

Think **Value**
Think **Customer**
Think **Global**



Starting a new phase of value creation

Pillar 3
Disclosure Report 2023

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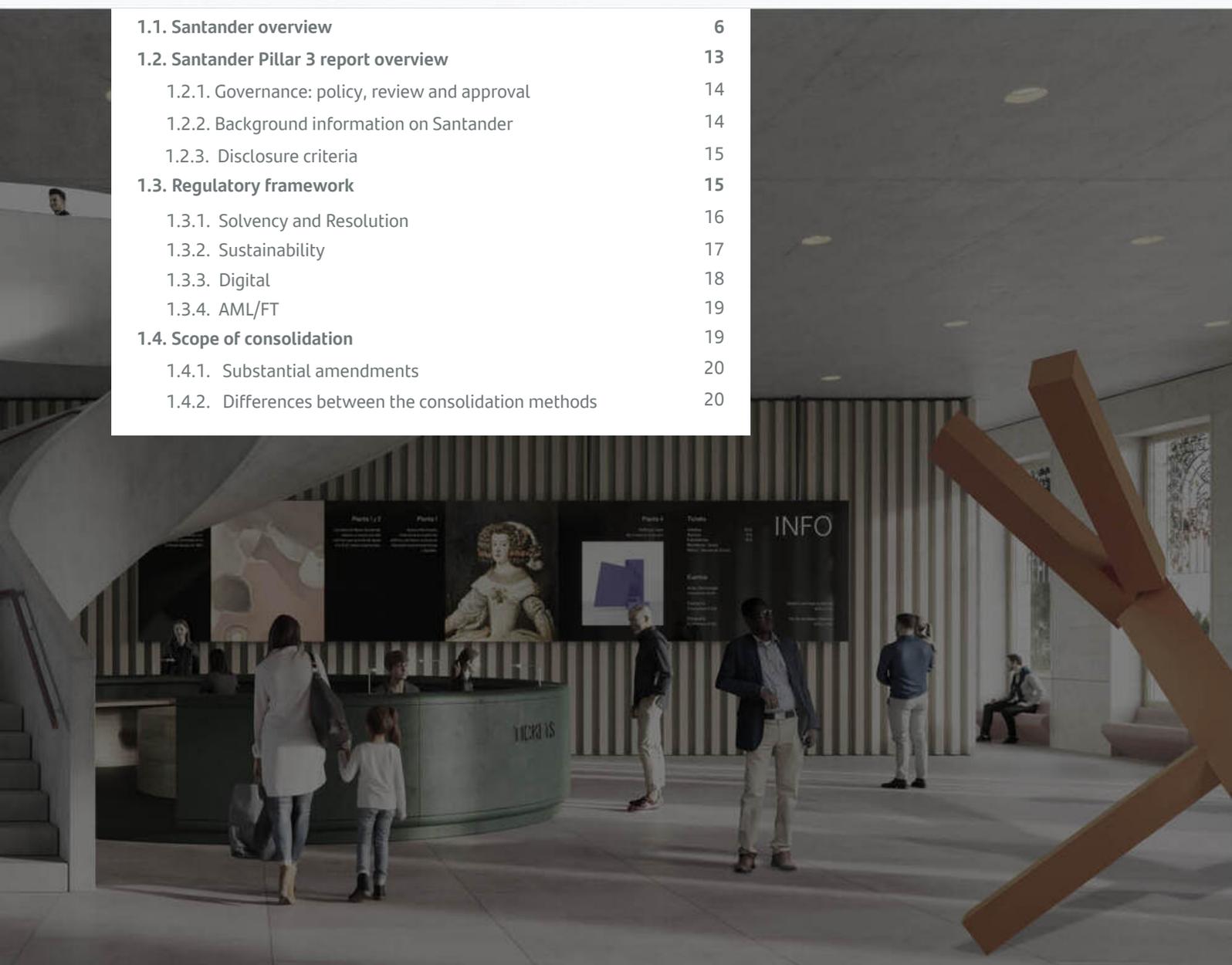
[Access 2023 Pillar 3 Disclosures Report available on the Santander Group website](#)

Introduction



1. Introduction

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1. Introduction

1.1. Santander overview

Our aim

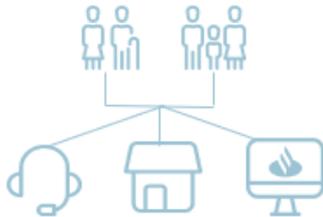
Santander is one of the largest banks in the eurozone. As of December 2023, Banco Santander's market capitalization of EUR 61,168 million was the second largest in the eurozone and 21st largest in the world among financial institutions.

Santander aims to be the best open financial service platform, by acting responsibly and earning the lasting loyalty of our people, customers, shareholders and communities. Our purpose is to help people and businesses prosper.

Our business model: Based on 3 Pillars

01. Customer focus

Digital bank with branches



We are building a digital bank with branches to make life easier for our customers, giving them the power to decide how they want to interact with us.

165 Mn +5 Mn
Total customers / New customers

02. Our scale

Local and global scale



These five global businesses support value creation based on profitable growth and operational leverage.

The scale in each of our main markets in volumes, together with our global capabilities generate profitable growth and give us advantages over local competitors.

03. Diversification

Geographic and business diversification



Diversification and a medium-low risk profile deliver recurrent pre-provision profit, with among the lowest volatility across peers.

Our simple and focused range of products and services meets the needs of a broad spectrum of customers.

Our business model is a source of great strength and resilience.

Economic and regulatory context

During 2023, Santander operated in an environment dominated by:

- 1 Higher interest rates as central banks looked to contain inflation, which gradually eased during the year.
- 2 Geopolitical tensions arising from ongoing conflicts.
- 3 A gradual slowdown in activity, however with resilient labour markets with unemployment rates at or close to full employment in two thirds of Santander's footprint.

In 2023, regulatory discussions were focused on four main areas: capital requirements and resolution framework, sustainability, digital (with a special focus on payments) and retail.

Regarding capital requirements, most of the discussions continued to focus on the legislative proposal to implement the Basel III prudential framework in Europe (CRR III-CRD VI). This reform aims to reduce the variability of risk-weighted assets and enhance comparability across institutions. It introduces other issues such as the prudential treatment of exposures to crypto-assets and provisions relating to Environmental, Social and Governance (ESG) risks. Regarding the latter, the European Banking Authority (EBA) is carrying out an analysis of potential prudential treatment of ESG risks. The Basel Committee published a first report on lessons learned from the Silicon Valley Bank and Credit Suisse crisis, highlighting the need to strengthen the supervisory framework, and announced that it will continue to analyse the need to reform the current framework on liquidity, interest rate risk and AT1 instruments.

Public policy

Santander has always supported the need for robust, high-quality regulation that reinforces the banking system strength and solvency, establishes strong consumer protection and market stability standards, and favours transparency regarding risk and resilience for investors and supervisors.

Capital and bank resilience

Although we believe that reforms in the last decade have made financial institutions more robust in terms of capital, helping banks grow in stress situations such as the covid-19 pandemic or the war in Ukraine, we continue to advocate for:



A strategy to continue working on the implementation of the Basel III prudential framework in Europe, which aims to reduce the variability of risk-weighted assets and enhance comparability between institutions, while also advocating that it takes into account a prudential treatment of crypto-assets and provisions relating to ESG risks.



The correction of the current regulatory bias that favours risk aversion over growth and competitiveness.



The need for a stable and predictable framework to facilitate institutions' management and investors' understanding of this agenda.



The building of a genuine single financial services market in Europe, which we believe is key to competitiveness.



Banking regulation that takes into account the realities of banks with a global footprint, does not penalize expansion to other countries and includes the recognition of the Multiple Point of Entry (MPE) resolution framework.



Common deposit insurance scheme for EU banks that breaks the bank/sovereign loop. Furthermore, the alignment of the different rules and the revitalization of the securitization market are essential for the construction of a Capital Markets Union.

We delivered record profit ...

→ Record results with 5mn new customers YoY contributing to double-digit revenue growth	FY'23 Attributable Profit	FY'23 Revenue
	€11.1 bn +15%	€58bn +11%
→ First year of ONE Transformation driving profitable growth and structural efficiency improvement	Cost-to-income	RoTE
	44.1% -173bps	15.1% +169bps
→ Strong balance sheet, with solid credit quality metrics and a higher capital ratio	CoR	FL CET1
	1.18% +0.19pp	12.3% +0.2pp
→ Delivering double digit value creation and higher shareholder remuneration	TNAVps + DPS	EPS
	15% Cash DPS ^A + c.50%	22%

Note: YoY changes. In constant euros. TNAVps + DPS includes the €5.95 cent cash dividend paid in May 2023 and the €8.10 cent cash dividend paid in November 2023

Note: Based on underlying P&L. YoY changes in euros. In constant euros: attributable profit +18% and revenue +13%.

(A) TNAVps + dividend per share (DPS) includes the €5.95 cent cash dividend paid in May 2023 and the €8.10 cent cash dividend paid in November 2023

Implementation of 2023 shareholder remuneration policy is subject to future corporate and regulatory decisions and approvals. For more details, see section 3.3 'Dividends and shareholder remuneration' in the 'Corporate Governance' chapter.

We achieved our 2023 Group financial targets

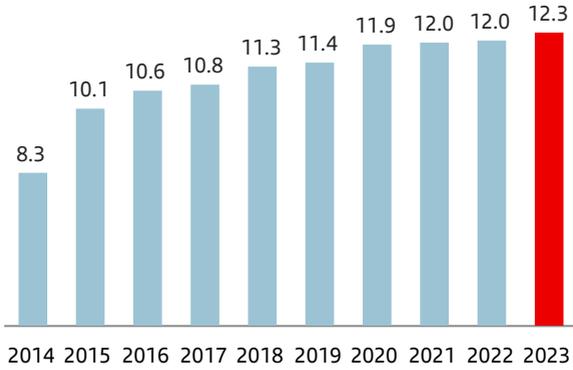
		2023 targets	2023 achievement
Revenue ^A	»»	Double-digit growth	+13%
Efficiency ratio	»»	44-45%	44.1%
Cost of risk	»»	<1.2%	1.18%
RoTE	»»	>15%	15.1%
FL CET1	»»	>12%	12.3%

A. YoY in constant euros.

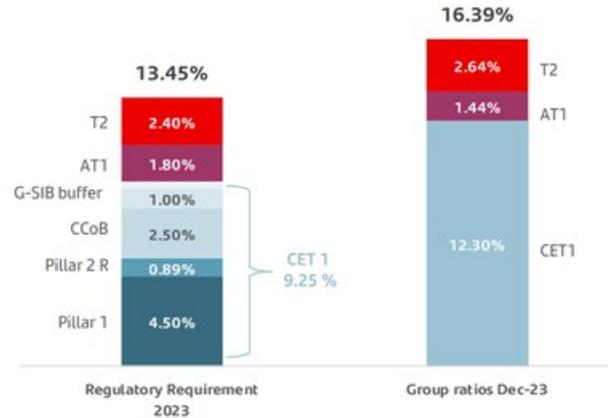
Executive summary

Santander's capital levels exceed minimum regulatory requirements

Fully-loaded CET1 ratio evolution



Regulatory capital vs. regulatory requirement (phased-in)^A

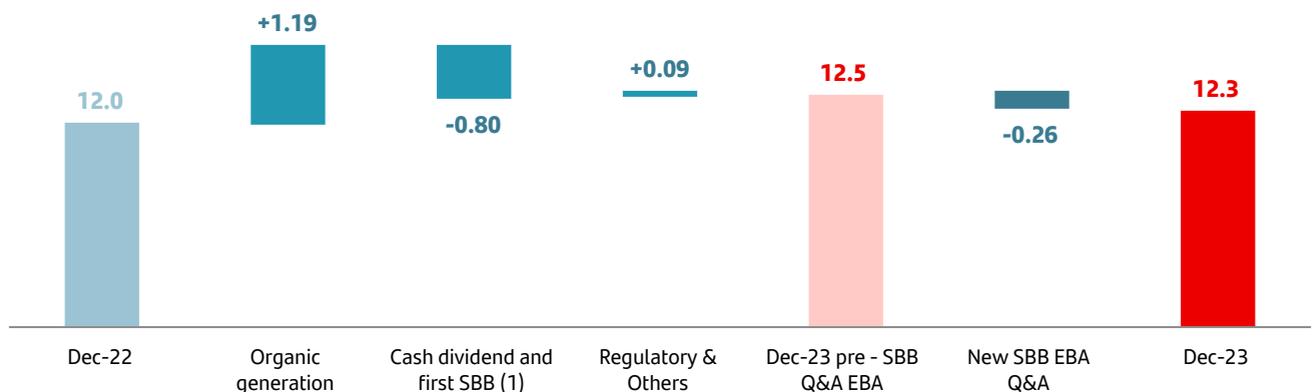


Our business model and strategy allow us to accelerate profitable growth and shareholder value creation.

	2025 target	2023 Achievement
CET1	>12%	12.3%
RWA with RoRWA > COE	85%	84%
Profitability (RoTE)	15-17%	15.1%
TNAVps	Double-digit growth	15%

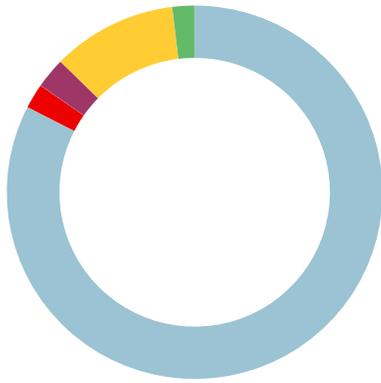
(A): The phased-in ratio includes the transitional treatment of IFRS 9, calculated in accordance with article 473a of the Capital Requirements Regulation (CRR II) and the subsequent amendments introduced by EU Regulation 2020/873. In addition, the total phased-in capital ratio includes the transitional treatment in accordance with Chapter 4, Title 1, Part 10 of CRR II.

Strong performance drove higher gross organic capital generation



¹: The implementation of the shareholder remuneration policy is subject to future corporate and regulatory decisions and approvals.

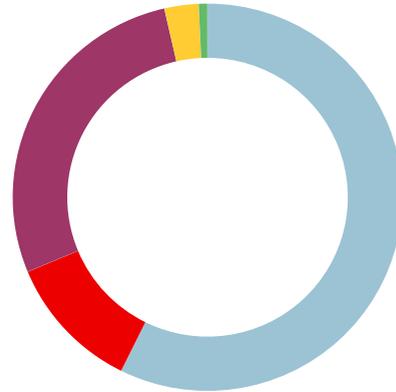
RWA distribution by type of risk ^A



- Credit (ex. CCR, SEC and Others) - €515 Bn
- CCR - €14 Bn
- Market - €16 Bn
- Operational - €67 Bn
- Securizations and Others - €12 Bn

Total: €624 Bn

RWA by credit approach ^{AB}



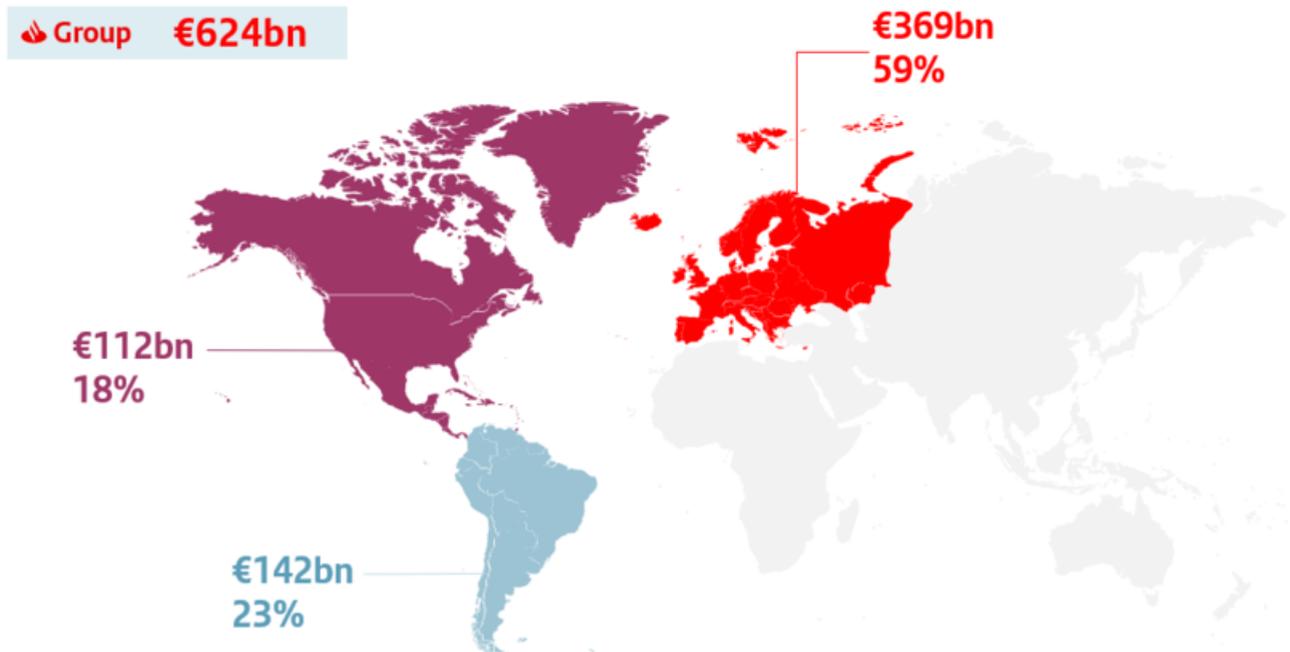
- SA Method - €286 Bn
- FIRB Method - €57 Bn
- AIRB Method - €138 Bn
- Slotting - €14 Bn
- Equities - €4 Bn

Total: €515 Bn

^A CRR Phased-in, NIIF9 Phased-in.

^B Securitisation and others are excluded. For more information, see table 9.OV1

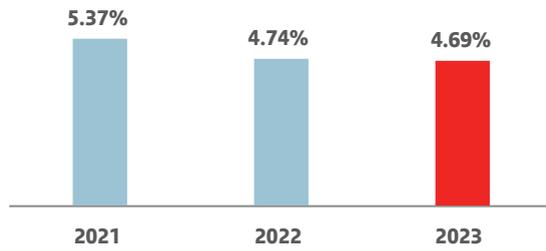
RWA distribution by geographic area ^{AB}



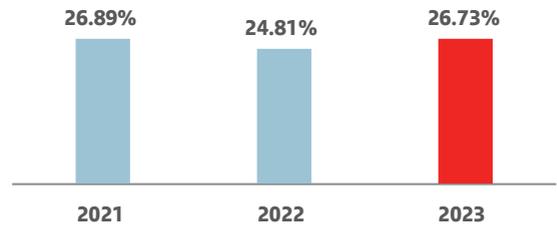
^A Others is excluded. For more information, see Table 10. RWA by geographical region

^B CRR Phased-in, Phased-in IFRS 9

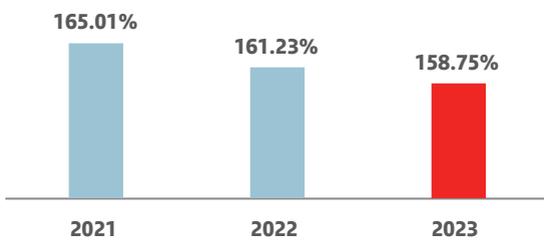
Leverage ratio (CRR and IFRS9 Phased-in)



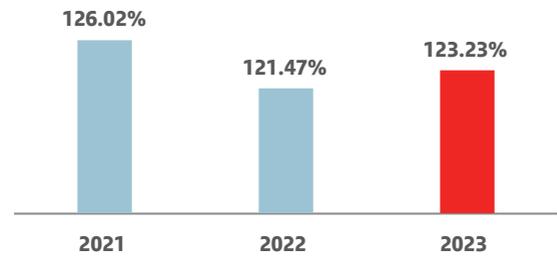
TLAC ratio



Liquidity coverage ratio



NSFR ratio



Fully-loaded CET1 ratio



The 2021 fully-loaded CET1 ratio includes a charge related to corporate transactions that were pending approval at year end (-0.16pp)

Fully-loaded total capital ratio



Table 1.KM1 - Key metrics template

EUR million		a	b	c	d	e
		Dec'23	Sep'23	Jun'23	Mar'23	Dec'22
Available own funds (amounts)						
1	Common Equity Tier 1 (CET 1) capital	76,741	77,658	77,628	76,127	74,202
2	Tier 1 capital	85,742	86,591	86,485	85,077	83,033
3	Total capital	102,240	102,617	101,154	98,646	97,392
Risk-weighted exposure amounts						
4	Total risk-weighted exposure amount	623,731	629,012	631,149	620,709	609,266
Capital ratios (as a percentage of risk-weighted exposure amount)						
5	Common Equity Tier 1 ratio (%)	12.30 %	12.35 %	12.30 %	12.26 %	12.18 %
6	Tier 1 ratio (%)	13.75 %	13.77 %	13.70 %	13.71 %	13.63 %
7	Total capital ratio (%)	16.39 %	16.31 %	16.03 %	15.89 %	15.99 %
Additional own funds requirements to address risks other than the risk of excessive leverage (as a percentage of risk-weighted exposure amount)						
EU 7a	Additional own funds requirements to address risks other than the risk of excessive leverage (%)	1.58 %	1.58 %	1.58 %	1.58 %	1.58 %
EU 7b	of which: to be made up of CET1 capital (percentage points)	0.89 %	0.89 %	0.89 %	0.89 %	0.89 %
EU 7c	of which: to be made up of Tier 1 capital (percentage points)	1.19 %	1.19 %	1.19 %	1.19 %	1.19 %
EU 7d	Total SREP own funds requirements (%)	9.58 %	9.58 %	9.58 %	9.58 %	9.58 %
Combined buffer requirement (as a percentage of risk-weighted exposure amount)						
8	Capital conservation buffer (%)	2.50 %	2.50 %	2.50 %	2.50 %	2.50 %
EU 8a	Conservation buffer due to macro-prudential or systemic risk identified at the level of a Member State (%)	— %	— %	— %	— %	— %
9	Institution specific countercyclical capital buffer (%)	0.37 %	0.37 %	0.25 %	0.22 %	0.18 %
EU 9a	Systemic risk buffer (%)	— %	— %	— %	— %	— %
10	Global Systemically Important Institution buffer (%)	1.00 %	1.00 %	1.00 %	1.00 %	1.00 %
EU 10a	Other Systemically Important Institution buffer	1.00 %	1.00 %	1.00 %	1.00 %	1.00 %
11	Combined buffer requirement (%)	3.87 %	3.87 %	3.75 %	3.72 %	3.68 %
EU 11a	Overall capital requirements (%)	13.45 %	13.45 %	13.33 %	13.30 %	13.26 %
12	CET1 available after meeting the total SREP own funds requirements (%)	6.56 %	6.58 %	6.45 %	6.31 %	6.41 %
Leverage ratio						
13	Total exposure measure	1,826,922	1,828,087	1,796,203	1,758,741	1,750,626
14	Leverage ratio (%)	4.69 %	4.74 %	4.81 %	4.84 %	4.74 %
Additional own funds requirements to address risks of excessive leverage (as a percentage of leverage ratio total exposure amount)						
EU 14a	Additional own funds requirements to address the risk of excessive leverage (%)	— %	— %	— %	— %	— %
EU 14b	of which: to be made up of CET1 capital (percentage points)	— %	— %	— %	— %	— %
EU 14c	Total SREP leverage ratio requirements (%)	3.00 %	3.00 %	3.00 %	3.00 %	3.00 %
Leverage ratio buffer and overall leverage ratio requirement (as a percentage of total exposure measure)						
EU 14d	Leverage ratio buffer requirement (%)	0.50 %	0.50 %	0.50 %	0.50 %	— %
EU 14e	Overall leverage ratio requirements (%)	3.50 %	3.50 %	3.50 %	3.50 %	3.00 %
Liquidity Coverage Ratio						
15	Total high-quality liquid assets (HQLA) (Weighted value - average)	323,188	317,397	315,166	309,535	303,330
EU 16a	Cash outflows - Total weighted value	274,162	270,725	268,613	264,162	257,311
EU 16b	Cash inflows - Total weighted value	70,643	69,251	70,310	70,583	69,185
16	Total net cash outflows (adjusted value)	203,519	201,473	198,303	193,579	188,126
17	Liquidity coverage ratio (%)*	158.75 %	157.57 %	158.93 %	159.90 %	161.23 %
Net Stable Funding Ratio						
18	Total available stable funding	1,139,711	1,137,915	1,132,210	1,126,567	1,121,194
19	Total required stable funding	924,843	932,153	928,665	934,618	923,018
20	NSFR ratio (%)	123.23 %	122.07 %	121.92 %	120.54 %	121.47 %

CRR Phased-in, Phased-in IFRS9

* Liquidity coverage ratio is the average of 12 months

1.2. GRUPO SANTANDER PILLAR 3 REPORT OVERVIEW

This section looks at general aspects applicable to Grupo Santander and describes the governance for approval and publication of the Pillar 3 report, in addition to the disclosure criteria used in the report.

→ This section covers the requirements of Articles 432, 433, 433bis, 434, 436a and 437bis of the CRR on the requirements and scope of disclosure of information by the Group.

The Basel framework, has three Pillars:

- Minimum capital requirements (Pillar 1)
- Supervisory review (Pillar 2)
- Market discipline (Pillar 3).

Santander Pillar 3 Disclosure Report is a public document that is published in the Group's corporate website in order to fulfil one of the regulatory requirements within the scope of Basel. Specifically, the reporting standards are set by Part Eight of the Capital Requirements Regulation (CRR) 575/2013 and complementary European Banking Authority (EBA) Guidelines. In addition, the Report considers the Regulation (CRR II) 2019/876 amending Regulation 575/2013.

Pillar 3 includes a set of disclosure requirements which are intended to provide analysts, investors, shareholders and other market agents with key capital and risk information to improve their ability of assessing banks' risk profile and capital adequacy.

The timely publication of this information is considered as a booster of transparency within financial institutions and it contributes to the adequate functioning of financial markets.

The banking package will implement the latest Basel III reforms, which will underpin a robust regulatory framework, efficient supervision and enhanced risk control by credit institutions. Following the CRDVI/CRR III, the EBA will be asked to work on the layer of the regulatory products that ensures a technical implementation of the prudential framework, including amendments to the disclosure requirements.

In addition, the EBA published the draft Consultation Paper ("Draft Implementing Technical Standards amending Commission Implementing Regulation (EU) 2021/637 on public disclosures by institutions of the information referred to in Titles II and III of Part Eight of Regulation (EU) No 575/2013") with the proposals to improve the information to be included in Pillar 3 from 2025.

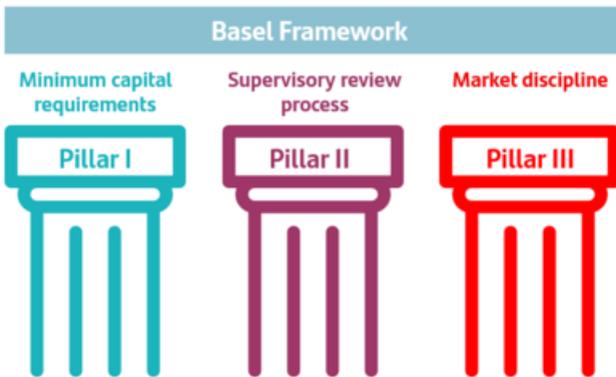
1.2.1. Governance: policy, review and approval

Grupo Santander has a formal policy on Pillar 3 disclosures which defines requirements, development process, frequency and associated governance in accordance with the Directive 2013/36/EU, Regulation (EU) no. 2019/876 of 20 May 2019 (the EU Regulation or CRR II) amending Regulation (EU) no. 575/2013, as well as the law on supervision and capital requirements (10/2014) of the Banco de España.

This policy has been prepared in compliance with the criteria established in the Guidelines on Materiality, Proprietary, Confidentiality and Frequency of the Information by the European Banking Authority in accordance with Article 432, sections 1 and 2 and Article 433 of Regulation (EU) 575/2013.

The Pillar 3 disclosures report relies on a range of defined processes relating to the internal control framework, with duties and responsibilities for review and certification of the information contained in the report at several levels of the organisation.

Additional information regarding Grupo Santander's system of internal control over financial reporting (SCI) can be found in the 'Corporate governance' chapter of the 2023 Annual Report.



This document should be read in conjunction with the Annexes of Pillar 3 and the Annual Report, which have been published on the website (www.santander.com).

On 27 June 2023, a political agreement was reached between the Council of the European Union and the European Parliament on the proposal put forward by the European Commission on 27 October 2021 on the banking package. The banking package includes amendments to the Capital Requirements Regulation (CRR III) and to the Capital Requirements Directive (CRD VI).



[Access 2023 Annual Report available on the Santander Group website](#)

The information contained in this report has been subject to an ex-ante review by the External Auditor which has not declared any findings in its report in relation to the reasonableness of the information detailed and the compliance with the information requirements established in the European Capital Directive and Regulation.

The conclusions are presented to the audit committee prior to its approval. In addition, this report is included in the recurring annual plan review of internal audit.

Approval by governing bodies

The report has been reviewed by the capital committee and the audit committee at their meeting on 13 February 2024, as well as by the board of directors' meeting on 15 February, prior to its final approval at the board of directors' meeting on 19 February 2024.

The board of directors of Santander certifies that the publication of the Pillar 3 disclosures report is compliant with the guidelines in Part Eight of Regulation (EU) 575/2013 and consistent with the "Pillar 3 Disclosures Policy" adopted by the board of directors.

No exceptions have been applied for the publication of information considered proprietary or confidential.

Furthermore, a quarterly report is published which includes a set of information complying with the internal policy and criteria established in the European Banking Authority guidelines about disclosure frequency.

The Pillar 3 disclosures report is available in the Shareholders and Investors section of the Santander website (www.santander.com), under "Financial and economic information".

 [Access 2023 Pillar 3 Disclosures Report available on the Santander Group website](#)



José García Cantera

Group Chief Financial Officer



José Doncel

Group Chief Accounting Officer



Mahesh Aditya

Group Chief Risk Officer

|| We confirm that Santander's Pillar 3 disclosures, to the best of our knowledge, comply with updated Pillar 3 framework within Capital Requirements Regulation (CRR) 575/2013 (Part Eight) and have been prepared in compliance with Santander's policies and internal processes, systems and controls. ||

1.2.2. Background information on Santander

Banco Santander, S.A. is a legal entity subject to the rules and regulations applicable to banks operating in Spain. In addition to its direct operations, Banco Santander, S.A. is the holding company of a group of banking subsidiaries engaged in a range of business activities. The European Central Bank (ECB) is the supervisor of the Grupo Santander on a consolidated basis.

The Capital Requirements Regulation (CRR) and its modifications (hereinafter referred to as CRR), Capital Requirements Directive (CRD) and its modifications, and its transposition through Banco de España Circular 2/2016, on supervision and capital adequacy, are applicable at a consolidated level to the entire Grupo Santander.

See Appendix II, CRR Mapping, for all aspects for which disclosure is required under Part Eight of the CRR, as amended but that are not applicable to Santander. These are reported as "N/A" (not applicable).

Disclosures by Santander subsidiaries

In addition to the information contained in this report on consolidated basis and following ECB requirements, Santander subsidiaries that are considered to have significant importance for their local market (under article 13 of the CRR, Application of disclosure requirements on a consolidated basis) publish information at the individual level on their websites.

These institutions are identified if one of the following criteria is met:

- Is a global systemically important entity (G-SIB);
- It has been identified as another systemically important entity (O-SII) in accordance with Article 131(1) and (3) of Directive 2013/36 EU;
- The subsidiary is, in the Member State in which it is established, one of the three largest entities in terms of total value of assets;
- The total value of assets on a solo or sub-consolidated basis is equal to or greater than EUR 30 billion.

Based on the above criteria, either Santander's subsidiaries in the European Economic Area (EEA) as Portugal, Poland and Santander Consumer Germany or subsidiaries outside EEA such as, Argentina, Brazil, Mexico, the UK and Uruguay publish their Pillar 3 reports.

The additional disclosures for the large subsidiaries (in accordance with Article 4 No. 146 and 147 CRR) can be found within the Pillar 3 Reports of the respective subsidiary as published on its website.

Individual banking subsidiaries are directly regulated by their local banking supervisors, who set and monitor their local capital and liquidity adequacy requirements. In most jurisdictions, non-banking financial subsidiaries are also subject to the supervision and capital requirements of local regulatory authorities.

The regulators of the Group's banking entities outside the EEA are at varying stages of implementation of the Basel framework, so local regulation in 2023 may have been implemented on the basis of Basel I, II or III.

1.2.3. Disclosure criteria

This report has been prepared in accordance with current European regulations on capital requirements (CRR).

The ratios presented in this report have been calculated using the transitional CRR and IFRS 9 implementation schedules.

Details of the types of information where there are differences between the regulatory information shown in this report and the information in the annual report and accounting information are as follows.

- The credit risk exposure measurements used for calculating regulatory capital requirements include:
 - Current and future risk exposures arising from future commitments (contingent liabilities and commitments) and changes in market risk factors (derivative instruments).
 - The mitigating factors for these exposures (netting agreements and collateral agreements for derivative exposures, and collateral and personal guarantees for on-balance-sheet exposures).
- The criteria used in classifying non-performing exposures in portfolios subject to advanced models for calculating regulatory capital are more conservative than those used for preparing the disaggregated information provided in the annual report.
- ESG disclosure in Pillar 3 follows the Implementing Technical Standards (ITS) defined by the EBA for this purpose and it is not necessarily aligned with the management criteria reported in other Group's ESG reports.

Finally, Appendix I shows compliance with the various ITS applicable in relation to disclosure, and Appendix II lists the location of the information disclosed in accordance with the relevant articles of Part Eight of the Regulation.

Some of the main transparency enhancements include the following:

- In accordance with EBA guidelines and as a consequence of the improvement and and stabilisation of the health and economic situation, from this year onwards the information on covid loans and advances will no longer be reported in the report. This measure includes both the tables related to loans and advanced payments, as well as the information collected in relation to the situation generated by the pandemic.
- Inclusion of the requirements established under Article 449 of CRR II. In addition to what was included in the previous report, this year 3 templates will be added in the ESG section this year, including the Green Asset Ratio.

In the Financial and economic information / Pillar 3 section of the Group's website, we also publish all the tables shown in this document in editable format for easier processing, as well as the appendices.

1.3. Regulatory framework

1.3.1. Solvency and Resolution

Credit institutions must meet a number of minimum capital and liquidity requirements. These minimum requirements are governed by the Capital Requirements Regulation, directly applicable in the Spanish legal system, and the Capital Requirements Directive.

On 27 October 2021, the European Commission published the draft review of European banking legislation: CRR and CRD. The European Council's proposal was published on 8 November 2022, and the European Parliament's proposal was published on 24 January 2023. Discussions progressed throughout 2023 on the new texts, which will be adopted in early months of the year and are expected to be published between April and May 2024.

The update of the banking package aims firstly to implement Basel III final reforms and, secondly, enhance standardisation of banking supervision in the European Union (EU).

The Basel III final reform, which was agreed at the end of 2017, aims to introduce greater sensitivity in standardised metrics, reduce variability in risk-weighted assets at banks using internal models when calculating requirements and facilitate comparability among banks. Specifically, they propose changes concerning, among other matters, key risk factors, standardised credit risk, internal models, the output floor and operational risk.

The goal of achieving **stronger supervision** and protection of financial stability is expressed in a series of provisions concerning fit-and-proper requirements, extending the scope by revising certain definitions and additions on establishing third-country branches in the EU in order to achieve greater harmonisation of rules and better supervision of these type of entities.

The new CRR/CRD regulations are generally expected to apply from 1 January 2025, although we expect an earlier application for some provisions, such as requirements on own funds for cryptoasset exposures.

In addition, in December 2023 the EBA, in order to comply with the mandates given in the new banking package, published a consultation to amend some aspects of the Pillar 3 disclosure framework specifically, the changes include new disclosure requirements on output floor and credit valuation adjustment (CVA) risk and amendments to existing disclosure requirements on credit risk and market risk, pending consultation related to operational risk. Following these consultations, the final text proposal will be submitted to the European Commission in June 2024.

On the other hand, the EBA also published the consultation on the Pillar 3 Data Hub, which aims to respond to one of the requirements established by the new CRR, to centralise institutions' prudential disclosures and make prudential information readily available through a single electronic access point on the EBA website. This initiative will facilitate access, usability and comparability of prudential information by all interested users, strengthening the transparency and market discipline of the EU banking sector and further contributing to the soundness of the European financial system.

With regard to the resolution framework, institutions must have an adequate funding structure to ensure that, in the

event of financial distress, the institution has sufficient liabilities to absorb losses in order to recover its position or be resolved, while ensuring the protection of depositors and financial stability. For this purpose, global systemically important institutions must therefore meet several minimum loss-absorbing requirements, named Total Loss-Absorbing Capacity (TLAC) and Minimum Requirement for own funds and Eligible Liabilities (MREL), which are regulated by the CRR and by the Bank Recovery and Resolution Directive (BRRD).

On 25 October 2022, the regulation on the prudential treatment for global systemically important banks was published. This modified both the CRR and the BRRD as regards prudential treatment of global systemically important banks (G-SIBs) with a multiple point of entry (MPE) resolution strategy, as well as the methods for indirect underwriting of eligible instruments (Daisy Chains) to meet the minimum requirement for own funds and eligible liabilities. This Regulation, known as the 'Quick Fix', covers the following two objectives:

- The inclusion in BRRD and CRR of references to third country subsidiaries to adjust the deduction for the holding of TLAC instruments issued from subsidiaries in third countries based on the excess TLAC/MREL existing in those subsidiaries, as well as the adjustment where the sum of the requirements for own funds and eligible liabilities of G-SIBs under an MPE strategy are higher than the theoretical requirements for the same group under a single point of entry (SPE) strategy. That is, the latter adjustment is based on a comparison between the two possible resolution strategies.

Additionally, for those subsidiaries in jurisdictions without a resolution regime in place, the Regulation provides for a transitional period until 31 December 2024. During this transitional period the institutions may adjust the deductions based on the excesses above the capital requirements in subsidiaries in third countries, if they meet certain requirements.

- Inclusion of a deduction scheme for MREL instrument holdings through entities of the same resolution group other than the resolution entity. This Regulation sets a deduction for the intermediate entity (Daisy Chains) that repurchases instruments, and, if there is such a deduction, the intermediate entity is obliged to issue the same amount as it is repurchasing, transferring the internal MREL needs to the resolution entity that will cover it with external MREL.

This Regulation is applicable from the 14 November 2022, except for the provisions relating to Daisy Chains, which apply from the 1 January 2024.

As regards Deposit Guarantee Schemes (DGSs), these are regulated by the Deposit Guarantee Schemes Directive (DGSD), which has not undergone any significant changes since its publication in 2014. The Directive aims to harmonise the DGSs of the Member States, thus ensuring stability and balance in the various different countries. It creates an appropriate framework for depositors to have better access to DGSs through clear scope of coverage, shorter repayment periods, better information and robust funding requirements. This Directive is transposed into Spanish law by Royal Decree 2606/1996, with additional amendments set forth in Royal Decree 1041/2021.

To ensure that eligible deposits are covered, the DGSs collect available financial means through contributions from their members which are performed at least once a year. The target level to be reached by 3 July 2024 is 0.8% of covered deposits. Annual contributions are determined depending on the covered deposits and the risk profile faced by the institutions which are members of each DGS. The method for calculating contributions is set out in the EBA Guidelines (EBA/GL/2023/02).

In addition to the DGS, the Single Resolution Board (SRB) has built up the Single Resolution Fund (SRF) with annual contributions from banks and investment firms since 2016. The target level of this fund is 1% of covered deposits and the contributions to be made by members are calculated by the SRB based on euro area bank's balance sheets and risk profiles. The SRB recently announced that it will not issue a call for contributions to the SRF in 2024.

Lastly, on 18 April 2023, the European Commission published its proposal to review the Crisis Management and Deposit Insurance (CMDI) framework. Specifically, several proposals have been submitted:

- Early intervention measures, conditions for resolution and funding for the resolution measure;
- The scope of deposit coverage, use of funds of the deposit guarantee schemes, cross-border cooperation and transparency; and
- Certain aspects of the minimum requirement for own funds and eligible liabilities.

These proposals imply amending regulations such as:

- CRR;
- BRRD;
- Single Resolution Mechanism Regulation (SRMR), which establishes uniform rules and a uniform procedure for the resolution of credit institutions and certain investment firms in the framework of a Single Resolution Mechanism (SMR) and a Single Resolution Fund ;
- Deposit Guarantee Schemes Directive.

Other regulatory developments in 2023:

Regulation 241/2014, which establishes the system applicable to prior authorisation to reduce own funds and establishes requirements on eligible liability instruments, was amended in April 2023. Firstly, this amendment extends the need to request approval to be able to reduce, buy back or redeem eligible liabilities; which until April 2023 was limited to own funds. Secondly, additional amendments were made, such as the creation of a new concept of prior general approval to buy back own funds and eligible liability instruments, as well as extending the period granted to the Supervisor and/or Resolution Authority, where appropriate, from 3 months to 4 months.

1.3.2. Sustainability

Since the publication of the European Commission's Action Plan underpinning the EU's 2030 climate and environmental goals, steady progress continued to be made in the development of sustainable finance. Progress has been made in 2023 on developing various regulatory elements.

With regard to the financial sector, a number of sustainability standards have been developed and published that contribute to meeting the specific needs of the economy while benefiting the planet and society.

2023 saw further implementation of the 2020 Taxonomy Regulation (2020/852), which sets out criteria for classifying an economic activity as environmentally sustainable. Said Regulation sets for six environmental targets and develops the technical screening criteria for considering an activity as environmentally sustainable. In its mission to develop these six objectives and the necessary criteria for rating activities, the European Commission published two particularly relevant regulatory pieces in November:

- The Delegated Regulation (2023/2486) that sets forth the technical screening criteria for determining the conditions under which an economic activity can substantially contribute to the four environmental targets pending development: sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control, and protection and restoration of biodiversity and ecosystems.

This Regulation supplements the Disclosure Delegated Regulation 2021/2178 to ensure that the disclosure requirements set forth therein include activities that contribute towards the four environmental objectives.

- The Delegated Regulation (2023/2485) that sets forth the conditions for a series of new economic activities (not previously included in the current Regulation) to be deemed to contribute substantially to the Taxonomy Regulation's two climate objectives: climate change mitigation and climate change adaptation.

Both Delegated Regulations came into force on 11 December 2023, and both shall apply from 1 January 2024.

As regards prudential scope, the CRR mandated the EBA to evaluate whether specific prudential analysis of environmental and social risks was appropriate, prior to consulting the European Systemic Risk Board (ESRB). In the last quarter of 2023, both institutions published their respective reports on how existing micro and macroprudential tools can be used to manage environmental and social risks. In its own publication, the EBA made short-term recommendations to expedite integration of the environmental and social risks into the prudential framework, while recommending further work that could lead to a more comprehensive review of the framework.

At the international level, and particularly as regards reporting obligations on climate risks, it is important to note that the Basel Committee published a consultation paper at the end of 2023 proposing a series of qualitative and quantitative requirements that should be disclosed in entities' Pillar 3 reports. In this document, the Committee acknowledges that precise, consistent and quality climate data is still evolving, yet the Committee believes that the disclosure requirements will expedite the availability of said information and will facilitate banks' prospective risk assessments.

Other regulatory initiatives approved in 2023 or that are in the final stage of being approved by European institutions include the following:

- Review of the Energy Performance of Buildings Directive, which aims to expedite the transition of member states'

real estate portfolio and seeks greater standardisation in Energy Performance Certificates.

- The proposal on ESG ratings to regulate transparency and integrity in environmental, social and governance (ESG) rating activities. This framework aims to provide clarity on ESG rating methodologies.
- Publication of the Regulation (2023/2631) on European green bonds that sets forth uniform requirements (use of funds, disclosure requirements etc.) for bond issuers who would like to use the name "European Green Bond" or "EuGB" and that will apply from 21 December 2024.
- The proposed Regulation establishing the European Single Access Point (ESAP), which will help investors and other stakeholders access information about companies. This Single Access Point will offer centralised digital access to financial and sustainability information that has been published by European companies.

1.3.3. Digital

In parallel with the sustainable agenda, the ambition to boost innovation in the European Union and create a competitive financial sector that integrates new technologies and realities has continued to support the adoption of regulatory pieces in these areas through 2023.

With the threefold objective of boosting competitiveness and innovation; offering consumers and businesses more choice in financial services and payment systems; and ensuring consumer protection while preserving financial stability, the European institutions made 2023 a fruitful year in terms of regulatory developments to achieve these objectives.

Specifically, below we highlight the regulatory proposals that were approved during 2023 (or are at an advanced stage of the legislative process):

Cryptoassets

- MiCA (Markets in cryptoassets), establishes a common framework in Europe for the emission, custody and exchange of these assets. This Regulation, although in force since June 2023, postpones its effective application until June 2024 for certain types of cryptoassets and until December 2025 or June 2026, depending on the Member State, for certain provisions of the Regulation.
- Within the scope of the Basel principles, the Committee that sets standards for the prudential regulation of the banking sector, which published its principles on the prudential treatment of these exposures in 2022, has opened a consultation to propose specific adjustments to its standard on the prudential treatment of banks' cryptoassets exposures with the purpose of incorporating the developments that these products have undergone in the market. In addition, Basel also published a consultation on future disclosure requirements for banks' on-balance-sheet exposures to cryptoassets at the end of 2023. Market discipline, also with regard to new products such as cryptoassets, will undoubtedly continue to be a focus of dialogue between regulators and the industry.

Central Bank Digital Currencies (CBDCs)

Within the initiatives being discussed and developed in the various jurisdictions around the world, two key milestones were achieved in 2023 as regards potentially issuing a digital euro in the future.

Although discussions are currently underway, the proposed Regulation that would establish the regulatory framework and the main characteristics and functions of the digital euro was published in June 2023. In tandem with this proposal, which will be discussed over the coming months, given that the project of analysing the digital euro's potential issuance required further technical analysis, the European Central Bank made a decision in October 2023 to start the "preparation and testing" phase. This phase will take around two to three years and only then, depending on whether the aforementioned legislative act is approved, can a decision be made on whether it is appropriate to issue a digital euro.

Artificial intelligence

The legislative process for the proposed European regulation on Artificial Intelligence that regulates the use of this technology for both public and private entities is still under discussion. The European Parliament and the European Council announced their agreement to the proposal in December, but the final text was not published in 2023. This Regulation focuses on applications that are considered high risk, including the customers' creditworthiness assessment and human resources management.

Digital platforms

DMA (Digital Markets Act), which became applicable in May 2023, establishes obligations and restrictions on digital platforms deemed to be gatekeepers, thus ensuring the EU digital market remains competitive. Specific standards were developed in 2023 to supplement the DMA on certain technical aspects, and the European Commission published its first list of identified gatekeepers.

Operational resilience

The Digital Operational Resilience Act (DORA), although currently in force, will not apply until January 2025. It establishes certain rules designed to manage and mitigate the risks generated by information technology (ICT) service providers when interacting with financial sector participants. DORA establishes a common supervisory framework for technology providers who provide services to financial institutions, in addition to imposing common cybersecurity requirements. Over the course of 2023, discussions on such developments centred around technical aspects regarding matters such as the classification of incidents relating to information technologies and policies on contractual agreements to provide ICT services that support critical or important functions when provided by a third-party provider, among other matters.

Payments

Payment services have adapted to user demand in recent times, with a growing trend towards electronic payments. New technologies and players in this market have emerged in the payment services sector, thus generating the need to adapt the regulatory framework to this transformation. In this context, the proposal for the Payment Services Directive (PSD3) was published in 2023, in addition to the Payment Services Regulations (PSRs). Both instruments will continue to be discussed by European co-legislators throughout the coming year.

Data

The proposed FiDA (Financial information Data Access) Regulation published in June aims to protect customers' control over their financial data and harness the benefits that exchanging data in the financial sector generates for customers. This proposal, which will continue to be negotiated by European co-legislators, will serve as a specific, standardised framework for European Union-wide access to financial data, establishing regulations on the access, exchange and use of certain categories of customers' data in financial services, among other matters.

Digital identity

The agreement reached by the European Parliament and Council on the eIDAS Regulation (European regulation on electronic identification) in the last few months of 2023 is worth noting. This Regulation will allow European citizens to be identified reliably and securely through wallets endorsed by Member States. Technical works to complete the legal text will continue over the coming months before it is officially published.

1.3.4. AML/FT

In July 2021, the European Commission published a proposal for an Anti-Money Laundering and Countering the Financing of Terrorism (AML/FT) regulatory package, that aims to strengthen existing EU rules, improve the detection of suspicious transactions and activities, and close loopholes in the current regulatory framework. It consists of four legislative proposals:

- A regulation establishing a new European AML/FT Authority named AMLA, that will coordinate national AML/FT authorities and directly supervise certain financial sector institutions. The Authority is expected to become operational in 2024 and to start its supervisory work in 2026/2027.
- An AML/CFT Regulation. Various sections of the current Directive will be transferred over to this Regulation with a view to ensuring that these sections apply directly in all Member States with no need for local transposition. This will harmonise EU requirements in areas such as customer due diligence. It is expected to be of application three years after its publication in the Official Journal of the European Union.
- Sixth AML/CFT Directive, which sets forth provisions on national supervisors and Financial Intelligence Units (FIUs); these provisions have already been incorporated into national legislation through the various transpositions of Directive 2015/849 (the Fifth Directive, AMLD V).
- Recast of the Regulation on Transfers of Funds, with a particular focus on the tracking of transfers of cryptoassets. This revision introduces new requirements in relation to Virtual Asset Service Providers (VASPs) by requiring these actors to collect and make available data on the originators and beneficiaries of virtual asset transfers. The recasting of this Regulation entered into force in 2023.

On 14 June 2022, the EBA published Guidelines specifying the role and responsibilities to be assumed by the Compliance Officer in the fight against money laundering and terrorism financing. The Guidelines also specify that the entities must

appoint a member of their board of directors to be responsible for ensuring compliance with these obligations; if an entity is part of a group, there can only be one single designated board member.

This therefore creates a shared understanding between the competent authorities and the institutions in line with the requirements of the EU's currently applicable "Fifth Directive" on the prevention of the use of the financial systems for the purposes of money laundering and terrorist financing.

1.4. Scope of consolidation

This section covers the qualitative requirements LIA - Explanations of differences between accounting and regulatory exposure amounts and LIB - Other qualitative information on the scope of application.

1.4.1. Substantial amendments

The following information is a summary of the main acquisitions and disposals of ownership interests in the share capital of other entities and other significant corporate transactions performed in the last three years or pending to be completed:

- Tender offer for shares of Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México.
- Agreement for the acquisition of a significant stake in Ebury Partners Limited.
- Purchase by SHUSA for shares of Santander Consumer USA.
- Acquisition of Amherst Pierpont Securities LLC, a U.S. fixed-income broker dealer

For more information on the main acquisitions and disposals of holdings in other companies and other major corporate transactions by Santander last year, refer to the Auditor's Report section of the 2023 Annual Report.



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The basis of the information used for accounting purposes differs from that used for calculating regulatory capital requirements. Risk exposure measurements may differ depending on the purpose for which they are calculated, such as financial reporting, regulatory capital reporting and management information. The exposure data included in the quantitative disclosures in this document are used for calculating regulatory capital or leverage ratio.

The companies for which different consolidation methods are used, depending on the regulations applied (table LI3), are listed in Appendix V of the 2023 Pillar 3 Report file available on the Santander website.

1.4.2. Differences between the consolidation methods.

Santander entities are consolidated using a different method for accounting consolidation.

For the purposes of calculating the capital adequacy ratio based on the nature of their business activities, the Group companies included in the prudential scope of consolidation are consolidated using the full consolidation method, with the exception of jointly controlled entities, which use proportionate consolidation. All companies that cannot be consolidated based on their business activities are accounted for using the equity method and so are treated as equity exposures.

The following table shows the relationship between the categories in the financial statements and the risk categories in accordance with prudential requirements.

Table 2.LI1 - Differences between accounting and regulatory scopes of consolidation and mapping of financial statement categories with regulatory risk categories

EUR million

2023

	a	b	c	d	e	f	g
	Carrying values of items:						
	Carrying values as reported in published financial statements	Carrying values under scope of regulatory consolidation	Subject to credit risk framework	Subject to the CCR framework	Subject to securitisation framework	Subject to market risk framework	Not subject to capital requirements or subject to deduction from capital
Assets							
1	Cash and cash balances at central banks	220,342	220,499	220,499	—	—	—
2	Financial assets held for trading	176,921	176,800	—	81,756	581	176,219
Non-trading financial assets mandatorily measured at fair value through profit or loss							
3		5,910	4,454	1,187	—	606	2,661
Financial assets not held for trading valued mandatorily at fair value through profit or loss							
4		9,773	7,176	—	1,360	—	7,176
Financial assets designated at fair value through profit or loss							
5		83,308	68,360	59,625	—	8,735	—
6	Financial assets at amortised cost	1,191,403	1,196,111	1,124,559	55,541	15,934	—
7	Derivatives - Hedge accounting	5,297	5,421	—	5,421	—	—
Fair value changes of the hedged items in portfolio hedge of interest rate risk							
8		(788)	(788)	—	—	—	(788)
9	Investments in subsidiaries, joint ventures and associates	7,646	8,555	—	—	—	8,555
10	Reinsurance assets	237	—	—	—	—	—
11	Tangible assets	33,882	30,606	30,606	—	—	—
12	Intangible assets	19,871	19,931	2,734	—	—	17,197
13	Tax assets	31,390	31,130	28,735	—	—	2,395
14	Other assets	8,856	9,087	8,085	—	—	1,001
15	Non-current assets and disposal groups classified as held for sale	3,014	3,132	3,132	—	—	—
16	Total assets	1,797,062	1,780,474	1,479,163	144,079	25,856	186,056
Liabilities							
1	Financial liabilities held for trading	(122,269)	(122,248)	—	(96,074)	—	(122,248)
2	Financial liabilities designated at fair value through profit or loss	(40,367)	(39,702)	—	(450)	—	(39,702)
Financial liabilities measured at amortised cost							
3		(1,468,703)	(1,471,011)	—	—	—	(508)
4	Derivatives - Hedge accounting	(7,656)	(7,670)	—	(7,670)	—	—
Fair value changes of the hedged items in portfolio hedge of interest rate risk							
5		(55)	(55)	—	—	—	—
6	Liabilities under insurance contracts	(17,799)	—	—	—	—	—
7	Provisions	(8,441)	(8,480)	(702)	—	—	(7,777)
8	Tax liabilities	(9,932)	(9,634)	—	—	—	(9,634)
9	Other liabilities	(17,598)	(17,472)	—	—	—	(17,528)
10	Total liabilities	(1,692,820)	(1,676,272)	(702)	(104,194)	—	(162,458)

The difference in total assets between the public and the reserved scopes is not material (-EUR 16.6 billion) and corresponds to the exclusion of non financial institutions (-EUR 25.5 billion) and the inclusion of jointly controlled (+EUR 12.9 billion) and intra group entities (-EUR 4.1 billion).

In addition, the sum of the carrying amounts of certain items is greater than the carrying amounts under the scope of prudential consolidation, as the financial assets held for

trading and the financial assets at fair value through profit or loss are subject to the capital requirements of more than one risk category under the regulatory scope.

The main differences between the carrying amounts in the financial statements and the exposures for prudential purposes are shown below:

Table 3.LI2 - Main sources of differences between regulatory exposure amounts and carrying values in financial statements

EUR million

		2023				
		a	b	c	d	e
		Total	Items subject to:			
			Credit risk framework	CCR framework	Securitisation framework	Market risk framework
1	Asset carrying value amount under scope of regulatory consolidation (as per template EU LI1)	1,835,154	1,479,163	144,079	25,856	186,056
2	Liabilities carrying value amount under regulatory scope of consolidation (as per template EU LI1)	(267,355)	(702)	(104,194)	—	(162,458)
3	Total net amount under regulatory scope of consolidation	1,567,799	1,478,461	39,885	25,856	23,598
4	Off-balance sheet amounts	379,078	379,078		—	—
	Regulatory Add-on	54,059		54,059		—
5	Differences in valuations	—				—
6	Differences due to different netting rules, other than those already included in row 2	(28,601)		(5,003)		(23,598)
	Non-eligibility of the balances corresponding to accounting hedges (derivatives)	(5,421)		(5,421)		—
10	Securitisations with risk transfer	22,652	27,306		(4,654)	—
11	Other	(17,752)	(65,967)		48,215	—
7	Differences due to consideration of provisions	(16,724)	(16,276)	—	(448)	—
8	Differences due to CRMs	(56,677)	(17,517)	(38,877)	(283)	—
9	Differences due to CCFs	(288,379)	(288,379)	—	—	—
12	Exposure amounts considered for regulatory purposes (EAD)	1,610,034	1,496,706	44,642	68,685	—

This table shows a breakdown of the differences between the amounts of exposures for prudential purposes and the carrying amounts according to various parameters

The main causes in this case, result from the amount of off-balance sheet items (+EUR 379.1 billion) and the application of CCFs (-EUR 288.4 billion).

The regulatory add-on (+EUR 54.1 billion) and the differences resulting from the various offsetting rules (-EUR 28.6 billion).

The reconciliation of the public and non-public balance sheets (table CC2) is shown in Appendix VI, which is available on the Santander website.



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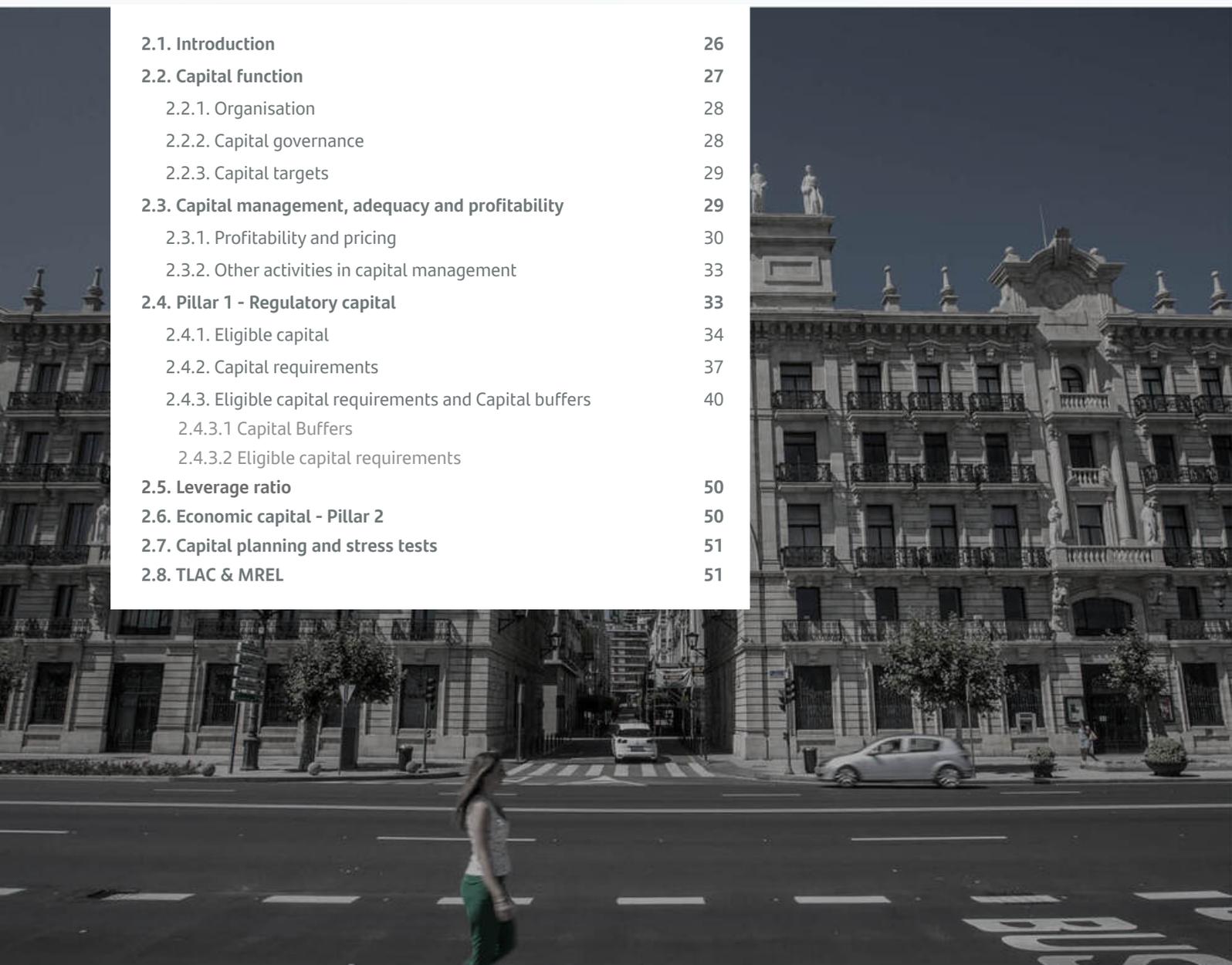
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Capital



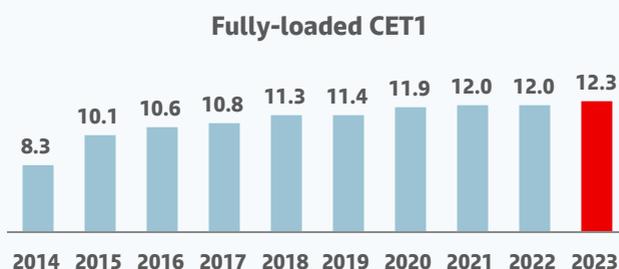
2. Capital

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2. CAPITAL

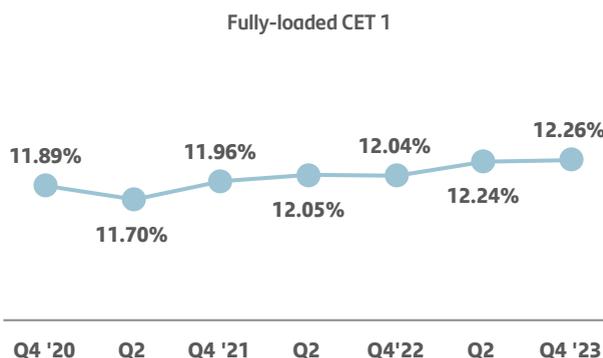
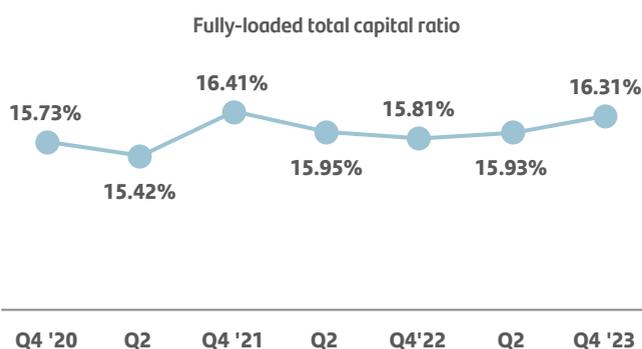
This chapter analyses the relevant aspects of capital management and capital adequacy in Grupo Santander, as well as the main capital figures and solvency ratios, including aspects of Pillar 2. For further details on capital requirements by type of risk, see the specific chapters on each of the risks.



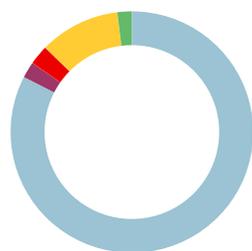
Focus on disciplined capital allocation and shareholder remuneration and on achieving our 2024 fully-loaded CET1 target of remaining above 12%.

Table 4. Main capital figures and capital adequacy ratios (Fully-loaded IFRS 9).

EUR million	CRR Fully loaded					CRR Phased-in				
	dic'23	sep'23	jun'23	mar'23	dic'22	dic'23	sep'23	jun'23	mar'23	dic'22
Common Equity (CET1)	76,448	77,193	77,216	75,841	73,390	76,448	77,193	77,216	75,841	73,390
Tier 1	85,450	86,125	86,072	84,790	82,221	85,450	86,125	86,072	84,790	82,221
Total capital	101,747	101,943	100,539	98,156	96,373	101,947	102,151	100,741	98,359	96,581
Risk weighted assets	623,652	628,873	631,021	620,908	609,702	623,652	628,873	631,021	620,908	609,702
CET1 Ratio	12.26%	12.27%	12.24%	12.21%	12.04%	12.26%	12.27%	12.24%	12.21%	12.04%
Tier 1 Ratio	13.70%	13.70%	13.64%	13.66%	13.49%	13.70%	13.70%	13.64%	13.66%	13.49%
Total capital ratio	16.31%	16.21%	15.93%	15.81%	15.81%	16.35%	16.24%	15.96%	15.84%	15.84%

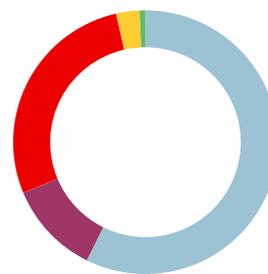


RWA distribution by type of risk^{AB}



- Credit (ex. CCR, SEC and Others) - €515 Bn
- CCR - €14 Bn
- Market - €16 Bn
- Operational - €67 Bn
- Securizations and Others - €12 Bn

RWA by credit approach (ex. Sec and others)



- SA Method - €286 Bn
- FIRB Method - €57 Bn
- AIRB Method - €138 Bn
- Slotting - €14 Bn
- Equities - €4 Bn

2.1. Introduction

Capital management and adequacy at Santander aims to guarantee solvency and maximize profitability, while complying with internal capital targets and regulatory requirements.

It is determined by the strategic objectives and risk appetite set by the board of directors. To achieve this, the following policies have been established that shape the approach that the Group applies to capital management:

- Adequate **capital planning**, to meet current needs and provide the necessary resources to meet the needs of the business plans, regulatory requirements and the associated risks in the short and medium term, while maintaining the risk profile approved by the board of directors.
- Ensure that Santander and its subsidiaries have adequate capital to cover needs resulting from increased risks due to deteriorating macroeconomic conditions under **stress scenarios**.
- Optimise capital use through appropriate allocation among businesses, based on **the relative return on regulatory and economic capital** and taking into account risk appetite, growth and strategic objectives.

Grupo Santander manages capital and its value creation through six main blocks, placing **profitability** and **capital** at the forefront of its decisions, with the aim of improving the CET1 ratio and reinvesting freed up capital in **profitable growth, shareholder remuneration** and **strategic investments**. These blocks are:

- Capital strategy, which sets an ambitious Group-wide target including a capital buffer above requirements, and takes into account a holistic market perspective with regard to competitors and supervisory authorities.
- Increasing risk-adjusted returns through better allocation, analysing the performance of portfolios and carrying out both the organic (front-book) and inorganic capital allocation process.
- The detailed tracking and monitoring of performance across all countries is reviewed and discussed at regular meetings to generate profitability-improvement actions.
- Portfolio management by identifying, prioritising and executing risk sharing and risk transfer across countries.
- Precise capital calculation identifying opportunities to optimise the numerator (CET1) and denominator (RWA), as well as greater industrialisation and standardisation of the Group's processes. In addition, the Group is working towards the overall optimisation of capital requirements (SREP framework, stress tests, MREL, TLAC).
- Existence of technological infrastructure and systems, capital tools and other optimisers are cross-cutting elements and factors that allow for proper capital management.

At 31 December 2023, the fully-loaded CET1 ratio (without applying the IFRS 9 or CRR transitional arrangements) stood at 12.26% and the phased-in CET1 ratio was 12.30%. Only applying the IFRS 9 transitional arrangements (CRR fully-loaded), the ratio remains at 12.30%. The following table shows the impact of the CRR transitional arrangements under a IFRS 9 phased-in scenario:

Table 4 bis. Main capital figures and capital adequacy ratios (Phased-in IFRS 9).

EUR million	Fully-loaded CRR					Phased-in CRR				
	Dec'23	Sep'23	Jun'23	Mar'23	Dec'22	Dec'23	Sep'23	Jun'23	Mar'23	Dec'22
	Common Equity (CET1)	76,741	77,658	77,628	76,127	74,202	76,741	77,658	77,628	76,127
Tier 1	85,742	86,591	86,485	85,077	83,033	85,742	86,591	86,485	85,077	83,033
Total capital	102,040	102,408	100,952	98,443	97,185	102,240	102,617	101,154	98,646	97,392
Risk weighted assets	623,731	629,012	631,149	620,709	609,266	623,731	629,012	631,149	620,709	609,266
CET1 Ratio	12.30%	12.35%	12.30%	12.26%	12.18%	12.30%	12.35%	12.30%	12.26%	12.18%
Tier 1 Ratio	13.75%	13.77%	13.70%	13.71%	13.63%	13.75%	13.77%	13.70%	13.71%	13.63%
Total capital ratio	16.36%	16.28%	15.99%	15.86%	15.95%	16.39%	16.31%	16.03%	15.89%	15.99%

2.2. Capital function

Core principles establish the underlying guidelines governing the actions of Santander entities in capital management, monitoring and control processes.

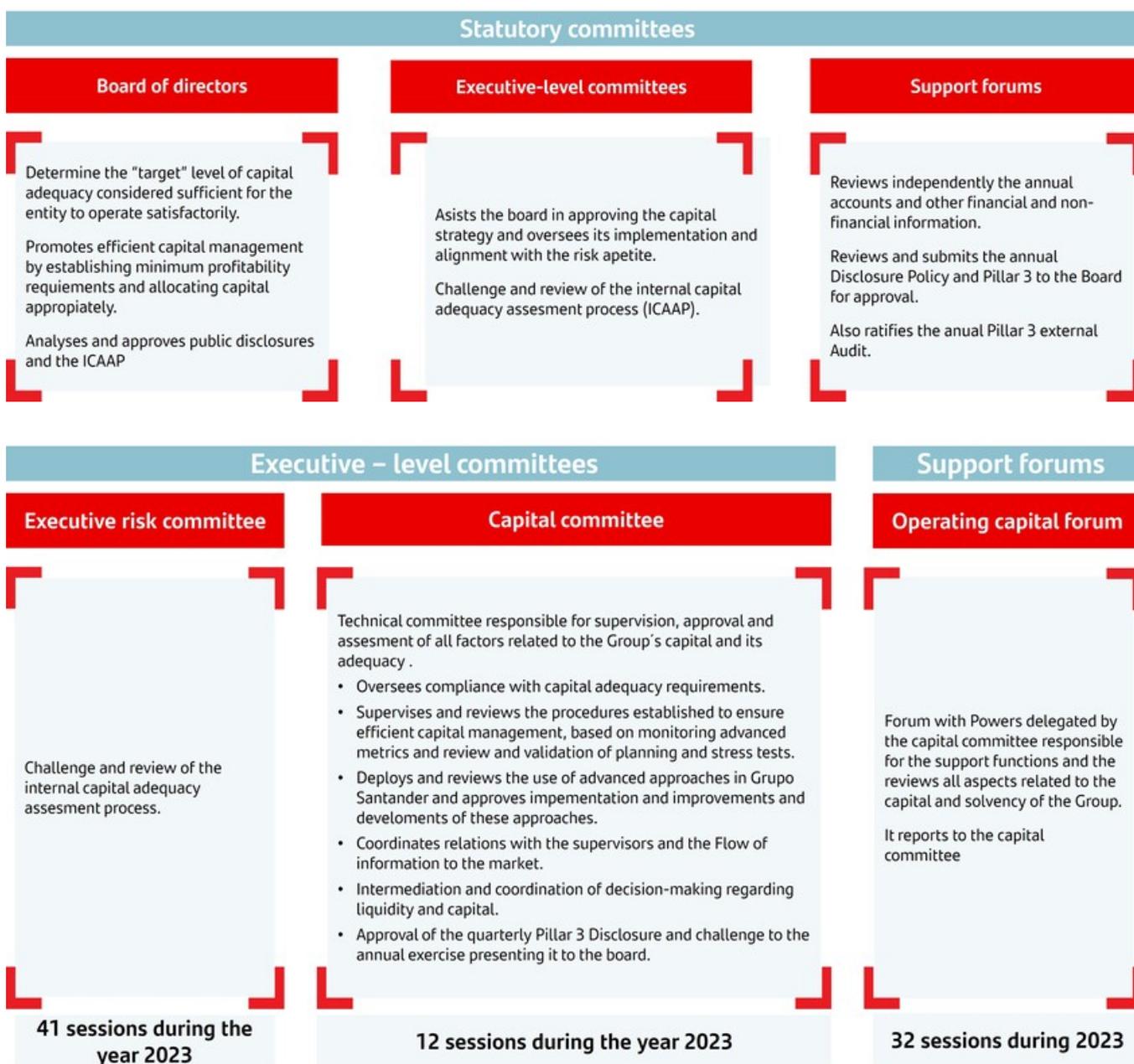
2.2.1. Organisation

The organisational structure has been defined with the aim of guaranteeing compliance with the core principles in relation to capital and ensuring that the relationship between the subsidiaries and the Corporate centre is maintained. This function allows dual objectives to be met: comply with the subsidiary's financial autonomy while at the same time retaining coordinated monitoring at group level.

