore, liquidity management procedures and tools will be reviewed.

— **Interest rate risk in the banking book (IRRBB) management policies and procedures.** Attention will be paid to the impact on medium-term profitability in institutions with large held-to-maturity investment portfolios.

— **Internal governance.** Monitoring will continue on the remediation of the shortcomings identified in the horizontal action carried out in 2021 and the shortcomings related to the functioning of the three lines of defence.

— **Climate risk identification, measurement and management.** Assessments will be performed of the following: i) the ability to mitigate climate risks; ii) the information available on climate risks; iii) compliance with regulatory requirements; and iv) plans for transition to a sustainable economy.

— **Business model and sustainability.** The analysis will be focused on: i) medium-term sustainability in a context of lower business generation; ii) the institution's preparedness to adapt to technological change (digitalisation of business); and iii) the recommendations and requirements made under the framework of the 2022 horizontal review.

— **Operational risk and, in particular, technology risk.** The analysis will be focused on: i) the assessment of operational resilience frameworks; ii) the monitoring of the recommendations and requirements made in the 2023 horizontal review on technology risk and its control framework; and iii) the monitoring of the recommendations and requirements stemming from the horizontal review of the management of the outsourcing of critical functions.

The various supervisory tools are used to implement the supervision plan: the SREP; in-depth reviews, such as specific in-depth or horizontal reviews, as well as on-site inspections. Also, the tools linked to compliance with requirements are gradually improving; these tools include the use of ever more intrusive measures, which will be particularly significant in ensuring institutions' remediation of the shortcomings identified.

2.3.2 Supervisory focal points in 2023

The SSM's identification of risks in relation to significant institutions for 2023 was based on an economic environment in which the pandemic crisis had given way to a framework characterised by geopolitical tensions, high levels of inflation and the rise in interest rates, together with increasing public indebtedness, highly volatile asset valuations and a potential deterioration in credit quality in the face of the withdrawal of institutional support measures. In this context, there was some concern about the possible deterioration of asset quality and/or an increase in the cost of bank funding. Also, a number of structural challenges continued to be identified, including digital transformation and the risks stemming from climate change.

Against this backdrop, three major objectives were set: increase resilience to macro-financial and geopolitical shocks; continue to address institutions' structural vulnerabilities —regarding governance, technology risk and digital transformation—; and continue to adapt the business strategy and risk management framework to climate risk. These objectives were broken down into 6 supervisory focus areas and guided activity for the SSM as a whole in 2023, with logical adaptations in view of the evolving environment, including the crisis of certain banks in the United States and Switzerland in early 2023 and geopolitical risks.

As for credit risk, the SSM was focused on addressing shortcomings in credit risk management frameworks, and it concluded that banks have made progress, but that more work needs to be done in areas such as the anticipation of emerging risks (including climate risk), the adequacy of recognised provisions and the management of debtors facing difficulties.

With regard to funding risk, which was incorporated as a supervisory priority last year, institutions have shown strong resilience in a context of restrictive monetary policy, although liquidity buffers have been reduced. A review of TLTRO III exit strategies was conducted over the course of 2023 and, as a result, some SSM banks were required to further increase the diversity of their funding sources. However, the degree of concentration of European SIs' funding sources was not comparable to that of the US banks that went into crisis at the beginning of 2023, thanks to the greater weight of retail deposits covered by guarantee funds.

Supervisory activity on governance was focused on monitoring the shortcomings identified. Improvements were seen in diversity policies, which now include education, experience, geographical origin and age criteria, as well as gender. However, following the specific review of institutions' governing bodies carried out in 2023, shortcomings were identified in the composition of boards, in their functioning and in their supervisory capacity. As regards risk data aggregation and risk reporting, a questionnaire was submitted to institutions on data governance and data quality, and the planned supervisory activities continued.

In 2022-2023 the SSM conducted a horizontal assessment and a benchmarking analysis of digital transformation and the use of FinTech. The outcome of this analysis was shared in early 2023 and helped classify risks in the categories of strategic and execution risks, cyber risk, outsourcing risk, and money laundering and fraud risks. Subsequently, a targeted review was launched on these issues to assess the institutions' digitisation strategies.

Supervision of technology risk consisted of horizontal reviews and on-site inspections throughout the year, with the aim of strengthening the cyber risk and IT security frameworks and outsourcing arrangements. In addition, data from outsourcing arrangements were collected to identify connections between significant institutions and technology service providers, and the potential concentration of certain technology service providers.

Lastly, with regard to climate risk, specific requirements were established for banks to align their practices with supervisory expectations based on the shortcomings identified in the stress tests and horizontal review conducted by the ECB in 2022. Specifically, as early as March 2023, institutions were required to adequately categorise climate and environmental risks and conduct a full assessment of the impact they could have on their activities. Certain institutions showed severe weaknesses that will be subject to supervisory monitoring.

Following a similar process, the Banco de España identified the key risks affecting Spanish LSIs and focused its work in 2023 on the following elements:

i) **Credit risk management,** paying particular attention to: i) the identification of shortcomings in granting, monitoring, accounting classification and loan-loss provisioning policy, and ii) the possible concentration of risk in vulnerable sectors. The conclusion is that there is room for improvement in the monitoring of risks and in the classification and sufficiency of loan-loss provisions recorded for troubled assets.

ii) **The business model and medium-term sustainability.** An analysis was made of institutions' preparedness to adapt to technological change (digitisation of the business) and institutions' response to the recommendations and requirements made in 2022 as a result of the cross-institutional business model review. In general, although progress has been made, there are still areas where more work needs to be done.

iii) **Operational risk and, in particular, technology risk.** All LSIs were reviewed; institutions' responses to the questionnaire sent in 2022 were assessed; and it was concluded that there is room for improvement in technology risk management. In addition, in relation to the outsourcing of critical functions and in order to close the horizontal action commenced in 2022, compliance with the provisions of Circular 2/2016 and the Guidelines on outsourcing arrangements EBA/GL/2019/02 was reviewed, and the adaptation of outsourcing agreements was found to be largely completed.

iv) **Governance.** Monitoring was performed as to the remediation of the shortcomings identified in previous horizontal actions and compliance with EBA guidelines on internal governance and remuneration policies. It was concluded that the functioning and composition of the management body and the independence and allocation of resources of the second and third lines of defence still have scope for improvement.

v) **Capital planning.** Reviews were performed of compliance with capital projections and assumptions and the frequency with which they are updated, and progress on the stress tests that institutions include in their capital adequacy assessment reports, mainly at institutions with a business model other than retail banking, following on from the recommendations for improvement made in 2022.

vi) **Risks linked to climate change.** Through a questionnaire received in early 2023, assessments were performed of the progress of institutions on incorporating these risks into their business strategy, governance and risk management frameworks, and their capacity to mitigate and report them, comply with regulatory requirements and evolve towards the transition of the economy. Consequently, recommendations in this respect were included in the 2023 capital decision letters.

Section 2.4 contains more detailed information on the supervisory activity carried out in 2023 and on the conclusions drawn.

2.4 Supervision of credit institutions

In the framework of the SSM, institutions are classified as either SIs or LSIs depending on their size or relative importance within each country. The ECB is directly responsible for the supervision of SIs and exercises indirect supervision over LSIs, which in the case of Spanish LSIs are supervised directly by the Banco de España (see Figure 2.2).

Table 2.1 shows the breakdown by category of the institutions operating in Spain. At the end of September 2023 there were 10 Spanish groups of SIs (out of a total of 109 groups in the

Figure 2.2
DISTRIBUTION OF SUPERVISORY POWERS ON CREDIT INSTITUTIONS

	Tasks assigned to the ECB within the SSM	Tasks assigned to the NACs within the SSM
Supervision of SIs	Direct supervision of SIs	Support to the ECB for supervision of SIs: participation in JSTs and in on-site missions
Supervision of LSIs	Indirect supervision of LSIs	Direct supervision of LSIs
Common procedures	Common procedures are the responsibility of the ECB, with proposals from the NACs: the granting and withdrawal of authorisation for credit institutions, and authorisations for the acquisition/sale of qualifying holdings in a credit institution	Preparation of the proposal for SIs and LSIs
Penalties	SIs: sanctioning powers in the event of non-compliance with directly applicable EU law, except for non-financial penalties and penalties for natural persons LSIs: sanctioning powers in the event of non-compliance with an ECB decision or regulation	SIs: sanctioning powers, after instruction from the ECB, for non-compliance with national legislation transposing EU directives; for infringements attributable to its directors and executives; and for the purpose of imposing non-financial penalties LSIs: sanctioning powers for other cases of non-compliance, in some cases after ECB's instruction

SOURCE: Banco de España.

Table 2.1
BANKS OPERATING IN SPAIN
Data at 30 September

	2022			2023		
	Number of groups	No. of banks in these groups	Market share in terms of assets (%)	Number of groups	No. of banks in these groups	Market share in terms of assets (%)
Spanish SIs	10	39	90.5	10	39	90.4
Other SSM SIs in Spain via subsidiary/branch	29	43	3.6	34	46	3.9
Spanish LSIs	56	68	5.5	56	67 (a)	5.2
Branches of other SSM LSIs	38	38	0.3	34	33	0.4
Branches of non-EU banking groups	4	4	0.2	4	4	0.1
TOTAL	**137**	**192**	**100.0**	**138**	**189**	**100.0**

SOURCE: Banco de España.

a 23 banks, 42 cooperatives and 2 savings banks.

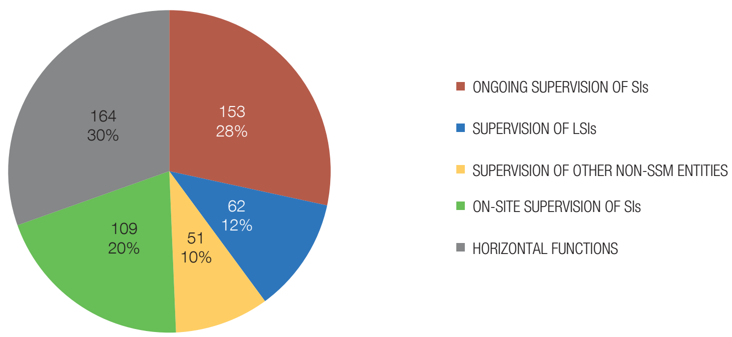
Table 2.2
REGISTER OF CREDIT INSTITUTIONS

Data at 31 December

	2022	2023
Credit institutions	194	189
Banks	48	47
Savings banks	2	2
Credit cooperatives	61	61
ICO	1	1
Branches of EU credit institutions	78	74
Branches of non-EU credit institutions	4	4
Financial holding companies	3	7
Mixed financial holding companies	1	1
TOTAL	**198**	**197**

SOURCE: Banco de España.

Chart 2.8
MICROPRUDENTIAL SUPERVISION STAFF



SOURCE: Banco de España.

SSM), which accounted for 90.4% of the total assets of the Spanish banking sector. Also, there were 56 groups of Spanish LSIs, which accounted for 5.2% of the total assets of the Spanish banking sector.

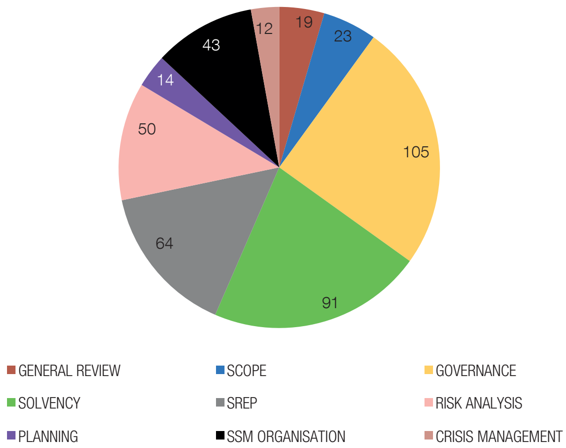
Chart 2.8 describes the allocation of staff to the main microprudential supervisory tasks within the Banco de España.

The Banco de España makes an essential contribution to the supervision of Spanish SIs, both through its presence in the JSTs, which are responsible for ongoing off-site supervision, and through its participation in on-site inspections and in model investigations.

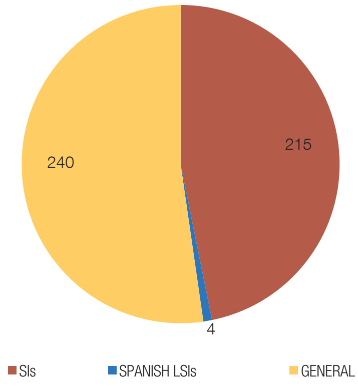
Chart 2.9
DISTRIBUTION OF THE ECB DECISIONS AND ACTIONS IN 2023 NOTIFIED TO THE EXECUTIVE COMMISSION

In 2023 there was a significant reduction in the number of decisions as compared to the previous year. However, there was an increase in the number of decisions related to risk analysis and relations with third parties.

1 BY CATEGORY



2 BY TYPE OF INSTITUTION



SOURCE: Banco de España.

A key element is the SSM working groups and expert networks in which the Banco de España actively participates. These groups analyse and develop technical and supervisory policy proposals with a view to improving the functioning of the SSM.

Also, the Banco de España participates in decision-making regarding all credit institutions under SSM supervision by means of the presence of the Deputy Governor and the Governor on the ECB Supervisory Board and Governing Council, respectively.

In 2023, a total of 2,013 decisions were adopted, of which 459 concerned Spanish institutions, as shown in Chart 2.9.

The supervision of SIs and LSIs is mainly performed through a combination of two complementary channels: i) ongoing off-site supervision, and ii) on-site supervision, for which a range of microprudential tools are available. More information on the supervision model can be found at the following link.

Ongoing off-site supervision aims to keep the risk profile of institutions up to date, and includes a series of periodic and/or ad hoc activities, such as the SREP, in-depth reviews, horizontal reviews, the assessment of compliance with prudential regulations, the suitability assessment of members of management bodies and the acquisition of qualifying holdings.

On-site supervision includes inspections, which can analyse any risk, and internal model investigations for the calculation of capital requirements, which can be for the authorisation of a new model or for the review of changes to pre-existing models. These actions involve more thorough reviews of certain aspects, as a complement to ongoing supervision.

In addition, stress tests are also conducted to assess credit institutions' strength in the face of financial and economic shocks. The results of these stress tests are published and allow vulnerabilities to be identified and addressed at an early stage, and they feed the SREP. Accordingly, they may influence Pillar 2 capital requirements (P2R), and the outcome of the adverse scenario serves as the basis for determining Pillar 2 capital guidance (P2G).

2.4.1 Supervision of significant institutions

The JSTs are responsible for the ongoing off-site supervision of SIs. The Banco de España participates in the JSTs of the 10 groups of Spanish credit institutions classified as significant under the SSM criteria. In addition, it also participates in 5 other JSTs (out of a total of 26) which supervise significant banking groups in SSM countries and which have a presence in Spain (through 4 subsidiaries and 41 branches).

Among the recurrent ongoing supervision tasks, a central role is played by those related to the SREP, which is the annual process whereby an institution's risk profile is determined and its capital requirement (P2R and P2G) is assigned.

As a result of the 2023 supervisory exercise, the P2R levels required in 2024 for Spanish SIs have increased by 8 basis points (bps) in aggregate terms, with an increase at four institutions, a decrease at two others and stability at the remaining four.

In turn, the P2G set in that exercise for Spanish SIs has fallen by 14 bps with respect to that of 2022, in aggregate terms. The purpose of this additional buffer is to ensure that banks withstand a stressed period. To this end, a stress test coordinated by the EBA is conducted every two years (see section 2.3.3).