2.2.2. Capital governance

Santander developed a structure of agile and efficient governing bodies, ensuring that the Capital function operates properly when it comes to decision-making and supervision and control. This ensures involvement of all relevant business areas and involvement of senior management as necessary.

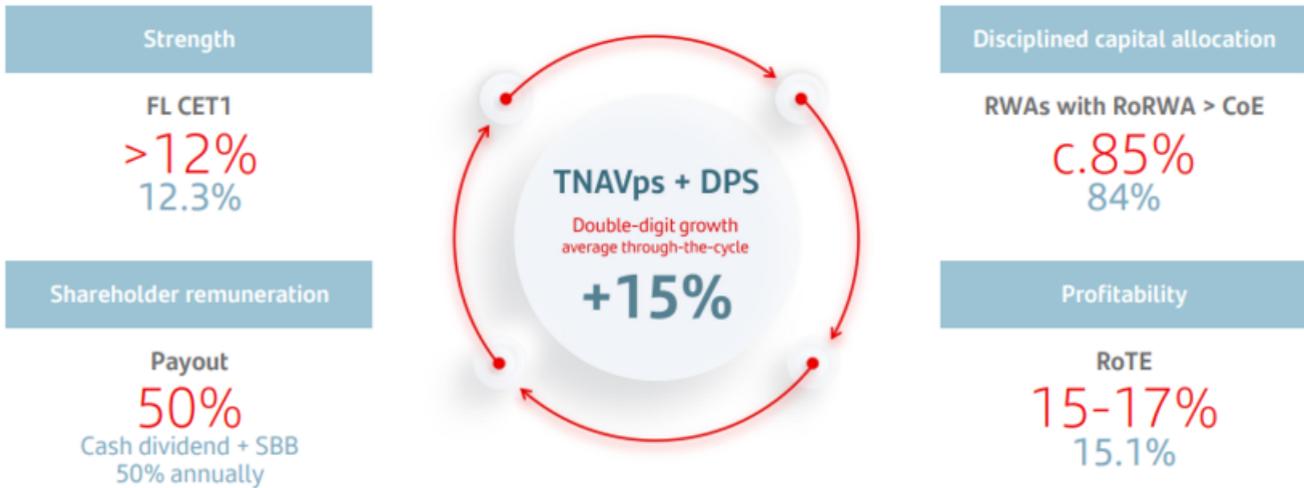
Santander's characteristic subsidiary-based structure has a strong capital governance where there are various committees with responsibilities at local level and also for coordination at Group level. The local committees must report to the corporate committees in due time and proper form on any relevant aspects of their activity that may affect capital, to ensure proper coordination between the subsidiaries and the Corporate Centre.



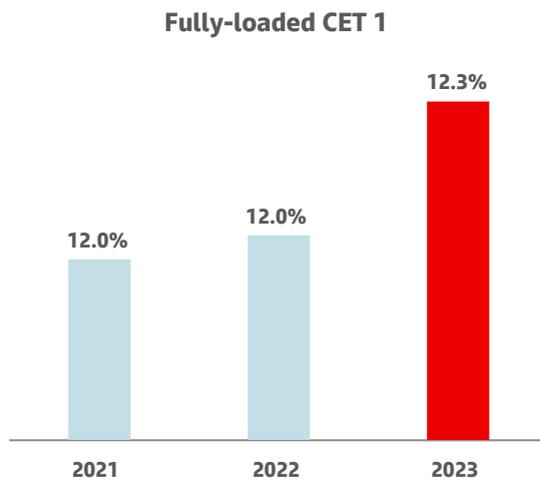
2.2.3. Capital targets

The bank is targeting a return on tangible equity (RoTE) of 15-17% for the next two years (2024-2025), while delivering double-digit average annual growth in tangible net asset value per share plus dividend per share through the cycle. Among group's key financial and commercial goals includes:

- Increasing the shareholder payout policy (the proportion of profit distributed to shareholders) from c.40% to c.50% in 2023-2025 through both cash dividends and share buybacks.
- Achieving a return on tangible equity of 15-17% in 2023-2025 and an efficiency ratio of c.42% by 2025.
- Maintaining a fully-loaded CET1 above 12%.
- Delivering double-digit average annual growth in tangible net asset value (TNAV) per share plus dividend per share through the cycle - a key measure of value creation.



We continue to focus on disciplined capital allocation and shareholder remuneration and on achieving our fully-loaded CET1 target of remaining above 12%



The 2021 fully-loaded CET1 ratio includes a charge related to corporate transactions that were pending approval at year end (-0.16pp)

Continuous improvement of our capital ratios reflects our profitable growth strategy and a culture of active capital management at all levels.

The **Capital and Profitability Management team** is in charge of Group's capital analysis, adequacy and management, coordination with subsidiaries on all matters related to capital and monitoring and measuring returns.

Every country and business unit has drawn up individual capital plans that focus on maximizing the return on equity.

Santander places high value on its long-term sustainability and the efficient use of capital in the incentives of the Group's main executives. We considered certain aspects relating to capital management and returns when setting senior managers' 2023 variable remuneration:

- Metrics include return on tangible equity (RoTE) and other relevant capital metrics (capital generation or CET1).
- Qualitative adjustments considered included efficient management of solvency metrics, operational risk management, risk appetite, sustainability and strength of results and effective cost management.

Action plans

In addition, we are developing an action plan for the continuous improvement of infrastructures, processes and methodologies that support all aspects related to capital, with the aim of further enhancing active capital management, responding more quickly to the numerous and increasing regulatory requirements and efficiently carrying out all associated activities.

2.3. Capital management, adequacy and profitability

Capital management and adequacy at Santander aims to guarantee solvency and maximize profitability, while complying with regulatory requirements and internal capital targets.

Capital management is a key strategic tool for decision-making at both the subsidiary and corporate levels.

We have a common framework that covers capital management actions, criteria, policies, functions, metrics and processes. We have a team in charge of our capital analysis, adequacy and management that coordinates with subsidiaries on all matters related to capital and monitors and measures shareholder returns.

Our most notable capital management activities are:

- establishing capital adequacy and capital contribution targets that align with minimum regulatory requirements, internal policies and the budget, to guarantee robust capital levels consistent with our risk profile and efficient use of capital to maximize shareholder value;

- drawing up a capital plan to meet our strategic plan objectives;
- monitoring the capital ratio in both regulatory and economic terms and the efficient capital allocation to units. Assessing capital adequacy to ensure the capital plan is consistent with our risk profile and risk appetite framework in baseline and stress scenarios;
- integrating capital metrics into businesses' management ensuring alignment with the Group's objectives. Continuously monitoring stock and new business profitability as well as new business pricing at the unit, segment and customer levels. Tracking portfolios and customers with profitability below the minimum target. Coordinating and promoting the bank's asset mobilization plan (e.g. securitizations, guarantees, sales);
- preparing internal capital reports, and reports for the supervisory authorities and the market (ICAAP, Pillar 3 reports and stress tests); and
- planning and managing other loss-absorbing instruments (MREL and TLAC).

The Group's capital function is carried out on three levels:

	<p>Regulatory capital</p> <p>The first step in managing regulatory capital is to analyse the capital base, the capital adequacy ratios under the current regulatory criteria and the scenarios used in capital planning in order to make the capital structure as efficient as possible, both in terms of cost and compliance with regulatory requirements and our internal capital targets. Active capital management includes strategies for capital allocation and its efficient usage, together with securitisations, asset sales and issuances of equity instruments (hybrid equity instruments and subordinated debt).</p>
	<p>Economic capital</p> <p>The objective of the economic capital model is to ensure that we adequately allocate our capital to cover all the risks to which we are exposed as a result of our activity and risk appetite. It also aims to optimise value creation in the Group and all of the business units.</p>
	<p>Profitability and pricing</p> <p>Creating value and maximizing profitability is one of Santander's main objectives by carefully selecting the most appropriate markets and portfolios based on profitability and risk. Profitability and pricing are therefore integral parts of the key capital model processes.</p>

Disciplined capital allocation, prioritizing organic growth and shareholder remuneration is always present in our capital management.

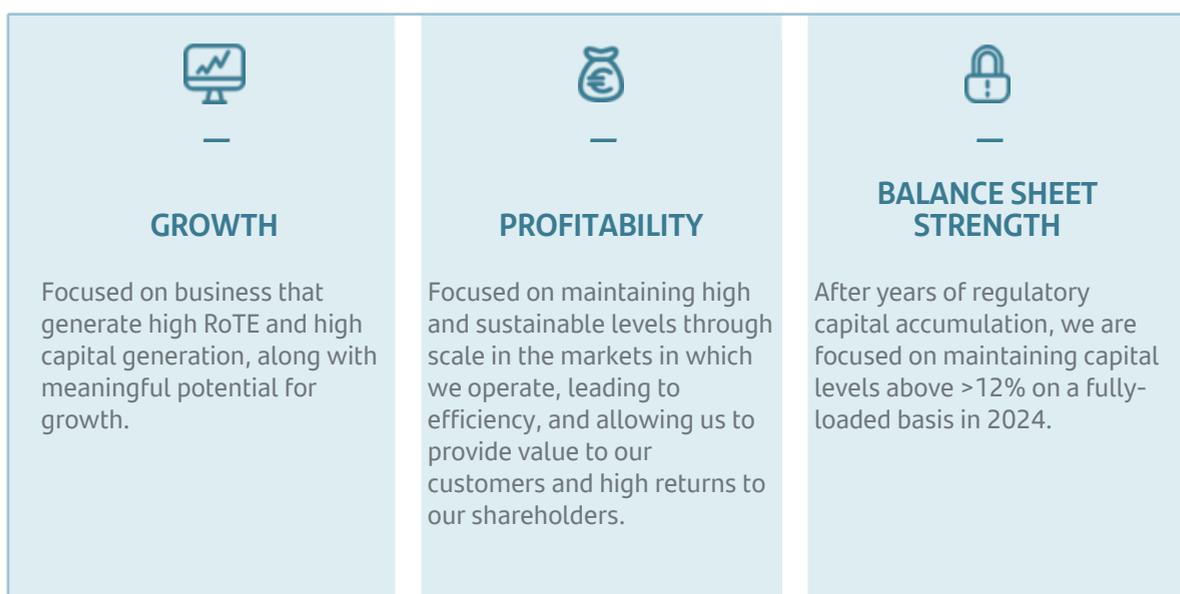
2.3.1. Profitability and pricing

Disciplined capital allocation

A disciplined execution of our capital allocation strategy...



...leads to growth, profitability and strength...



One of the Group's primary priorities is to manage capital by ensuring that we make a cost-effective allocation of capital in all our activities.

Our strategy includes investing capital in those markets and portfolios that demonstrate the best returns on capital, ensuring strong shareholder value creation on a sustainable basis. Metrics such as RoTE, RoRWA and RoRAC are part of the admission and monitoring policies. These metrics allow us to compare, on a homogeneous basis, the performance of operations, clients, portfolios and businesses, identifying those that obtain a risk-adjusted return above the cost of capital, thus aligning risk and business management with the intention of maximizing value creation.

We regularly evaluate the level and evolution of the Group's value creation and that of its main business units, both from a regulatory and an economic perspective. Value creation (EVA) is the profit generated above the cost of capital employed.

The minimum rate of return on capital is determined by the cost of capital, which is the minimum remuneration required by shareholders. For its calculation, the premium required by shareholders for investing in Santander is added to the risk-free return. This premium will depend essentially on the

greater or lesser volatility in the price of our shares in relation to the evolution of the market. The cost of capital defined for the Group for 2023 was 11.2% (similar to the previous year).

In addition to reviewing the cost of capital annually, a cost of capital is also estimated for each business unit, considering the specific characteristics of each market, under the philosophy of autonomous subsidiaries in capital and liquidity, in order to assess whether each business is capable of generating value individually.

A Shareholder Value Added (SVA) view is also used internally, where, from the perspective of a euro investor, components that affect shareholder value creation and are not reflected in the results are adjusted.

Identifying and managing businesses with low profitability is part of the Group's capital optimization process. We dynamically target and actively monitor customers, portfolios and markets with attractive returns on capital.

To ensure profitability enhancement and maximize capital productivity, we must focus on capital efficiency from origination. Pricing is an objective process based on the characteristics of the transaction, product, borrower, segment

and market. Furthermore, it should ensure that this price exceeds a minimum threshold that covers, at least, the funding, operating, credit and capital costs, as well as the additional margin that considers the sensitivity of demand to price and the generation of value. Therefore, pricing should aim to maximize profitability, with positive EVA for every transaction, customer and/or portfolio and ensure compliance with minimum return on capital targets.

For a correct execution of this process, Grupo Santander has granular admission tools for the SCIB and Corporate segments, from which it is possible to calculate the regulatory and economic return on capital (RoRWA and RoRAC) and determine an appropriate pricing. For retail segments, the tools are developed by the units to better adapt to the particularities of each local market. In addition, there is a granular tool to monitor the return on equity homogeneous among units.

Admission tools are used to identify and justify any new production granted with pricing below the minimum threshold, and monitoring tools are used to identify operations whose profitability is below the cost of capital and which are recurrently destroying value. To try to ensure that value is created with all customer relationships, underperforming customers are monitored on a recurring basis and their active management is prioritized through specific action plans.

Both the intake and profitability monitoring processes have robust approval and review governance to ensure that the minimum threshold is properly integrated, a timely escalation process is in place for deal approval, and those deals approved below the minimum threshold are followed up in detail.

The guidelines note that pricing frameworks should be well documented and supported by appropriate governance structures that are responsible for the maintenance of the overall pricing framework and for individual pricing decisions when relevant. In December 2020, the capital committee approved a **corporate pricing policy**, which sets out the general criteria and describes the main stages for pricing. It also outlines the core components, focusing on the minimum threshold, the need to integrate pricing in approval using ex ante tools and the relevance of defining robust governance and monitoring of recurring profitability.

All Group units transposed this corporate policy in 2021, after validation by the corporate teams, to ensure uniformity in interpretation and local implementation. In July 2023, the corporate pricing policy was reinforced and updated, and the units are finalizing its local implementation.

The Risk function updated three pricing procedures:

- Santander Corporate & Investment Banking
- Corporates
- Pooled or personalised treatment

These procedures develop the processes described in the pricing policy, deepening the criteria and the assignment of roles and responsibilities as well as the governance required by the units.

2.3.2. Other activities in capital management

The most significant actions taken this year are as follows:

Issues of hybrid capital and other loss-absorbing instruments

In 2023, Banco Santander, S.A. issued EUR 5.7 billion in hybrid instruments including EUR 3.4 billion in Tier 2 subordinated debt and EUR 2.3 billion in contingently convertible preferred shares (CoCos). The CoCo issuances aim to replace a EUR 1.0 billion AT1 issuance that was amortized early in December 2023 and a EUR 1.1 billion AT1 issuance amortized early in February 2024.

Banco Santander, S.A. also issued EUR 3.2 Billion in senior non-preferred debt.

Dividends and shareholder remuneration

With regard to the 2023 results, the board followed a policy of allocating 50% of the Group reported profit (excluding non-cash, non-capital ratios impact items) to shareholder remuneration, distributed as approximately 50% in cash dividends and 50% in share buybacks.

Interim remuneration.

On 26 September 2023, the board resolved to:

- Pay an interim cash dividend against the 2023 results of EUR 8.10 cents per share entitled to the dividend (equivalent to approximately 25% of said Group's reported profit in H1'23); it was paid from 2 November 2023.
- Execute the First 2023 Buyback Programme worth up to EUR 1,310 million (equivalent to approximately 25% of said Group reported profit in H1'23). See 'First 2023 Buyback Programme' in the 'Corporate Governance' chapter of the 2023 Annual Report.

Final remuneration.

Under the 2023 shareholder remuneration policy, on 19 February 2024 the board of directors resolved to:

- Submit a resolution at the 2024 Annual General Meeting to approve a final cash dividend in the gross amount of EUR 9.50 cents per share entitled to dividends. If approved at the AGM, the dividend would be payable from 2 May 2024.
- Implement the Second 2023 Buyback Programme worth EUR 1,459 million, for which the appropriate regulatory authorization has been obtained, the execution of which will begin from 20 February 2024. For more details, see 'Second 2023 Buyback Programme' in the 'Corporate Governance' chapter of the 2023 Annual Report.

Once the above-mentioned actions are completed, total shareholder remuneration for 2023 will total EUR 5.538 million (approximately 50% of the Group reported profit - excluding non-cash, non-capital ratios impact items- in 2023), distributed as approximately 50% in cash dividends (EUR 2.769 million) and 50% in share buybacks (EUR 2.769 million).

Finally, in the geographies where the ECB is not home supervisor, the local regulators, as a general rule, did not impose restrictions on dividend distribution except in Argentina whose local supervisor set a limit of 40% on the pay-out of dividends. Additionally, KNF polish supervisor is

recommending to set a limit of 75% on the pay out of dividends, but during 2023 no impediments were found.

For further information, see section 3.3 'Dividends and shareholder remuneration' in the chapter 'Corporate Governance' of the 2023 Annual Report.



[Access 2023 Annual Report available on the Santander Group website](#)

2.4. Pillar 1 - Regulatory capital

The current regulatory framework for calculating capital is based on three pillars:

- **Pillar 1** sets the minimum capital requirements for credit risk, market risk and operational risk, allowing internal ratings and models to be used. The aim is to make regulatory requirements more sensitive to the risks actually incurred by financial institutions in their business activities.
- **Pillar 2** establishes a system of supervisory review, aimed at improving banks' internal risk management and capital adequacy assessment in line with their risk profile.
- **Pillar 3** is intended to enhance market discipline by developing a set of disclosure requirements that enable market agents to appraise key information relating to the application of Basel II: capital, risk exposures, risk assessment processes and, by extension, the bank's capital adequacy.

Eligible capital. December 2023

EUR million	Fully-loaded	Phased-in
CET1	76,448	76,741
Basic capital	85,450	85,742
Eligible capital	101,747	102,240
Risk-weighted assets	623,652	623,731
CET1 capital ratio	12.26 %	12.30 %
Tier 1 capital ratio	13.70 %	13.75 %
Total capital ratio	16.31 %	16.39 %

Note: The phased-in ratio includes the transitory treatment of IFRS9

2.4.1. Eligible capital

Equity at 31 December 2023 stood at EUR 104,240 million, up EUR 6,654 million from the year before.

The reconciliation between equity and capital eligible as Tier 1 is set out below.

Table 5. Reconciliation of accounting capital with regulatory capital

EUR million	2023	2022
Subscribed capital	8,092	8,397
Share premium account	44,373	46,273
Reserves	69,278	62,111
Treasury shares	(1,078)	(675)
Attributable profit	11,076	9,605
Approved dividend	(1,298)	(979)
Shareholders' equity on public balance sheet	130,443	124,732
Valuation adjustments	(35,020)	(35,628)
Non-controlling interests	8,818	8,481
Total equity on public balance sheet	104,241	97,585
Goodwill and intangible assets	(17,313)	(17,272)
Eligible preference shares and participating securities	9,002	8,831
Accrued dividend	(1,471)	(942)
Other adjustments	(8,717)	(5,169)
Tier 1 (Phased-in)	85,742	83,033

CRR Phased-in, IFRS 9 Phased-in.

The following table provides a breakdown of the Group's eligible capital and a comparison with the previous year:

Table 6. Eligible capital

EUR million	2023	2022
Eligible capital		
Common Equity Tier 1 (CET1)	76,741	74,202
Capital	8,092	8,397
(-) Treasury shares and own shares financed	(2,847)	(60)
Share premium	44,373	46,273
Reserves	68,721	62,246
Other retained earnings	(35,038)	(37,439)
Minority interests	6,899	7,416
Attributable profit net of dividends	8,307	7,684
Deductions	(21,766)	(20,315)
Goodwill and intangible assets	(17,220)	(17,182)
Others	(4,546)	(3,133)
Additional Tier 1 (AT1)	9,002	8,831
Eligible instruments AT1	8,461	8,344
T1 excesses - subsidiaries	541	487
Residual value of intangibles	—	—
Deductions	—	—
Tier 2 (T2)	16,497	14,359
Eligible instruments T2	17,101	14,770
Gen. funds and surplus loan loss prov. IRB	76	—
T2 excesses - subsidiaries	(680)	(411)
Others	—	—
Total eligible capital	102,240	97,392

CRR Phased-in, IFRS 9 Phased-in.

Common equity Tier 1 capital (CET1) comprises the elements of Tier 1 capital (after applying prudential filters) and CET1 deductions after applying the threshold exemptions specified in the CRR.

CET1 consists of:

- Subscribed share capital, which stood at €8,092 million in December 2023.
- Other tier 1 capital items: (i) paid-up share premiums; (ii) effective and disclosed reserves generated against profits and amounts that are not taken to the income statement but are recorded under "Other reserves" (any item); (iii) other retained earnings, including certain valuation adjustments, primarily for exchange differences and for hedges of net investments in foreign operations.
- The paid-up portion of any non-controlling interests arising from the issue of ordinary shares by consolidated subsidiaries, subject to the limits set in the CRR.
- The Group's attributable net of dividends in cash, which was €8,307 million in December 2023¹.

- The prudential filters exclude any positive or negative valuation adjustments from cash flow hedges. They also exclude gains or losses on liabilities and derivative liabilities measured at fair value resulting from changes in the institution's own credit quality. The prudential filters include the additional valuation adjustments applied pursuant to article 34 of the CRR.
- Deductions from CET1 items mainly include: treasury shares; current-year losses; goodwill and other intangible assets recognised in the balance sheet; deferred tax assets that rely on future earnings (subject to the limits set in the CRR); the valuation adjustments due to prudent valuation requirements; and defined benefit pension fund assets shown on the balance sheet.

In addition to the movements in net book equity, for changes in regulatory capital, the undistributed dividend in cash for 2023 was considered to be €2,769 million, so the net attributable profit net of dividends calculated is €8,307 million.

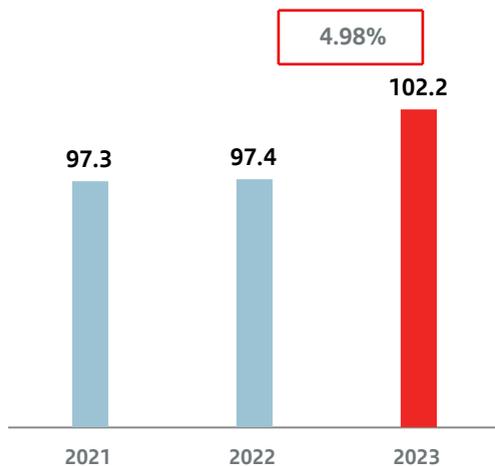
¹ The cash dividend represents 25% of underlying profit, see note 4.a of the Consolidated Annual Accounts for the proposed result distribution

Table 7. Regulatory capital. Changes

EUR million	2023
Common Equity Tier 1 (CET1)	
Ending figure (31/12/2022)	74,202
Shares issued during the year and share premium account	(2,205)
Treasury shares and own shares financed	(2,787)
Reserves	(1,209)
Attributable profit net of dividends	8,307
Other retained earnings	2,400
Minority interests	(518)
Decrease/(increase) in goodwill and other intangibles	(38)
Other deductions	(1,412)
Ending figure (31/12/2023)	76,741
Additional Tier 1 (AT1)	
Ending figure (31/12/2022)	8,831
Eligible instruments AT1	117
AT1 excesses - subsidiaries	54
Residual value of intangibles	
Deductions	
Ending figure (31/12/2023)	9,002
Tier 2 (T2)	
Ending figure (31/12/2022)	14,359
Eligible instruments T2	2,331
Gen. funds and surplus loan loss prov. IRB	76
T2 excesses - subsidiaries	(269)
Deductions	
Ending figure (31/12/2023)	16,497
Deductions from total capital	
Final figure for total capital (31/12/2023)	102,240

CRR Phased-in, IFRS 9 Phased-in.

Eligible capital over time



Tier 1 Capital comprises CET1 Capital plus Additional Tier 1 Capital (AT1) including preferred issuances and CoCos issued by Grupo Santander.

Total capital comprises Tier 1 capital plus Tier 2 capital (T2) and includes, among other items, equity instruments and subordinated loans where the conditions laid down in the CRR are met.

The movement of issued shares and issue premiums is mainly due to the amortisation of shares acquired through the share buyback programme, with the aim of contributing to shareholder remuneration by increasing earnings per share, which is inherent to the reduction in the number of shares. On the other hand, the rest of the variation considered under the headings of other comprehensive income, deductions and prudential filters, improves mainly due to valuation adjustments of financial assets at fair value through equity.

The increase in Tier 1 capital is mainly due to new issuances in Spain net of redemptions during the year.

The increase in Tier 2 capital is due to new issuances in Spain and Brazil which is partly offset by the loss of eligibility for capital purposes of certain issuances.

For further detail on regulatory own funds (Table CC1) see Appendix VIII.

 [Access 2023 Pillar 3 Disclosures Report available on the Santander Group website](#)

At 31 December 2023, none of the financial institutions consolidated in the Group had less than the minimum capital required under applicable regulations.

Under Article 7 and 9 of the CRR, the subsidiaries Santander Leasing S.A. EFC and Santander Factoring y Confirming S.A. EFC are exempt from the minimum capital requirements, the limit on large exposures and the internal corporate governance obligations. None of the exemptions under applicable regulations have been used for any other Santander subsidiaries.

Santander maintains a very comfortable capital adequacy position, well above the levels required by applicable regulations and by the European Central Bank.

IFRS 9 became effective on 1 January 2018, implying changes in accounting that affect capital ratios. Santander decided to apply the transitional arrangements, which means a seven-year transitional period.

Had neither the IFRS 9 nor the CRR transitional arrangements been applied, the total impact on the fully-loaded CET1 ratio as at December would have been -4bps.

Phased-in CET1 stood at 12.30% in December, increasing by 12bps during the year. The fully-loaded CET1 ratio stood at 12.26% in December

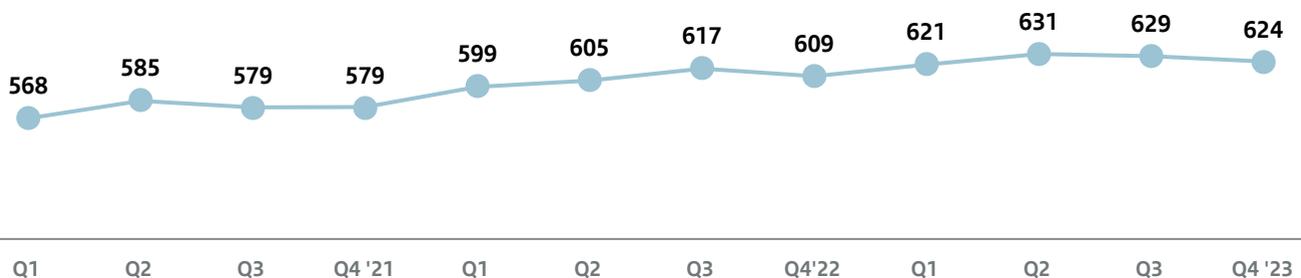
Table 8. IFRS 9-FL - Comparison of institutions' own funds and capital and leverage ratios with and without the application of transitional arrangements for IFRS 9 or analogous ECLs (IFRS 9-FL)

EUR million		a	b	c	d
		Dec'23	Sep'23	Jun'23	Mar'23
Available capital (amounts)					
1	Common Equity Tier 1 (CET1) capital	76,741	77,658	77,628	76,127
2	Common Equity Tier 1 (CET1) capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	76,448	77,193	77,216	75,841
3	Tier 1 capital	85,742	86,591	86,485	85,077
4	Tier 1 capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	85,450	86,125	86,072	84,790
5	Total capital	102,240	102,617	101,154	98,646
6	Total capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	101,947	102,151	100,741	98,359
Risk-weighted assets (amounts)					
7	Total risk-weighted assets	623,731	629,012	631,149	620,709
8	Total risk-weighted assets as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	623,652	628,873	631,021	620,908
Capital ratios					
9	Common Equity Tier 1 (as a percentage of risk exposure amount)	12.30 %	12.35 %	12.30 %	12.26 %
10	Common Equity Tier 1 (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	12.26 %	12.27 %	12.24 %	12.21 %
11	Tier 1 (as a percentage of risk exposure amount)	13.75 %	13.77 %	13.70 %	13.71 %
12	Tier 1 (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	13.70 %	13.70 %	13.64 %	13.66 %
13	Total capital (as a percentage of risk exposure amount)	16.39 %	16.31 %	16.03 %	15.89 %
14	Total capital (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	16.35 %	16.24 %	15.96 %	15.84 %
Leverage ratio					
15	Leverage ratio total exposure measure	1,826,922	1,828,087	1,796,203	1,758,741
16	Leverage ratio	4.69 %	4.74 %	4.81 %	4.84 %
17	Leverage ratio as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	4.68 %	4.71 %	4.79 %	4.82 %

2.4.2. Capital requirements

The capital requirements hardly changed with respect to 2022, maintaining a similar distribution by risks under Pillar 1 as last year: credit 87%, market 3% and operational 10%. Risk-weighted assets increased 2.37% to EUR 623,731 million, due to an increase of EUR 9,488 millions in credit risk. Operational risk also increased by EUR 4,314 million and market risk by EUR 664 million.

RWA Evolution (Phased-in)



Below is a general evolution of RWA by risk, and then also by geography:

Table 9.OV1 - Overview of risk weighted exposure amounts

EUR million		RWA		Min. Capital Requirements		
		a	b	c		
		Dec'23	Sep'23	Dec'22	Dec'23	
1	Credit risk (excluding CCR)^A	515,238	524,034	507,775	41,219	
2	Of which, standardised approach (SA)	285,728	290,803	274,922	22,858	Chapter 4. Credit Risk
3	Of which, the foundation IRB (FIRB) approach ^B	56,913	56,870	11,759	4,553	
4	Of which, slotting approach ^C	14,123	14,837	14,509	1,130	
EU 4a	Of which, equities under the simple risk weighted approach ^B	3,603	3,592	2,828	288	
5	Of which, the advanced IRB (AIRB) approach	138,204	142,019	188,442	11,056	
6	Counterparty credit risk - CCR	13,593	13,687	13,096	1,087	
7	Of which, the standardised approach	10,150	10,275	9,493	812	Chapter 5. Counterparty Credit Risk
8	Of which, internal model method (IMM)	—	—	—	—	
EU 8a	Of which, exposures to a CCP	324	297	278	26	
EU 8b	Of which, credit valuation adjustment - CVA	680	748	1,097	54	
9	Of which, other CCR	2,439	2,368	2,229	195	
15	Settlement risk	4	2	4	—	
16	Securitisation exposures in the banking book (after the cap)	11,419	9,791	9,898	914	
17	Of which, SEC-IRBA approach	4,275	3,558	4,471	342	Chapter 6. Credit Risk - Securitisations
18	Of which, SEC-ERBA approach	2,257	1,852	2,156	181	
19	Of which, SEC-SA approach ^D	4,887	4,380	3,270	391	
EU 19a	Of which, 1250% ^E	—	—	—	—	
20	Position, foreign exchange and commodities risks (Market risk)	16,454	18,195	15,791	1,316	
21	Of which, standardised approach	9,166	10,205	7,521	733	Chapter 7. Market Risk
22	Of which, IMA	7,288	7,990	8,270	583	
EU 22a	Large exposures	—	—	—	—	
23	Operational risk	67,022	63,303	62,702	5,362	
EU 23a	Of which, basic indicator approach	—	—	—	—	Chapter 8. Operational Risk
EU 23b	Of which, standardised approach	67,022	63,303	62,702	5,362	
EU 23c	Of which advanced measurement approach	—	—	—	—	
24	Amounts below the thresholds for deduction (subject to 250% risk weight)	28,732	29,880	25,868	2,299	
29	Total	623,731	629,012	609,266	49,898	

CRR Phased-in, IFRS9 Phased-in.

A It includes equities under the PD/LGD approach.

B During 2023 the ECB has approved the reversal to FIRB for some wholesale portfolios

C Correction from the mapping indicated by supervisor to {C 08.01, r0020, c0260, s0010} + {C 08.01, r0030, c0260, s0010}.

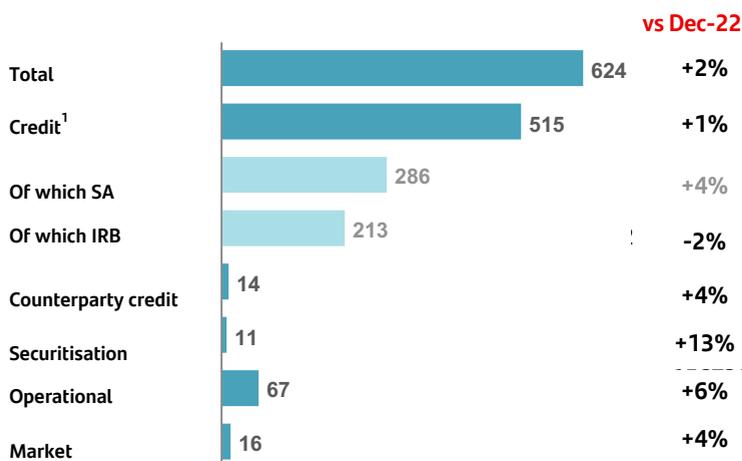
D Correction from the mapping to the one appearing in tables SEC3+SEC4.

E Information prepared following the recent update of the EBA (24.05.22, "ITS on institutions' Pillar 3 public disclosures").

Banco Santander S.A. deducts from capital those securitisations that meet the deduction requirements, and therefore does not apply a 1,250% weighting to these exposures. This row does not include the EUR 5,475 million that would result from applying this weighting to these exposures.

RWA distribution by type of risk

RWA distribution by type of risk



¹ Excluding securitisations and CRR

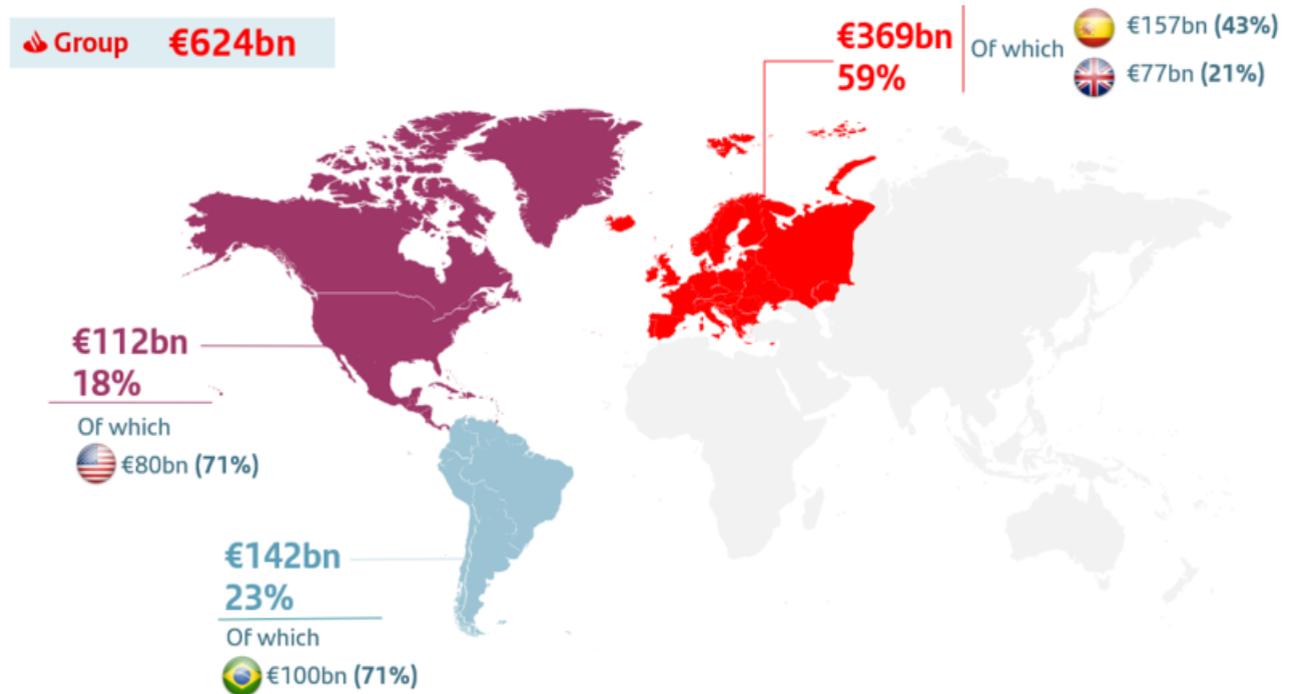
Tabla 10.RWA by geographical region

2023

EUR billion	Total	Europe	Of which, Spain	Of which, United Kingdom	North America	Of which, United States	South America	Of which, Brasil
Credit risk	540	323	132	69	94	67	123	89
Of which, standardised approach (SA)	290	122	36	19	74	56	94	65
Of which, internal rating-based (IRB) approach	218	172	74	46	18	9	28	23
Of which, Equity and DTAs	19	19	19	-	-	-	-	-
Of which, Securitizations*	11	9	2	3	2	2	0	0
Of which, the rest	1	1	0	-	0	-	-	-
Market risk	16	12	11	0	2	1	3	1
Operational risk	67	35	14	7	16	11	16	10
Total**	624	369	157	77	112	80	142	100

*1250% deductions are excluded.

**Amounts broken down according to obligor residency criteria, except for operational risk under management criteria. Counterparty RWA are included in the IRB/STD approaches.



2.4.3. Eligible capital requirements and Capital buffers

2.4.3.1 Capital Buffers

From 1 January 2016, Grupo Santander has to comply with the combined buffer capital requirement, which is defined as the total CET1 capital necessary to meet the following obligations:

- **Capital conservation buffer (CCoB):** this buffer was introduced to ensure that banks have additional own funds that can be used in the event that they incur losses. The surcharge is 2.5% and is directly applicable and mandatory for all EU banks.
- **Buffers for systemically important banks (G-SIB and D-SIB):** There are two types of buffers, with their own methodologies, which classify financial institutions into buckets. These buckets determine their systemic risk (either global or domestic) and their applicable capital surcharge. The two types are:
 - G-SIB (global systemically important banks) buffer: common methodology following the framework and levels established by Basel. Applicable only at the consolidated level. There is an additional methodology that considers the eurozone as a single jurisdiction for calculation purposes and allows the competent authority to classify a G-SIB in a lower bucket, reducing the applicable G-SIB buffer surcharge accordingly.
 - D-SIB (domestic systemically important banks) buffer: common methodology following the EBA Guidelines for the calculation of the score. However, it is the national authorities who define the capital surcharges that correspond to each risk bucket, with EU authorities having to comply with the floor methodology published by the ECB. It can be applicable at consolidated, sub-consolidated or individual level.

In the case of groups that are G-SIBs also categorised as D-SIBs, the higher of the two surcharges will apply at consolidated level.
- **Countercyclical capital buffer (CCyB):** required when national authorities consider that credit is growing excessively in a given jurisdiction, with the objective of curbing it. This buffer is calculated specifically for each institution or group and consists of the weighted average of the countercyclical buffer rates that apply in the territories in which the institution's relevant credit exposures are located. It is designed to be built up in periods of excessive credit growth and released in times of crisis, and is therefore the only capital buffer that can be released on a discretionary basis should the competent authority deem it appropriate. The surcharges imposed by the national authorities in the different territories in which the bank has exposures are, as a general rule, applicable at the Group consolidated level.
- **Systemic risk buffer (SyRB):** National competent authorities may require this buffer to mitigate macroprudential or systemic risks that are not covered by other buffers and that could trigger a disturbance in the financial system with serious consequences for both the system itself and the real economy. Its application by the authorities is discretionary, and it may be required for all institutions or for one or more subsets of institutions, for all exposures or for a subset of exposures (domestic, third

countries, mortgage sector etc.). The surcharges imposed by the national authorities on the different exposures or institutions of the Group require the endorsement of the Spanish macroprudential authority in order to be applicable at the consolidated level.

The table below summarises the regulation that sets the buffer surcharge rates on the different capital buffers to be applied and the situation of Banco Santander in 2024:

Application	Buffers (% RWA)	2023
All institutions	Conservation (CCoB)	2.5 %
	G-SIB institutions ⁽¹⁾	100% of the buffer
Designated institutions	D-SIB institutions ⁽²⁾	100% of the buffer
	Systemic risk buffer (SyRB)	0% -> 5%
At the discretion of competent national authority	Countercyclical (CCyB)	0% - 2.5%
	Consolidated combined buffer	CCoB+CCyB+SyRB +Max (G-SIB, D-SIB)

1) Banco de España requires Grupo Santander to have a buffer of 1.25% from 2024.

- 2) The buffer requirement for Grupo Santander is 1%.
- 3) % Countercyclical buffer applicable as of January 2024 to:
- Exposures to customers resident in Germany: 0.75%
 - Exposures to customers resident in Australia: 1%
 - Exposures to customers resident in Bulgaria: 2%
 - Exposures to customers resident in Cyprus: 0.5%
 - Exposures to customers resident in Croatia: 1%
 - Exposures to customers resident in Denmark: 2.5%
 - Exposures to customers resident in Slovakia: 1.5%
 - Exposures to customers resident in Slovenia: 0.5%
 - Exposures to customers resident in Estonia: 1.5%
 - Exposures to customers resident in France: 1%
 - Exposures to customers resident in Hong Kong: 1%
 - Exposures to customers resident in Ireland: 1%
 - Exposures to customers resident in Iceland: 2%
 - Exposures to customers resident in Lithuania: 1%
 - Exposures to customers resident in Luxembourg: 0.5%
 - Exposures to customers resident in Norway: 2.5%
 - Exposures to customers resident in Netherlands: 1%
 - Exposures to customers resident in Czech Republic: 2%
 - Exposures to customers resident in United Kingdom: 2%
 - Exposures to customers resident in Romania: 1%
 - Exposures to customers resident in Sweden: 2%

The geographic breakdown of relevant exposures for calculating the countercyclical capital buffer (table CCyB1) and the amount of institution-specific countercyclical capital buffer (table CCyB2) are available in Appendix X and Appendix XI respectively on Santander's website.

 [Access 2023 Pillar 3 Disclosures Report available on the Santander Group website](#)

Global Systemically Important Institutions

The Group is one of 29 entities designated as global systemically important banks (G-SIB) in 2023.

Systemically important banks may pose a risk to financial stability.

The insolvency of a systemically important bank, or even an expectation that it might become insolvent, could generate negative effects for the financial system and even the real economy that are difficult to predict.

This situation warrants special prudential treatment. This has led to the introduction of specific capital buffer requirements for both global (G-SIB) and domestic (D-SIB) systemically important banks.

This designation requires Santander to meet additional requirements mainly relating to the following:

- Its capital buffer (Santander is in the group of banks with the lowest capital buffer, 1.25%).
- TLAC (total loss-absorbing capacity) requirements.
- The requirement to publish relevant information more often than other banks.
- Stricter regulatory requirements for internal control bodies.
- Special supervision.
- Requirements to submit special reports to supervisory authorities.

The designation as a globally systemically important entity is made by the Basel Committee, jointly with the Financial Stability Board, using a methodology based on five indicators: size, cross-jurisdictional activity, interconnectedness with

other financial entities, substitutability of financial services/ financial infrastructure and complexity (weighted at 20% for each of the above categories). The methodology was revised in December 2021 incorporating, among other things, an additional score considering the SRM Member States as a single jurisdiction.

The information needed to evaluate the indicators is requested yearly from banks with leverage exposure exceeding €200 billion, or from any other banks at the supervisor's discretion: 77 banks were considered in December 2022. These institutions are then required to publish the information before 30 April of the following year.

The information is used to produce a global indicator. The score obtained by each bank determines the size of the capital buffer required of it, which is based on a set of buckets defined by the regulators (CET1 surcharge ranging from 1% to 3.5%).

In November 2023, the Financial Stability Board (FSB) published its list of global systemically important banks based on the December 2022 data. This will be fully applicable in 2025. Meeting these requirements makes the Group a more robust bank than its domestic rivals. Santander is currently subject to a systemic capital surcharge of 1%, which will become fully effective in 2024. For more details regarding Quantitative indicators, access file "G-SIBs indicators quantitative", under sections Shareholders and Investors / Other presentations on the [Grupo Santander website](#).

 [Access 2023 Pillar 3 Disclosures Report available on the Santander Group website](#)

Indicators for global systemically important institutions

Category	Individual indicator	Supervisor jurisdiction
Size	Exposure used for the leverage ratio calculation	An indicator of the weight of the bank in the financial system
Cross-jurisdictional activity	Cross-jurisdictional assets Cross-jurisdictional liabilities	Snapshot of a bank's global footprint
Interconnectedness	Intra-financial system assets Intra-financial system liabilities Securities outstanding	Measures a bank's interconnectedness with other financial institutions
Substitutability/financial infrastructure	Assets under custody Payments activity Transactions subscribed in debt and equity Trading Volume	Measures whether the bank's activity can be replaced with other banks
Complexity	Notional amount of over-the-counter (OTC) derivatives Level 3 assets Held for trading and available-for-sale securities	Measures the complexity of a financial entity

Global systemically important institutions

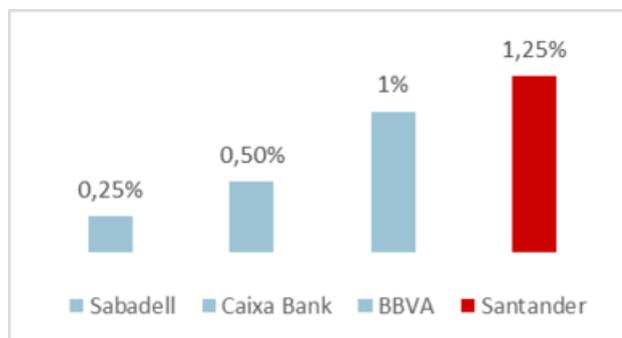
Capital buffer	Entity
5 (3.50%)	(Empty)
4 (2.50%)	JP Morgan Chase
3 (2.00%)	Bank of America Citigroup HSBC
2 (1.50%)	Agricultural Bank of China BNP Paribas Bank of China Barclays China Construction Bank Deutsche Bank Goldman Sachs Industrial and Commercial Bank of China Limited Mitsubishi UFJ FG UBS
1 (1.00%)	Bank of Communications Bank of New York Mellon Group BPCE Group Crédit Agricole ING Bank Mizuho FG Morgan Stanley Royal Bank of Canada Santander Société Générale Standard Chartered State Street Sumitomo Mitsui FG Toronto Dominion Wells Fargo

Domestic Systemically Important Institutions

When identifying domestic systemically important banks (DSIBs), Banco de España, using the methodology established in rule 14 of Circular 2/2016, applies a mix of guidelines based on size, importance, complexity (cross-jurisdiction activity) and the degree of interconnectedness between the institutions and the financial system. Banco de España conducts an annual review of this classification. The following institutions are included on its 2024 list:

Systemic risk buffer (2024)

Domestic Systemically Important Institutions

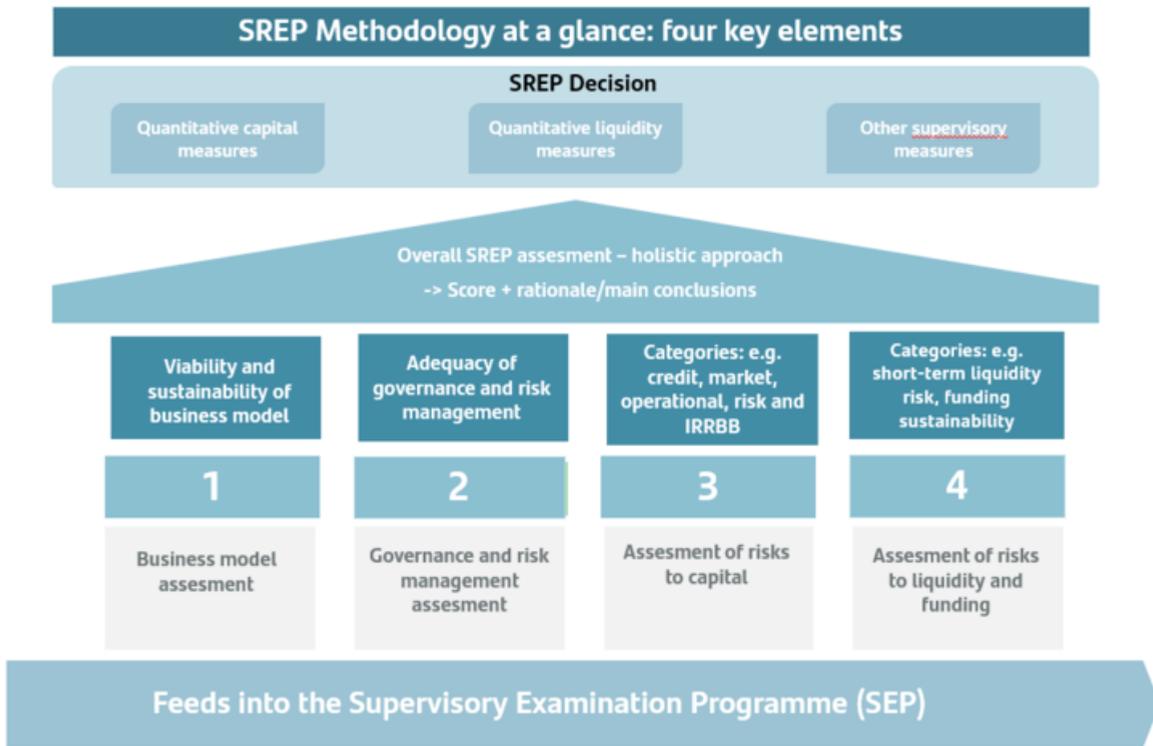


The Group is on the lists of both global and domestic systemically important banks. Banco de España requires the higher of the two buffers to be applied, under rule 23 of Circular 2/2016. The applicable surcharge in 2024 will be 1.25%, in accordance with the domestic buffer.

2.4.3.2 Eligible capital requirements

The capital decision resulting from the Supervisory Review and Evaluation Process (SREP) under the European Central Bank’s (ECB) Single Supervisory Mechanism comprises a Pillar 2 Requirement (Pillar 2R) and Pillar 2 Guidance (Pillar 2G). While Pillar 2R is binding and failure to comply may have direct consequences for banks, Pillar 2G is not directly

binding, and failure to comply is irrelevant for the purposes of calculating the Maximum Distributable Amount (MDA). However, the ECB expects compliance with Pillar 2G at all times. If a bank is not compliant with Pillar 2G, the ECB will carefully consider the reasons and circumstances and may define additional supervisory control measures.



On a consolidated basis, the minimum levels required by the European Central Bank are 9.26% for CET1 and 13.45% for the total capital ratio.

Our capital requirements increased in 2023, mainly due to the continued increase of countercyclical buffer requirements by the competent authorities in the countries in which we operate (+0.19 pp).

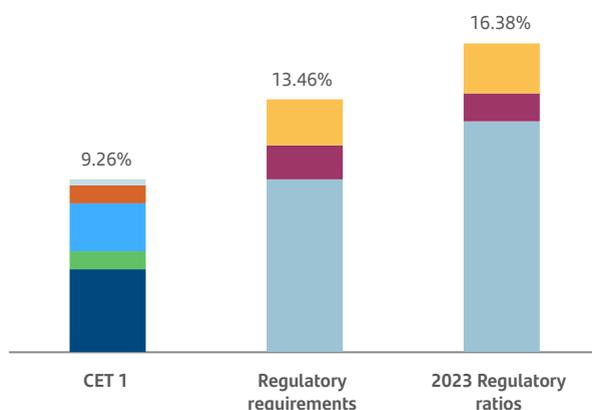
At year-end, the CET1 (phased-in) ratio was 12.30%, resulting in a CET1 management buffer of 305 bps. This shows our ability to generate organically, our solid position to be able to

to pay dividends and our strong capital management.

The total phased-in capital ratio stands at 16,39%. Taking into account the AT1 shortfall, Santander exceeded the 2023 minimum regulatory requirements (i.e. distance to the MDA) by 269 bps.

Institutions must hold capital at the consolidated level for the higher of the G-SIB and D-SIB requirements. In 2023, they were both set at 1%, however Banco de España informed the Group that its D-SIB buffer would increase from 1.00% to 1.25% from 1 January 2024.

Regulatory Capital vs Regulatory requirement (Phased-in IFRS9)



Regulatory requirements		Regulatory Ratios 2023 (phased-in)	
T2	2.40%	T2	2.64%
AT 1	1.80%	AT 1	1.44%
CET 1:	9.26%	CET 1	12.30%
Min. Pillar 1	4.50%		
Pillar 2 R	0.89%		
CCoB ^A	2.50%		
G-SIB ^B	1.00%		
CCyB ^C	0.37%		

A. Capital conservation buffer.
 B. Global systemically important banks (G-SIB) buffer
 C. Countercyclical buffer

2.5. Leverage ratio

This section covers the qualitative requirement LRA - Free format text boxes for disclosure on qualitative items.

Basel III established the leverage ratio as a non-risk-sensitive measure to limit excessive growth of the balance sheet relative to available capital.

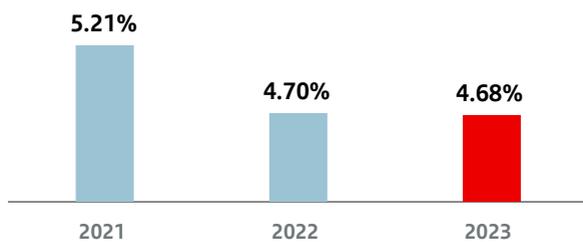
The ratio is calculated as the ratio of Tier 1 divided by the leverage exposure. This exposure is calculated as the sum of the following components:

- Asset value, without derivatives and without elements considered as deductions in Tier 1 (for example, the loan balance is included but not goodwill), also excluding the exposures referred to in section 1 of article 429.a of the standard.

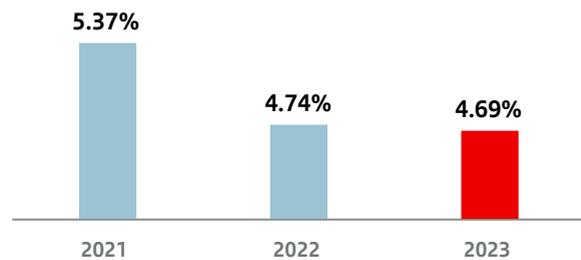
- Off-balance-sheet accounts (mainly: guarantees, undrawn credit limits, letters of credit) weighted by the conversion factors of the standardised approach to credit risk.
- Inclusion of the net value of derivatives (gains and losses against a single counterparty are netted, minus collateral – provided certain criteria are met) plus a surcharge for potential future exposure.
- A surcharge for the potential risk of financing securities transactions.
- Lastly, a surcharge is included for risk relating to unhedged credit derivatives (CDS).

The following tables illustrate the ratios published by Santander since December 2023.

Leverage ratio (CRR fully-loaded, fully-loaded IFRS 9)



Leverage ratio (CRR fully loaded, phased-in IFRS9)



With the publication of CRR II, the definitive calibration of the leverage ratio was set at 3% for all institutions, with G-SIBs being subject to an additional surcharge of 50% of the ratio of the buffer applicable to the global systemically important institution (G-SII) from January 2023. Adjustments to its calculation are also included, notably the exclusion of certain exposures from the measure of total exposure: exposures to central banks in exceptional circumstances, public loans, transfer loans and officially guarantees export credits.

The Group's leverage ratio at 31 December 2023 was as follows:

Table 11. Leverage ratio

EUR million

	2023	
	CRR Fully/IFRS9 Fully	CRR Fully/ IFRS9 Phased in
Tier 1	85,450	85,742
Exposure	1,826,629	1,826,922
Leverage Ratio	4.68 %	4.69 %

The following table gives a breakdown of the ratio calculation:

Table 12. Leverage ratio details

EUR million						2023
Item	Amounts Consol. Balance Sheet	To be eliminated	To be included	Leverage exposure	Comment	
Derivatives	61,688	61,688	32,043	32,043	Substitution of carrying amount by EAD net of collateral	
Securities financing transactions	100,108		4,190	104,298	A buffer is added for these transactions	
Assets deducted in Tier 1	21,344	21,344		—	Deletion to avoid duplication	
DTAs	—	—		—	Carrying amount of the balance sheet asset adjusted for changes in DTAs, as a result of the recognition of lower reserve account provisions, due to the application of IFRS 9 transitional arrangements.	
Rest of Assets	1,597,333	14,551		1,582,782	Fully included	
Total Assets	1,780,473	97,583	36,233	1,719,123		
Total Off-Balance-Sheet items	409,307	301,508		107,799	Balances are weighted according to their risk	
Total Exposure (denominator)				1,826,922		
Tier 1 (numerator)				85,742		
Leverage ratio	1,682,890			4.69 %	Minimum recommended 3%	

The leverage ratio is calculated by Santander every month and reported to the capital committee and other governing bodies, thus ensuring adequate monitoring of the risk of excessive leverage at its most restrictive measurement: fully loaded.

The leverage ratio is a primary metric in Santander's Risk Appetite Framework, as part of its commitment to preserving robust capital adequacy ratios. It is regularly monitored to ensure that the ratio comfortably exceeds the minimum regulatory requirements. The bank's Risk Appetite Framework includes a "stressed" leverage ratio as an additional metric, to manage the risk of excessive leverage in a forward-looking way, identifying how it will perform in a crisis scenario.

Within this framework, the Group has established the necessary limits and alerts to ensure that leverage is kept at tolerable risk levels, consistent with sustainable growth in the group's balance sheet and well above the minimum levels that could be considered to be a risk. Any significant changes in any of the main drivers of this indicator are therefore analysed and reported to senior management.

Additional quantitative indicators are monitored as part of the Group's active management of leverage risk, to complement the management and monitoring of the risk of excessive leverage, so as to understand the maturities, types of charges and movements of collateralised assets. These metrics include asset encumbrance and the Net Stable Funding Ratio (NSFR).

 For more information, see section 10.1.2.

As part of its capital planning, the Group estimates the leverage ratio over a three-year horizon under a range of macroeconomic scenarios, including recession.

For further information on the leverage ratio, see tables: LR1(LRSum)-summary reconciliation of accounting assets and leverage ratio exposures, LR2(LRCom)-leverage ratio common disclosure and LR3 (LRSpl)- breakdown of on balance sheet exposures (excluding derivatives, SFTs and exempted exposures) below.

The following table presents information corresponding to the reconciliation of accounting assets and leverage ratio exposures

Table 13.LR1 - LRSum: Summary reconciliation of accounting assets and leverage ratio exposures

EUR million		a
		2023
1	Total assets as per published financial statements	1,797,060
2	Adjustment for entities which are consolidated for accounting purposes but are outside the scope of prudential consolidation	(16,587)
3	(Adjustment for securitised exposures that meet the operational requirements for the recognition of risk transference)	(13,441)
4	(Adjustment for temporary exemption of exposures to central banks (if applicable))	—
5	(Adjustment for fiduciary assets recognised on the balance sheet pursuant to the applicable accounting framework but excluded from the total exposure measure in accordance with point (i) of Article 429a(1) CRR)	—
6	Adjustment for regular-way purchases and sales of financial assets subject to trade date accounting	(1,110)
7	Adjustment for eligible cash pooling transactions	—
8	Adjustments for derivative financial instruments	(16,078)
9	Adjustment for securities financing transactions (SFTs)	4,190
10	Adjustment for off-balance sheet items (ie conversion to credit equivalent amounts of off-balance sheet exposures)	107,799
11	(Adjustment for prudent valuation adjustments and specific and general provisions which have reduced Tier 1 capital)	—
EU-11a	(Adjustment for exposures excluded from total exposure measure in accordance with point (c) of Article 429a(1) CRR)	—
EU-11b	(Adjustment for exposures excluded from total exposure measure in accordance with point (j) of Article 429a(1) CRR)	—
12	Other adjustments	(34,912)
13	Total exposure measure	1,826,922

CRR Phased-in, IFRS 9 Phased-in.

Table 14. LR2 - LRCom: Common disclosure table of the leverage ratio

Millions of euros		a	b
		Dec'23	Jun'23
On-balance sheet exposures (excluding derivatives and SFTs)			
1	Balance sheet items (excluding derivatives, securities lending and repos, but including collateral)*	1,606,446	1,586,173
2	Gross derivative collateral provided when deducted from balance sheet assets in accordance with the applicable accounting framework	—	—
3	(Deduction from credit assets for the cash variation margin provided in derivative transactions)	(13,567)	(14,850)
4	(Adjustment for values received in securities financing operations that are recognized as assets)	—	—
5	(General adjustments for credit risk in balance sheet items)	—	—
6	Asset amounts deducted to determine Tier 1 capital	(21,344)	(20,094)
7	Total on-balance sheet exposures (excluding derivatives, securities lending and repos)	1,571,534	1,551,228
Derivatives exposures			
8	Replacement cost associated with derivative operations	19,558	19,732
EU-8a	Exception for derivatives: contribution to replacement costs according to the simplified standardized method	—	—
9	Amount added by PFE (Potential Future Exposure) associated with derivative operations	18,985	19,221
EU-9a	Exception for Derivatives: Potential Contribution to Future Exposure Under the Simplified Standardized Approach	—	—
EU-9b	Exposures determined under the original exposure method	—	—
10	(CCP tranche exempt for exposures to commercial operations settled by the client)	—	—
EU-10a	(CCP-exempt portion of client-cleared trading exposures) (simplified standard approach)	—	—
EU-10b	(CCP-exempt portion of client-compensated trade exhibitions) (original exposure method)	—	—
11	Adjusted effective notional amount of credit derivatives subscribed	9,220	7,452
12	(Adjusted effective notional compensation and additional deductions for credit derivatives written)	(2,153)	(1,760)
13	Total derivative exposures	45,610	44,645
Exposures from securities financing operations			
14	SFT gross assets (without recognition of compensation), after adjustment of sales accounting transactions	100,108	97,610
15	(Net amounts of accounts payable and receivable from SFT gross assets)	—	—
16	Counterparty credit risk exposure for SFT assets	4,190	3,460
EU-16a	Exception for SFTs: Counterparty credit risk exposure in accordance with Article 429e(5) and Article 222 CRR	—	—
17	Agent Trading Exhibitions	—	—
EU-17a	(Part of CCP exempt from SFT exposure cleared by client)	—	—
18	Total exposures from securities financing operations	104,298	101,071
Off-balance sheet exposures			
19	Off-balance sheet exposures by gross notional amount	387,506	385,969
20	(Adjustments for conversion to equivalent credit amounts)	(282,027)	(286,710)
21	(General provisions associated with off-balance sheet exposures deducted in the determination of Tier 1 capital)	—	—
22	Off-balance sheet exposures	105,480	99,259

Table 14. LR2 - LRCom: Common disclosure table of the leverage ratio

Millions of euros		a	b
		Dec'23	Jun'23
Excluded exposures (both on and off balance sheet) according to article (7) and (14) of the CRR.			
EU-22a	(Exposures excluded from the leverage ratio total exposure measure in accordance with Article 429a(1) CRR)	—	—
EU-22b	(Exempt exposures pursuant to Article 429a(1)(j) CRR (on and off balance sheet))	—	—
EU-22c	(-) Exposures excluded from public development banks - Public sector investments	—	—
EU-22d	(Exhibitions excluded from public development banks (or units) - Promotional credits)	—	—
EU-22e	(Excluding transferable promotional loan exposures of non-public development banks (or units))	—	—
EU-22f	(Excluding guaranteed portions of export credit risks)	—	—
EU-22g	(Excluding excess guarantees deposited with tripartite agents)	—	—
EU-22h	(Excluding services related to CSDs of entities in accordance with point (o) of Article 429 bis (1) of the CRR)	—	—
EU-22i	(CSD-related services excluded from designated entities in accordance with Article 429a(1) CRR)	—	—
EU-22j	(Reduction of the exposure value of pre-financing or intermediate loans)	—	—
EU-22k	(Total exempt exhibitions)	—	—
Total capital and exposures			
23	Tier 1 Capital	85,742	86,485
24	Measurement of total exposure	1,826,922	1,796,203
Leverage Ratios			
25	Leverage ratio	4.69 %	0.05
EU-25	Leverage ratio (without the impact due to exposures excluded from public sector investments and promotional loans) (%)	4.69 %	0.05
25a	Leverage ratio (excluding the impact of any applicable temporary exemption from central bank reserves)	4.69 %	0.05
26	Minimum regulatory leverage ratio requirement (%)**	3.00 %	0.03
EU-26a	Additional leverage ratio requirements (%)	— %	—
EU-26b	Of which: part of CET1 capital (basis points)	— %	—
27	Leverage Buffer Requirements (%)	0.50 %	0.01
EU-27a	Global leverage ratio requirements (%)	3.50 %	0.04
Election on transitional provisions and unrecognized trust items			
EU-27b	Choice of the transitional regime for the definition of the capital measure	Transitional	Transitional

Table 14. LR2 - LRCom: Common disclosure table of the leverage ratio

Millions of euros		a	b
		Dec'23	Jun'23
Disclosure of average values			
28	Average value of SFT's gross assets, after adjustment of sales accounting transactions and after deducting the amounts of the associated treasury amounts payable and treasury amounts receivable	106,810	94,696
29	End-of-quarter value of SFT's gross assets, after adjustment for sales accounting transactions and net of associated cash accounts payable and receivable amounts	100,108	97,610
30	Measure of total exposure (including the impact of any applicable temporary exemption from central bank reserves) incorporating the average values of row 28 of SFT's gross assets (after adjustment for sales and net accounting transactions of the amounts of the associated payment and cash collection assets)	1,833,624	1,793,289
30a	Measure of total exposure (excluding the impact of any applicable temporary exemption from central bank reserves) incorporating the average values of row 28 of SFT's gross assets (after adjustment for sales accounting transactions and net amounts of associated cash accounts payable and receivable)	1,833,624	1,793,289
31	Leverage ratio (including the impact of any applicable temporary exemption from central bank reserves) incorporating the average values of row 28 of SFT's gross assets (after adjustment for sales accounting transactions and net of the amounts of the accounts payable and associated cash accounts receivable)	4.68 %	4.82 %
31a	Leverage ratio (excluding the impact of any applicable temporary exemption from central bank reserves) incorporating the average values of row 28 of SFT's gross assets (after adjustment for sales accounting transactions and net of the amounts of the accounts payable and associated cash accounts receivable)	4.68 %	4.82 %
CRR Phased-in, IFRS 9 Phased-in			
Tier 1 Capital - transitional definition			
Total Leverage Ratio exposure - using a transitional definition of Tier 1 capital			
*In row 1 mapping has been corrected to: {C 47.00, r0190, c0010} + {C 47.00, r0185, c0010} + {C 47.00, r0186, c0010} + {C 47.00, r0187, c0010} + {C 47.00, r0188, c0010} + {C 47.00, r0189, c0010} + {C 47.00, r0193, c0010} + {C 47.00, r0194, c0010} + {C 47.00, r0195, c0010} + {C 47.00, r0196, c0010} + {C 47.00, r0197, c0010} + {C 47.00, r0198, c0010} + {C 47.00, r0220, c0010} + {C 47.00, r0240, c0010} + {C 47.00, r0254, c0010} + {C 47.00, r0255, c0010}			
** Modified according to FAQs on ECB supervisory measures in reaction to the coronavirus of 23 July 2021 regarding to the recalibration of the 3% leverage ratio requirement			

Below is a breakdown of the different on-balance sheet exposures:

Table 15.LR3 - LRSpl: Split-up of on balance sheet exposures (excluding derivatives, SFTs and exempted exposures)

EUR million		a
		2023 CRR leverage ratio exposures
EU-1	Total on-balance sheet exposures (excluding derivatives, SFTs, and exempted exposures), of which:	1,592,878
EU-2	Trading book exposures	77,327
EU-3	Banking book exposures, of which:	1,515,551
EU-4	Covered bonds	2,945
EU-5	Exposures treated as sovereigns	437,953
EU-6	Exposures to regional governments, MDB, international organisations and PSE not treated as sovereigns	4,508
EU-7	Institutions	34,751
EU-8	Secured by mortgages of immovable properties	392,363
EU-9	Retail exposures	208,663
EU-10	Corporate	219,446
EU-11	Exposures in default	25,937
EU-12	Other exposures (eg equity, securitisations, and other non-credit obligation assets)	188,985
CRR Phased-in, IFRS 9 Phased-in.		

2.6. Economic capital – Pillar 2

Economic capital is the capital required to cover risks from our activity with a certain level of solvency. We measure it using an internal model. To calculate the required capital, we determine our solvency level based on our long-term rating target of 'A' (in line with the Kingdom of Spain); this represents a confidence level of 99.95% (above the regulatory level of 99.90%).

Our economic capital model measurements cover all significant risks incurred in our activity (concentration risk, structural interest rate risk (ALM), business risk, pensions risk, deferred tax assets (DTAs), goodwill and others that are beyond the scope of regulatory Pillar 1). It also considers diversification, which is key to determining and understanding our risk profile and solvency in view of our multinational operations and businesses.

Our total risk and related economic capital are less than the sum of the risk and capital of all individual units combined. Because our business spans several countries in a structure of separate legal entities with different customer and product segments and risk types, our earnings are less vulnerable to adverse situations for any given market, portfolio, customer type or risk. Despite increasing economic globalization, economic cycles and their impact differ by country, which was evident during the covid-19 pandemic. Groups with a global presence tend to have more stable results and are more resistant to market or portfolio crises, which translates into lower risk.

In contrast to regulatory criteria, we consider such intangible assets as DTAs and goodwill to retain value (even in a hypothetical resolution), owing to the geographic structure of our subsidiaries. Thus, we can value assets and estimate their unexpected loss and capital impact.

Economic capital is an essential internal management tool that helps us develop our strategy, assess solvency and manage portfolio and business risk. As such, it is a key part of the Supervisory Review and Evaluation Process (SREP).

Regarding Basel Pillar 2, we use our economic model for the internal capital adequacy assessment process (ICAAP). We plan business progression and capital needs under a baseline scenario and alternative stress scenarios to make sure we meet our solvency objectives, even in adverse scenarios.

Economic capital-derived metrics help us assess risk-return objectives, price operations based on risk, determine how economically viable projects are, and value country units and business lines to fulfil our overriding objective of maximizing shareholder value.

As a homogeneous risk measure, we can use economic capital to explain how we distribute risk throughout Santander, bringing together several activities and risk types under a single metric.

Given its relevance to internal management, Santander includes several economic capital-derived metrics from both a capital needs and a risk-return point of view, within a conservative risk appetite framework established at both Group and subsidiary level.

Required economic capital in December 2023 amounted to EUR 74,721 million. Compared to the available economic capital base of EUR 94,228 million, this implies a capital surplus of EUR 19,507 million

For more information on economic capital, please refer to the capital management chapter of the Economic and Financial Review in the 2023 Annual Report.



[Access 2023 Annual Report available on the Santander Group website](#)

2.7. Capital planning and stress tests

This section covers the qualitative requirement OVC - ICAAP information.

Capital stress test exercises are a key tool in banks' dynamic assessments of their risks and solvency. These forward-looking reviews are based on unlikely-but-plausible macroeconomic and idiosyncratic scenarios. They require robust planning models that can translate the effects defined in the projected scenarios to elements that affect solvency.

The ultimate aim of these exercises is to assess risks and solvency thoroughly to determine capital requirements if a bank fails to meet its regulatory and internal capital objectives.

Santander has an internal capital stress and planning process to respond to various regulatory exercises and is a key tool integrated within management and strategy. They aim to ensure sufficient current and future capital, even in unlikely-but-plausible economic scenarios. We estimate results in various business environments (including severe recessions as well as expected macroeconomic environments), based on our initial situation (financial statements, capital base, risk parameters and regulatory and economic ratios) to determine our solvency ratios, usually for a three-year period.

Planning offers a comprehensive view of our capital for the analysed period and in each of the defined scenarios based on regulatory capital and economic capital metrics.

Further information on capital planning and stress exercises can be found in the Economic and Financial Report in the 2023 Annual Report.



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2.8. TLAC and MREL

In November 2015, the FSB published the TLAC term sheet based on the previously published principles for crisis management frameworks. It aims to ensure global systemically important banks (G-SIBs) will have the capacity to absorb losses and recapitalize as required to maintain critical functions during and immediately after resolution proceedings without compromising public funds or financial stability.

The TLAC term sheet requires a minimum TLAC requirement to be set on an individual basis for each G-SIB as the higher of (a) 18% of risk-weighted assets; and (b) 6.8% of Basel III Tier 1 leverage ratio exposure, from 1 January 2022.

Some jurisdictions have already implemented the TLAC term sheet in their legislation (namely Europe through the CRR 2 and the BRRD II, and the United States). In other jurisdictions in which we operate, such as Brazil, this requirement is yet to be implemented.

In June 2019, Europe published the final texts to revise the resolution's framework: CRR II and BRRD II. This revision primarily aimed to implement the TLAC requirement across Europe.

For G-SIBs, CRR II, which came into force in June 2019, introduced the TLAC term sheet minimum requirement (18%) to be composed of subordinated liabilities, except for a percentage of senior debt (3.5%).

As of 31 December 2023, the TLAC of the resolution group headed by Banco Santander, S.A., stands at 26.7% of risk-weighted assets and 9.2% of leverage exposure.

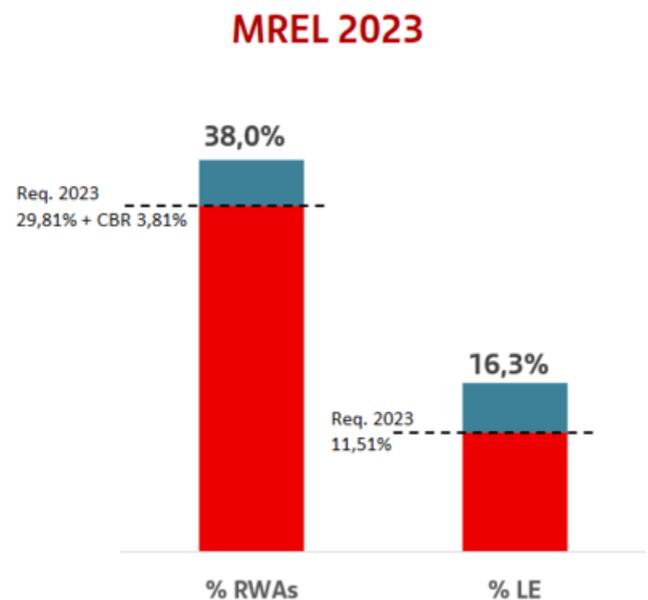
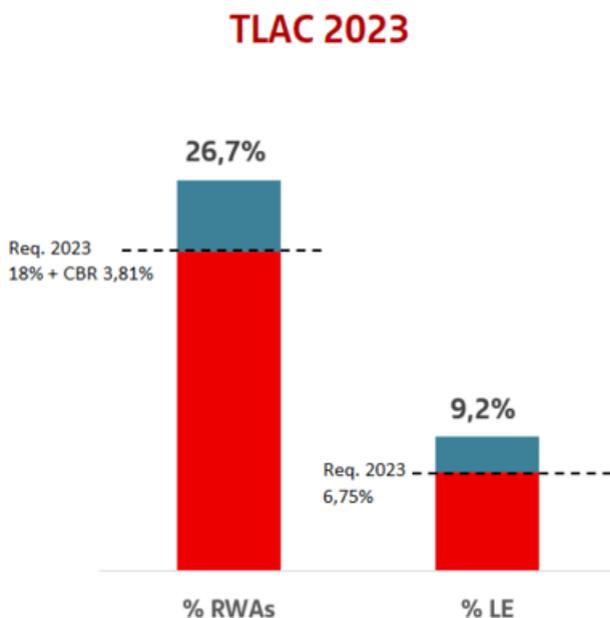
BRRD 2 was transposed in Spain in 2021.

In addition to the minimum TLAC requirement set out in the CRR, an additional requirement, or Pillar 2, will be added as a result of the application of the MREL methodology of the BRRD II, which was transposed in Spain in 2021.

Banco de España gave formal notice of the (binding) minimum requirement on own funds and eligible liabilities (MREL) for the Banco Santander, S.A. Resolution Group in May 2023, at a sub-consolidated level, which must be met by 1 January 2024. The requirement set the maximum between 29.8% of risk-weighted assets[2] and 11.5% of the Resolution Group's leverage ratio exposure, based on data from December 2021.

As at 31 December 2023, Banco Santander, S.A. already complies with the MREL requirements. Specifically, the figures stood at 37.99% of RWA assets and 16.33% of leverage ratio exposure.

Of the total MREL requirement, a minimum subordination was set equal to the maximum between 10.27% of risk-weighted assets and 6.13% of leverage ratio exposure. However, the minimum subordination required from the Resolution Group is determined by TLAC, not by MREL, as the TLAC subordination requirement is higher than that set under MREL. In December 2023, the subordinated MREL figures of the Resolution Group headed by Banco Santander, S.A. stood at 32.2% and 13.8%, respectively.



CBR: Combined Buffer Requirement, composed by capital conservation buffer (2.5%), GSII (1%) and countercyclical capital buffer (0.31%)

The requirement for own funds and eligible liabilities are shown below:

Table 16.EU KM2: Key metrics - G-SII requirement for own funds and eligible liabilities (TLAC)

		G-SII Requirement for own funds and eligible liabilities (TLAC)				
		b	c	d	e	f
		Dec'23	Sep'23	Jun'23	Mar'23	Dec'22
Own funds and eligible liabilities, ratios and components						
1	Own funds and eligible liabilities	84,086	79,354	76,328	68,446	72,856
2	Total risk exposure amount of the resolution group (TREA)	315,015	308,067	305,416	290,250	293,609
3	Own funds and eligible liabilities as a percentage of TREA (row1/row2)	26.69%	25.76%	24.99%	23.58%	24.81%
4	Total exposure measure (TEM) of the resolution group	912,014	902,306	883,892	799,516	828,717
5	Own funds and eligible liabilities as percentage of the TEM	9.22%	8.79%	8.64%	8.56%	8.79%
6a	Does the subordination exemption in Article 72b(4) of Regulation (EU) No 575/2013 apply? (5 % exemption)	No	No	No	No	No
6b	Aggregate amount of permitted non-subordinated eligible liabilities instruments if the subordination discretion in accordance with Article 72b(3) of Regulation (EU) No 575/2013 is applied (max 3,5 % exemption)	11,026	10,782	10,690	10,159	10,276
6c	If a capped subordination exemption applies in accordance with Article 72b (3) of Regulation (EU) No 575/2013, the amount of funding issued that ranks pari passu with excluded liabilities and that is recognised under row 1, divided by funding issued that ranks pari passu with excluded liabilities and that would be recognised under row 1 if no cap was applied (%)	45.50%	51.04%	52.29%	37.07%	47.56%

Table 17. EU TLAC1 - Composition - G-SII Requirement for own funds and eligible liabilities

	b
	G-SII requirement for own funds and eligible liabilities (TLAC)
Own funds and eligible liabilities and adjustments	
1	Common Equity Tier 1 capital (CET1)
	80,473
2	Additional Tier 1 capital (AT1)
	8,152
6	Tier 2 capital (T2)
	11,969
11	Own funds for the purpose of Articles 92a CRR and 45 BRRD
	100,594
Own funds and eligible liabilities: Non-regulatory capital elements	
12	Eligible liabilities instruments issued directly by the resolution entity that are subordinated to excluded liabilities (not grandfathered)
	30,389
EU-12a	Eligible liabilities instruments issued by other entities within the resolution group that are subordinated to excluded liabilities (not grandfathered)
	—
EU-12b	Eligible liabilities instruments that are subordinated to excluded liabilities, issued prior to 27 June 2019 (subordinated grandfathered)
	—
EU-12c	Tier 2 instruments with a residual maturity of at least one year to the extent they do not qualify as Tier 2 items
	3,739
13	Eligible liabilities that are not subordinated to excluded liabilities (not grandfathered pre cap)
	24,231
EU-13a	Eligible liabilities that are not subordinated to excluded liabilities issued prior to 27 June 2019 (pre-cap)
	—
14	Amount of non subordinated instruments eligible, where applicable after application of Article 72b (3) CRR
	11,026
17	Eligible liabilities items before adjustments
	45,154
EU-17a	Of which subordinated liabilities items
	34,128
Own funds and eligible liabilities: Adjustments to non-regulatory capital elements	
18	Own funds and eligible liabilities items before adjustments
	145,747
19	(Deduction of exposures between multiple point of entry (MPE) resolution groups)
	61,661
20	(Deduction of investments in other eligible liabilities instruments)
	—
22	Own funds and eligible liabilities after adjustments
	84,086
Risk-weighted exposure amount and leverage exposure measure of the resolution group	
23	Total risk exposure amount (TREA)
	315,015
24	Total exposure measure (TEM)
	912,014
Ratio of own funds and eligible liabilities	
25	Own funds and eligible liabilities as a percentage of TREA
	26.69 %
26	Own funds and eligible liabilities as a percentage of TEM
	9.22 %
27	CET1 (as a percentage of TREA) available after meeting the resolution group's requirements
	8.69 %
28	Institution-specific combined buffer requirement
	3.81 %
29	of which: capital conservation buffer requirement
	2.50 %
30	of which: countercyclical buffer requirement
	0.31 %
31	of which: systemic risk buffer requirement
	— %
EU-31a	of which: Global Systemically Important Institution (G-SII) or Other Systemically Important Institution (O-SII) buffer
	1.00 %
Memorandum items	
EU-32	Total amount of excluded liabilities referred to in Article 72a(2) of Regulation (EU) No 575/2013
	507,592

The creditor ranking is shown below:

Table 18.EU TLAC3a: creditor ranking - resolution entity

	Insolvency ranking							Sum of 1 to 7
	1	2	3	4	5	6	7	
	(most junior)						(most senior)	
1 Description of insolvency ranking	CET1	AT1	Tier 2	Specific Subordinated Claims	Other subordinated debt and claims	Senior non preferred claims	Ordinary claims	
2 Liabilities and own funds	69,653	7,904	15,214	31,137	1,816	30,629	257,022	413,376
3 of which excluded liabilities	0	0	0	0	0	0	163,799	163,799
4 Liabilities and own funds less excluded liabilities	69,653	7,904	15,214	31,137	1,816	30,629	93,224	249,577
5 Subset of liabilities and own funds less excluded liabilities that are own funds and liabilities potentially eligible for meeting TLAC	69,653	7,904	15,214	0	731	29,658	24,231	147,391
6 of which residual maturity ≥ 1 year < 2 years	0	0	2,899	0	0	4,342	5,642	12,883
7 of which residual maturity ≥ 2 year < 5 years	0	0	4,573	0	0	17,588	13,078	35,238
8 of which residual maturity ≥ 5 years < 10 years	0	0	7,598	0	0	7,291	5,240	20,129
9 of which residual maturity ≥ 10 years, but excluding perpetual securities	0	0	0	0	0	438	272	709
10 of which perpetual securities	69,653	7,904	144	0	731	0	0	78,432

For further information on capital and TLAC instruments main features - Own Funds and Eligible liabilities, see Appendix XV and Appendix XVI.

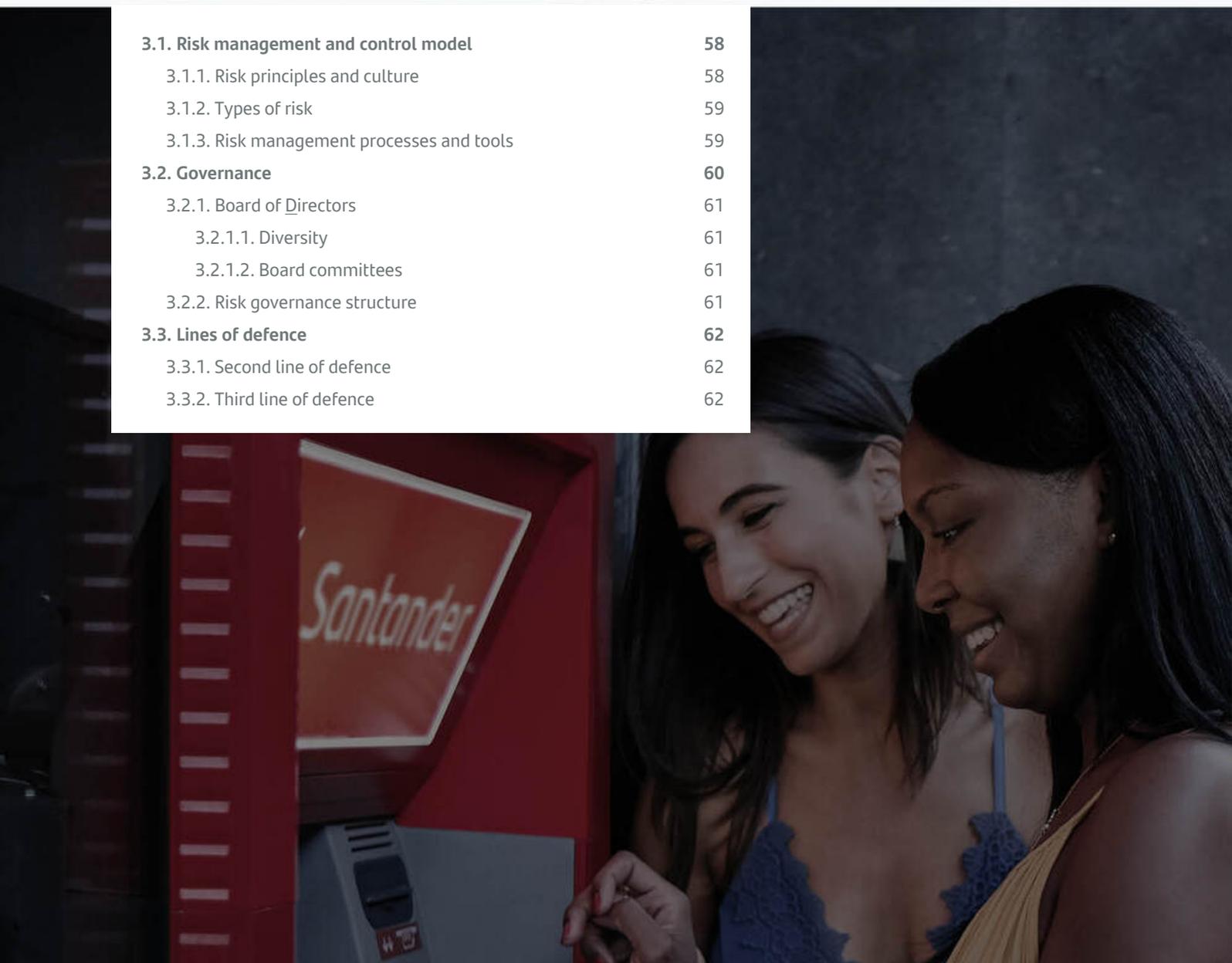
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Risks



3. Global risk view

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3. GLOBAL RISK VIEW

This chapter will focus on three main sections:

- | | | | | | |
|---|---|---|---|---|---|
| 1 | <p>Risk management and control model. This section covers the qualitative requirements OVA - Entity's risk management approach and OVB - Information on governance arrangements.</p> | 2 | <p>Governance. This section covers the qualitative requirements OVA - Entity's approach to risk management and OVB - Information on governance arrangements.</p> | 3 | <p>Lines of defence. This section covers paragraphs (b), (c) and (d) of the qualitative requirement SRA - Qualitative disclosure requirements related to the IRB approach.</p> |
|---|---|---|---|---|---|

3.1. Risk management and control model

This section covers the qualitative requirements OVA - Institution risk management approach and OVB - Disclosure on governance arrangements.

Our risk management and control model is underpinned by common principles, a solid risk culture, robust governance and advanced management processes on risk types.

3.1.1. Risk principles and culture

Grupo Santander's risk management and control are based on these mandatory principles, which consider regulatory requirements and best market practices:

- **All employees are risk managers** who must understand the risks associated with their functions and not assume risks that will exceed the Group's risk appetite or have an unknown impact.
- **Senior managers** must be involved to make sure we keep our risk profile within risk appetite, with consistent risk conduct, action, communications, and oversight of our risk culture.
- **Independence of risk management and control functions**, according to our three lines of defence model.
- **We take a forward-looking**, comprehensive approach for all businesses and risk types.
- **Effective information management** to identify, assess, manage and disclose risks at appropriate levels.

In 2023, we continued rolling out our risk culture target operating model, which is based on the best practices identified in the different subsidiaries where we operate. Its main target is to consolidate the risk culture across the Group.

Throughout the year, with the aim of promoting our risk culture, we've celebrated our third global Risk Pro Week to raise employees' awareness of why they must manage risk in their day-to-day. In addition, we measure how risk cultures is embedded within the organization through YourVoice and other KPIs.

For more details about Group's risk culture, see the section '2. Our culture' of the 'Responsible Banking' chapter.

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Risk culture - Risk Pro

The Group's risk culture, which is called Risk Pro (or 'I AM RISK' in the UK and the US), is a core element of both our corporate culture, The Santander Way, and our purpose of helping people and businesses prosper.

Risk Pro is each employee's accountability for the risks taken in their day to day and their individual contribution to identifying, assessing and managing risks properly and responsibly.

Risk Pro is part of all stages of the employee life cycle, so we ran training in the behaviors of our risk culture. Our performance review system, MyContribution, assigns all Santander employees a common risk objective.

3.1.2. Types of risk

The Grupo Santander’s risk classification is based on our corporate risk framework and includes:

- 1 **Credit risk** is the risk of financial loss arising from the default or credit quality deterioration of a customer or counterparty, to which the Grupo Santander has either directly provided credit or for which it has assumed a contractual obligation.
- 2 **Market risk** is the risk incurred as a result of the effect of changes in market factors interest rates, exchange rates, equities and commodities, among others, may have on profits or capital.
- 3 **Liquidity risk** occurs if liquid financial resources are insufficient or too costly to obtain in order to meet liabilities when they fall due.
- 4 **Structural risk** is the risk of changes in the value or margin generation of the assets or liabilities in the banking book resulting from changes in market factors and balance sheet behaviour. It also includes risks associated with insurance and pension activities, as well as the risk of the Grupo Santander not having an adequate amount or quality of capital to meet its internal business objectives, regulatory requirements, or market expectations.
- 5 **Operational risk** is the risk of loss resulting from inadequate or failed internal processes, people, and systems or from external events, including legal risk and the regulatory compliance and conduct risks.
- 6 **Financial crime risk** is the risk arising from actions or the use of the Group’s means, products, and services in criminal or illegal activities. These activities include, among others, money laundering, terrorist financing, violation of international sanctions programs, corruption, bribes, and tax evasion.
- 7 **Model risk** is the risk of potential negative consequences arising from decisions based on poorly developed, poorly implemented or incorrectly used models, which could lead to financial losses, inadequate commercial or strategic decisions or damage to the Group’s operations.
- 8 **Reputational risk** is the risk of current or potential negative economic impact to the bank due to damage to the perception of the bank on the part of employees, customers, shareholders/investors, and the wider community.
- 9 **Strategic risk** is the risk of loss or damage arising from strategic decisions or their poor implementation, that impact the medium and long term interests of our key stakeholders, or from an inability to adapt to external developments.

At Grupo Santander we consider that ESG (environmental, social and governance) risk factors can impact the types of risks that exist in different time horizons. Consequently, they must be identified, evaluated, managed and mitigated in accordance with regulatory requirements and market best practices.

3.1.3. Risk management processes and tools

Grupo Santander has the following processes and tools to carry out an effective risk management :

A. Risk appetite and structure of limits

Risk appetite is the aggregate level and types of risk we deem prudent for our business strategy, even in unforeseen circumstances.

The risk appetite is expressed through qualitative statements and quantitative limits and metrics representative of the bank’s risk profile. Those metrics cover all key risk types according to our corporate risk framework. We articulate them in five axes that provide us with a holistic view of all risks we incur in the development of our business model.

Our risk appetite and business model rests on:

- a medium-low, predictable target risk profile, centred on retail & commercial banking, internationally diversified
- operations and a strong market share;
- stable, recurrent earnings and shareholder remuneration, sustained by a sound base of capital, liquidity and sources of funding;
- autonomous subsidiaries that are self-sufficient in terms of capital and liquidity to ensure their risk profiles will not compromise the Group’s solvency;
- an independent risk function and a senior management actively engaged in supporting a robust control environment and risk culture; and
- a conduct model that protects our customers and our Simple, Personal and Fair culture.

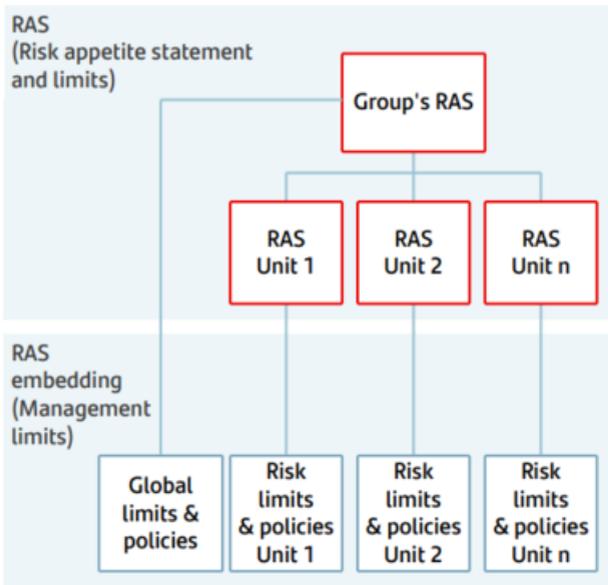


Risk appetite is governed throughout the Group by the following principles:

- Risk appetite is part of the board’s duties. It prepares the risk appetite statement (RAS) for the whole Group every year. In a cascading down process, each subsidiary’s board also sets its own risk appetite.
- Comprehensiveness and forward-looking approach. Our appetite includes of all material risks that we are exposed to and defines our target risk profile for the current and medium term with a forward-looking view considering stress scenarios.

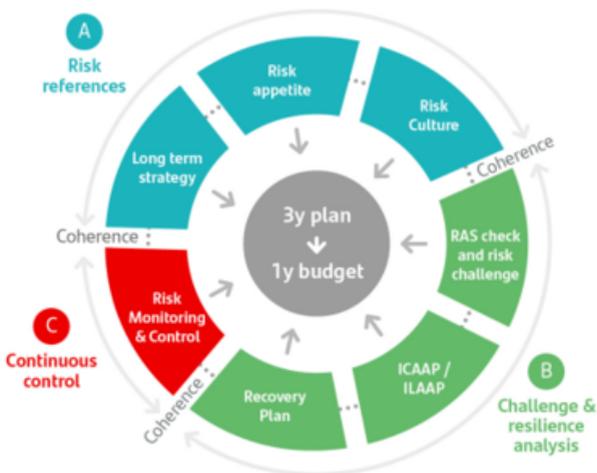
To promote that all material risks are adequately represented, we use corporate methodologies to identify and assess the risk to which we are exposed to and are inherent to our activities (emerging risks and risk control self-assessment — RCSA— among others).

- Common standards embedded in the day-to-day risk management. The Group shares the same risk appetite model, which sets common requirements for processes, metrics, governance bodies, controls and standards. It also facilitates an effective and traceable embedding of our appetite into more granular management policies and limits across our subsidiaries.
- Continuous adaptation to market best practices, regulatory requirements and supervisors’ expectations.
- Aligning with business plans and strategy. The risk appetite is a key point of reference for strategic and business planning. We verify that the three-year strategic plans, the annual budget, and capital and liquidity planning are within the limits set in the RAS before we approve them.



We promote that strategic and business plans are aligned with our risk appetite by:

- considering the risk appetite, long-term strategic view and the risk culture when drafting strategic and business plans.
- challenging business and strategic plans against the risk appetite. Misalignments trigger a review of either the three-year strategic plan (to make sure we stay within RAS limits) or risk appetite limits, with independent governance.
- control through the three lines of defence model that the risk appetite limits are subject to periodic oversight and that the specialized control functions report on risk profile and compliance with limits to the board and its committees every month.



B. Risk profile assessment (RPA)

Identification and assessment are crucial to managing, controlling and reporting on risks properly. Our risk profile assessment (RPA) covers the Group's internal and external risks and vulnerabilities and measures their quantitative and qualitative materiality. Our risk framework outlines all material risk types that stem from the Group's core risk assessments.

We systematically evaluate the risk profile of the Group and its subsidiaries using a single RPA methodology based on the core principles of our risk identification and assessment model: area-level accountability, efficiency, common methodology, comprehensive risk coverage, materiality, and guidance on corrective action and mitigation.

Under the RPA methodology, we calculate risk profiles based on a points system of 'low', 'medium-low', 'medium-high' and 'high' to make sure the board-approved risk appetite remains within a medium-low, predictable risk profile. In addition, it allows a holistic view of all risks at a given moment in time, pinpointing weaknesses in our risk management and deviations from our business plan to take corrective action. It showcases our prudent risk management that translates to solid solvency ratios and comfortable levels of liquidity.

Our risk profile considers these factors:

- Risk type, where we measure exposure under base and stressed scenarios through risk appetite and 'top of the house' metrics and internationally-recognized, internal and best practice indicators.
- Group/Subsidiaries, which gives an aggregated view of risks to the Group and its subsidiaries, as well as threats that may impact on business planning and strategic objectives.

The Group's target is to maintain a medium-low risk profile, despite market volatility, a gradual drop in inflation (which remains high) and ongoing geopolitical tension. Our cautious and proactive management led to strong profitability and credit quality indicators, and a robust liquidity risk profile.

For more information on the Risk Profile Assessment (RPA), please refer to the 'Risk compliance and conduct management' chapter of the 2023 Annual Report.



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3.2. Governance

This section covers the qualitative requirements OVA - Institution risk management approach and OVB - Disclosure on governance arrangements.

Except in matters reserved for the general shareholders' meeting, the board of directors is the highest decision-making body of Banco Santander, performing its duties with unity of purpose and independence of judgement. The board's policy is to delegate day-to-day management and the execution of strategy to the executive bodies and the management team, focusing on the performance of its general supervisory function.

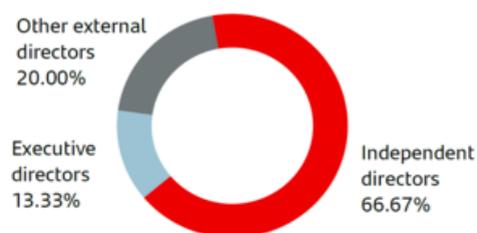
3.2.1. Board of Directors

31 December 2023, the Board of Directors consists of 15 members, whose profiles and track records are listed in section 4.1 "Our directors" of the corporate governance chapter of the 2023 Annual Report. The Bylaws allow it to have between 12 and 17 members.

Composition by type of director

The composition of the Board of Directors is balanced between executive and non-executive directors, most of whom are independent. Each director's status has been verified by the nomination committee.

Our Board composition



For more details on the actual knowledge, skills and experience of the members of the Board of Directors, as well as on the appointment, renewal and succession of directors, see chapter 'Corporate Governance' of the 2023 Annual Report.

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3.2.1.1. Diversity

A diverse Board of Directors is essential to its effectiveness. A pluralistic composition incorporating a broad range of qualities, experiences and points of view promotes the contribution of independent opinions, encourages constructive debate and ensures soundness and quality in decision-making. Thus, we seek to achieve a sound balance of technical skills, expertise and a broad diversity in the composition of the board..

Our policy for the selection, suitability assessment and succession of directors favours diversity on the board, not only in terms of gender, but also in terms of age, geographical origin, experience and expertise. In addition, the policy ensures that selection procedures for directors are free from

implicit biases that could lead to discrimination of any kind, e.g. on the basis of race, disability and/or ethnic origin.

In the past year we have continued to renew and strengthen the composition of the board to ensure a balanced representation of skills and diversity. The board is composed of 40% women (meeting the internally set target of a balanced representation of 40-60% of both genders) and two thirds of independent directors.

For more information on board diversity at Banco Santander, see 'Corporate governance' chapter of the 2023 Annual Report.

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3.2.1.2. Board committees

Banco Santander has a structure of seven committees that support the board in three main areas:

- In the management of the Group, exercising decision-making powers, through the executive committee.
- In defining strategy in key areas, through the responsible banking, sustainability and culture committee and the innovation and technology committee.
- In its functions of supervision and adoption of relevant decisions, through the audit, appointments, remuneration and risk supervision, regulation and compliance committees.

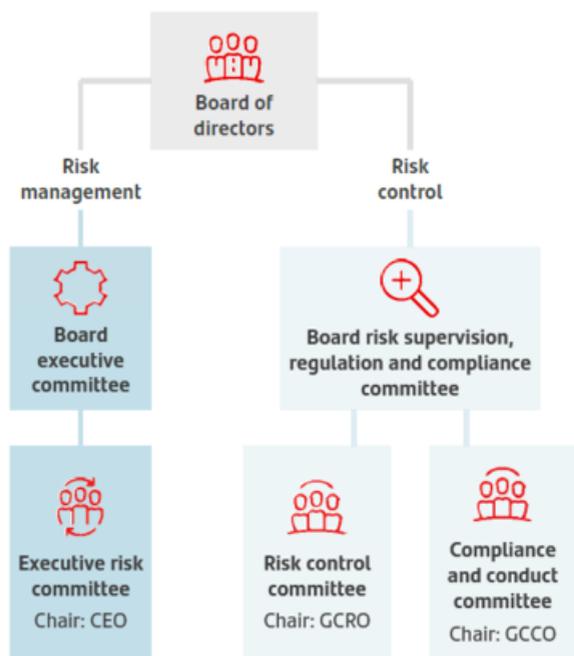
For more details see the 'Corporate Governance' chapter of the 2023 Annual Report.

[Access 2023 Annual Report available on the Santander Group website](#)

3.2.2. Risk governance structure

The Board of Directors is ultimately responsible for risk and compliance management and control.

It revises and approves the bank's risk frameworks and appetite, while promoting a strong risk culture across the Group. The board relies on its risk supervision, regulation and compliance committee for risk control and on the Group's executive committee for risk approval.



For more details on Board committees, see the, Corporate Governance, chapter and Risk, compliance & conduct management chapter of the 2023 Annual Report.

 [Access 2023 Annual Report available on the Santander Group website](#)

3.3. Lines of defence

In this section, the provisions of letters (b), (c) and (d) of the CRE - Qualitative disclosure requirements related to IRB approach requirement -Institution risk management approach, are complied with.

Our model of three lines of defence effectively manages and controls risks:

- **First line:** formed by the business units that take or originate exposure to risk, it recognizes, measures, controls, monitors and reports on risks according to internal risk management regulation. Risk origination must be consistent with the approved risk appetite and related limits.
- **Second line:** formed by the risk and compliance and conduct functions, it independently oversees and challenges the first line's risk management.
- **Third line:** the internal audit function, which is independent to ensure the Board of Directors and senior managers with high quality and efficient internal controls, governance and risk management systems, helping to safeguard our value, solvency and reputation.

The Risk, Compliance & Conduct and Internal Audit functions are separate and independent.

Each has direct access to the Board of Directors and its committees.

3.3.1. Second line of defence

Its duties include ensuring that risks are managed according to the risk appetite defined by senior management and strengthening our risk culture throughout Grupo Santander.

3.3.2. Third line of defence

Internal Audit applies the definition of the Institute of Internal Auditors. It is a permanent function and is independent of all other functions and units. Its mission is to provide the Board of Directors and senior management with independent assurance with regard to the quality and efficacy of the systems and internal control, risk (current and emerging) management and governance processes, helping to safeguard the organisation's value, capital adequacy and reputation. It evaluates:

- the efficacy and efficiency of the processes and systems referred to above;
- compliance with applicable legislation and the requirements of supervisory bodies;
- the reliability and integrity of financial and operating information;
- and the integrity of capital.

Internal Audit is the third line of defence, acting independently.

Its scope of work encompasses:

- all group entities over which the group exercises effective control;
- separate asset pools (for example, investment funds) managed by the entities mentioned in the previous section;
- all entities (or separate asset pools) not included in the previous points for which there is an agreement for the group to provide internal audit functions.

Internal Audit is guided by the following principles in this work: (i) Independence, objectivity and impartiality, (ii) Integrity, ethical behaviour and confidentiality of the information handled and its findings, (iii) Competence and professional qualifications of the auditors, (iv) Quality of the work, (v) Value creation, (vi) Adequate collaboration with other control functions in the group and with the external auditors and other assurance providers working within the organisation, (vii) A smooth relationship with the supervisory bodies and (viii) Compliance with international standards for the function.

Internal Audit's authority comes directly from the Board of Directors. Internal Audit reports to the Board Audit Committee and complies with the reporting requirements it receives from the committee in the discharge of its duties. However, as an independent unit, it reports regularly to the Board of Directors, at least twice a year, and, when it deems it necessary, it has direct access to the board.

In addition, it organises its activities with the flexibility necessary to adapt to the Group's current structure and circumstances and to achieve its objectives with maximum effectiveness and efficiency.

The Group Chief Audit Executive is responsible for submitting a corporate framework for Internal Audit to the Board of Directors for approval and subsequent implementation. This corporate framework sets out the global function and the way in which it is to be performed, as well as any changes that arise from its regular reviews.

Internal Audit prepares a plan based on an assessment of the risks to which the group is exposed, and submits it to the audit committee. It is then submitted to the Board of Directors, which approves it. In terms of solvency, this plan is defined in accordance with the cycle of capital audits, taking into account the results of engagements in previous years and other criteria, such as the ratio of implementation of recommendations issued, the results of regulatory inspections, requests made by supervisory authorities and changes in mandatory regulations.

The Internal Audit functions uses this cycle to issue a full opinion on the capital function in the Group, assessing the capital governance framework and the key capital processes defined in the period established and executed by teams specialised in capital. It also performs other tasks focusing on transversal issues with significant impact on the Group's solvency, such as analysis of credit portfolios and accounting provisions, and risk management processes.

In accordance with the "ECB Guide to Internal Models" of October 2019, a risk assessment exercise is performed on the models used to calculate capital. This focuses on the aspects in each geography that present the greatest risks in the following major lines of action:

- Reviewing compliance with the Group's internal governance model and supervisory requirements for the approval and maintenance of advanced models.
- Managing models and their adequacy and integration.
- Analysing the accuracy of risk measurement. Checking, through analysis and tests on the consistency and integrity of the Basel databases, that the methodology used in constructing the risk parameter models is consistent with their intended uses and complies with corporate standards and regulatory requirements, and verifying the replication of the calculations.
- Review of the regulatory capital calculation and reporting process, verifying compliance with existing regulations.
- Analysing the technical aspects and applications of the technological environment.

6. IA - Key processes

6. Follow-up:

A risk-based monitoring process in which Internal Audit assesses the effectiveness of actions planned and put in place to resolve the weaknesses.

Recommendations follow-up metric calculation.

5. Reporting:

Daily - All Reports issued are published on Audify.

Semiannually – heatmap including chronic cases and MIAs.

Monthly – Chairman memo and BAC presentation with a detail of the most relevant reports issued and recommendations follow-up.

Annually – Annual paramount overview of IA activity and most relevant activities white books.

4. Fieldwork:

- Planning the audit (scope and objectives, current circumstances, resources needed to carry out, etc).
- Fieldwork, completing audit testing.
- Conclusions and issuance of the report.



1. Audit universe:

Inventory of the units to be included in the Plan based on the Group's inventory of legal entities and relevant relationships. The audit universe is updated and reviewed continuously by corporate teams ensuring consistency and coherence across the Group.

2. Risk Assessment:

- Top-down assessment, based on: direct inputs from audit committees, supervisors, external auditor, senior management, IA Convention, review of critical documentation related to strategic plans, ERM reporting and financial information.
- Bottom-up assessment of the audit universe's residual risk to ensure full coverage in a 4-year audit cycle.

3. Planning:

- Audit plan configuration, including a staff and skill assessment, to execute the audit plan. These exercises include remediation actions to cover gaps. Conclusions, as well as budget needs, are part of the documentation reviewed and approved by their governing bodies
- Plan review and approval: the whole process is subject to a strict calendar and support documentation standards, to ensure proper oversight and coordinated approval by local and corporate governing bodies.

Full embedding in the day-to-day activities of the Santander IA units through the following:

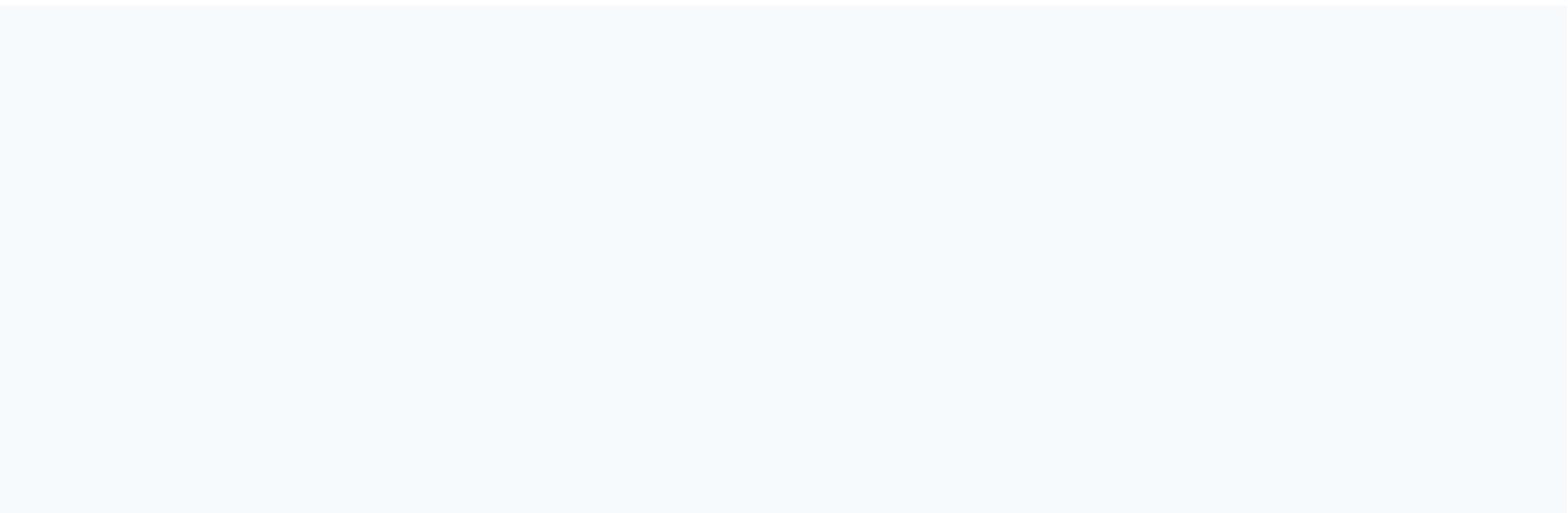
- Common standards and operating principles subject to regular assessments.
- Homogeneous methodologies; working practices and common training programs.
- Integrated systems (tools): Aries & Audify.



Enhancement and embedding of the continuous monitoring engine for quality, providing real-time quality testing results across the cycle, and enhancing controls / eliminating duplicated manual processes across local audit units.

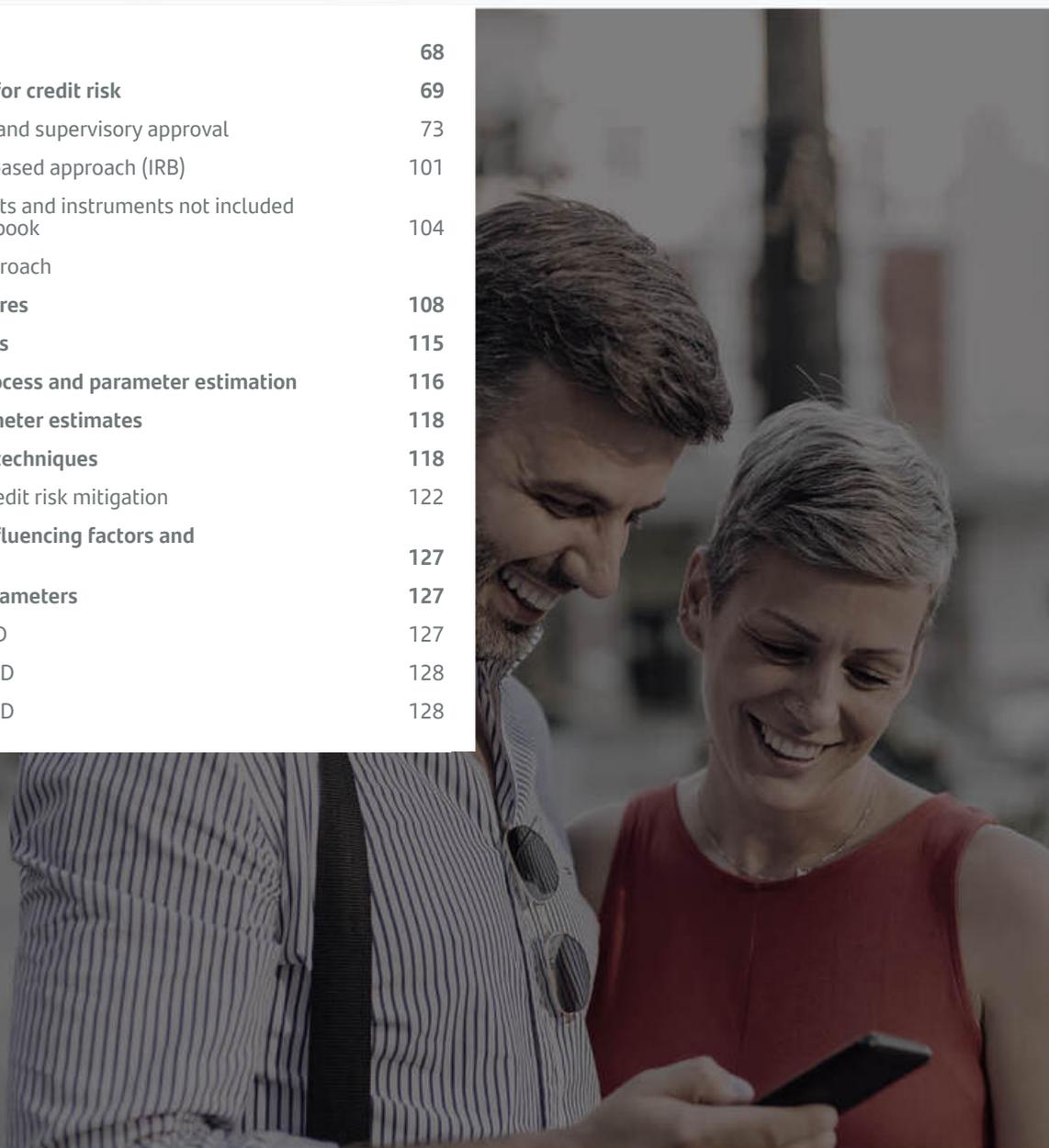


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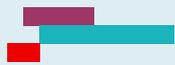


4. Credit risk

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4. CREDIT RISK

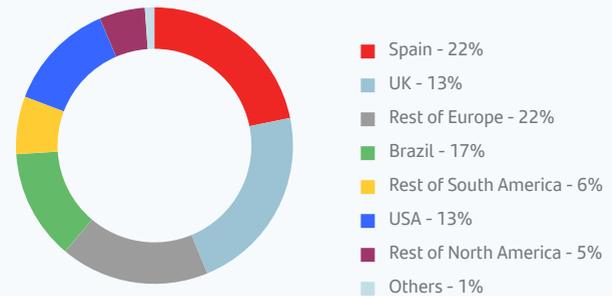


Credit risk is the risk of financial loss due to failure to comply with or deterioration of the credit risk rating of a customer or a third party, that has been financed or through which a contractual obligation has been assumed.

This chapter provides a detailed analysis of Grupo Santander’s credit risk profile from several angles: region, activity sector, residual maturity, etc with a focus on regulatory indicators (EAD and RWA).

RWA by geography

Excludes Counterparty Credit risk



Main figures

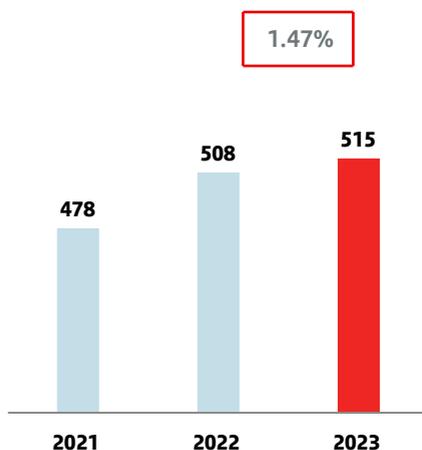
EUR million	RWA		Min. Capital Requirements	
	2023	2022	2023	2022
Credit risk (excluding CCR)^A	515,238	507,775	41,219	40,622
Of which, standardised approach (SA)	285,728	274,922	22,858	21,994
Of which, the foundation IRB (FIRB) approach ^B	56,913	11,759	4,553	941
Of which, slotting approach ^C	14,123	14,509	1,130	1,161
Of which, equities under the simple risk weighted approach ^B	3,603	2,828	288	226
Of which, the advanced IRB (AIRB) approach	138,204	188,442	11,056	15,075
Counterparty credit risk - CCR	13,593	13,096	1,087	1,048
Of which, the standardised approach	10,150	9,493	812	759
Of which, internal model method (IMM)	0	0	0	0
Of which, exposures to a CCP	324	278	26	22
Of which, credit valuation adjustment - CVA	680	1,097	54	88
Of which, other CCR	2,439	2,229	195	178
Settlement risk	4	4	0	0
Securitisation exposures in the banking book (after the cap)	11,419	9,898	914	792

^A It includes equities under the PD/LGD approach.

^B During 2023 the ECB has approved the reversal to FIRB for some wholesale portfolios

RWA variation

EUR million



4.1. General aspects

This section covers the CRA - General qualitative information about credit risk. It also complies with (d), (e), (f) and (g) of the OVA Requirement - Institution risk management approach.

The credit risk management process involves identification, assessment, control and decision-making in relation to the credit risk incurred in the group's operations.

It incorporates operational, customer and portfolio factors, together with a comprehensive view of the credit risk cycle. The Business and Risk areas are involved in the process, along with senior management. The Group's profile is mainly retail, with an adequate diversification of credit risk between mature and emerging markets.

4.2. Capital requirements for credit risk

The following table shows the main changes in capital requirements for credit risk in the year:

Table 19. Credit risk capital requirements movements

EUR million	RWA	Capital requirements
Starting amount (31/12/2022)	529,401	42,352
Asset size	14,247	1,140
Asset quality	(2,091)	(167)
Model updates	(13)	(1)
Methodology and policy	—	—
Acquisitions and disposals	—	—
Foreign exchange movements	(2,297)	(184)
Other	—	—
Ending amount (31/12/2023)	539,247	43,140

Includes capital requirements from equity, securitizations and counterparty risk (excluding CVA and CCP)

Credit risk RWA increased EUR 9,846 million in 2023. If we isolate the exchange rate effect (due to the depreciation of the Argentine peso, the US dollar and the Chilean peso partially offset by the appreciation of the Brazilian real and the Mexican peso), RWA increased EUR 12,143 million. This is mainly due to asset size (EUR 14,247 million), driven by greater business volumes particularly in DCB and South America which were partially offset by securitizations during the year (EUR 15,371 million). Additionally, there was a decrease in RWA related to credit quality performance (-EUR 2,091 million).

RWA Evolution of Credit risk (excluding CCR)*

Million euros



4.2.1. IRB roll-out plan and supervisory approval

This section covers the letter (a) of the qualitative requirement CRE - Qualitative disclosure requirements related to IRB approach.

Santander has supervisory approval to use advanced approaches for calculating regulatory capital for credit risk for the parent and its main subsidiaries in Spain, the United Kingdom and Portugal, and for some portfolios in Germany, Mexico, Brazil, Chile, Nordic countries (Sweden, Finland and Norway), France and the United States.

Grupo Santander is currently reviewing the strategy regarding the application of internal models to the different portfolios following the simplification criteria discussed with the supervisor previously to its implementation.

The following table shows the geographical scope of the internal models for credit risk (AIRB or FIRB) in the various portfolios:

List of authorised IRB models by legal entity

Country	Legal Entity	IRB portfolio (AIRB or FIRB)
UK	Santander UK PLC	Institutions, Corporates Project Finance, Mortgages, Qualifying Revolving, Other Retail.
	Abbey National Treasury Services	Institutions, Corporates Project Finance.
	Abbey Covered Bonds LLP	Institutions
Spain	Banco Santander, S.A.	Institutions, Corporates, Corporates SMEs, Corporates Project Finance, Mortgages, Qualifying Revolving, Retail SMEs, Other Retail
	Santander Factoring y Confirming S.A.	Institutions, Corporates, Corporates SMEs, Corporates Project Finance, Mortgages, Retail SMEs, Other Retail
	Santander Lease, S.A. E.F.C.	Institutions, Corporates Corporates SMEs, Mortgages, Retail SMEs, Other Retail
	Santander Consumer EFC, S.A.	Corporates, Corporates SMEs, Qualifying Revolving, Other Retail.
	Santander Consumer Finance, S.A.	Corporates, Corporates SMEs, Qualifying Revolving, Other Retail.
Portugal	Banco Santander Totta	Institutions, Corporates, Corporates SMEs, Corporates Project Finance, Mortgages, Qualifying Revolving, Retail SMEs, Other Retail.
Brazil	Banco Santander Brasil	Corporates
	Santander Brasil EFC	Corporates
Germany	Santander Consumer Bank AG	Corporates, Corporates SMEs, Mortgages, Revolving and Other Retail
Mexico	Banco Santander México	Institutions, Corporates, Corporates SMEs, Corporates Project Finance
USA	Santander Bank, National Association	Corporates
France	Société Financière de Banque - SOFIB	Corporates, Corporates SMEs, Retail SMEs, Other Retail
Nordics	Santander Consumer Bank A.S.	Other Retail
	Santander Consumer Finance OY	Other Retail
Chile	Banco Santander - Chile	Institutions and Corporates

The following table shows the extent of use of the IRB and standard methods for each exposure category as of December 31, 2023

Table 20.CR6-A - Scope of the use of IRB and SA approaches

						2023
EUR million	Exposure value as defined in Article 166 CRR for exposures subject to IRB approach	Total exposure value for exposures subject to the Standardised approach and to the IRB approach	Percentage of total exposure value subject to the permanent partial use of the SA (%)	Percentage of total exposure value subject to a roll-out plan (%)	Percentage of total exposure value subject to IRB Approach (%)	
	a	b	c	d	e	
1 Central governments or central banks	—	486,963	100.00%	—%	—	
1.1 Of which Regional governments or local authorities		16,780	100.00%	—%	—	
1.2 Of which Public sector entities		5,066	100.00%	—	—	
2 Institutions	21,337	58,569	43.96%	19.61%	36.43%	
3 Corporates	224,547	407,824	26.49%	18.45%	55.06%	
3.1 Of which Corporates - Specialised lending, excluding slotting approach		—	—%	—%	—%	
3.2 Of which Corporates - Specialised lending under slotting approach		31,463	21.07%	10.93%	68.00%	
4 Retail	357,770	760,263	28.57%	24.37%	47.06%	
4.1 of which Retail - Secured by real estate SMEs		43,103	21.76%	46.69%	31.55%	
4.2 of which Retail - Secured by real estate non-SMEs		419,243	22.42%	10.98%	66.60%	
4.3 of which Retail - Qualifying revolving		51,232	25.41%	49.07%	25.52%	
4.4 of which Retail - Other SMEs		64,201	33.31%	43.79%	22.91%	
4.5 of which Retail - Other non-SMEs		182,483	43.52%	36.10%	20.38%	
5 Equity	9,908	9,938	0.30%	—	99.70%	
6 Other non-credit obligation assets	1,266	103,366	88.01%	10.76%	1.23%	
7 Total	614,828	1,826,922	50.85%	15.50%	33.65%	

Leverage exposure

Phased-in CRR, Phased-in IFRS 9

Following the guidance of the competent national authority, the perimeter applied includes only those entities with at least one portfolio under IRB approach.

The following table shows the geographical scope of portfolios using the internal models approach (IMA) for market risk:

List of authorised IMA models by legal entity

Country	Legal entity	IMA portfolio (product)
Spain	Banco Santander, S.A.	Trading book
	Santander London Branch	Trading book
Chile	Banco Santander - Chile	Trading book
	Santander Investment Chile Limited	Trading book
	Santander Corridors de Bolsa Limited	Trading book
Mexico	Banco Santander México	Trading book
	Casa de Bolsa Santander, S.A. de C.V.	Trading book



For further information on the market risk, see chapter 7.

The Group currently uses the standardised approach for calculating regulatory capital for **operational risk**, as provided for in the CRR. In 2017, the European Central Bank granted authorisation for the Alternative Standardised Approach to be used to calculate consolidated capital requirements at Banco Santander México, following the approval granted in 2016 for Brazil.



For further information on the Operational Risk, see chapter 8.

4.2.2. Internal ratings-based approach (IRB)

The following table shows the main variations in IRB credit risk RWA:

Table 21.CR8 - RWEA flow statements of credit risk exposures under the IRB approach

EUR million	Three months ended	Twelve months	Three months ended	Twelve months
	Dec'23	ended Dec'23	Dec'22	ended Dec'22
	a			
	RWA	RWA	RWA	RWA
1 the previous reporting period	221,907	222,926	216,761	205,676
2 Asset size	(2,369)	(5,032)	(4,785)	80
3 Asset quality	(630)	(2,091)	—	—
4 Model updates	304	442	15,202	16,663
5 Methodology and policy	—	—	—	—
6 Acquisitions and disposals	—	—	—	—
7 Foreign exchange movements	(1,510)	1,457	(4,252)	507
8 Other	—	—	—	—
9 the reporting period	217,701	217,701	222,926	222,926

It includes capital requirements of equity.

Fully-loaded CRR, Phased-in IFRS 9.

IRB credit risk assets decreased by EUR -5,224 million in 2023. Excluding the exchange rate effect (mainly due to the appreciation of the pound, the Brazilian real and the Mexican peso), the fall is -6,681 billion euros and is mainly explained by the evolution of asset size (-5,032 billion euros) and by the evolution of asset credit quality (-2,091 billion euros). With regard to the change in asset size, the increase in business, mainly in Spain, Digital Consumer Banking and Brazil, was more than offset by the securitizations carried out during the year (-9,684 billion euros).

The distribution of exposures and average parameters by segments and geographies in IRBs without default, equities or specialized financing is shown below:

Table 22. IRB Exposures and parameters by segment and geography

EUR million							2023
	Institutions	Corporates	Retail Mortgages	Retail SME	Retail Other	Retail Qualifying Revolving	Total
Grupo Santander							
EAD	39,227	215,211	287,211	41,528	17,383	12,906	613,467
Average LGD in %	41.75 %	43.37 %	15.40 %	43.76 %	48.79 %	69.84 %	30.91 %
Average PD in %	0.25 %	0.77 %	1.34 %	3.70 %	2.07 %	2.36 %	1.28 %
Europe							
EAD	33,668	162,437	287,211	41,528	17,383	12,906	555,134
Average LGD in %	43.62 %	43.62 %	15.40 %	43.76 %	48.79 %	69.84 %	29.80 %
Average PD in %	0.22 %	0.75 %	1.34 %	3.70 %	2.07 %	2.36 %	1.33 %
North America							
EAD	4,171	16,275	—	—	—	—	20,446
Average LGD in %	25.58 %	41.10 %	— %	— %	— %	— %	37.94 %
Average PD in %	0.57 %	0.56 %	— %	— %	— %	— %	0.56 %
South America							
EAD	1,388	36,499	—	—	—	—	37,887
Average LGD in %	44.87 %	43.23 %	— %	— %	— %	— %	43.29 %
Average PD in %	0.10 %	0.96 %	— %	— %	— %	— %	0.93 %

EAD and parameters without default.

EAD including counterparty credit risk, does not include neither equities nor specialised lending.

The tables in this section show, for each business segment and credit rating (internal and Standard & Poor's), the value of exposures, credit risk parameters and capital under the IRB approach, distinguishing between foundation IRB (FIRB) and advanced IRB (AIRB).

Table 23. Credit risk exposures by exposure class

AIRB

EUR million 2023

Exposure class	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions
Institutions	3,258	188	29.93 %	2,748	0.94 %	182	14.34 %	4.20	908	33 %	4	(4)
Corporates - Other	45,303	18,030	31.60 %	43,719	4.14 %	35,140	46.08 %	1.62	36,250	83 %	937	(940)
Corporates - SMEs	29,590	8,686	26.90 %	28,896	8.04 %	75,230	42.81 %	2.01	18,002	62 %	922	(1,181)
Retail - Mortgages SMEs	14,579	137	68.24 %	14,548	7.52 %	190,995	30.43 %	—	4,157	29 %	397	(359)
Retail - Mortgages no SMEs	273,955	10,315	40.59 %	278,141	2.96 %	2,196,297	14.87 %	—	44,584	16 %	1,312	(888)
Qualifying Revolving	3,056	19,197	51.79 %	13,074	3.62 %	19,290,794	69.82 %	—	4,528	35 %	312	(236)
Retail - Other non SMEs	41,263	1,617	73.51 %	42,389	5.68 %	6,836,149	44.30 %	—	20,693	49 %	1,265	(1,045)
Retail - SMEs	24,326	4,709	49.97 %	18,498	7.97 %	1,925,654	49.62 %	—	9,082	49 %	889	(890)
Total	435,331	62,878	41.11 %	442,013	4.04 %	30,550,441	26.20 %	0.32	138,204	31 %	6,039	(5,542)

Table 23. Credit risk exposures by exposure class

FIRB

EUR million 2023

Exposure class	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions
Instituciones	14,531	17,402	25.70%	20,871	0.16%	1,592	43.71%	1.54	6,447	31%	14	(9)
Empresas - Resto	104,048	126,190	33.09%	132,843	1.55%	13,893	42.58%	1.67	48,544	37%	884	(1,248)
Empresas - pymes	958	591	75.00%	1,401	2.02%	1,344	43.74%	1.28	606	43%	14	(10)
Total	119,537	144,183	32.37%	155,115	1.37%	16,829	42.74%	1.65	55,597	36%	912	(1,268)

Table 24.CR6 - AIRB approach - Credit risk exposures by exposure class and PD range

EUR million

2023

PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions
a	b	c	d	e	f	g	h	i	j	k	l	m
Institutions												
0.00 < 0.15	—	—	— %	—	— %	—	— %	—	0	— %	—	—
0.00 to < 0.10	—	—	— %	—	— %	—	— %	—	0	— %	—	—
0.10 to < 0.15	—	—	— %	—	— %	—	— %	—	0	— %	—	—
0.15 < 0.25	—	—	— %	—	— %	—	— %	—	0	— %	—	—
0.25 < 0.50	—	—	— %	—	— %	—	— %	—	0	— %	—	—
0.50 < 0.75	1,094	49	68.78 %	1,128	0.63 %	19	10.13 %	5	283	25 %	1	(0.37)
0.75 < 2.50	1,946	133	16.22 %	1,400	0.93 %	82	17.32 %	4	513	37 %	2	(2.99)
0.75 to < 1.75	1,946	133	16.22 %	1,400	0.93 %	82	17.32 %	4	513	37 %	2	(2.99)
1.75 to < 2.50	—	—	— %	—	— %	—	— %	—	0	— %	—	—
2.50 < 10.00	218	6	19.47 %	220	2.61 %	71	16.90 %	4	112	51 %	1	(0.50)
2.50 to < 5	217	6	19.47 %	219	2.59 %	70	16.90 %	4	112	51 %	1	(0.49)
5 to < 10	1	—	— %	1	6.14 %	1	18.32 %	5	1	82 %	—	(0.01)
10.00 < 100.00	—	—	0.47 %	—	43.86 %	9	18.32 %	1	0	96 %	—	—
10 to < 20	—	—	—	—	—	—	—	—	0	— %	—	—
20 to < 30	—	—	—	—	—	—	—	—	0	— %	—	—
30 to < 100	—	—	0.47 %	—	43.86 %	9	18.32 %	1	0	96 %	—	—
100.00 (Default)	—	—	—	—	100.00 %	1	18.32 %	1	0	196 %	—	—
Subtotal (exposure class)	3,258	188	29.93 %	2,748	0.94 %	182	14.34 %	4	908	33 %	4	(3.85)
Total (all exposures classes AIRB)	435,331	62,878	41.11 %	442,013	4.04 %	30,550,441	26.20 %	0	138,204	31 %	6,039	(5,542.17)

Table 24.CR6 - AIRB approach - Credit risk exposures by exposure class and PD range

EUR million

2023

PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions
a	b	c	d	e	f	g	h	i	j	k	l	m
Corporates - Other												
0.00 < 0.15	4	—	48.29 %	4	0.11 %	61	24.94 %	3	1	23 %	—	—
0.00 to < 0.10	—	—	55.41 %	—	0.05 %	39	57.52 %	1	0	18 %	—	—
0.10 to < 0.15	4	—	31.86 %	4	0.11 %	22	23.64 %	4	1	23 %	—	—
0.15 < 0.25	3,731	1,479	29.55 %	3,795	0.21 %	1,544	39.95 %	2	1,308	34 %	3	(2.96)
0.25 < 0.50	7,483	5,137	30.85 %	8,557	0.37 %	4,997	50.22 %	2	5,528	65 %	15	(6.54)
0.50 < 0.75	16,422	4,592	39.32 %	16,778	0.59 %	8,288	46.23 %	2	12,341	74 %	46	(22.94)
0.75 < 2.50	10,712	4,084	28.56 %	8,794	1.64 %	10,568	44.68 %	1	9,398	107 %	67	(35.03)
0.75 to < 1.75	5,672	2,537	22.32 %	3,891	1.31 %	5,486	46.29 %	2	4,106	106 %	27	(18.27)
1.75 to < 2.50	5,040	1,547	38.79 %	4,903	1.90 %	5,082	43.40 %	1	5,291	108 %	40	(16.76)
2.50 < 10.00	4,356	2,113	25.06 %	3,923	3.96 %	6,136	42.51 %	1	5,532	141 %	69	(54.80)
2.50 to < 5	3,415	1,640	26.88 %	3,323	3.52 %	4,859	42.05 %	1	4,432	133 %	49	(24.07)
5 to < 10	942	473	18.72 %	599	6.36 %	1,277	45.07 %	2	1,100	184 %	19	(30.73)
10.00 < 100.00	707	275	29.43 %	638	22.31 %	1,346	43.68 %	2	1,567	246 %	56	(19.76)
10 to < 20	373	163	31.58 %	367	14.46 %	645	45.24 %	1	877	239 %	23	(7.59)
20 to < 30	143	15	19.64 %	156	26.20 %	341	40.18 %	2	385	248 %	14	(4.06)
30 to < 100	190	97	27.32 %	116	41.97 %	360	43.41 %	2	305	264 %	19	(8.11)
100.00 (Default)	1,889	350	26.50 %	1,231	100.00 %	2,200	56.89 %	2	576	47 %	681	(797.82)
Subtotal (Exposición por categoría)	45,303	18,030	31.60 %	43,719	4.14 %	35,140	46.08 %	2	36,250	83 %	937	(940)
Total (Todas las exposiciones AIRB)	435,331	62,878	41.11 %	442,013	4.04 %	30,550,441	26.20 %	0	138,204	31 %	6,039	(5,542)

Table 24.CR6 - AIRB approach - Credit risk exposures by exposure class and PD range

EUR million

													2023
PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions	
a	b	c	d	e	f	g	h	i	j	k	l	m	
Corporates - SMEs													
0.00 < 0.15	11	2	48.55 %	12	0.11 %	380	28.10 %	3	2	18 %	—	(0.03)	
0.00 to < 0.10	—	1	51.85 %	1	0.06 %	205	56.46 %	2	0	23 %	—	—	
0.10 to < 0.15	11	1	44.67 %	11	0.11 %	175	25.79 %	3	2	18 %	—	(0.03)	
0.15 < 0.25	1,191	128	24.64 %	3,001	0.21 %	2,263	37.85 %	1	727	24 %	1	(2.24)	
0.25 < 0.50	3,280	1,375	30.71 %	3,645	0.37 %	8,748	45.69 %	2	1,635	45 %	5	(7.10)	
0.50 < 0.75	5,918	1,709	33.92 %	6,810	0.62 %	13,636	43.99 %	2	3,584	53 %	15	(10.15)	
0.75 < 2.50	10,098	2,659	28.31 %	8,380	1.55 %	27,851	44.09 %	2	5,956	71 %	54	(40.24)	
0.75 to < 1.75	7,143	1,762	28.76 %	5,755	1.31 %	18,236	44.35 %	2	3,931	68 %	32	(23.86)	
1.75 to < 2.50	2,954	896	27.43 %	2,625	2.10 %	9,615	43.52 %	2	2,025	77 %	22	(16.38)	
2.50 < 10.00	5,711	2,521	18.23 %	4,691	4.50 %	16,563	39.23 %	2	4,436	95 %	79	(129.19)	
2.50 to < 5	3,635	1,882	18.18 %	2,944	3.42 %	9,735	37.84 %	2	2,507	85 %	38	(40.32)	
5 to < 10	2,076	639	18.36 %	1,747	6.32 %	6,828	41.57 %	2	1,928	110 %	41	(88.86)	
10.00 < 100.00	712	175	35.19 %	586	25.56 %	2,324	43.06 %	2	1,006	172 %	58	(57.77)	
10 to < 20	299	51	19.98 %	293	13.25 %	1,284	40.26 %	2	424	145 %	14	(14.36)	
20 to < 30	76	16	13.81 %	66	24.14 %	372	45.89 %	3	123	187 %	7	(14.93)	
30 to < 100	338	108	45.45 %	227	41.84 %	668	45.83 %	2	459	202 %	37	(28.49)	
100.00 (Default)	2,669	119	24.03 %	1,771	100.00 %	3,465	44.27 %	3	657	37 %	711	(934.26)	
Subtotal (exposure class)	29,590	8,686	26.90 %	28,896	8.04 %	75,230	42.81 %	2	18,002	62 %	922	(1,181)	
Total (all exposures classes AIRB)	435,331	62,878	41.11 %	442,013	4.04 %	30,550,441	26.20 %	0	138,204	31 %	6,039	(5,542)	

CR6 - AIRB approach - Credit risk exposures by exposure class and PD range (31.12.2022)

EUR million

													2022
PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions	
a	b	c	d	e	f	g	h	i	j	k	l	m	
Institutions													
0.00 < 0.15	18,852	13,572	26.13 %	31,239	0.05 %	1,017	40.28 %	1	4,446	14 %	4	(15.66)	
0.00 to < 0.10	17,619	13,187	25.92 %	30,321	0.05 %	913	40.22 %	1	4,158	14 %	4	(14.29)	
0.10 to < 0.15	1,233	385	33.49 %	919	0.13 %	104	42.19 %	1	288	31 %	—	(1.37)	
0.15 < 0.25	4,033	2,237	33.76 %	3,102	0.16 %	337	41.41 %	1	1,217	39 %	2	(1.98)	
0.25 < 0.50	1,719	603	27.06 %	1,535	0.32 %	149	41.74 %	1	932	61 %	2	(2.24)	
0.50 < 0.75	514	52	23.54 %	491	0.63 %	91	11.86 %	5	144	29 %	—	(0.27)	
0.75 < 2.50	2,366	409	28.86 %	1,811	0.99 %	666	17.76 %	4	767	42 %	4	(1.98)	
0.75 to < 1.75	2,365	223	14.74 %	1,725	0.91 %	658	16.50 %	4	639	37 %	3	(1.72)	
1.75 to < 2.50	1	185	45.90 %	86	2.46 %	8	43.03 %	—	128	149 %	1	(0.27)	
2.50 < 10.00	782	209	25.60 %	320	3.52 %	193	24.10 %	3	266	83 %	3	(1.34)	
2.50 to < 5	721	105	17.10 %	272	2.56 %	91	22.18 %	3	170	62 %	2	(0.93)	
5 to < 10	62	104	34.21 %	48	8.90 %	102	34.88 %	2	96	198 %	1	(0.41)	
10.00 < 100.00	299	433	12.15 %	53	45.00 %	147	41.91 %	2	173	329 %	10	(1.98)	
10 to < 20	—	—	— %	—	— %	—	— %	—	0	—	—	—	
20 to < 30	—	—	— %	—	— %	—	— %	—	0	—	—	—	
30 to < 100	299	433	12.15 %	53	45.00 %	147	41.91 %	2	173	329 %	10	(1.98)	
100.00 (Default)	—	—	— %	—	100.00 %	3	41.65 %	—	0	20 %	—	(0.04)	
Subtotal (exposure class)	27,665	14,255	29.52 %	31,443	0.21 %	2,724	40.47 %	1	6,655	21 %	20	(35)	
Total (all exposures classes AIRB)	562,363	180,483	42.34 %	595,486	4.86 %	29,655,171	26.18 %	1	173,956	29 %	8,804	(9,483)	

CR6 - AIRB approach - Credit risk exposures by exposure class and PD range (31.12.2022)

EUR million

												2022
PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions
a	b	c	d	e	f	g	h	i	j	k	l	m
Corporates - Other												
0.00 < 0.15	43,385	65,864	39.26 %	64,059	0.08 %	1,933	43.41 %	2	14,702	23 %	20	(56)
0.00 to < 0.10	27,664	49,074	43.87 %	44,813	0.05 %	1,033	43.04 %	2	8,660	19 %	10	(28)
0.10 to < 0.15	15,720	16,790	25.78 %	19,246	0.14 %	900	44.25 %	2	6,042	31 %	11	(28)
0.15 < 0.25	19,329	23,054	18.68 %	21,047	0.22 %	2,823	41.28 %	1	7,937	38 %	17	(30)
0.25 < 0.50	21,349	14,177	22.82 %	20,478	0.36 %	5,949	44.36 %	2	11,441	56 %	31	(132)
0.50 < 0.75	24,717	8,663	31.58 %	22,490	0.59 %	8,865	46.19 %	2	16,843	75 %	61	(48)
0.75 < 2.50	17,469	8,057	32.04 %	13,845	1.47 %	11,203	43.83 %	2	14,605	105 %	92	(78)
0.75 to < 1.75	12,217	6,324	30.11 %	8,995	1.25 %	6,380	43.68 %	2	9,325	104 %	50	(60)
1.75 to < 2.50	5,252	1,734	39.08 %	4,850	1.88 %	4,823	44.11 %	1	5,280	109 %	41	(18)
2.50 < 10.00	6,363	3,905	33.61 %	5,536	3.90 %	5,926	38.85 %	2	7,439	134 %	91	(120)
2.50 to < 5	5,217	3,104	32.31 %	4,638	3.38 %	4,591	37.35 %	2	5,696	123 %	63	(69)
5 to < 10	1,146	801	38.68 %	898	6.57 %	1,335	46.61 %	2	1,743	194 %	28	(51)
10.00 < 100.00	7,620	3,283	22.61 %	963	20.52 %	2,361	40.74 %	2	2,205	229 %	83	(96)
10 to < 20	6,870	3,088	22.01 %	720	15.82 %	1,651	41.08 %	2	1,630	227 %	50	(78)
20 to < 30	611	107	47.41 %	155	26.08 %	428	43.09 %	2	402	260 %	17	(8)
30 to < 100	139	88	13.38 %	89	49.01 %	282	33.80 %	2	173	195 %	16	(10)
100.00 (Default)	3,806	1,306	21.93 %	3,749	100.00 %	3,084	48.27 %	2	792	21 %	1,769	(1,784)
Subtotal (exposure class)	144,038	128,311	32.00 %	152,167	3.07 %	42,144	43.63 %	2	75,966	50 %	2,164	(2,343)
Total (all exposures classes AIRB)	579,863	191,307	36.21 %	603,311	4.13 %	31,273,223	28.33 %	1	188,442	31 %	7,838	(7,629)

CR6 - AIRB approach - Credit risk exposures by exposure class and PD range (31.12.2022)