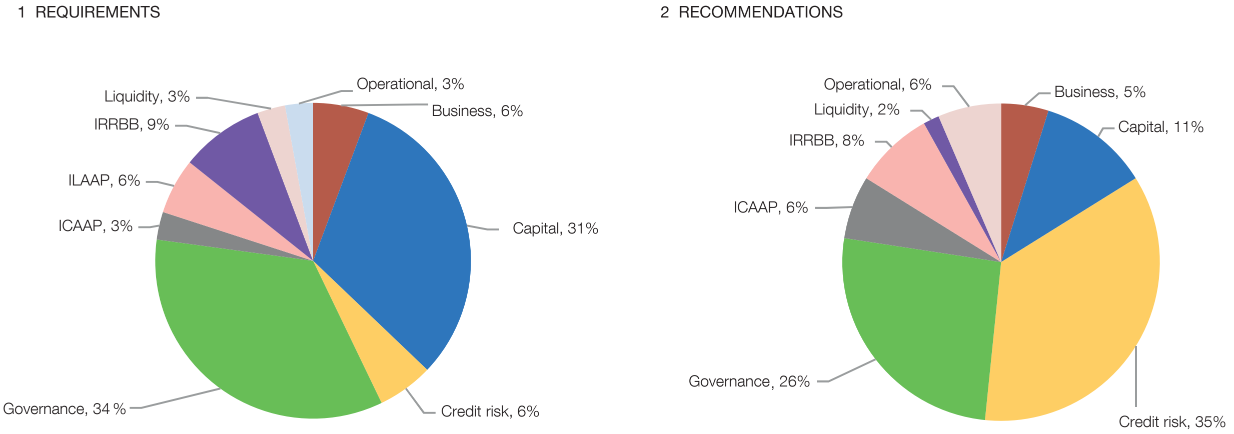
In addition, as a result of the SREP, a letter is sent to the institutions containing (mandatory) requirements and quantitative and qualitative recommendations on matters that should be improved (Chart 2.10).

Noteworthy, in 2023 capital requirements and recommendations (P2R and P2G), credit risk and governance have been highlighted. As regards credit risk, the most widespread requirement once again, refers to coverage shortfalls in non-performing exposures, which must be covered by provisions and, failing that, by a capital add-on (CET1). This year, three institutions were required to allocate a specific capital add-on for this reason.

As regards governance, noteworthy are the requirements relating to the need to strengthen the strategic decision-making process; to foster the proper functioning and composition of the Board of Directors and its committees, improving the processes for determining the individual

Chart 2.10
2023 SREP REQUIREMENTS AND RECOMMENDATIONS ON SIs

As a result of the SREP, a total of 97 quantitative and qualitative requirements and recommendations were made in 2023, of which 35 (36%) are binding requirements. Noteworthy are the quantitative capital requirements (P2R), as well as the requirements and recommendations on matters regarding governance and credit risk.



SOURCE: Banco de España.

and collective suitability of members and the renewal and succession plans for directors; to enhance the documentation submitted to the Board of Directors; and to ensure that the risk management function has an adequate role in the organisation and a degree of independence in line with the level of complexity and with the banking activity carried out by the institutions. Recommendations or requirements were also made in relation to the risk data aggregation and risk reporting capacity, and the effective implementation of the subsidiaries' control systems and the money laundering control model.

In addition to the SREP, the following activities were worthy of note in 2023 in terms of the resources devoted or conclusions reached:

In the area of credit risk, two horizontal reviews were carried out. The first review was to assess risk management practices in residential real estate financing, which concluded that institutions need to make an effort to properly align these risk management practices with EBA guidelines. And the other to analyse and understand how accounting provisioning models capture emerging risks. The general conclusions of the review of the IFRS 9 provisioning models include the following: the need to include emerging risks, such as environmental and geopolitical risks, and to have greater granularity in the quantification of provisions; the preference for the use of in-model adjustments rather than expected loss provisioning; the lack of methodologies for the collective analysis of significant increases in risk; and the desirability of linking such expected loss provisioning to individual risks.

Also, the conclusions of the horizontal review conducted in 2022 on the degree of alignment with the ECB's expectations regarding leveraged finance operations were monitored, which in certain cases gave rise to a letter with recommendations. The main weaknesses relate to the effective implementation of stricter limits on new origination of highly leveraged transactions (as outlined in the ECB guidance), and to improving the management and accounting of syndicated transaction positions.

In-depth reviews of non-performing loans were also performed at six Spanish institutions, highlighting the need, in general, for an improvement in the policies and procedures governing this portfolio.

Lastly, it should be noted that the requirements and the monitoring of the correction of the shortcomings detected in the IRB model review are an important part of the supervisory work carried out by the JSTs.

In relation to business risk, a horizontal analysis was carried out to check institutions' compliance with the new "Implementing Technical Standards reporting and Pillar 3 disclosure" requirements related to climate risk. The conclusion was the need for Spanish institutions to strengthen the climate risk disclosure and reporting framework in order to comply with current regulations.

A targeted review on digitisation was also launched in 2023 and will be completed in 2024, with the aim of identifying credit institutions' digital transformation strategies and use of innovative technologies.

Lastly, in the case of new acquisitions of banks or activities, or the segregation of business, the monitoring of the resulting institution's business model was also a significant focal point in 2023. Thus, analyses were performed of the impact from business acquisitions or spin-offs initiated by Spanish credit institutions on (i) the acquirer's solvency, and (ii) the resulting business model; in addition, the governance and control that the risk management function performs on the financial effects of the operation were also assessed.

In the area of solvency, the JSTs participated actively in the analysis and approval of share buyback programmes by credit institutions, which increasingly use them as part of their ordinary shareholder remuneration policy or as extraordinary remuneration in the event that they consider they need to occasionally distribute excess capital.

In governance, efforts were focused on driving progress in the effectiveness and diversity of management bodies; in particular, identifying potential areas for improvement in the board of directors, the nominations and remuneration committees, and the internal audit area. The proper establishment of succession and suitability plans and policies and the review of the Three Lines of Defence model were also areas of particular attention by the JSTs. Also, the governance of corporate operations mentioned above was an additional focal point.

Regarding market and liquidity risk and IRRBB, the events of the first quarter of 2023 had an impact on the liquidity and interest rate risk management performed by the institutions,

Table 2.3
ON-SITE SUPERVISION OF SIGNIFICANT CREDIT INSTITUTIONS. NUMBER OF ACTIONS

	2023		
	On-site Inspections	Model Investigations	Total
At Spanish credit institutions	19	11	30
Led by the Banco de España	13	7	20
Led by the ECB	3	2	5
Led by other NCAs	3 (a)	2 (b)	5
At credit institutions of other SSM countries	3 (c)	1	4
TOTAL	**22**	**12**	**34**

SOURCE: Banco de España.

a De Nederlandsche Bank, Banco de Portugal and the Commission de Surveillance du Secteur Financier de Luxembourg.
b Banca d'Italia and Banco de Portugal.
c The Banco de España led an inspection in France and participated in the inspections teams at Belgium and Finnish institutions.

and on the supervisory activity carried out by the JSTs. In particular, the crisis of certain banks in the United States and the behaviour of the AT1 instrument market following the crisis of Credit Suisse triggered the monitoring of new metrics, the definition of which was also influenced by the impact of the rise in interest rates on government bond portfolios. The impact of these events on Spanish SIs has been very small, due to their comfortable liquidity situation and the decline in credit, and no market access problems were observed.

Overall, with data up to 15 September 2023, 639 activities were planned by the JSTs for Spanish SIs.

As regards on-site supervision, in 2023 the missions followed a hybrid working model combining visits by inspectors to institutions' head offices with off-site work.

Over the course of 2023, the 19 inspections planned for the year on Spanish significant institutions (Table 2.3) were conducted, in line with the inspections carried out in 2022. In addition, the Banco de España participated in 3 inspections to institutions in other SSM countries.

By risk type, the breakdown of inspections is in line with the supervisory priorities defined for 2023. The supervisory focus continues to be on credit risk (6 inspections), business models (3) and technology risk (2). Moreover, 2 interest rate risk inspections were carried out in 2023 due to concerns about the impact of the rise in interest rates and the crisis in US banks on institutions' risk profile. Also, it is worth noting that 2023 saw the first climate risk inspection at a Spanish institution.

The inspections continued to be conducted with the "campaigns" approach, which accounted for a high percentage of the total number of missions, which favours

uniformity in the review standards and methodology among SSM institutions and countries. In 2023, the relevant campaigns for Spanish institutions were the review of the corporate loan portfolio, business model and interest rate risk.

In 2023, 15 on-site inspection reports were submitted to Spanish SIs, with a total of 156 findings. Credit risk inspections, and interest rate and market risk inspections account for the largest number of findings. The most severe weaknesses identified in relation to credit risk relate to the parameters used by the internal accounting provisioning models, the quality of the databases reviewed and the classification of transactions. In the interest rate and market risk inspections, significant weaknesses were observed in the layers of control over these risks, in the methodology of their assessment models and in the quality of the information received by the management bodies.

As regards internal ratings-based (IRB) model investigations, 11 missions on Spanish significant institutions were undertaken in 2023 (Table 2.3). In addition, the Banco de España led an investigation at 1 institution in Ireland.

By type of risk, in line with previous years, all investigations focused on credit risk models. In terms of content, most of the missions were aimed at reviewing material changes to models emerging from adaptations to the new EBA guidelines (mainly probability of default (PD) and loss given default (LGD) guidelines and the new definition of default) and from the resolution of outstanding obligations from previous missions.

In 2023, 11 Internal Model Investigation (IMI) reports were sent to the Spanish significant institutions, with a total of 253 findings. The most serious weaknesses were concentrated on quantification (both PD and LGD) and on validation and governance processes.

2.4.2 Supervision of less significant institutions, non-EU branches and the Official Credit Institute

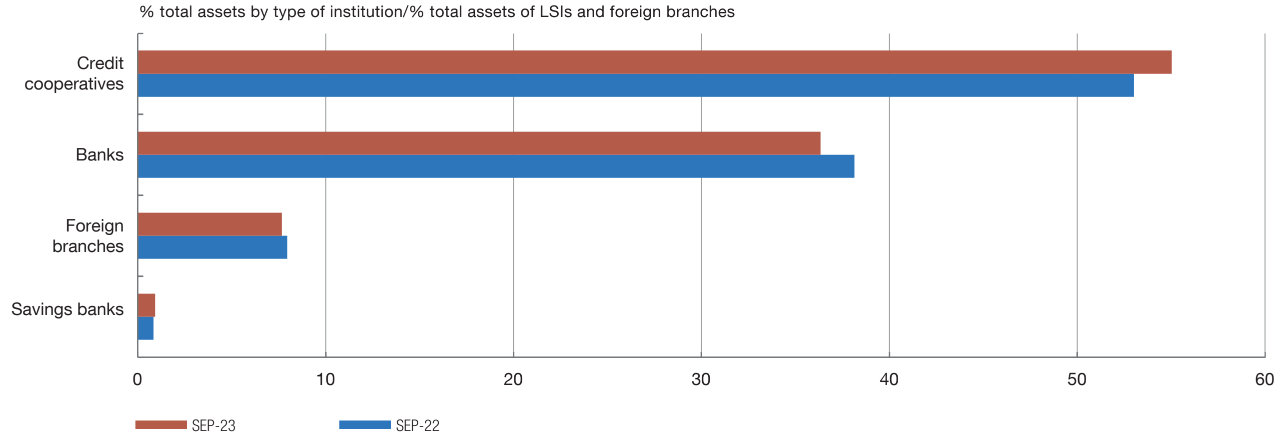
The Banco de España is responsible for the direct supervision of Spanish LSIs, while the ECB is responsible for their indirect supervision in order to ensure the consistent application of high standards and to guarantee the consistency of supervisory outcomes across the SSM countries.

The Banco de España likewise performs supervisory functions on the branches in Spain of LSIs from other SSM countries (and the other EU countries, as the case may be), along with the branches of non-EU credit institutions. Chart 2.11 shows the breakdown of these assets by type of institution. The Banco de España also supervises the ICO.

As mentioned above, the action plan, which details the following year's supervisory activities, is prepared on the basis of the supervisory priorities.

Chart 2.11
WEIGHT OF THE VARIOUS TYPES OF LSIs AND NON-EU BRANCHES

The breakdown of the volume of assets of LSIs has changed, since the percentage of assets from credit cooperatives increased and the percentage of assets relating to banks has decreased.



SOURCE: Banco de España.

Among the ongoing supervision activities, in 2023 regular quarterly monitoring was carried out of the Spanish LSIs and groups of LSIs, with the ultimate objective of detecting potential future problems in the various risks, solvency or business model sustainability.

The SREP follows the SREP methodology for LSIs approved by the ECB and it incorporates all the information obtained in the various ongoing supervision activities. Following the 2023 supervisory exercise, the weighted average P2R required in 2024 for LSIs hardly changed; specifically, it fell by 2 bps. P2R increased for 16 institutions and fell for 11 institutions.

The P2G guidance was updated in the 2023 SREP, albeit with no substantial change in the weighted average level, which increased by 7 bps (it increased for 26 institutions and fell for 15 institutions). To this end, the results of the stress test known as the Forward-Looking Exercise on Spanish Banks (FLESB) (see section 2.4.3), together with the quantitative results of the stress tests performed by the institutions within their internal capital and liquidity adequacy assessment reports, were taken into account.

In addition, the annual letter sent to institutions as a result of the SREP contains other requirements and recommendations arising from the supervisory process carried out during the year. The main weaknesses identified are as follows:

— **Governance.** Weaknesses related to the functioning of the board of directors (board supervision function with room for improvement and deficient minutes) and the composition of the board of directors (lack of gender balance or high average tenure of members); to the remuneration policy and/or its publication; and to improving the content of the internal capital and liquidity adequacy assessment report.

— **Business model.** Weaknesses related to the improvement in results; quality in the design, implementation and monitoring of institutions' strategic plans, and the need to update projections in the event of significant deviations; the effective integration of strategic plans into internal management; the definitive implementation of tools to improve the quality and reporting of profitability by business line; and the improvement in the pricing framework and its effective integration into loan origination processes and systems.

— **Credit risk.** Requirements related to NPL and foreclosure reduction plans, and recommendations to take extra precautions in loan origination and monitoring.

— **Interest rate risk.** Weaknesses related to the need to intensify control and reinforce the monitoring of this risk in institutions where unfavourable interest rate variations could have a greater impact on their solvency or on the recurring margin forecast for the following year; and to the need to update and implement the IRRBB regulatory framework, adapting its means of control to the changes in its business model.

— **Operational risk.** Requirements to all entities arising from the horizontal review of technology risk questionnaires and from the review of critical outsourcing. The two reviews are discussed below.

Also, a review conducted in 2022 of outsourcing processes of critical activities was monitored in 2023, and two horizontal reviews (technology risk and climate risk) were conducted. The findings were incorporated in the annual SREP letter sent to the institutions. Specifically:

— As a result of the horizontal action performed in 2022 on the outsourcing of critical activities, letters were sent to all LSIs so that they assess certain outsourcing arrangements that had not been communicated in the framework of the Banco de España Circular 2/2016 and the EBA guidelines on outsourcing arrangements (EBA/GL/2019/02). In 2023, the notification process was analysed and monitored, and it was concluded that the bulk of institutions had completed the adaptation of their outsourcing agreements. The SREP letters to those that had not done so highlighted the need to complete the adaptation by the end of the first half of 2024.

— A technology risk assessment was conducted based on the responses to a questionnaire developed by the ECB for the LSIs and based on the EBA Guidelines on ICT Risk Assessment under the SREP (EBA/GL/2017/05). The outcome of this assessment was taken into account in the 2023 SREP, and the SREP letters have stressed the need to make progress on the remediation measures for the areas for improvement identified in the questionnaire and to continue to equip themselves with the necessary human resources, technological infrastructure and management procedures, as well as the need to achieve full implementation of cybersecurity measures at all levels of the institution, until they are fully effective, so that the operational risk arising from IT is adequately managed.

— Lastly, the responses to a second climate risk questionnaire submitted by the institutions in January 2023 (the first was sent in 2021) were analysed in order to assess the solidity, exhaustiveness and effectiveness of practices in relation to climate and environmental risks, and the degree of progress made towards meeting the Banco de España's supervisory expectations regarding the risks arising from climate change and environmental deterioration. Areas for improvement focus on climate risk materiality assessments, the definition and incorporation of indicators into the risk appetite framework, the integration of climate risks in their risk management procedures, and the adoption of a global approach to climate risk identification.