EUR million

													2022
PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions	
a	b	c	d	e	f	g	h	i	j	k	l	m	
Corporates - SMEs													
0.00 < 0.15	23	3	41.59 %	24	0.11 %	585	31.34 %	3	5	23 %	—	—	
0.00 to < 0.10	—	1	55.57 %	1	0.05 %	293	56.98 %	5	0	40 %	—	—	
0.10 to < 0.15	22	2	32.07 %	23	0.11 %	292	30.38 %	3	5	22 %	—	—	
0.15 < 0.25	758	174	23.18 %	875	0.21 %	1,762	37.01 %	1	196	22 %	—	(2)	
0.25 < 0.50	3,870	1,360	33.96 %	3,707	0.37 %	9,628	46.02 %	2	1,683	45 %	5	(8)	
0.50 < 0.75	6,407	1,548	34.21 %	6,025	0.61 %	14,353	44.59 %	2	3,234	54 %	14	(17)	
0.75 < 2.50	11,184	2,466	35.74 %	8,522	1.57 %	31,669	42.51 %	2	5,896	69 %	55	(61)	
0.75 to < 1.75	7,624	1,556	36.01 %	5,589	1.29 %	19,679	42.68 %	2	3,722	67 %	30	(34)	
1.75 to < 2.50	3,559	910	35.28 %	2,933	2.10 %	11,990	42.19 %	2	2,173	74 %	25	(27)	
2.50 < 10.00	7,260	2,481	20.04 %	5,322	4.64 %	21,468	41.27 %	2	5,158	97 %	102	(196)	
2.50 to < 5	4,300	1,843	18.24 %	3,153	3.42 %	12,165	40.09 %	2	2,759	88 %	42	(70)	
5 to < 10	2,960	638	25.25 %	2,169	6.43 %	9,303	42.98 %	2	2,399	111 %	60	(126)	
10.00 < 100.00	650	136	24.43 %	529	19.62 %	2,975	42.94 %	2	818	155 %	42	(57)	
10 to < 20	419	75	28.62 %	370	13.10 %	2,016	43.81 %	2	551	149 %	20	(27)	
20 to < 30	92	30	17.19 %	71	24.18 %	500	45.65 %	3	126	177 %	8	(13)	
30 to < 100	139	30	21.22 %	88	43.31 %	459	37.12 %	3	141	160 %	14	(17)	
100.00 (Default)	2,864	108	18.49 %	2,364	100.00 %	3,618	41.93 %	3	827	35 %	912	(1,096)	
Subtotal (exposure class)	33,015	8,277	29.78 %	27,368	10.60 %	86,058	42.97 %	2	17,817	65 %	1,131	(1,436)	
Total (all exposures classes AIRB)	579,863	191,307	36.21 %	603,311	4.13 %	31,273,223	28.33 %	1	188,442	31 %	7,838	(7,629)	

Table 25.CR6 - AIRB approach Retail - Credit risk exposures by exposure class and PD range

EUR million

													2023
PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions	
a	b	c	d	e	f	g	h	i	j	k	l	m	
Retail - Mortgages SMEs													
0.00 < 0.15	3,674	38	97.74 %	3,711	0.08 %	53,555	27.88 %	—	175	5 %	1	(1)	
0.00 to < 0.10	2,955	31	100.00 %	2,987	0.07 %	42,588	28.25 %	—	126	4 %	1	(1)	
0.10 to < 0.15	718	7	87.49 %	725	0.13 %	10,967	26.36 %	—	49	7 %	—	(1)	
0.15 < 0.25	2,258	11	78.44 %	2,267	0.21 %	27,002	32.05 %	—	258	11 %	2	(2)	
0.25 < 0.50	2,332	16	87.31 %	2,345	0.37 %	30,242	29.14 %	—	376	16 %	3	(5)	
0.50 < 0.75	1,194	8	73.50 %	1,200	0.61 %	14,919	32.29 %	—	288	24 %	2	(2)	
0.75 < 2.50	2,438	34	33.18 %	2,436	1.30 %	29,912	29.00 %	—	904	37 %	9	(13)	
0.75 to < 1.75	1,949	27	37.96 %	1,955	1.09 %	24,172	29.62 %	—	676	35 %	6	(8)	
1.75 to < 2.50	489	6	12.37 %	480	2.17 %	5,740	26.49 %	—	229	48 %	3	(4)	
2.50 < 10.00	1,218	13	66.03 %	1,153	4.41 %	16,754	30.93 %	—	905	78 %	16	(21)	
2.50 to < 5	698	9	82.73 %	678	3.20 %	10,582	30.60 %	—	451	66 %	7	(7)	
5 to < 10	520	4	25.81 %	475	6.13 %	6,172	31.40 %	—	454	96 %	9	(14)	
10.00 < 100.00	656	13	48.06 %	629	28.76 %	8,074	29.83 %	—	815	130 %	55	(45)	
10 to < 20	313	9	42.20 %	285	13.58 %	4,132	29.36 %	—	363	128 %	12	(14)	
20 to < 30	145	—	28.39 %	144	23.95 %	1,605	32.95 %	—	225	156 %	11	(8)	
30 to < 100	198	4	64.37 %	200	53.86 %	2,337	28.25 %	—	227	114 %	32	(22)	
100.00 (Default)	809	3	23.06 %	807	100.00 %	10,537	42.57 %	—	436	54 %	309	(270)	
Subtotal (exposure class)	14,579	137	68.24 %	14,548	7.52 %	190,995	30.43 %	—	4,157	29 %	397	(359)	
Total (all exposures classes AIRB)	435,331	62,878	41.11 %	442,013	4.04 %	30,550,441	26.20 %	—	138,204	31 %	6,039	(5,542)	

Table 25.CR6 - AIRB approach Retail - Credit risk exposures by exposure class and PD range

EUR million

2023

PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions
a	b	c	d	e	f	g	h	i	j	k	l	m
Retail - Mortgages no SMEs												
0.00 < 0.15	29,523	386	100.00 %	29,908	0.09 %	436,417	26.14 %	—	1,788	6 %	7	(44.82)
0.00 to < 0.10	19,469	247	100.00 %	19,716	0.07 %	315,016	27.05 %	—	1,038	5 %	4	(3.20)
0.10 to < 0.15	10,054	139	100.00 %	10,193	0.13 %	121,401	24.37 %	—	750	7 %	3	(41.63)
0.15 < 0.25	19,274	739	58.64 %	19,708	0.22 %	178,618	22.63 %	—	2,053	10 %	10	(6.10)
0.25 < 0.50	73,459	4,021	37.68 %	74,974	0.37 %	471,278	12.31 %	—	6,114	8 %	34	(23.58)
0.50 < 0.75	83,618	3,760	36.60 %	84,994	0.61 %	575,590	11.30 %	—	9,169	11 %	59	(33.63)
0.75 < 2.50	45,174	1,057	34.67 %	45,540	1.36 %	314,292	13.82 %	—	10,010	22 %	84	(66.88)
0.75 to < 1.75	34,750	442	49.40 %	34,968	1.16 %	239,637	14.13 %	—	7,185	21 %	57	(48.98)
1.75 to < 2.50	10,424	615	24.10 %	10,572	2.02 %	74,655	12.79 %	—	2,825	27 %	27	(17.90)
2.50 < 10.00	13,222	176	29.66 %	13,274	4.22 %	123,180	14.89 %	—	6,244	47 %	85	(79.90)
2.50 to < 5	9,635	95	38.54 %	9,672	3.42 %	77,143	13.70 %	—	3,728	39 %	45	(39.06)
5 to < 10	3,587	80	19.10 %	3,602	6.35 %	46,037	18.08 %	—	2,516	70 %	40	(40.84)
10.00 < 100.00	5,020	146	36.34 %	5,073	30.21 %	52,809	15.30 %	—	4,217	83 %	220	(133.26)
10 to < 20	1,833	69	28.38 %	1,852	13.69 %	25,842	16.96 %	—	1,686	91 %	43	(39.89)
20 to < 30	1,592	32	50.89 %	1,609	24.41 %	10,071	15.50 %	—	1,523	95 %	59	(31.36)
30 to < 100	1,594	45	38.21 %	1,612	54.98 %	16,896	13.18 %	—	1,008	63 %	117	(62.00)
100.00 (Default)	4,666	30	14.26 %	4,670	100.00 %	44,113	25.95 %	—	4,988	107 %	813	(499.63)
Subtotal (exposure class)	273,955	10,315	40.59 %	278,141	2.96 %	2,196,297	14.87 %	—	44,584	16 %	1,312	(888)
Total (all exposures classes AIRB)	435,331	62,878	41.11 %	442,013	4.04 %	30,550,441	26.20 %	—	138,204	31 %	6,039	(5,542)

Table 25.CR6 - AIRB approach Retail - Credit risk exposures by exposure class and PD range

EUR million

2023

PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions
a	b	c	d	e	f	g	h	i	j	k	l	m
Qualifying Revolving												
0.00 < 0.15	481	8,421	32.07 %	3,183	0.08 %	4,518,774	72.74 %	—	123	4 %	2	(1.89)
0.00 to < 0.10	412	5,517	35.07 %	2,348	0.07 %	3,228,063	79.22 %	—	89	4 %	1	(1.20)
0.10 to < 0.15	69	2,904	26.37 %	835	0.12 %	1,290,711	54.52 %	—	34	4 %	1	(0.69)
0.15 < 0.25	244	1,499	34.00 %	757	0.21 %	870,182	73.11 %	—	67	9 %	1	(1.54)
0.25 < 0.50	100	4,606	83.73 %	3,957	0.31 %	6,226,334	67.26 %	—	487	12 %	8	(3.01)
0.50 < 0.75	190	730	33.88 %	439	0.64 %	692,089	75.44 %	—	95	22 %	2	(1.47)
0.75 < 2.50	726	2,104	64.24 %	2,091	1.37 %	3,179,702	70.16 %	—	808	39 %	20	(11.50)
0.75 to < 1.75	579	1,826	62.94 %	1,738	1.23 %	2,602,277	69.94 %	—	615	35 %	15	(8.50)
1.75 to < 2.50	147	279	72.74 %	352	2.11 %	577,425	71.26 %	—	192	55 %	5	(2.99)
2.50 < 10.00	745	1,462	67.11 %	1,746	4.73 %	2,643,538	68.94 %	—	1,571	90 %	57	(41.43)
2.50 to < 5	441	975	63.32 %	1,071	3.46 %	1,617,403	69.88 %	—	798	74 %	26	(21.77)
5 to < 10	303	488	74.68 %	675	6.75 %	1,026,135	67.45 %	—	774	115 %	31	(19.66)
10.00 < 100.00	429	326	82.39 %	732	23.69 %	999,680	65.67 %	—	1,309	179 %	112	(75.56)
10 to < 20	229	197	85.07 %	409	12.97 %	570,788	68.12 %	—	680	166 %	36	(26.82)
20 to < 30	92	83	90.16 %	178	23.39 %	273,888	62.35 %	—	365	205 %	26	(17.49)
30 to < 100	107	46	56.97 %	146	54.14 %	155,004	62.84 %	—	264	181 %	50	(31.24)
100.00 (Default)	143	48	53.01 %	169	100.00 %	160,495	67.90 %	—	67	40 %	109	(99.18)
Subtotal (exposure class)	3,056	19,197	51.79 %	13,074	3.62 %	19,290,794	69.82 %	—	4,528	35 %	312	(236)
Total (all exposures classes AIRB)	435,331	62,878	41.11 %	442,013	4.04 %	30,550,441	26.20 %	—	138,204	31 %	6,039	(5,542)

Table 25.CR6 - AIRB approach Retail - Credit risk exposures by exposure class and PD range

EUR million

2023

PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions
a	b	c	d	e	f	g	h	i	j	k	l	m
Retail - Other non SMEs												
0.00 < 0.15	1,506	546	75.65 %	1,920	0.08 %	1,879,132	40.74 %	—	178	9 %	1	(0.99)
0.00 to < 0.10	431	431	74.12 %	751	0.05 %	1,430,493	55.19 %	—	67	9 %	—	(0.22)
0.10 to < 0.15	1,075	115	81.41 %	1,169	0.10 %	448,639	31.46 %	—	111	9 %	—	(0.77)
0.15 < 0.25	3,749	94	86.46 %	3,830	0.21 %	499,078	29.70 %	—	558	15 %	2	(3.63)
0.25 < 0.50	6,669	180	72.18 %	6,782	0.37 %	887,489	44.46 %	—	2,039	30 %	12	(13.86)
0.50 < 0.75	5,998	89	66.83 %	6,053	0.64 %	660,566	35.99 %	—	1,971	33 %	14	(17.09)
0.75 < 2.50	13,849	312	64.91 %	14,027	1.34 %	1,508,569	46.39 %	—	7,779	55 %	86	(80.33)
0.75 to < 1.75	11,431	226	68.50 %	11,570	1.16 %	1,197,227	46.29 %	—	6,133	53 %	61	(55.45)
1.75 to < 2.50	2,418	87	55.60 %	2,457	2.17 %	311,342	46.86 %	—	1,646	67 %	25	(24.88)
2.50 < 10.00	6,048	167	50.08 %	6,127	4.61 %	853,159	54.04 %	—	5,175	84 %	150	(122.76)
2.50 to < 5	3,744	63	69.41 %	3,785	3.36 %	435,097	54.45 %	—	3,112	82 %	68	(52.93)
5 to < 10	2,303	104	38.26 %	2,341	6.62 %	418,062	53.38 %	—	2,063	88 %	82	(69.83)
10.00 < 100.00	2,324	226	96.42 %	2,536	29.51 %	368,250	45.32 %	—	2,571	101 %	336	(191.33)
10 to < 20	909	21	91.95 %	927	14.52 %	123,885	50.97 %	—	981	106 %	68	(40.63)
20 to < 30	718	201	98.04 %	915	22.34 %	99,325	40.42 %	—	922	101 %	83	(26.74)
30 to < 100	697	3	22.78 %	694	58.96 %	145,040	44.22 %	—	668	96 %	185	(123.96)
100.00 (Default)	1,120	3	28.55 %	1,115	100.00 %	179,906	62.60 %	—	423	38 %	664	(615.29)
Subtotal (exposure class)	41,263	1,617	73.51 %	42,389	5.68 %	6,836,149	44.30 %	—	20,693	49 %	1,265	(1,045)
Total (all exposures classes AIRB)	435,331	62,878	41.11 %	442,013	4.04 %	30,550,441	26.20 %	—	138,204	31 %	6,039	(5,542)

Table 25.CR6 - AIRB approach Retail - Credit risk exposures by exposure class and PD range

EUR million

													2023
PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions	
a	b	c	d	e	f	g	h	i	j	k	l	m	
Retail - SMEs													
0.00 < 0.15	453	268	49.54 %	585	0.09 %	260,378	39.50 %	—	52	9 %	—	(0.70)	
0.00 to < 0.10	111	168	52.35 %	198	0.06 %	162,981	53.06 %	—	18	9 %	—	(0.21)	
0.10 to < 0.15	342	100	44.83 %	387	0.11 %	97,397	32.54 %	—	34	9 %	—	(0.49)	
0.15 < 0.25	1,633	298	60.96 %	1,387	0.21 %	142,341	36.13 %	—	211	15 %	1	(1.84)	
0.25 < 0.50	1,764	663	52.47 %	1,456	0.39 %	167,180	45.06 %	—	381	26 %	2	(3.40)	
0.50 < 0.75	3,601	969	46.95 %	2,670	0.62 %	229,063	50.88 %	—	1,077	40 %	7	(11.53)	
0.75 < 2.50	8,321	1,722	49.43 %	6,485	1.47 %	538,694	50.64 %	—	3,434	53 %	45	(49.74)	
0.75 to < 1.75	5,673	1,342	49.70 %	4,563	1.18 %	374,990	50.94 %	—	2,317	51 %	25	(30.04)	
1.75 to < 2.50	2,648	380	48.48 %	1,922	2.15 %	163,704	49.92 %	—	1,117	58 %	19	(19.70)	
2.50 < 10.00	5,458	615	53.39 %	4,128	4.63 %	362,709	50.57 %	—	2,756	67 %	96	(121.81)	
2.50 to < 5	3,574	426	55.26 %	2,714	3.57 %	217,351	50.03 %	—	1,751	65 %	48	(57.04)	
5 to < 10	1,884	189	49.17 %	1,414	6.67 %	145,358	51.60 %	—	1,005	71 %	48	(64.77)	
10.00 < 100.00	1,315	88	39.98 %	918	32.12 %	130,864	49.01 %	—	866	94 %	144	(122.15)	
10 to < 20	526	36	40.73 %	371	14.55 %	43,197	50.21 %	—	323	87 %	27	(35.63)	
20 to < 30	243	22	39.26 %	178	24.21 %	26,230	47.65 %	—	183	103 %	21	(18.15)	
30 to < 100	546	30	39.62 %	369	53.61 %	61,437	48.46 %	—	360	98 %	97	(68.37)	
100.00 (Default)	1,781	86	24.30 %	868	100.00 %	94,425	70.41 %	—	304	35 %	594	(578.91)	
Subtotal (exposure class)	24,326	4,709	49.97 %	18,498	7.97 %	1,925,654	49.62 %	—	9,082	49 %	889	(890)	
Total (all exposures classes AIRB)	435,331	62,878	41.11 %	442,013	4.04 %	30,550,441	26.20 %	—	138,204	31 %	6,039	(5,542)	

CR6 - AIRB approach Retail - Credit risk exposures by exposure class and PD range (31.12.2022)

EUR million

													2022
PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions	
a	b	c	d	e	f	g	h	i	j	k	l	m	
Retail - Mortgages SMEs													
0.00 < 0.15	3,483	35	97.17 %	3,517	0.09 %	55,956	26.62 %	—	165	5 %	1	(6.31)	
0.00 to < 0.10	2,657	31	100.00 %	2,688	0.07 %	42,749	26.65 %	—	108	4 %	1	(4.39)	
0.10 to < 0.15	826	3	71.91 %	829	0.13 %	13,207	26.52 %	—	57	7 %	—	(1.92)	
0.15 < 0.25	2,314	10	91.78 %	2,323	0.20 %	27,474	30.13 %	—	237	10 %	1	(4.74)	
0.25 < 0.50	2,990	26	69.76 %	3,007	0.36 %	35,046	30.16 %	—	497	17 %	3	(7.32)	
0.50 < 0.75	1,195	13	59.40 %	1,202	0.58 %	15,023	30.33 %	—	261	22 %	2	(3.91)	
0.75 < 2.50	3,263	49	31.97 %	3,264	1.25 %	35,590	30.30 %	—	1,232	38 %	12	(17.14)	
0.75 to < 1.75	2,592	37	35.39 %	2,595	1.04 %	28,355	30.78 %	—	905	35 %	8	(11.74)	
1.75 to < 2.50	672	12	21.62 %	669	2.08 %	7,235	28.44 %	—	328	49 %	4	(5.40)	
2.50 < 10.00	1,188	19	43.98 %	1,170	4.51 %	16,324	30.49 %	—	923	79 %	16	(23.67)	
2.50 to < 5	687	11	61.92 %	676	3.23 %	10,430	30.41 %	—	452	67 %	7	(9.53)	
5 to < 10	502	7	16.88 %	494	6.27 %	5,894	30.60 %	—	471	95 %	9	(14.14)	
10.00 < 100.00	659	2	30.58 %	592	18.98 %	7,270	30.83 %	—	838	142 %	35	(50.70)	
10 to < 20	459	1	44.28 %	392	13.52 %	5,270	29.38 %	—	503	128 %	16	(28.88)	
20 to < 30	144	1	20.70 %	144	22.66 %	1,297	36.68 %	—	251	174 %	12	(15.12)	
30 to < 100	56	1	22.03 %	56	47.47 %	703	25.92 %	—	84	150 %	7	(6.70)	
100.00 (Default)	1,239	7	8.28 %	1,239	100.00 %	15,505	45.31 %	—	566	46 %	518	(410.59)	
Subtotal (exposure class)	16,333	161	58.57 %	16,314	9.01 %	208,188	30.63 %	—	4,719	29 %	589	(524)	
Total (all exposures classes AIRB)	579,863	191,307	36.21 %	603,311	4.13 %	31,273,223	28.33 %	1	188,442	31 %	7,838	(7,629)	

CR6 - AIRB approach Retail - Credit risk exposures by exposure class and PD range (31.12.2022)

EUR million

PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	2022
												Value adjustments and provisions
a	b	c	d	e	f	g	h	i	j	k	l	m
Retail - Mortgages no SMEs												
0.00 < 0.15	25,223	473	99.54 %	25,694	0.08 %	417,361	25.18 %	—	1,377	5 %	5	(39.53)
0.00 to < 0.10	20,132	337	100.00 %	20,470	0.07 %	337,070	25.47 %	—	985	5 %	4	(35.65)
0.10 to < 0.15	5,090	136	98.41 %	5,224	0.13 %	80,291	24.04 %	—	391	7 %	2	(3.88)
0.15 < 0.25	24,000	1,373	81.00 %	25,119	0.20 %	217,700	22.00 %	—	2,392	10 %	11	(14.63)
0.25 < 0.50	26,140	2,787	72.07 %	28,167	0.36 %	257,198	19.21 %	—	3,594	13 %	20	(24.55)
0.50 < 0.75	19,205	940	66.55 %	19,843	0.62 %	161,511	12.35 %	—	2,365	12 %	15	(16.59)
0.75 < 2.50	122,187	3,819	50.68 %	124,383	1.41 %	767,458	7.78 %	—	16,282	13 %	129	(95.05)
0.75 to < 1.75	80,777	3,132	50.92 %	82,490	1.14 %	520,768	8.37 %	—	10,130	12 %	74	(63.87)
1.75 to < 2.50	41,410	687	49.57 %	41,893	1.95 %	246,690	6.62 %	—	6,152	15 %	55	(31.19)
2.50 < 10.00	58,321	400	50.15 %	58,676	4.38 %	346,955	7.23 %	—	14,838	25 %	195	(120.41)
2.50 to < 5	40,095	357	49.92 %	40,391	3.32 %	236,866	6.54 %	—	7,950	20 %	88	(64.07)
5 to < 10	18,227	42	52.03 %	18,285	6.74 %	110,089	8.74 %	—	6,888	38 %	107	(56.34)
10.00 < 100.00	10,224	199	33.43 %	10,311	24.92 %	92,482	9.85 %	—	5,973	58 %	225	(202.93)
10 to < 20	6,364	30	44.84 %	6,391	15.14 %	48,847	10.39 %	—	3,899	61 %	98	(92.18)
20 to < 30	1,149	7	31.25 %	1,153	23.31 %	11,504	15.08 %	—	1,085	94 %	40	(57.18)
30 to < 100	2,711	163	31.45 %	2,767	48.18 %	32,131	6.41 %	—	989	36 %	86	(53.57)
100.00 (Default)	4,586	31	0.01 %	4,586	100.00 %	47,775	23.61 %	—	1,239	27 %	984	(631.03)
Subtotal (exposure class)	289,886	10,022	64.05 %	296,778	3.97 %	2,308,440	12.09 %	—	48,059	16 %	1,583	(1,145)
Total (all exposures classes AIRB)	579,863	191,307	36.21 %	603,311	4.13 %	31,273,223	28.33 %	1	188,442	31 %	7,838	(7,629)

CR6 - AIRB approach Retail - Credit risk exposures by exposure class and PD range (31.12.2022)

EUR million

													2022
PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions	
a	b	c	d	e	f	g	h	i	j	k	l	m	
Qualifying Revolving													
0.00 < 0.15	524	7,958	32.06 %	3,076	0.08 %	4,379,279	65.41 %	—	108	4 %	2	(3.41)	
0.00 to < 0.10	453	5,128	34.89 %	2,243	0.07 %	3,101,979	70.41 %	—	75	3 %	1	(2.24)	
0.10 to < 0.15	71	2,831	26.93 %	833	0.12 %	1,277,300	51.93 %	—	33	4 %	1	(1.17)	
0.15 < 0.25	221	1,259	37.25 %	694	0.21 %	828,622	67.04 %	—	54	8 %	1	(0.91)	
0.25 < 0.50	115	4,689	83.54 %	4,033	0.31 %	6,448,732	66.63 %	—	494	12 %	8	(3.05)	
0.50 < 0.75	130	700	47.55 %	465	0.63 %	703,591	62.68 %	—	85	18 %	2	(2.46)	
0.75 < 2.50	726	3,037	67.15 %	2,776	1.31 %	3,740,878	61.25 %	—	910	33 %	22	(15.23)	
0.75 to < 1.75	553	2,648	66.56 %	2,324	1.16 %	3,062,153	61.22 %	—	700	30 %	17	(9.48)	
1.75 to < 2.50	173	389	71.20 %	452	2.07 %	678,725	61.35 %	—	210	46 %	6	(5.75)	
2.50 < 10.00	799	1,585	65.41 %	1,853	4.69 %	2,775,304	64.44 %	—	1,564	84 %	56	(47.26)	
2.50 to < 5	504	1,080	62.23 %	1,187	3.51 %	1,747,469	64.61 %	—	831	70 %	27	(19.46)	
5 to < 10	295	506	72.20 %	666	6.81 %	1,027,835	64.13 %	—	733	110 %	29	(27.80)	
10.00 < 100.00	452	335	78.16 %	749	23.70 %	1,004,837	61.88 %	—	1,273	170 %	107	(71.23)	
10 to < 20	252	215	77.80 %	428	13.05 %	576,712	63.61 %	—	668	156 %	35	(27.58)	
20 to < 30	98	73	90.84 %	176	24.03 %	266,340	60.57 %	—	354	202 %	25	(18.51)	
30 to < 100	102	47	60.02 %	145	54.89 %	161,785	58.37 %	—	251	174 %	46	(25.14)	
100.00 (Default)	156	63	37.60 %	180	100.00 %	163,531	71.71 %	—	59	33 %	124	(106.18)	
Subtotal (exposure class)	3,122	19,628	54.17 %	13,825	3.62 %	20,044,774	64.68 %	—	4,547	33 %	322	(250)	
Total (all exposures classes AIRB)	579,863	191,307	36.21 %	603,311	4.13 %	31,273,223	28.33 %	1	188,442	31 %	7,838	(7,629)	

CR6 - AIRB approach Retail - Credit risk exposures by exposure class and PD range (31.12.2022)

EUR million

PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	2022
												Value adjustments and provisions
a	b	c	d	e	f	g	h	i	j	k	l	m
Retail - Other non SMEs												
0.00 < 0.15	927	456	69.01 %	1,241	0.07 %	2,054,994	50.96 %	—	122	10 %	—	(5.94)
0.00 to < 0.10	874	375	67.70 %	1,128	0.06 %	422,788	48.97 %	—	99	9 %	—	(2.71)
0.10 to < 0.15	53	80	75.10 %	113	0.12 %	1,632,206	70.80 %	—	23	21 %	—	(3.23)
0.15 < 0.25	3,380	69	36.35 %	3,405	0.20 %	411,760	37.91 %	—	579	17 %	3	(6.72)
0.25 < 0.50	6,043	540	85.76 %	6,484	0.35 %	829,090	47.32 %	—	1,972	30 %	11	(21.21)
0.50 < 0.75	6,253	112	57.06 %	6,312	0.61 %	675,825	39.03 %	—	2,133	34 %	15	(22.32)
0.75 < 2.50	13,961	232	56.79 %	14,038	1.32 %	1,470,909	48.08 %	—	7,992	57 %	89	(82.79)
0.75 to < 1.75	11,437	175	54.31 %	11,495	1.15 %	1,193,122	47.90 %	—	6,238	54 %	63	(58.54)
1.75 to < 2.50	2,524	56	64.50 %	2,542	2.09 %	277,787	48.89 %	—	1,754	69 %	26	(24.25)
2.50 < 10.00	6,050	137	25.81 %	6,060	4.49 %	691,669	54.37 %	—	5,139	85 %	146	(114.81)
2.50 to < 5	4,307	69	17.42 %	4,298	3.52 %	450,258	54.15 %	—	3,545	82 %	81	(65.27)
5 to < 10	1,743	68	34.36 %	1,762	6.85 %	241,411	54.92 %	—	1,594	90 %	65	(49.54)
10.00 < 100.00	2,031	358	66.51 %	2,262	25.92 %	318,092	46.25 %	—	2,358	104 %	268	(146.02)
10 to < 20	949	135	13.89 %	965	14.42 %	114,995	50.04 %	—	998	103 %	69	(44.80)
20 to < 30	670	220	99.57 %	888	23.02 %	88,553	42.10 %	—	937	106 %	86	(34.28)
30 to < 100	412	4	22.67 %	410	59.24 %	114,544	46.32 %	—	422	103 %	113	(66.94)
100.00 (Default)	976	4	28.64 %	974	100.00 %	191,501	67.76 %	—	521	53 %	619	(580.43)
Subtotal (exposure class)	39,621	1,908	66.73 %	40,777	5.12 %	6,643,840	47.10 %	—	20,816	51 %	1,151	(980)
Total (all exposures classes AIRB)	579,863	191,307	36.21 %	603,311	4.13 %	31,273,223	28.33 %	1	188,442	31 %	7,838	(7,629)

CR6 - AIRB approach Retail - Credit risk exposures by exposure class and PD range (31.12.2022)

EUR million

													2022
PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions	
a	b	c	d	e	f	g	h	i	j	k	l	m	
Retail - SMEs													
0.00 < 0.15	283	292	46.12 %	417	0.09 %	307,189	44.91 %	—	43	10 %	—	(1.93)	
0.00 to < 0.10	216	178	50.50 %	306	0.07 %	105,229	42.88 %	—	23	8 %	—	(0.78)	
0.10 to < 0.15	67	114	39.26 %	112	0.13 %	201,960	50.47 %	—	20	18 %	—	(1.15)	
0.15 < 0.25	1,858	343	61.19 %	1,418	0.20 %	138,803	44.16 %	—	266	19 %	1	(6.22)	
0.25 < 0.50	1,836	904	59.76 %	1,488	0.37 %	186,494	46.64 %	—	404	27 %	3	(5.97)	
0.50 < 0.75	4,355	1,359	34.10 %	2,796	0.62 %	238,071	50.89 %	—	1,148	41 %	8	(17.51)	
0.75 < 2.50	8,684	1,731	49.15 %	5,926	1.48 %	522,698	49.73 %	—	3,126	53 %	42	(51.79)	
0.75 to < 1.75	5,941	1,324	49.17 %	4,055	1.18 %	357,665	50.16 %	—	2,056	51 %	23	(31.77)	
1.75 to < 2.50	2,744	406	49.06 %	1,871	2.13 %	165,033	48.78 %	—	1,070	57 %	19	(20.02)	
2.50 < 10.00	5,476	655	56.44 %	3,783	4.60 %	329,260	49.44 %	—	2,556	68 %	85	(115.14)	
2.50 to < 5	3,754	391	55.63 %	2,584	3.63 %	217,722	48.82 %	—	1,683	65 %	45	(54.34)	
5 to < 10	1,723	264	57.64 %	1,198	6.69 %	111,538	50.77 %	—	874	73 %	40	(60.80)	
10.00 < 100.00	1,196	110	39.51 %	785	28.79 %	112,812	47.77 %	—	754	96 %	106	(103.06)	
10 to < 20	548	37	40.81 %	340	14.13 %	40,827	48.52 %	—	291	86 %	23	(35.78)	
20 to < 30	260	30	43.07 %	187	24.49 %	24,891	47.04 %	—	193	103 %	21	(21.99)	
30 to < 100	387	43	35.96 %	258	51.19 %	47,094	47.31 %	—	270	104 %	62	(45.29)	
100.00 (Default)	1,592	92	23.00 %	914	100.00 %	101,849	70.41 %	—	278	30 %	627	(623.28)	
Subtotal (exposure class)	25,282	5,486	48.00 %	17,529	8.15 %	1,937,176	50.01 %	—	8,574	49 %	874	(925)	
Total (all exposures classes AIRB)	579,863	191,307	36.21 %	603,311	4.13 %	31,273,223	28.33 %	1	188,442	31 %	7,838	(7,629)	

Table 26.CR6 - FIRB approach - Credit risk exposures by exposure class and PD range

EUR million

2023

PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Exposure weighted average PD (%)	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions
a	b	c	d	e	f	g	h	i	j	k	l	m
Institutions												
0.00 < 0.15	11,362	13,815	26.22 %	17,138	0.06 %	1,126	43.49 %	1	3,777	22 %	4	(4.22)
0.00 to < 0.10	10,300	12,891	26.90 %	16,020	0.05 %	989	43.39 %	1	3,379	21 %	3	(3.71)
0.10 to < 0.15	1,062	924	16.73 %	1,119	0.13 %	137	44.89 %	1	397	36 %	1	(0.51)
0.15 < 0.25	1,990	2,056	32.68 %	2,494	0.16 %	168	44.99 %	2	1,384	56 %	2	(1.64)
0.25 < 0.50	987	727	8.87 %	971	0.31 %	138	44.75 %	2	826	85 %	1	(1.22)
0.50 < 0.75	72	96	8.51 %	80	0.66 %	43	45.00 %	2	105	131 %	—	(0.21)
0.75 < 2.50	49	451	20.54 %	141	1.69 %	34	40.54 %	2	219	155 %	1	(0.34)
0.75 to < 1.75	49	182	21.34 %	88	1.22 %	31	37.82 %	2	114	130 %	—	(0.24)
1.75 to < 2.50	—	268	20.00 %	54	2.46 %	3	45.00 %	2	105	196 %	1	(0.11)
2.50 < 10.00	27	209	6.46 %	20	8.43 %	37	36.21 %	2	42	205 %	1	(0.62)
2.50 to < 5	23	162	0.01 %	2	2.89 %	5	45.00 %	3	5	191 %	—	(0.15)
5 to < 10	4	47	28.76 %	18	9.19 %	32	34.99 %	1	37	207 %	1	(0.48)
10.00 < 100.00	44	48	0.33 %	26	44.96 %	44	44.97 %	2	94	360 %	5	(0.96)
10 to < 20	—	—	52.18 %	—	12.65 %	2	21.90 %	3	—	154 %	—	—
20 to < 30	—	—	—	—	—	—	—	—	—	—	—	—
30 to < 100	44	47	0.26 %	26	45.00 %	42	45.00 %	2	94	360 %	5	(0.95)
100.00 (Default)	—	—	—	—	100.00 %	2	45.00 %	3	—	— %	—	—
Subtotal (exposure class)	14,531	17,402	25.70 %	20,871	0.16 %	1,592	43.71 %	2	6,447	31 %	14	(9)
Total (all exposures classes FIRB)	119,537	144,183	32.37 %	155,115	1.37 %	16,829	42.74 %	2	55,597	36 %	912	(1,268)

Table 26.CR6 - FIRB approach - Credit risk exposures by exposure class and PD range

EUR million

2023

PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Exposure weighted average PD (%)	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions
a	b	c	d	e	f	g	h	i	j	k	l	m
Corporates - Other												
0.00 < 0.15	43,789	78,481	39.44 %	82,242	0.07 %	2,094	43.71 %	2	17,389	21 %	22	(35.19)
0.00 to < 0.10	29,040	58,477	41.21 %	61,454	0.05 %	1,199	43.68 %	2	10,201	17 %	11	(20.44)
0.10 to < 0.15	14,749	20,003	34.25 %	20,788	0.14 %	895	43.78 %	2	7,189	35 %	11	(14.76)
0.15 < 0.25	17,870	20,642	20.63 %	18,695	0.22 %	1,572	39.83 %	2	7,330	39 %	15	(21.03)
0.25 < 0.50	16,738	10,352	24.33 %	15,378	0.38 %	2,610	41.03 %	2	8,733	57 %	23	(28.88)
0.50 < 0.75	6,618	5,341	19.56 %	5,346	0.61 %	1,633	41.07 %	2	3,881	73 %	14	(17.47)
0.75 < 2.50	9,527	4,253	27.71 %	6,317	1.21 %	2,809	43.36 %	2	6,408	101 %	35	(42.94)
0.75 to < 1.75	9,512	4,253	27.71 %	6,302	1.21 %	2,512	43.36 %	2	6,388	101 %	35	(42.90)
1.75 to < 2.50	15	—	75.00 %	15	2.14 %	297	45.00 %	3	20	135 %	—	(0.05)
2.50 < 10.00	4,383	3,616	29.22 %	2,762	3.94 %	1,607	37.42 %	2	3,562	129 %	50	(71.18)
2.50 to < 5	3,428	3,315	28.54 %	2,082	3.23 %	549	35.81 %	2	2,434	117 %	26	(59.00)
5 to < 10	956	301	36.67 %	680	6.12 %	1,058	42.37 %	2	1,128	166 %	24	(12.18)
10.00 < 100.00	3,380	2,813	20.41 %	515	18.46 %	1,351	41.40 %	2	1,240	241 %	42	(32.33)
10 to < 20	3,337	2,812	20.38 %	471	17.63 %	993	41.06 %	2	1,120	238 %	36	(32.13)
20 to < 30	29	—	75.00 %	29	22.09 %	281	45.00 %	3	83	281 %	3	(0.13)
30 to < 100	14	1	60.15 %	15	38.09 %	77	45.00 %	3	38	257 %	2	(0.07)
100.00 (Default)	1,744	690	25.24 %	1,588	100.00 %	217	42.97 %	2	—	— %	683	(999.15)
Subtotal (exposure class)	104,048	126,190	33.09 %	132,843	1.55 %	13,893	42.58 %	2	48,544	37 %	884	(1,248)
Total (all exposures classes FIRB)	119,537	144,183	32.37 %	155,115	1.37 %	16,829	42.74 %	2	55,597	36 %	912	(1,268)

Table 26.CR6 - FIRB approach - Credit risk exposures by exposure class and PD range

EUR million

2023

PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Exposure weighted average PD (%)	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions
a	b	c	d	e	f	g	h	i	j	k	l	m
Corporates - SMEs												
0.00 < 0.15	276	587	75.00 %	716	0.04 %	27	42.54 %	3	97	14 %	—	(0.46)
0.00 to < 0.10	276	558	75.00 %	695	0.04 %	26	42.77 %	3	92	13 %	—	(0.44)
0.10 to < 0.15	—	29	75.00 %	22	0.13 %	1	35.00 %	3	5	22 %	—	(0.01)
0.15 < 0.25	—	—	— %	—	— %	—	— %	—	—	— %	—	—
0.25 < 0.50	254	—	75.00 %	254	0.43 %	144	45.00 %	—	125	49 %	—	(0.74)
0.50 < 0.75	37	—	75.00 %	38	0.55 %	95	45.00 %	—	21	54 %	—	(0.11)
0.75 < 2.50	219	2	75.00 %	221	1.57 %	426	45.00 %	—	173	78 %	2	(0.64)
0.75 to < 1.75	219	2	75.00 %	221	1.57 %	426	45.00 %	—	173	78 %	2	(0.64)
1.75 to < 2.50	—	—	— %	—	— %	—	— %	—	0	— %	—	—
2.50 < 10.00	144	1	75.00 %	145	5.70 %	448	45.00 %	—	164	113 %	4	(0.49)
2.50 to < 5	—	—	— %	—	— %	—	— %	—	0	— %	—	—
5 to < 10	144	1	75.00 %	145	5.70 %	448	45.00 %	—	164	113 %	4	(0.49)
10.00 < 100.00	15	—	75.00 %	15	24.23 %	147	45.00 %	—	27	175 %	2	(0.04)
10 to < 20	—	—	— %	—	— %	—	— %	—	0	— %	—	—
20 to < 30	13	—	75.00 %	13	22.07 %	99	45.00 %	—	23	178 %	1	(0.04)
30 to < 100	3	—	75.00 %	3	34.20 %	48	45.00 %	—	5	165 %	—	(0.01)
100.00 (Default)	11	—	— %	11	100.00 %	57	45.00 %	—	0	— %	5	(7.97)
Subtotal (exposure class)	958	591	75.00 %	1,401	2.02 %	1,344	43.74 %	1	606	43 %	14	(10)
Total (all exposures classes FIRB)	119,537	144,183	32.37 %	155,115	1.37 %	16,829	42.74 %	2	55,597	36 %	912	(1,268)

CR6 - FIRB approach - Credit risk exposures by exposure class and PD range (31.12.2022)

EUR million

													2022
PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Exposure weighted average PD (%)	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions	
a	b	c	d	e	f	g	h	i	j	k	l	m	
Institutions													
0.00 < 0.15	1,050	2,043	13.45 %	1,590	0.05 %	202	44.83 %	1	228	14 %	—	(1)	
0.00 to < 0.10	1,048	1,690	13.62 %	1,544	0.05 %	169	44.83 %	—	204	13 %	—	(1)	
0.10 to < 0.15	2	353	12.67 %	46	0.13 %	33	45.00 %	2	24	52 %	—	—	
0.15 < 0.25	105	256	3.72 %	124	0.18 %	21	44.88 %	1	48	38 %	—	—	
0.25 < 0.50	92	108	2.82 %	121	0.31 %	42	44.83 %	2	91	76 %	—	—	
0.50 < 0.75	53	117	3.19 %	53	0.66 %	28	6.31 %	1	9	16 %	—	—	
0.75 < 2.50	—	18	19.63 %	4	1.18 %	5	45.00 %	2	6	171 %	—	—	
0.75 to < 1.75	—	18	19.63 %	4	1.18 %	5	45.00 %	2	6	171 %	—	—	
1.75 to < 2.50	—	—	— %	—	— %	—	— %	—	—	—	—	—	
2.50 < 10.00	—	—	— %	—	9.55 %	1	35.00 %	3	—	220 %	—	—	
2.50 to < 5	—	—	— %	—	— %	—	— %	—	—	—	—	—	
5 to < 10	—	—	— %	—	9.55 %	1	35.00 %	3	—	220 %	—	—	
10.00 < 100.00	—	5	48.78 %	3	45.00 %	6	45.00 %	1	10	333 %	1	—	
10 to < 20	—	—	— %	—	— %	—	— %	—	—	—	—	—	
20 to < 30	—	—	— %	—	— %	—	— %	—	—	—	—	—	
30 to < 100	—	5	48.78 %	3	45.00 %	6	45.00 %	1	10	333 %	1	—	
100.00 (Default)	—	—	— %	—	— %	—	— %	—	—	—	—	—	
Subtotal (exposure class)	1,300	2,548	11.67 %	1,894	0.17 %	305	43.77 %	1	392	21 %	1	(1)	
Total (all exposures classes FIRB)	13,064	6,677	23.90 %	14,432	2.83 %	7,561	43.90 %	2	10,181	71 %	181	(163)	

CR6 - FIRB approach - Credit risk exposures by exposure class and PD range (31.12.2022)

EUR million

												2022
PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Exposure weighted average PD (%)	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions
a	b	c	d	e	f	g	h	i	j	k	l	m
Corporates - Other												
0.00 < 0.15	3,093	1,901	38.73 %	4,068	0.10 %	56	45.00 %	2	1,303	32 %	2	(1.91)
0.00 to < 0.10	1,754	910	35.46 %	2,217	0.07 %	23	45.00 %	2	579	26 %	1	(0.94)
0.10 to < 0.15	1,339	990	41.73 %	1,852	0.14 %	33	45.00 %	2	724	39 %	1	(0.97)
0.15 < 0.25	246	230	26.57 %	253	0.22 %	35	45.00 %	2	124	49 %	—	(0.28)
0.25 < 0.50	2,669	203	28.78 %	2,352	0.44 %	988	44.41 %	3	1,628	69 %	5	(14.76)
0.50 < 0.75	408	239	25.55 %	406	0.59 %	448	44.72 %	3	340	84 %	1	(2.27)
0.75 < 2.50	2,280	835	28.12 %	2,286	1.24 %	1,902	41.95 %	3	2,243	98 %	12	(15.19)
0.75 to < 1.75	1,992	338	67.87 %	1,993	1.11 %	1,548	41.73 %	3	1,902	95 %	9	(11.73)
1.75 to < 2.50	288	497	1.13 %	293	2.13 %	354	43.47 %	3	341	116 %	3	(3.46)
2.50 < 10.00	1,416	316	24.68 %	1,469	5.10 %	1,506	43.17 %	3	2,307	157 %	32	(24.90)
2.50 to < 5	617	192	29.55 %	673	3.72 %	517	41.39 %	2	920	137 %	10	(17.97)
5 to < 10	799	124	17.16 %	796	6.27 %	989	44.67 %	3	1,387	174 %	22	(6.93)
10.00 < 100.00	319	142	6.21 %	320	18.80 %	610	44.67 %	3	777	243 %	27	(9.06)
10 to < 20	263	95	5.34 %	261	16.32 %	134	44.64 %	3	619	237 %	19	(2.78)
20 to < 30	21	2	100.00 %	23	22.09 %	394	45.00 %	3	63	281 %	2	(0.16)
30 to < 100	35	45	3.26 %	36	34.63 %	82	44.69 %	3	94	260 %	6	(6.12)
100.00 (Default)	87	6	49.11 %	89	100.00 %	153	45.00 %	3	—	— %	40	(29.86)
Subtotal (exposure class)	10,517	3,871	32.06 %	11,243	2.40 %	5,698	44.00 %	3	8,722	78 %	119	(98)
Total (all exposures classes FIRB)	13,064	6,677	23.90 %	14,432	2.83 %	7,561	43.90 %	2	10,181	71 %	181	(163)

CR6 - FIRB approach - Credit risk exposures by exposure class and PD range (31.12.2022)

EUR million

												2022
PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Exposure weighted average PD (%)	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions
a	b	c	d	e	f	g	h	i	j	k	l	m
Corporates - SMEs												
0.00 < 0.15	—	—	— %	—	— %	—	— %	—	—	—	—	—
0.00 to < 0.10	—	—	— %	—	— %	—	— %	—	—	—	—	—
0.10 to < 0.15	—	—	— %	—	— %	—	— %	—	—	—	—	—
0.15 < 0.25	—	—	— %	—	— %	—	— %	—	—	—	—	—
0.25 < 0.50	212.81	1.87	100.00 %	214.21	0.43 %	131.00	45.00 %	3.00	106.69	49.81 %	0.41	(1.06)
0.50 < 0.75	41.16	11.61	99.36 %	49.81	0.55 %	82.00	45.00 %	3.00	27.16	54.52 %	0.12	(0.25)
0.75 < 2.50	366.39	66.64	30.70 %	383.07	1.79 %	468.00	42.28 %	2.82	288.41	75.29 %	2.86	(6.30)
0.75 to < 1.75	231.07	15.36	98.89 %	242.47	1.57 %	406.00	45.00 %	3.00	189.18	78.02 %	1.72	(1.20)
1.75 to < 2.50	135.32	51.28	10.27 %	140.59	2.16 %	62.00	37.60 %	2.50	99.23	70.58 %	1.14	(5.10)
2.50 < 10.00	461.55	136.21	16.43 %	481.36	4.98 %	589.00	42.49 %	2.60	497.58	103.37 %	10.22	(22.45)
2.50 to < 5	297.16	113.28	8.89 %	307.23	4.10 %	180.00	41.67 %	2.50	295.04	96.03 %	5.24	(16.16)
5 to < 10	164.39	22.93	53.66 %	174.13	6.54 %	409.00	43.94 %	2.79	202.54	116.32 %	4.98	(6.29)
10.00 < 100.00	80.83	37.23	2.36 %	81.62	23.35 %	204.00	44.53 %	2.59	146.63	179.65 %	8.50	(6.25)
10 to < 20	50.48	26.17	1.03 %	50.75	18.10 %	31.00	44.29 %	2.50	89.93	177.22 %	4.07	(4.53)
20 to < 30	11.89	0.24	100.00 %	12.07	22.07 %	111.00	45.00 %	3.00	21.42	177.47 %	1.20	(0.05)
30 to < 100	18.46	10.82	3.45 %	18.80	38.32 %	62.00	44.88 %	2.58	35.27	187.60 %	3.23	(1.68)
100.00 (Default)	84.65	5.05	9.60 %	85.13	100.00 %	84.00	45.00 %	2.76	0.00	— %	38.31	(27.10)
Subtotal (exposure class)	1,247.39	258.61	22.27 %	1,295.20	10.52 %	1,558.00	43.23 %	2.76	1,066.47	82.34 %	60.42	(63)
Total (all exposures classes FIRB)	13,064.48	6,677.11	23.90 %	14,432.20	2.83 %	7,561.00	43.90 %	2.32	10,181.41	70.55 %	180.55	(163)

The following tables show the specialized financing exposures:

Table 27.CR10.1 - Specialised lending and equity exposures under the simple riskweighted approach. Project financing

EUR million

								2023
Specialised lending : Project finance (Slotting approach)								
Regulatory Categories	Remaining maturity	On-balance-sheet amount	Off-balance-sheet amount	RW	EAD	RWA	Expected loss	
		a	b	c	d	e	f	
Category 1	< 2.5 years	797	447	50 %	1,005	425	0	
	>= 2.5 years	3,317	1,695	70 %	3,970	2,203	16	
Category 2	< 2.5 years	2,572	1,651	70 %	3,049	1,806	12	
	>= 2.5 years	5,138	5,206	90 %	6,192	4,538	50	
Category 3	< 2.5 years	282	13	115 %	284	317	8	
	>= 2.5 years	352	18	115 %	361	366	10	
Category 4	< 2.5 years	0	4	250 %	1	1	0	
	>= 2.5 years	0	45	250 %	0	0	0	
Category 5	< 2.5 years	74	3	— %	75	0	37	
	>= 2.5 years	288	17	— %	302	0	151	
Total	< 2.5 years	3,725	2,117	— %	4,414	2,550	58	
	>= 2.5 years	9,094	6,982	— %	10,824	7,106	226	

Including counterparty credit risk

Table 28.CR10.2 - Specialised lending and equity exposures under the simple riskweighted approach. Income-earning real estate and highly volatile commercial real estate

EUR million

								2023
Specialised lending: Income-producing real estate and high volatility commercial real estate (Slotting approach)								
Regulatory Categories	Remaining maturity	On-balance-sheet amount	Off-balance-sheet amount	RW	EAD	RWA	Expected loss	
		a	b	c	d	e	f	
Category 1	< 2.5 years	601	50	50 %	608	270	—	
	>= 2.5 years	1,856	83	70 %	1,873	1,202	7	
Category 2	< 2.5 years	2,114	173	70 %	2,186	1,392	9	
	>= 2.5 years	2,119	359	90 %	2,203	1,830	18	
Category 3	< 2.5 years	346	6	115 %	348	376	10	
	>= 2.5 years	110	—	115 %	110	114	3	
Category 4	< 2.5 years	4	—	250 %	4	10	—	
	>= 2.5 years	3	—	250 %	3	5	—	
Category 5	< 2.5 years	137	—	— %	137	—	69	
	>= 2.5 years	90	—	— %	90	—	45	
Total	< 2.5 years	3,202	230	— %	3,283	2,047	87	
	>= 2.5 years	4,176	443	— %	4,277	3,151	73	

Table 29.CR10.3 - Specialised lending and equity exposures under the simple riskweighted approach. Financing of assets

EUR million

								2023
Specialised lending : Project finance (Slotting approach)								
Regulatory Categories	Remaining maturity	On-balance-sheet amount	Off-balance-sheet amount	RW	EAD	RWA	Expected loss	
		a	b	c	d	e	f	
Category 1	< 2.5 years	40	92	50 %	118	59	—	
	>= 2.5 years	25	75	70 %	100	70	—	
Category 2	< 2.5 years	72	38	70 %	108	75	—	
	>= 2.5 years	150	56	90 %	201	179	2	
Category 3	< 2.5 years	—	—	115 %	—	—	—	
	>= 2.5 years	19	—	115 %	19	22	1	
Category 4	< 2.5 years	2	—	250 %	2	5	—	
	>= 2.5 years	—	—	250 %	—	—	—	
Category 5	< 2.5 years	—	—	— %	—	—	—	
	>= 2.5 years	—	—	— %	—	—	—	
Total	< 2.5 years	114	131	— %	228	140	1	
	>= 2.5 years	193	131	— %	320	270	3	

Table 30.CR10.4 - Specialised lending and equity exposures under the simple riskweighted approach. Financing of raw materials

EUR million

2023									
Commodities finance slotting approach									
Regulatory Categories	Remaining maturity	On-balance-sheet amount	Off-balance-sheet amount	RW	EAD	RWA	Expected loss		
		a	b	c	d	e	f		
Category 1	< 2.5 years	—	—	50 %	—	—	—		
	>= 2.5 years	—	—	70 %	—	—	—		
Category 2	< 2.5 years	—	—	70 %	—	—	—		
	>= 2.5 years	69	11	90 %	78	70	1		
Category 3	< 2.5 years	—	—	115 %	—	—	—		
	>= 2.5 years	—	—	115 %	—	—	—		
Category 4	< 2.5 years	—	—	250 %	—	—	—		
	>= 2.5 years	—	—	250 %	—	—	—		
Category 5	< 2.5 years	—	—	— %	—	—	—		
	>= 2.5 years	—	—	— %	—	—	—		
Total	< 2.5 years	—	—	— %	—	—	—		
	>= 2.5 years	69	11	— %	78	70	1		

4.2.3. Equity investments and instruments not included in the held-for-trading book

This section provides definitions of investments in associates, equity instruments classified as other financial assets at fair value through other comprehensive income, and financial assets with mandatory classification at fair value through profit or loss. It also defines the accounting policies and measurement methods applied. Information is also provided on the amounts of those equity instruments not included in the held-for-trading portfolio.

Investments in associates are those stakes affording the Group significant influence, but not control or joint control. This capacity is usually observed with 20% or more of the voting power at the investee.

Equity instruments not held for trading issued by entities other than subsidiaries, jointly controlled entities and

associates are required to be classified at fair value through profit or loss, unless the entity opts to classify them as financial assets at fair value through other comprehensive income, irrevocably, on initial recognition.

Investments in associates are recognised at cost and the Group periodically tests for their impairment.

Equity instruments classified as other financial assets at fair value through other comprehensive income are recognised and measured at fair value with a corresponding entry in equity, under valuation adjustments, irrevocably. Instruments classified as financial assets with mandatory recognition at fair value through profit or loss are recognised and measured at fair value with a corresponding entry in profit or loss.

Table 31.CR10.5 - Equity exposures under the simple risk-weighted approach

EUR million

Categories	2023					
	On-balance sheet exposure	Off-balance sheet exposure	Risk weight	Exposure value	Risk weighted exposure amount	Expected loss amount
	a	b	c	d	e	f
Private equity exposures	1,891	—	190 %	1,891	3,592	15
Exchange-traded equity exposures	4	—	290 %	4	10	0.028
Other equity exposures	—	—	370 %	—	—	—
Total	1,894	—		1,894	3,603	15

Equity exposures under the simple risk-weighted approach represent in Santander 1,894 million euros in exposure with a risk weighted exposure amount of 3,603 million.

Table 32. Equity instruments through other comprehensive income

EUR million

	2023		
	Carrying value	Fair value	Valuation adjustment
Quoted	1,225	1,225	207
Unquoted	537	537	(939)
Total	1,762	1,762	(732)

Table 33. Equity instruments mandatory at fair value through profit and loss

EUR million

	2023
	Fair Value
Quoted	134
Investment funds	583
Unquoted	1,945
Total	2,661

Table 34. Equity instruments through other comprehensive income. Consolidated gross valuation adjustments

EUR million	2023
	Fair Value
Prior-year balance	(614)
Revaluation gains and losses	(118)
Current-year balance	(732)

Refer to the Auditor's Report and consolidated financial statements in the Annual Report for further information on the portfolio of equity instruments classified as other financial assets at fair value through other comprehensive income.



[Access 2023 Annual Report available on the Santander Group website](#)

With respect to holdings accounted for using the equity method at year-end 2023, the amounts for associates and jointly controlled entities were EUR 5,754 million and EUR 568 million, respectively.

There are also investments in group entities totalling 2,233 million, which are accounted for using the full consolidation method in the public perimeter.

The group tests these investments for impairment on a regular basis. No evidence of significant impairment was found in 2023.

The following table summarises and describes EU - CRA requirements on qualitative disclosure requirements related to the IRB approach:

IRB parameter models by geographic area (CRE)

Article	Description of the article	Comentarios
Article 452(a)	When disclosing information on the extent of the authorization of the method by the competent authority or its approval of the transition process in accordance with Article 452(a) of the CRR, entities shall describe the main characteristics of the qualification systems used under the IRB method for which authorization has been granted by the competent authority, as well as the types of exposures covered by those rating systems. Institutions shall also describe the types of exposures for which they are permitted to permanently partially use the standardized approach in accordance with Article 150 of the CRR and which form part of their plans to deploy the IRB approach in accordance with Article 148 of the CRR. . The description will be provided at the group level.	See Appendix XVII and section 2.4.2.1
Article 452(b)	For each exposure category referred to in Article 147, the percentage of the total exposure value of each exposure category subject to the standard method established in part three, title II, chapter 2 or the IRB method established in part three, title II, chapter 3, as well as the part of each exposure category subject to an implementation plan; Where authorized to use their own loss given default (LGD) estimates and conversion factors for the calculation of risk-weighted amounts of exposures, institutions shall separately disclose the percentage of the total exposure value of each category of exhibition subject to said authorization;	See table CR6
Article 452(c)	The description of the control mechanisms of the rating systems will cover the estimation of risk parameters, including the development and calibration of internal models, as well as controls on the application of the models and changes to the rating systems. In accordance with Article 452(c)(i) to iv) of the CRR, the role description of the functions mentioned above will also include: i) the relationships between the risk management function and the internal audit function ii) processes and methods for the review of rating systems, including periodic reviews of estimates in accordance with Article 179(1)(c) CRR and validations, iii) organizational procedures and modalities to ensure the independence of the function responsible for reviewing the models (validation function) with respect to the functions responsible for the development and calibration of the models, iv) and the procedure to ensure that the functions responsible for developing and reviewing the models have the obligation to render accounts.	See sections 3.3 and 4.5
Article 452(d)	The entities will specify the role of the functions involved in the development, calibration and approval of the models and the subsequent modification of the qualification systems.	See Appendix XVII and section 2.4.2.1
Article 452(e)	Entities will disclose the scope and main content of the management reports related to the IRB models referred to in Article 189 of the CRR, as well as the recipients and frequency of such reports.	See Appendix XVII and section 2.4.2.1
Article 452(f)	Disclosure of information on internal rating systems by exposure category will include the number of key models used in each exposure category with respect to different types of exposures, together with a brief description of the main differences between models in the same category. of exposition. applicable and the factors causing the differences observed between the PD estimates and the actual default rates during, at least. It will also include a description of the main characteristics of the approved fundamental models, in particular: i) the definitions, methods and data used for the estimation and validation of the probability of default (PD), including the estimation and validation of the PD for low-default portfolios, possible regulatory floors imo, the last three years; ii) where applicable, the definitions, methods and data for the estimation and validation of LGD, including the estimation and validation of LGD in recession situations, information on how LGDs are estimated for low default portfolios and the average time interval between the non-payment event and the closing of the exhibition; iii) the definitions, methods and data used to estimate and validate the conversion factors, including the assumptions used to obtain said estimates.	See Appendix XVII and section 4.5.
Article 452(g)	As applicable, the following information in relation to quantitative information on the uso of the IRB approach covered by Article 147	See table 29, CR6 and CR4

4.2.4. Standardised approach

For the calculation of regulatory capital under the standardised approach, Santander uses the external rating agencies designated as eligible by the ECB (European Central Bank). The agencies used for the capital calculation at 31 December 2023 are Fitch, Moody's, DBRS, Standard & Poor's, Japan Credit Rating Agency and HR Ratings de México.

For the central government and central banks category, if the requirements of article 137 of the CRR are met, the Group uses the OECD's Country Risk Classification of the Participants to the Arrangement on Officially Supported Export Credits.

Different risk weights are applied to credit exposures depending on the rating assigned by the credit rating agencies (e.g. Fitch, Moody's and Standard & Poor's for the segments approved under Part III, Title II, Chapter II of the CRR) or the minimum export insurance premium rating (e.g. OECD for the central government and central bank segment, as explained above). Japan Credit Rating Agency and HR Ratings de México are used for credit exposures in the Sovereign segment.

Grupo Santander does not currently transfer the issuer and issue credit ratings onto items not included in the trading book for exposures treated under the standard method

The assignment of weights according to credit ratings complies with the regulatory requirements, aligning the alphanumeric scale of each agency used with the credit quality steps set down in Chapter II, Section II of the CRR, as follows:

Credit quality step	S&P	Moody's	Fitch	DBRS	Japan Credit Rating Agency	HR Ratings Mexico
1	AAA a AA-	AAA to AA3	AAA a AA-	AAA to AAL	AAA to AA	HR AAA to HR AA
2	A+ to A-	A1 to A3	A+ to A-	AH to AL	A	HR A
3	BB+ to BBB-	BAA1 to BAA3	BB+ to BBB-	BBBH to BBBL	BBB	HR BBB
4	BB+ to BB-	BA1 to BA3	BB+ to BB-	BBH to BBL	BB	HR BB
5	B+ to B-	B1 to B3	B+ to B-	BH to BL	B	HR B
6	Lower than B-	Lower than B3	Lower than B-	CCCH to lower	CCC to lower	HR CCC to lower

Credit quality step	Central governments and central banks	Public sector entities	Institutions ≤ 3 months rated	Institutions > 3 months rated	Institutions not rated	Corporates
1	0%	20%	20%	20%	20%	20%
2	20%	50%	20%	50%	50%	50%
3	50%	100%	20%	50%	100%	100%
4	100%	100%	50%	100%	100%	100%
5	100%	100%	50%	100%	100%	150%
6	150%	150%	150%	150%	150%	150%

In accordance with article 150 of the CRR, Santander always uses the standardised approach for sovereign exposures denominated and funded in the Member State's local currency, applying a 0% risk weighting.

Guarantees are applied by reallocating exposures to the corresponding asset categories and risk weightings.

When credit institutions use some of their qualifying financial collateral as a credit risk mitigation technique, the valuation of this collateral for the calculation of risk-weighted exposure amounts can either follow the financial collateral simple method under Article 222 of the CRR or the financial collateral comprehensive method under Article 223.

Table 35.CR4 - standardised approach - Credit risk exposure and CRM effects

EUR million

2023

Exposure classes	Exposures before CCF and CRM		Exposures post CCF and CRM		RWA and RW	
	On-balance-sheet amount	Off-balance-sheet amount	On-balance-sheet amount	Off-balance-sheet amount	RWA	RW
	a	b	c	d	e	f
1 Central governments or central banks	380,526	4,367	415,326	2,607	26,949	6 %
2 Regional governments or local authorities	13,720	2,335	13,450	652	531	4 %
3 Public sector entities	5,005	639	5,216	243	360	7 %
4 Multilateral Development Banks	2,179	—	5,212	71	—	— %
5 International Organisations	1,924	—	1,924	—	—	— %
6 Institutions	18,910	3,431	19,003	1,013	5,526	28 %
7 Corporates	67,043	31,416	57,565	3,382	55,811	92 %
8 Retail	153,984	90,361	140,414	1,717	99,635	70 %
9 Secured by mortgages on immovable property	96,438	8,078	92,582	243	33,382	36 %
10 Exposures in default	14,020	466	13,576	84	14,523	106 %
11 Items associated with particularly high risk	712	67	680	—	1,021	150 %
12 Covered bonds	2,620	—	2,620	—	424	16 %
13 Claims on institutions and corporates with a short-term credit assessment	232	26	316	8	109	34 %
14 Collective investments undertakings (CIU)	262	—	262	—	248	95 %
15 Equity	30	—	30	—	30	100 %
16 Other items	81,438	20,617	84,495	4,283	47,181	53 %
17 TOTAL	839,042	161,803	852,670	14,304	285,728	33 %

CRR Fully-loaded, Phased-in IFRS 9

CR4 - standardised approach - Credit risk exposure and CRM effects (31.12.2022)

EUR million

2022

Exposure classes	Exposures before CCF and CRM		Exposures post CCF and CRM		RWA and RW	
	On-balance-sheet amount	Off-balance-sheet amount	On-balance-sheet amount	Off-balance-sheet amount	RWA	RW
	a	b	c	d	e	f
1 Central governments or central banks	355,992	2,939	407,830	4,944	26,579	6 %
2 Regional governments or local authorities	1,649	56	1,387	12	330	24 %
3 Public sector entities	3,901	662	4,459	257	369	8 %
4 Multilateral Development Banks	2,064	2	4,681	—	—	— %
5 International Organisations	664	—	664	—	—	— %
6 Institutions	20,238	3,758	19,642	1,541	4,610	22 %
7 Corporates	57,211	31,450	48,156	3,732	47,920	92 %
8 Retail	151,211	82,995	138,674	1,464	98,556	70 %
9 Secured by mortgages on immovable property	99,668	10,626	95,905	302	35,103	36 %
10 Exposures in default	11,925	403	11,492	99	12,251	106 %
11 Items associated with particularly high risk	956	394	943	—	1,414	150 %
12 Covered bonds	1,728	—	1,728	—	257	15 %
13 Claims on institutions and corporates with a short-term credit assessment	172	8	296	3	157	52 %
14 Collective investments undertakings (CIU)	158	—	158	—	158	101 %
15 Equity	135	—	135	—	135	100 %
16 Other items	81,672	19,873	84,649	4,041	47,082	53 %
17 TOTAL	789,343	153,167	820,800	16,395	274,922	33 %

Securitisations not included.

CRR Fully-loaded, Phased-in IFRS 9

Table 36.CR5 - standardised approach

EUR million		Risk Weight															Total	Of which unrated
		0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1250%	Otros		
		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
1	Central governments or central banks	397,622	—	668	30	3,947	—	531	—	—	7,980	2	7,154	—	—	—	417,933	415,890
2	Regional government or local authorities	13,183	—	—	—	442	—	69	—	—	408	—	—	—	—	—	14,102	13,613
3	Public sector entities	4,177	—	52	—	1,036	—	90	—	—	101	3	—	—	—	—	5,459	4,333
4	Multilateral development banks	5,283	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5,283	5,283
5	International organisations	1,924	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,924	1,924
6	Institutions	—	1,045	—	—	14,950	—	3,050	—	—	910	61	—	—	—	—	20,016	10,816
7	Corporates	—	—	—	—	1,047	—	1,100	—	—	58,459	341	—	—	—	—	60,947	59,904
8	Retail	—	—	—	—	—	1,650	—	—	140,481	—	—	—	—	—	—	142,132	142,132
9	Secured by mortgages on immovable property	—	—	—	—	—	77,621	12,985	—	—	1,488	730	—	—	—	—	92,825	92,825
10	Exposures in default	—	—	—	—	—	—	—	—	—	11,932	1,727	—	—	—	—	13,660	13,660
11	Exposures associated with particularly high risk	—	—	—	—	—	—	—	—	—	—	681	—	—	—	—	681	681
12	Covered bonds	—	—	—	996	1,624	—	—	—	—	—	—	—	—	—	—	2,620	1
13	Institutions and corporates with a short-term credit assessment	—	—	—	—	198	—	114	—	—	10	2	—	—	—	—	324	4
14	Collective investment undertakings	23	—	—	—	—	—	—	—	—	220	18	—	—	—	—	262	262
15	Equity	—	—	—	—	—	—	—	—	—	30	—	—	—	—	—	30	30
16	Other items	26,507	141	—	—	18,634	—	18	—	176	43,289	14	—	—	—	—	88,778	88,778
17	Total	448,719	1,185	719	1,027	41,877	79,271	17,957	—	140,657	124,829	3,579	7,154	—	—	—	866,974	850,133

CR5 - standardised approach (31.12.2022)

EUR million

		Risk Weight															Total	Of which unrated
		0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1250%	Otros	p	q
		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o		
1	Central governments or central banks	393,891	—	—	—	1,286	—	1,709	—	—	9,499	4	6,386	—	—	—	412,775	409,135
2	Regional government or local authorities	655	—	—	—	487	—	49	—	—	207	—	—	—	—	—	1,399	1,131
3	Public sector entities	3,514	—	—	—	1,003	—	60	—	—	138	1	—	—	—	—	4,716	3,630
4	Multilateral development banks	4,681	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4,681	4,681
5	International organisations	664	—	—	—	—	—	—	—	—	—	—	—	—	—	—	664	664
6	Institutions	—	2,638	—	—	17,059	—	767	—	—	625	94	—	—	—	—	21,183	11,858
7	Corporates	—	—	—	—	617	—	404	—	—	50,432	435	—	—	—	—	51,889	50,975
8	Retail	—	—	—	—	—	1,460	—	—	138,678	—	—	—	—	—	—	140,138	140,138
9	Secured by mortgages on immovable property	—	—	—	—	—	78,447	13,419	—	1,728	2,608	6	—	—	—	—	96,207	96,202
10	Exposures in default	—	—	—	—	—	—	—	—	—	10,270	1,321	—	—	—	—	11,591	11,591
11	Exposures associated with particularly high risk	—	—	—	—	—	—	—	—	—	—	943	—	—	—	—	943	943
12	Covered bonds	—	—	—	885	843	—	—	—	—	—	—	—	—	—	—	1,728	73
13	Institutions and corporates with a short-term credit assessment	—	—	—	—	2	—	281	—	—	16	—	—	—	—	—	299	3
14	Collective investment undertakings	11	—	—	—	—	—	—	—	—	123	23	—	—	—	—	158	158
15	Equity	—	—	—	—	—	—	—	—	—	135	—	—	—	—	—	135	135
16	Other items	27,399	340	—	—	17,322	—	11	—	43	43,574	—	—	—	—	—	88,690	88,690
17	Total	430,816	2,978	—	885	38,620	79,907	16,699	—	140,449	117,628	2,827	6,386	—	—	—	837,195	820,005

Securitisations not included. Including counterparty credit risk

4.3. Distribution of exposures

This section covers the CRB requirement - Additional disclosure concerning the credit quality of assets.

The tables below give a breakdown of the exposures to credit and dilution risk of the Group:

- Exposure category
- Business sector
- Geographical area
- Residual maturity

Information is also presented on non-performing exposures, impairment loss allowances, and provisions for contingent liabilities and commitments.

The amounts shown in the tables in this section include the amounts for counterparty and credit risk excluding securitisations.

The geographic distribution in standard portfolios is mainly concentrated in Brazil, Spain and the United States. The most prominent segments continue to be central administrations (with a strong presence in Spain, Brazil and UK) and retailers and companies with a prominent presence in Brazil, the United States and UK.

In terms of IRB portfolios, most of the exposure is concentrated in the corporate and retail segments in Spain and the UK.

Exposures by geographic area

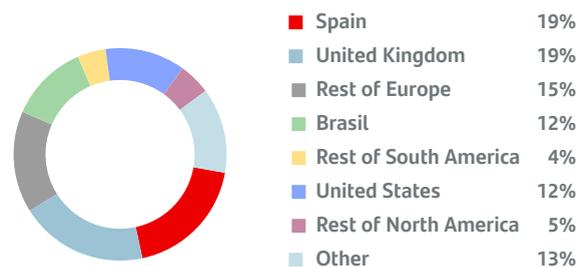


Table 37.CR1-A: Maturity of exposures

EUR million	2023					
	a	b	c	d	e	f
	Net exposure value					
	On demand	<= 1 year	> 1 year <= 5 years	> 5 years	No stated maturity	Total
1 Loans and advances	41,742	350,656	365,667	349,983	—	1,108,048
2 Debt securities	—	45,170	57,816	60,642	—	163,628
3 Total	41,742	395,826	423,483	410,625	—	1,271,676

CR1-A: Maturity of exposures (31.12.2022)

EUR million	2022					
	a	b	c	d	e	f
	Net exposure value					
	On demand	<= 1 year	> 1 year <= 5 years	> 5 years	No stated maturity	Total
1 Loans and advances	44,687	319,195	310,538	419,077	—	1,093,497
2 Debt securities	—	36,774	55,512	44,691	—	136,977
3 Total	44,687	355,969	366,050	463,768	—	1,230,474

The following table shows the stock of loans classified as non-performing between the close of the previous year and the end of current year.