The Banco de España has continued to cooperate with other NCAs in the context of a supervisory college of an LSI with subsidiaries in various SSM countries, the parent of which is a non-EU institution. It contributed to joint decisions at that college on capital and liquidity requirements. Also, in its capacity as supervisor of LSIs, the Banco de España has participated in four supervisory colleges[1] and in two resolution colleges[2] for foreign central counterparties (CCPs).

In the case of branches in Spain of institutions with headquarters in other EU Member States, their performance is monitored on a regular basis since they are not subject to prudential or liquidity requirements.

Overall, a total of 727 ongoing supervision actions were carried out on LSIs during 2023.

As regards the on-site supervision plan for LSIs, 11 on-site inspections were commenced or completed in 2023, with a special emphasis on the assessment of credit quality, foreclosed assets, governance and solvency, along with IT-related matters. The main weaknesses detected relate to credit risk, and refer to both quantitative aspects (adequate loan classification and coverage) and qualitative aspects (investment control and monitoring processes), and to governance (functioning of delegated committees, adequate segregation of control functions and insufficient internal audit scope and means).

As a result of the supervisory actions described above that were performed in 2023, the Banco de España sent 93 letters to the LSIs and the ICO. Chart 2.12 provides a breakdown of these letters by type of institution and origin. Of these, 59 related to capital decisions following

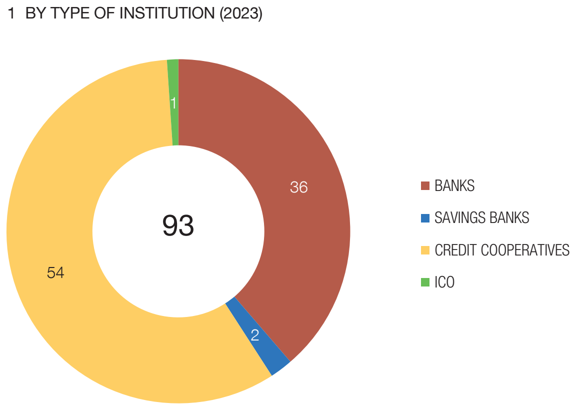
1 In accordance with Article 18(2)(c) of Regulation (EU) No 648/2012 on OTC derivatives, central counterparties and trade repositories (commonly known as EMIR), the Banco de España participates as the competent authority responsible for the supervision of clearing members established in one of the three Member States with the largest contributions to the default fund of the CCP. The Banco de España participated in three colleges as a voting member and in one as a non-voting member.

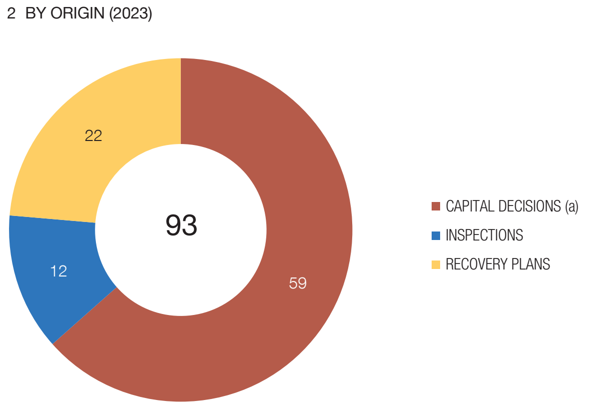
2 In accordance with Article 4(2)(c) of Regulation (EU) 2021/23 on a framework for the recovery and resolution of CCPs, the members of the resolution college shall be the competent authorities and resolution authorities of the clearing members of the CCPs established in the three Member States that, over a one-year period, make the largest aggregate contribution to the default fund. The Banco de España participated in one college as a voting member and in one as a non-voting member.

Chart 2.12

NUMBER OF LETTERS ADDRESSED TO LSI CREDIT INSTITUTIONS

The majority of letters were addressed to credit cooperatives, since this group has the highest number of LSIs, while capital decisions and recovery plans were most commonly at the origin of the letters.





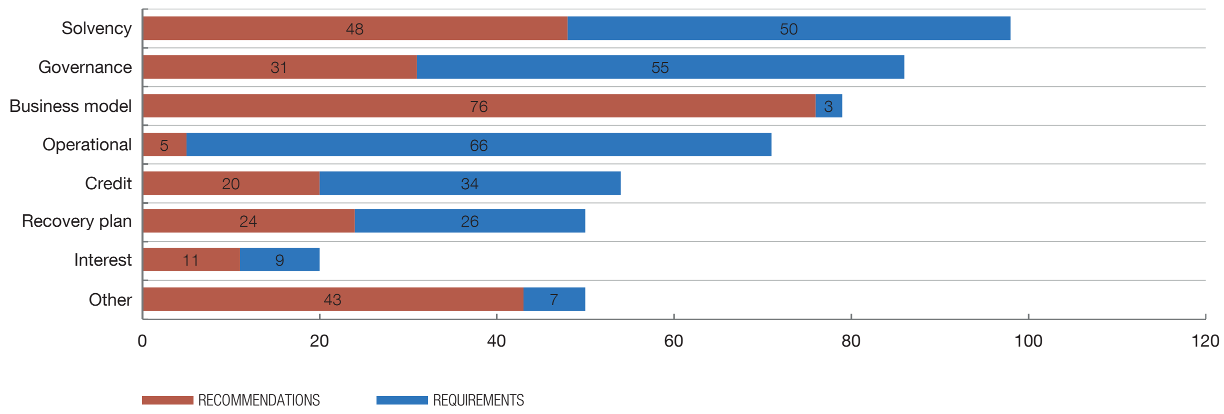
SOURCE: Banco de España.

a The 58 capital decision letters addressed to the 56 LSI institutions or groups (in one case a letter was addressed to a subsidiary of an LSI group in addition to the group itself) and to the ICO.

Chart 2.13

NUMBER OF RECOMMENDATIONS AND REQUIREMENTS NOTIFIED TO CREDIT INSTITUTIONS

By specific areas, the requirements and recommendations on solvency risk, governance and business model stand out.



SOURCE: Banco de España.
NOTE: "Other" contains requirements and recommendations in relation to climate risk and liquidity.

the prior submission of drafts for representations, 22 to recovery plan reviews and 12 to on-site inspections.

Also, Chart 2.13 shows the breakdown by subject matter of the 508 requirements and recommendations contained in the 93 letters sent to credit institutions. As shown in this Chart, the largest number of requirements and recommendations made to LSIs in 2023 relate to the area of solvency (mostly P2R and P2G requirements included in capital decisions); to the area of governance (both in capital decisions and inspections); to the area of business models (in capital decision letters); and to the area of operational risk (capital decisions), the main conclusions of which are detailed above. Most of the requirements arising from the inspections related to governance and credit risk, in equal measure, as explained above.

On a quarterly basis, within the LSI monitoring framework, the situation of the requirements and recommendations not yet complied with by each institution is assessed and communicated to the Executive Committee within the framework of compliance with the supervisory plan.

2.4.3 Stress tests

The EBA is responsible for coordinating the European stress tests, which are conducted every two years. 70 groups of European credit institutions, representing approximately 75% of the assets of the EU banking sector, participated in the 2023 stress test. As compared to the previous year (in 2021), 20 groups were added to the sample, which represents an increase of around 5% in terms of asset volume. In the case of Spain, 8 groups participated: Abanca, Bankinter, BBVA, Caixabank, Kutxabank, Sabadell, Santander and Unicaja. The ECB, in turn, carried out a test, with criteria consistent with those applied by the EBA, on a further 41 significant institutions under its supervision, including Ibercaja and Banco de Crédito Social Cooperativo.

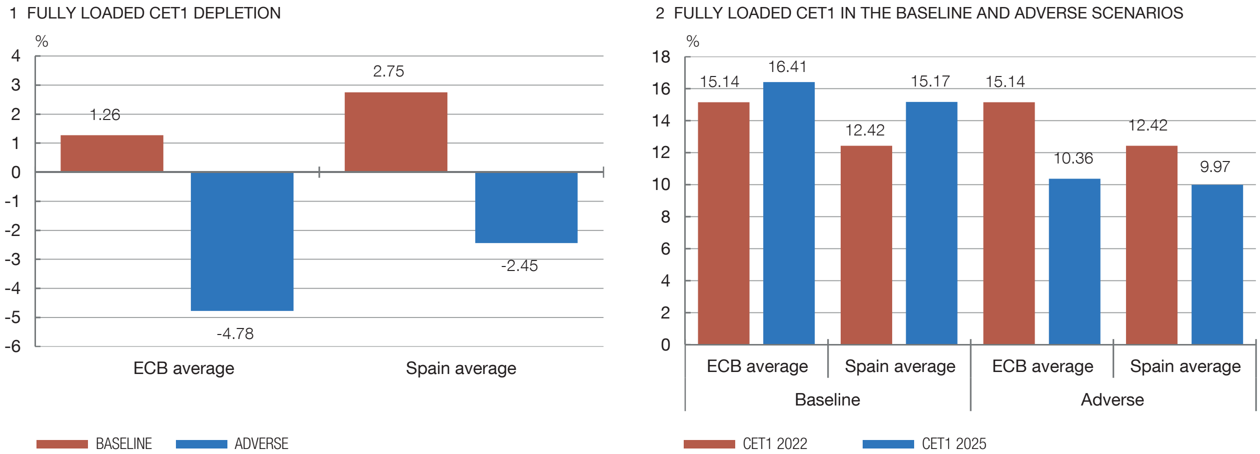
The design of this year's adverse scenario was characterised by a sharp contraction in economic activity, caused by disruptions to global supply chains due to increased geopolitical tensions, aggravated by a new outbreak of COVID-19 infections. These disruptions also made inflation higher and more persistent, leading to high market interest rates. This was precisely the main difference between the adverse scenario and the scenario used in 2021.

Charts 2.14.1 and 2.14.2 show that the impact of the adverse scenario on fully loaded capital for all the institutions supervised by the ECB was 478 bp, as compared to 245 bp for the Spanish institutions. This means that the 272 bps higher CET1 ratio of the SSM bank average at the starting point in 2022 compared to Spanish institutions (15.1% against 12.4%) becomes only 39 bps stronger (10.4% as compared to 10%) at the end of the exercise at end-2025.

These results reflect Spanish institutions' resilience in the adverse scenario, with satisfactory capital levels despite the greater severity. In this scenario, the new resources generated by Spanish banks are positive (6.2%) thanks to the increase in the interest margin, but cannot offset the significant loan impairment losses (7.4%) or the other negative impacts (1.3%).

As in previous years, no minimum capital thresholds were set. However, the outcome of the adverse scenario served as the basis for determining P2G. In addition, qualitative aspects of the conduct of the exercise are taken into account in the supervisory review and assessment process and, therefore, they may have influenced the P2R requirements, mainly in governance and operational risk.

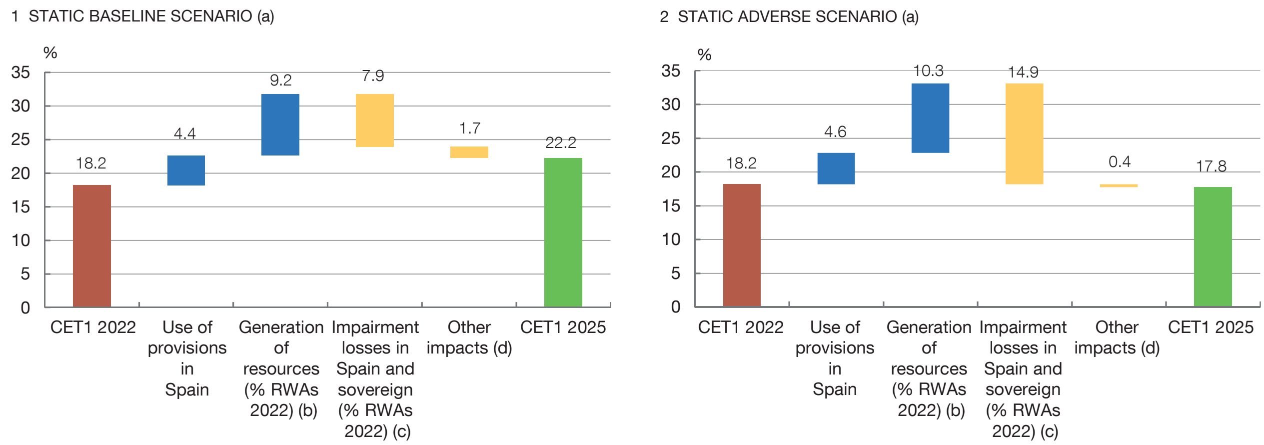
Chart 2.14
2023 EUROPEAN STRESS TEST



SOURCE: EBA, produced by Banco de España.

Chart 2.15
LSI STRESS TESTS. RESULTS

The results of the FLESB stress test for LSIs shows that there is a 4 pp increase in their CET1 ratio in the baseline scenario, while there is a 0.4 pp decrease in the adverse scenario.



SOURCE: Banco de España.

- **a** The yellow (blue) colour of the bars indicates a negative/positive contribution of the item corresponding to the change in the CET1 ratio at the horizon end of the forward-looking exercise (2025) as compared to the beginning of the exercise (2022).
- **b** The generation of loss-absorbing resources is determined by net operating income in Spain.
- **c** Impairment losses on loans and foreclosed assets in Spain, and the impact on capital of the potential impairment of institutions' sovereign exposures.
- **d** Other consolidated profit and loss, tax and exchange rate effects, profit distribution and changes in RWAs.

The Banco de España conducts annual stress tests of LSIs[3] with the aim of measuring institutions' capacity to cope with potential macroeconomic and financial risks and to feed the SREP and, in particular, the P2G estimate. These tests are conducted in the same framework and under the FLESB tool, which is mentioned in Chapter 3.

3 These stress tests are conducted in accordance with Article 55(5) of Law 10/2014 on the regulation, supervision and solvency of credit institutions.

The aggregate results of the test, with the baseline and adverse scenarios of that section which use the static balance sheet method recommended by the ECB, point to an increase in the CET1 ratio of 4 pp in the baseline scenario and a decrease of 0.4 pp in the adverse scenario (Chart 2.15). In the baseline scenario, the generation of new loss-absorbing resources (9.2% of RWAs) and the use of provisions (4.4%) more than offset impairment losses (7.9%) and the other impacts (-1.7%). In the adverse scenario, the new resources generated are positive (10.3%) thanks to the increase in the interest margin favoured by the interest rate rise; however, this effect, together with the use of provisions (4.6%), does not offset the negative effect of the other impacts (0.4%) and the significant impairment losses (14.9%).

The aggregate solvency of all the LSIs in both scenarios would be high and above regulatory requirements.

2.4.4 Supervision of covered bonds and securitisations

The supervisory powers over covered bonds were attributed to the Banco de España by Royal Decree-Law 24/2021.[4] This new supervisory regime is complemented by the designation by the issuing institutions of a cover pool control body, which performs the ongoing monitoring of the cover pool.

Royal Decree-Law 5/2023 of 28 June 2023 introduced significant amendments in this matter, including, inter alia, those relating to the assessment of cover assets, loan exits from the cover pool and the authorisation of loan restructurings by the control body, and to the appointment and sanctioning regime of that control body.

At December 2023, there were 19 Spanish credit institutions issuing covered bonds under the scope of this supervision. These institutions have designated a total of 5 commercial companies as cover pool control bodies. This new regulatory regime strengthens the activity of a market that has been widely used by Spanish institutions in recent years.

In 2023, both individual monitoring of each of the issuing institutions and a horizontal analysis were carried out. Issuing institutions submit to the Banco de España, on a quarterly basis, the confidential returns relating to covered bonds provided for in Circular 1/2023, which entered into force on 31 March 2023. Both the issuing institutions and control bodies have adequately adapted to the new covered bond regime. In this respect, no weaknesses were noted in the formation of the cover pools, which comply with all legal requirements in terms of over-collateralisation, loan-to-value (LTV) ratio and liquidity cushion. The implementation phase is considered completed and on-site inspections on this matter are planned to start in 2024.

4 This regulation transposed Directive (EU) 2019/2162, thereby establishing a harmonised minimum regime in the EU with regard to the conditions for the issue and characteristics of this type of instrument, with the aim of promoting the unified development of these markets.

In addition, among its supervisory functions, the Banco de España must authorise the programmes that include the characteristics of the covered bonds issued under it. In this regard, over the course of the year, the Banco de España authorised one new programme, the extension of the term of another programme, the increase in the amount of three programmes and the termination of another programme.

At the end of 2023, there were 27 authorised covered bond programmes, with an aggregate maximum amount of EUR 421 billion, covering both issues outstanding at that date and issues subsequent to the term of the programme and up to the maximum authorised amount.

At December 2023, there were 218 outstanding covered bonds on the Spanish covered bond market, with a nominal value of around EUR 213 billion, of which 89% corresponded to mortgage covered bonds, 6% to public sector covered bonds and 5% to internationalisation covered bonds. Total covered bond issuance in 2023 amounted to EUR 25.3 billion, while repayments amounted to EUR 22.8 billion.

Lastly, in compliance with Royal Decree-Law 24/2021, the Banco de España discloses and periodically updates on its website the list of authorised issuing institutions and of covered bonds issued under authorised programmes.

Also, in accordance with Law 5/2015 of 27 April 2015 on the promotion of business financing, as amended by Law 6/2023 of 17 March 2023 on Securities Markets and Investment Services, in 2023 the Banco de España assumed the supervision of the specific framework for simple, transparent and standardised (STS) securitisation, provided for in Regulation (EU) 2017/2402, when the issuers of these instruments are credit institutions or other institutions under the supervision of the Banco de España.

In the context of this supervision, institutions have submitted to the Banco de España information in relation to STS securitisations existing at 2023 year-end. 54 notifications of STS securitisations were received, of which 35 related to significant credit institutions. All of them have been notified to the European Securities and Markets Authority in accordance with the procedures established for this purpose and, pursuant to Article 28 of Regulation (EU) 2017/2402, they have used the service of an authorised third party certifying that the STS criteria have been respected. The Banco de España has initiated a review of these transactions to verify compliance with the STS criteria, as set out in Regulation (EU) 2017/2402.

Also derived from Regulation (EU) 2017/2402, the Banco de España has to supervise compliance with certain requirements that any securitisation must meet, relating to risk retention, transparency of information, the ban on re-securitisation and credit granting. In this case, the institutions under the scope of the supervision of the Banco de España are the LSIs, as well as the other institutions subject to the supervision of the Banco de España in accordance with sectoral regulations. As regards the SIs' securitisations, this review falls under the remit of the ECB.

For this purpose, the institutions also submit information to the Banco de España, following the established procedure. In 2023, 19 notifications were received in relation to LSIs and specialised lending institution (SLIs) securitisations, of which 14 qualified as STS.

2.4.5 Anti-money laundering and countering the financing of terrorism

The Banco de España's powers in the area of anti-money laundering and countering the financing of terrorism (AML/CFT) are confined to the supervision of certain obligations related to due diligence, internal control and reporting, at the institutions subject to AML/CFT regulations within its scope of supervision.[5] These supervisory powers are exercised within the framework of the provisions of Spanish legislation and the agreement entered into with the Commission for the Prevention of Money Laundering and Monetary Offences (CPMLMO) in 2021 for the coordination of their respective supervisory and inspection activities, particularly through close cooperation with its two bodies, the Secretariat of the CPMLMO and SEPBLAC, and with the National Securities Market Commission (CNMV) and the Directorate General of Insurance and Pension Funds (DGSFP). This cooperation allows supervisory synergies to be exploited and contributes to institutional efficiency.

In 2023 supervisory cooperation continued to advance. In this respect, together with SEPBLAC, the Banco de España completed the update of the assessment methodology for money laundering and countering the financing of terrorism (ML/CFT) risk at credit institutions and updated the ML/CFT risk profile of credit institutions established in Spain, in accordance with the aforementioned methodology. This profile is an essential element for the annual preparation of the Joint Inspection Plan, which follows a risk-based approach. Also, the Banco de España continued to work on the development of supervisory criteria and procedures in coordination with the Secretariat of the CPMLMO, SEPBLAC, the DGSFP and the CNMV.

Over the course of 2023, the Banco de España completed the following inspections (all of which commenced in 2022): 2 general actions in relation to AML/CFT obligations, relating to one LSI and one SI; a specific inspection on one SI's internal control systems for the activity carried out by its branches and subsidiaries abroad, and, jointly with SEPBLAC, 15 thematic reviews of foreign exchange activity (at 9 SIs, 5 LSIs and 1 branch of an EU institution).

In relation to these thematic reviews of foreign exchange activity, it can be concluded that, in general, internal policies and regulations are adequate; in particular, these include measures for the identification of the customer and, in the case of legal entities, of the beneficial owner, which are in line with current regulations. The implementation of due diligence measures for this type of customer is generally adequate, although institutions have been required to further improve the alerts related to foreign exchange activity.

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5 Credit institutions, branches of foreign credit institutions, SLIs, mutual guarantee societies (MGSs), payment institutions (PIs), electronic money institutions (ELMIs) and currency-exchange bureaux.

As regards general inspections, the main weaknesses identified relate exclusively to the implementation of due diligence measures, in particular the ongoing monitoring of business relationships. Room for improvement was also observed in the detection, analysis and reporting of suspicious operations, and in the allocation of technical and human resources. In this regard, institutions have been required to strengthen internal control systems, including the implementation of due diligence measures and the monitoring of customers and suspicious transactions, and to increase the resources allocated.

Lastly, the inspection of foreign activity control systems identified weaknesses in relation to the implementation of corporate policies and procedures and the supervision model of subsidiaries and branches, requiring institutions to strengthen the oversight of their groups' foreign activity. Also, there were recommendations for the implementation of measures ensuring that a global view is obtained on customers operating in several jurisdictions.

Taking into account the findings of these inspections, in the second half of 2023 the Banco de España initiated and concluded four inspections of currency-exchange bureaux. Lastly, a general inspection of one SI commenced at the end of 2023.

At the international level, the Banco de España continued to cooperate closely with other supervisors and to participate in international AML/CFT supervisory fora. In particular, in addition to maintaining bilateral cooperation relations with AML/CFT supervisors in other countries, the Banco de España and SEPBLAC jointly organised the supervisory colleges for 6 Spanish credit institutions and 8 Spanish PIs, and participated in 70 AML/CFT supervisory colleges of other European institutions.

Lastly, in regulatory matters, the Banco de España provided technical support to the negotiations on the EU's AML/CFT legislative package of July 2021.[6] This package seeks, among other things, the approval of a regulation for the creation of the European Anti-Money Laundering Authority (AMLA), with direct and indirect supervisory functions over regulated institutions, and a more harmonised regulatory framework in the EU, which will include both a new European regulation that is directly applicable to regulated institutions and a sixth AML/CFT directive.

2.4.6 Common procedures, suitability and other procedures

Common procedures are those relating to the authorisation to perform the activity of credit institutions, the withdrawal of such authorisation and the acquisition of qualifying holdings. They are set out in ECB Regulation (EU) No 468/2014 establishing the framework for cooperation within the SSM between the ECB and NCAs. In these procedures, for Spanish institutions, the Banco de España makes an initial assessment and formulates a draft decision

6 https://ec.europa.eu/commission/presscorner/detail/es/ip_21_3690

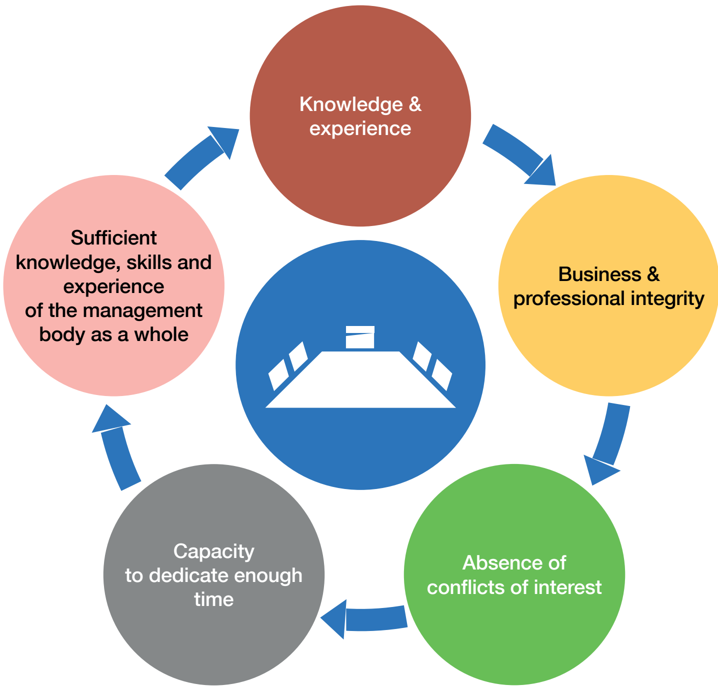
Table 2.4
PROCEDURES IN RESPECT OF CREDIT INSTITUTIONS INVOLVING THE BANCO DE ESPAÑA

	Total number
Qualifying holdings, merger, spin-off and other significant acquisitions	6
Cross-border activity of Spanish credit institutions	91
Branches in the EU	15
Branches in third countries	0
Freedom to provide services	76
Representative offices	0
Cessation of business	0
Loans to directors & senior officers	16
Suitability of directors & senior officers (a)	207
Procedures relating to capital	100
Amendments to articles of association	26
Climate change	57
Communications with other supervisory authorities or institutions	7
Other procedures	85
TOTAL	595

SOURCE: Banco de España.

a Includes 17 suitability assessments regarding mixed financial holding companies.

Figure 2.3
SUITABILITY REQUIREMENTS ASSESSED FOR DIRECTORS WITHIN THE SSM



SOURCE: Banco de España.

for each specific case. Subsequently, on the basis of this proposal and any additional work it deems appropriate, the ECB adopts a definitive decision. Noteworthy among the rest of the procedures is the suitability procedure.

Table 2.4 details the common procedures and the rest of the procedures on credit institutions in which the Banco de España has participated.

Figure 2.3 offers a visual summary of the determining criteria in the assessment of SSM directors.

2.5 Supervision of institutions other than credit institutions

The Banco de España has exclusive microprudential supervisory powers over the following institutions that provide financial services or carry out activities related to the financial system: SLIs, mutual guarantee societies (MGSs), re-guarantee companies, appraisal companies, PIs, exempt PIs, account information service providers, ELMIs,[7] currency-exchange bureaux, Sareb (the asset management company for assets arising from bank restructuring)[8] and banking foundations.[9] Table 2.5 shows the number and performance of these institutions other than credit institutions.

The legal basis under which the Banco de España supervises these institutions and the approach to the tasks differ from case to case. Although the weight of these institutions in the financial system is not comparable to that of credit institutions, an effective regulatory and supervisory model of these institutions promotes the fluidity of financial intermediation mechanisms and generates a climate of trust in financial institutions.

The Banco de España is the competent authority for registering, granting and withdrawing the licenses of the various types of payment institutions and electronic money institutions provided for in Royal Decree-Law 19/2018, and SLIs which provide payment services (SLI-PIs) or which issue electronic money (SLI-ELMIs) and currency-exchange bureaux, and for the official recognition of appraisal companies.

7 As regards the supervision of PIs and ELMIs, it should be noted that the Banco de España has distributed this supervision internally between the Directorate General Banking Supervision and the Directorate General Operations, Markets and Payment Systems. The Directorate General Banking Supervision, to simplify matters, deals with the supervision of solvency, the shareholder structure and the business model from a profitability perspective, while the Directorate General Operations, Markets and Payment Systems deals with the supervision of the safeguarding of funds and the operational aspects of payment service provision.

8 The Banco de España supervises fulfilment of Sareb's sole corporate purpose, in order to identify deviations therefrom that jeopardise the attainment of Sareb's overall statutory objectives.

9 Law 26/2013 of 27 December 2013 on savings banks and banking foundations confers on the Banco de España control of compliance with certain rules related to the influence of the banking foundation over the sound and prudent management of the investee credit institution, in the event that the foundation holds an ownership interest of, at least, 30% of the share capital of the credit institution or which allows it to exercise control. This control refers to the submission for approval by the Banco de España of management protocols and annual financial plans.

Table 2.5
REGISTER OF INSTITUTIONS OTHER THAN CREDIT INSTITUTIONS

Data at 31 December

	2021	2022	2023
SLIs	23	24	25
SLI-PIs	9	9	9
Branches of financial institutions subsidiaries of EU credit institutions	1	1	1
MGSs and reguarantee companies	19	19	19
Appraisal companies	32	32	32
Currency-exchange bureaux (a)	16	16	15
PIs	49	52	50
PIs exempt under Article 14 of Royal Decree-law 19/2018	9	10	14
Payment service providers excluded under Article 4 of Royal Decree-Law 19/2018	15	18	23
Account information service providers	1	3	4
ELMIs	9	10	10
Branches of EU PIs	7	9	8
Branches of EU ELMIs	3	4	6
TOTAL	**193**	**207**	**216**

SOURCE: Banco de España.

a Not including establishments authorised only to purchase currency using euros.

Also, the Banco de España is tasked with issuing the mandatory report on the authorisation of SLIs, MGSs and re-guarantee companies, the granting of which is the prerogative of the Ministry of Economy, Trade and Business.

With regard to applications for authorisation and registration of new payment service providers, noteworthy is the relatively low number of applications for the extension of activity compared to the total number of authorisation and registration applications. As a result, the observed trend leads to the consolidation of a payment service provider ecosystem which has ever more participants and, therefore, is increasingly heterogeneous, with an associated increase in the number of institutions to be supervised.

The number of PIs and ELMIs increased from 49 in December 2018 to 78 at the end of 2023 (50 PIs, 10 ELMIs, 14 small payment institutions (SPIs) that are exempt pursuant to Article 14 of Royal Decree-Law 19/2018, and 4 aggregators). In line with this increase, the number of payment service providers excluded under Article 4 of Royal Decree-Law 19/2018[10] continues to grow.

Specifically, with regard to authorisation procedures for new specialised payment service providers, a total of 15 requests for assessments of payment service provision were received, of which 7 were procedures to request authorisation to operate as a PI, 5 to operate as an

10 The payment service providers excluded under Article 4 of Royal Decree-Law 19/2018 that are included in Table 2.5 are subject to a separate registration regime in the Banco de España and only certain regulatory provisions of Royal Decree-Law 19/2018 are applicable to them.

ELMI and 3 to benefit from the partial exemption regime established in Article 14 of Royal Decree-Law 19/2018.

In addition, 19 new license authorisation processes are in progress for the various types of payment institutions, which will lead to a further increase in the number of institutions in this sector.

It is worth noting that in 2023, in order to streamline authorisation and registration procedures, the informative guide on these processes, as well as certain forms, was updated and can be consulted at the Banco de España's Sede Electrónica (Electronic Headquarters). Also, the Banco de España is a member of the electronic notification system, Single Enabled Electronic Address *(Dirección Electrónica Habilitada Única)*, to offer interested parties the opportunity to send communications and notifications by electronic means.

The pre-application process for authorisation or registration was also improved, in such a way that it offers applicants the possibility of holding a meeting before formally submitting the application to discuss the most relevant aspects of the project and resolve doubts about the procedure.

In 2023, 281 ongoing off-site supervision actions were carried out by various means: periodic monitoring, external audit report reviews and other actions, as detailed in Chart 2.16. These monitoring activities carried out through the returns and the alert system make it possible to detect situations of non-compliance with regulatory requirements, such as the non-compliance with minimum capital requirements in the area of payment institutions discussed below, and any significant deviations in financial behaviour.