Table 38.CR2 - Changes in the stock of non-performing loans and advances

EUR million	2023
	a
	Gross carrying amount
10 Opening balance	36,853
20 Inflows to non-performing portfolios	25,806
30 Outflows from non-performing portfolios	(9,953)
40 Outflows due to write-offs	(13,797)
50 Outflow due to other situations	—
60 Closing balance	38,909

The following table displays performing and non-performing exposures including provisions by stage:

Table 39.CR1 - Performing and non-performing exposures and related provisions

EUR million															2023	
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	
	Gross carrying amount/nominal amount						Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions						Collateral and financial guarantees received			
	Performing exposures		Non-performing exposures		Performing exposures - accumulated impairment and provisions		Non-performing exposures - accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions		Accumulated partial write-off	On performing exposures	On non-performing exposures					
	Of which, stage 1	Of which, stage 2	Of which, stage 2	Of which, stage 3	Of which, stage 1	Of which, stage 2	Of which, stage 2	Of which, stage 3								
5 Cash balances at central banks and other demand deposits	211,879	211,774	105	—	—	—	—	—	—	—	—	—	—	—	—	
10 Loans and advances	1,092,226	1,010,085	74,350	38,906	3,363	34,425	(8,087)	(3,653)	(4,434)	(14,997)	(545)	(14,233)	(218)	724,079	18,389	
20 Central banks	20,106	20,106	—	—	—	—	—	—	—	—	—	—	—	2,330	—	
30 General governments	27,024	25,758	122	47	6	42	(19)	(13)	(6)	(10)	(1)	(9)	—	2,603	26	
40 Credit institutions	58,300	57,841	—	1	—	1	(9)	(9)	—	—	—	—	—	22,970	—	
50 Other financial corporations	80,469	75,176	1,086	263	1	256	(145)	(117)	(28)	(65)	—	(58)	—	47,385	169	
60 Non-financial corporations	324,572	296,889	25,772	13,103	371	12,120	(2,087)	(935)	(1,152)	(5,586)	(76)	(5,355)	(79)	199,171	5,377	
70 Of which SMEs	119,752	104,364	14,832	7,267	282	6,766	(1,165)	(414)	(751)	(3,305)	(61)	(3,170)	—	85,160	3,138	
80 Households	581,755	534,315	47,370	25,492	2,985	22,006	(5,827)	(2,579)	(3,248)	(9,336)	(468)	(8,811)	(139)	449,620	12,817	
90 Debt securities	164,792	163,374	203	510	—	461	(37)	(29)	(8)	(249)	—	(249)	—	620	—	
100 Central banks	10,761	10,761	—	—	—	—	(1)	(1)	—	—	—	—	—	—	—	
110 General governments	111,616	111,418	—	—	—	—	(4)	(4)	—	—	—	—	—	444	—	
120 Credit institutions	9,585	9,585	—	—	—	—	(1)	(1)	—	—	—	—	—	—	—	
130 Other financial corporations	18,421	17,817	—	11	—	11	(5)	(5)	—	(6)	—	(6)	—	4	—	
140 Non-financial corporations	14,409	13,793	203	499	—	450	(26)	(18)	(8)	(243)	—	(243)	—	172	—	
150 Off-balance-sheet exposures	407,592	399,099	8,490	1,715	104	1,519	462	292	170	241	4	221	—	9,280	208	
160 Central banks	190	190	—	—	—	—	—	—	—	—	—	—	—	—	—	
170 General governments	6,120	6,093	28	16	—	16	—	—	—	—	—	—	—	44	—	
180 Credit institutions	49,602	49,601	—	16	—	16	1	1	—	—	—	—	—	629	—	
190 Other financial corporations	38,462	38,181	281	11	—	11	89	63	26	1	—	1	—	1,149	—	
200 Non-financial corporations	201,844	195,729	6,113	1,463	91	1,283	214	114	100	232	3	214	—	6,965	206	
210 Households	111,374	109,305	2,068	209	13	193	158	114	44	8	1	6	—	493	2	
220 Total	1,876,489	1,784,332	83,148	41,131	3,467	36,405	(8,586)	(3,974)	(4,612)	(15,487)	(549)	(14,703)	(218)	733,979	18,597	

CR1 - Performing and non-performing exposures and related provisions (31.12.2022)

EUR million															2022		
		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	
		Gross carrying amount/nominal amount						Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions						Collateral and financial guarantees received			
		Performing exposures			Non-performing exposures			Performing exposures - accumulated impairment and provisions			Non-performing exposures - accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions			Accumulated partial write-off	On performing exposures	On non-performing exposures	
		Of which, stage 1	Of which, stage 2		Of which, stage 2	Of which, stage 3		Of which, stage 1	Of which, stage 2		Of which, stage 2	Of which, stage 3					
5	Cash balances at central banks and other demand deposits	214,266	214,091	175	—	—	—	(3)	(3)	—	—	—	—	—	—	—	
10	Loans and advances	1,079,684	1,007,077	64,974	36,853	2,800	33,204	(8,333)	(3,675)	(4,658)	(14,707)	(497)	(13,895)	(336)	724,054	15,974	
20	Central banks	15,397	15,397	—	—	—	—	—	—	—	—	—	—	—	189	—	
30	General governments	27,100	25,455	183	65	7	54	(14)	(12)	(2)	(11)	(1)	(10)	—	3,358	34	
40	Credit institutions	46,519	45,845	1	—	—	—	(6)	(6)	—	—	—	—	—	10,856	—	
50	Other financial corporations	80,223	76,284	774	272	—	263	(126)	(91)	(35)	(117)	—	(111)	—	46,422	138	
60	Non-financial corporations	324,822	296,860	25,718	13,310	522	12,115	(2,295)	(970)	(1,325)	(5,827)	(87)	(5,489)	(254)	198,416	5,381	
70	Of which SMEs	120,996	106,367	13,854	8,037	332	7,454	(1,237)	(428)	(809)	(3,537)	(67)	(3,361)	(74)	88,785	3,745	
80	Households	585,623	547,236	38,298	23,206	2,271	20,772	(5,892)	(2,596)	(3,296)	(8,752)	(409)	(8,285)	(82)	464,813	10,421	
90	Debt securities	139,268	137,916	75	431	—	403	(24)	(22)	(2)	(206)	—	(198)	—	601	39	
100	Central banks	12,133	12,117	—	—	—	—	(1)	(1)	—	—	—	—	—	—	—	
110	General governments	90,873	90,845	14	—	—	—	(3)	(3)	—	—	—	—	—	391	—	
120	Credit institutions	7,033	7,031	—	—	—	—	(1)	(1)	—	—	—	—	—	—	—	
130	Other financial corporations	16,744	15,907	—	25	—	11	(1)	(1)	—	(3)	—	—	—	—	—	
140	Non-financial corporations	12,485	12,016	61	406	—	392	(18)	(16)	(2)	(203)	—	(198)	—	210	39	
150	Off-balance-sheet exposures	378,526	371,650	6,846	2,081	218	1,769	495	327	168	238	22	209	—	6,700	253	
160	Central banks	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
170	General governments	4,267	4,249	17	4	—	4	1	1	—	—	—	—	—	60	—	
180	Credit institutions	39,555	39,554	1	9	—	9	1	1	—	—	—	—	—	339	—	
190	Other financial corporations	30,752	30,255	498	223	—	223	15	10	5	3	—	3	—	420	—	
200	Non-financial corporations	194,591	189,499	5,064	1,604	204	1,319	234	121	113	219	19	193	—	5,229	250	
210	Households	109,361	108,093	1,266	241	14	214	244	194	50	16	3	13	—	652	3	
220	Total	1,811,744	1,730,734	72,070	39,365	3,018	35,376	(8,855)	(4,027)	(4,828)	(15,151)	(519)	(14,302)	(336)	731,355	16,266	

The following table breaks down performing and non-performing exposures according to the number of days past due:

Table 40.CQ3 - Credit quality of performing and non-performing exposures by past due days

EUR million													2023
		a	b	c	d	e	f	g	h	i	j	k	l
		Gross carrying amount/nominal amount											
		Performing exposures				Non-performing exposures							
		Not past due or past due ≤ 30 days	Past due > 30 days ≤ 90 days	Unlikely to pay that are not past due or are past due ≤ 90 days	Past due > 90 days ≤ 180 days	Past due > 180 days ≤ 1 year	Past due > 1 year ≤ 2 years	Past due > 2 years ≤ 5 years	Past due > 5 years ≤ 7 years	Past due > 7 years	Of which defaulted		
5	Cash balances at central banks and other demand deposits	211,879	211,879	—	—	—	—	—	—	—	—	—	—
10	Loans and advances	1,092,226	1,086,982	5,244	38,909	24,294	4,753	4,457	2,963	1,581	340	521	38,648
20	Central banks	20,106	20,106	—	—	—	—	—	—	—	—	—	—
30	General governments	27,024	27,021	3	48	28	—	19	—	1	—	—	48
40	Credit institutions	58,300	58,300	—	1	1	—	—	—	—	—	—	1
50	Other financial corporations	80,469	80,457	12	265	212	14	4	6	20	9	—	265
60	Non-financial corporations	324,572	323,886	686	13,103	8,949	1,148	1,171	783	617	141	294	13,035
70	Of which SMEs	119,752	119,161	591	7,267	3,926	924	991	628	440	111	247	7,217
80	Households	581,755	577,212	4,543	25,492	15,104	3,591	3,263	2,174	943	190	227	25,299
90	Debt securities	164,792	164,775	17	510	475	7	10	6	11	1	—	510
100	Central banks	10,761	10,761	—	—	—	—	—	—	—	—	—	—
110	General governments	111,616	111,616	—	—	—	—	—	—	—	—	—	—
120	Credit institutions	9,585	9,585	—	—	—	—	—	—	—	—	—	—
130	Other financial corporations	18,421	18,420	1	11	11	—	—	—	—	—	—	11
140	Non-financial corporations	14,409	14,393	16	499	464	7	10	6	11	1	—	499
150	Off-balance-sheet exposures	407,592			1,715								1,675
160	Central banks	190			—								—
170	General governments	6,120			16								16
180	Credit institutions	49,602			16								9
190	Other financial corporations	38,462			11								11
200	Non-financial corporations	201,844			1,463								1,433
210	Households	111,374			209								206
220	Total	1,876,489	1,463,636	5,261	41,134	24,769	4,760	4,467	2,969	1,592	341	521	40,833

Table 41.CQ4 - Quality of non-performing exposures by geography

EUR million

									2023
		a	b	c	d	e	f	g	
		Gross carrying/Nominal amount				Accumulated impairment	Provisions on off-balance sheet commitments and financial guarantee given	Accumulated negative changes in fair value due to credit risk on non-performing exposures	
		of which: non-performing		of which: defaulted	of which: subject to impairment				
10	On balance sheet exposures	1,296,437	39,416	39,157	1,289,204	(23,344)			(26)
20	GB	274,415	4,268	4,267	273,730	(1,072)			—
30	ES	232,411	9,119	9,047	227,628	(4,553)			(24)
40	BR	160,050	8,610	8,610	159,173	(6,442)			—
50	US	153,243	7,188	7,188	152,322	(4,207)			—
60	MX	68,929	1,681	1,538	68,905	(1,398)			—
70	CL	56,753	2,482	2,482	56,754	(1,211)			—
	PL	54,711	1,665	1,663	54,754	(1,285)			(2)
	DE	50,951	876	876	50,926	(624)			—
	IT	40,460	401	401	39,949	(247)			—
	PT	44,605	914	914	44,775	(819)			—
70	Other countries	159,909	2,212	2,171	160,288	(1,486)			—
80	Off balance sheet exposures	409,307	1,715	1,675			703		
90	ES	89,427	694	673			148		
100	GB	57,409	121	121			98		
110	US	54,910	76	72			51		
120	BR	44,046	472	472			154		
130	FR	30,567	2	2			6		
	MX	17,235	40	40			85		
	PL	16,099	32	32			29		
	DE	15,937	12	12			8		
	CL	13,087	19	19			22		
	PT	9,483	137	137			57		
140	Other countries	61,107	110	95			45		
150	Total	1,705,744	41,131	40,832	1,289,204	(23,344)	703		(26)

The following two tables show all exposures by industry and geographical area:

Table 42.CQ5 - Credit quality of loans and advances by industry

EUR million		2023					
		a	b	c	d	e	f
Gross carrying amount		of which: non-performing			of which: loans and advances subject to impairment	Accumulated impairment	Accumulated negative changes in fair value due to credit risk on non-performing exposures
		of which: defaulted					
10	Agriculture, forestry and fishing	8,346	471	471	8,310	(266)	(1)
20	Mining and quarrying	10,156	41	35	10,118	(31)	—
30	Manufacturing	54,487	1,852	1,851	54,346	(1,114)	(1)
40	Electricity, gas, steam and air conditioning supply	14,893	256	254	14,890	(104)	—
50	Water supply	1,559	36	36	1,540	(25)	—
60	Construction	18,399	870	870	18,385	(574)	(15)
70	Wholesale and retail trade	79,984	3,621	3,620	79,710	(2,339)	(2)
80	Transport and storage	16,897	1,105	1,105	16,801	(475)	(4)
90	Accommodation and food service activities	11,524	1,094	1,094	11,413	(477)	(1)
100	Information and communication	17,406	253	253	17,403	(143)	—
110	Financial and insurance activities	—	—	—	—	—	—
120	Real estate activities	45,454	1,307	1,299	45,027	(663)	—
130	Professional, scientific and technical activities	16,731	624	606	16,718	(475)	—
140	Administrative and support service activities	14,219	496	494	14,202	(344)	—
150	Public administration and defense, compulsory social security	1,597	—	—	1,597	(1)	—
160	Education	1,978	68	68	1,971	(54)	—
170	Human health services and social work activities	4,506	216	216	4,470	(111)	—
180	Arts, entertainment and recreation	1,362	89	89	1,360	(47)	—
190	Other services	18,177	704	674	17,475	(406)	—
200	Total	337,675	13,103	13,035	335,736	(7,649)	(24)

The following table shows the credit quality of the restructured or forbore exposures

Table 43.CQ1 - Credit quality of forbore exposures

EUR million		2023							
		a	b	c	d	e	f	g	h
		Gross carrying amount/nominal amount of exposures with forbearance measures				Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions		Collateral received and financial guarantees received on forbore exposures	
		Non-performing forbore				On performing forbore exposures	On non-performing forbore exposures	Of which collateral and financial guarantees received on non-performing exposures with forbearance measures	
		Performing forbore	Of which defaulted		Of which impaired				
—	Cash balances at central banks and other demand deposits	—	—	—	—	—	—	—	—
10	Loans and advances	17,539	15,575	15,545	15,442	(1,565)	(6,511)	18,315	7,575
20	Central banks	—	—	—	—	—	—	—	—
30	General governments	438	5	5	5	—	(3)	2	1
40	Credit institutions	—	—	—	—	—	—	—	—
50	Other financial corporations	408	130	130	130	(3)	(40)	424	67
60	Non-financial corporations	7,396	6,173	6,163	6,086	(404)	(2,594)	8,368	3,024
70	Households	9,297	9,267	9,247	9,221	(1,158)	(3,874)	9,521	4,483
80	Debt Securities	8	211	211	211	—	(128)	—	—
90	Loan commitments given	963	84	84	78	10	1	579	45
100	Total	18,510	15,870	15,840	15,731	(1,575)	(6,640)	18,894	7,620

The following table shows the collateral obtained through repossession and foreclosure processes:

Table 44.CQ7 - Collateral obtained by taking possession and execution processes

EUR million		2023	
		a	b
		Collateral obtained by taking possession	
		Value at initial recognition	Accumulated negative changes
10	Property, plant and equipment (PP&E)	—	—
20	Other than PP&E	5,695	2,475
30	Residential immovable property	844	207
40	Commercial Immovable property	4,561	2,247
50	Movable property (auto, shipping, etc.)	276	21
60	Equity and debt instruments	14	—
70	Other collateral	—	—
80	Total	5,695	2,475

Requirements CQ2, CQ6, CQ8 and CR2A of the EBA Disclosure ITS are not published because THE NPL ratio does not exceed 5%.

4.4. Internal rating systems

Santander has been using its own internal rating and scoring models to measure the credit quality of customers and transactions since 1993.

Each rating or score indicates a probability of default, measured on the basis of the bank's historical default experience (except in the case of low default portfolios).

More than 400 internal rating models are used in the Group's credit approval and risk monitoring process.

The global rating tools are those used for **SCIB** segments: corporates, financial institutions, sovereigns and specialised funding, which are managed centrally in Santander, in terms of both allocating the rating and risk monitoring. The rating these tools assign to each customer is obtained using a model which relies on an analyst's opinion, supported by a quantitative or automatic module based on balance sheet ratios or macroeconomic variables. This quantitative module is created by applying a structured technique for dealing with complex decisions based on two-by-two comparisons to evaluate priorities. Starting from an expert selection of variables/ratios to be considered in the model, this method yields the relative weight of each variable in the overall model. The analyst takes this information as a reference but revises and adjusts it to obtain the final rating, which is therefore heavily based on expert judgement. Occasionally, ratings are also adjusted when the company belongs to a group from which it receives explicit support, as in the case of Corporate SCIB.

The parent of Santander has established a single methodology for constructing a rating in each country for the **Corporates and Institutions** segment (including the SMEs with the highest turnover). The aim is to include all available information (internal behaviour, external sources, etc.) in a structured way and to (statistically) weight the objective (automatic) assessment and the subjective (expert) assessment according to the client's characteristics. The analyst may or may not modify the resulting score by a limited number of rating points.

Customer ratings are reviewed regularly to take account of new information that becomes available. Ratings are reviewed more frequently when certain automatic alerts are triggered and for customers placed on special watch. The rating tools are also reviewed, to refine the ratings they generate.

For the **Retail segment** (individuals and SMEs), Santander has scoring tools that automatically assign a score to transactions submitted for approval.

These credit approval systems are supplemented by behavioural rating models, which provide greater predictability of the assumed risk. These are used not only when accepting new risks but also when monitoring and setting limits.

For each of the Group's portfolios, PD models are developed where the rating and/or scoring models are an essential input. In the case of SCIB portfolios, the aforementioned models establish the following list of internal ratings and probability of default:

Mapping of internal ratings and PD

Corporate		Banks		Financial institutions non banks	
Rating	PD	Rating	PD	Rating	PD
9.3	0.008%	9.3	0.013%	9.3	0.002%
9.2	0.009%	9.2	0.014%	9.2	0.002%
9.0	0.011%	9.0	0.016%	9.0	0.003%
8.5	0.018%	8.5	0.025%	8.5	0.006%
8.0	0.029%	8.0	0.038%	8.0	0.012%
7.5	0.048%	7.5	0.059%	7.5	0.025%
7.0	0.080%	7.0	0.090%	7.0	0.051%
6.5	0.133%	6.5	0.137%	6.5	0.108%
6.0	0.219%	6.0	0.193%	6.0	0.194%
5.5	0.362%	5.5	0.295%	5.5	0.406%
5.0	0.597%	5.0	0.451%	5.0	0.850%
4.5	0.984%	4.5	0.689%	4.5	1.779%
4.0	1.617%	4.0	1.051%	4.0	3.721%
3.5	2.646%	3.5	1.600%	3.5	7.785%
3.0	4.303%	3.0	2.429%	3.0	16.285%
2.5	6.922%	2.5	3.671%	2.5	34.068%
2.0	10.954%	2.0	5.512%	2.0	45.000%
1.5	16.907%	1.5	8.197%	1.5	45.000%
1.0	25.181%	1.0	12.024%	1.0	45.000%

These PDs are applied uniformly across the whole Santander, consistently with the global management of the portfolios. As we can see, the PD assigned to any given internal rating is not exactly the same in every portfolio. Regulatory requirements require differentiated calibration.

4.5. Rating assignment process and parameter estimation

This credit risk classification policy establishes criteria for the proper classification of transactions with customers, depending on the credit risk to which the bank is exposed. This classification is based on two regulations comprising:

- **Accounting principles:** pursuant to International Financial Reporting Standard 9 (IFRS 9), which is used for internal management, reporting and accounting purposes.
- **Prudential requirements:** pursuant to Article 178 of Regulation (EU) no. 575/2013 of the European Parliament and of the Council of 26 June 2013, on prudential requirements for credit institutions and investment firms, as well as the EBA Guidelines on the application of the definition of default.

For accounting purposes, the classification is broken down into the following categories: Phase 1, Phase 2, Phase 3 and Write-off. Furthermore, for prudential purposes, the classification is separated into: No-Default and Default.

As a result of consistency between the classification for prudential and accounting purposes, we typically classify transactions by credit risk as follows:

- **Stage 1/No-default risk:** This includes all transactions that do not meet the requirements to be classified in other categories.
- **Stage 2/No-default risk:** This category contains all the transactions that, without meeting the criteria for individual classification as Phase 3/Default or write-off, show significant increases in credit risk since initial recognition. Transactions are classified as Phase 2 based on the total value of the risk.
- **Stage 3/Default risk:** This includes all transactions, whether or not past due, for which the circumstances for classification as write-offs have not arisen, but there are reasonable doubts with regard to their total repayment (principal and interest) by the obligor as set out in the contract. It also includes off-balance-sheet exposures where payment by the entity is likely, but recovery is doubtful. Transactions are classified as Phase 3/Default based on the total value of the risk.
- **Write-off risk:** This includes debt instruments, whether or not past due, in relation to which an individual analysis considers that recovery is unlikely, due to severe or irretrievable impairment of the solvency of the transaction or the obligor. This is an accounting classification only, hence there is no equivalent in the prudential criteria.

In 2023, the accounting and prudential definitions were aligned by incorporating core regulation aspects that better capture the economic downturn, such as day count and materiality thresholds. Only certain criteria that capture an exclusively prudential assessment have been excluded from the definition, thus avoiding excessive conservatism in the accounting perspective.

Additionally, the Group's Customer Forborne Loans Debt Policy defines forbearance as the modification of the payment

conditions of a transaction, which allows a customer experiencing financial difficulties (current or foreseeable) to fulfil his/her payment obligations, on the basis that if this modification were not made, it would be reasonably certain that the customer would not be able to meet his/her financial obligations.

The modification may be made to the original transaction or through a new transaction which replaces it and is accompanied with concessions by the bank.

The modification may be made to the original transaction or through a new transaction which replaces it and is accompanied with concessions by the bank.

Measuring the credit risk of a transaction involves calculating both the expected and the unexpected loss on the transaction. Unexpected loss is the basis for the calculation of both regulatory and economic capital. It refers to a very high, though improbable, level of loss that is not considered a recurring cost and must be absorbed by capital. Measuring risk involves two separate steps: estimating the risk and then assigning the credit risk parameters: PD, LGD and EAD.

PD (probability of default) estimates the likelihood that a customer or a contract will default within 12 months. PD used for regulatory capital is long run, or TTC (through-the-cycle) PD, which is not linked to a specific point in the cycle.

The default event being modelled is based on the definition in article 178 of the European Central Bank Solvency Regulation², which considers default to be defined for a customer/contract when at least one of the following circumstances arises:

- The entity considers there is reasonable doubt about the obligor meeting their credit obligations in full.
- The customer/contract is past due by more than 90 days on any material credit obligation.

Recently, the definition of default has also been adopted in accordance with the "Guidelines on the application of the definition of default" and the materiality thresholds set by the competent authorities.

For portfolios managed at the customer level, the event to be modelled is the customer default, while for portfolios managed at the contract level, the default calculated at the same level is modelled.

The calculation of PD is based on the institution's internal experience, i.e. historical observations of defaults by rating or scoring level, and the level at which it is estimated (contract or customer) is agreed with management.

LGD (loss given default) is the mathematical expectation of the percentage loss in the event of a default event. LGD is calculated using internal data on the income and expenses incurred by the institution during the recovery process once the default event has arisen, discounted to the start date of the default.

LGD calculated to determine regulatory capital is "downturn" LGD, i.e. considered for a worst-case scenario in the economic cycle.

In addition to the estimation of downturn LGD that will be used for normal operations, a specific loss estimate is made for operations in default. This is determined using LGD and

² Regulation (EU) No 575/2013 of the European Parliament and Council of 26 June 2013 on prudential requirements for credit institutions and investment firms.

ELBE (expected loss best estimate) parameters. ELBE attempts to provide the best estimate of economic loss at a particular time based mainly on the time during which the operation has been in default, with due regard to the prevailing economic situation, while LGD for transactions in default is increased by any further unexpected losses that may be reported during the recovery period.

Finally, **EAD (exposure at default)** is calculated. This is defined as the value of the debt at the time of default. For lending products or any product with no off-balance-sheet amount, EAD equals the balance of the transaction plus any interest accrued but not yet payable. For products providing facilities it is necessary to estimate any future drawings that will be made between the present time and any possible future default event. The **CCF (credit conversion factor)** is calculated for this reason, to show the percentage of the balance not currently utilised (off-balance-sheet amount) that would be utilised at the time of default.

Past information on portfolios is essential for estimating regulatory parameters, as established in EU regulations (Regulation No 575/2013). The minimum data periods to be used in estimates are between five and seven years, depending on the parameter and the portfolio, although the period used in the estimate can be longer, depending on the historical information available. The Bank has an internal data model containing historical information on portfolios, which is subject to review by the internal supervisory divisions (Validation and Audit) and by the supervisory authorities.

The methodology used to estimate the credit risk parameters will be updated under the new regulatory guidelines, mainly established in the "Guidelines on PD estimation, LGD estimation and the treatment of defaulted assets", to incorporate the requirements and interpretations deriving from these regulatory provisions.

For regulatory purposes, observations of frequency of default and associated losses must be averaged out over an entire economic cycle, in the case of PD, or represent a downturn situation in the case of LGD or EAD, or represent the current economic cycle in the case of ELBE for non-performing transactions.

For this reason, recent observations are not directly comparable with the regulatory parameters and **backtesting exercises** should be treated with due caution, placing them in the context of the current economic environment. As explained in section 3.10, recent observed default frequencies (ODFs) are below the regulatory PDs in geographies with economic growth rates above the average for the cycle. Conversely, in regions where economic growth is below average, the ODFs may exceed the regulatory PDs.

The risk parameters must be estimated separately for each entity, country and segment, and must be reviewed at least once a year.

The parameters are then assigned to the transactions recorded on each unit's balance sheet, so as to calculate the expected losses and capital requirements associated with the unit's exposure.

In certain portfolios there is so little default experience that alternative approaches to parameter estimation must be adopted. These are known as low default portfolios.

Low default portfolio: corporates; banks; non-bank financial institutions and central governments.

Estimates of PD and LGD in low default portfolios rely chiefly on studies performed by external rating agencies, which reflect the pooled experience of the large numbers of entities and countries rated by the agencies. These databases contain in-depth historical information to help identify complete economic cycles and analyse downturn situations.

The definition of default employed by the agencies is compared in detail with the regulatory requirements. Even though this does not produce a perfect match, there are sufficient points in common to enable this approach to be used.

For PD, the agencies do not directly report long run (through the cycle, TTC) estimates, but rather the annual observed default frequency. The observations are averaged out over an economic cycle by external rating levels to obtain the long run (TTC) PD. This long run PD is assigned to all counterparties with external ratings, which later helps to calibrate the internal rating. Therefore, the PD will not depend on the counterparty's external rating, but on its internal rating, and may also be applied to customers with no external rating.

The parameters estimated for global portfolios are the same for all the Group units. Thus, a financial institution with a rating of 8.5 will have the same PD, regardless of the unit in which the exposure is recognised.

Corporates (including SMEs, specialised lending and receivables)

The estimation is based on the entity's own internal experience for portfolios of customers that have an account manager assigned to them with sufficient experience of internal defaults. The PD is calculated for customers by observing new NPLs in the portfolio and relating these to the ratings assigned to the customers concerned. To this end, long-run observed default frequencies (LR ODFs) are calculated for a rating or group of ratings and are adjusted to the average PD observed for each portfolio over a complete economic cycle.

Unlike low default portfolios, corporates portfolios have specific rating systems in each the Group unit, requiring specific PD calibrations in each case.

In Corporates portfolios, LGD is calculated on the basis of observed recoveries of defaulted transactions. This calculation takes into account not only the cash inflows and outflows associated with the recovery process but also the timing of these flows, so as to calculate their present value, and direct and indirect recovery costs. For regulatory use, LGD estimates must be associated with a period of economic crisis or downturn. The existence of major variables (known as "drivers") is modelled to explain the emergence of various LGDs for different groups of transactions. The main drivers used are the age of the transactions, the existence or absence of guarantees, the type of guarantee, the Loan to Value, etc. Statistical significance and business relevance are required for these explanatory variables. Estimated ELBE and LGD are also calculated for operations in default.

Finally, EAD is estimated by comparing the percentage use of off-balance sheet operations at the time of default and in normal circumstances, to estimate the extent to which customers make more use of their credit facilities as they approach default. To estimate the CCF, information on past defaults is gathered from databases and balances (on and off the balance sheet) are compared between the time of default and earlier times when the downturn in the customer's credit quality had yet to be observed.

Retail

In portfolios where customers do not have an account manager assigned to them but are treated on a pooled or standardised basis, PDs are estimated based on the entity's internal experience, although the unit of information for assigning PD is the transaction, not the customer.

PDs are calculated by observing new NPLs and relating each new NPL to the score assigned to the transaction at the time of approval or, for transactions beyond a certain age, to the customer's rating. As with the corporates portfolios, LGD is calculated on the basis of an observed recovery process, adjusted to downturn conditions. Estimated ELBE and LGD are also calculated for transactions in default. The EAD estimation is also similar to that for corporates.

For further details, see Appendix XVII, which contains several tables summarising the parameter models used in the geographies, complying with the requirement (e) of CRE in relation to the article 452 (f) of the CRR.



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4.6. Uses of internal parameter estimates

One major application of the PD, LGD and EAD credit risk parameters is to determine minimum capital requirements within the CRR framework.

The CRR states that these parameters and their associated metrics, including expected and unexpected loss, are to be used not only for regulatory purposes but also for internal credit risk management.

The Group has adapted its projection methodology to IFRS 9, resulting in an impact on the estimation of expected loss and the other relevant credit risk metrics arising from the parameters obtained, thus making full use of the risk parameters (PD, LGD and EAD) in its management through the calculation of provisions and allowances.

The internal credit risk parameter estimates are also used in a variety of management tools, including pre-classifications, economic capital allocation, the RoRAC (return on risk-adjusted capital) calculation, RoRWA (return on risk-weighted assets), stress testing and scenario analyses, the results of which are reported to senior management through various internal committees.

The pre-classification tool is used to assign limits to customers based on their risk characteristics. For the Corporate Investment Banking (SCIB) segment, limits are established for capital at risk (CaR) and nominal CAP.³ Limits for financial institutions are managed using credit risk equivalent (CRE) models.

Through the calculation and allocation of economic capital, all the various types of risks arising from the lending business are integrated in a single measurement, combining measurement of credit risk with that of other risks, including market, operational, business and on-balance-sheet interest rate risk. The economic capital allocation at the business unit level provides a view of the distribution of risk by business activity and geographical area, taking the benefits of diversification into account. By relating economic capital to financial results, it is possible to calculate the risk-adjusted return (RoRAC), which can be compared to the cost of capital to determine how each unit is contributing to value creation in the Group.

The use of economic capital figures in determining management compensation and setting capital and RoRAC-related targets for the business units further reinforces the integration of economic capital in management.

In scenario analyses, the credit risk parameters (including provisions under IFRS 9) are related to macroeconomic variables, such as the unemployment rate, GDP growth and interest rates, using statistical models. This allows credit risk to be quantified under different macroeconomic scenarios, and in particular, to assess potential risk levels in stress situations.

For further details on IFRS 9, see the Risk management chapter (section 3.4) of the 2023 Annual Report.

³ Maximum nominal amount of a risk transaction, excluding market transactions and with maximum terms according to the type of transaction

4.7. Credit risk mitigation techniques

This section covers the CRC requirement - Qualitative disclosure requirements related to credit risk mitigation techniques.

Santander applies various credit risk mitigation techniques based on customer and product type, among other factors.

Some are inherent to specific operations (such as real estate collateral) while others apply to a series of transactions (such as netting or collateral).

Risk approval is generally determined by the borrowers' ability to make payment due, irrespective of any additional collateral or personal guarantees that may be required to modulate the exposure. To determine repayment capacity, Grupo Santander reviews funds or net cash flows from its businesses or revenues without guarantors or assets pledged as collateral. When approving a loan, the Group always considers guarantors and guarantees as a secondary means of recourse if the first channel fails.

In general, guarantees are to reinforce a credit transaction and mitigate a loss if the borrower defaults on its payment obligation. Grupo Santander's techniques for mitigating credit risk cover various types of customers and products. Some are for specific transactions (e.g. property) or a series of transactions (e.g. clearing derivatives and guarantees). They are grouped by personal guarantees (with a solvent guarantor), guarantees (mainly on primary residence mortgages) and credit derivative hedges.

Grupo Santander ensures that mitigation techniques are duly accepted for legal compliance in all jurisdictions. Internal oversight and effective control of the value of the collateral is maintained throughout the process, especially for mortgage guarantees.

Second and subsequent mortgages

As a general rule, and from a risk acceptance perspective, lending criteria are linked to the borrower's capacity to fulfil all of their financial obligations in due time and proper form, although this is no impediment to seeking the highest level of collateral or personal guarantees.

Payment capacity is assessed on the basis of the funds or net cash flows from their businesses or usual sources of income, without depending on guarantors or assets delivered as collateral. These must always be taken into account when considering approval of the transaction as a second and exceptional method of recovery when the first method has failed. As a general rule, security is defined as a reinforcement that is added to a credit operation for the purpose of mitigating any loss arising from default on the payment obligation.

Effective guarantees, for these purposes, are collateral and personal guarantees whose validity is demonstrated as mitigating the credit risk and whose valuation is compliant with the internal policies and procedures in place. The analysis of the effectiveness of the guarantee must consider, among other things, the time necessary for the execution of the security and the capacity to make the guarantees effective.

For the calculation of regulatory capital, only those that meet the requirements described both in the CRR and in the EBA's guide on credit risk reduction are taken into consideration.

Implementation of mitigation techniques follows the minimum requirements established in the guarantee management policy: legal certainty (possibility of legally requiring the settlement of guarantees at all times); the lack of a substantial positive correlation between the counterparty and the value of the collateral; the correct documentation of all guarantees; the availability of the documented methodologies used for each mitigation technique; and appropriate monitoring, traceability and regular monitoring of the items or assets used for the guarantee.

The mitigation techniques can be grouped into the following categories:

Personal guarantees

This type of guarantee grants the creditor a personal right or entitlement affecting the equity of the guarantor. Examples include bonds, guarantees and stand-by letters of credit. Only personal guarantees provided by persons who meet the minimum requirements established by the supervisory authority can be recognised in capital calculations.

Hedging through credit derivatives

Credit derivatives are financial instruments that are mainly used to hedge credit risk. By buying protection from a third party, Banco Santander transfers the risk of the issuer of the underlying instrument. Credit derivatives are over-the-counter (OTC) instruments that are traded on non-organised markets. Hedging with credit derivatives is contracted with leading financial institutions, mainly using credit default swaps.

The distribution of personal guarantees and credit derivatives for the corporates, banks, non-financial institutions and sovereigns segments by rating grade is shown below, in compliance with one of the transparency recommendations originally issued by the Basel Committee:

Table 45. Guarantees by external rating

EUR million		2023
Corporates		
External Rating	Exposures in default	Exposures not in default
AAA/AA	—	115
A	—	11,165
BBB	—	19,056
BB	—	3,385
B	0.3	1,432
Rest	100	183
Unrated	—	90
Total	100	35,426
Banks		
External Rating	Exposures in default	Exposures not in default
AAA/AA	—	3,384
A	—	7,060
BBB	—	644
BB	—	—
B	—	—
Rest	—	—
Unrated	—	—
Total	—	11,088
Other financial institutions		
External Rating	Exposures in default	Exposures not in default
AAA/AA	—	4,670
A	—	9,264
BBB	—	2,058
BB	—	27
B	—	—
Rest	—	—
Unrated	—	4
Total	—	16,023
Sovereign		
External Rating	Exposures in default	Exposures not in default
AAA/AA	—	17,874
A	—	26,274
BBB	—	8,421
BB	—	127
B	—	12
Rest	—	—
Unrated	—	—
Total	—	52,708

Collateral

This is collateral pledged on assets (movable or immovable) or rights that are specific and determinate. These are rights that secure performance of the main obligation for the creditor via the attachment of an asset. As a result of this attachment, in the event of default on the secured obligation, the creditor may realise the economic value of the asset through a regulated procedure and collect the proceeds; preference over other creditors may be upheld in this collection method. Collateral may also be classified as follows:

- **Real estate guarantees** implemented as first charge real estate mortgages. The property can be buildings and parts of finished buildings (homes, offices, commercial premises, multi-purpose buildings, non multi-purpose

buildings and hotels), urban land and land for urban development, and other property (buildings under construction, developments in progress, etc.).

- **Pledges on financial instruments** (cash deposits, debt instruments).

A very important example of financial collateral is that which is used for the purpose (as with the netting technique) of reducing counterparty credit risk. Collateral consists of instruments with certain economic value and high liquidity that are deposited/transferred by one party in favour of another to guarantee or reduce any counterparty credit risk arising from portfolios of risk-bearing transactions between the two. Transactions backed by collateral are marked to market periodically (usually daily) and the parameters defined in the collateral agreement are applied, obtaining an amount of collateral (usually cash or securities) to be called from, or returned to, the counterparty.

From an estimation standpoint, the collateral adjudication flows are reduced on the basis of a haircut, which reflects the difference between the sale value of the asset and the adjudication value, as well as other aspects such as indirect costs or the effect of the discount factor.

Netting

The concept of netting involves offsetting gains and losses on multiple transactions of the same type under the umbrella of a master agreement such as an ISDA or similar (CSA, OSLA, ISMA, GMRA, etc.).

Market gains and losses on derivative transactions between Santander and a counterparty are offset against one another, so that if the counterparty defaults, it owes (or Santander owes, if the net amount is negative) a single net amount, rather than a large number of positive and negative amounts relating to the individual transactions entered into with that counterparty.

An important feature of a master netting agreement is that it entails a single legal obligation, encompassing all the transactions covered by the agreement. This is what makes it possible to offset the risks of all the transactions covered by the agreement with a counterparty.

There are two methodologies for the measurement of exposure: a mark-to-market (MtM) methodology, involving replacement cost in the case of derivatives, plus an add-on for potential future exposure; and a methodology including calculation of exposure using Monte Carlo simulation, which is used in certain regions and for some products. We also calculate capital at risk or unexpected loss, i.e. the loss in economic capital once expected loss is subtracted, net of guarantees and recoveries.

Exposures are recalculated at market close, adjusting all transactions to their new time horizon. Potential future exposure is adjusted and mitigation measures (netting, collateral, etc.) are applied, so that exposures can be checked on a daily basis against the limits approved by senior management. Risk control is performed through an integrated system in real time, enabling the exposure limit available with any counterparty to be known at any time.

Table 46. Credit risk mitigation techniques - IRB and SA

Million euros	Exposures unsecured	Exposures secured	Exposures secured by personal guarantees	Exposures secured by collateral pledged	Exposures secured by mortgage collateral
Total IRB exposures (after CCFs)	364,312	419,445	79,842	32,621	306,982
Total STD exposures	858,817	142,028	16,874	24,632	100,522
Type of guarantee applied in credit risk mitigation evaluated under standard methodology					
Central governments or central banks	381,242	3,650	3,325	325	—
Regional government or local authorities	15,719	336	201	135	—
Public sector entities	5,610	34	—	33	—
Multilateral development banks	2,179	—	—	—	—
International organisations	1,924	—	—	—	—
Institutions	20,137	2,204	1,961	242	—
Corporates	87,735	10,724	5,879	4,845	—
Retail	224,300	20,046	3,552	16,494	—
Exposures covered by residential mortgages	—	104,516	1,555	2,440	100,522
Exposures in default	14,036	450	392	59	—
Higer-risk categories	747	32	—	32	—
Covered bonds	2,620	—	—	—	—
Institutions and corporates with a short-term credit assessment	258	—	—	—	—
Collective investment under takings (CIU)	262	—	—	—	—
Equity	30	—	—	—	—
Other items	102,019	36	10	27	—
Type of guarantee applied in credit risk mitigation evaluated under IRB methodology					
IRB methods when neither proprietary LGD estimates nor conversion factors are used					
Specialised lending	28,350	—	—	—	—
Institutions	28,674	3,250	2,675	561	13
Corporates - SMEs	1,362	206	30	—	176
Corporates - Other	176,256	52,962	41,636	7,104	4,222
IRB approach when proprietary LGD estimates and/or conversion factors are used					
Institutions	824	2,619	574	2,045	—
Corporates - SMEs	15,192	21,905	11,128	2,735	8,042
Corporates - Other	42,118	20,275	13,976	2,594	3,705
Retail exposures - guaranteed by real estate, SMEs	289	14,068	130	6	13,932
Retail exposures - guaranteed by real estate, not SMEs	6,689	276,692	—	—	276,692
Qualifying revolving retail exposures	22,017	—	—	—	—
Retail exposures - other, SME	15,607	12,540	9,597	2,821	121
Retail exposures - other, not SME	26,932	14,928	96	14,754	78

4.7.1. Recognition of credit risk mitigation

Valuation and control processes

The valuation of collateral should always use conservative criteria appropriate to the time horizon of the secured transaction, using the most appropriate processes for each type of collateral to minimise the risk of overvaluation. The time value of the collateral offered, as well as its possible change in nature, especially in the case of rights, or risks of reduction in value, amortisation or disappearance, must be appropriate to the maturity and payment flow of the main transaction. From the point of view of parameter estimation, the collateral allotment flows are discounted on the basis of a haircut, which reflects the difference between the sale value of the asset and the allotment value, as well as other aspects such as indirect costs or the effect of the discount factor.

For collateral, the value of the collateral established at the time of grant must be updated in accordance with minimum frequencies, either by individual valuation or by automated methods. In any case, the following frequency criteria shall be observed depending on the type of collateral:

- Financial collateral shall be valued at least quarterly, taking its fair value as a reference value.
- For movable and immovable collateral, the existence of indications of significant falls in their reference valuations must be verified at least annually or when the thresholds established by the unit are exceeded, which in this case could trigger an individualised update. In determining whether there are indications of significant falls, factors such as the development of published mortgage market price indices or the opinion of an independent valuator will be taken into account. For transactions classified as doubtful risk, the minimum frequency must be annual.
- More specific review periods, with a higher frequency than normal, may be established for: real estate under construction, collateral securing transactions with a high LTV ratio, or when securing loans with a low credit quality, as defined in the relevant customer monitoring governance for each segment.

In any case, individualised updates of the value of collateral shall be made in the following cases:

- When the monitoring of the customer's performance reveals any negative symptoms that make it necessary to take urgent measures to secure the customer's credit operations.
- When a decision is taken to initiate a legal claim, or to negotiate a restructuring, with or without granting new credits.
- When it is intended to novate the credits in an amending way, altering essential elements of the same (amount and term).
- Where partial release or substitution of collateral associated with a transaction is sought.
- In guarantees granted through financial securities, where daily value updates and immediate requirement of additional coverage must be made when the thresholds established in the corresponding contract are exceeded. In this type of guarantees, the inclusion of a clause for replenishment or the provision of additional collateral in the event of variations in value below a certain threshold is considered to be an eligibility policy.
- When market conditions or extraordinary events make it advisable for certain types of transactions or when there is a specific regulation that makes it compulsory to do so.
- Transactions that have been in the doubtful risk category for more than 3 years.
- When required taking into consideration the type and complexity of the collateral, e.g. aircraft, ships, factories, machinery, etc.

For loans exceeding EUR 3 million or 5% of an institution's own funds, the valuation on the real estate must be reviewed by an expert valuer at least every 3 years.

Table 47.CR3 - CRM techniques overview: Disclosure of the use of credit risk mitigation techniques

EUR million		2023				
	Unsecured carrying amount	Secured carrying amount				
		a	b	Of which secured by collateral c	Of which secured by financial guarantees	
					Of which secured by credit derivatives d	
1	Loans and advances	577,459	742,469	643,337	99,132	3,131
2	Debt securities	164,682	620	—	620	—
3	Total	742,141	743,089	643,337	99,752	3,131
4	Of which non-performing exposures*	21,029	18,390	16,132	2,258	—
EU-5	Of which defaulted**	19,761	6,094	5,922	174	—

*Correction of the mapping {F 18.00, r0070+r0191+r0221, c0060} - {F 18.00, r0070+r0191+r0221, c0200+c0210} + ({F 18.00, r0010+r0181+r0211, c0060} - {F 18.00, r0010+r0181+r0211, c0200+c0210})

**Defaulted information net of provisions

CR3 - CRM techniques overview: Disclosure of the use of credit risk mitigation techniques (31.12.2022)

EUR million		2022				
	Unsecured carrying amount	Secured carrying amount				
		a	b	Of which secured by collateral c	Of which secured by financial guarantees	
					Of which secured by credit derivatives d	
1	Loans and advances	567,731	740,029	639,839	100,190	3,027
2	Debt securities	139,059	640	39	601	—
3	Total	706,790	740,669	639,878	100,791	3,027
4	Of which non-performing exposures	21,270	16,014	13,815	2,199	—
EU-5	Of which defaulted*	11,887	12,718	12,452	265	—

*Defaulted information net of provisions

Table 48.IRB approach. Credit risk mitigation techniques: credit derivatives and personal guarantees

Original hedged exposure by collateral type and exposure category	2023		2022	
	Financial guarantees	Personal guarantees	Financial Guarantees	Personal guarantees
IRB Approach	—	—	—	—
Central administrations and banks	—	—	—	—
Institutions	—	3,249	49	11,603
Corporates	364	66,519	1,816	64,486
Retail	—	9,824	—	11,749
Total	364	79,591	1,865	87,838

The following table shows the impact of the credit derivatives used as credit mitigation techniques in RWA.

Table 49.CR7 - IRB approach - Effect on the RWEAs of credit derivatives used as CRM techniques

EUR million		2023	
		Pre-credit derivatives RWA	Actual RWA
		a	b
1	Exposures under FIRB	69,856	69,769
2	Central governments and central banks	—	—
3	Institutions	6,544	6,457
4	Corporates	63,312	63,312
4.1	of which Corporates - SMEs	606	606
4.2	of which Corporates - Specialised lending	14,123	14,123
5	Exposures under AIRB	138,204	138,204
6	Central governments and central banks	—	—
7	Institutions	908	908
8	Corporates	54,252	54,252
8.1	of Corporates - which SMEs	18,002	18,002
8.2	of which Corporates - Specialised lending	—	—
9	Retail	83,043	83,043
9.1	collateral	4,157	4,157
9.2	property collateral	44,584	44,584
9.3	of which Retail - Qualifying revolving	4,528	4,528
9.4	of which Retail - SMEs - Other	9,082	9,082
9.5	of which Retail - Non-SMEs- Other	20,693	20,693
10	Total	208,060	207,973

CCPs are excluded

In the calculation of regulatory capital for exposures under the AIRB approach, the effects of credit risk mitigation of hedges are recognised through the credit risk parameters, depending on the technique to be used depending on the type of collateral involved, real or personal. This mitigation process will be carried out provided that the collateral has been tested for validity and is considered eligible for application.

In relation to personal guarantees, the substitution method is applied so that, for the exposure covered by the personal guarantee, the PD and LGD of the holder are substituted for those of the guarantor, provided that the resulting risk-weighted assets and the expected loss are lower than those estimated with the PD and LGD of the holder. Similarly, if the guarantor belongs to a standardised portfolio, the risk-weighted assets are directly substituted for those of the guarantor calculated under the standardized approach.

In relation to collateral, in general, its effect is reflected in the final value of the estimated LGD. For this purpose, potentially significant factors such as the type of collateral, the type of product or, in the case of mortgage collateral, the LTV are taken into account in the estimation.

Table 50.CR7-A - IRB approach - Disclosure of the extent of the use of CRM techniques

EUR million														2023	
Credit risk Mitigation techniques														Credit risk Mitigation methods in the calculation of RWEAs	
A-IRB	Total exposures	Funded credit Protection (FCP)						Unfunded credit Protection (UFCP)							
		Part of exposures covered by Financial Collaterals (%)	Part of exposures covered by Other eligible collaterals (%)			Part of exposures covered by Other funded credit protection (%)			Part of exposures covered by Guarantees (%)	Part of exposures covered by Credit Derivatives (%)	RWEA without substitution effects (reduction effects only)	RWEA with substitution effects (both reduction and substitution effects)			
			Part of exposures covered by Immovable property Collaterals (%)	Part of exposures covered by Receivables (%)	Part of exposures covered by Other physical collateral (%)	Part of exposures covered by Cash on deposit (%)	Part of exposures covered by Life insurance policies (%)	Part of exposures covered by Instruments held by a third party (%)							
a	b	c	d	e	f	g	h	i	j	k	l	m	n		
1	Central governments and central banks														
2	Institutions	2,748	— %	74.42 %	— %	— %	74.42 %	— %	— %	— %	— %	— %	954	908	
3	Corporates	72,615	3.59 %	19.92 %	16.18 %	0.03 %	3.71 %	— %	— %	— %	— %	— %	55,018	54,252	
3.1	Of which Corporates - SMEs	28,896	3.00 %	34.29 %	27.83 %	0.06 %	6.40 %	— %	— %	— %	— %	— %	16,619	18,002	
3.2	Of which Corporates - Specialised lending												—		
3.3	Of which Corporates - Other	43,719	3.98 %	10.43 %	8.48 %	0.01 %	1.94 %	— %	— %	— %	— %	— %	38,399	36,250	
4	Retail	366,650	0.17 %	83.94 %	79.32 %	— %	4.62 %	— %	— %	— %	— %	— %	82,738	83,043	
4.1	Of which Retail - Immovable property SMEs	14,548	0.04 %	95.76 %	95.76 %	— %	— %	— %	— %	— %	— %	— %	4,222	4,157	
4.2	Of which Retail - Immovable property non-SMEs	278,141	— %	99.48 %	99.48 %	— %	— %	— %	— %	— %	— %	— %	44,584	44,584	
4.3	Of which Retail - Qualifying revolving	13,074	— %	— %	— %	— %	— %	— %	— %	— %	— %	— %	4,528	4,528	
4.4	Of which Retail - Other SMEs	18,498	1.06 %	14.84 %	0.66 %	0.04 %	14.15 %	0.01 %	— %	0.01 %	— %	— %	8,708	9,082	
4.5	Of which Retail - Other non-SMEs	42,389	0.97 %	33.98 %	0.18 %	— %	33.80 %	0.04 %	— %	0.04 %	— %	— %	20,696	20,693	
5	Total	442,013	0.73 %	73.37 %	68.45 %	0.01 %	4.91 %	— %	— %	— %	— %	— %	138,709	138,204	

Phased-in IFRS9

Table 50.CR7-A - IRB approach - Disclosure of the extent of the use of CRM techniques

EUR million

2023

F-IRB	Credit risk Mitigation techniques												Credit risk Mitigation methods in the calculation of RWEAs	
	Funded credit Protection (FCP)											Unfunded credit Protection (UFCP)		
	Total exposures	Part of exposures covered by Other eligible collaterals (%)				Part of exposures covered by Other funded credit protection (%)				Part of exposures covered by Guarantees (%)	Part of exposures covered by Credit Derivatives (%)	RWEA without substitution effects (reduction effects only)	RWEA with substitution effects (both reduction and substitution effects)	
		Part of exposures covered by Financial Collaterals (%)	Part of exposures covered by Immovable property Collaterals (%)	Part of exposures covered by Receivables (%)	Part of exposures covered by Other physical collateral (%)	Part of exposures covered by Cash on deposit (%)	Part of exposures covered by Life insurance policies (%)	Part of exposures covered by Instruments held by a third party (%)						
a	b	c	d	e	f	g	h	i	j	k	l	m	n	
1	Central governments and central banks													
2	Institutions	20,881	2.19 %	0.56 %	0.06 %	— %	0.50 %	— %	— %	— %	— %	— %	8,963	6,457
3	Corporates	155,679	3.79 %	3.49 %	2.83 %	0.43 %	0.23 %	0.11 %	0.11 %	— %	— %	— %	68,564	63,312
3.1	Of which Corporates - SMEs	1,401	— %	12.59 %	12.59 %	— %	— %	— %	— %	— %	— %	— %	606	606
3.2	Of which Corporates - Specialised lending	21,396	— %	— %	— %	— %	— %	— %	— %	— %	— %	— %	16,042	14,123
3.3	Of which Corporates - Other	132,882	4.44 %	3.96 %	3.18 %	0.50 %	0.28 %	0.13 %	0.13 %	— %	— %	— %	51,915	48,583
4	Total	176,561	3.60 %	3.14 %	2.50 %	0.38 %	0.27 %	0.10 %	0.10 %	— %	— %	— %	77,527	69,769

Phased-in IFRS9

4.8. Asset impairment losses: influencing factors and comparative analysis

In addition to the advanced models described (which are detailed in the economic capital section), other metrics are used to help ensure prudent and effective credit risk management based on an assessment of losses on the portfolios.

Credit risk is monitored continuously and comprehensively, to ensure the early identification of incidents involving risk that could affect customers' credit ratings. This monitoring is carried out through the periodic review of all customers, the allocation of a monitoring score, the establishment of predefined actions associated with each category and the implementation of specific measures (predefined or ad-hoc) to correct potential deviations that could have negative impact on the entity.

The analysis of credit risk involves continuous and systematic comparison to budgets, limits and standards, assessing the effects of future external events and strategic decisions, to establish measures that ensure the risk profile and volume are within the established parameters and aligned with the appetite established by the group.

The main metric used to measure and control the credit risk at the Group is the cost of credit. This ratio quantifies loan-loss provisions arising from credit risk over a defined period of time for a given loan portfolio. As such, it acts as an indicator of the group's credit quality.

The loan-loss provisions are calculated under the IFRS 9 standards.

The basic structure for the impairment recognition phases is as follows, from lower to higher credit quality impairment (Stage 1 to 3):

- Stage 1: expected credit losses over the next twelve months
- Stage 2: The impairment provision reflects expected losses from defaults over the financial instrument's residual life.
- Stage 3: The impairment provision reflects expected losses from defaults over the financial instrument's residual life.

In this stage, the calculation considers that loss events have already occurred and, therefore, the only possible scenario is that they will materialize in losses.

A significant increase in credit risk determines the transition from the first phase to the second phase.

For further details on the key credit risk figures, see the Risk management and control chapter of the 2022 Annual Report.



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4.9. Backtesting of IRB parameters

4.9.1. Backtesting of PD

The aim of the backtesting of PD is to assess the suitability of regulatory PDs by comparing them with the Observed Default Frequencies (ODFs) during the most recent period.

This comparison applies the quantitative study required by the European Banking Authority (EBA) in its Guidelines on disclosure requirements under part eight of the capital requirements regulation (EU) No 575/2013, of August 2017.

This proposes reporting information for backtesting PD in accordance with Template 24: - Internal ratings-based approach (IRB) - Back-testing of PD per exposure class.

For further details on PD backtesting (in accordance with the format of table CR9), see Appendix XVIII. A summary of the conclusions from the results obtained can be found below:

Regulatory PDs are consistent with observed historical default rates, although the following relevant facts can be highlighted:

- Overall regulatory PDs are on average higher than observed default rates, both in the last year and from a historical perspective. This situation is generally a reflection of: 1) the conservatism adopted in the estimation of the parameters and 2) the progressive reflection, albeit interrupted in recent years by the covid period, of a better economic situation once the recession that began in 2008 has been overcome. All this tends to reduce the observed default frequencies. The exceptions to this situation are minimal and are generally due to idiosyncratic factors of the portfolios that have nothing to do with the economic situation, such as the integration processes of acquired entities.
- Particularly noteworthy is the good performance of the retail portfolios of non-SME mortgages and cards, where the differences between the model's PDs and levels of NPLs are more notable. Moreover, thanks to the considerable volume of these portfolios, the PD and default rate values maintain monotony for the different PD intervals, giving greater robustness to the results.
- In the case of the portfolios of Large Corporates and Financial Institutions, where point (f) of article 180 (1) of the CRR is being applied for the estimation of PD, it is noted that the low number of defaults produces occasional inconsistencies in some ranges and makes comparability with the average PD per obligor difficult, and differences may exist if PD is weighted by exposure.

For more information on PD backtesting results, see Annex XIX, Annex XX, Annex XXI and Annex XXII.



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4.9.2. Backtesting of EAD

In order to compare the suitability of the estimated credit conversion factors (CCFs), the estimated parameters are compared with the actual CCFs in the most recent period. Given the downturn nature of the regulatory parameter, the estimated conversion factors are expected to exceed those observed. For this reason, the comparison must be placed in the context of the economic circumstances in which the contrast is made, although EAD is not a parameter that is particularly sensitive to the economic cycle.

Additionally, calculations of the so-called "coverage ratios" are performed, where the assigned EAD is compared with the default balance or observed EAD. Values above 100% are indicative of a suitable degree of conservatism.

4.9.3. Backtesting of LGD

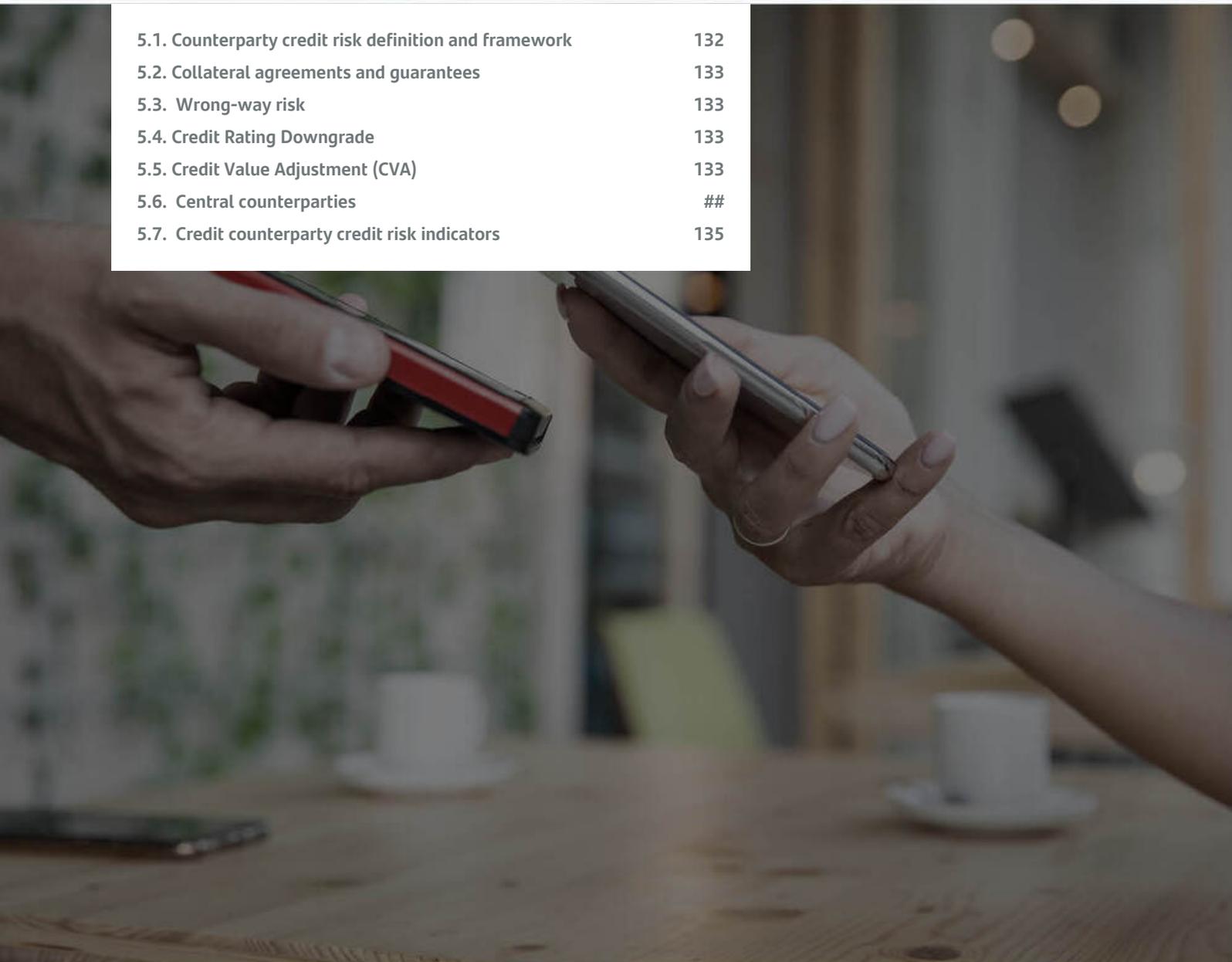
As for the rest of the parameters, the LGD estimates are compared with the LGD realised in the most recent period. Given the downturn nature of the regulatory parameter, the estimated LGDs are expected to exceed those observed. For this reason, the comparison must be placed in the context of the economic circumstances in which the contrast is made, particularly taking into account the typical sensitivity to the cycle of the parameter, especially in portfolios where the collateral is sensitive to the economic cycle.

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5. Counterparty credit risk

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5. COUNTERPARTY CREDIT RISK

Counterparty credit risk is the risk that a customer will default before the final settlement of a transaction's cash flows. It creates a bilateral credit risk because it can affect both parties to a transaction. It is also uncertain because it depends on market factors, which can be volatile.

This chapter analyzes in detail Grupo Santander's counterparty credit risk profile from several approaches: geography, type of financial contract, calculation method and notional value. It also focuses on regulatory indicators (EAD and RWA).

Main figures

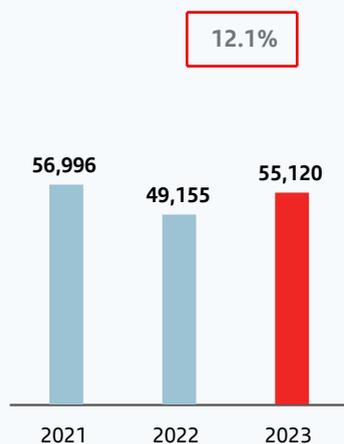
EUR million	EAD		RWA	
	2023	2022	2023	2022
Counterparty credit risk*	55,120	49,155	13,343	12,895
Of which the standardised approach	44,642	39,138	12,663	11,798
Of which internal model method (IMM)	—	—	—	—
Of which exposures to a CCPs**	3,653	3,799	73	76
Of which credit valuation adjustment - CVA	10,478	10,017	680	1,097

*Includes counterparty credit risk + CVA

**Does not include CCPs exposures corresponding to pre-funded default fund contributions and unfunded default fund contributions.

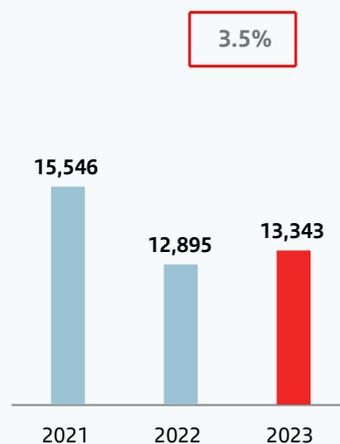
EAD variation

EUR million



RWA variation

EUR million



5.1 Counterparty credit risk definition and framework

This section covers the qualitative requirement CCRA - Qualitative disclosure related to CCR. It also complies with (d), (e), (f) and (g) of the OVA Requirement - Institution risk management approach.

Chapter 6 of the CRR (Regulation (EU) No 575/2013) describes counterparty credit risk as the risk a counterparty to a transaction could default before the final settlement of the transaction's cash flows. It includes the following transaction types: derivative instruments, repurchase agreements,

securities or commodities lending, long settlement transactions and lending transactions with margin replacement.

Santander includes counterparty credit risk in its Credit Risk Framework.

For management purposes, it also has a specific counterparty credit risk model, policy and procedures.

This risk is controlled using an integrated system that provides real-time information so that exposures can be checked on a daily basis against the limits approved by senior management for any counterparty, product or maturity, in any the Group unit.

Specific counterparty credit risk limits are included in the overall credit risk limits and counterparty credit risk is independently monitored and controlled. These limits are set and reviewed in accordance with the appetite set by the board. The definition of limits and appetite metrics are reviewed and updated every year.

There are two methodologies for the measurement of credit risk equivalent (CRE): a mark-to-market (MtM, replacement cost in the case of derivatives) methodology with an add-on for potential future exposure; and a methodology including calculation of exposure using Monte Carlo simulation, which is used in certain geographies and for some products.

In addition, quarterly stress tests are conducted for credit risk equivalent and the results are reported to senior management.

Credit risk equivalent is used to calculate capital at risk or unexpected loss, i.e. the loss in economic capital once expected loss is subtracted, net of guarantees and recoveries.

Every quarter, the risk teams report to senior management on the main risk metrics (exposure, MtM, notional amounts) of the group's Counterparty Credit Risk portfolio broken down by geography and segment.

5.2. Collateral agreements and guarantees

A policy is applied to regulate eligibility criteria for eligible collaterals and applicable haircuts complying with the Variation and Initial Margin regulatory requirements. The policy applies to derivatives, repo and securities lending transactions.

Transactions subject to collateral agreements are valued daily and on that valuation, the parameters agreed in the collateral agreement are applied, giving an amount of collateral to be called from, or returned to, the counterparty.

The counterparty that receives the margin call checks the valuation, at which point discrepancies may arise.

A monitoring committee (discrepancies committee) meets weekly to analyse transactions in which significant discrepancies have been detected, and manages them with Risk teams to ensure they are valued correctly.

5.3. Wrong-way risk

Wrong-way risk exists when the potential exposure of a transaction with a counterparty is highly and positively (adversely) correlated with the credit rating of the counterparty, i.e. if the counterparty's credit rating deteriorates, potential exposure increases.

The criterion used by the Group for calculating the credit exposure of derivatives with specific wrong way risk (WWR) is very conservative, as exposure to derivatives with WWR resembles exposure to basic financing. In very specific exceptions, a decision may be taken to calculate the stressed credit exposure for the derivative, to provide incentives for short-term transactions with customers with good ratings and liquid underlyings with collateralisation mechanisms in the derivatives.

Santander has defined criteria to identify transactions subject to specific wrong way risk on the basis of the legal connection between the counterparty and the issuer of the underlying instrument. Additionally, a method for measuring general wrong way risk has also been defined.

Where most collateral is in cash, there is practically no risk of adverse effects arising from specific correlations between the collateral and the collateral provider. Any adverse effects arising from correlations in non-cash collateral are immaterial since issuances from the same counterparty and its subsidiaries are excluded from collateral eligibility policies.

5.4. Credit rating downgrade

It is estimated that if our credit rating was downgraded and it was required to post additional collateral, the impact of collateral would be relatively limited. This is because the Group's credit rating affects only a small percentage of its current collateral agreements. In the event of a hypothetical one-notch downgrade in the group's credit rating, it is estimated that the resulting impact of the collateral it would have to post would be €428 million.

5.5. Credit value adjustment (CVA)

The team responsible for managing counterparty credit risk in each geography charges the corresponding treasury desk a credit premium at the start of each transaction, in exchange for assuming the credit risk involved.

The team can then cover the CVA sensitivities through a combination of credit derivatives, interest rate derivatives, currency derivatives and other instruments.

CVA regulatory capital is also calculated. The purpose of this charge is to improve the resilience of banks to potential losses of market value associated with a reduction in the solvency of counterparties in derivatives transactions that are not settled through clearing houses.

The following table shows the credit valuation adjustment (CVA) for the counterparty credit risk.

Table 51.CCR2 - Transactions subject to own funds requirements for CVA risk

EUR million		2023	
		a	b
		Exposure value	RWA
1	Total transactions subject to the Advanced method	—	—
2	(i) VaR component (including the 3× multiplier)	—	—
3	(ii) stressed VaR component (including the 3× multiplier)	—	—
4	Transactions subject to the Standardised method	10,478	680
EU4	Transactions subject to the Alternative approach (Based on the Original Exposure Method)	—	—
5	Total transactions subject to own funds requirements for CVA risk	10,478	680

5.6. Central counterparties

The clearing of transactions through central counterparties is a common market practice for Santander. As a member of the clearing houses with which it operates, the bank contributes to their risk management framework through payments into the default fund, in addition to daily margin calls.

The risk associated with this type of counterparty is managed through the credit risk framework.

The following tables show central counterparty (CCP) exposure following risk mitigation techniques.

Table 52.CCR8 - Exposures to CCPs

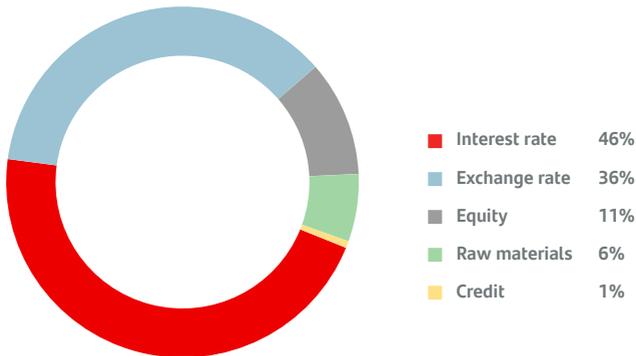
EUR million		2023	
		a	b
		EAD (post CRM)	RWA
1	Exposures to QCCPs (total)	—	324
2	of which	3,653	73
3	(i) OTC derivatives	2,083	42
4	(ii) Exchange-traded derivatives	491	10
5	(iii) Securities financing transactions	1,078	22
6	(iv) Netting sets where cross-product netting has been approved	—	—
7	Segregated initial margin	—	—
8	Non-segregated initial margin	—	—
9	Pre-funded default fund contributions	1,249	251
10	Unfunded default fund contributions	1,497	—
11	Exposures to non-QCCPs (total)	—	—
12	contributions); of which	—	—
13	(i) OTC derivatives	—	—
14	(ii) Exchange-traded derivatives	—	—
15	(iii) Securities financing transactions	—	—
16	(iv) Netting sets where cross-product netting has been approved	—	—
17	Segregated initial margin	—	—
18	Non-segregated initial margin	—	—
19	Pre-funded default fund contributions	—	—
20	Unfunded default fund contributions	—	—

5.7. Credit counterparty credit risk indicators

The following table shows a breakdown of derivatives exposure by the type of product, category, geographical area and rating of the counterparty:

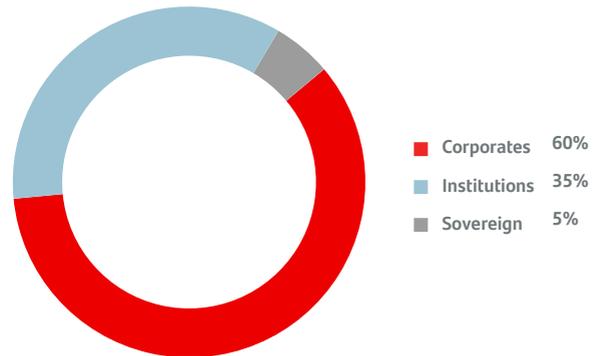
Derivatives exposure by product

%



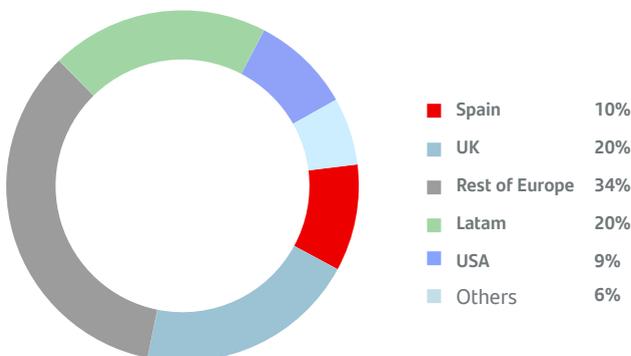
Derivatives exposure by category

%



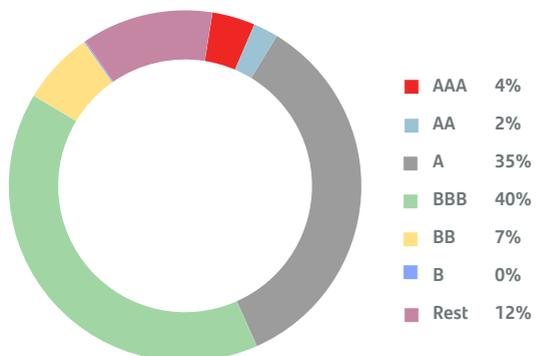
Derivatives exposure by geography

%



Derivatives exposure by rating

%



In 2023, exposure to counterparty credit risk from derivative transactions was concentrated in counterparties with high credit quality, so that around 41% of the exposure was with counterparties rated A or higher. The distribution by type of counterparty was 31% Institutions, 5% in Sovereigns and 60% Corporates.

As regards geographic distribution, 34% of the exposure was accounted for by UK counterparties with the remainder being accounted for by Spain (10%), the rest of Europe (34%), Latin America (20%), the United States (9%) and the rest of the world (6%).

The following table shows exposure to counterparty credit risk depending on the calculation methodology used.

Table 53.CCR1 - Analysis of CCR exposure by approach

EUR million									2023
		a	b	c	d	e	f	g	h
		Replacem ent cost (RC)	Potential future exposure (PFE)	EEPE	Alpha used for computing regulatory exposure value	Exposure value pre- CRM	Exposure value- post CRM	Exposure Value	RWEA
EU1	EU - Original Exposure Method (for derivatives)	—	—	—	—	—	—	—	—
EU2	EU - Simplified SA-CCR (for derivatives)	—	—	—	—	—	—	—	—
1	SA-CCR (for derivatives)	9,112	10,583	—	1.4	54,721	28,877	28,701	10,150
2	IMM (for derivatives and SFTs)	—	—	—	—	—	—	—	—
2a	Of which securities financing transactions netting sets	—	—	—	—	—	—	—	—
2b	Of which derivatives and long settlement transactions netting sets	—	—	—	—	—	—	—	—
2c	Of which from contractual cross-product netting sets	—	—	—	—	—	—	—	—
3	Financial collateral simple method (for SFTs)	—	—	—	—	—	—	—	—
4	Financial collateral comprehensive method (for SFTs)	—	—	—	—	169,892	12,289	12,289	2,439
5	VaR for SFTs	—	—	—	—	—	—	—	—
6	Total					224,613	41,166	40,990	12,590

Since June 2021, when the new European Capital Requirement Regulation (CRR) came into force, the Group has implemented the standard **SA-CCR** methodology for calculating the regulatory exposure of the derivatives portfolio.