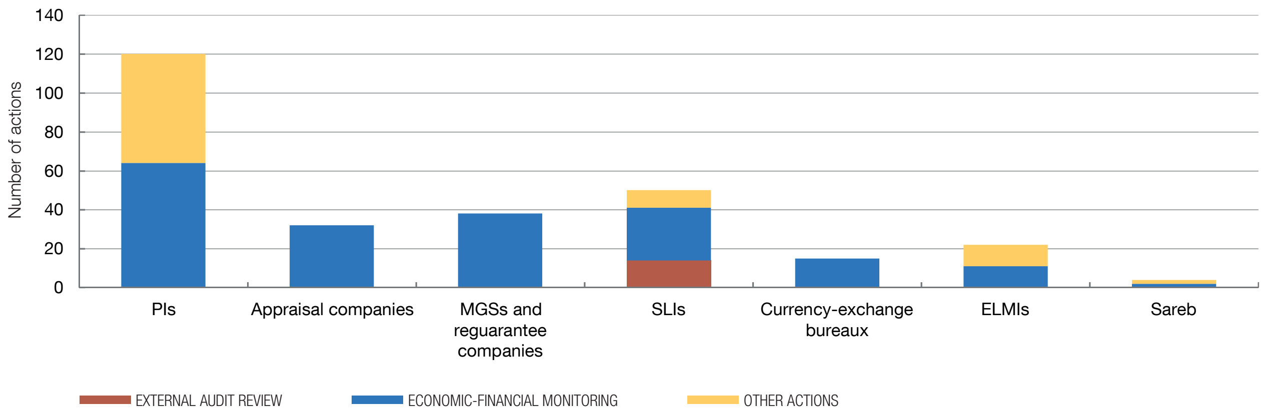
Also, 2023 saw the commencement of an inspection of one MGS, one ELMI and one appraisal company. For 2024, inspection visits are planned to two appraisal companies, one ELMI, one PI and one MGS. In addition, as in 2022, a capital decision was sent to one SLI in 2023, justified by the institution's importance.

Similarly, in 2023 further 2,693 procedures were performed within the remit of the supervisory powers over these institutions, as detailed in Table 2.6.

In relation to compliance with PI and ELMI capital requirements, oversight is conducted through the information collected from these institutions by means of ad hoc templates that they have been submitting since 2020 until the development of a prudential circular that allows for regular reporting on their solvency situation. As a result of this oversight, from 2020 to date, 27 situations of non-compliance with capital requirements have been detected, requiring the injection of capital by their shareholders.

These capital needs generally arise from two very different situations: on the one hand, the limited generation of capital by some institutions in the sector, which does not cover their own business expectations, and, on the other, the limited solvency buffer with which some of these institutions operate, which hinders the absorption of the higher capital requirements arising from increased activity or from greater investment in technological systems.

Chart 2.16
NUMBER OF ONGOING OFF-SITE SUPERVISORY ACTIONS AT OTHER INSTITUTIONS



SOURCE: Banco de España.

Table 2.6
OTHER PROCEDURES PERFORMED BY THE BANCO DE ESPAÑA ON OTHER INSTITUTIONS

Number of procedures in 2023	PIs	ELMIs	SLIs	MGSs	Appraisal companies	Currency-exchange bureaux	Sareb	Banking foundations	Total other institutions
Qualifying holdings, mergers, spin-offs and other significant acquisitions	9	6	6			1			**22**
Cross-border activity of Spanish credit institutions (a)	2,400	4	1						**2,405**
Branches in the EU	8	1	1						**10**
Branches in third countries									**0**
Freedom to provide services	194								**194**
Agents	2,198	3							**2,201**
Cessation of business	6								**6**
Suitability of senior officers	61 (*)	37	33	42	21	3			**197**
Procedures relating to capital	3					1			**4**
Amendments to articles of association	7	3	3	1					**14**
Authorisation of management protocol and financial plan								8	**8**
Communications with other supervisory authorities or institutions						30			**30**
Other procedures			5			2			**7**
TOTAL									**2,693**

SOURCE: Banco de España.

a Each daily notification per recipient country and institution is deemed a procedure.
(*) Includes 2 hybrid payment institutions' senior officer suitability procedures.

In addition to the high number of register entries for PI agents (2,201), noteworthy are the supervisory procedures in the PI and ELMI area, with 15 procedures for qualifying holdings, mergers, spin-offs and other acquisitions. It is also worth mentioning these institutions' senior officer suitability processes, which amounted to 197 procedures in 2023 and were carried out in most of the sector, the largest number being PIs.

Section 2.6 describes the Banco de España's oversight of the operational aspects of the provision of payment services, including institutions' security and fraud control. Further below, in section 2.7, additional information is provided on the appraisal company sector and its supervision.

2.6 Supervision of payment service providers

In 2023, a major part of the supervisory activity of PIs and ELMIs consisted of reviewing compliance with the guarantee and protection requirements for payment service users' funds; this activity will be continued next year.

With regard to the reporting of major operational or security incidents related to payment service provision, 58 incidents were reported in 2023, which were generally due to failures in the systems or processes implemented by the institutions. Noteworthy are two incidents which affected the same group of institutions and another two incidents which affected a significant number of payment service providers, as they originated in a card payment processor.

The analysis of the six-monthly evolution of fraud data seems to confirm the growing impact and importance of digital fraud with respect to total fraud in payment transactions, especially in transfer and card transactions. The most common type of digital fraud includes most notably fraudsters' manipulation of payers in order to obtain their banking codes or authorisation for fraudulent transactions; to this end they use social engineering techniques, such as phishing (online), vishing (via voice calls) or smishing (via SMS). Moreover, the evolution of data also confirms that the implementation of the use of strong customer authentication (SCA) techniques on initiation of card payment transactions has had a beneficial impact on fraud containment. In addition, the EBA, together with the NCAs, conducted a review process of the fraud information reported by the institutions.

Under the framework of Delegated Regulation 2018/389, approval was granted for four requests submitted by three payment service providers to apply the SCA exemption provided for legal entities initiating electronic payment transactions through certain payment processes or protocols only available to payers who are not consumers. These decisions were issued on particular payment solutions, designed and managed entirely and exclusively by the corresponding payment service providers and mainly related to payment cards issued for specific purposes.

As regards the proper functioning and performance of the specific interfaces maintained by the account servicing payment service providers, as in previous years, the problems reported by the so-called "third party payment service providers" have been managed and monitored in order to resolve them. These problems have mainly consisted of shortcomings in the information provided on the status of payment transactions initiated through the above-mentioned interfaces, one-off outages and deteriorations in the interface performance and additional frictions for payment service users as compared to the experience offered by other remote payment account access channels.

A total of 24 communications were received and analysed regarding the delegation of operational functions from PIs and ELMIs, most of which were related to critical functions, which represents an increase of more than 70% with respect to the previous year. In addition, 13 files have also been reported on requests for the exclusion from the scope of application of the payment services regulation of certain payment instruments that can be used only in a limited way.

Lastly, in the area of international coordination in the supervision of payment service provision, there have been varying degrees of participation in the implementation and application of the payment service provision regulation.

2.7 Supervision of appraisal companies

The officially recognised appraisal company sector currently comprises 32 companies One characteristic of the sector is its concentration, since 5 companies or groups of companies issued appraisals accounting for 61% of the total volume of appraisals in 2022, while at the other extreme, the 12 appraisal companies with an individual market share of less than 1% together only issued 4% of this amount. A significant part of the business of appraisal companies continues to be contributed by credit institutions which, since 2013, can no longer hold shares in appraisal companies, a measure that was adopted to foster the independence of the sector.

The choice of which companies are to be inspected is based on both size and risk profile. In order to determine the risk profile, all available information on the companies is used, including the results of statistical tools that analyse various parameters of the valuations issued by the appraisal companies in the previous year, and, to this end, specific databases are requested annually from the appraisal companies. Since 2018, on-site inspections have been carried out at several appraisal companies which, together, account for a 79% market share of the total volume of appraisals, and this figure will reach 87% by the end of 2024.

In 2022, a letter was sent to the two associations of valuation companies and meetings were held with them to inform of the main weaknesses that had been detected most frequently in inspections with the aim of improving the application of valuation regulations and compliance with official recognition requirements. In particular, emphasis was placed on the need to have sufficient technical and human resources to carry out the control of the appraisals issued; to remedy shortcomings in the application of valuation methods; and to improve the content of appraisal reports, which, in the case of the comparison method, were focused on the content of market information, the characteristics of witnesses and the process of valuation homogenisation.

2.8 Compliance with vetted access to activity and name reservation

Under Spanish legislation, several financial activities are subject to vetted access to activity, i.e. they can only be carried out by the legal entities and individuals legally authorised to do so. The Banco de España's functions include overseeing compliance with this legislation, taking action on those seeking to break into the financial market without meeting the conditions of access, either by conducting activities legally restricted to credit institutions, payment service providers or other types of institutions supervised by the Banco de España, or through the use of generic names restricted to those institutions or any other name that may confuse the public.

In 2023, 14 supervisory actions were performed in relation to legal entities and a further one was performed in relation to an individual that may have been carrying out activities restricted to credit institutions and/or currency-exchange bureaux without authorisation or simply making undue use of a name pertaining to supervised institutions; these actions could lead to the adoption of penalties.

In the area of payment services, the analysis commenced in 2023 of eight cases of possible non-compliance with the vetted access to activity established in Article 5 of Royal Decree-Law 19/2018 of 23 November 2018 on payment services and other urgent financial measures. Most of these cases are caused by certain formal irregularities detected in the activity of commercial establishments which, in reality, operate as agents or distributors in Spain of payment service providers; innovative business models, that are not always an easy fit within the regulations; as well as institutions which depend on other payment service providers to carry out their activity.

At the end of November 2023, the Executive Commission of the Banco de España assigned to the General Secretariat the responsibilities for the supervision of vetted access to activity and name reservation, previously carried out by the Directorate General Banking Supervision and the Directorate General Operations, Markets and Payment Systems. Thus, the General Secretariat, through the new Financial Fraud Prevention Unit, is the area currently responsible for carrying out the aforementioned supervisory functions and for submitting the corresponding reports and proposals on this matter to the Banco de España's governing bodies.

2.9 Application of financial technology innovation to supervisory functions. Sandbox: controlled digital innovation testing space

The Banco de España considers that its modernisation is essential for it to become a more efficient, flexible and innovative institution and, therefore, the need to boost technological innovation is included in its 2024 Strategic Plan.

In the area of supervision, the term “SupTech”[11] has become popular in recent years to refer to the use of innovative technology (e.g. machine learning and big data) by supervisory authorities to support their work. In this same area, the Banco de España has been operating for decades with multidisciplinary supervisory teams comprising inspectors, supervisory experts, IT auditors and modelling experts accustomed to bulk data processing, which puts it in a good position to address the above-mentioned boost in the supervisory field.

Consequently, one of the paths that will boost technological innovation is the incorporation of new technologies into supervisory activity; in order to achieve this, among other things, a roadmap was designed that runs until the end of 2024 and which has been published on the Banco de España’s blog. This roadmap presents the following four major blocks of activities, which are in turn interrelated:

i) **In-house creation of SupTech tools.** Box 2.7 provides a number of examples of internal technological innovation developments applied to supervision (SupTech).

ii) **Active participation in the SupTech initiatives carried out in the SSM.** The use of SSM tools is fostered, and internally developed tools are shared with the rest of the SSM. Of particular note is that fact that the Banco de España has been designated as SSM SupTech centre.

iii) **Fostering a culture of innovation.** An internal SupTech forum was set up in the DG.SUP and there is intensive collaboration with other areas, especially with the Information Systems Department.

iv) **Boosting training in data science. To this end, courses given by DG.SUP** staff have been incorporated into the Banco de España’s extensive training catalogue. These courses are occasionally open to staff from other SSM supervisory authorities or from the Association of Supervisors of Banks of the Americas.

Also, in line with the priority given to this area, the SupTech function was included in the external evaluation programme, that was conducted by a team of independent international experts, commencing in the first quarter of 2023. The strengths highlighted by the evaluators are the significant progress made in recent years: they stress the support of senior management and emphasise some aspects that put us ahead of other central banks and financial authorities, such as having an explicit strategy and roadmap, and a formal process for the identification, exploration and development of potential SupTech tools.

In terms of possible areas for improvement, a more effective deployment of SupTech tools is suggested, integrating them into the supervisory process and strengthening the dedicated resources and development activities to acquire the required skills, as well as developing the

11 Simone di Castri, Stefan Hohl, Arend Kulenkampff and Jermy Prenio. (2019). “The suptech generations”. FSI Insights, 19. https://www.bis.org/fsi/publ/insights19.htm.

necessary digital mindset among supervisory staff. They also suggest further close coordination with the SSM on the development and implementation of tools. Moving forward, they propose exploring other tools for dealing with the changing landscape of the financial system. These suggestions undoubtedly point to the way for further growth and serve as a guide for drafting the next roadmap.

The controlled testing space,[12] known internationally as the "regulatory sandbox", allows for the testing of innovative projects for the financial system under the monitoring of the competent financial authorities. The benefits of this instrument for project promoters include the possibility of knowing what the supervisory expectations are, identifying the existence of regulatory barriers or knowing whether they need to apply for a licence or authorisation for the subsequent exercise of the activity. Moreover, it allows supervisory authorities to understand the state of the art of technology-based financial innovation and the impact that the projects could have on the Spanish financial system.

This year there are two authorised periods for the submission of applications. On 20 January 2023[13] the General Secretariat of the Treasury and International Financing approved the resolution announcing the fifth call and set the application submission period between 1 March and 12 April 2023. A total of 11 projects were received. Of these, four of the five projects that were assigned to the Banco de España received a favourable rating. The sixth call was announced by resolution of 28 July 2023,[14] with an application submission period between 1 September and 13 October 2023. In this call, there was a slight decrease in the absolute number of projects submitted, with a total of seven projects. Of these, two were assessed by this institution, but were not finally admitted because they did not meet the access requirements set out in Law 7/2020 of 13 November 2020 for the digital transformation of the financial system.

Throughout the year, projects from five different calls coexisted at various stages. Thus, tests of the ContractID and Eurocoinpay projects, from the second and third calls, respectively, were completed in 2023; the process was closed with the publication of the supervisor's conclusion documents on these proposals.

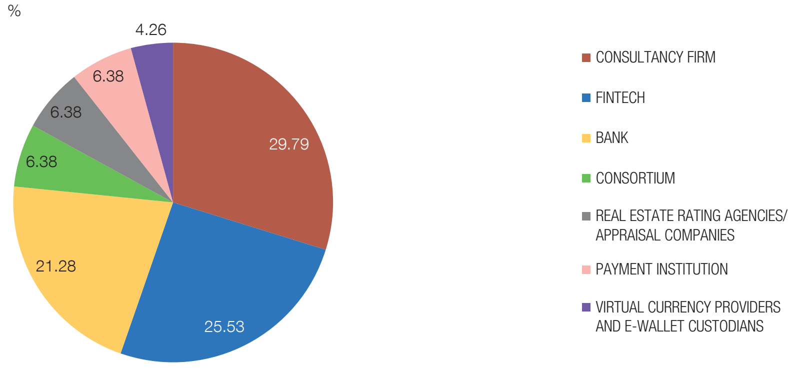
The ContractID project proposes an alternative non-face-to-face customer identification solution supported by the use of artificial intelligence and the use of strong customer authentication mechanisms provided for in the European payment services regulations. If this non-face-to-face identification mechanism were to be incorporated into the AML/CFT regulatory framework, it could be of potential benefit to users of financial services and, potentially, if it were to reduce the risk of fraud, it would also increase the efficiency of institutions or markets.

12 The Supervision Report 2021 details the characteristics of the Spanish regulatory sandbox.

13 https://www.tesoro.es/sites/default/files/20230113_resolucia3n_de_convocatoria_de_la_5aa_cohorte_del_sandbox_vf_csv.pdf

14 https://www.tesoro.es/sites/default/files/20230728%20Resoluci%C3%B3n%20de%20convocatoria%20de%20la%206%C2%AA%20cohorte%20del%20Sandbox.pdf

Chart 2.17
PROMOTERS OF THE SANDBOX PROJECTS ANALYSED BY THE BANCO THE ESPAÑA



SOURCE: Banco de España.