The following table details the breakdown of counterparty credit risk exposures calculated using the standardised approach, by portfolio (counterparty type) and risk weighting (degree of risk resulting from the standardised approach):

Table 54.CCR3 - Standardised approach - CCR exposures by regulatory exposure class and risk weights

EUR million		Risk Weight											2023
													Total
		a	b	c	d	e	f	g	h	i	j	k	l
		0%	2%	4%	10%	20%	50%	70%	75%	100%	150%	Others	Total
1	Central governments or central banks	3,487	—	46	—	20	—	—	—	—	—	—	3,553
2	Regional government or local authorities	102	—	—	—	152	—	—	—	—	—	—	254
3	Public sector entities	14	—	—	—	13	57	—	—	—	—	—	85
4	Multilateral development banks	1,174	—	—	—	—	—	—	—	—	—	—	1,174
5	International organisations	4	—	—	—	—	—	—	—	—	—	—	4
6	Institutions	—	3,783	—	—	757	611	—	—	114	—	—	5,264
7	Corporates	—	—	—	—	28	27	—	—	3,572	10	—	3,637
8	Retail	—	—	—	—	—	—	—	104	—	—	—	104
9	Institutions and corporates with a short-term credit assessment	—	—	—	—	—	1	—	—	5	—	—	6
10	Other items	—	—	—	—	—	—	—	—	7	—	—	7
11	Total	4,781	3,783	46	—	970	695	—	104	3,698	11	—	14,088

CCR3 - Standardised approach - CCR exposures by regulatory exposure class and risk weights (31.12.2022)

EUR million		Risk Weight											2022
													Total
		a	b	c	d	e	f	g	h	i	j	k	l
		0%	2%	4%	10%	20%	50%	70%	75%	100%	150%	Others	Total
1	Central governments or central banks	2,784	—	—	—	74	4	—	—	—	—	—	2,862
2	Regional government or local authorities	8	—	—	—	210	—	—	—	—	—	—	218
3	Public sector entities	16	—	—	—	—	77	—	—	2	—	—	95
4	Multilateral development banks	552	—	—	—	—	—	—	—	—	—	—	552
5	International organisations	17	—	—	—	—	—	—	—	—	—	—	17
6	Institutions	1	3,799	—	—	853	387	—	—	102	—	—	5,142
7	Corporates	—	—	—	—	22	30	—	—	2,605	15	—	2,673
8	Retail	—	—	—	—	—	—	—	357	—	—	—	357
9	Institutions and corporates with a short-term credit assessment	—	—	—	—	—	7	—	—	—	6	—	13
10	Other items	—	—	—	—	—	—	—	—	18	—	—	18
11	Total	3,378	3,799	—	—	1,159	504	—	357	2,727	22	—	11,947

The following table shows a breakdown of counterparty credit risk exposure by portfolio and PD scale (excluding CCPs and specialised lending).

Table 55.CCR4 - AIRB approach - CCR exposures by exposure class and PD scale

EUR million

								2023
a	b	c	d	e	f	g	h	
PD scale	Exposure value	Exposure weighted average PD (%)	Number of obligors	Exposure weighted average LGD (%)	weighted average maturity (years)	RWEA	Density of risk weighted exposure amount	
Institutions								
1	0.00 < 0.15	0	— %	0	— %	0	—	
2	0.15 < 0.25	0	— %	0	— %	0	—	
3	0.25 < 0.50	0	— %	0	— %	0	—	
4	0.50 < 0.75	5	0.62 %	3	10.56 %	3	1	
5	0.75 < 2.50	75	1.02 %	7	21.46 %	5	46	
6	2.50 < 10.00	1	2.53 %	1	45.00 %	2	1	
7	10.00 < 100.00	0	— %	0	— %	0	—	
8	100.00 (Default)	0	— %	0	— %	0	—	
9	Sub-total	82	1.02 %	11	21.08 %	5	48	
Corporates								
1	0.00 < 0.15	0	— %	0	— %	0	—	
2	0.15 < 0.25	21	0.21 %	342	43.43 %	2	9	
3	0.25 < 0.50	46	0.44 %	51	43.72 %	0	18	
4	0.50 < 0.75	372	0.58 %	776	40.19 %	2	258	
5	0.75 < 2.50	88	1.73 %	480	40.40 %	2	85	
6	2.50 < 10.00	63	3.64 %	273	39.85 %	2	79	
7	10.00 < 100.00	4	16.87 %	54	39.88 %	1	9	
8	100.00 (Default)	8	100.00 %	26	76.24 %	1	5	
9	Sub-total	602	2.46 %	2,002	41.04 %	2	462	
Retail								
1	0.00 < 0.15	7	0.13 %	51,266	87.60 %	—	2	
2	0.15 < 0.25	—	0.20 %	1,838	87.59 %	—	—	
3	0.25 < 0.50	—	— %	0	— %	—	—	
4	0.50 < 0.75	—	0.54 %	2,241	87.59 %	—	—	
5	0.75 < 2.50	—	1.58 %	3,070	74.40 %	—	—	
6	2.50 < 10.00	—	6.90 %	2,388	87.59 %	—	—	
7	10.00 < 100.00	—	19.97 %	34	87.59 %	—	—	
8	100.00 (Default)	—	100.00 %	210	67.12 %	—	—	
9	Sub-total	8	0.87 %	61,047	87.00 %	—	3	

CCR4 - AIRB approach - CCR exposures by exposure class and PD scale (31.12.2022)

EUR million

							2022	
a	b	c	d	e	f	g	h	
PD scale	Exposure value	Exposure weighted average PD (%)	Number of obligors	Exposure weighted average LGD (%)	weighted average maturity (years)	RWEA	Density of risk weighted exposure amount	
Institutions								
1	0.00 < 0.15	11,975	0.06 %	1,021	43.74 %	1	1,992	16.64 %
2	0.15 < 0.25	976	0.19 %	105	44.48 %	1	400	41.00 %
3	0.25 < 0.50	306	0.33 %	123	42.67 %	0	150	48.99 %
4	0.50 < 0.75	99	0.66 %	31	41.52 %	0	69	69.65 %
5	0.75 < 2.50	9	1.91 %	41	44.39 %	1	12	128.18 %
6	2.50 < 10.00	71	2.89 %	31	21.35 %	5	58	82.00 %
7	10.00 < 100.00	69	45.00 %	77	41.59 %	1	213	309.15 %
8	100.00 (Default)	0	— %	0	— %	0	—	— %
9	Sub-total	13,506	0.33 %	1,429	43.63 %	1	2,895	21.44 %
Corporates								
1	0.00 < 0.15	8,529	0.09 %	368	44.96 %	2	2,168	25.42 %
2	0.15 < 0.25	865	0.22 %	534	44.97 %	3	501	57.85 %
3	0.25 < 0.50	360	0.37 %	215	44.93 %	2	233	64.81 %
4	0.50 < 0.75	849	0.59 %	837	42.58 %	2	667	78.53 %
5	0.75 < 2.50	208	1.43 %	495	43.78 %	2	224	107.87 %
6	2.50 < 10.00	158	3.23 %	255	42.00 %	2	201	126.99 %
7	10.00 < 100.00	34	21.58 %	85	43.65 %	1	85	254.19 %
8	100.00 (Default)	5	100.00 %	395	24.50 %	2	—	1.33 %
9	Sub-total	11,008	0.32 %	3,184	44.70 %	2	4,079	37.06 %
Retail								
1	0.00 < 0.15	11	0.12 %	19,735	59.57 %		2	18.21 %
2	0.15 < 0.25	—	0.19 %	771	59.46 %		—	24.39 %
3	0.25 < 0.50							
4	0.50 < 0.75	—	0.51 %	1,246	57.27 %	0	—	44.10 %
5	0.75 < 2.50	1	1.33 %	2,707	50.53 %	0	1	56.34 %
6	2.50 < 10.00	—	6.74 %	1,275	59.38 %	0	—	94.93 %
7	10.00 < 100.00	—	— %	1	— %	0	—	— %
8	100.00 (Default)	—	100.00 %	301	66.14 %	0	—	86.89 %
9	Sub-total	13	0.57 %	26,036	58.49 %	0	3	24.74 %

Table 56.CCR4 - FIRB approach - CCR exposures by exposure class and PD scale

EUR million

								2023
a	b	c	d	e	f	g	h	
PD scale	Exposure value	Exposure weighted average PD (%)	Number of obligors	Exposure weighted average LGD (%)	weighted average maturity (years)	RWEA	Density of risk weighted exposure amount	
Institutions								
1	0.00 < 0.15	14,123	0.06 %	1,214	44.21 %	0	2,041	14 %
2	0.15 < 0.25	824	0.18 %	122	45.00 %	0	290	35 %
3	0.25 < 0.50	392	0.34 %	159	45.00 %	1	233	59 %
4	0.50 < 0.75	66	0.66 %	38	45.00 %	1	61	93 %
5	0.75 < 2.50	47	1.73 %	28	45.00 %	—	56	120 %
6	2.50 < 10.00	6	2.89 %	23	45.00 %	0	10	150 %
7	10.00 < 100.00	58	45.00 %	53	45.00 %	0	191	328 %
8	100.00 (Default)	1	100.00 %	2	45.00 %	0	0	— %
9	Sub-total	15,517	0.25 %	1,639	44.28 %	0	2,881	19 %
Corporates								
1	0.00 < 0.15	10,038	0.08 %	498	45.00 %	2	2,275	23 %
2	0.15 < 0.25	1,055	0.22 %	217	45.00 %	2	514	49 %
3	0.25 < 0.50	559	0.36 %	198	45.00 %	2	338	60 %
4	0.50 < 0.75	507	0.61 %	99	45.00 %	2	393	78 %
5	0.75 < 2.50	138	1.30 %	78	45.00 %	2	161	117 %
6	2.50 < 10.00	8	3.73 %	17	45.00 %	2	13	159 %
7	10.00 < 100.00	13	18.50 %	68	45.00 %	2	36	273 %
8	100.00 (Default)	0	100.00 %	6	45.00 %	3	0	— %
9	Sub-total	12,319	0.16 %	1,181	45.00 %	2	3,731	30 %

CCR4 - FIRB approach - CCR exposures by exposure class and PD scale (31.12.2022)

EUR million

								2022
a	b	c	d	e	f	g	h	
PD scale	Exposure value	Exposure weighted average PD (%)	Number of obligors	Exposure weighted average LGD (%)	weighted average maturity (years)	RWEA	Density of risk weighted exposure amount	
Institutions								
1	0.00 < 0.15	636	0.08 %	84	45.00 %	1	120	18.84 %
2	0.15 < 0.25	61	0.17 %	17	45.00 %	1	24	38.79 %
3	0.25 < 0.50	66	0.32 %	24	45.00 %	1	39	60.06 %
4	0.50 < 0.75	4	0.67 %	12	45.00 %	1	5	103.00 %
5	0.75 < 2.50	0	— %	0	— %	0	0	— %
6	2.50 < 10.00	1	9.55 %	3	45.00 %	1	2	263.03 %
7	10.00 < 100.00	0	45.00 %	1	45.00 %	0	1	323.62 %
8	100.00 (Default)							
9	Sub-total	768	0.13 %	141	45.00 %	1	190	24.72 %
Corporates								
1	0.00 < 0.15	243	0.11 %	26	45.00 %	1	65	26.82 %
2	0.15 < 0.25	105	0.22 %	5	45.00 %	3	58	55.32 %
3	0.25 < 0.50	1	0.37 %	8	45.00 %	2	1	71.39 %
4	0.50 < 0.75	1	0.61 %	6	45.00 %	3	1	90.13 %
5	0.75 < 2.50	3	1.00 %	4	45.00 %	2	2	95.24 %
6	2.50 < 10.00	0	2.70 %	1	45.00 %	3	1	148.02 %
7	10.00 < 100.00	4	19.91 %	38	45.00 %	1	11	258.27 %
8	100.00 (Default)							
9	Sub-total	357	0.38 %	88	45.00 %	2	139	38.83 %

The following table shows a summary of the effects of netting agreements and collateral for exposure to counterparty credit risk, in addition to the type of collateral exchanges in derivatives transactions and securities financing transactions (SFTs).

Table 57.CCR5 - Composition of collateral for CCR exposures

		2023													
		a		b		c		d		e		f		g	
		Collateral used in derivative transactions				Collateral used in SFTs									
		Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received		Fair value of posted collateral							
		Segregated	Unsegregated	Segregated	Unsegregated	Segregated	Unsegregated	Segregated	Unsegregated	Segregated	Unsegregated	Segregated	Unsegregated	Segregated	Unsegregated
1	Cash - domestic currency	31	10,200	273	6,167	271	144,922	528	112,619						
2	Cash - other currencies	91	5,911	1,269	7,242	95	49,207	143	38,784						
3	Domestic sovereign debt	1,320	736	7,562	285	328	101,205	8,722	113,274						
4	Other sovereign debt	1,840	696	1,956	89	319	53,860	2,604	44,362						
5	Government agency debt	—	—	2	—	—	174	9	289						
6	Corporate bonds	257	96	78	169	2,249	37,518	2,757	53,100						
7	Shares	855	26	550	—	7,394	5,099	11,173	2,837						
8	Other collateral	—	—	—	—	—	—	—	—						
9	Total	4,394	17,665	11,689	13,952	10,657	391,984	25,936	365,265						

Table 58.CCR6 - Credit derivatives exposures

		2023	
		a	b
		Credit derivatives hedges	
		Protection bought	Protection sold
Notionals		—	—
1	Single-name credit default swaps	7,972	6,549
2	Index credit default swaps	7,100	2,241
3	Total return swaps	467	—
4	Credit options	—	—
5	Other credit derivatives	—	—
6	Total notionals	15,539	8,790
Fair values		—	—
7	Positive fair value (asset)	197	298
8	Negative fair value (liability)	(596)	(74)

Bought credit derivatives do include loan coverage

CCR6 - Credit derivatives exposures (31.12.2022)

EUR million

		2022	
		a	b
		Credit derivatives hedges	
		Protection bought	Protection sold
Notionals		—	—
1	Single-name credit default swaps	6,608	2,952
2	Index credit default swaps	4,301	231
3	Total return swaps	467	—
4	Credit options	—	—
5	Other credit derivatives	—	—
6	Total notionals	11,375	3,183
Fair values		—	—
7	Positive fair value (asset)	223	67
8	Negative fair value (liability)	(127)	(27)

Bought credit derivatives do include loan coverage

Table CCR7- Statement of flows of risk-weighted amounts of counterparty exposures subject to IMM is not included as Santander does not have an internal model to calculate counterparty risk EAD.

For more information, see the 'Risk compliance & conduct management' chapter of the 2023 Annual Report.



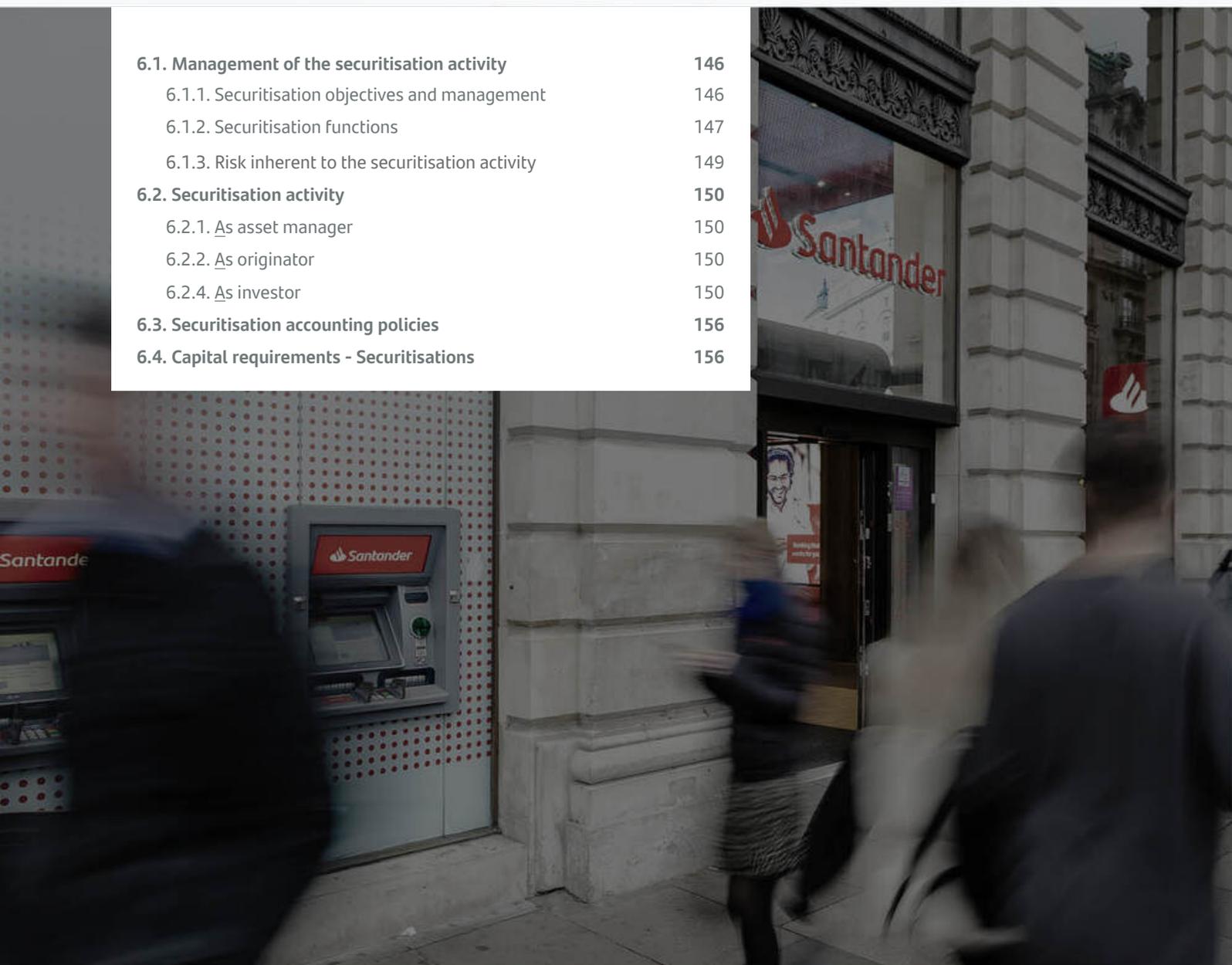
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6. Credit risk - Securitisations

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6. CREDIT RISK - SECURITISATIONS

This chapter provides details of Grupo Santander's securitisation activity. It also describes the basic concepts in securitisations and summarises the objectives and functions that Grupo Santander performs in the management of securitisation activity.

Main figures

Million euros	EAD		RWA*	
	2023	2022	2023	2022
Securitisation exposures in banking book	68,684	57,007	11,419	9,898

*It does not include 1250% deductions.

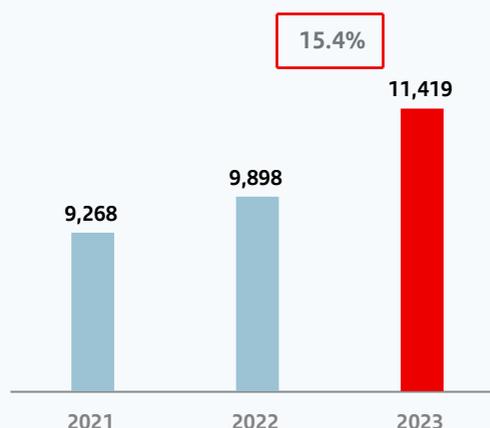
EAD variation

Million euros



RWA variation

Million euros



6.1. Management of the securitisation activity

This section covers the qualitative requirement SECA - Qualitative disclosure requirements related to securitisation exposures. Letters (d), (e), (f) e (i) are not applicable to Santander. Also the provisions of letters (d), (e), (f) and (g) of the OVA requirement - Institution risk management approach, are complied with.

6.1.1. Securitisation objectives and management

Santander pursues various objectives through its securitisation activity:

- **Management and diversification of credit risk:** the group aims to mitigate risk that arises naturally from growth in its commercial activity through securitisation transactions and the subsequent transfer of credit risk to third parties. The effective transfer of risk achieved through these transactions enables the group to optimise its credit risk exposure and contributes to value creation by reducing Banco Santander's need to retain own funds.
- **Optimization of capital consumption:** significantly transferring risk allows for reductions in capital consumption contributing to this objective. 2023 gave rise to 26 new transactions that benefit from the new securitization framework.
- **Obtaining liquidity:** securitisation enables Santander to mobilise its balance sheet by transforming illiquid assets into liquid assets and obtain wholesale funding by selling the transformed assets or using them as collateral. Retained securitisation positions can also be used as collateral for ECB and Bank of England.

- **Diversifying funding sources:** the liquidity obtained from securitisation allows the Group to diversify its funding sources, in terms of maturity and product type.

The Financial Management division draws up the issuances and securitisations plan for each Santander subsidiary/global business annually, on the basis of the liquidity plan and considering certain prudential limits on raising short-term market funding.

Grupo Santander also has a robust governance process for all securitisations intended to transfer risk. Said review assesses transactions from a risk, capital, regulatory and economic approach.

6.1.2. Securitisation functions

Santander's role in the securitization process is mainly that of originator – i.e. the entity that creates the exposures (underlying assets) subsequently traditionally or synthetically securitized. Apart from being the originator, Santander also generally manages the underlying portfolio (servicing).

In traditional securitizations, Santander usually also acts as the facilitator for credit enhancements (subordinated loan,

credit facilities or interest-rate swaps or caps) necessary for the securitisation fund that has acquired the loans and will subsequently issue the notes that typically have an external rating.

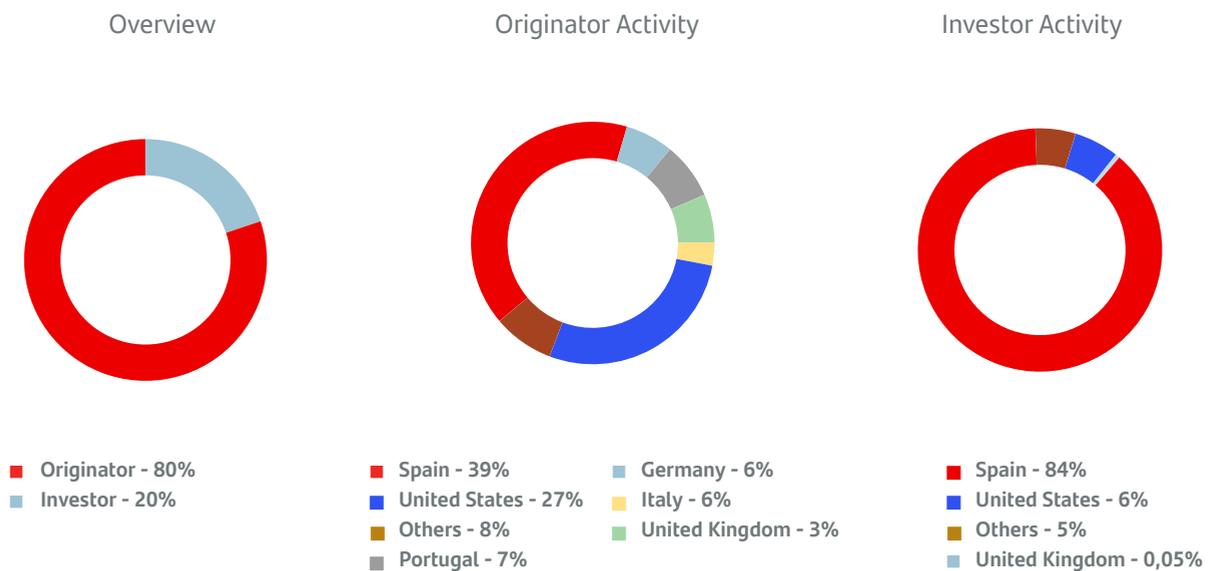
Santander also structures and places its own securitizations, as it does for third parties, and leads and promotes new structures in various jurisdictions for both funding and risk transfer purposes. This activity is carried out against a backdrop of securitization revival as a tool for channelling credit to the real economy, with a special focus on SMEs and consumer loans.

Conversely, Santander also acts as an investor, acquiring securitization positions originated by non-Santander entities.

Finally, Grupo Santander is sponsor of a securitisation whose underlying is the short-term receivables on individual debtors issued by a corporate client in the energy sector.

The following diagram depicts the distribution of the Group's exposure by activity at 31 December 2023:

Distribution of the Group's securitisation function (EAD)



The information on the securitisation positions of the investment and trading portfolio of Santander is included.

As indicated in the graph, originator activity accounts for more than 80% of Santander securitisation activity, while investment activity accounts for 20%. 66% of the volume of securitisations originated by Santander is concentrated in Spain and the United States. On the investment side, 84% of acquisitions of investment positions are concentrated in Spain and 6% in the United States, as shown in the graph on the right.

The following table gives a breakdown of the distribution of the activity carried out by Grupo Santander at 31 December 2023:

Table 59. Securitisation positions purchased and retained with risk transfer by exposure type in the banking book

EUR million

	2023						2022					
	Exposure			RWA			EAD			RWA		
	Originator	Investor	Sponsor	Originator	Investor	Sponsor	Originator	Investor	Sponsor	Originator	Investor	Sponsor
Traditional securitisations	350	21,194	—	35	3,799	—	455	17,380	—	60	3,323	—
Residential mortgages	—	3,278	—	—	517	—	—	3,216	—	—	473	—
Commercial mortgages	—	—	—	—	—	—	—	—	—	—	—	—
Credit cards	—	250	—	—	89	—	—	244	—	—	91	—
Leasing	—	30	—	—	140	—	—	81	—	—	375	—
Loans to corporates or to SMEs treated as corporates	—	4,641	—	—	958	—	—	4,356	—	—	912	—
Consumer loans	309	6,254	—	29	938	—	407	5,047	—	55	794	—
Receivables	—	947	—	—	192	—	—	1,229	—	—	184	—
Others	41	5,794	—	6	967	—	48	3,206	—	5	494	—
Resecuritisations	—	—	—	—	—	—	—	—	—	—	—	—
Securitisation positions	—	—	—	—	—	—	—	—	—	—	—	—
Synthetic securitisations	47,140	—	—	7,586	—	—	39,172	—	—	6,515	—	—
Residential mortgages	8,025	—	—	1,246	—	—	—	—	—	—	—	—
Commercial mortgages	3,200	—	—	431	—	—	18,543	—	—	2,880	—	—
Credit cards	—	—	—	—	—	—	10,990	—	—	1,974	—	—
Leasing	418	—	—	41	—	—	—	—	—	—	—	—
Loans to corporates or to SMEs treated as corporates	19,532	—	—	3,039	—	—	1,424	—	—	213	—	—
Consumer loans	10,228	—	—	1,924	—	—	3,935	—	—	829	—	—
Receivables	1,459	—	—	217	—	—	—	—	—	—	—	—
Others	4,278	—	—	687	—	—	4,281	—	—	619	—	—
Total	47,490	21,194	—	7,621	3,799	—	39,627	17,380	—	6,575	3,323	—

6.1.3. Risk inherent to the securitisation activity

Securitization offers advantages in terms of diversified funding sources and better risk management. However, it exposes investors to certain inherent risks, which are defined below. Santander is not exposed to any additional risk by acting as the originator or sole investor in a securitization. In fact, doing so it reduces liquidity risk by transforming illiquid assets (the loans originated) into liquid assets (securitization bonds).

- **Credit risk:** the risk that borrowers will fail to meet their contractual obligations in due time and proper form, with the consequent impairment of the underlying assets backing the securitisation positions. Credit risk is assessed by external credit rating agencies, which assign ratings to the securitisation positions. For third-party positions Grupo Santander invests in, this credit risk is firstly assessed by external credit rating agencies, who assign ratings to the securitisation positions. At the Group, the maximum exposure in the banking book is limited by rating (AAA, AA, A, BBB) and by type of underlying. In addition, the group continuously monitors published data on default of the underlying, the credit quality of the originator and mandatory minimum ratios and ratings in the structure, as well as data on granularity, geographical distribution and type of underlying.
- **Prepayment risk:** the risk of early repayment of some or all of the assets underlying the securitization, so that the securitization positions mature faster than expected and therefore fewer coupons are received than expected. Calculations of the average life, return and duration of securitisation positions is subject, among other aspects, to assumptions about the rate at which the underlying assets will be prepaid, which may vary.
- **Interest rate risk:** This risk arises when there is a mismatch between the interest rates of the securitized assets and those of the securitization positions. At Santander, and for any traditional securitizations that arise, this risk is usually hedged with swaps (Interest Rate Swaps — IRS).
- **Exchange rate risk:** This exists in securitizations where the securitized assets and the securitization positions are denominated in different currencies. Traditional securitizations issued by Santander are issued in the same currency as the underlying asset, so this risk is therefore absent. However, this risk will only be partially present in a small portion of synthetic securitizations.
- **Liquidity risk:** this risk is diminished through the securitisation process, whereby naturally illiquid assets are transformed into debt securities that can be traded on organised financial markets. In some securitisations, however, such as those which issue commercial paper, liquidity risk is still significant and is manifested in the need to cover potential timing mismatches between interest payments on the underlying assets and payments of interest on the securities. At Santander, this risk tends to be very small and is mitigated by liquidity facilities included in the structure (excluding synthetic securitisations). The liquidity risk associated with investing in bond positions is managed by establishing maximum holding periods.
- **Counterparty risk:** This risk is not present in traditional securitizations issued by Santander because the notes/bonds are actually sold in exchange for cash. This means there is not counterparty risk involved. This risk is, however,

present in synthetic securitizations if the hedging/protection obtained is not anchored. Synthetic transactions originated by Santander can be structured through a SPV (Special Purpose Vehicle), which hedges the portfolio and issues CLNs (Credit Link Notes), or the financial guarantee can be issued directly. If the financial guarantees are funded, there will be no counterparty risk. However, if hedged, if they are not funded, this risk will not be present (the counterparty risk). Lastly, a synthetic transaction can be structured without an SPV and without issuing notes. These types of guarantees are financial in nature and will tend not to be anchored. In this case, counterparty risk will indeed be present. To conclude, this type of risk will be present only if the synthetic guarantee received is not anchored. Santander will therefore have to reclaim losses generated by the hedged portfolio from the investor, whenever such losses reach their tranche. In synthetic securitisations, there is no right of credit risk transfer nor sale of the underlying portfolio. The financial guarantees received can be funded or unfunded. In the latter case, Banco Santander has to reclaim the losses from the investor, which generates counterparty risk.

Santander analyses annually the evolution of the securitisations originated with the release of capital, assessing the different parameters from a risks and capital perspective (backtesting). These reviews are submitted to the relevant management bodies.

6.2. Santander securitisation activity

The list of SPPEs are listed in Appendix XXIII of the 2023 Pillar 3 Report file available on the Santander website.



[Access 2023 Pillar 3 Disclosures Report available on the Santander Group website](#)

6.2.1. As asset manager

Grupos Santander has Santander de Titulización S.G.F.T., S.A. (Sociedad Gestora de Fondos de Titulización) and Gamma, STC. (Sociedade de Titularização de Créditos), in order to set up, manage and legally represent the securitisation funds originated in Spain and Portugal, respectively .

6.2.2. As originator

In 2023, Grupo Santander originated 26 securitisations mainly for risk transfer purposes.

Grupo Santander has a total of 83 securitisations that transfer risk and free up capital (26 traditional transactions and 57 synthetic). The main underlying portfolios are consumer loans (primarily for cars) and loans to businesses.

Grupo Santander strives to achieve and maintain STS (Simple, Transparent and Standardised Securitizations) certification for all newly originated securitisations (both synthetic and traditional) whenever possible. Presently, 38 securitisations currently have this certification.

Of the **57 synthetic securitisation funds**, seventeen were originated in 2023.

Santander also originates and holds positions in traditional securitisation funds whose underlying portfolios mainly comprise consumer and corporate loans.

Santander is awarded a rating by one or more of the following external rating agencies for each of these traditional structures and for some synthetic securitisations, regardless of the underlying product: Standard & Poors, Moody's, Fitch, DBRS, Arc, Scope and KROLL. The group obtains ratings from at least two of these agencies when a traditional securitisation is placed on the market in Europe.

Grupo Santander does not provide implicit support in synthetic securitizations, where there is significant risk transfer at the regulatory level.

6.2.3. As investor

With regard to investment activity, Santander holds positions in **securitisation funds originated by entities outside the Group** whose underlying assets mainly comprise receivables, credit cards, and corporate, SME and mortgage loans. As Santander limits its maximum exposure by rating (AAA, AA, A, BBB), it does not usually employ hedging techniques to mitigate the risk.

Monitoring process for changes in associated risk:

- **Securitisation positions originated:** periodic monitoring is the responsibility of the different securitisation fund managers (trustees/management companies) or of the originators directly no fund is created. In any of the cases that prepare regular reports containing an update of the rating performance of the bonds' underlying portfolios of the securitisation positions generated.
- **Securitisation positions invested in:** published NPL metrics (90+, default, recoveries) and prepayments are monitored regularly using specialised software, which also checks whether the established rating-based limits are being met.

The processes mentioned above serve to monitor changes in credit and market risk for securitisation exposures.

The following tables show the distribution, by type of underlying asset, of the securitisation positions issued and repurchased by the Group as an originator, investor and sponsor at 31 December 2023, in both the banking book and trading book.

Table 60.SEC1 - Securitisation exposures in the non-trading book

EUR million

																2023			
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o				
	Bank acting as originator							Bank acting as sponsor				Bank acting as investor							
	Traditional			Synthetic				Traditional			Traditional								
	STS		Non-STS		of which		Sub-total	STS		Synthetic		STS		Non-STS		Synthetic		Sub-total	
	of which		of which		of which			STS		Synthetic		STS		Non-STS		Synthetic		Sub-total	
	SRT		SRT		SRT			STS		Synthetic		STS		Non-STS		Synthetic		Sub-total	
1 Total exposures	1,492	328	36,842	22	47,188	47,140	85,522	—	—	—	—	2,431	18,763	—	21,194				
2 Retail (total)	1,380	328	34,749	22	21,669	21,669	57,798	—	—	—	—	2,431	10,704	—	13,134				
3 Residential mortgages	—	—	12,074	—	8,025	8,025	20,099	—	—	—	—	197	3,082	—	3,278				
4 Credit card	—	—	1,375	—	—	—	1,375	—	—	—	—	—	250	—	250				
5 Other retail exposures	1,380	328	21,300	22	13,644	13,644	36,324	—	—	—	—	2,234	7,372	—	9,606				
6 Resecuritisation	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
7 Wholesales (total)	111	—	2,093	—	25,519	25,472	27,723	—	—	—	—	—	8,060	—	8,060				
8 Loans to corporates	—	—	898	—	19,579	19,532	20,478	—	—	—	—	—	4,641	—	4,641				
9 Commercial mortgage	—	—	—	—	3,200	3,200	3,200	—	—	—	—	—	—	—	—				
10 Finance leases and receivables	111	—	—	—	1,878	1,878	1,989	—	—	—	—	—	978	—	978				
11 Other wholesale exposures	—	—	1,195	—	862	862	2,057	—	—	—	—	—	2,441	—	2,441				
12 Resecuritisation	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				

The securitisation portfolio has been considered as a whole (positions bought and retained)
CRR Fully-loaded, Phased-in IFRS 9.

Table 61.SEC2 - Securitisation exposures in the trading book

EUR million												2023
	a	b	c	d	e	f	g	h	i	j	k	l
	Bank acting as originator				Bank acting as sponsor				Bank acting as investor			
	Traditional		Synthetic	Subtotal	Traditional		Synthetic	Subtotal	Traditional		Synthetic	Subtotal
	STS	Non-STS			STS	Non-STS			STS	Non-STS		
1 Total									59	317		376
2 Retail (total)									59	66		125
3 Residential mortgages	—	—	—	—	—	—	—	—	11	39	—	50
4 Credit card	—	—	—	—	—	—	—	—	—	—	—	—
5 Other retail exposures	—	—	—	—	—	—	—	—	48	27	—	75
6 Resecuritisation	—	—	—	—	—	—	—	—	—	—	—	—
7 Wholesales (total)										251		251
8 Loans to corporates	—	—	—	—	—	—	—	—	—	—	—	—
9 Commercial mortgage	—	—	—	—	—	—	—	—	—	5	—	5
10 Finance leases and receivables	—	—	—	—	—	—	—	—	—	—	—	—
11 Other wholesale exposures	—	—	—	—	—	—	—	—	—	246	—	246
12 Resecuritisation	—	—	—	—	—	—	—	—	—	—	—	—

Finally, in its role as originator and investment entity for securitisations, Santander complies with the requirements relating to the net retention of economic interest and requirements established in procedure and control policies for all securitisation funds issued since 1 January 2011. We have to distinguish between the requirements for originators and for investment positions:

Securitisations originated:

- Santander always retains a minimum of 5% of the net economic interest.
- Santander meets all the due diligence requirements, making available to investors all the information needed to ensure the risks of the investment are fully known before purchase and to enable regular monitoring of the
- performance of the investment. This information includes

details of the risk criteria applied to the securitised exposures, which in all cases are the same as for the non-securitised exposures in the originator's balance sheet.

Investment positions in securitisations:

- The Group performs due diligence to ensure that the investment risks are understood before purchase and to be able to monitor the performance of the investment on a regular basis.
- The Group verifies that the originators of the securitisations in which it invests retain a 5% net economic interest.

Below we show positions in securitisations with risk transfer and in investment and sponsoring positions on the banking book, based on the approach used to calculate regulatory capital:

Table 62. Breakdown of repurchased positions in SSPEs with risk transfer, distributed by function and approach used

EUR million	2023						2022				
	On-balance sheet amount exposures	Off-balance sheet amount exposures	EAD	EAD after capital reductions	RWA*	On-balance sheet amount exposures	Off-balance sheet amount exposures	EAD	EAD after capital reductions	RWA*	
Originator - standardised approach	—	—	—	—	—	—	—	—	—	—	
Originator - SEC standardised approach	10,302	—	10,184	9,959	1,763	5,286	—	5,212	5,058	924	
Originator - SEC ERB approach	7,819	18	7,824	7,824	1,589	6,794	11	6,805	6,805	1,179	
Originator - RB approach	—	—	—	—	—	—	—	—	—	—	
Originator - SF approach	—	—	—	—	—	—	—	—	—	—	
Originator - IRB approach	29,530	85	29,445	29,270	4,275	27,659	52	27,580	27,456	4,471	
Originator - 1250%	384	76	37	—	—	520	55	29	—	—	
Total originator	48,035	179	47,490	47,053	7,627	40,259	118	39,627	39,319	6,575	
Investor - standardised approach	—	—	—	—	—	—	—	—	—	—	
Investor - SEC standardised approach	18,219	288	18,503	18,502	3,716	13,387	1,007	14,388	14,387	3,300	
Investor - SEC ERB approach	2,443	251	2,691	2,691	668	2,328	666	2,992	2,992	977	
Investor - RB approach	—	—	—	—	—	—	—	—	—	—	
Investor - SF approach	—	—	—	—	—	—	—	—	—	—	
Investor - IRB approach	—	—	—	—	—	—	—	—	—	—	
Investor - 1250%	0.439	—	0.439	—	—	0.439	—	0.439	—	—	
Total investor	20,663	539	21,194	21,193	4,384	15,715	1,673	17,380	17,379	4,277	
Sponsor - standardised approach	—	—	—	—	—	—	—	—	—	—	
Sponsor - SEC standardised approach	—	—	—	—	—	—	—	—	—	—	
Sponsor - SEC ERB approach	—	—	—	—	—	—	—	—	—	—	
Sponsor - RB approach	—	—	—	—	—	—	—	—	—	—	
Sponsor - SF approach	—	—	—	—	—	—	—	—	—	—	
Sponsor - IRB approach	—	—	—	—	—	—	—	—	—	—	
Sponsor - 1250%	—	—	—	—	—	—	—	—	—	—	
Total sponsor	—	—	—	—	—	—	—	—	—	—	
Total	68,698	718	68,684	68,246	12,012	55,974	1,791	57,007	56,698	10,851	
Of which: traditional securitisations	21,329	718	21,544	21,477	4,419	16,631	1,791	17,835	17,774	4,336	
Of which: synthetic securitisations	47,369	—	47,140	46,769	7,592	39,343	—	39,172	38,924	6,515	

EAD IRB (RBA & SFA): exposures net of collateral, before provisions and deductions and after outflows to other regulatory reports.

EAD STD: exposures net of collateral, before deductions and after provisions and outflows to other regulatory reports.

RWA IRB (RBA & SFA): after provisions, deductions and outflows to other regulatory reports and before application of the limit.

*RWA: after provisions, deductions and outflows to other regulatory reports and before application of the limit.

It should be noted that for all securitisations which qualify for a weight of 1250%, the entity deducts this exposure from equity.

As shown in Table 62, exposure has increased by 20.4%, due to the increase in exposures in securitisations originated by the Group. This year, 26 new securitisations with significant risk transfer were originated, with the main goal of transferring credit risk and optimising capital consumption.

Securitisation positions in the trading portfolio are eliminated from the regulatory capital calculation based on an internal market risk model and are included in the calculation of capital for specific risk, in accordance with article 335 of the CRR. The correlation trading portfolio is also included among these positions. This book consists of securitisation positions and nth-to-default derivatives that meet all the criteria in article 338.1 of the CRR. Therefore, none of these positions are considered in the VaR spread and IRC calculation, although they are included in the interest rate VaR calculation (general risk). For these positions, capital is calculated as if they were securitisation positions in the banking book, so that capital requirements are calculated taking into account the new approaches considered in the new Regulation (EU) 2017/2401 on securitisations.

Finally, Regulation (EU) 2017/2402 on securitisations came into force from 1 January 2019. This regulation changes the prudential requirements for credit institutions and investment firms, establishing new treatment for securitisation positions. One of the most significant changes is that positions in preferential securitisation tranches may not consume more capital than the loan portfolio. It also provides for a more favourable treatment for **senior tranches of STS (simple, transparent and standardised)** securitisations which was updated on 31 March 2021 Regulation (EU) 2021/558 amending Regulation (EU) No 575/2013 as regards adjustments to the securitisation framework to support the economic recovery in response to the covid-19 crisis.

A breakdown of all securitisations in the banking book is provided below, together with the corresponding capital consumption arranged by RW (risk weighting) interval and the calculation method employed when the Group acts as originator or sponsor.

The following table shows the aggregate value of securitisation positions purchased and retained in the trading portfolio.

Table 63. Aggregate amount of securitisation positions purchased and retained. Trading book

	2023					
	Investor positions		Originator positions		Sponsor positions	
	Mark to market	RWA	Mark to market	RWA	Mark to market	RWA
ABS PORTFOLIO						
SEC - ERBA approach						
10 -12%	47	2	—	—	—	—
12-20%	182	23	—	—	—	—
20-40%	20	6	—	—	—	—
40-100%	34	24	—	—	—	—
1,250%	58	172	—	—	—	—
ABS PORTFOLIO	—	—	—	—	—	—
10 -12%	4	—	—	—	—	—
12-20%	31	—	—	—	—	—
20-40%	—	—	—	—	—	—
40-100%	—	—	—	—	—	—
1,250%	—	—	—	—	—	—
Total ABS Portfolio	377	227	—	—	—	—
CORRELATION PORTFOLIO						
SEC - ERBA approach	—	—	—	—	—	—
40-75 %	—	—	—	—	—	—
100%	—	—	—	—	—	—
250%	—	—	—	—	—	—
Supervisory formula method	—	—	—	—	—	—
FS	—	—	—	—	—	—
Total correlation portfolio	—	—	—	—	—	—
Total	—	—	—	—	—	—

The table does not include the RWA of short position correlation, since it does not consume capital.

The following table shows the current situation of the underlying portfolio for originated securitisations with risk transfer and the changes compared to 2022.

Table 64. Securitisation structures with risk transfer

	2023				2022			
	Outstanding balance	Of which, in default	Value adjustments in the period	RWA	Outstanding balance	Of which, in default	Value adjustments in the period	RWA
Traditional SPVs								
Residential mortgages	—	—	—	—	—	—	—	—
Commercial mortgages	—	—	—	—	—	—	—	—
Loans to corporates or to SMEs treated as corporates	—	—	—	—	—	—	—	—
Consumer loans	11,105	290	83	29	9,008	188	26	55
Others	2,395	55	11	6	2,220	48	6	5
Resecuritisations								
Securitisation positions	—	—	—	—	—	—	—	—
Total traditional SPVs	13,500	345	94	35	11,228	236	31	60
Synthetic securitisation SPVs								
Residential mortgages	9,106	12	7	1,246	1,599	—	1	213
Commercial mortgages	3,365	7	7	431	4,593	15	3	829
Loans to corporates or to SMEs treated as corporates	20,832	153	27	3,039	19,543	149	15	2,880
Consumer loans	11,814	182	38	1,931	12,893	113	28	1,974
Others	7,350	81	17	945	5,386	111	1	619
Total synthetic securitisation SPVs	52,467	435	96	7,592	44,014	389	49	6,515
Total	65,967	780	190	7,627	55,242	624	80	6,575

The value adjustments in the period include the value adjustments by asset and provision (generic and specific) deterioration.

This year, 26 new significant risk transfer securitizations have been issued, with the main objective of transferring credit risk and optimizing capital consumption

Regarding securitization funds without risk transfer, Grupo Santander retains the majority of the positions of the originated securitization funds, so they do not meet the regulatory conditions that would allow the significant transfer of risk.

For these funds, capital is calculated for the securitized exposures, as if they had not been securitized. The underlying assets that have been securitized in the funds originated by Grupo Santander continue to be mainly mortgages and consumer loans.

Table 65. SEC5 - Exposures securitised by the institution - Exposures in default and specific credit risk adjustments

	2023		
	a	b	c
	Exposures securitised by the institution - Institution acts as originator or as sponsor		
EUR million	Total outstanding nominal amount		
		Of which exposures in default	Total amount of specific credit risk adjustments made during the period
1 Total exposures	139,294	2,960	724
2 Retail (total)	108,238	2,749	689
3 residential mortgage	29,522	531	54
4 credit card	1,375	34	13
5 other retail exposures	77,341	2,183	623
6 re-securitisation	—	—	—
7 Wholesale (total)	31,056	211	35
8 loans to corporates	22,679	189	22
9 commercial mortgage	3,365	7	7
10 lease and receivables	2,693	0.136	3
11 other wholesale	2,320	15	3
12 re-securitisation	—	—	—

CRR Fully Phased-in IFRS 9.

6.3. Securitisation accounting policies

This section covers letter (g) of the qualitative requirement SECA - Qualitative disclosure requirements related to securitisation exposures.

According to IFRS 9, the initial recording, classification and subsequent measurement of financial assets is influenced by the company's business model and by the nature of the cash flows for said financial assets. Specifically, to allow them to be measured at amortized cost or at fair value with changes in OCI, the Standard requires that contractual cash flows meet the criteria of a basic loan agreement (SPPI [Solely Payments of Principal and Interest] flows).

The criterion for derecognising securitised assets is that set by IFRS 9 in section 3.2. The accounting treatment of transfers of financial assets depends on the form and extent to which the cash flows, risks and rewards are transferred to third parties, as well as with the control of the assets transferred:

1. Where substantially all the risks and rewards are transferred to third parties, e.g. in asset securitisations in which the transferor neither retains subordinated debt nor grants any credit enhancement to the new holders, the transferred financial assets are derecognised. Any right or obligation retained or created in the transfer is recognised. The difference between the carrying amount recorded prior to the transfer and the fair value of the retained rights or obligations is recognised in profits or losses for the year.
2. Where substantially all the risks and rewards associated with the transferred financial asset are retained (as in securitisations in which subordinated debt or some other type of credit enhancements are retained that absorb substantially all of the expected credit losses for the transferred asset or the probable variation of its future net cash flows), the transferred financial asset is not derecognised and continues to be measured using the same criteria as before the transfer. Additionally, it should be recognized:
 - An associated financial liability, which is recognised for an amount equal to the consideration received and is subsequently measured at amortised cost, unless it meets the requirements for classification at fair value through profit or loss.
 - The income from the financial asset that has been transferred but not derecognised and any expense incurred on the new financial liability are presented on the profit and losses without netting.
3. The following distinction is made when substantially all the risks and rewards associated with the transferred financial asset are neither transferred nor retained, e.g. in securitisations in which the transferor takes on subordinated debt or some other type of credit enhancement for a portion of the transferred asset and thus significantly, but not substantially, reduces its exposure to variations in the present value of future net cash flows:
 - Where the transferor does not retain control of the transferred financial asset: the transferred financial asset is derecognised and any right or obligation retained or created in the transfer is recognised.

- Where the transferor retains control of the transferred financial asset: it continues to recognise the transferred financial asset on its balance sheet for an amount equal to its exposure to possible changes in value and recognises a financial liability associated with the transferred financial asset. The net amount of the transferred asset and the associated liability is:
 - The amortised cost of the rights and obligations retained, if the transferred asset is measured at amortised cost, or
 - The fair value of the rights and obligations retained, if the transferred asset is measured at fair value.

Accordingly, financial assets are only derecognised when any of the following circumstances occur:

- The rights to the future cash flows generated have been extinguished.
- The risks and benefits have been substantially transferred to third parties.
- If not all risks and benefits are retained or transferred, when control has been transferred.

There have been no changes with respect to the previous year in the methods, assumptions and key data used to assess the securitised exposures or re-securitisation exposures (i.e. securitisations in which at least one of the underlying exposures is a securitisation exposure)

There is no specific accounting treatment for synthetic securitisations or assets awaiting securitisation.

6.4. Capital requirements - Securitisations

Grupo Santander calculates regulatory capital under the securitization approach for positions held in originated securitizations only if the regulatory conditions established in the Capital Requirements Regulation (CRR) for significant risk transfer are met. Otherwise, capital is calculated for the securitized exposures as if they had never been securitized. Capital is also calculated for investment positions in securitization funds originated by third parties.

Regulation 2017/2401 modified the CRR in those areas related to the calculation methods for capital requirements for securitizations. Within this framework, with the aim of reducing the dependence on external ratings, the entity must use its own calculation of regulatory capital requirements so long as it is authorized to apply the internal ratings-based approach for securitized exposures, **the Securities and Exchange Commission Internal ratings-based approach (SEC-IRBA)**. Entities that cannot use the SEC-IRBA must apply the standardized approach (**SEC-SA**) to securitizations. The SEC-SA must be based on the capital requirements calculated under the standardized approach for credit risk. When neither of these two approaches are available, entities must adopt the external ratings-based approach for securitizations (**SEC-ERBA**). In accordance with SEC-ERBA, capital requirements must be assigned to securitization tranches on the basis of their external rating.

Capital requirements for securitization positions are calculated by applying the appropriate risk weight to the exposure value of each position, depending on the approach used by the entity to calculate the risk-weighted exposure amounts of the securitized portfolio.

In November 2020, the Basel Committee published a technical amendment establishing prudential treatment for securitizations of non-performing loans. In 2021, this technical amendment was transposed into an EU regulation as part of the '**quick fix**' for securitizations implemented through two EU regulations, as explained below.

- Regulation (EU) 2021/557, amending Regulation (EU) 2017/2402 (Securitization Regulation) to aid recovery from the covid-19 crisis. In addition to establishing a framework for securitizations of non-performing exposures, this regulation also aimed to extend the benefits of STS (simple, transparent and standardized) securitization to synthetic securitizations. To this end, the framework was created so that institutions could trade their non-performing exposures in the market by securitizing said exposures.

- Regulation 2021/558, which amended Regulation 575/2013 (CRR) to specify the capital requirements applicable to the changes introduced by Regulation 2021/557, such as securitizations of NPLs, senior tranches of STS synthetic securitizations, etc.

In February 2023, the European Banking Authority (EBA) published its final Regulatory Technical Standards (RTS) amending the regulatory technical standards established in Delegated Regulation (EU) 2019/1851 with regard to the assessment of the consistency of underlying exposure in simple, transparent and standardized (STS) on-balance-sheet securitization.

Lastly, in October 2023, Delegated Regulation (EU) 2023/2175 was published, specifying in greater detail the risk retention requirements for originators, sponsors, original lenders and servicers. Among others, this Delegated Regulation sets forth the requirements concerning the types of risk retention, prohibits selling or hedging the retained economic interest, establishes the conditions of retention on a consolidated basis, as well as the types of risk retention in the case of the traditional securitization of non-performing exposures.

A breakdown of all securitisations in the banking book is provided below, together with the corresponding capital consumption arranged by RW (risk weighting) interval and the calculation method employed when the Group acts as originator or sponsor.

Table 66.SEC3 - Securitisation exposures in the non-trading book and associated regulatory capital requirements - institution acting as originator or as sponsor

		2023								
EUR million		a	b	c	d	e	f	g	h	i
		Exposure values (by RW bands/deductions)					Exposure values (by regulatory approach)			
		<= 20%	> 20% to 50%	> 50% to 100%	> 100% to 1250%	1250% RW/ deductions	SEC-IRBA	SEC-ERBA (including IAA)	SEC-SA	1250%/ deductions
1	Total exposure	40,536	6,244	25	248	437	29,270	7,824	9,959	437
2	Traditional securitisation	236	47	—	—	66	265	18	—	66
3	Securitisation	236	47	—	—	66	265	18	—	66
4	Retail underlying	236	47	—	—	66	265	18	—	66
5	Of which STS	216	47	—	—	65	245	18	—	65
6	Wholesale	—	—	—	—	—	—	—	—	—
7	Of which STS	—	—	—	—	—	—	—	—	—
8	Re-securitisation	—	—	—	—	—	—	—	—	—
9	Synthetic securitisation	40,300	6,197	25	248	371	29,005	7,805	9,959	371
10	Securitisation	40,300	6,197	25	248	371	29,005	7,805	9,959	371
11	Of which, retail underlying	17,563	3,849	25	—	231	7,563	7,557	6,318	231
12	Of which, wholesale underlying	22,736	2,347	—	248	140	21,442	248	3,641	140
13	Of which, resecuritisation	—	—	—	—	—	—	—	—	—

Table 66.SEC3 - Securitisation exposures in the non-trading book and associated regulatory capital requirements - institution acting as originator or as sponsor

		2023							
EUR million		j	k	l	m	n	o	EU-p	EU-q
		RWEA (by regulatory approach)*				RWEA (by regulatory approach)			
		SEC-IRBA	SEC-ERBA (including IAA)	SEC-SA	1250% RW	SEC-IRBA	SEC-ERBA (including IAA)	SEC-SA	1250% RW
1	Total exposure	4,275	1,589	1,763	—	342	127	140	—
2	Traditional securitisation	31	4	—	—	2	0.3	—	—
3	Securitisation	31	4	—	—	2	0.3	—	—
4	Retail underlying	31	4	—	—	2	0.3	—	—
5	Of which STS	28	4	—	—	2	0.3	—	—
6	Wholesale	—	—	—	—	—	—	—	—
7	Of which STS	—	—	—	—	—	—	—	—
8	Re-securitisation	—	—	—	—	—	—	—	—
9	Synthetic securitisation	4,244	1,585	1,763	—	340	127	140	—
10	Securitisation	4,244	1,585	1,763	—	340	127	140	—
11	Of which, retail underlying	1,251	1,292	1,161	—	100	103	92	—
12	Of which, wholesale underlying	2,994	293	602	—	239	23	48	—
13	Of which, resecuritisation	—	—	—	—	—	—	—	—

*RWA do not include tranches that have a risk weight of 1250% due to they are deducted from Common Equity Tier 1.

Fully CRR Phased-in IFRS 9.

Following Mapping tool defined by the EBA, RWA are before CAP adjustment, capital requirements after

Table 67.SEC4 - Securitisation exposures in the non-trading book and associated regulatory capital requirements - institution acting as investor

							2023				
EUR million		a	b	c	d	e	f	g	h	i	
		Exposure values (by RW bands/deductions)					Exposure values (by regulatory approach)				
		<= 20%	> 20% to 50%	> 50% to 100%	> 100% to 1250%	1250 %	SEC-IRBA	SEC-ERBA (including IAA)	SEC-SA	1250 %	
1	Total exposure	17,085	3,836	64	208	0.79	—	2,691	18,502	0.79	
2	Traditional securitisation	17,085	3,836	64	208	0.79	—	2,691	18,502	0.79	
3	Securitisation	17,085	3,836	64	208	0.79	—	2,691	18,502	0.79	
4	Retail underlying	12,429	674	1	29	0.74	—	1,937	11,196	0.74	
5	Of which STS	2,369	62	—	—	—	—	542	1,888	—	
6	Wholesale	4,656	3,162	64	178	0.05	—	754	7,306	0.05	
7	Of which STS	—	—	—	—	—	—	—	—	—	
8	Re-securitisation	—	—	—	—	—	—	—	—	—	
9	Synthetic securitisation	—	—	—	—	—	—	—	—	—	
10	Securitisation	—	—	—	—	—	—	—	—	—	
11	Of which, retail underlying	—	—	—	—	—	—	—	—	—	
12	Of which, wholesale underlying	—	—	—	—	—	—	—	—	—	
13	Of which, resecuritisation	—	—	—	—	—	—	—	—	—	

Table 67.SEC4 - Securitisation exposures in the non-trading book and associated regulatory capital requirements - institution acting as investor

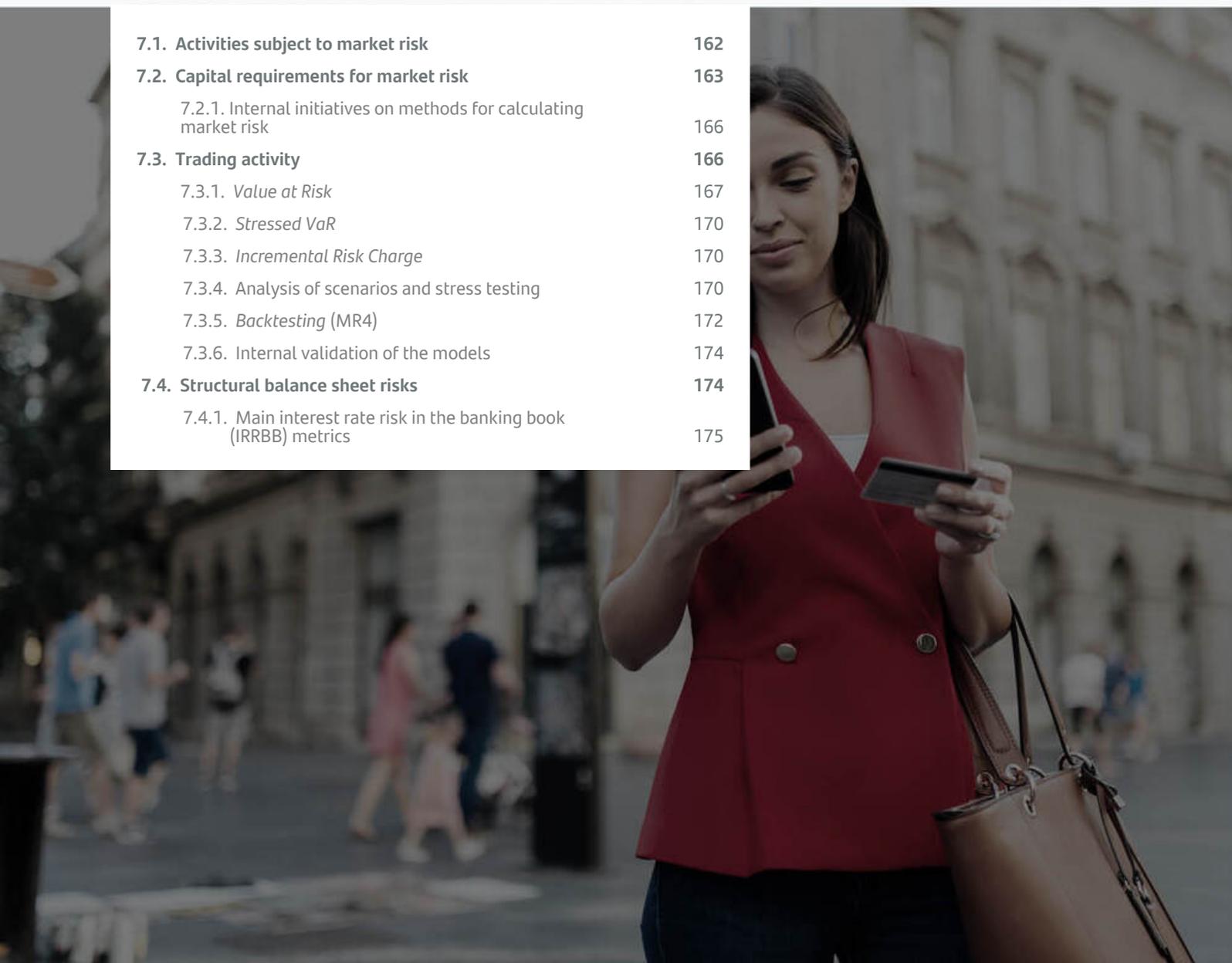
		2023							
EUR million		j	k	l	m	n	o	EU-p	EU-q
		RWEA (by regulatory approach)				RWEA (by regulatory approach)			
		SEC-IRBA	SEC-ERBA (including IAA)	SEC-SA	1250% RW	SEC-IRBA	SEC-ERBA (including IAA)	SEC-SA	1250% RW
1	Total exposure	—	668	3,716	—	—	53	251	—
2	Traditional securitisation	—	668	3,716	—	—	53	251	—
3	Securitisation	—	668	3,716	—	—	53	251	—
4	Retail underlying	—	356	1,673	—	—	28	134	—
5	Of which STS	—	79	207	—	—	6	17	—
6	Wholesale	—	312	2,043	—	—	25	117	—
7	Of which STS	—	—	—	—	—	—	—	—
8	Re-securitisation	—	—	—	—	—	—	—	—
9	Synthetic securitisation	—	—	—	—	—	—	—	—
10	Securitisation	—	—	—	—	—	—	—	—
11	Of which, retail underlying	—	—	—	—	—	—	—	—
12	Of which, wholesale underlying	—	—	—	—	—	—	—	—
13	Of which, resecuritisation	—	—	—	—	—	—	—	—

Fully CRR Phased-in IFRS 9.



7. Market Risk

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7. MARKET RISK

Market risk is the risk of loss of value of financial instruments arising from changes in market parameters, volatility of these parameters and the correlations between them.

The following chapter provides information on the activities subject to market risk and market outcomes in 2023, distinguishing trading activity from structural risks. It also describes the methodologies and different metrics used in Grupo Santander.

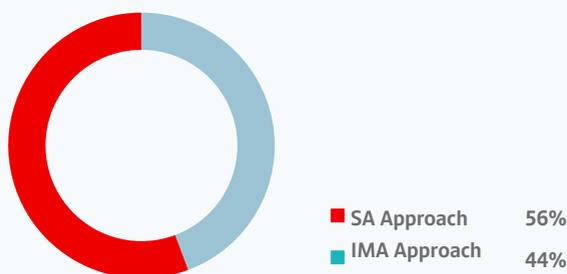
Main figures

Million euros

	RWA	
	2023	2021
Market risk	16,454	17,224
Of which, standardised approach	9,166	6,844
Of which, IMA	7,288	10,380

RWA by calculation approach

%



RWA by geography

%



7.1. Activities subject to market risk

This section covers the qualitative requirement MRA - Qualitative disclosure requirements related to market risk and MRB - Qualitative disclosure requirements for institutions using the internal Market Risk Models.

Also the provisions of letters (d), (e), (f) and (g) of the OVA requirement -Institution risk management approach, are complied with.

The measurement, control and monitoring perimeter of the Market Risk area includes all transactions where risk arises due to changes in market factors. This risk arises from changes in risk factors (interest rate, exchange rate, equities, credit spreads, commodity prices and the volatility of each of these) which may impact earnings or capital, and from the liquidity risk of the products and markets in which Santander operates.

The activities are segmented according to the purpose of the risk, as follows:

- **Trading:** the trading book includes all financial instruments that a bank holds for short-term resale in order to profit from short-term price movements, to make arbitrage profits or to hedge risks arising from the positions or instruments in this portfolio. This includes the provision of financial services in the markets to customers where the bank is the counterparty, as well as proprietary trading and positioning primarily in fixed income, equities, currencies and commodities. It should be noted that a corporate policy transposed by the different units delimits the Boundary between the Trading Book and the Banking Book.

See chapter "Risk, compliance & conduct management", of the the Group Annual Report, for further information about the different risks of this activity.



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- **Structural risks:** these are composed of the market risks inherent to the balance sheet, excluding the trading book. Namely:
 - **Structural interest rate risk:** this risk arises from timing mismatches in maturities and repricing of all balance sheet assets and liabilities.
 - **Structural foreign exchange risk (hedging of results):** foreign currency risk arising from the currency in which investments in consolidated and non-consolidated companies are made (structural exchange rate). This category also includes the positions taken to hedge the foreign currency risk on future results generated in currencies other than the euro (hedging of results).
 - **Structural equity risk:** this includes equity investments in non-consolidated financial and non-financial companies, and the available-for-sale portfolios of equity positions.

7.2. Capital requirements for market risk

This section provides more detailed information on changes in capital requirements for market risk through both internal and standardised models. The Group's consumption of regulatory capital for market risk at the end of December 2023 breaks down as follows.

Table 68. Regulatory capital requirements for market risk

EUR million	2023	2022
Position risk - Trading book* - Standardised approach	438	305
Commodity Risk - Standardised approach	27	32
Specific risk in the correlation trading risk portfolio	—	—
Currency risk - standardised approach	268	264
Position and currency risk - Tradingbook - Internal models	583	662
Spain & SLB	442	473
Chile	84	104
Mexico	57	85
Total	1,316	1,263

*Includes structural equity considered as business.

Grupo Santander has an internal market risk model in Spain, Chile and Mexico.

At the end of the 2023 financial year, Grupo Santander had authorization to use the internal market risk model for calculating regulatory capital in the trading books of the Spain, Chile and Mexico units. From October 2021, the market risk capital of the internal model for Spain and SLB will be reported in a single entity, following regulatory approval of the diversification between the two units. The other geographical units calculate capital consumption by market risk through the standardized approach. This calculation methodology is also used by entities that have approved internal models for only some of their portfolios. The standardized approach is applied to portfolios for which the internal model is not approved.

Consolidated regulatory capital under the internal market risk model for Santander is computed as the sum of the regulatory capital of the units that have the necessary approval from the European Central Bank. This is a conservative criterion when consolidating the Group's capital, as it takes no account of the capital savings arising from the geographical diversification effect.

The regulatory capital of the trading activity for the perimeter concerned is calculated with advanced approaches, using VaR, Stressed VaR and incremental risk charge (IRC) as the core metrics, in line with the new bank capital requirements under the Basel Accords and, specifically, the CRR.

The capital resulting from the VaR and SVaR metrics is adjusted through a Kr coefficient, derived from the number of backtesting overshootings existing for each unit in its local internal model and by a qualitative coefficient Kc determined by the European Supervisor. At the end of 2023, due to improvements made by the Bank to align with the supervisory expectations of the TRIM guidance the multiplier was reduced to zero.

In 2023, we continued to add new not-in-model risks to the calculation of capital by market risk, for those risk factors not included in the current regulatory capital metrics (VaR, SVaR, etc.).

A breakdown of capital requirements in the units that use the internal model is shown below, by geography and component, at year-end:

Table 69. Capital requirements for market risk. Internal model

EUR million						2023
	CR (VaR)	CR (SVaR)	IRC	Risk Not in VaR	Add-On	Total
Spain & SLB	103	202	118	19	—	442
Chile	36	45	3	—	—	84
México	18	38	2	—	—	57
Total	157	285	122	19	—	583

Below is a breakdown of capital requirements and RWA for market risk and calculation component with internal model approval at 2023 year-end:

Table 70.MR2-A - Market risk under the internal Model Approach (IMA)

EUR million			2023	
		a	b	
		RWA	Capital requirements	
1 VaR (higher of values a and b)	1,958	157		
(a) (a) Previous day's VaR (Article 365(1) of the CRR (VaRt-1))	810	65		
(b) (b) Average of the daily VaR (Article 365(1)) of the CRR on each of the preceding 60 business days (VaRavg) x multiplication factor (mc) in accordance with Article 366 of the CRR	1,958	157		
2 SVaR (higher of values a and b)	3,568	285		
(a) (a) Latest SVaR (Article 365(2) of the CRR (SVaRt-1))	1,510	121		
(b) (b) Average of the SVaR (Article 365(2) of the CRR) during the preceding 60 business days (SVaRavg) x multiplication factor (ms) (Article 366 of the CRR)	3,568	285		
3 IRC (higher of values a and b)	1,522	122		
(a) (a) Most recent IRC value (incremental default and migration risks calculated in accordance with Article 370 and Article 371 of the CRR)	1,483	119		
(b) (b) Average of the IRC number over the preceding 12 weeks	1,522	122		
4 Comprehensive risk measure (higher of values a, b and c)	—	—		
(a) (a) Most recent risk number for the correlation trading portfolio (Article 377 of the CRR)	—	—		
(b) (b) Average of the risk number for the correlation trading portfolio over the preceding 12 weeks	—	—		
(c) (c) 8% of the own funds requirement in the standardised approach on the most recent risk number for the correlation trading portfolio (Article 338(4) of the CRR)	—	—		
5 Other*	241	19		
6 Total	7,288	583		

* Other includes Risks not in Model not included in VaR or Svar

Table 71.MR2-B - RWA flow statements of market risk exposures under the IMA

EUR million		2023						
		a	b	c	d	e	f	g
		VaR	SVaR	IRC	Comprehensive risk measure	Other*	Total RWA	Total capital requirements
1	RWEAs at previous period end	2,268	4,802	790		130	7,990	639
1a	Regulatory adjustment	1,567	3,391	387		—	5,345	428
1b	RWEAs at the previous quarter-end (end of the day)	701	1,411	402		130	2,645	212
2	Movement in risk levels	(393)	(1,853)	732		111	(1,402)	(112)
3	Model updates/changes	—	—	—	—	—	—	—
4	Methodology and policy	—	—	—	—	—	—	—
5	Acquisitions and disposals							
6	Foreign exchange movements	82	619		—	—	701	56
7	Other	—	—	—	—	—	—	—
8a	RWEAs at the end of the reporting period (end of the day)	810	1,510	1,483	—	241	4,045	324
8b	Regulatory adjustment	1,148	2,057	39	—	—	3,243	259
8	RWEAs at the end of the reporting period	1,958	3,568	1,522	—	241	7,288	583

* Other includes Risks not in Model not included in Var or Svar

ESP & SLB: CRI capital increase driven by an increase in the net long position during the quarter (mainly in European debt).

CHILE: The quarterly decrease of €77 million is due to the elimination of the kc in December 2023.

MEXICO: The quarterly decrease of €39 million is due to the elimination of the kc in December 2023.

IRC multiplier of 2.25 would be in effect for Mexico and Chile.

Table 72.MR1 - Market risk under the standardised approach

EUR million		2023
		a
		RWEAs
Outright products		8,707
1	Interest rate risk (general and specific)	4,954
2	Equity risk (general and specific)	146
3	Foreign exchange risk	3,271
4	Commodity risk	336
Options		458
5	Simplified approach	—
6	Delta-plus method	184
7	Scenario approach	—
8	Securitisation (specific risk)	275
9	Total	9,166

Below is a breakdown of capital requirements and RWA for market risk with standardised model approval from 2022 to 2023.

Table 73. Capital requirements for market risk. Standardised approach

	2023	
	Capital	RWA
Starting figure (31 Dec. 2022)	602	7,521
Changes in business	131	1,645
Ending figure (31 Dec. 2023)	733	9,166

Prudent Valuation Adjustments (PVA)

In addition, Appendix XXIV provides a breakdown of the constituent elements of Banco Santander's PVA for all assets measured at fair value (at market or model prices) and for which PVA is required.

The amount of prudent valuation adjustments increased in the second half of the year. The main reason for this increase was the rise in the number of positions subject to prudential valuation adjustments, which did not offset the reduction due to the improvements in their calculation methodologies that were implemented during the year.

The details of the prudent valuation adjustments (table PV1) can be found in Appendix XXIV available on Grupo Santander's website.

 [Access 2023 Pillar 3 Disclosures Report available on the Santander Group website](#)

7.2.1. Internal initiatives on methods for calculating market risk

Grupo Santander has dedicated great efforts in recent years to improve the internal Market Risk models, under the global initiative called Market Risk Advanced Platform (MRAP), with the double objective of transforming and strengthening them in line with the new requirements of market risk regulatory framework published by Basel ("Fundamental Review of Trading Book" - FRTB) and to adapt them to the guidelines of the ECB's TRIM exercise ("Targeted Review of Internal Model") and supervisor expectations.

This program adopted a multidisciplinary and multi-geographic approach, with the participation of all entities that carry out activities with market risk and all relevant interest groups, including market risk, technology, Front Office and Regulatory Affairs and Compliance. It has introduced significant improvements in terms of functional and IT architecture and operating models, which entails a change in the culture established in the Group and the generation of synergies between all initiatives and resources.

Within this program, during the years 2019 and 2020, intense work was done on improving and adapting the IRC model in order to comply with the findings previously raised by the supervisor. Finally, in October 2021, after the improvements and developments executed for this purpose, the new model was approved by the ECB for the calculation of capital requirements for market risk for Spain and SLB, along with other material changes (improvement in the treatment of credit VaR and VaR percentiles), after the corresponding inspection (IMI 4313).

Additionally, during 2023 work continued on improving all components of the internal model (VaR/SVaR, RNIMs and IRC) in order to respond to the obligations raised by the supervisor in the TRIM and in the aforementioned IMI. As a result of all this, the ECB closed all obligations at the end of the year and eliminated the corresponding capital surcharges.

Currently, the Group's focus is on strengthening the regulatory calculation model for the future implementation of FRTB/CRR III in January 2025, improving the quality of sensitivity metrics, making technological implementation more efficient and filling certain gaps in monitoring and the "end-to-end" validation exercise.

See the Santander Annual Report, for further information about the IBOR initiative.

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7.3. Trading activity

The goal of daily market risk function monitoring is to ensure that market risk positions remain within approved limits and to assess performance and significant deviations in risk metrics.

Trading activity at Santander is monitored by the local market risk units, under the principle of independence of business units, monitoring market risk positions on a daily basis and analysing the value of a set of metrics identified and approved by the group, the changes in them, any material changes that may occur and compliance with the approved limits on these metrics.

Regular reports are prepared and distributed on the basis of this analysis. These reports ensure the appropriate monitoring of market risk activities within the group, and are distributed to senior management and other internal and external stakeholders, so that market risk activities may be properly monitored.

The corporate Market Risk functions also monitor positions daily, both locally at the level of the individual unit and globally, through exhaustive checking of changes in the portfolios to detect any incidents and correct them immediately.

The local Market Risk functions are also responsible for the daily calculation and analysis of the results of the trading books. Preparing and analysing a daily income statement is an excellent risk indicator, helping us identify the impact of changes in financial variables on the portfolios.

The main market risk metrics are:

- VaR and Stressed VaR
- Equivalent and/or nominal positions
- Sensitivities of the various market risk factors to underlying factors (delta, vega, gamma and theta)
- Delivery risk for short positions in securities (fixed income and equities)
- The volume of effective and relative losses resulting from the monitoring of results during a period:
 - Loss trigger
 - Stop loss
- Credit metrics:
 - Total exposure and exposure by sector/geography/rating
 - Jump to default by issuer, product, currency and seniority
 - Sensitivity to credit risk
- Volume of origination transactions
- P&L of each desk and/or portfolio

These metrics are used to establish limits and sub-limits, in order to provide a sufficiently granular limit structure to enable effective control of the various types of market risk factors to which the group's portfolios are exposed in its trading activities.

The establishment of market risk limits for trading is a dynamic process that responds to the level of risk appetite established by the group. This process is part of an annual limits plan defined by the group's senior management, involving all of the group's subsidiaries.

For more information on the process of setting limits please refer to the chapter 4. Risk, compliance & conduct management, of the Santander Annual Report.



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Scenario analysis is also performed as a risk management tool, to control the potential impact of extreme or unexpected movements in market risk factors on trading books. These scenarios can replicate past events (historical scenarios), identify plausible alternatives that do not correspond to past events (hypothetical scenarios) or look for market movements that cause a particular impact on results (reverse scenarios).

7.3.1. Value at Risk

Santander's VaR calculation methodology consists of historical simulation at a 99% confidence level, with a one-day horizon for internal risk management and a ten-day horizon when calculating own funds for market risk.

Statistical adjustments are applied in VaR to enable swift and efficient incorporation of the most recent events affecting the levels of risk assumed. Currently, all units use historical simulation with full revaluation, except for Market Risk Spain, which, while using this methodology for certain portfolios, applies historical simulation using a Taylor series approximation for the bulk of its portfolios.

The group uses a two-year window, or 520 daily readings, backwards in time from the VaR calculation reference date. Two figures are calculated every day: one applying an exponential decay factor that accords less weight to the observations furthest away in time and another with the same weight for all observations. The reported VaR is the higher of these two figures. Additionally, it should be noted that VaR is calculated with a one-day horizon and scaled using the square root of time rule. Periodically, a comparison is made between this method and the direct calculation with 10-day performance.

To calibrate the VaR model, the risk factors use different calculation methodologies (relative, absolute or mixed approaches), based on observable data. The criteria for assigning these methodologies to the different groups of risk factors are set out in standards defined by Methodology and independently validated by Internal Validation (2nd Line of Defence). In addition, the corporate VaR guidance requires an annual review of the selection criteria for performance models.

At the same time as the VaR is calculated, the value at earnings (VaE) is also calculated, which measures the maximum potential gain at a certain level of confidence and time horizon, applying the same methodology as for VaR.

VaR by historical simulation has many advantages as a risk metric: it sums up the market risk of the portfolio in a single number and is based on observed market movements without the need for assumptions about functional forms or correlations between market factors.

In relation to the VaR, the Expected Shortfall (ES) is also calculated by estimating the expected value of the potential loss when this is greater than the level set by the VaR.

Unlike VaR, ES has the advantage of being better at capturing the risk of large losses with low probability (tail risk) and of being a sub-additive metric. The BCBS considers that a 97.5% confidence interval delivers a similar level of risk to VaR at a 99% confidence interval. ES is calculated by applying uniform weightings to all observations.

At the end of December 2023, Santander had authorisation from the European Central Bank to use the internal market risk model for calculating regulatory capital in the trading portfolios of the Spain, Santander London Branch, Chile and Mexico units.

The total regulatory capital figures based on the internal model are calculated as the linear sum of the individual regulatory capital of the units that have received internal model approval; i.e. without considering diversification.

Moreover, for those Grupo Santander entities without approval for calculating regulatory capital based on the internal model, capital will be calculated based on the standard model. This calculation methodology is also used by entities that have approved internal models for only some of their portfolios. The standardised approach is applied to portfolios for which the internal model is not approved.

During the year, the strategy for Santander trading activity was to remain focused on customer business, minimising any exposure to directional risk as much as possible and

maintaining geographic and risk factor diversification. This is reflected in the VaR of SCIB's trading book.

The level of risk in the trading portfolio remained low, despite the war in Ukraine, which led to energy price hikes and, ultimately, inflation and increased interest-rate volatility. Furthermore, the risk management processes were proven to be solid, robust and effective, despite occasional peaks observed in VaR over the year.

This is reflected in the VaR of the trading portfolio, which, despite market volatility, especially in relation to interest rates and exchange rates, mostly stayed below the trend of the last four years, and closed December at EUR 65 million. This has meant that trading risk has contributed to capital less than in previous years.

Santander also continues to have very limited exposure to complex structured instruments or vehicles, reflecting a risk culture in which prudent risk management is one of the key features.

Our exposure to hedge funds at the end of December 2023 was 57 million euros, being indirect acting as counterparty in derivative transactions. We analyze the risk related to this type of counterparty on a case-by-case basis, establishing collateralization percentages according to the characteristics and assets of each fund.

The group's policy for approving new transactions related to these products remains very prudent and conservative, and is subject to strict supervision by the group's senior management.

The bank's derivatives activity is mainly focused on the sale of investment products and on hedging risks for our customers. Risk management is focused on ensuring that net open risk is as low as possible.

These transactions include options on equities, fixed income and exchange rates. The units where this activity mainly takes place are: Spain, Brazil, the UK and Mexico.

In comparison with other similar financial groups, the Group's trading risk profile can be classified as low. Dynamic management of risk enables Santander to adopt changes in strategy to unlock opportunities in an uncertain environment.

For more information, see the Risk, compliance & conduct management chapter of the 2023 Annual Report.



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At year-end 2023, VaR by geography was as follows:

Table 74.MR3 - IMA values for trading portfolios

EUR million				
		<u>α</u>		
Total		2023	2022	Variation
Var (10 days - 99%)				
1	Maximum	87	111	(22%)
2	Average	50	56	(11%)
3	Minimum	31	34	(8%)
4	End of period	65	47	38 %
Stressed VaR (10 days - 99%)				
5	Maximum	155	229	(33) %
6	Average	98	129	(24) %
7	Minimum	56	66	(15) %
8	End of period	121	86	41 %
Incremental Risk Charge (99.9%)				
9	Maximum	131	70	89 %
10	Average	72	44	63 %
11	Minimum	24	15	60 %
12	End of period	119	37	221 %
Comprehensive risk measure (99.9%)				
13	Maximum	—	—	—
14	Average	—	—	—
15	Minimum	—	—	—
16	End of period	—	—	—

Figures do not include Risks not in model

Spain				
		<u>α</u>		
		2023	2022	Variation
Var (10 days - 99%)				
1	Maximum	49	68	(28) %
2	Average	29	38	(25) %
3	Minimum	20	24	(17) %
4	End of period	40	27	47 %
Stressed VaR (10 days - 99%)				
5	Maximum	92	161	(43) %
6	Average	60	94	(36) %
7	Minimum	40	57	(31) %
8	End of period	92	57	61 %
Incremental Risk Charge (99.9%)				
9	Maximum	118	57	108 %
10	Average	70	39	78 %
11	Minimum	24	15	61 %
12	End of period	118	37	221 %
Comprehensive risk measure (99.9%)				
13	Maximum	—	—	—
14	Average	—	—	—
15	Minimum	—	—	—
16	End of period	—	—	—

Figures do not include Risks not in model

Chile				
		<u>α</u>		
		2023	2022	Variation
Var (10 days - 99%)				
1	Maximum	24	28	(16%)
2	Average	15	12	24%
3	Minimum	8	6	26%
4	End of period	18	13	38%
Stressed VaR (10 days - 99%)				
5	Maximum	37	45	(18) %
6	Average	22	22	(2) %
7	Minimum	11	4	167 %
8	End of period	15	14	3 %
Incremental Risk Charge (99.9%)				
9	Maximum	11	9	30 %
10	Average	1	4	(61) %
11	Minimum	—	—	17 %
12	End of period	—	—	350 %
Comprehensive risk measure (99.9%)				
13	Maximum	—	—	—
14	Average	—	—	—
15	Minimum	—	—	—
16	End of period	—	—	—

Figures do not include Risks not in model

Mexico				
		<u>α</u>		
		2023	2022	Variation
Var (10 days - 99%)				
1	Maximum	14	15	(7) %
2	Average	7	6	17 %
3	Minimum	4	4	(5) %
4	End of period	7	7	3 %
Stressed VaR (10 days - 99%)				
5	Maximum	26	23	13 %
6	Average	16	13	22 %
7	Minimum	6	5	18 %
8	End of period	14	15	(1) %
Incremental Risk Charge (99.9%)				
9	Maximum	2	4	(50) %
10	Average	1	1	(59) %
11	Minimum	—	—	(79) %
12	End of period	1	—	121 %
Comprehensive risk measure (99.9%)				
13	Maximum	—	—	—
14	Average	—	—	—
15	Minimum	—	—	—
16	End of period	—	—	—

Figures do not include Risks not in model

7.3.2. Stressed VaR

In addition to standard VaR, Stressed VaR is also calculated daily for the main portfolios. The methodology for calculating Stressed VaR is the same as that used to calculate VaR, apart from two differences:

- Historical window for observing factors: in the stressed VaR calculation a window of 260 data readings is used, instead of the 520 used for computing the ordinary VaR measurement.
- Unlike the method used for the ordinary VaR calculation: stressed VaR is not obtained as the higher of the uniformly weighted percentile and the exponentially weighted percentile; instead, the uniformly weighted percentile is used directly.

All other aspects of the methodology and inputs for calculating the stressed VaR are the same as for the VaR.

The Market Risk functions periodically define the window used to calculate SVaR (the observation period), using the most severe at any given time, depending on the positions in the portfolio. The scope considered comprises the Treasuries for which approval has been obtained for the use of the internal model at 31 December 2023: Spain + SLB, Chile and Mexico.

The windows currently used to calculate Stressed VaR are:

Stress Window

	Period
Spain & SLB	26/02/2008 – 05/03/2009
Chile	18/01/2008 – 30/01/2009
Mexico	11/05/2016 – 22/05/2017

The Market Risk functions review these stress windows every quarter. The SVaR figures are also checked daily, comparing them to the VaR figures. If this analysis reveals that the current window used to calculate daily VaR covers a period with greater volatility than the window used to calculate SVaR, the stress window is reviewed on an extraordinary basis.

7.3.3. Incremental risk charge

Following the recommendations of the Basel Committee on Banking Supervision and applicable regulations, an additional metric is calculated in relation to the credit risk inherent to the trading portfolios: the incremental risk charge (IRC).

The IRC is intended to measure both rating migration risk and any incremental default risk that is not captured by VaR, through changes in the corresponding credit spreads. To this end, transition matrices are used, which represent the probabilities of migrating from one rating to another over a certain time horizon. The matrices are extracted from reports published by one of the leading ECAs for the various sectors. The above-mentioned reports are produced annually by the ECAI, analysing more than thirty years of default data and one-year rating migrations for various types of debt. Some modifications are made to the transition matrices extracted from the reports in order to guarantee their consistency and that they can be used in the defined model.

The IRC metric is calculated for public and private fixed-income bonds, bond derivatives and credit derivatives in the trading portfolio. In addition, the new IRC model approved for

Spain (including the SLB) uses correlations that are determined by the relationship between each issuer and the systemic factors. These ratios are calibrated to a one-year time frame using historical price series representing each issuer and the systemic factors. The price series used are at least ten years long and include at least one stress period in accordance with regulatory requirements.

In the previous IRC model that continues to apply for the Mexican and Chilean units, the calculation of correlations uses the single-factor formula proposed by the Basel regulation.

The method used to calculate the IRC, which is essentially similar to that applied to the credit risk of non-trading portfolio exposures, is based on the Merton structural model, which dictates that the default event occurs when the assets of a company fall below a certain level of its debts. This internally developed model comprises direct measurements on the distribution queues of losses caused by the different credit events it provides for, i.e. default risk and migration of credit quality subject to a confidence interval of 99.9% and a capital horizon of one year for all positions. The assumed liquidity horizon coincides with the one-year capital horizon and the simulation methodology uses the Montecarlo approach.

During 2019 and 2020, work was carried out on the development of a new CRI model in response to the deficiencies and findings that had been raised by the regulator in the previous IMI. In this way, the new CRI model incorporated various improvements in fundamental aspects of the model and, following IMI 4313 carried out during 2020, obtained the regulator's approval for Spain, including VMS, as well as the consequent elimination of the multiplier that had previously been imposed for this geography. In addition, along with this approval, a series of Obligations were established for the resolution of which improvements have been made during 2022 and 2023. As of the end of December 2023, a large part of the lifted Obligations have already been considered as implemented by the supervisor.

As approval of the new model was only granted for Spain, the geographies of Chile and Mexico will continue to calculate their regulatory capital for market risk using the previous IRC model.

7.3.4. Analysis of scenarios and stress testing

The risk measures described above are based on assumptions that underpin day-to-day risk management and decision-making, including normal market conditions, continuous pricing and adequate liquidity, although they do not fully predict extreme movements or unforeseen market turbulence.

Stress testing is an important risk management tool that identifies unexpected outcomes related to a wide range of risks, telling us how much capital would be needed to absorb losses if these unexpected events were to occur.

Stress tests play a particularly important role in: estimating future risk; overcoming the inherent constraints of models and the use of historical data; the communication of internal and external risks; supporting liquidity and capital plans; reporting the establishment of risk tolerance levels; and designing risk mitigation and contingency plans for stressed conditions.

The group's stress test programme includes the following scenarios:

- **Historical scenarios:** these study how the portfolio reacts under crisis conditions or significant market events that occurred in the past which affect portfolio positions, estimating maximum losses under the assumption that such events will recur.
- **Subprime crisis:** based on events that occurred in the period between September 2007 and December 2008, triggered by the subprime mortgage crisis in the USA. Considering two different time horizons (one day and ten days), it identifies the most severe changes in market variables for each risk factor
- **Covid-19 crisis:** this reflects the dramatic changes in financial markets as a result of the covid-19 pandemic during the first two quarters of 2020. It is based on the application of historical market movements during the most severe ten-day period in terms of results, for most of the positions in the trading portfolios of the group's units
- **Hypothetical scenarios:** built using movements for market variables that are not necessarily connected to historical events, with a forward-looking (ex-ante) view, as opposed to a backward-looking (ex-post) view of historical scenarios.
- **Abrupt crisis:** a hypothetical scenario based on abrupt changes in market risk factors: rise in yield curves and credit spreads, appreciation of the USD, sharp fall in stock market indices and dividends, increased volatility in all risk factors, rises in commodity prices and default of the main positions in the portfolio.
- **Worst case:** this combines movements in risk factors and their respective historical volatilities, assuming a variation in the value of market factors of +/-3 and +/-6 standard deviations per day. Its output is the sum of the worst results by risk factor, regardless of their historical correlations.
- **EBA adverse scenario:** based on the adverse macroeconomic scenario to be applied to market risk

factors, as proposed by the EBA for the "EU-wide stress test 2020" exercise

- **Forward-looking scenario:** a plausible scenario defined by the Market Risk functions, based on the portfolio positions and their expert judgement regarding short-term changes in market variables that can have a negative impact on such positions.
- **Reverse stress test scenarios:** analysis of scenarios that could undermine the institution's viability, identifying the potential vulnerabilities of the business, along with hidden risks and interactions between risk factors. They start from a known stress result (such as non-compliance with certain ratios relating to capital, liquidity or capital adequacy) and from there they identify the extreme scenarios in which movements in market variables could cause events that might compromise the viability of the business.

Other scenarios:

- **IRC scenarios:** designed to stress the default risk and rating migration risk of credit positions in the trading portfolio, with a view to identifying credit events that could impact regulatory capital and measure how reasonable the assumptions of the IRC model are.
- **Use of proxies scenarios:** defined to analyse what impact incorrect estimates of proxies could have on determining the time horizons used to calculate VaR.
- **Liquidity and concentration stress scenario:** designed to estimate the potential impact of a reduction in market liquidity or an excessive concentration of portfolio positions that could affect their exit price.

The Market Risk functions regularly calculate and analyse all these scenarios. A consolidated stress test report is prepared every month, based on the results of each of the scenarios and for all the group's units with trading activities. There are also alerts on the stress results which, when exceeded, trigger communication and joint analysis by Risk and Business functions.

The table below shows the results as at 31 December 2023, broken down by risk factor (interest rate, equities, foreign currency, credit spread, commodities and the volatility for each), in a scenario in which volatility equivalent to six standard deviations in a normal distribution is applied, regardless of the historical correlation between them.

The scenario is defined by taking the change that produces the highest potential loss in the global portfolio for each risk factor, discarding the most improbable combinations in economic and financial terms.

The result of the analysis shows that the economic impact that Santander would suffer in its trading portfolios, in terms of mark to market, assuming that the stress movements defined in the worst-case scenario materialised in the market, would be €59 million.

Table 75. Stress scenario: Maximum volatility (worst case)

EUR million	2023						2022					
	Interest rate	Equities	Foreign currency	Credit spread	Commodities	Total	Interest rate	Equities	Foreign currency	Credit spread	Commodities	Total
Total Trading	(37.50)	(10.40)	(32.30)	(0.50)	—	(80.70)	(30.60)	(11.00)	(12.00)	(5.20)	—	(58.80)
Europe	(10.10)	(4.90)	(21.40)	(0.50)	—	(36.80)	(17.90)	(8.70)	(3.60)	(5.10)	—	(35.30)
South America	(26.80)	(5.40)	(9.90)	—	—	(42.10)	(8.20)	(2.10)	(4.40)	(0.10)	—	(14.80)
USA	(0.60)	(0.10)	(1.00)	—	—	(1.80)	(4.50)	(0.20)	(4.00)	—	—	(8.80)
Global Activities	—	—	—	—	—	—	—	—	—	—	—	—
Asia	—	—	—	—	—	—	—	—	—	—	—	—

The result of the analysis is that the economic impact on Grupo Santander's trading portfolios, in terms of market price, would be EUR 80.7 million if the worst-case stress movements were to materialise in the market.

7.3.5. Backtesting (MR4)

The backtesting exercise consists of comparing the VaR forecasts, given a certain confidence level and time horizon, with the actual losses incurred over a time horizon equal to the VaR time horizon.

The general aim of backtesting is to verify the accuracy of the Value at Risk (VaR) calculation model. In other words, whether to accept or reject the model used to estimate the maximum loss on a portfolio with a given level of confidence, over a certain period of time.

Backtesting is analysed at local level by the local market risk control units. The market risk consolidation unit is responsible for backtest reporting at consolidated level. It is important to note that the backtesting methodology is applied identically to all the sub-portfolios covered by the internal market risk model. The analysis of regulatory backtesting is conducted daily, at portfolio and sub-portfolio level.

Four types of backtesting are defined, depending on the kind of P&L used:

- **Economic P&L (dirty P&L):** refers to the daily P&L calculated on the basis of mark-to-market or mark-to-model securities (depending on the instruments) of the books and records of Banco Santander at the end of the day. It is calculated using Front Office systems (data on positions, pricing models, valuation methods, price parameters and end-of-day market data)
- **Actual P&L (dirty P&L without mark-ups):** refers to the daily P&L calculated by comparing the portfolio's closing value and its actual value at the end of the following day, including losses and gains derived from intraday activities, excluding fees, commission and net interest income. Santander, as considered acceptable in paragraph 63 of the TRIM guidance ("ECB Guide to Internal Models", Oct 2019), has established that net interest income is equal to zero in the trading portfolio. The "actual P&L" includes all time effects (theta). This P&L is used for the regulatory backtesting in accordance with article 366 (3) of the CRR, in order to compute the number of overshootings. The additional aspects included in the TRIM guidance are also considered.
- **Hypothetical P&L (clean P&L due to subtractions):** this refers to the daily P&L calculated by comparing the portfolio's closing value and its actual value at the end of the following day, assuming unchanged positions. In this case, time effects are not considered, to be consistent

with the VaR. Similarly, the additional aspects included in the TRIM guidance are also considered. Specifically, any valuation adjustment made in actual P&L that is not included in VaR is also not included in hypothetical P&L. Hypothetical P&L is obtained from the Front Office platforms by the Market Risk function, without considering intraday results or changes in portfolio positions. This P&L, like actual P&L, is used for the regulatory backtesting in accordance with article 366 (3) of the CRR, in order to calculate the number of overshootings.

- **Risk-theoretical P&L (clean P&L due to change of factors):** this hypothetical P&L is similar to the previous measure but is calculated using the Market Risk calculation engine (AIRE), without considering intraday results, changes in portfolio positions or time effects (theta). This P&L is exclusively used to verify the quality of the internal VaR model.

Of these four backtesting methods, only the backtesting on actual P&L (dirty P&L without mark-ups) and the hypothetical P&L (clean P&L due to subtractions) are used to measure and report the accuracy of the model, for regulatory purposes.

In order to calibrate and control the effectiveness of the internal systems for measuring and managing market risks, in 2023 Grupo Santander regularly carried out the necessary analyses and tests, obtaining conclusions that confirm the reliability of the model.

Number of overshootings

Overshooting occurs whenever the losses or gains observed in a day exceed the VaR estimate. The number (or percentage) of overshootings recorded is one of the most intuitive indicators of a model's accuracy.

When the P&L exceeds the previous day's VaR it is considered to be an overshooting (or exception). The number (or percentage) of overshootings recorded is one of the most intuitive indicators of the models accuracy. A regulatory coefficient "K" is calculated on the basis of the number of overshootings in the regulatory backtesting. This affects the calculation of regulatory capital in accordance with the following table:

Backtesting overshootings	KR value
0	—
1	—
2	—
3	—
4	—
5	0.40
6	0.50
7	0.65
8	0.75
9	0.85
10	1.00

The confidence level for the VaR calculation is a measure of the number of overshootings expected to occur in a given time window. For example, if the daily VaR is calculated with a confidence level of 99%, the percentiles of interest are the 1st and the 99th percentiles of the P&L distribution, so we should expect 2% of overshootings during the days studied (1% due to excess profits and 1% due to excess losses).

If there are significantly more, or fewer, overshootings, this might be a sign of problems in the VaR model employed. The observed P&L and estimated VaR data can be used to construct a hypothesis test to check the validity of the VaR/P&L relationship.

Time between overshootings

The confidence level for the VaR calculation is also an indicative measure of the number of days that can be expected to elapse between two successive overshootings. For instance, if the daily VaR is calculated at 99% confidence (1st and 99th percentiles), we may expect an average time of approximately 50 days between overshootings.

Similarly to the frequency of overshootings, hypothesis-testing can be done based on the time between overshootings, as a means of validating the VaR model.

Distance between overshootings

Whereas VaR predicts the risk that is assumed with a certain probability, average overshooting (expected shortfall) is a predictor, for that probability, of the average loss once VaR is exceeded. This study should be included when analysing the backtesting report, to obtain the size of the potential losses that exceed the VaR level.

Daily VaR/P&L relationship

To validate the VaR model, it is not enough to analyse the number and type of overshootings that occur in a time window. Other indicators must be observed to ensure the model's consistency. One such indicator is the daily VaR/P&L relationship. This relationship is defined as:

- The P&L figure, as a percentage of VaR, on all the days on which there are no overshootings (losses or gains).
- Calculation of its arithmetic mean.

The percentage should be close to a value determined by the VaR confidence level, because the higher the chosen confidence level, the higher the VaR estimate (and the smaller the P&L results as a percentage of that estimate).

If the percentage observed is much higher than expected, the risk is being underestimated and the model should be reviewed. Conversely, if the percentage is significantly smaller, then the risk is being overestimated and the VaR model should be adjusted. The latter outcome may, however, be desirable if the aim is to maintain conservative risk estimates.

The following diagram shows the annual backtest (MR4) at the end of December 2023 for each unit with internal model approval (see Appendix XXV).

 [Access 2023 Pillar 3 Disclosures Report available on the Santander Group website](#)

The number of overshootings at 31 December 2023 for the units with internal model approval are shown below.

Table 76. Exceptions at units with internal model

	2023	
	Exceptions	Model Status
Spain & SLB	3	OK
Chile	—	OK
Mexico	2	OK

During 2023, there have been three exceptions in Spain and two in Mexico.

On the one hand, the exceptions in Spain would be mainly due to volatility and movements in interest rate curves arising from the collapse of Silicon Valley Bank, as well as extreme movements in the CDS market.

On the other hand, the exceptions in Mexico are due to the volatility generated in the interest rate curves derived from the collapse of Silicon Valley Bank, as well as movements in curves and exchange rates between the Mexican peso and the U.S. dollar.

The fair value of a financial instrument is calculated using quoted market prices or appropriate valuation models, duly validated and approved. This may cause a degree of uncertainty in the valuation of less liquid financial instruments, which are not traded on a regular basis or which use valuation models. These uncertainty factors are incorporated into the fair value of positions through valuation adjustments.

Valuation adjustments are designed to ensure the fair valuation of positions, by including variables in the market value that are not considered in the valuation models or for which there is sufficient uncertainty to significantly affect the valuation.

The valuation adjustment categories used at the Group include:

- Market liquidity valuation adjustments (close out cost): adjustments arising from the use of average prices when valuing portfolio positions, where accounting rules require valuation based on the exit price.
- Valuation adjustments are included due to the existence of spreads between buy and sell prices.

- These adjustments are calculated taking into account the spread between market buy and sell prices and are estimated independently for each risk factor, distinguishing between: interest rate curves, prices, dividends, volatilities and correlation.
- Valuation adjustments due to uncertainty in market prices (market price uncertainty): these are warranted because of considerable uncertainty in the market data used for the calculation of fair value, distinguishing between:
 - Observable market data
 - Unobservable market data
- Valuation adjustments due to model risk: these are warranted when there is a high degree of uncertainty in the valuation models or in the parameters used by these models. This uncertainty may be caused by: adding certain assumptions that may be erroneous, models whose results cannot be calibrated because there are no alternatives or because of dependence on parameters that are subject to possible estimation errors.
- Other valuation adjustments: adjustments for limitations in valuation systems, for exotic items not captured in the payoffs configured in the systems, uncertainty in the financing/investment costs used in estimating the exit price, profit reserves for specific or one-off transactions (generally associated with the first-day profit or loss of instruments classified as Level 3 in the fair value hierarchy) and credit risk adjustments (CVA/DVA).

7.3.6. Internal validation of the models

Market, counterparty and other non-financial risk models

In 2023, in accordance with the model risk policies, the Internal Validation team performed independent review exercises for the main models used in the group's various geographies. The areas covered are counterparty risk (maximum and expected exposures, CVA/DVA), issuer risk (incremental risk charge), valuation (interest rates, FX, equity, credit and commodities), valuation adjustments (AVA, FVA), market risk (VaR/SVaR), structural interest rate and liquidity risk (prepayments, accounts with no specified maturity, mortgages, calculation of EVE/NIM) and other non-financial risks (operational risk, macroeconomic scenarios).

The group also continued to monitor on a quarterly basis the VaR & SVaR models used to calculate regulatory capital for market risk, based on key indicators of the quality of the models, in order to proactively and independently monitor the operation of these models.

7.4. Structural balance sheet risks

This section covers the requirement IRRBBA - IRRBB qualitative information.

Structural risk is inherent in banking business and arises as a result of changes in a number of factors, including market or balance sheet behaviour variables, that affect the profit or loss or economic value of balance sheet items (banking book). This risk includes both the potential losses from price changes for assets recognised at fair value, and economic losses arising from management of assets and liabilities carried at amortised cost in the banking book positions.

Within structural risk, interest rate risk in the banking book (IRRBB) is considered the main source of balance sheet risk. There are four sources of IRRBB: repricing risk (or mismatch risk), curve risk, basis risk and optionality risk (automatic and behavioural).

The management of IRRBB measures aims to ensure the stability of net interest margin and the economic value within the Group's defined risk appetite.

Additionally, within the structural risks is the credit spread risk in the banking book (hereinafter CSRBB), which measures the risk of changes in the market price due to credit risk, liquidity or other characteristics of the instruments with credit risk, which is not captured by other existing risk frameworks such as IRRBB or the expected default risk.

These activities are based on the following principles, which take into account internal policy, regulatory and market best practice requirements:

- **Independence of risk management and control functions** following the group's established lines of defence model.
- **Involvement of senior management.**
- **Holistic approach to risk:** IRRBB and CSRBB control and monitoring must take into account all sources of risk and the fact that risks can originate due to factors connected with subsidiaries or for reasons not connected with them, so that local IRRBB risk events can have an impact on the group. Furthermore, the approach should be forward-looking and analyse trends over different time periods and under different scenarios.
- **Robust systems and quality internal data.**
- **Use of methodologies and models which are standardised and documented.**
- **Establishment and adaptability of limits**

For more information, see the Risk management and control chapter (section 4.1) of the 2023 Annual Report.



[Access 2023 Annual Report available on the Santander Group website](#)

The financial area of each group subsidiary manages interest rate risk originated by retail and commercial banking and is responsible for management of the structural risk generated by interest rate fluctuations. Mitigation strategies are used to manage the IRRBB risk profile by using interest rate instruments such as fixed income bond portfolios (usually government bonds) or derivative instruments with high credit quality, high liquidity and low capital consumption that

complement the natural hedges provided by the balance sheet itself. They are always carried out taking into account the market environment.

For more information, see the Risk compliance & conduct chapter (section 4.5) of the 2023 Annual Report.



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7.4.1. Main interest rate risk in the banking book (IRRBB) metrics

The management, measurement and control of IRRBB risk and metrics is performed independently in each subsidiary. The set of metrics used in the group is homogeneous to ensure consistent measurement. However, the range of specific metrics implemented in each subsidiary depends on the dimensions and risk factors identified as relevant by each subsidiary in its IRRBB self-assessment, based on the individual features and nature of its business, its balance sheet structure and the complexity of the markets in which it operates.

IRRBB metrics are calculated under various scenarios and provide a static and/or dynamic overview of balance sheet exposure and net interest margin in response to adverse interest rate movements and/or on the main behavioural parameters and assumptions under which optionality is modelled. The main metrics are as follows:

- **Repricing gap:** it measures the difference between the volume of sensitive assets and liabilities, on and off the balance sheet, that re-price (i.e. that mature or are subject to rate revisions) at certain times.
- **Economic value and its sensitivity:** economic value of the equity (EVE) is the difference between the present value of assets less the present value of liabilities of the banking book, excluding own equity and other instruments that do not generate interest. The present value is calculated by discounting projected cash flows of assets and liabilities with the appropriate discount curve. EVE sensitivity is calculated as the difference between the EVE in a selected interest rates scenario and the EVE calculated in the baseline scenario. Therefore, EVE can have as many sensitivities as scenarios considered. This metric enables the identification of long-term risk, and so supplements net interest margin.
- **Net interest margin and its sensitivity:** net interest margin is calculated as the difference between the interest income as percentage of assets and the interest cost of the liabilities of the banking book in a determined time horizon (typically from one to three years, the group's standard being one year). Its sensitivity reflects the impact of changes in interest rates on net interest income in the given time horizon. Net interest margin sensitivity is calculated as the difference between the net interest margin in a selected scenario and the net interest margin in the baseline scenario. Therefore, the net interest margin can have as many sensitivities as scenarios considered. This metric enables the identification of short-term risk, and supplements economic value of equity (EVE) sensitivity.
- **Earnings measures:** measures the change in expected future returns within a certain time horizon (three months) as a result of movements in interest rates and credit

spreads as risk factors. This ratio takes into account both the impact of net interest income and the instruments whose value could be affected by changes in interest rates and which can be sold in the short term (mainly the instruments assigned to the HTC&S (Held to Collect and Sale) model and reported in the fair value measurement category OCI (Fair Value Through Other Comprehensive Income)).

- **Economic P&L of the ALCO portfolio:** to estimate losses from price changes of assets recognised at fair value, economic P&L is calculated under stress for fixed-income instruments managed by the ALCO (ALCO portfolios). The impact this market stress could have on the portfolio is then measured. A change in the value of this portfolio would reduce the group's equity and, therefore, have a negative effect on its capital ratio. The stress has a statistical component, as it is calibrated according to past performances observed in the market, and a forward-looking component, as it also uses stress scenarios generated by the group based on macro-economic analysis.
- **Value at risk (VaR and EaR) for the purpose of calculating economic capital:** the economic capital model by IRRBB in the group is based on a value-at-risk model that assesses the potential impact of movements in market variables, interest rates and credit spreads (the latter limited to the FV positions managed by ALCO) on both the economic value of equity and earnings. VaR and EaR represent the maximum amount of estimated losses on the economic value of equity and earnings calculated over a two-year period, which are expected to be exceeded only in a percentage of cases (confidence level 0.05%) and over a time horizon that varies for each subsidiary depending on its balance sheet structure.

System for controlling limits

The measurement, analysis and control of IRRBB metrics guarantees that the level of risk is aligned with the group's policies, approved management limits and risk appetite.

As a general rule, metrics are measured and controlled on a monthly basis, using the previous month's closing data.

IRRBB limits are set independently for each subsidiary in accordance with the individualised management and control per subsidiary. The main limits set in all subsidiaries are:

- Net interest margin sensitivity limit at one year
- Market value of equity sensitivity limit
- Limit of the market value of banking book portfolios used for on-balance-sheet interest rate management that could have an impact on equity due to their accounting classification (fair value through equity)

The limits are reviewed regularly and have flexible modification mechanisms that can adapt to extreme or unfavourable market situations, but also to market opportunities.

If one of these limits or their sub-limits is exceeded (by currency or IRRBB risk type), the heads of risk management must explain the reasons and facilitate a corrective action plan.

IRRBB information is reported to the group's senior management on a subsidiary-by-subsidary basis, but

collectively. In this way, the group's management can assess and control the risk profile in the subsidiaries, while at the same time obtaining a comprehensive overview of the risk so that it can be analysed and controlled from a global perspective.

The internal metrics used in the group to monitor IRRBB, based on the direct application of shocks to interest rate curves, are economic value and net interest margin sensitivities. The most commonly used interest rate scenarios are:

- Parallels of +/-100bp and +/- 25bp, depending on the volatility of the group's various currencies.
- The six regulatory scenarios (parallel and non-parallel) defined by the EBA⁴ for the EVE sensitivity calculation.

In addition, each subsidiary of the group uses a variety of scenarios sufficient to ensure appropriate measurement and control of its IRRBB profile. The use of these scenarios plays an important role in providing supplementary future risk estimates. These scenarios are set on an annual basis and the range is also based on the IRRBB self-assessment performed by each entity in the group. They can be of different types, e.g. historical, forward-looking, probabilistic or based on expert assessments.

Santander measures structural risks using models to support decision-making processes, obtain predictive information and generate metrics that are better adapted to the reality of each subsidiary and its balance sheet structure. These models must be consistent with the methodological standards defined in the group. Wherever possible, the group tries to align all methods and models used for the calculation of regulatory and internal metrics, and currently there are no relevant differences.

The general IRRBB management strategies are transactions with fixed-income instruments or derivatives. If hedging is through fixed income instruments, they are generally recorded at fair value through equity and to a lesser extent at amortised cost. If hedging is through derivatives, the group's general policy to reduce asymmetries in accounting treatment is to enter into fair value or cash flow hedges depending on the exposure of the underlying.

Fair value hedges hedge portfolio risks (fixed rate) and are therefore exposed to changes in the fair value of the portfolios due to changes in interest rates.

The cash flow hedges hedge the exposure of foreign flows subject to changes in interest rates. The purpose of these hedges is to actively manage the interest rate risk of floating rate volumes by entering into interest rate derivatives where the bank swaps floating rate flows for fixed rate flows.

Both types of hedging are carried out in the group. The financial management divisions of the individual subsidiaries are responsible for designing and implementing operations according to their balance sheet structure, risk exposure and markets. These hedges are made through mainly interest rate swaps.

Financial derivatives that do not qualify for hedge accounting are treated for accounting purposes as trading derivatives.

For further details, see the Risk, compliance & conduct management chapter of the 2023 Annual Report.

⁴ EBA/GL/2018/02



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Methodologies

Three main elements are necessary to calculate IRRBB metrics in Santander:

- Yield curves for capitalisation and discounting
- Behavioural models that enable the cash flows of certain instruments to be determined
- Assumptions about future changes in the entity's balance sheet and its various items

Of these three elements, the behavioural element is the main one subject to modelling.

The group develops methodological standards that establish best practises and criteria to be followed for the successful development and implementation of IRRBB models. Models may be based on quantitative approaches and methods using statistical or other mathematical techniques, or on assumptions and hypotheses assessed by experts. All models are managed within the framework of the Model Risk framework, which defines the principles and processes (including planning, development, validation, etc.) required to ensure adequate control of the models used in the group.

The main models used in the management and control of IRRBB are described below, by product type:

a. Treatment of non-maturity deposits (NMD)

Accounts with no contractual maturity are subject to two types of optionality, the customer's option to withdraw their money without prior notice and/or the bank's option to review the interest paid. The NMD corporate model models the product as a synthetic bond, with callable nominal and a periodic coupon. The callable nominal is determined by the stable balance and the estimated run-off for these flows. The coupon can be fixed, floating or subject to an elasticity with respect to market rates or a more complex function depending on different variables.

The model is based on the following sub-models and variables:

- **Beta model:** this sub-model defines the relationship between benchmark interest rates in the market and the remuneration paid to customers. The model can use a single beta or multi betas for the same account.
- **Attrition model:** is determined by two sub-models: one calculates the unstable/stable balance, while the other determines the run-off of the stable balance up to the maximum maturity considered. For the unstable balance an outflow is assumed in the first temporary bucket, typically one day.
- **Stable and unstable balance:** a statistical model is used to estimate the stable balance based on the historical distribution of aggregated balances at the segment level and the observed outflows in relation to the trend of the series. The stable balance is determined on the basis of a certain confidence level, which is usually above 95%.

- **Run-off model:** this sub-model attempts to estimate customer behaviour on the basis of historical harvest data (development of accounts created at the same point in time). The estimate can be made using a statistical model that depends on several variables (interest rates, spread with other products, macro variables) or it can be calculated using an optimisation process that assumes a certain function, e.g. assuming an exponential function and calibrating the decay rate⁵.

The average repricing term is not a parameter used directly in the NMD corporate model, but duration is. However, following regulatory criteria, the group ensures that the average repricing term of NMDs for each currency does not exceed the thresholds set out in the EBA guidelines. This is calculated using the average maturity of the expected cash flows of the entire NMD balance (stable and unstable) adjusted by the betas of the model. For segments with fixed coupons or a beta of zero, the average maturity of the repricing dates matches the average maturity of the cash flows, and as the unstable balance (repricing balance) or betas increase, the gap between them opens (causing the average repricing maturity to decrease).

This model requires a variety of inputs, which are as follows:

- Parameters inherent to the product.
- Customer and/or bank behavioural parameters (in this case, analysis of historical data is combined with expert judgement on the business).
- Market data.
- Historical data for the portfolio.

b. Treatment of non-maturing assets (NMA)

The model used on the asset side for products such as credit cards can be modelled in a similar way to the NMD model, sharing some of the same methodology and assumptions. The difference between the two models is that for assets without a fixed maturity, the fixed credit limit, which serves as a ceiling for future drawdowns, must be taken into account.

c. Treatment of prepayment of certain assets.

The prepayment option is defined as the possibility offered to customers to repay their loans before the contractual maturity date, without this involving a significant additional cost for them. Prepayment can be total or partial. Prepayment mainly affects fixed-rate products, such as fixed-rate mortgages in markets where the yield curves for these loans are at low levels and there is an incentive for customers to prepay when the market interest rate is below the product's reference interest rate. However, prepayment does not only depend on the level of interest rates. It also depends on other more complex factors resulting from macroeconomic and cultural situations in the market. This means that the normal techniques used to value options cannot be applied directly, and they must be combined with empirical statistical models that aim to capture customer behaviour. Some of the factors conditioning this behaviour are:

- **Interest rate:** the differential between the fixed rate of the product (e.g. a mortgage) and the market rate at which it could be refinanced, net of cancellation and opening costs.

⁵ An exponential function implies assuming higher outflows in the short/medium term followed by long-term stability; i.e. the empirically observed behaviour of most units with positive interest rates.

- **Seasoning:** the trend whereby prepayment is low at the beginning of the instrument lifecycle (signature of the agreement) and then increases, stabilising with the passage of time.
- **Seasonality:** redemptions and early cancellations tend to take place at specific dates.
- **Burnout:** a decreasing trend in the speed of prepayment as the instrument's maturity approaches. This includes:
 1. Age, which defines low rates of prepayment.
 2. Cash pooling, which defines loans that have already survived various waves of interest rate reductions as being more stable. In other words, when a loan portfolio has been through one or more cycles of rate cuts and, thus, high levels of prepayment, the surviving loans have a significantly lower prepayment probability.
 3. Other: such as geographic mobility, demographic, social and disposable income factors.

However, prepayment can also occur with variable rate products, and variable rate mortgages are also modelled in

the group. In these cases, prepayment is usually due to factors other than the level of interest rates and the impact in terms of IRRBB risk is lower due to having variable repricing.

The prepayments model assumes that these balances naturally decline as customers gradually repay. Prepayment parameters can be constant values or a function dependent on several variables. The model creates a function that produces a fall in flows until the maturity for the transaction.

The use of additional behavioural models in the group (e.g. early termination of time deposits or pipelines) depends on the structure and complexity of each subsidiary's balance sheet. The rationale for these models is based on those described above.

d. Non Performing Exposures Treatment

The group includes and models NPEs in the IRRBB measurement. The definition of the parameters used in the model (e.g. estimated recovery period) is based on expert judgement and/or credit risk model parameters (probability of default and loss given default).

The published sensitivity to economic value in the IRRBB1 table follows all methodologies and criteria defined within the group and is adjusted (if necessary) by the principles set out in the EBA guidelines.

The published sensitivity to net interest margin is calculated for an interest rate shock of +/-200 basis points in all currencies and following all methodologies and principles defined for internal metrics.

The average and maximum repricing maturity of NMDs in the group is calculated by each subsidiary based on its historical data and statistical techniques. The data for the group are:

	Average repricing maturity		Longest repricing maturity	
	Total volume	Core Volume	Total Volume	Core volume
Retail	2.50	3.40	20.00	20.00
Non-financial Wholesale	2.60	3.80	20.00	20.00

For further details, see the "Risk, compliance & conduct management" chapter of the 2023 Annual Report.

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The following tables show changes in the bank's economic value of equity (EVE) and net interest margin (NIM) for every prescribed interest rate scenario and for every currency:

Table 77. IRRBB1 - Interest rate risks of non-trading book activities

EUR million		2023			
Total	Supervisory shock scenarios	Changes of the economic value of equity		Changes of the net interest income	
		Current period	Last period	Current period	Last period
1	Parallel up	(4,991)	(4,880)	2,576	2,740
2	Parallel down	1,682	1,005	(2,586)	(2,630)
3	Steepener	(688)	(113)		
4	Flattener	(1,559)	(1,964)		
5	Short rates up	(2,843)	(3,223)		
6	Short rates down	361	63		

Metrics reported as of December 23 vs June 23

EUR	Supervisory shock scenarios	Changes of the economic value of equity		Changes of the net interest income	
		Current period	Last period	Current period	Last period
1	Parallel up	12	531	2,041	2,174
2	Parallel down	342	(5,548)	(2,000)	(2,060)
3	Steepener	(839)	224		
4	Flattener	1,096	(2,884)		
5	Short rates up	1,125	(1,832)		
6	Short rates down	(1,298)	(2,152)		

USD	Supervisory shock scenarios	Changes of the economic value of equity		Changes of the net interest income	
		Current period	Last period	Current period	Last period
1	Parallel up	(387)	(763)	537	523
2	Parallel down	(264)	150	(558)	(509)
3	Steepener	(45)	(102)		
4	Flattener	(335)	(323)		
5	Short rates up	(325)	(469)		
6	Short rates down	263	410		

GBP	Supervisory shock scenarios	a		b		c		d	
		Changes of the economic value of equity				Changes of the net interest income			
		Current period	Last period	Current period	Last period	requirement	Last period		
1	Parallel up	(476)	(900)	452				465	
2	Parallel down	218	657	(493)				(475)	
3	Steeper	111	96						
4	Flattener	(196)	(261)						
5	Short rates up	(323)	(515)						
6	Short rates down	242	452						

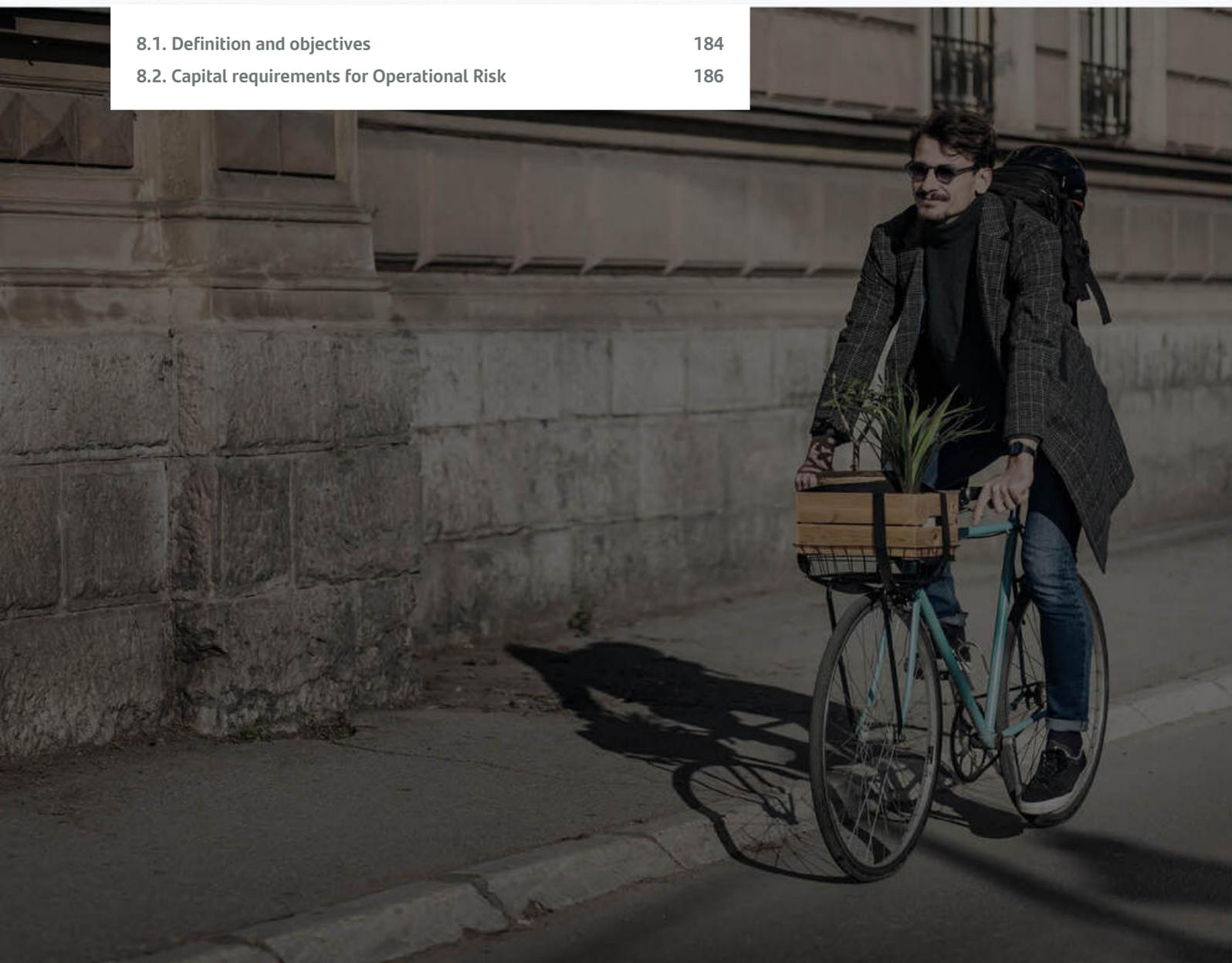
BRL	Supervisory shock scenarios	a		b		c		d	
		Changes of the economic value of equity				Changes of the net interest income			
		Current period	Last period	Current period	Last period	requirement	Last period		
1	Parallel up	(2,222)	(2,031)	(295)				(272)	
2	Parallel down	2,135	2,064	323				260	
3	Steeper	213	328						
4	Flattener	(729)	(763)						
5	Short rates up	(1,398)	(1,413)						
6	Short rates down	1,567	1,505						

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8. Operational risk

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8. OPERATIONAL RISK

Operational risk is the risk of losses resulting from the deficiencies or failures in processes, personnel, information systems or external events outside Grupo Santander.

This chapter details the objectives of Grupo Santander in terms of control and management of operational risk, presenting the main capital figures and their evolution.

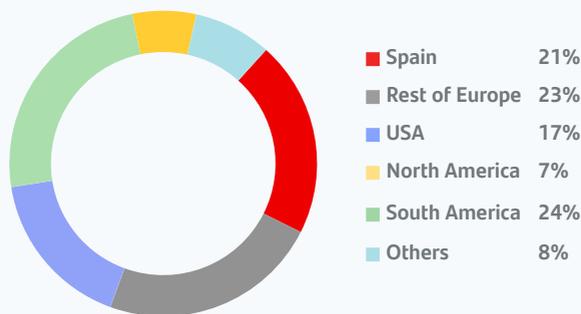
Main figures

Million euros

	RWA	
	2023	2022
Operational risk	67,022	62,702
Of which, standardised approach	54,018	51,663
Of which, alternative standardised approach	13,005	11,039

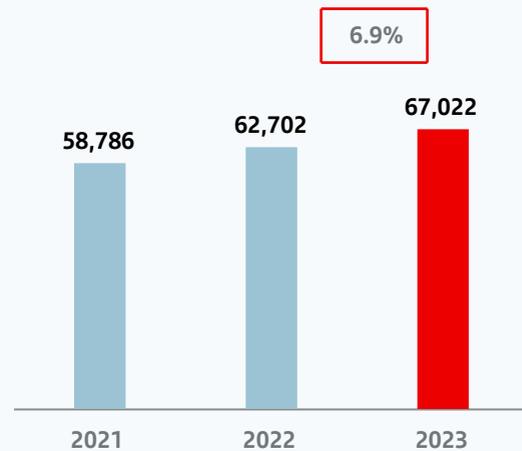
RWA by geography

%



RWA variation

Million euros



8.1. Definition and objectives

This section covers the letter (a) of the qualitative requirement ORA - Qualitative information on operational risk. Also the provisions of letters (d), (e), (f) and (g) of the OVA requirement - Institution risk management approach, are complied with.

Paragraphs (c) and (d) of the qualitative requirement ORA are not applicable as Banco Santander does not use the AMA approach to calculate minimum capital requirements.

Santander operational risk management and control model is based on a continual process of identifying, evaluating and mitigating sources of risk, regardless of whether they have materialized or not, ensuring that risk management priorities are established appropriately. Santander expressly recognises that while a certain volume of operational losses can be expected, severe unexpected losses resulting from failures in business controls are unacceptable.

The group applied new developments and enhancements to the operational risk management model in 2023 in the risk assessment and control tools, operational risk appetite, operational resilience, as well as the integration and reporting of new risks (such as transformation risk or climate risk) into the non-financial risk monitoring and control model.

In terms of key risks, the business opportunities arising from digital transformation bring with them a host of new risks, such as technology risks, cyber risks and increasing dependence on suppliers, which increases potential exposure to events that could affect the delivery of services to our customers. The group has taken numerous initiatives to mitigate these risks and adapt to changes in the regulatory framework, the focus being on strengthening its ability to recover from disruptive events affecting its core operations.

For more information, see the Risk, compliance & conduct management chapter of the 2023 Annual Report.



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Operational risk reporting should cover the following objectives:

- Provide the heads of business units and support functions with the data they need to manage their risks and meet their objectives and strategies.
- Provide senior management with the information it needs to establish, review and, where appropriate, modify business strategies and risk profiles.
- Provide the operational risk function with the information necessary to efficiently discharge its duties.
- Comply with the information requests of supervisory and regulatory bodies.

The business and support functions of all group entities are responsible for identifying, assessing and communicating their operational risks and supported by the Operational Risk Coordinator. The Operational Risk function in each Group unit collects information from all business and support functions and reports on it in established local forums.

Subsequently, the corporate Operational Risk function consolidates the information available from each unit in order to provide a comprehensive and complete overview of the group's operational risk profile.

At the group level, the process of consolidating and reporting operational risk information is divided into the following phases:

- Reception of information: the local operational risk functions submit various types of information to the corporate operational risk function with the frequency that is specified in the related procedures and guidelines. Although information can be sent via various channels, the Heracles corporate tool is the primary tool for collecting and recording information.
- Consolidation and processing of the information: once all the information has been received, the corporate operational risk function conducts a qualitative analysis, checking the suitability and consistency of the data and the main deviations.
- Use of information: the consolidated information is used for reporting to external parties as well as to the group's senior management. The reports' content is updated and developed in response to the needs of the governing bodies.

Heracles is the Golden Source of the operational risk data of the Group. One of its main components is the database of events and losses for this risk, which is used in internal and regulatory reporting and in the calculation of economic capital. In addition, Heracles contains all the necessary tools for operational risk analysis and management: controls, risks, metrics, scenarios and mitigation measures. Its functionality integrates all these programmes through the use of common taxonomies applied in the different control communities and common methodologies for assessing risks and the effectiveness of controls. Heracles is also the tool used to perform certifications related to various regulations such as SOX, Volcker and FATCA.

Risk mitigation is one of the core elements of the operational risk framework and consists of continuous monitoring of risks exposure to identify unmanaged risks, implement control procedures, provide training and reduce the occurrence of events and losses. This information is shared on a regular basis with the governing bodies in order to ensure proper monitoring and control.

For Santander, insurance is also a key element in operational risk management. The Own Insurance function is responsible for the use of risk transfer formulas to optimize and safeguard the bank's financial results. The group constantly monitors the appropriate implementation of policies and procedures for managing insurable risks, in collaboration with the relevant group areas that contribute to their correct execution in the various units.

For further information on the specific management of the principal operational risks, as well as global insurance programs, please refer to the Risk, compliance & conduct management of the 2023 Annual Report.



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The following are the key operational risk management and control processes:

- Strategic planning: covers the activities necessary to define the Group's objective operational risk profile, including setting the risk appetite, estimating losses annually and reviewing the management perimeter.
- Identification and assessment of operational risk: aims to identify the risks and factors that may cause OR in the organisation and assess their potential impact quantitatively or qualitatively. The first lines of defence, which include all organisational units of the group, are responsible for identifying and assessing the operational risks in their activities.
- Continuous monitoring of the OR profile: this process aims to regularly analyse available information on the nature and extent of the risks incurred in the development of the group's activities through an adequate alerts system, based on available tools such as indicators and escalation processes.
- Risk response decisions including risk mitigation and risk transfer measures: once the operational risk assessment has been carried out, it is important to identify risk mitigation measures to prevent risks from occurring and, if necessary, to take corrective measures to minimise the economic impact of the risks that have occurred. The identification and implementation of such risk mitigating measures is an ongoing process and particularly important for adequate risk management.
- Information: information includes obtaining, disseminating and making available the information necessary for decision-making to the relevant persons. The information processes are carried out in accordance with the standards and criteria established in each case. See the OVA and OVB tables for more information about this process.

The group has defined an organisational model with three lines of defence for the structure and organisation of operational risk management in order to meet regulatory requirements and in line with best practises in the banking sector:

- The first line of defence includes all business units and support functions. The first line of defence is responsible for the operational risk generated in its area. Its main function within the operational risk management and control model is to identify, assess, monitor, mitigate and communicate the risks.
- The second line of defence comprises the operational risk control function within the Risk division. Its functions include: designing, maintaining and developing the operational management and control model, while promoting the development of a risk culture throughout the Group; encouraging business units and support functions to monitor and effectively manage identified risks; and ensuring that the management bodies receive adequate information on all relevant risks for decision-making.
- At Santander, Internal Audit is the independent body that performs the functions of the third line of defence. Its functions include: verifying that the risks associated with the group's activities are adequately covered; monitoring the compliance, effectiveness and efficiency of the internal control systems of operational risk; assessing the state of implementation of the operational risk management and control model in the group; and making recommendations for continuous improvement to all functions involved in OR management.

For more information on risk measurement and control tools and reporting of operational risk, please refer to the EU OVA table of this document, and the Risk compliance & conduct management of the 2023 Annual Report.



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8.2. Capital requirements for Operational Risk

This section covers the letter (b) of the qualitative requirement ORA - Qualitative information on operational risk .

Santander uses the standardised approach to calculate the capital requirements for operational risk, as established in the CRR.

The resolution was taken by the Board of Directors on 22 June 2007 and reported to Banco de España's general supervisory department by the second vice chairman and chief executive officer on 29 June 2007.

Under the standardised approach, capital requirements are calculated on the basis of relevant income, which is defined as the sum of the following components of the income statement:

- Interest and similar income
- Interest expense and similar charges
- Income from equity instruments
- Fee and commission income
- Fee and commission expense
- Trading gains (net)
- Exchange differences (net)
- Other operating income (earnings)

The CRR also defines the following segmentation of business lines for this method:

- Corporate finance
- Trading and sales
- Retail brokerage
- Commercial banking
- Retail banking
- Payment and settlement
- Agency services
- Asset management

Relevant income

Under the standardised approach, capital requirements are calculated as the simple average over the last three years of the aggregation, for each year, of the greater of zero or the sum of relevant income across each of the business lines, multiplied by the weight assigned to each business line.

The mathematical expression of these requirements is as follows:

$$\frac{\{\sum \text{years } 1 - 3 \text{ Max } [\sum (\text{RI}1 - 8 \times \beta 1 - 8), 0]\}}{3}$$

Where:

RI1-8 = Relevant income of each business line, with the appropriate sign, in accordance with the CRR.

$\beta 1-8$ = Weight applicable to each business line, in accordance with the CRR.

The Financial Accounting and Control division is responsible for obtaining data on relevant income, allocating it to the various business lines and calculating the capital requirements.

Santander obtains the figure for relevant income from the consolidated management information by business line. This information is generated from accounting information.

Consolidated management information is published quarterly in aggregate form and is the basis on which the budgetary compliance of the businesses is measured. This is prepared by the Management Control area, which regulates the business lines of all the group's units based on corporate criteria, which all units must apply when drawing up their management information.

Main segments

This primary level of segmentation, which is based on the group's management structure, comprises five reportable segments: four operating areas plus the corporate centre. The operating areas are:

Europe: includes all business conducted in the region except that included in Digital Consumer Bank, including Spain, the UK, Portugal and Poland.

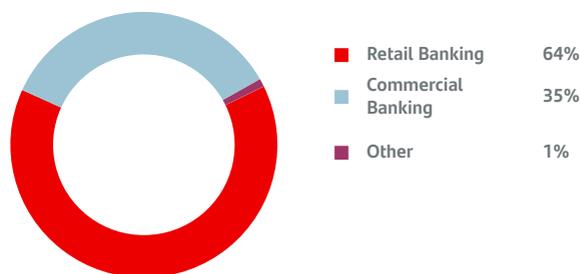
North America: includes all the business activities carried out in Mexico and the US, which includes the holding company (SHUSA) and the businesses of Santander Bank, Santander Consumer USA, the specialised unit of Banco Santander International, Santander Investment Securities (SIS), and the New York branch.

South America: mainly includes all the financial activities performed by the group through its banks and subsidiary banks in the region.

Digital Consumer Bank: includes Santander Consumer Finance, which covers all the consumer business in Europe, Openbank and ODS (Open Digital Services).

The following chart shows the distribution of capital by business line at 31 December 2023.

Capital distribution by business line



Changes in capital requirements and RWA for operational risk from 2022 to 2023 are shown below:

Table 78.Changes in capital requirements for operational risk

	2023	
	Capital	RWA
EUR million		
Starting figure (31/12/2022)	5,016	62,702
Perimeter	(7)	(90)
Exchange rate effect	(271)	(3,391)
Change in business	624	7,801
Ending figure (31/12/2023)	5,362	67,022

The standardised approach imposes higher capital requirements for financial institutions operating in jurisdictions with high net interest income, which are often associated with a high risk premium but not necessarily greater operational risk. To avoid this undesired effect, EU legislation (Regulation 575/2013/EU) provides for the use of the alternative standardised approach by businesses that meet certain conditions, subject to the supervisor's approval. This approach uses a standardised indicator calculated by multiplying certain balances by 3.5%, thereby providing an average which is more in line with the unit's operational risk.

On 3 February 2016, the European Central Bank issued authorisation for the alternative standardised approach to be used to calculate consolidated capital requirements for operational risk at Banco Santander Brasil, S.A.

The European Central Bank also issued authorisation for the alternative standardised approach to be used to calculate consolidated capital requirements for operational risk at Banco Santander México S.A., on 12 July 2017.

Table 79.OR1 - Operational risk own funds requirements and risk-weighted exposure amounts

	2023				
	a	b	c	d	e
	Relevant indicator			Own funds requirements	Risk weighted exposure amount
	Year-3	Year-2	Last year		
1	Banking activities subject to basic indicator approach (BIA)			—	—
2	Banking activities subject to standardised (TSA) / alternative standardised (ASA) approaches			5,362	67,022
3	Subject to TSA:			—	—
4	Subject to ASA:			—	—
5	Banking activities subject to advanced measurement approaches AMA			—	—

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9. Liquidity risk

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9. LIQUIDITY RISK

Liquidity risk entails the potential losses that may be incurred by an entity as a result of its inability to secure funding on the market and/or the higher borrowing costs of new sources of finance.

This section covers the qualitative requirements LIQA - Liquidity risk management and LIQB - Qualitative information on LCR, which complements template EU LIQ1. Also the provisions of letters (d), (e), (f) and (g) of the OVA requirement -Institution risk management approach, are complied with.

Main figures

Million euros	2023	2022
Liquidity Coverage Ratio		
Total high-quality liquid assets (HQLA) (Weighted value - average)	323,188	303,330
Cash outflows - Total weighted value	274,162	257,311
Cash inflows - Total weighted value	70,643	69,185
Total net cash outflows (adjusted value)	203,519	188,126
Liquidity coverage ratio (%)	159%	161%
Net Stable Funding Ratio		
Total available stable funding	1,139,711	1,121,194
Total required stable funding	924,843	923,018
NSFR ratio (%)	123%	121%

9.1. Liquidity and funding risk

Our structural liquidity management aims to optimize maturities and costs, and to avoid undesired liquidity risks in funding Santander's operations.

It follows these principles:

- Decentralized liquidity model.
- Medium- and long-term (M/LT) funding needs must be covered by medium- and long-term instruments.
- High contribution from customer deposits due to the retail nature of the balance sheet.
- Wholesale funding sources diversified by instrument, investor, market, currency and maturity.
- Limited use of short-term funding.
- Sufficient liquidity reserves (including standing facilities/discount windows at central banks) to be used in adverse situations.
- Group and subsidiary compliance with regulatory liquidity requirements.

The requirements of the EU LIQA table are addressed in the Economic and financial review chapter of the 2023 Annual Report.



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9.1.1. Liquidity Coverage Ratio (LCR)

Description of the degree of centralisation of liquidity management and interaction among the Group's units:

The group has adopted a decentralised financing model through a structure of autonomous subsidiaries that are self-sufficient when it comes to liquidity.

Each subsidiary is responsible for covering the liquidity needs arising from its current and future business, either through deposits secured from its customers in its area of influence or through recourse to the wholesale markets in which it operates, within a management and supervision framework coordinated at group level. **Therefore, each subsidiary manages and monitors its own LCR ratio, ensuring that it remains at all times within the limits specifically established for that subsidiary.**

This funding model has proven itself to be highly effective during times of high market stress, since it effectively prevents problems at one area from impacting the borrowing capacity of other areas and, therefore, of the group as a whole, which can happen with centralised funding models.

The breakdown of the LCR ratio is essentially the sum of the individual ratios at each group unit, stripping out any one-off intra-group transactions.

Explanation of the main drivers and inputs that contribute to the LCR

The Group's consolidated ratio is largely shaped by the individual ratios of its three main units: Santander Parent, Santander UK and Santander Brazil. These units acquire most of their funding from retail deposits, which are much more stable liabilities that generate fewer potential outflows from the LCR ratio. Most cash outflows from the LCR ratio stem

from wholesale funding, which is considerably more unstable, although the group typically minimises and diversifies the maturities. The group's stock of liquid assets is very high quality. On average, approximately 98% of the assets that form part of the LCR numerator are Level 1. This is because the units' asset portfolios mainly comprise the public debt of the countries in which the group operates or countries with good credit ratings.

The value of the Group's consolidated ratio in December was 166%, above the internal and regulatory requirement.

The Group's LCR performance has remained stable with increased available liquidity in 2023, after having strengthened the balance sheet thanks to the combination of growth in customer deposits, an increase in short-term instruments and more activity in medium- and long-term issuance, intended to keep regulatory liquidity ratios and internal metrics at prudent levels following the return of TLTRO-III, implemented by the European Central Bank and with an original maturity of 2023/24.

Composition of the liquidity buffer

The group's liquidity buffer consists mainly of Level 1 assets: cash and sovereign debt, with a broad level of diversification across issuers. In addition to the regulatory liquidity buffer, the group has an internal buffer that monitors the positions of other non-pledged liquid assets that can be immediately used as collateral for additional funding.

Concentration of funding and liquidity sources

The group seeks to diversify its sources of wholesale financing, in terms of instruments, investors, markets, currencies and maturities, to ensure sound liquidity management. The group's model relies on its presence in major markets, affording it a large degree of diversification. Since most group units are commercially-oriented, they obtain a large part of their funding from deposits secured from retail customers, which are inherently more stable than wholesale funding sources.

In view of the above, there is no material risk in the concentration of funding. However, the group has a number of additional metrics in place to identify and monitor those counterparties whose funding is significant and whose withdrawal could trigger liquidity issues. During 2022, the group's concentration risk levels were within management limits, ensuring the diversity of wholesale funding at unit level.

Derivative exposures and potential collateral calls

Most derivatives transactions involving Group entities are subject to collateral contracts covering the market value of the transactions. Liquidity risk relates to the impact of adverse market scenarios leading to changes in the market values of derivatives, which generate additional liquidity needs due to the requirement to post collateral. Group units include liquidity risk in their LCR ratios using the historical look-back approach, in which the most significant net change in 30 days over the preceding 24 months is calculated and then added as additional liquidity needs.

Currency mismatches in the LCR

The Group prepares its consolidated LCR ratio for each of its identified significant currencies, which reflect the geographies in which the group's units operate: euro (EUR), US dollar (USD), pound sterling (GBP), Brazilian real (BRL), Mexican

peso (MXN) and Chilean peso (CLP). Each of the entities draws up its own LCR ratio in its significant currency. Units present a consistent position between the liquidity buffer and net outflows. Latin American countries have significant buffer positions in USD, so as to optimise the position and ensure high convertibility. The positions of foreign currencies are closely tracked, e.g. by conducting currency stress scenarios.

Other items in the LCR calculation not captured in the LCR disclosure template that the institution considers relevant for its liquidity profile

Contingent lines, which are the last driver of the group's LCR, exhibit a stable performance over time, lines are tracked and monitored daily.

For further details, see the Economic and financial review chapter and the Risk, compliance & conduct management chapter in the 2023 Annual Report.

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9.1.2. Net Stable Funding Ratio (NSFR)

NSFR or the net stable funding ratio is a regulatory metric which represents required stable funding against available stable funding. This metric requires banks to maintain a solid balance sheet in which assets and off-balance sheet activities are funded with stable liabilities. Grupo Santander monitors this metric on a monthly basis, which is a higher requirement than the regulatory one.

The high weight of customer deposits (which are more stable); permanent liquidity needs deriving from commercial activity funded by medium- and long-term instruments; and limited recourse to short-term funding help maintain our balanced liquidity structure as reflected in our consolidated and subsidiary NSFRs which all exceeded 100% in December 2023.

For more information, see the LIQ2 table at the end of the chapter.

9.1.3. Asset Encumbrance

This section covers the qualitative requirements AE4 - Accompanying narrative information.

Following the guidelines laid down by the European Banking Authority (EBA), the concept of asset encumbrance includes both on-balance-sheet assets pledged as collateral in transactions to obtain liquidity and off-balance-sheet assets that have been received and re-used for similar purposes, in addition to other assets associated with liabilities other than for funding reasons.

Disclosures on Grupo Santander required by Commission Delegated Regulation (EU) 2017/2295 are presented below.

The scope used for the disclosures in this report is the same as the liquidity management scope on a consolidated basis, as regulated in CRR II 876/2019, which amends regulation CRR 575/2013.

There is a difference in the treatment of certain transactions that are pledged but not encumbered. These correspond to assets that are pledged because they have been delivered as collateral for financing transactions and that are not

considered to be encumbered (for all or part of the value of the asset) as these financing transactions are not fully drawn.

There are no cases of encumbered assets that do not result in their being pledged or transferred.

The value of the exposure shown in the tables below was calculated as the median of the values disclosed in the regulatory information for the four quarters of the year, in line with European Banking Authority guidelines.

As we can see from table AE1, the vast majority of unencumbered assets are loans that could be pledged as collateral.

Table 80.AE1 - Encumbered and unencumbered assets

EUR million		2023							
		10	30	40	50	60	80	90	100
		Carrying amount of encumbered assets	Fair value of encumbered assets		Carrying amount of unencumbered assets		Fair value of unencumbered assets		
			of which notionally eligible EHQLA and HQLA		of which notionally eligible EHQLA and HQLA		of which EHQLA and HQLA		of which EHQLA and HQLA
10	Assets of the reporting institution	313,403	81,357			1,463,947	291,733		
30	Equity instruments	9,331	5,603	9,330.9225	5,602.9835	8,971	3,050	8,971.2505	3,049.9515
40	Debt securities	81,504	74,426	82,694	75,386	134,573	85,324	135,047	83,900
50	of which: covered bonds	1,223	1,159	1,255	1,188	5,787	2,803	5,757	2,728
60	of which: securitisations	6,630	3,941	6,227	3,315	11,606	6,485	12,509	5,585
70	of which: issued by general governments	67,195	64,603	68,300	65,723	80,757	73,087	82,188	71,925
80	of which: issued by financial corporations	12,908	8,762	12,993	8,588	24,885	6,432	24,856	6,308
90	of which: issued by non-financial corporations	1,010	13	1,034	13	15,965	127	16,153	106
120	Other assets	222,971	1,190			1,319,783	202,462		
	of which: loans	196,395	1,106			1,168,885	198,008		

Table 81.AE2 - Collateral received and own debt securities issued

EUR million		2023			
		10	30	40	60
		Fair value of encumbered collateral received or own debt securities issued		Unencumbered	
		of which notionally eligible EHQLA and HQLA		of which EHQLA and HQLA	
130	Collateral received by the reporting institution	133,426	105,332	44,526	32,943
140	Loans on demand	—	—	1	—
150	Equity instruments	5,240	4,148	7,463	6,083
160	Debt securities	126,876	101,052	37,004	27,299
170	of which: covered bonds	4,503	4,343	3,450	2,878
180	of which: securitisations	16,920	15,680	5,248	1,020
190	of which: issued by general governments	96,849	75,801	23,492	21,217
200	of which: issued by financial corporations	28,503	23,776	8,989	3,748
210	of which: issued by non-financial corporations	665	417	314	76
220	Loans and advances other than loans on demand	1,508	—	14	—
230	Other collateral received	—	—	142	—
240	Own debt securities issued other than own covered bonds or securitisations	13	—	1,847	—
241	Own covered bonds and asset-backed securities issued and not yet pledged	—	—	9,281	—
250	Total assets, collateral received and own debt securities issued	442,441	135,649		

Where our own covered bonds and asset-backed securities are retained and used, the pledged asset is included in Table 85 under loans and the related liability in Table 87.