The Eurocoinpay project consists of a platform using blockchain technology that allows users to purchase goods and services with cryptoassets at participating merchants. This solution could potentially benefit financial service users, on the one hand, by offering an additional payment mechanism, and, on the other hand, potentially reduce costs if the method proposed by the promoter were available at lower prices than traditional payment solutions.

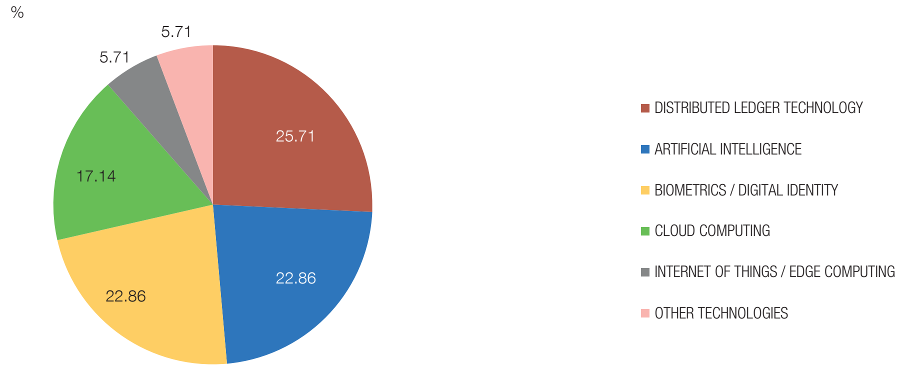
In relation to the projects from the fourth call, the Banco de España participates in the testing for Monei Eurm and Multilateral Trading System. In the latter case, the CNMV is the lead supervisor and the Banco de España acts as observer. As for the initiatives of the fifth call, this institution is monitoring the testing of various projects which are based on a digital identity solution and are called Onboarding financiero DNI Wallet, Identificación física en oficina con DNI Wallet, Segundo factor de identificación con DNI Wallet and Tarjeta Openbank en DNI Wallet.

There are various different types of promoter, including supervised and non-supervised institutions, most notably consultancy firms, FinTechs and banks (see Chart 2.17). There is also evidence of collaboration through consortia, where several promoters submit joint applications. As regards technologies, distributed ledger technology continued to dominate in 2023, followed closely by artificial intelligence and biometrics and digital identity (see Chart 2.18).

None of the projects tested in the sandbox, from its launch to date, is applicable to the better performance of the supervisory functions carried out by the Banco de España.

In 2023, the authorities responsible for the sandbox continued to work on improving its functioning. The Banco de España updated the information on innovation facilitators on its website, it made the communications channel for queries on financial innovation (provided for in Article 20 of Law 7/2020) more widely disseminated, and it continued to disseminate the sandbox and its functioning at both the national and international level. As part of this work,

Chart 2.18
TECHNOLOGY OF PROJECTS WITH FAVOURABLE PRIOR ASSESSMENT (a)



SOURCE: Banco de España.

a Projects can use more than one technology. Technologies in accordance with what is reported by the promoter in its application.

and following the event organised in Malaga on 27 January 2023[15] to learn about the experience of the promoters of the projects in the first call, the Banco de España held bilateral meetings with all the promoters who had completed their passage through the controlled testing environment. These meetings served to ascertain how this experience impacted on the promoters and to seek possible suggestions on areas for improvement.

15 Information on the event is available at https://www.bde.es/f/webeventos/Eventos/Acta_Sandbox_Malaga_2023.pdf.

Box 2.1

THE SINGLE SUPERVISORY MECHANISM IS TEN YEARS OLD

The tenth anniversary of the Single Supervisory Mechanism (SSM) is on 4 November 2024, so it is a good time to take stock of what has been achieved so far and reflect on what lies ahead.

The creation of the SSM was a major challenge, not least because of the need to implement the new supervisory scheme in just one year, which required major transformations at the European Central Bank (ECB) and the National Competent Authorities (NCAs), and because of the difficult context in which it had to be tackled, following the major financial crisis that erupted in 2008. It has been a period of intense work and continuous improvement, which has enabled the SSM to become a robust, credible banking supervisor, able to adapt to a rapidly changing environment, and respected in the international financial community.

In this period, the Supervisory Board has played a key role, setting standards and defining priority areas for the entire organisation.

Some of the main achievements during this phase have been:

— Progress has been made in the consistent application of supervisory regulations and policies, through common guidelines and criteria on the implementation of national options and discretions.

— Supervisory practices and working methodologies have been harmonised, with the development of a supervisory manual and progress made in building a common supervisory culture.

— Risk-based supervision has been fostered, supported by a process of identifying and assessing key risks and setting supervisory priorities.

— In-depth knowledge of the supervised institutions has been achieved, through the ongoing supervision of the joint supervisory teams, specific on-sites and various cross-institutional activities.

To mark the tenth anniversary, a series of commemorative events will be organised throughout 2024, at both the ECB and the NCAs, and posters illustrating the main features of the ECB's and NCAs' supervisory systems will be displayed at the premises of each member state.

In this context, the Banco de España is organising various events:

— Public event commemorating the tenth anniversary, as part of the SSM Chair's annual visit to Spain.

— Internal seminar to discuss with staff from across the SSM what the integration of the various supervisory cultures has been like over the last ten years, the difficulties that have faced and the lessons learned from these difficulties.

— Exchange of a group of employees with other SSM institutions, with the aim of sharing experiences and fostering joint work.

— High-level discussion on the main challenges facing SSM supervision going forward.

As shown by the features of the activities planned, this anniversary is a good opportunity to give further impetus to the continuous improvement of the SSM and thus be in a position to adequately address future challenges. Some work is underway:

An expert group report on the SREP process published in April 2023 has defined a comprehensive set of recommendations, including strengthening the supervisory culture and its processes and methodologies; improving the procedures for defining quantitative requirements; and making more ambitious use of qualitative measures and the supervisor's toolkit. The concrete implementation of these recommendations will progress over the course of 2024. Also, the experience of the banking crises of early 2023 highlighted some weaknesses in supervisory frameworks (see Box 2.2) and the recent increase in geopolitical instability makes it advisable to analyse in depth how to capture the impact of certain developments on banking risks. Lastly, the debate on future supervision should take into account the impact of technological developments on risks and the competitive environment in which banks operate.

In any case, the changes to be implemented must make our supervisory process more integrated and risk-sensitive, and should pursue the following objectives:

— Increase effectiveness: developing supervision that is more sensitive to risk and geared towards attaining

Box 2.1
THE SINGLE SUPERVISORY MECHANISM IS TEN YEARS OLD (cont'd)

results that ensure compliance with an increasingly complex regulatory and operational framework. This is particularly relevant in relation to certain risks, such as governance risks, where progress has been slower.

— Improve consistency: progressing in the integration of the various components of the organisation and the harmonisation of supervisory activities.

— Increase efficiency: harnessing new technologies (most notably SupTech) to streamline and improve procedures and methodology, and generating additional space for higher value-added activities based on supervisory expert judgement.

In an economic, technological and geopolitical environment that is very different from that of ten years ago, future supervision must also be equipped with the necessary flexibility to respond swiftly to the increasingly dynamic environment. This will allow for effective action-oriented supervisory measures to be taken with a tangible impact on banking activity. The supervisor's transparency and communication with supervised entities, other related authorities and the general public should also be further strengthened.

Ten years go a long way and it seems clear that the SSM has so far been a successful experience. In this period, it has developed into a mature and increasingly integrated institution, which has contributed to preserving the solidity of the European banking sector in a highly uncertain environment. But there is still room for improvement and the new challenges of the future will need to be tackled ambitiously in a changing economic and technological context.

Box 2.2

RECENT BANKING CRISES: CAUSES AND SOME LESSONS FOR SUPERVISION[1]

Between March and May 2023, there was the chain crisis of several US regional banks (Silicon Valley, Signature and First Republic) and of the Swiss bank Credit Suisse which, due to its size and complexity, was classified as a global systemically important bank according to BIS international standards.

The interest rate rises against a backdrop of inflationary pressures and the uncertainty about macro-financial conditions that stems from existing geopolitical risks were the main trigger for this crisis, which affected institutions with weaknesses that made them especially vulnerable in this context.

The crisis started in Silicon Valley Bank (hereafter SVB). This institution showed a significant concentration of liabilities in deposits with high average balances, not covered by the deposit guarantee fund and concentrated in the technology and venture capital sectors; on the asset side, long-term debt portfolios classified as held-to-maturity, and acquired before the rise in interest rates, had a significant weight. The tightening of monetary policy led to significant decreases in the valuation of these debt portfolios, which SVB was forced to materialise in order to try to alleviate the liquidity pressures arising from the deposit outflows it had been experiencing. Negative news further accelerated this process, favoured by the concentration of depositors and the rapid spread of these concerns on social media.

Following this event, markets focused on institutions showing weaknesses of some kind, leading to significant deposit outflows and liquidity problems that fed off each other, in cases such as Signature Bank and First Republic. The Swiss bank Credit Suisse was affected by the mistrust generated in the markets by the US bank crises, as it had been showing weaknesses in its governance and risk management, which affected its liquidity and posed a significant threat to its viability.

The affected institutions found themselves needing to turn to the markets to maintain their liquidity levels, which further stimulated scrutiny and doubts about their situation, and revealed significant shortcomings in their interest rate and liquidity risk management which, far from being the result of a temporary situation, had been developing over time.

Deposit withdrawals and contagion effects affected institutions that shared, to varying degrees and with some different characteristics, certain underlying factors: i) lack of sustainability of their business models and of a comprehensive business perspective, with their activity strongly linked to certain sectors (e.g., SVB with the technology and venture capital sector; Signature with the crypto sector); ii) poor management of liquidity in relation to their liability structure, and inadequate management of collateral available for use in markets or with the central bank; iii) inappropriate interest rate risk management, with a high concentration of liabilities in deposits susceptible to high volatility and a concentration of assets in long-term debt portfolios classified as held-to-maturity; and iv) inadequate governance, with weak risk control and monitoring by the institutions' management bodies.

Liquidity pressures prompted swift reactions by the authorities, which provided additional liquidity lines to those already in place and took certain extraordinary measures aimed at curbing contagion effects. However, these actions could not stop the major, rapid outflows of funds from the affected institutions and, therefore, the supervisory and resolution authorities had to intervene to safeguard the stability of the banking system.

Subsequent reports prepared by US and Swiss supervisors and by some international bodies revealed that certain vulnerabilities had not been detected and, where identified, they had not always been addressed effectively.[2] These analyses suggest some important areas of improvement in supervision, including most notably: a) the need to ensure that the structure and focus of supervision provide a holistic picture of institutions' risks, with greater emphasis on the sustainability of the business model and on liquidity and interest rate risks; b) the need to improve the supervisory decision-making process, streamlining its management and establishing clear processes for the escalation of supervisory measures; and c) the need for

1 For further analysis of these crises and the lessons learned, see the Financial Stability Review Autumn 2023 article The 2023 banking crises: The causes and the role played by bank management, supervisors and regulators.

2 See Basel Committee on Banking Supervision. Report on the 2023 banking turmoil.

Box 2.2

RECENT BANKING CRISES: CAUSES AND SOME LESSONS FOR SUPERVISION[1] (cont'd)

swift corrective measures to address identified shortcomings (enforcement).

These areas for improvement are a point of reflection for all supervisors, although they are not equally applicable in all jurisdictions. There are significant differences between the supervisory structure and approach in the United States, Switzerland and the European Single Supervisory Mechanism (SSM). Thus, for example, in the US, unlike in Europe, the Basel standards do not apply in full to smaller institutions, such as those affected by the crisis. In the case of Credit Suisse, as a globally systemically important institution, its supervision has faced greater complexities than those existing at medium-sized institutions.

In short, the crises mentioned above show the significance of confidence and the contagion effects in the development of crises, especially in environments such as the current one, where the speed of communication and the dissemination of information is high. Also, as is becoming the norm in all crises, the institutions that show the most weaknesses and shortcomings in internal control and risk management are the most sensitive to these contagion effects and the consequent withdrawal of funds. These institutions are the most prone to liquidity pressures that feed off each other and can eventually render an institution unviable.[3] This crisis also offers valuable lessons for the supervisory approach. In particular, it has highlighted the importance of a holistic analysis of business models and of attention to asset and liability management, and it has revealed the need to act swiftly to remedy detected shortcomings, with the focus on the effectiveness of supervisory measures (see Box 2.3).

3 See, on this subject, A. Enria. (2023). *Well-run banks don´t fail-why governance is an enduring theme in banking crises;* Federal Reserve Board. (2023). *Review of the Federal Reserve Supervision and regulation of Silicon Valley Bank*, and Federal Deposit Insurance. (2023). *Remarks on Oversight of Financial Regulators: Financial Stability, Supervision, and Consumer Protection in the Wake of Recent Bank Failures.*

Box 2.3

CONSIDERATIONS ON THE EFFECTIVENESS OF SUPERVISORY ACTION

The crisis experienced in the first half of 2023 by certain US and Swiss banks has been the subject of analysis by the main international supervisors and bodies. In its report on the factors that contributed to the collapse of Silicon Valley Bank, the Federal Reserve noted that supervisors failed to adequately identify vulnerabilities as the bank grew in size and complexity. Also, when these vulnerabilities were identified, the necessary actions to correct them were not taken quickly enough.

As a result of this experience, the effectiveness of supervision has been at the centre of debate in the supervisory community, as evidenced by the analyses of the lessons learned from this episode carried out by various bodies (e.g. the International Monetary Fund (IMF) or the Basel Committee on Banking Supervision (BCBS)) and the work initiated by certain supervisors, including the Single Supervisory Mechanism.

The first precondition for effective supervision is a sound supervisory framework. In this regard, there is a broad consensus on a series of minimum standards, which are set out in the BCBS's "Core Principles for effective banking supervision" (updated in 2023). These standards cover a very wide range of issues, such as the institutional supervision framework, the treatment of key risks, the supervisory approach and the powers granted to supervisory authorities.

Effective supervision should ensure that institutions have adequate capital and liquidity buffers and that indicators of key risks are kept at manageable levels. In this respect, the evolution of the banking sector in Spain and in Europe has on the whole been very favourable in recent years: average capital ratios show a clear upward trend over the years; a notable effort has been made to reduce the portfolio of non-performing assets, as reflected in the significant decline in NPL ratios and foreclosed assets; profitability, another focus of supervisory attention in recent years, has improved, favoured by the normalisation of monetary policy; and liquidity ratios are also at comfortable levels.

In addition, European institutions have passed various stress tests and vulnerability analyses, which show high resilience under hypothetical stress scenarios, and have successfully withstood certain significant shocks in recent years, such as the COVID-19 crisis, the implications of the war in Ukraine and other geopolitical tensions, as well as the instability associated with the banking crises in the first part of 2023.

Supervisory activity within the SSM framework has contributed to this positive performance, tending towards higher standards and seeking a greater impact on institutions, and focusing on the most relevant risks and shortcomings. In recent years, special emphasis has been placed on areas such as credit risk management, the functioning of institutions'

Chart 1
IDENTIFICATION OF SHORTCOMINGS WITH HIGH SEVERITY. SPANISH SIGNIFICANT INSTITUTIONS (a)

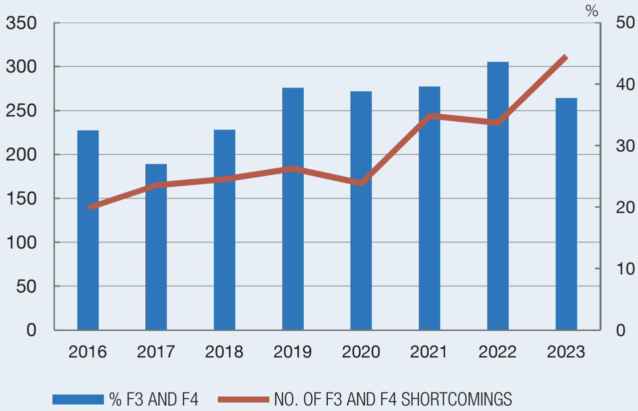
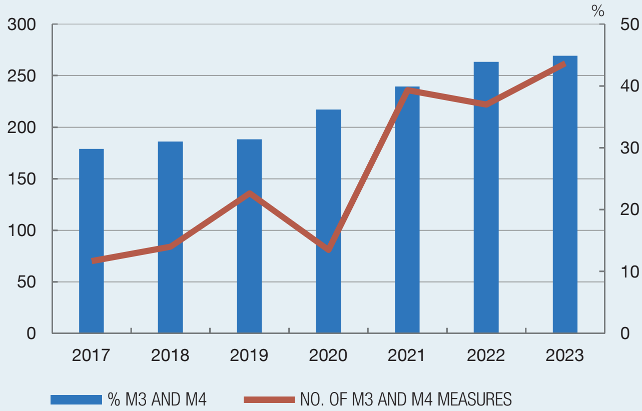


Chart 2
CLOSURE OF MEASURES WITH HIGH SEVERITY. SPANISH SIGNIFICANT INSTITUTIONS (b)



SOURCE: Banco de España.

a The Chart represents the number of shortcomings with high severity (F3 and F4) identified each year (left-hand scale) and their relative weight with respect to the total shortcomings with severity assigned (right-hand scale) of Spanish significant institutions.
b The Chart represents the number of measures with high severity (M3 and M4) closed each year as they are considered to be reasonably remedied (left-hand scale) and their relative weight with respect to the total measures with severity assigned closed in the year (right-hand scale) of Spanish significant institutions.

management bodies, the sustainability of business models and the operational resilience. More recently, liquidity and funding risks, interest rate risk and climate risk have become increasingly significant.

After ten years of the SSM functioning, the supervisor's knowledge of the system as a whole has progressively increased and ever more mature tools and methodologies have been developed to assess the main risks. This greater level of scrutiny has led to an increase in the number and significance of shortcomings identified in supervisory work, despite institutions' progress.

In the case of Spanish significant institutions under the direct supervision of the ECB, there is an upward trend in the identification of shortcomings with high severity (levels 3 and 4), which also account for a higher relative weight of the total shortcomings detected in recent years (Chart 1). Similarly, growing supervisory pressure on institutions to give priority to remedying their most significant shortcomings has been reflected in the greater remediation of shortcomings (corrective measures) with high severity in recent years as compared to previous years, in both absolute and relative terms (Chart 2).

In the case of the Spanish less significant institutions under the direct supervision of the Banco de España, the identification of shortcomings from inspections increased in the period from 2018 to 2023 (Chart 3), while the proportion of weaknesses with high severity (levels 3 and 4) with respect to the total has remained stable, with the exception of 2022, when it was significantly higher (Chart 4).

However, despite the overall improvement in institutions' resilience, the degree of progress across the SSM as a whole has not been the same for all risks. For example, in areas such as governance or risk data aggregation capacity, some problems are persistently being detected, the correction of which is slower than is desirable, partly because the shortcomings in these areas, especially in the case of governance, are of a qualitative nature and tend to take longer to remedy.

The effectiveness of supervisory action is linked to the selection of an appropriate combination of supervisory measures. In this regard, the report on the SREP, entrusted by the SSM to a group of independent experts, stresses that capital is not sufficient to address all risks, and recommends that the ECB make extensive use of the tools at the supervisor's disposal, including a more ambitious use of qualitative measures, aimed at getting banks to address necessary improvements in their business models and governance.

In this vein, the SSM has focused on improving supervisory effectiveness, especially in those areas where the weaknesses detected are most persistent. To this end, the supervisor must make an effort to prioritise and communicate its concerns to institutions as clearly and precisely as possible. In addition, work is being done on the design of escalation processes, using progressively more intrusive supervisory

Chart 3
LSIs

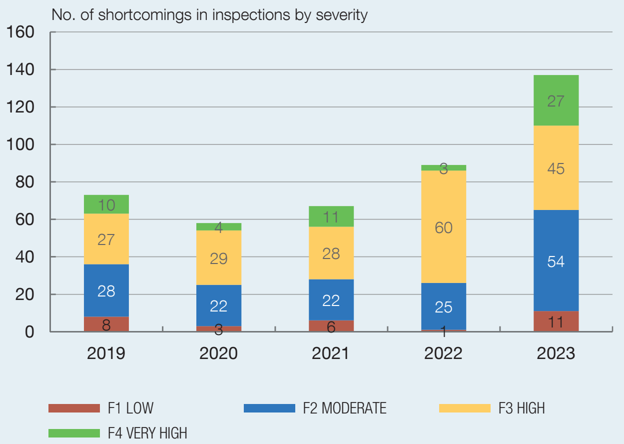
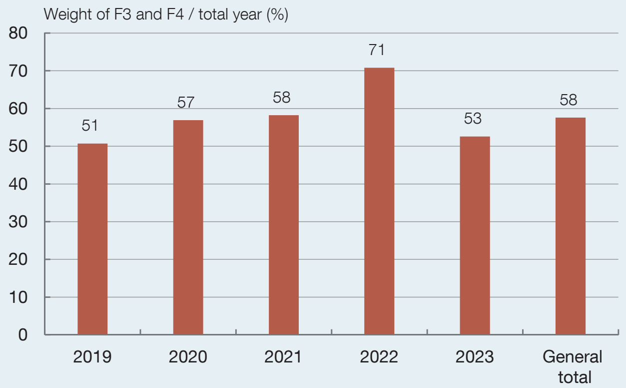


Chart 4
LSIs



SOURCE: Banco de España.

Box 2.3
CONSIDERATIONS ON THE EFFECTIVENESS OF SUPERVISORY ACTION (cont'd)

measures to incentivise corrective actions by institutions. This includes more intensive use of the qualitative requirements in the SREP and, where necessary, of the framework for sanctions and periodic penalty payments provided for in the SSM Regulation.

The increased focus on supervisory effectiveness also applies to less significant institutions. In the supervision of these institutions, which are smaller and have less complex business models, the focus is being placed on prioritising the most significant risk areas and on increasing supervisory pressure, including thematic actions on the highest priority issues and the adoption of binding measures within the SREP framework, in order to bolster institutions' resilience.

Box 2.4
CLIMATE RISK AND SUSTAINABLE ECONOMY

The European Central Bank (ECB), in close cooperation with the national competent authorities and on the basis of a comprehensive assessment of the main risks and vulnerabilities of the supervised institutions, performs annual reviews of the SSM supervisory priorities, which reflect its strategy for the next three years.

In December 2023, the supervisory priorities for 2024-2026 were published;[1] as in recent years, they highlight the need for credit institutions to continue working to resolve weaknesses related to the incorporation of climate and environmental risks into their risk management framework. This demonstrates European banking supervisors' commitment to play a major role in the fight against climate change and the transition to a more sustainable economy.

Given the priority nature of climate and environmental risks, numerous supervisory activities were developed in 2023, that will continue over the coming years, including most notably, in the case of significant institutions, the following:

— Specific monitoring of the weaknesses detected in the 2022 thematic review, which resulted in qualitative requirements being imposed on institutions with severe shortcomings in their materiality and business context assessment.

— On-site inspections on climate and environmental risks.

— Analysis of climate risk information that significant institutions published for the first time under Pillar 3 standards in the first half of 2023.

— Preparation and launch of the Fit-for-55 exercise, scenario analysis which aims to assess how public policies for the transition to a more decarbonised economy would affect the financial system (banking, securities and insurance).

For the less significant institutions, directly supervised by the Banco de España, an analysis of their progress in implementing the supervisory expectations on climate and environmental risk management that were published by the Banco de España in October 2020 was carried out by means of two questionnaires sent to all institutions. In parallel, there has been a progressive inclusion of the considerations on these risks in the supervisory dialogue and recommendations issued under the SREP.

As regards these institutions, the Banco de España will intensify the specific monitoring of these recommendations through horizontal on-site reviews across a sample of institutions to verify, among other aspects, whether institutions integrate the risks arising from climate change and environmental degradation into their current risk management procedures, and whether they have implemented a comprehensive approach to the identification, assessment, monitoring and mitigation of these risks.

The importance of these supervisory activities is given by the weight of the most carbon-intensive sectors in the credit exposure and income of European banks, and by recent developments in climate and environmental risks, including most notably the following:

— on a global scale, greenhouse gas emissions continue to rise, causing global warming which leads to an increase in physical risks;

— transition risks are increasing, due to the delay in the adoption of policies and measures to meet climate objectives, together with the need to invest in low-emission technologies that, in many cases, are costly or not sufficiently developed; and

— society's level of awareness is growing and, therefore, there is greater demand for sustainable goods and services, and greater scrutiny of companies' and institutions' behaviour, which increases their operational and reputational risks.

For the proper integration of these risks into their practices, institutions face well-known challenges. These include, among other things, the limited availability of quality data to assess climate risks, the very nature of the risks and the high uncertainty as to their materialisation, which require a long-term approach, exceeding the usual periods used by institutions in their customary planning. Also, although progress is being made, the methodologies for estimating these risks still lack the necessary sophistication for proper assessment.

1 See "ECB Banking Supervision: supervisory priorities for 2024-2026".

Box 2.4
CLIMATE RISK AND SUSTAINABLE ECONOMY (cont'd)

In this context, supervisors are playing a very active role, maintaining constant dialogue with institutions, publishing observed good practices and contributing to regulatory developments in this area.

It is important to note the significance of the transition plans that credit institutions will have to draw up. The fact that they will necessarily have to rely on the plans produced by their main counterparties will pose an additional challenge to those already mentioned. It is essential that credit institutions maintain fluid communication with their customers to learn about their transition plans and the technological developments and investments needed to implement them. Channelling capital only to industries that can already be described as "sustainable" would make it practically unfeasible to achieve the European Union's climate targets. The ECB, in turn, will develop an approach for analysing these plans as part of its supervisory review and assessment process.

Box 2.5

THE NEW DIGITAL OPERATIONAL RESILIENCE ACT

As part of its digital finance strategy, and in order to mitigate the risks associated with digitisation and improve the resilience of the European financial system, the European Commission published in September 2020 its legislative proposal for a new digital operational resilience act, known as DORA.

After a two-year negotiation process, the final text of DORA was published in December 2023, and its date of application is January 2025.

The fact that the chosen legislative instrument is a regulation ensures that the same standard will apply in all EU countries, thus achieving an unprecedented harmonisation of ICT resilience regulation for the European financial system.

The scope of DORA is surprisingly broad, as it will apply to all types of financial institutions, of all sizes, with due proportionality. The Commission thus recognises that, given the high level of interconnections and interdependencies between the various institutions that make up the financial system, it is essential to ensure minimum levels of resilience common to all of them in order to make the whole sector resilient.

Resilience is by no means a mere compliance exercise. In a true statement of principles, the chapter on technology risk management begins with an article on governance and organisation, setting out the responsibilities and obligations of institutions' management bodies, which will need to understand these risks and be directly involved in their management. For many institutions, this will be a turning point that will force a review of the composition of their management bodies, their functions and their level of involvement in the institutions' operational resilience.

While it could be argued that DORA's requirements on technology risk management, technology incident management and reporting, system resilience testing and third-party risk management are not entirely new, it is a novelty to have elevated them to the status of a sector-wide regulation. At present, financial institutions' resilience levels are not homogeneous and, therefore, the effort they will have to make in order to comply with the DORA requirements will also differ from case to case. This is of particular concern to smaller institutions, for which it can be a major challenge to equip themselves with the necessary technical and human resources.

One of the new developments with the greatest impact on supervisors is the DORA provisions on advanced cybersecurity testing (Threat-Led Penetration Tests), similar to those already in place in some countries, including Spain, under the TIBER framework. These tests will have to be carried out with a certain frequency (in principle every three years) and will be required for a potentially large number of institutions, which will require significant supervisory resources. While some institutions already undertake these tests on a voluntary basis, for others it will imply raising standards substantially.

Also, DORA contains provisions encouraging institutions to voluntarily share threat and vulnerability intelligence, as, while the benefits of such sharing are undisputed, there is often reluctance to do so.

But, undoubtedly, the most talked-about feature of DORA, which has made the regulation a global benchmark, is the establishment of a new oversight framework for the external technology providers that are critical to the European financial system as a whole, an aspect that is becoming increasingly significant given the growing trend towards the outsourcing of certain critical functions. The Commission is aware that in order to improve the level of resilience of the sector, it is essential to take into account the technology service providers supporting institutions' critical business functions, especially those ones that have reached a systemic dimension. The new oversight scheme will be led by European supervisory agencies, although national supervisors will have to support this function.

The implementation of this oversight mechanism is requiring and will require a significant effort on the part of all the authorities in the European financial sector, including the Banco de España. Initially, procedures and methodologies will have to be developed in order to carry out effective supervision of large, complex companies with widely differing business models, organisation and governance structures, with which the financial supervisors are not familiar. Also, the authorities will have to equip themselves with the necessary additional resources, which will involve bringing in a significant number of professionals with a high level of technical expertise. This type of profile is rare and highly solicited by all types of companies, so recruiting and retaining them will be a challenge for supervisors.

Beyond the above-mentioned aspects, it is also worth noting that the regulation establishes numerous additional

Box 2.5
THE NEW DIGITAL OPERATIONAL RESILIENCE ACT (cont'd)

obligations for the competent authorities, thereby recognising that they are key players in the ecosystem. We will need to make an unprecedented coordination effort, and play an active role beyond our responsibility as overseers of regulatory compliance, for example by promoting sectoral resilience exercises.

Box 2.6

BANKING APPLICATION OF MACHINE LEARNING TECHNIQUES IN INTERNAL RATINGS-BASED MODELS. SUPERVISORY APPROACH

The last five years have seen a growing use of artificial intelligence techniques —and, in particular, machine learning (ML) — for credit risk measurement and management. The implementation of this type of methodology is still a minority in industry, but its possibilities have aroused great interest and there is a continuous upward trend in its use. In addition to enabling the exploitation of new data sources, one of the major benefits of these models is their capacity to provide more accurate risk estimates.

In certain cases, financial institutions are incorporating ML techniques into credit risk models, where they play a central role, mainly scoring or rating counterparties based on their risk. Since 2018, there have been examples in the Single Supervisory Mechanism (SSM) of the use of these advanced techniques in models that have been approved. As well as in credit risk, ML is also being used in other financial risks, such as market and counterparty risk, or in the context of Pillar 2.

On the supervisory side, there is a degree of caution as to the use of ML in internal ratings-based (IRB) models for the calculation of capital requirements, mainly due to the difficulty in interpreting and explaining such techniques, which are sometimes referred to as "black boxes" precisely because their greater complexity limits the ability to understand how the results are arrived at. In this regard, it should be noted that understanding the internal behaviour of a model and how it generates forecasts is necessary to ensure its alignment with economic logic and to allow, where appropriate, manual adjustments to the ratings (overrides).

At present, supervisory and regulatory bodies are working intensively in this field, promoting communication with stakeholders to ascertain the degree of maturity of these approaches, to find out which types of developments the institutions are planning to undertake and to clarify regulatory expectations.

There is also significant interest among Spanish institutions in the use of ML techniques, and several initiatives have been developed for their use as a central part of IRB models, the approval of which has involved the dedication of supervisory resources. It is worth noting that, in several of the models presented, the difficulty in interpreting the model's internal logic has been addressed by introducing constraints into the models. In any case, while the introduction of such constraints provides valuable insight into the functioning of the model, it does not by itself completely resolve the "black box" problem.

The application of ML techniques in the area of credit risk is not confined to capital estimation models; it is also generating interest in loan origination areas, where the greater predictive capacity as compared to traditional techniques would have a direct economic impact on institutions. Such uses will have a specific regulatory framework under the AI Act, but they are also subject to the requirements set out in the general data protection regulation. Among other issues, this regulation addresses personal data exploitation and the prevention of discriminatory bias, which can be a challenge when using such techniques.

The emergence of ML in credit models is an interesting challenge. Through its supervisory function, the Banco de España will be able to examine firsthand how these techniques penetrate the banking environment, and will monitor their repercussions on management tasks and on access to credit. Moreover, it will require the update of professional profiles and an even greater involvement in training and research to understand both the capabilities and limitations of this disruptive technology.

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1 ML is a field of artificial intelligence that generates knowledge from big data processing.

2 As well as being useful in terms of management, this scoring or rating serves as a first step in many internal ratings-based (IRB) models to define sets of counterparties with a similar level of risk and, subsequently, quantify their risk. In addition to these scoring processes, there are also other uses with a more secondary role, for example, the initial processing of the data.

3 A survey is currently being conducted by the ECB, in addition to the survey in the European Banking Authority's Discussion paper on machine learning for IRB models.

4 In this way, certain patterns in the variables are imposed in advance, which favours alignment with economic or business logic. For example, the relationship between the borrower's income and the probability of default is always forced to be negative.

5 Regulation of artificial intelligence, which specifies various requirements for the use of ML techniques in the granting of credit, as it is considered an essential service for individuals.

Box 2.7

SUPTECH DEVELOPMENTS (TECHNOLOGICAL INNOVATION APPLIED TO SUPERVISION)

The Banco de España included the need to boost technological innovation in its 2024 Strategic Plan. To this end, among other initiatives, in the supervisory sphere it designed a roadmap for incorporating new technologies into supervisory activity.

One of the pillars on which this roadmap is based is the internal development of SupTech tools. To undertake this task, it is essential to combine people with training in new technologies and knowledge of and experience in the banking supervision function, and access to rich and quality data sources.

Three data sources can be accessed for the development of SupTech tools: i) information from confidential returns; (ii) granular loan information, mainly from the Banco de España's Central Credit Register (CIRBE); and (iii) unstructured data in the form of text: internal capital and liquidity adequacy assessment reports, news, contracts, etc.

The combination of both factors —appropriately trained and experienced staff and quality data sources— should take us to the highest level of the well-known "Data, Information, Knowledge, Wisdom" pyramid (Figure 1), and thus have the capacity to make well-informed decisions based on an understanding of the underlying information, in order to improve the effectiveness and efficiency of supervision.

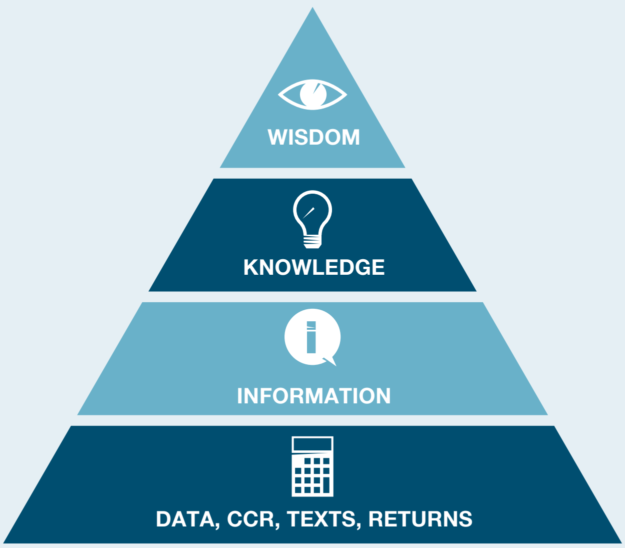
In the development of SupTech tools, four lines of work can be distinguished, which, based on the available data sources, interact in some way with each other (Figure 2):

1 **Improving the quality of the information reported in the CIRBE.** One of the techniques used to identify shortcomings in data quality is the reconciliation of the data reported to the CIRBE with the corresponding information in the confidential returns reported.

2 **Detecting changes in trends and anomalous data based on machine learning algorithms.** An example of this line of work is the tool called Avalanch, which analyses on a monthly basis, by using machine learning models, possible significant changes in the information received on new mortgage loans. The tool applies the adversarial validation technique, which is widely used in artificial intelligence to identify possible differences between two datasets.

Using an algorithm with a hierarchical decision tree structure (Figure 3), the most predictive variables are recursively searched and datasets are compared on a monthly basis, looking for significant changes or outliers. For example, between loans of a certain type granted by one institution on different dates; between loans granted by one institution versus another; or

Figure 1
DATA SCIENCE AS A PYRAMID, WITH DATA AT ITS BASE

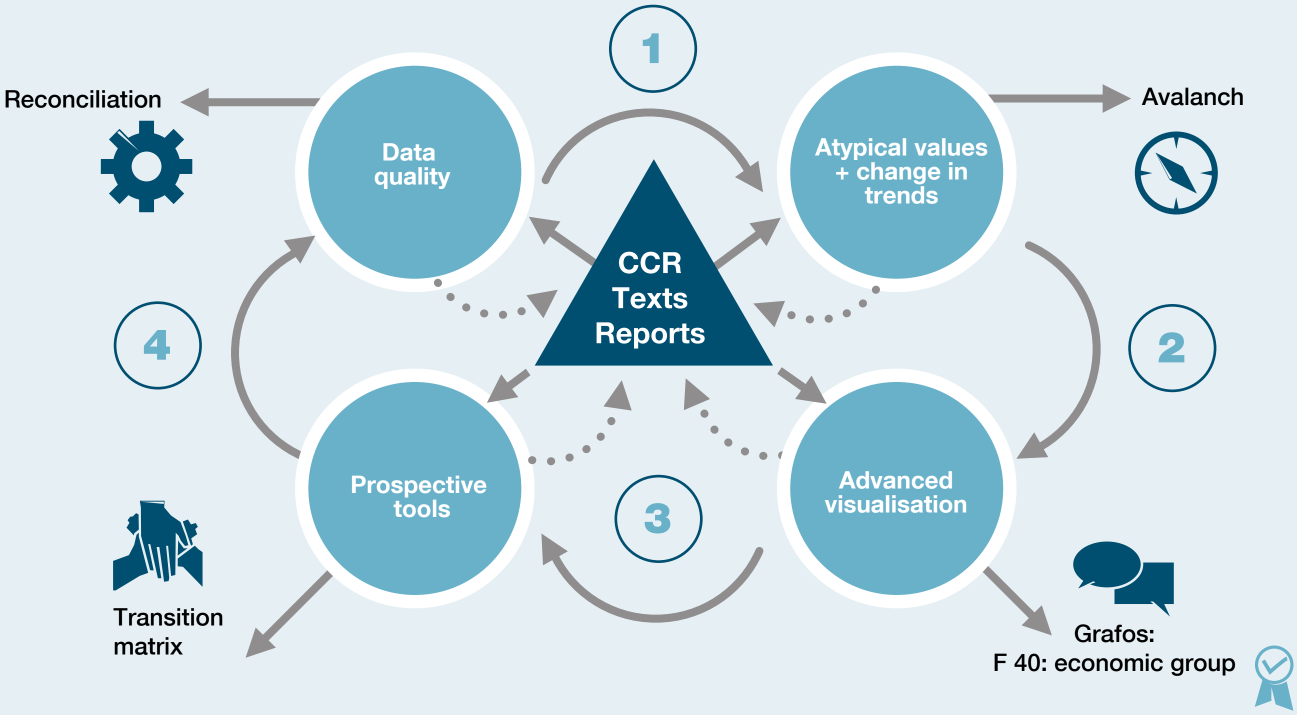


SOURCE: Banco de España.

Box 2.7

SUPTECH DEVELOPMENTS (TECHNOLOGICAL INNOVATION APPLIED TO SUPERVISION) (cont'd)

Figure 2
INTERRELATION AND INTERACTION PROCESSES



SOURCE: Banco de España.

differences between sub-populations of the same institution (e.g. between transactions granted through an agent versus those granted by the institution's branches). In this way, changes in loan origination policies, anomalous data, reporting errors, etc. can be detected.

3 **Graphical representation of large amounts of data to facilitate their interpretation and analysis.** Noteworthy is the tool called Grafos —a tool that we are going to share with the SSM, in our capacity as SupTech centre— which allows the interactive visualisation of "multiple relationships (n to m)".

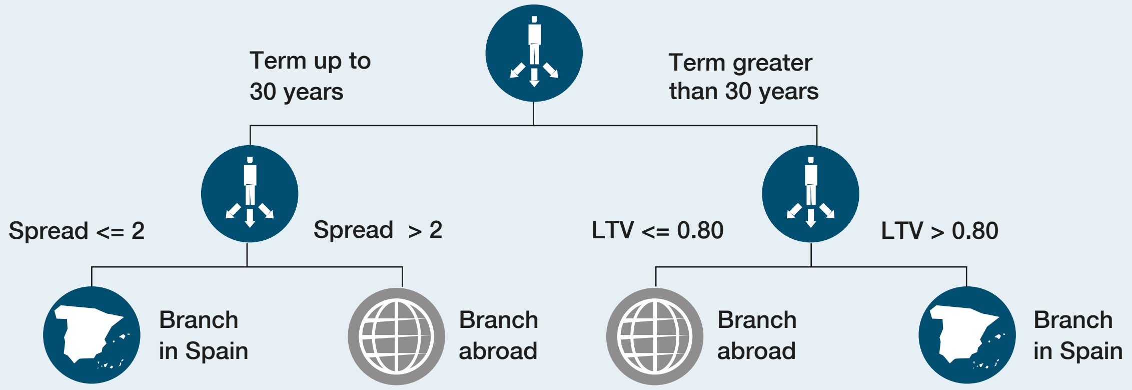
Certain complex relationships can be represented by graphs that facilitate analysis. For example: based on granular information on loan portfolios, relationships (n to m) between debtors, guarantors, collateral and/or economic groups of a set of loans can be represented by graphs; further, ownership relationships between companies forming an economic group can also be represented by graphs.

In the latter case, the visualisation of the multiple relationships of an institution's investee structure makes it possible, for example, to identify the main changes in an economic group between various dates or the structure resulting from mergers and acquisitions between credit institutions; to analyse the impact on solvency of regulatory amendments; or to analyse subsets of the economic group (e.g. the group in a given country).

The tool provides basic graphical capabilities for marking nodes and paths, interactive searches and filtering, or navigation functions through the graph. It also makes it possible to compare graphs (changes in a group between two dates), to perform graph calculations (e.g. to calculate the effective ownership interest percentages that a parent company has in its subsidiaries in complex structures), to identify ownership interests that are in loops (which may lead to capital inefficiency) or to show all paths from the parent company to each investee.

Box 2.7
SUPTECH DEVELOPMENTS (TECHNOLOGICAL INNOVATION APPLIED TO SUPERVISION) (cont'd)

Figure 3
AVALANCH. CASCADING DECISION TREE



SOURCE: Banco de España.

It is also a lightweight tool, easily integrable into Office, which does not require the installation of complicated new environments or other components on the supervisor's basic workstation.

4 **Exploration of predictive capacity based on CIRBE information and extraction of information from unstructured texts.** An example of a tool that explores predictive capacity is the so-called Transition Matrices, which tries to study the payment behaviour of loans and credits through the monthly analysis of the number of months in arrears of each operation reported to the CIRBE.

The tool compares the status of each loan in two consecutive months and generates the percentages of the money exposure that migrate between one arrears level and the other (percentage of the exposure with "x" months in arrears reported in the month that moves to "y" months in arrears in the following month), resulting in a "transition coefficient matrix" between in arrears statuses.

The statistical treatment of these monthly transition matrices makes it possible to project an estimate of future losses of the portfolios (the time evolution of which is an indicator of their quality) or to identify anomalous behaviour in the portfolios.

Box 2.8

ANTI-MONEY LAUNDERING: THE NEW REGULATORY PACKAGE AND THE ANTI-MONEY LAUNDERING AND COUNTERING THE FINANCING OF TERRORISM AUTHORITY

In July 2019, following several money laundering scandals in credit institutions operating in various European Union (EU) Member States, the European Commission published, among other documents, an analysis highlighting a number of shortcomings in the implementation of the EU legal framework on anti-money laundering and countering the financing of terrorism (AML/CFT) in areas such as the supervision and cooperation between Financial Intelligence Units (FIUs). This analysis concluded that the EU legal framework needed to be reformed to ensure its effectiveness and coherence, as the minimum harmonisation approach to AML/CFT legislation at the time resulted in different regulatory and supervisory frameworks.

In this regard, international AML/CFT regulations have traditionally been implemented in the EU via directives (there have been five directives since 1991), and a certain degree of flexibility has been permitted in their transposition into national frameworks. Reality has shown that such a transposition scheme is inadequate in the area of AML/CFT, and that a truly single EU-wide regulatory framework is needed instead.

AML/CFT supervision, in turn, has so far been entrusted to the national competent authorities, designated by Member States when transposing the successive directives; the various NCAs have different mandates and characteristics. Recent scandals have shown that, in certain cases, these authorities lacked the resources required to prevent them from occurring.

On 7 May 2020, the European Commission presented an action plan for a comprehensive EU-wide AML/CFT policy, defining six priorities or pillars:

1 Ensuring the effective implementation of the existing AML/CFT framework.

2 Establishing a single rulebook on AML/CFT.

3 Bringing about an EU level AML/CFT supervision.

4 Establishing a support and cooperation mechanism for FIUs.

5 Enforcing Union-level criminal law provisions and information exchange.

6 Strengthening the international dimension of the EU AML/CFT framework.

The EU is addressing these priorities by creating, through a Regulation, the new Anti-Money Laundering and Countering the Financing of Terrorism Authority (hereafter AMLA), and strengthening legislation with two legislative proposals (a new directive and a regulation that is directly applicable across the EU, which are expected to be finalised by June 2024).

The new regulation responds to the aforementioned need to harmonise key aspects of the regulations applicable to the private sector, such as the definition of obliged entities, the cases in which enhanced diligence measures apply, the limits on the use of cash, the rules on beneficial ownership and the application of enhanced measures to transactions with high-risk third countries. The AMLA Regulation was agreed by the Council and the EU Parliament in December 2023, while political agreement on the Directive and Regulation was reached in January 2024. In a significant development, on 22 February 2024, the Council and Parliament agreed that the seat of the new prevention authority will be in Frankfurt. Following this key decision, the AMLA will be legally constituted in September 2024, but will not be fully operational until mid-2025.

The current set-up of AML/CFT supervision has given rise to uneven quality and effectiveness across the EU. It is clear that shortcomings in the supervision of a national competent authority on AML/CFT can create material risks for the single market as a whole. It is worth recalling that recent money laundering scandals in the EU had a cross-border dimension and, therefore, it is necessary that AMLA and the national AML/CFT supervisory authorities form an integrated AML/CFT supervisory system, of which the new authority will be the central element.

The articulation and coordination of AML/CFT supervision by AMLA will undoubtedly be a major challenge, and one for which Spain in general — and the Banco de España in particular— is prepared. In this respect, the soundness of the Spanish regulatory and institutional framework, which has the highest compliance ratings according to the Financial Action Task Force (FATF), is an excellent starting point. The Banco de España, as an integral part of our institutional framework for AML/CFT supervision together with SEPBLAC, will actively contribute to this process, also building on the experience gained and lessons learned following the creation of the Single Supervisory Mechanism (SSM) a decade ago. Also, credit institutions will have to adapt and respond to the challenges posed by the new

Box 2.8

ANTI-MONEY LAUNDERING: THE NEW REGULATORY PACKAGE AND THE ANTI-MONEY LAUNDERING AND COUNTERING THE FINANCING OF TERRORISM AUTHORITY (cont'd)

regulatory framework and, in particular, by the new AML/CFT supervisory scheme of which the AMLA will be an essential part. However, the experience accumulated by institutions in the SSM's ten years of existence, as well as the demanding Spanish regulatory framework, are strengths for this transition to the European regulatory and supervisory framework.

Like the SSM, AMLA will be responsible for the direct supervision of a limited number of higher-risk obliged entities in the financial system with cross-border activity. Also, it will coordinate and supervise AML/CFT supervisors in the financial and non-financial sectors. It will also coordinate and support FIUs in their joint analysis of transactions reporting and suspicious activity with a cross-border dimension. In addition, it will be responsible for monitoring, analysing and exchanging information on money laundering and terrorist financing risks affecting the internal market.