The main sources and types of encumbrances and the level of over-collateralisation are set out in the following table:

Table 82.AE3 - Sources of encumbrance

EUR million		2023	
		10	30
		Matching liabilities, contingent liabilities or securities lent	Assets, collateral received and own debt securities issued other than covered bonds and securitisations encumbered
10	Carrying amount of selected financial liabilities	288,148	364,292

The table below shows the amount of own covered bonds and asset-backed securities retained and not used as collateral and the value of the related underlying assets

Table 83. Own covered bonds and asset-backed securities issued

EUR million		2023	
		Non-encumbered	
		Carrying amount of the underlying pool of assets	Fair value of debt securities issued available for encumbrance
Own covered bonds and asset-backed securities issued		10,745	9,281
Retained covered bonds issued		5,385	1,969
Retained asset-backed securities issued		5,342	7,312

The contribution to the group's level of asset encumbrance on a consolidated basis by the various units is uneven across geographies. The unit whose assets are relatively more encumbered is the United States (Santander Consumer USA), due to the high weight of consumer business. In the Eurozone and the UK, both markets where covered bonds and securitisations are highly developed, the level of taxation of assets is similar and close to the Group average. Asset encumbrance is also significant in Mexico, which is very active in asset repurchase agreements. The South American and Poland units have a relatively low level of asset encumbrance. Moreover, intra-group asset encumbrance is not material.

In each unit, the encumbered assets are denominated in the same currency as the encumbrance, normally the unit's functional currency.

Table 84.LIQ1 - Quantitative information of LCR

Scope of consolidation (consolidated) Currency and units (Million euros)		a	b	c	d	e	f	g	h
		Total unweighted value (average)				Total weighted value (average)			
EU 1a	Quarter ending on (DD Month YYY)	dec'23	sep'23	jun'23	mar'23	dec'23	sep'23	jun'23	mar'23
EU-1b	Number of data points used in the calculation of averages	12	12	12	12	12	12	12	12
HIGH-QUALITY LIQUID ASSETS									
1	Total high-quality liquid assets (HQLA), after application of haircuts in line with Article 9 of regulation (EU) 2015/61					323,188	317,397	315,166	309,535
CASH - OUTFLOWS									
2	retail deposits and deposits from small business customers, of which:	610,087	607,909	603,898	600,124	42,594	43,208	43,799	44,103
3	Stable deposits	349,455	342,468	337,779	337,191	17,473	17,123	16,889	16,860
4	Less stable deposits	210,005	220,115	228,546	232,149	25,035	26,002	26,833	27,172
5	Unsecured wholesale funding	293,398	291,415	286,814	280,844	147,700	145,654	142,420	138,327
6	Operational deposits (all counterparties) and deposits in networks of cooperative banks	40,949	39,155	38,740	38,485	9,339	8,846	8,652	8,520
7	Non-operational deposits (all counterparties)	240,131	240,357	237,312	232,917	126,043	124,905	123,007	120,366
8	Unsecured debt	12,318	11,903	10,761	9,442	12,318	11,903	10,761	9,442
9	Secured wholesale funding					9,768	9,096	9,066	8,717
10	Additional requirements	230,212	230,495	231,634	230,674	46,160	45,954	46,360	46,050
11	Outflows related to derivative exposures and other collateral requirements	22,645	22,126	21,639	20,813	22,046	21,616	21,271	20,555
12	Outflows related to loss of funding on debt products	371	770	1,226	1,685	371	770	1,226	1,685
13	Credit and liquidity facilities	207,196	207,598	208,769	208,176	23,744	23,568	23,862	23,810
14	Other contractual funding obligations	20,353	19,363	19,366	19,022	18,707	17,843	18,037	17,911
15	Other contingent funding obligations	162,453	157,493	153,766	150,914	9,234	8,970	8,932	9,054
16	TOTAL CASH OUTFLOWS					274,162	270,725	268,613	264,162
CASH - INFLOWS									
17	Secured lending (e.g. reverse repos)	76,744	71,771	68,593	64,298	2,843	3,067	3,384	3,533
18	Inflows from fully performing exposures	66,960	68,151	69,090	69,294	46,346	46,616	46,948	46,922

Table 84.LIQ1 - Quantitative information of LCR

Scope of consolidation (consolidated) Currency and units (Million euros)		a	b	c	d	e	f	g	h
		Total unweighted value (average)				Total weighted value (average)			
EU 1a	Quarter ending on (DD Month YYYY)	dec'23	sep'23	jun'23	mar'23	dec'23	sep'23	jun'23	mar'23
19	Other cash inflows	25,392	23,454	23,818	23,869	21,453	19,568	19,978	20,129
EU-19a	(Difference between total weighted inflows and total weighted outflows arising from transactions in third countries where there are transfer restrictions or which are denominated in non-convertible currencies)	—	—	—	—	—	—	—	—
EU-19b	(Excess inflows from a related specialised credit institution)	—	—	—	—	—	—	—	—
20	TOTAL CASH INFLOWS	169,097	163,377	161,501	157,462	70,643	69,251	70,310	70,583
EU-20a	Fully exempt inflows	—	—	—	—	—	—	—	—
EU-20b	Inflows subject to 90% cap	—	—	—	—	—	—	—	—
EU-20c	Inflows subject to 75% cap	167,011	161,504	159,808	155,874	70,643	69,251	70,310	70,583
	TOTAL ADJUSTED VALUE								
EU-21	LIQUIDITY BUFFER					323,188	317,397	315,166	309,535
22	TOTAL NET CASH OUTFLOWS					203,519	201,473	198,303	193,579
23	LIQUIDITY COVERAGE RATIO*					159%	158%	159%	160%

*The calculation of the LCR following the instructions of the EBA Disclosure ITS is the average of the year

Details of the qualitative information regarding the liquidity coverage ratio is shown below:

Table 85.LIQB on qualitative information on LCR, which complements template EU LIQ1

		2023
Qualitative information - Free format		
(a)	Explanations on the main drivers of LCR results and the evolution of the contribution of inputs to the LCR's calculation over time	The Group LCR as of end of December 2023 was 166%, comfortably exceeding the internal and regulatory requirements. Key to this levels was the size of the HQLA buffers upheld by all subsidiaries. Group's strong stable retail deposits base and low dependence on short-term funding make the movements in the commercial gap and the issuances maturities as key drivers of the LCR.
(b)	Explanations on the changes in the LCR over time	Grupo Santander has maintained the LCR at a stable and comfortable level above the limits established throughout the year 2023. The stability remains after the early repayment of the most significant part of the financing received under the TLTRO-III program since the last quarter of 2022. These funds were replaced by strengthening the balance sheet through a combination of growth in different funding alternatives, including a greater activity in medium and long-term issuances.
(c)	Explanations on the actual concentration of funding sources	Achieving a diversified funding base is a key element of Santander's liquidity risk management. The principle of prudence states that the Board expects subsidiaries to provide effective diversification in the sources, products and funding tenors while limiting the recourse to short-term wholesale funds. The Group has a set of additional metrics in order to identify and monitor those counterparties that are of such significance that withdrawal of the funding they are providing to the entity could trigger liquidity problems. Throughout the year 2023, the Group levels of concentration risk were within management limits, ensuring diversity of wholesale funding at subsidiary level.
(d)	High-level description of the composition of the institution's liquidity buffer.	The Group buffer is mainly composed by Level 1 assets including central bank reserves and sovereign debt, well diversified between different issuers. Additional to the regulatory buffer, the Group has an internal buffer with a set of unencumbered liquid assets that are available for immediate use as collateral to obtain additional funding.
(e)	Derivative exposures and potential collateral calls	Other contingent exposures are limited as (i) the derivatives position is covered by collateral, and (ii) credit and liquidity lines are monitored daily with a limited impact.
(f)	Currency mismatch in the LCR	Regarding the composition by currency, the units present a consistent position between buffer composition and net outflows. Occasionally some units in S. America present higher positions on USD buffers in order to optimize the position while ensuring strong currency convertibility.
(g)	Other items in the LCR calculation that are not captured in the LCR disclosure template but that the institution considers relevant for its liquidity profile	There are no other relevant items in the LCR calculation not captured in the LCR disclosure template

The following table shows the information on the stable funding ratio divided by residual maturity

Table 86.LIQ2 - Net Stable Funding Ratio (NFSR)

EUR million		a	b	c	d	e
(in currency amount)		Unweighted value by residual maturity				Weighted value
		No maturity	< 6 months	6 months to < 1 year	1 year	
1	Capital elements and instruments	107,216	—			123,738
2	Own funds	107,216	—	—	16,522	123,738
3	Other capital instruments		—	—	16,522	—
4	Retail deposits		598,818	—	—	582,600
5	Stable deposits		371,685	16,214	10,179	362,587
6	Less stable deposits		227,133	6,174	3,622	220,013
7	Wholesale financing:		588,474	10,040	6,557	407,157
8	Operational deposits		47,517	62,065	234,730	23,936
9	Other wholesale financing		540,957	122	116	383,221
10	Interdependent liabilities		2,834	61,944	234,614	—
11	Other passives:	10,247	106,407	6,608	24,486	26,216
12	Liabilities derived from the net stable financing ratio	10,247				
13	All other liabilities and equity instruments not included in the above categories		106,407	6,608	24,486	26,216
14	Total stable financing available (FED)					1,139,711

Table 86.LIQ2 - Net Stable Funding Ratio (NSFR)

RSF						2023
Millions of euros		Unweighted value by residual maturity				Weighted value
(in currency amount)		There is no expiration[1]	< 6 months	6 months to < 1 year	≥ 1 year	
15	Total high-quality liquid assets (ALAC)					8,477
EU-15a	Encumbered assets with a residual maturity of one year or more in a coverage pool		15	19	36,933	31,422
16	Deposits held in other financial institutions for operational purposes		3,110	109	588	2,197
17	Loans and securities executed:		311,287	94,986	718,622	704,595
18	Securities financing operations with financial clients guaranteed by ALAC level 1 subject to a 0% haircut.		97,257	2,804	5,214	8,320
19	Securities financing operations with financial clients guaranteed by other assets and loans to financial institutions		33,345	10,149	24,342	32,594
20	Loans to non-financial corporate clients, loans to retail clients and small businesses, and loans to sovereigns, and PSEs, of which:		131,521	69,056	351,456	625,170
21	With a risk weight of less than or equal to 35% according to the Basel II Standardized Approach to credit risk		19,687	9,202	55,720	261,693
22	Residential mortgages in foreclosure, of which:		4,455	4,179	305,622	—
23	With a risk weight of less than or equal to 35% according to the Basel II Standardized Approach to credit risk		3,804	3,662	289,332	—
24	Other loans and securities that are not in default and are not considered ALAC, including publicly traded stocks and on-balance sheet trade finance products		44,709	8,797	31,987	38,511
25	Interdependent assets		2,834	—	—	—
26	Other assets:		98,279	2,728	140,397	166,670
27	Physically traded commodities				31	26
28	Assets deposited as initial margin for derivative contracts and contributions to CCP default funds		224	—	8,440	7,364
29	Assets derived from the net stable financing ratio		12,551			2,305
30	NSFR derivative liabilities before deducting posted variation margin		26,638			1,332
31	All other assets not included in the above categories		58,866	2,728	131,926	155,643
32	Off-balance sheet items		265,985	20,150	99,846	11,483
33	Total RSF					924,843

NSFR

Millions of euros

Net Stable Funding Ratio (%)

2023

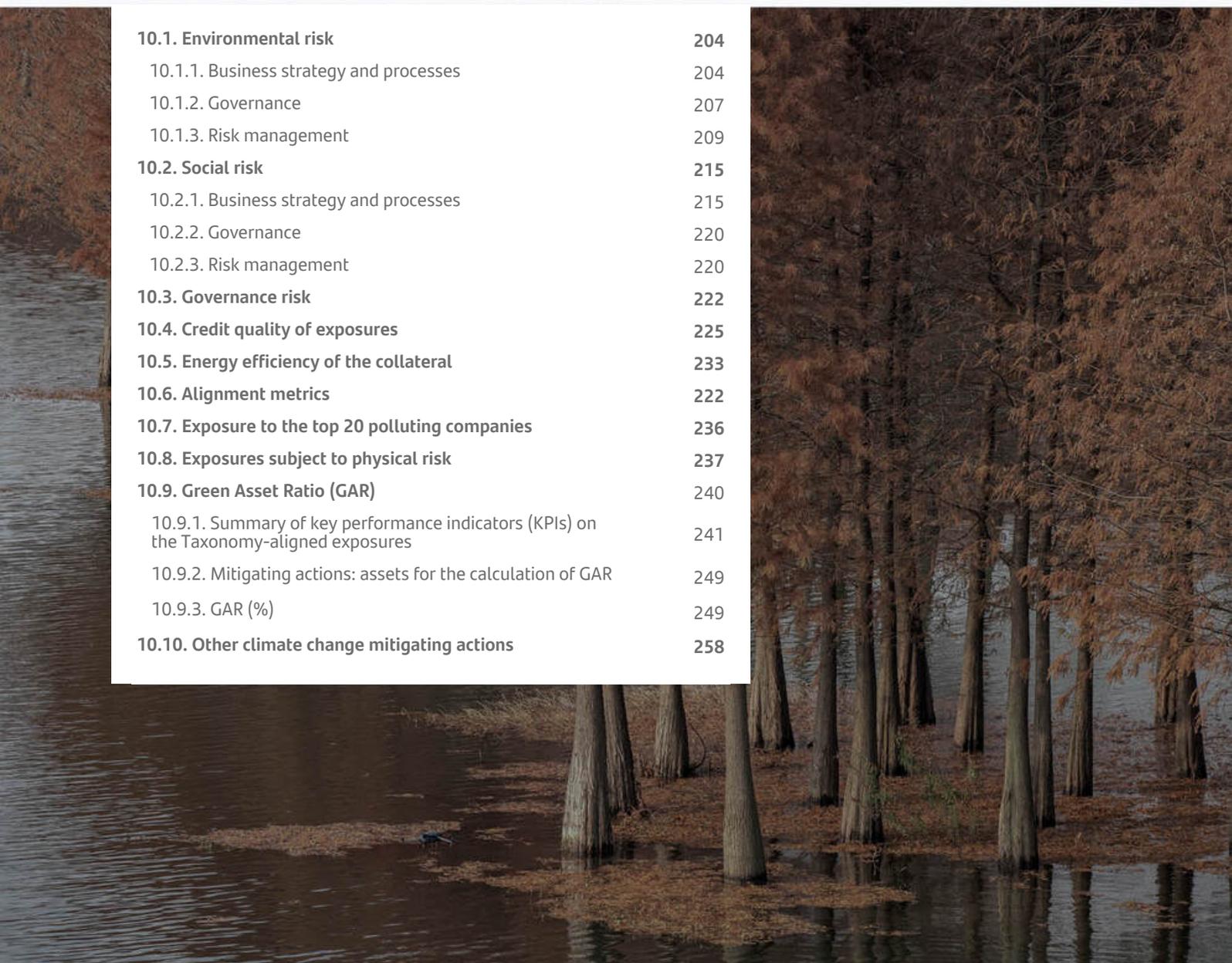
Weighted value

123%



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10. ESG RISK

10.1. Environmental risks

10.1.1. Business strategy and processes

This section covers the requirement on qualitative information on environmental risk, specifically, the point on business strategy and processes, for questions (a), (b) and (c)

This is a summary of our overall climate strategy. For further detail, please refer to our annual report and climate finance report, available in our corporate website.

Our approach

Within our broader ESG strategy, tackling climate change is a key priority at Santander. We support the Paris Agreement goals. Our ambition is to achieve zero carbon emissions by 2050. We intend to do this and support the green transition in four ways:



For fulfilling those purposes, within a broader set of ESG objectives, we have set some climate-related and environmental goals:

	2018	2019	2020	2021	2022	2023	2025/2030 target
Electricity from renewable sources ^A	43%	50%	57%	75%	88%	97%	100% by 2025
Carbon neutral in our own operations ^B			✓	✓	✓	✓	Every year
Green finance raised and facilitated (EUR bn) ^C		19	33.8	65.7	94.5	114.6	120 bn by 2025 220 bn by 2030
AuMs in Socially Responsible Investments (SRI) (EUR bn)				27.1	53.2	67.7	100 bn by 2025
Thermal coal-related power & mining phase out (EUR bn)				7	5.9	4.9	0 by 2030
Emissions intensity of power generation portfolio		0.21	0.17	0.19			0.11 tCO ₂ e / MWh in 2030
Absolute emissions of energy (oil & gas) portfolio		23.84	22.58	27.43			16.98 mtCO ₂ e in 2030
Emissions intensity of aviation portfolio		92.47	93.05	97.21			61.71 gCO ₂ e/ RPK in 2030
Emissions intensity of steel portfolio		1.58	1.40	1.36			1.07 tCO ₂ e/ tS in 2030
New in 2023 Emissions intensity of auto manufacturing portfolio			149	138			103 gCO ₂ /vkm in 2030
Emissions intensity of auto lending portfolio					137		75-89 gCO ₂ e/vkm in 2030

→ From...To
 → Cumulative target
 ✓ Commitment Achieved

A. In countries where we can verify electricity from renewable sources at Banco Santander properties. It considers the 10 main countries in which we operate.
 B. Scope 1 and 2 emissions and scope 3 emissions from employee commuting and business travel. It considers wholly owned companies in Argentina, Brazil, Chile, Germany, Mexico, Poland, Portugal, Spain, the United Kingdom and the United States.
 C. Preliminary data as final League Tables for 2023 were not yet available at the date of editorial closing. CIB contributed EUR 20.2 billion to the green finance target, including EUR 5.6 bn in Project Finance; EUR 2.8 bn in financial advice; EUR 5.8 bn in green bonds (DCM); EUR 0.2 bn in export finance (ECAs); and EUR 5.8 bn in M&A, according to Dealogic, Infralogic, TXF and Mergermarket league tables. In 2023 there was no significant contributions from ECM and Project bonds. This refers to all roles undertaken by Banco Santander in the same project. It does not include financial inclusion and entrepreneurship. Green Finance raised and facilitated is not a synonym of EU Taxonomy. Please refer to specific section on EU taxonomy-related requirements for further details in this regard. This information will be updated to year end in the next Climate Finance Report.
 D. Consumer lending for acquisition of passenger cars, covering a significant majority of the exposure in Europe.

Our net zero ambition

As per the annual report, Santander aims to be net zero in carbon emissions by 2050. This applies to the Group's operations and emissions from our lending, advisory and investment services.

Since 2021, we are a founding member of the Net Zero Banking Alliance (NZBA, under the United Nations Environment Programme Finance Initiative), committing the Group to:

- Support the transition of operational and attributable greenhouse gas (GHG) emissions from lending and investment portfolios towards pathways to net zero by 2050.
- Set intermediate targets for priority GHG emitting sectors for 2030 (or sooner).

Investment targets towards environmental objectives

As stated in section 6 'Financing the green transition' in the climate finance report, to achieve our ambition to become sustainable finance leaders in our markets, we are mobilizing EUR 120 billion in green finance by 2025 and EUR 220 bn by 2030. According to the annual report, we raised and facilitated €20.2 bn in green finance in 2023, reaching €114.6 bn since 2019⁶.

We have the goal of providing our clients with global and local green solutions in SCIB, retail and commercial banking and raising awareness in our local communities.

The Green Finance main priorities are to establish a robust infrastructure by implementing the sustainable finance and investment classification system (SFICS) and to grow the green finance business.

Limits to assess and address environmental risk

Santander will not directly invest in and/or provide financial products and/or services to clients involved in the oil & gas, power generation and transmission and mining & metals sectors and those arising from businesses engaged in soft commodities, who develop the activities prohibited in the Environmental, Social & Climate Change Risk Management Policy (ESCC Policy). These restrictions have been defined in a consistent way related to our internal policies of sustainability and human rights, based on the market practices and the meetings with NGOs and other external stakeholders.

We summarise some examples of the restrictions:

- Any **projects or activities** for oil & gas extraction, power generation or transmission, mining, manufacturing, plantations or other major infrastructure projects which **put areas classified as Ramsar Sites, World Heritage Sites or by the International Union for Conservation of Nature (IUCN) as categories I, II, III or IV at risk.**

- **Oil & Gas:** new oil exploration and production customers, except for specific financing operations for new renewable energy facilities. Also, project-related financing to oil upstream greenfield projects.
- **Power generation:** by 2030, any customer with more than 10% of revenue, on a consolidated basis, directly derived from coal fired power generation. New customers with more than 25% of revenues, on a consolidated basis, directly derived from coal fired power generation, except for transactions for the specific financing for new renewable energy facilities. In these exceptions, the client must not be developing new coal power plants and/or expanding existing ones, have a robust, credible plan, with verifiable targets, which show the client will reduce its revenues coming from coal power generation to 10% or below by 2030. Onboarding new clients with less than 25% of their revenues, on a consolidated basis, derived from coal-fired power generation is allowed, if they have a credible plan to reduce its revenues coming from coal power generation to 10% or below by 2030; and if they are not developing new coal power plants and/or expanding existing ones.
- **Mining & Metals:** by 2030 customers that own thermal coal mines worldwide. New clients that own thermal coal mining operations and projects worldwide, except for transactions for the specific financing for renewable energy. In these exceptions, the client must have a robust, credible plan, with verifiable targets, which show the client will have no thermal coal by 2030. Project-related financing for new, or the expansion of thermal coal mines.
- **Soft commodities:** any customer that extracts native tropical wood species not certified to forest stewardship council (FSC) or any palm oil processors not certified to roundtable on sustainable palm oil (RSPO). Also, projects for developments in forested peatlands in high-risk geographies.

This information is stated in the [ESCC Policy](#).

⁶ Preliminary data as final League Tables for 2023 were not yet available at date of editorial closing. This information will be updated to year end in the next Climate Finance Report

Policies and procedures relating customer engagement on their strategies to mitigate and reduce environmental risks

This section covers the requirement on qualitative information on environmental risk, specifically, the point on business strategy and processes, for question (d)

As discussed in the climate finance report, our customer engagement approach aims to facilitate the achievement of our emissions targets and to develop a strong understanding of our customers' transition strategies towards low carbon business models.

The approach is supported by governance processes, involving various internal stakeholders, such as front office teams, the risk reporting functions, as well as senior management to guide the potential portfolio steering actions.

Collect

We collect relevant information as part of regular customer dialogue and engagement. In addition, we source specific climate related information through tailored information requests that contain transition focused elements designed to help us better understand companies' decarbonization strategies. Furthermore, we also seek to source reliable and consistent information from credible third parties to complement our understanding.

This information will be collected and updated both at the customer onboarding stage, but also as part of the regular business and risk assessment review with each customer, which is performed at least on an annual basis.

Assess

Assessment consists of a two-step approach designed to categorize our customers according to their emissions intensity pathway and perceived quality of their transition strategy.

The first step involves assessing how our customers' emissions trajectory aligns with our current sectoral portfolio baseline and future sectoral portfolio targets. The second step assesses the quality of each customer's transition plan. Our transition plan assessment methodology focuses on four pillars: targets, action plan, disclosure and governance. We draw on established transition plan assessment methodologies, such as TPI (Transition Pathway Initiative), CDP, ACT (Assessing Low Carbon Transition), Climate Action 100+, as well as other climate risk disclosure frameworks such as the TCFD.

Engage

Our objective is to engage our customers through offering sustainable financing solutions and advisory that enable the energy transition.

Our sustainable finance offering includes, among others, leading expertise in renewable energies, as demonstrated by our long-standing leadership in this field.

Our sustainable tech advisory offering, led by our global team of experts in green and transition technologies, allows us to provide bespoke strategic and corporate finance advice on opportunities to accelerate adoption of low-carbon technologies.

Training

We implemented a client engagement training programme for SCIB, in collaboration with external expert providers, specifically designed to educate on transition topics. Over the last year, multiple sessions took place involving 300 senior bankers on topics including: climate regulations and taxonomies; greenwashing; climate pathways to net zero; and frameworks to enable evaluation of client transition plans.

In addition, internally organized sessions were delivered to sector-specific relationship managers and Environmental Social Climate Change Risk (ESCC) analysts. These focused on the gathering of information in order to complete the transition plan quality assessment. These sessions were delivered by senior experts representing ESCC, Portfolio Alignment and ESG Solutions teams.

These complement our global training we're developing to familiarize all employees with sustainability at different levels.

Additionally, there have been different climate trainings for board members on responsible banking, green finance, and ESG risks, both at global and subsidiary boards and key positions.

10.1.2. Governance

This section covers the requirement on qualitative information on environmental risk, specifically, the point on governance, for questions (e), (h), and (g)

Governance bodies and frequency

As per the annual report, **the board of directors** oversees our activity regarding climate change and the green transition. In 2023, the board discussed these topics at seven meetings, including the Climate-Net Zero ambition plan, the ESCC policy review and disclosure reports. Additionally, business units and global businesses report annually to the board on their main ESG initiatives.

The board of directors is responsible for approving the responsible banking agenda and set the strategy, approving the culture policy and related policies on responsible business and sustainability matters and, in particular, on environmental and social matters. It also ensures that the alignment of the responsible banking strategy is consistent with Group strategy, among others.

The **responsible banking, sustainability and culture committee (RBSCC)** is the highest governance body that oversees drawing up and implementing the Group's sustainability strategy and policies, supporting the board of directors. In 2023, the RBSCC met six times and reviewed items related to climate change at five sessions.

The RBSCC coordinates its activities with the other board committees, in particular with the risk supervision, regulation, and compliance committee, the board audit committee and the remuneration committee. The first one has assessed the ESG policies and ESG risk appetite, the second has supervised financial and non-financial reporting and disclosures, as well as related ESG processes and controls and the third has approved the sustainability incentives in reward schemes.

The **management meeting**, chaired by the CEO, discusses our progress on the responsible banking agenda, especially as regards to climate change, TCFD and ESG business opportunities. In 2023, the committee was informed 3 times on progress made with the responsible banking agenda.

The **responsible banking forum (RBF)** which comprises senior Group executives, monitors and guides the execution of our sustainability strategy. The RBF discussed climate change and/or green finance at its six meetings in 2023. As this body supervises consistency across the Group on key issues, it reviewed and escalated the mentioned topics, as well as criteria tools to label products and services as sustainable, developments in tagging standards, and decarbonization plan overviews.

The **Group responsible banking unit** with support from a senior adviser on responsible business practices who reports directly to the executive chair.

The **responsible banking network** consists of the corporate responsible banking unit and responsible banking teams that execute the sustainability agenda according to our corporate strategy and policies.

The **audit, remuneration and risk committees** also supported and reviewed sustainability topics.

Management body's integration of environmental risks, organizational structure both within business lines and internal control functions

This section covers the requirement on qualitative information on environmental risk, specifically, the point on governance, for question (f)

In 2023 we continued to embed climate management in business-as-usual across CIB, Risk and Responsible Banking. For instance, CIB set up a dedicated team for portfolio alignment and strengthened its corresponding governance.

Beyond CIB, a number of local units are engaged in a process coordinated by Group Responsible Banking. The objective is to progress the decarbonization agenda, promote knowledge and expertise sharing among local teams, and seek out synergy to design reliable transition plans.

Other corporate-level initiatives and groups that support governance meet regularly to implement or advise on our climate change agenda. For example, our public policy sustainability working group advises on regulation; the environmental footprint working group measures our footprint and reviews ways to reduce it; and the sustainable bonds working group oversees sustainable bonds issues.

The 2023 internal audit plan, based on the annual risk assessment, continued to uphold the monitoring of ESG criteria and embedding of climate risk. In 2023, the Internal audit function monitored the progress of our key initiatives to meet ESG disclosure requirements and embed climate change in the bank's business processes and risk management.

Since 2020, Santander has assessed green finance and progress made on climate targets and other ESG targets for the Group's variable remuneration scheme.

Santander integrates short-term, medium-term and long-term effects of environmental risks for the purposes of risk management through the integration of climate-related and environmental risk in our main strategic financial planning, that comprises annual budgeting, our three-year financial plan and the Group's long-term strategic plan.

Alignment of the remuneration policy with environmental risk-related objectives

This section covers the requirement on qualitative information on environmental risk, specifically, the point on governance, for questions (i)

In 2023, our reward schemes included ESG as a lever to make Santander teams' actions consistent with our goals. Variable remuneration (which applies to all units) has included ESG since 2020 and long-term incentives (which apply to senior executives) since 2022. In both cases, the scorecards leverage on Santander ESG public targets, including climate, green finance, financial inclusion, diversity, equity and inclusion (DE&I) and socially responsible investment.

The executive directors' variable remuneration consists of a single incentive scheme, linked to the achievement of short- and long term objectives. It is structured as follows:

- The final amount of variable remuneration will be set at the start of the following year (2025) based on the benchmark amount and subject to compliance with the annual objectives described in the annual report.
- 40% of the incentive will be paid immediately once the final amount has been set, and 60% will be deferred in equal parts paid out over five years and subject to long-term metrics:
 - The amount deferred over the first two years (24% of the total) will be paid in 2026 and 2027 on the condition that no malus clauses are triggered.
 - The amount deferred over the next three years (36% of the total) will be paid in 2028, 2029 and 2030, on the condition that no malus clauses are triggered and long-term targets are met. The long-term targets, as described in the annual report, are:
 - A. Banco Santander's consolidated return on tangible equity
 - B. Relative performance of Banco Santander's total shareholder return (TSR)
 - C. ESG metrics.

In relation to ESG metrics, achievement will depend on the progress made on the Group's Responsible Banking actions lines and associated targets: (1) percentage of women in senior executive positions, (2) financial inclusion, (3) socially responsible investment and (4) supporting transition.

Regarding environmental aspects, these targets cover:

- **Socially responsible investment in 2026 as a percentage of total assets under management:**

Socially responsible investment ^B (%)	Coefficient
≥ 21%	1.25
≥ 18% but < 21%	1 – 1.25 ^A
≥ 15% but < 18%	0 – 1 ^A
< 15%	0

A. Increase of the coefficient is proportional to its position on this line of the scale.
B. Assets under management that meet the criteria of Santander's Sustainable Finance and Investment Classification System (SFICS).

- **Supporting transition.** This goal includes how we support our customers' transition, and the fulfilment of a transition plan:

Business raised and facilitated ^B between 2024 and 2026 (EUR Bn)	Coefficient
≥ 180	1.25
≥ 150 but < 180	1 – 1.25 ^A
≥ 110 but < 150	1
< 110	0

A. Increase of the coefficient is proportional to its position on this line of the scale.
B. Grupo Santander's contribution to our customers' transition (2024-2026): CIB green finance raised and facilitated (public target), Retail & Commercial banking green finance and sustainable linked-loans, and Digital Consumer Bank green finance.

As regards the overall assessment of these ESG metrics, they will be measured jointly with the social risk commitments set out in the section on Remuneration policy for social aspects objectives.

Each ESG goal has a different weighting:

- Women in senior executive positions: 20%
- Financial inclusion: 20%
- Socially responsible investment: 10%
- Supporting transition: 50%

This information can be found in the '6.4 Directors' remuneration policy for 2024, 2025 and 2026' section in the annual report.

[Access 2023 Annual Report available on the Santander Group website](#)

10.1.3. Risk management

This section covers the requirement on qualitative information on environmental risk, specifically, the point on risk management, for questions (j), (l), (m), (n) and (q)

Integration of environmental factors in the risk framework: management, setting of limits and tools

Managing climate and environmental risk factors is crucial to implementing our strategy, aiding the transition to a low-carbon economy, and fulfilling our ambition to be net zero by 2050.

As part of our climate and environmental risk factors management, we are gradually introducing decarbonization targets in sectors that are considered 'highly polluting', as well as embedding climate and environmental factors in our risk management and cross-cutting enterprise risk management processes, such as our risk appetite and in the emerging risks identification exercise. One of the elements that has contributed to integrating these factors into our strategy is their inclusion in the credit granting and monitoring process.

We identify and assess the factors that are most material to each risk type.

The following chart describes how we are integrating climate and environmental factors into the risk management cycle:

Risk management cycle



As detailed in the annual report, the risk management cycle consists of these phases:

1. Identification

Through the exercise of emerging risks related to climate change (which have a climate subcategory and a biodiversity subcategory), we evaluate internal and external threats that could affect our profitability, solvency or strategy.

Our emerging risks exercise focuses on ESG risks, such as greenwashing, the environment and biodiversity.

2. Planning

As part of our public sustainability commitments, we included decarbonization targets in strategic planning, with separate time horizons: short-term budget (one year); medium-term financial plan (three years); long-term strategic plan (five years); and ad hoc analysis.

3. Assessment

We use materiality assessments, quantitative and qualitative heatmaps, scenario analyses and other tools and techniques to analyse the potential impact of climate and environmental factors on our portfolios. For instance, we run a quarterly materiality assessment to pinpoint the loan portfolios with the highest physical and transition risk.

Our automated corporate tool 'Klima' enables us to monitor the Group's loan portfolios. This tool includes forward-looking analysis of companies' performance by sector and geography, using orderly, disorderly and hot house world scenario analyses to calculate physical and transition risk impact across several time horizons. In 2023, we added a physical risk assessment module for collateral and customer portfolios, which we break down by economic activity. Our physical and transition risk assessments rate each sector on a 5-point scale from 'Low' to 'Very high'.

The following table shows the latest materiality analysis prepared by the Group with data at the end of Q3'2023.

Materiality assessment - Climate risk analysis and portfolio heatmap

September 2023 (pre-mitigation) - EUR billion

	TR	PR	CIB	Other segments
Power (conventional)	High	Medium	28	2
Power (renewables)	Moderately Low	Medium	12	0
Oil & Gas	Very High	Moderately Low	23	1
Mining y metals	Very High	Moderately Low	14	8
Transport	High	Moderately Low	28	12
Auto Consumer	Moderately Low	Moderately Low	0	159
Real Estate	Moderately Low	Medium	8	388
Agriculture	Medium	Medium	2	9
Other climate-related sectors	Moderately Low	Moderately Low	17	14
Construction	Moderately Low	Moderately Low	49	26
Manufacturing	Medium	Medium	3	1
Water & Waste	Medium	Medium		
Climate sectors			184	620
Other sectors			58	230
Total portfolio			242	850

TR: transition risk. PR: physical risk.

CIB: REC (on and off-balance sheet lending + guarantees + derivatives PFE: Potential Future Exposure).

Other segments: Drawn amount; includes individuals, SCF, Auto US, Corporates and Institutions, and SMEs.

Other sectors: considered as low risk; include: CIB, Corporate and SMEs outside the risk taxonomy perimeter // Individuals and SCF: cards and other consumer credit // Private Banking (excl. mortgages).

0 exposure amounts to exposures below EUR 500 million.

Finally, we highlight the methodological progress made in our materiality assessment, with improvements to the scope of the existing methodology, including a more holistic view of how climate and environmental factors can impact the main types of risks set out in our framework.

4. Monitoring

At Grupo Santander, we constantly monitor the risk profile and our compliance with risk appetite limits through control functions that report to the board. From 2021, we have been enhancing our risk appetite statement with a quantitative metric for thermal coal counterparties, energy and mining related customers. Moreover, we have a decarbonization roadmap to set risk appetite limits that are consistent with our commitments for 2030. In 2023, we approved new quantitative metrics — adding to the ones we set for thermal coal and power — for oil and gas, steel, and aviation, which we will implement and monitor in 2024. For the automotive sector, we are making progress in designing a metric for approval in 2024.

We are in permanent contact with our customers to monitor and support their transition planning. Specifically, we continue to embed environmental, social and climate change (ESCC) risk factors into the credit risk granting and monitoring process, through our operating model, 'The Climate Race'. This model is underpinned by the following pillars: strategic planning, risk management, loan approval and tracking, models and systems, and culture and governance. The timeline to implement it ends in late 2024, when we expect to have met supervisory expectations and to have rolled out a common strategy for the whole Group.

The time horizons of our risk appetite framework are aligned with the horizons of the commitments made, both in the medium (2030) and long term (2050).

5. Mitigation

Policies are key to mitigating climate and environmental risk factors. Our ESCC policy sets out our public commitments and aims to support our strategy for sensitive and prohibited activities in the oil and gas, power generation and transmission, mining and metals sectors, and those derived from businesses dedicated to soft commodities.

We also have internal policies and frameworks that include climate and environmental factors in risk management. Our credit granting policies consider climate and environmental factors through our internal taxonomy (SFICS), credit committees, CIB rating and Corporate clients, collateral management, and other means. Moreover, we continue to use insurance and compensation funds to mitigate climate risks.

Throughout 2023, Grupo Santander has promoted a wide range of specific training on ESG matters, with the aim of raising employee awareness, both through internal continuous training and through international certifications for those professionals directly involved in this subject. In addition, we have best case studies, to establish the best practices regarding the integration of climate and environmental factors in the credit cycle.

Finally, another mitigation element is the multidisciplinary working group on ESG controversies, coordinated by the reputational risk function and where any matter that may have a reputational impact derived from said controversies is escalated.

6. Reporting

Transparent and regular reports to senior managers and stakeholders help us manage climate and environmental factors and comply with the law and supervisors' expectations.

Our reporting on climate and environmental risk management includes our annual report, the Climate Finance Report, the ICAAP exercise and in this Pillar 3 report.

International standards on which the environmental risk management framework is based

This section covers the requirement on qualitative information on environmental risk, specifically, the point on risk management, for questions (k)

The ESCC risk management policy sets out the standards for investing in, and providing financial products and services⁷ to companies and customers in oil and gas, power generation and distribution, mining and metals, and soft commodities (especially retail customers dedicated to farming and ranching in the Amazon).

As disclosed on the ESCC risk policy, we are part of the main and most important local and global initiatives to support the inclusive and sustainable growth. Some examples are:

- World Business Council for Sustainable Development (WBCSD).
- Banking Environment Initiative (BEI).
- UN Global Compact.
- Equator Principles.

The Group establishes ESG policies, procedures and guidelines on ESG that adapt to local regulation and apply to all units. We systematically review the scope of policies for adopting ESG standards according to international best practice.

Additionally, as stated in the annual report, the SFICS outlines common standards to consider an asset or activity as environmental, social or sustainable in all the Group's units and businesses. It draws on such international market guidelines, standards and principles as the EU Taxonomy (including the four new environmental targets for 2023), ICMA Principles, LMA Principles, UNEP FI Framework and the Climate Bonds Standard.

The SFICS enables us to track our sustainable activity, support product development and mitigate greenwashing risk.

Impact of environmental risk on capital and liquidity risk

This section covers the requirement on qualitative information on environmental risk, specifically, the point on risk management, for question (o)

The environmental and climate-related risk drivers are considered as factors that could impact the existing risks in the medium-to-long-term. These elements include, on the one hand, those derived from the physical effects of climate change, generated by one-off events as well as by chronic changes in the environment and, on the other hand, those derived from the process of transition to a development model with lower emissions, including legislative, technological or behaviour of economic agents changes.

Given the nature of its operations, the Group has no environment-related liabilities, expenses, assets or contingencies of a material relevance to its consolidated equity, financial situation and results.

Most exposures in sectors potentially affected by climate change risk, according to market consensus and to the execution of our materiality assessment, are with wholesale clients, whose preliminary reviews, credit approval and credit ratings take such risk into account. Customers' ratings determine the parameters for calculating loan loss (typically in terms of probability of default or "PD"). Thus, when climate factors are relevant, in conjunction with other elements of analysis, they have an impact on the loan loss calculations which support capital and provisions.

Additionally, within the regulatory capital (ICAAP) adequacy exercises and liquidity stress testing (a component of the ILAAP), climate and environmental risk scenarios and factors have been included covering both physical and transition events. These contribute to the estimation of potential impacts on the occurrence of one or more environmental risk events on the Group's position in these scenarios.

Likewise, Grupo Santander has participated in the various climate stress regulatory exercises carried out recently, which have been classified as learning exercises in the industry. Results showed that the Group's coverage for potential losses would be sufficient in view of portfolio maturity over time.

Therefore, based on the best information available at the time these consolidated annual financial statements were prepared, the Group sees no additional environmental or climate change risk having a substantial impact on its equity, financial situation and results in 2023.

Still, this matter is constantly changing, and, like other banks, the Group is working on developing more methodologies to better measure potential loan loss in line with new management needs, best practice, and regulators' and supervisors' requirements. In particular, we monitor progress in this regard both in the prudential area (mandate of the European Banking Authority in article 501c of Regulation (EU) 575/2013), and that resulting from the plan for the second phase of the post-review implementation of IAS 9 by the IASB regarding the calculation of expected losses, planned during 2024.

⁷ Transactions that entail credit risk, insurance, advisory services, equity, and asset management

Data availability, quality and accuracy

This section covers the requirement on qualitative information on environmental risk, specifically, the point on risk management, for question (p)

As stated by the EBA in the Report on management and supervision of ESG risks for credit institutions and investment firms, one of the main challenges faced by financial institutions in the integration of ESG risks is insufficient data. Grupo Santander, together with the rest of the industry, is therefore working to increase the granularity and quality of the ESG data necessary for management, including, among others:

- The availability of energy efficiency certificates, especially in those geographies where there is no specific regulation or requirement.
- The collection and availability of customers' financed emissions, information that will improve in Europe with the recent entry into force of the CSRD regulation.
- Improving the granularity and accuracy of the information needed to assess physical risks.

In order to achieve the above, the following lines of work are being carried out:

- Enhance the internal ESG information available.
- Strengthen the customer registration and risk admission process.
- Supplement the information available through external providers.
- Assess the development of models and proxies to be able to estimate the information not available once the other three previous initiatives have been applied.

Link between environmental risks with other risks in the management framework

This section covers the requirement on qualitative information on environmental risk, specifically, the point on risk management, for questions (r)

Due to the climate emergency, the data availability and methodology, the Environmental aspects within ESG are a focus of attention in the banking industry, among others. For this reason, the following section is more targeted on climate and environmental risks factors, which are considered transversal and likely to have an impact on existing risk typologies such as credit, market, liquidity, operational, reputational and strategic, mainly.

These risk factors include the physical effects of climate change and the transition to a low-carbon economy.

Physical risk: effects of climate change on economic activity, labour supply, communities, markets, assets and investors. It comprises:

- **Acute:** more intense extreme weather events, such as droughts, hurricanes or floods.
- **Chronic:** changes in rainfall patterns, extreme weather variability, average temperature rises, severe heatwaves and rising sea levels.

Transition risk: effects of the transition to a low-carbon economy, including changes in regulation, technology and market trends:

- **Market sentiment:** changes in the supply and demand of certain commodities, products and services as they consider climate risk and opportunity, which could lead to reputational and other issues.
- **Policy action:** implementing carbon pricing mechanisms to reduce greenhouse gas emissions; using energy sources with lower emissions; adopting energy efficient solutions; and promoting water efficiency measures and more sustainable land use practices.
- **Technology:** the need to build and innovate to support the transition to an energy efficient financial system with lower CO2 emissions. This can have a significant impact on companies as new technology displaces obsolete systems and disrupts some components of the financial system as we know it.

We measure the impact of the climate and environmental factors of each risk type across several time horizons. This table shows pre-mitigation impact, our progress with climate matters in 2023, and next steps:

Risk factor	Main climate drivers ⁸	Main time horizon ⁹	Potential impact on climate risk factors	What we are doing to manage climate risk	Next steps
Credit	<ul style="list-style-type: none"> - Chronic - Acute - Policy action - Market sentiment - Technology 	Medium - Long term	<ul style="list-style-type: none"> - Extreme weather can lead to higher retail and corporate loan default and lower collateral value. It can also cause income to fall, harm agriculture, and increase insurance coverage and premiums. Moreover, changes in wind patterns that reduce energy production can lead to higher operating costs and hamper productivity. This may increase asset depreciation and early disposal due to property damage in 'high risk' locations - A failure by borrowers to adapt their business models to a low-carbon economy could heighten credit risk and, therefore, the risk of a reduction in income or activity that may increase default or cause the business to lose value. - Adverse weather conditions can cause significant financial loss, endanger communities, harm the environment and affect the value of guarantees. - Market sentiment that influences demand; obsolete technology; customer preferences. - Higher operating costs for carbon intensive customers; information requirements (data gathering), especially on emissions (e.g. Scope 3) and green taxonomy disclosures; and new EU financial information directives stemming from government measures. 	<ul style="list-style-type: none"> - Conducting materiality assessments to spot physical and transition risk in our portfolios. - Analysing short-, medium- and long-term risk concentration by sector and region. - Creating heatmaps that follow orderly, disorderly and Hot House World scenarios up to 2050. - Implementing mitigation measures such as policies, thresholds and insurance to combat risks and their impact. - Conducting scenario analyses and measuring sensitivities to forecast changes in ratings, PD and LGD in view of physical and transition risk. - Drawing up credit risk metrics to monitor and control E&CC risk factors in BAU processes. - Measuring E&CC factors in customer and transaction analysis and ratings. - Setting risk appetite limits and alerts to manage climate-related sectors. 	<ul style="list-style-type: none"> - Run the second phase of 'Climate Race', our credit risk target operating model for climate and environmental factors and embedding of E&CC factors in the entire credit cycle to pinpoint and mitigate physical and transition risk. - Include climate factors in internal physical and transition risk models and embed scenario analysis techniques in risk management through a forward-looking approach by sector and geography. - Develop tools to monitor E&CC factors that consider physical and transition risk in the property sector.
Market risk	<ul style="list-style-type: none"> - Acute - Chronic - Market sentiment 	Short-Medium-term	<ul style="list-style-type: none"> - Higher volatility in market factors under stress scenarios. - Changes in market perception leading to wider credit spreads for business in impacted sectors. 	<ul style="list-style-type: none"> - Regular reviews of climate stress scenarios and subsidiaries that apply them. - Stress testing using physical and transition risk scenarios. - Portfolio analysis of current exposure to climate-sensitive business activities. 	<ul style="list-style-type: none"> - Enhancing analysis of material climate impact on trading portfolios to help with future sector-based stress testing. - Enriching stress testing and reviewing new scenarios to be included. - Adapting stress testing to best market practices.

⁸ All climate drivers have an effect in risk factors, although in this table only the main ones have been considered.

⁹ Short-term: up to 1 year; medium-term: up to 3 years; long-term: ≥ 5 years

Risk factor	Main climate drivers ⁸	Main time horizon ⁹	Potential impact on climate risk factors	What we are doing to manage climate risk	Next steps
Liquidity risk	<ul style="list-style-type: none"> - Chronic - Market sentiment 	Short-Medium-term	<ul style="list-style-type: none"> - Market impacts on the value of high quality liquid assets in Santander's liquidity buffer. - More frequent extreme weather stifling economic growth in countries susceptible to climate change, causing sovereign debt to rise and limiting access to capital markets. - Cash outflows from companies trying to boost their reputation in the market or solve problems with climate scenarios. 	<ul style="list-style-type: none"> - Qualitative and quantitative climate scenario analyses of impacts on highly liquid assets (HQLAs) and financing of exposed companies. - Analysis of higher outflows due to changes in market perception of corporations in climate-sensitive business activities. 	<ul style="list-style-type: none"> - Enhancing stress testing and reviewing new scenarios to be included. - Adapting stress testing to best market practices, including new liquidity scenarios to measure their impact.
Operational risk	<ul style="list-style-type: none"> - Acute - Policy action - Market sentiment 	Medium-Long term	<ul style="list-style-type: none"> - Severe climate events can cause damage to our assets, including branches, offices and data centres. They can also affect business continuity, processes and staff. - Climate-related factors can also lead to operational risk losses from litigation (e.g., if a bank is perceived to misrepresent sustainability-related practices). 	<ul style="list-style-type: none"> - Conducting operational risk and control self-assessments that include ESG-related risks to evaluate our exposure. - Conducting mandatory operational risk scenario analysis that covers physical and transition risk. - Adding ESG flag to the operational risk events database to classify incidents and environmental- and climate-related losses - Including an assessment of climate threats in business continuity scenarios. 	<ul style="list-style-type: none"> - Enhance operational risk reporting on climate-related factors. - Update documentation and provide training on the embedding of ESG factors in operational risk management.
Reputational risk	<ul style="list-style-type: none"> - Chronic - Acute - Policy action - Market sentiment 	Short - Medium -Long-term	<ul style="list-style-type: none"> - Customers, investors and other stakeholders who believe banks aren't doing enough to meet low-carbon targets, act against their policies or that their public commitments can pose reputational risk. - Misleading customers, investors and stakeholders with statements, actions, announcements, policies and the sustainability features of products or 'greenwashing' practices. 	<ul style="list-style-type: none"> - Updating climate and environmental risk policies and procedures. - Addressing reputational risk through corporate credit committees that assess sensitive transactions that involve climate and environmental risk. - Holding formal meetings to review reputational issues (including climate matters), involving the legal, responsible banking, investor relations, risk and other teams. - Implementing proactive measures to support companies' green transition and decarbonization. 	<ul style="list-style-type: none"> - Continue driving cooperation between the reputational risk area and other teams to address reputational impact. - Conduct a materiality assessment to measure climate-related and environmental reputational risk. - Implement a methodology to quantify the reputational impact of climate and environmental risk.
Strategic risk	<ul style="list-style-type: none"> - Acute - Chronic - Market sentiment - Policy action - Technology 	Short - Medium - Long-term	<ul style="list-style-type: none"> - A failure to achieve our climate and environmental targets, including those relating to our own and our customers' operations, could affect our strategy. 	<ul style="list-style-type: none"> - Checking that ESG targets are embedded in the Group's strategic planning. - Monitoring the Group's strategic 'Climate change' project, including net zero KPIs. - Identifying emerging risks, which includes an ESG risk event and analysis of how low-probability stress scenarios might impact on the Group's strategic targets to draw up suitable action plans. - Monitoring ESG initiatives presented at the corporate product governance forum (CGPF) and investors' forum. - Reviewing ESG factors and KPIs in the business model. 	<ul style="list-style-type: none"> - Continue monitoring climate and environmental threats as part of emerging risk identification. - Revise ESG KPIs regularly so that they remain consistent with the Group's strategy. - Continue reviewing ESG factors in relation to business model performance.

We use various assessment tools to help us analyse the potential impacts of climate and environmental factors on our portfolios, such as: materiality assessments, quantitative and qualitative heatmaps, and scenario analysis, among others.

10.2. Social risk

10.2.1. Business strategy and processes

This section covers the requirement on qualitative information on social risk, specifically, the point on business strategy and processes, for question (a)

Integration of social factors on the business strategy

As per the annual report, the Group strategy focuses on the ESG topics that are material to Santander. Our social ambition is to promote inclusive growth.

Regarding social topics, we have identified the following priority action plans to focus on:

- **Promote employees' wellbeing and equal treatment and opportunity for all:** ensuring fairness and respect among employees in an inclusive environment, with zero tolerance of harassment and discrimination in a psychological safety environment.
- **Support financial inclusion by promoting access to financial products and services and financial health, including financial literacy:** developing and providing products and services promoting access to basic financial services, including finance that meet their needs.
- **Foster customer information transparency and data privacy:** financially support our stakeholders to help with any potential challenges (e.g., rising cost of living) that might emerge through tailored products and solutions, including financial education.
- **Support education, employability and entrepreneurship:** Santander Universities focus on providing education, employability and entrepreneurship opportunities, connecting startups and SMEs, clients, training and other resources. We also support community well-being and improve the lives of people at risk of exclusion through our community programs.

We continue to expand our sustainable investment proposition for customers and progress towards our goal of reaching EUR 100 billion of socially responsible investment (SRI)¹⁰ AUM by 2025.

We have set a target to invest EUR 400 million between 2023-2026 to foster education, employability and entrepreneurship.

We have an ongoing strategic DE&I Plan (2020- 2025) to promote an inclusive working environment where everyone can be themselves.

We maintain rigorous standards for hiring, promotions, succession planning and talent pipelines to strengthen diversity. We also promote implicit bias training, as well as mentoring, networking and other actions aimed at creating a more inclusive environment.

Additionally, our internal taxonomy, the SFICS, is our guide on green and social financing. With regards to the latter, our social eligibility standards outline the business activities that address or mitigate specific social issues or seek to achieve positive social outcomes.

Currently, Grupo Santander is addressing 9 business activities: education, healthcare, transport, energy, water and waste management, real estate, finance and insurance, IT and communications, and non-profit organizations. All of which have an "impact metric" that measures its social contribution and a "target population" that is eligible for this social financing.

In addition, the Group's social ambition and strategic pillars are incorporated into its financial planning exercises (e.g. contribution to society / community, financial inclusion...). In particular, the social risks are indirectly considered in our strategic exercises (e.g. ICAAP) through the embedding of social factors such as the evolution in technology, policy framework or market sentiment in climate scenarios are used.

Following are some examples: projections of gross value added affecting at sector country level in the value of goods and services, productivity, industrials and manufacturing processes; change in demand is also affected under each scenario, as it determines the costs and the profitability of production as well as the demand of consumers and products; technological change applies also to affecting the demand for the sectors due to growth in the low-carbon technologies and market sentiment.

Objectives, targets and limits to assess and address social risk

This section covers the requirement on qualitative information on social risk, specifically, the point on business strategy and processes, for question (b)

Our activity and investments contribute to several United Nations' Sustainable Development Goals (SDG) and support the Paris Agreement, and other international and local initiatives such as UN Women's Empowerment Principles.

We analysed our agenda's contribution to the SDGs and determined the most relevant goals to Banco Santander's business, commitments and strategy. For more details, see the 'Banco Santander and the SDGs' brochure on our corporate website.

We increased two ESG targets at our Investor Day: 35% of senior executive positions to be held by women by 2025 and to financially include 5 million people by between 2023 and 2025.

In 2023, we continued consolidating our strategy to serve vulnerable customers, and specially to prevent over-indebtedness. In addition, the Group best practices were upgraded to internal regulation for the subsidiaries. This will ensure a common approach throughout the Group for employee training, recognition of vulnerable customers, case escalation, product and service design, recoveries, fraud management and assistance for senior citizens and people with disabilities.

¹⁰ Funds registered under article 8 and 9 (SFDR) in the EU, including third-party funds and SAM's Latin American funds that meet equivalent criteria.

Following UN Principles for Responsible Banking, we have set social targets in those areas where we have the greatest potential impact (additional to the environmental targets listed under Environmental risk):¹¹

	2018	2019	2020	2021	2022	2023	Target
Women in senior executive positions (%) ^A	20% →	22.7%	23.7%	26.3%	29.3%	31.4%	→ 35% by 2025
Equity pay gap ^B	3% →	2%	2%	1%	1%	c. 0% ✓	→ -0% by 2025
Financially empowered people (cumulative) ^C	—	2.0 mn	4.9 mn	7.5 mn	11.8 mn ✓		— 10 mn by 2025
Financially included people (cumulative) ^D						1.8 mn	— 5mn between 2023-2025
Investment to foster education, employment and entrepreneurship						105 mn	— €400m between 2023-2026

— Cumulative target
 → From... to...
 ✓ Commitment Achieved

Policies and procedures to manage social risks

This section covers the requirement on qualitative information on social risk, specifically, the point on business strategy and processes, for question (c)

Grupo Santander ensures ethical factors are properly considered when conducting business.

We therefore adhere to several policies, codes and internal rules inspired by the best practices, international conventions and protocols, codes of conduct and guides that are applicable in every area.

Our compliance with these policies is a process of continuous improvement. Santander undertakes an annual review of its corporate sustainability policies, which apply to the whole Group.

Among the most relevant policies relating to social aspects, are the following:

- **Responsible banking and sustainability policy**

It defines Santander's general principles for responsible banking and sustainability, as well as the objectives that the Group voluntarily undertakes with its main stakeholders, including Santander's position on the protection of human rights. This policy includes the main recommendations of the CNMV's Code of Good Governance in this area.

The responsible banking and sustainability policy also includes the main processes to ensure the management and monitoring of the objectives in this area.

The policy approved by the board of directors merges the general sustainability policy and the human rights policy to better integrate the objectives of both policies into existing processes. It also facilitates implementation and

understanding in a single, simpler and more operational document.

- **Environmental, social and climate change risk policy**

This policy sets out Grupo Santander's criteria for investing in entities, and/or providing financial products and/or services to customers involved in the oil & gas, power generation and mining & metals sectors and those arising from businesses engaged in soft commodities. The policy sets out which activities are prohibited and those that require special attention from an environmental, social and climate change perspective. This policy is a substitute to the previous energy, mining and metals, and soft commodities policies.

- **Policy on donations**

The purpose of this policy is to set out the criteria that regulate the treatment of donations as well as the process for making donations (proposal, assessment, decision, control and monitoring) that the Grupo Santander considers making for social purposes.

- **Principles of responsible behaviour for suppliers**

This document establishes the minimum principles of ethical, social and environmental conduct that Banco Santander expects from all its suppliers; these are aligned with the ten principles of the Global Compact.

¹¹ A. Senior executive positions make up 1% of the total workforce.

B. Equal pay gap based on same jobs, levels and functions. The year-end figure is 0.44%. Having met the target set (two years ahead of schedule), the Group has set itself the objective of maintaining a pay equity ratio in line with best market practices.

C. Unbanked, underbanked and financially vulnerable individuals who receive tailored finance solutions and become more aware and resilient through financial education

D. Additional 5 million of included people, considering unbanked, underbanked and financially vulnerable individuals who receive tailored finance solutions relates to access and finance.

being initiatives; and listening to employees so we can continuously improve.

10.2.2. Governance

Responsibilities of the management body for setting the risk framework, supervising and managing the implementation of the objectives, strategy and policies in the context of social risk management

This section covers the requirement on qualitative information on social risk, specifically, the point on governance, for questions (d), (e) and (f)

The board of directors approves and oversees the implementation of policies and strategies related to our corporate culture and values, responsible practices and sustainability. It also ensures that all the Group's employees are aware of our codes of conduct and act ethically, and comply with the law, customs and good practices of the sectors and countries in which we operate. This information is publicly stated on the annual report.

We continue to reinforce the multidisciplinary team, already announced in the previous report, to help enhance the identification, remediation and mitigation of social and environmental risks (including human rights), analyse customer engagement throughout their relationship with us, spot deficiencies and implement action plans.

In the management of the social objectives and strategies, the following initiatives, among others, are considered:

- **Activities towards the community and society:** over 174 million euros in community investment in 2023¹².
 - **Conduct and ethical behaviour:** our business complies with the highest standards of conduct and ethical behaviour, taking into account all stakeholders.
 - **Support for higher education and other local initiatives:** we support the communities where we operate, with a special focus on higher education, through our Santander Universities programme. We promote employability and entrepreneurship with initiatives like Santander Open Academy or Santander X.
 - **Financial inclusion and empowerment:** we help people access the financial services, set up and grow micro-businesses, and learn how to manage their finances. In line with our Group's commitment to reducing the stigma in providing financial services to vulnerable customers.
- **Employee relationships and labour standards:** we want to be an employer of choice. Our approach strategy is based on three pillars:
 - **Putting the employee at the centre of all we do;** working to have the best culture and a great employee experience delivered through diversity, equity and inclusion, culture, and health and well-

¹² Includes social contributions of foundations. In addition, Banco Santander made a donation of 6,617,008 Banco Santander shares to Fundación Banco Santander as financial support for it to bear (at least partially) the costs of fulfilling its founding purposes with the return on the shares.

- **Having the right talent and skills in place to enable the Bank's transformation;** attracting and engaging the best talent, with a strong focus on employee development; and having a best-in-class employee value proposition.
- **Driving change in the company;** shaping a more dynamic organization that's ready to face the future with a positive impact on society; having the best organizational design; utilizing new ways of working to drive value; and holding meaningful conversations with our stakeholders.
- **Customer protection and product responsibility**
 - **Customer conduct risk model:** being responsible means going above and beyond minimum legal requirements to offer customers products and services that are simple, personal, and fair (SPF). Our product governance and consumer protection area oversees and reviews how we follow our customer conduct risk model. The model sets out the requirements applicable to the product and service design, sales, post-sales, and execution.
 - **Product governance:** Santander's product and service approval policy, supported by local decision-making bodies and the corporate product governance forum, helps to provide that products and services are designed to meet the needs of the target market, at a fair price and in a transparent manner. Processes and controls set across life cycle taking into account the interests of our customers.
- **Human rights:** our board-approved responsible banking and sustainability policy illustrates ESG Santander's commitments including human rights protection of our employees, customers, suppliers and the communities we serve.
 - We run initiatives to combat discrimination, forced labour, and child exploitation as well as to preserve freedom of association and collective bargaining, our employees' health, and decent employment.
 - We protect our customers' human rights through responsible business practices and the protection of their data.
 - We improved our supplier questionnaires and environmental, social and human rights analysis to respect for human rights throughout our supply chain.
 - We are also enhancing human rights questionnaires to include risks to customers in the supply chain under our ESCC risk management policy.
 - We assess the human rights impact on transactions that fall within the scope of the Equator Principles.

As per the annual report, the **board of directors** oversee our activity regarding climate change and the green transition. In 2023, these topics were discussed by the board in seven of its meetings, including the social factors in the ESCC Policy review and the disclosure reports. Additionally, business units and global businesses report annually to the board on their main ESG initiatives.

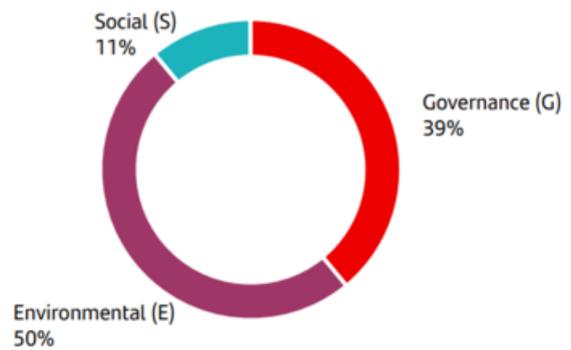
According to the Rules and Regulations of the board of directors, the **RBSCC** shall be composed of a minimum of

three and a maximum of nine directors, all external or non-executive, with independent directors having majority representation. In order to fulfil its purpose, the committee has the function of giving advice to the board of directors on the formulation of the corporate culture and values, including the strategy and policies on responsible business and sustainability and, in particular, on environmental and social matters, monitoring, supervising and evaluating them and considering proposals to the board as to advisable changes to the referred policies, all of this with the purpose of fulfilling their mission of promoting corporate interest and of taking into account, as appropriate, the legitimate interests of the other stakeholders.

In 2023, the **RBSCC** held five meetings. It discussed and reviewed the ESG revised policies, including the ESCC Policy Policy review and Group Culture Policy. The RBSCC reviewed our social agenda, which includes financial inclusion; financial health; business with social output; and corporate social responsibility or philanthropic activities. Likewise, there are teams within the Responsible Banking, General Intervention and Risks Divisions that are dedicated to the identification, evaluation, and reporting of social aspects, including possible risks derived from them.

The annual report provides information on members' attendance and the estimated average time each one spent on preparing for and participating in meetings.

The chart below shows the committee's approximate time allocation to each ESG criteria in 2023.



Alignment of the remuneration policy with social risk-related objectives

This section covers the requirement on qualitative information on social risk, specifically, the points on governance, for question (g)

To align the remuneration policy with the institution's social risk-related objectives, Santander applies the equal pay principle in the corporate remuneration policy of Grupo Santander for executive directors and employees alike, which forbids any type of differential treatment that is not exclusively based on an assessment of performance results and corporate behaviours, and promotes equal pay for men and women.

Furthermore, Santander’s remuneration framework rewards employees for their contribution based on such common principles as, among others:

- **Meritocracy:** non-discrimination based on sex, age, culture, religion or ethnicity.
- **Consistency:** remuneration consistent with the level of responsibility, leadership and performance within the Group, to promote retention of key professionals and attract the best talent.
- **Social responsibility:** employees’ pay cannot be lower than the legal minimum wage or the living wage in the country where they work. Additionally, in order to give our social responsibility prominence in remuneration, the Group’s responsible banking objectives for employee remuneration include the people financially empowered metric.

Also, performance objectives for annual variable remuneration have included ESG components aligned with our Responsible banking goals since 2020.

As previously mentioned in section 10.1.2 Governance, we measure our progress in ESG against these four lines of action and their related metrics: (1) percentage of women in senior executive positions, (2) financial inclusion, (3) socially responsible investment and (4) supporting transition.

Regarding social aspects, these targets cover

- **Women in senior executive positions by 2026**

Women in senior executive positions ^B (%)	Coefficient
≥ 37%	1.25
≥ 36% but < 37%	1 – 1.25 ^A
≥ 34% but < 36%	0 – 1 ^A
< 34%	0

A. Increase of the coefficient is proportional to its position on this line of the scale.

B. Senior leadership positions make up 1% of the total workforce

- **Financial inclusion between 2024 and 2026**

Financial inclusion ^B (million)	Coefficient
≥ 6.3	1.25
≥ 5.3 but < 6.3	1 – 1.25 ^A
≥ 3.5 but < 5.3	0 – 1 ^A
< 3.5	0

A. Increase of the coefficient is proportional to its position on this line of the scale.

B. Number of people unbanked, underbanked, in financial distress or with difficulty to access credit to whom we provide tailored access and finance solutions, aiming to meet local financial inclusion needs in a recurrent, comprehensive, affordable and effective way.

This information can be found in the ‘6.4 Directors’ remuneration policy for 2024, 2025 and 2026’ section in the annual report.



[Access 2023 Annual Report available on the Santander Group website](#)

10.2.3. Risk management

This section covers the requirement on qualitative information on social risk, specifically, the point on risk management, for question (h)

International standards on which the social risk management framework is based

Our social risk management framework draws up on international industry guidelines and principles. Thus, the four policies covered previously on "Policies and procedures to manage social risks", have been established in accordance with international standards:

- The **responsible banking and sustainability policy** is based on standards such as the agreements reached at the 2015 COP21 summit on climate change in Paris, or the UNESCO World Heritage list, the 2011 United Nations Guiding Principles on Business and Human Rights, the Universal Declaration of Human Rights, Fundamental conventions of the International Labour Organization, United Nations Guiding Principles on Business and Human Rights, among others.
- Our **environmental, social & climate change risk management policy**, follows the Equator Principles, the standards for social and environmental performance and the explanatory notes of the International Finance Corporation (IFC), the United Nations Global Compact, the Universal Declaration of Human Rights, the International Labour Organization Declaration, the Convention on the Rights of the Child, the Rio Declaration on Environment and the United Nations Convention against corruption.
- In the **policy of donations**, contributions must have, among other purposes, the defence of human rights, as proclaimed by the UN's Universal Declaration of Human Rights.
- **Principles of responsible behaviour for suppliers:** Banco Santander expects its suppliers to work to support and respect the protection of human rights in accordance with the United Nations Universal Declaration of Human Rights, the Fundamental Conventions of the International Labour Organization (ILO) and the United Nations Guiding Principles on Business and Human Rights.

In addition, the SFICS in the aspects related to social risk, draws on international industry guidelines, standards and principles such as the ICMA's social and green bond principles, LMA's principles or the UNEP FI framework among others.

Integration of social factors in the risk framework: management, setting of limits, tools and link with other risks

This section covers the requirement on qualitative information on social risk, specifically, the point on risk management, for question (i), (j), (k), (l) and (m)

The integration of social factors into the risk framework can be summarised as follows:

- As discussed in the climate finance report, the first line of defence runs due diligence with several specific questionnaires for credit approvals. Reputational risk assessment is also included for the decision making. In due diligence, SCIB's project finance transactions must be evaluated according to the Equator Principles.

In this regard and as indicated in the ESCC policy, an analysis is carried out at client intake include ethical considerations and inclusiveness assessment (considering, among others, actions and policies on non-discrimination at work, working conditions, populations in need of special attention, human rights, etc.). As per the annual report, global awareness training on the treatment of vulnerable customers has been launched in 2023.

- As mentioned in the Environmental Risk template, our ESCC risk management policy (which we review every year) sets out the standards for investing in, and providing financial products and services to, companies and customers in oil and gas, power generation and distribution, mining and metals, and soft commodities (especially retail customers dedicated to farming and ranching in the Amazon).

A financial manager completes a questionnaire before a team of analysts conducts an overall assessment of the client's ESCC risks in the applicable sectors¹³.

The ESCC risk and compliance departments delve deeper into cases that uncover red flags. They submit the findings of their analysis (and its impact on credit and other risks) to the bank's risk approval committees, who use them in decision-making.

Regarding this last point, the objective of this criterion is to add a social component to the environmental dimension, so that potentially green financing to clients must also be aligned with:

- OECD Guidelines for Multinational Enterprises
- ILO Declaration on Fundamental Principles and Rights at Work
- Universal Declaration of Human Rights
- The Convention on the Rights of the Child

¹³ Sectors covered by the ESCC Risk management policy and additional tactical sectors included in the CIB Procedure, as well as other material businesses and sectors depending on the geography and local legal requirements

- As stated in our ESCC risk management policy, we are committed to responsible investments that align with our sustainability goals and support for the Paris Agreement. Therefore, we will not invest in or provide financial products or services to projects that fail to meet our social responsibility standards, including projects requiring Free, Prior and Informed Consent (FPIC) under IFC Performance Standard 7 - Indigenous Peoples. Such projects must demonstrate adherence to IFC Performance Standard 7 and have a credible plan to achieve compliance.

For the activities that require special attention, the Group has decided to perform a detailed analysis. These activities originate from clients whose business activities involve the resettlement of indigenous people and/or other vulnerable groups.

- The Group continued to prioritize embedding its anti-bribery and corruption (ABC) compliance framework in 2023, with a strong commitment from marketing, sponsorships, supplier management, human resources and other key functions that are exposed to high ABC risk. The Group's training plan continued to combine introductory ABC courses with more detailed and customized content for certain teams. In 2023, stand-out sessions included technical training on penalty enforcement, ABC risk awareness workshops with staff from the Acquisitions team, and courses for board members.
- Among the tools for integrating social factors, we run surveys and speak-up channels for employees and customers. We assess externalities to identify risks and opportunities and to appraise our impact on the community. We respond to demands from analysts, investors and ratings and NGOs; keep pace with new regulation and best practices worldwide; and take part in consultations with authorities, trade bodies and other organizations that influence policymaking on sustainable development.
- Additionally, in 2023, the remuneration committee continued prioritizing gender pay measurement and trends in the Group to set targets; and checked that the methodology to calculate gender equality metrics was accurate and action plans effectively narrowed the gender pay gap in the Group and its subsidiaries.
- As it is mentioned in section 10.2.1. Business strategy and processes, social risks are indirectly included in the Group's stress testing exercises, both in the measurement of transition and physical risk in our portfolios, and through the assumptions and triggers used to develop our scenarios for the Group's strategic financial processes (e.g. ICAAP), including social factors, such as productivity, labour force change, technological change, market sentiment and demographic trends.

Likewise, the evaluation is carried out as described in section 10.1.3 Risk Management, under different time horizons, both in the Group's strategic exercises and in management for monitoring purposes (short, medium and long term, from 2020 to 2050).

With regard to methodologies for the direct incorporation of social aspects in scenario analysis, Grupo Santander closely follows regulatory developments related to these aspects.

Lastly, the interaction of social risks with the other risks is carried out on the basis of the aforementioned questionnaires. These are carried out during the process of analysis and granting of financing, but are also taken into account for the management of market, operational and reputational risks associated with these customers. However, the connection between these factors and the market and operational risks is being analysed.

10.3. Governance risk

This section covers the requirement on qualitative information on risks derived from governance, specifically questions (a), (b), (c) and (d)

The management of risks derived from governance is a relevant aspect in two facets: on the one hand, in the internal governance of Grupo Santander, and on the other, in the evaluation we make of the governance of our customers.

Our internal governance is described in the Group's annual report, which also covers, among other things, the committees responsible for ESG matters, the management of ethical issues, including conduct, inclusivity, transparency, conflicts of interest, and of internal communication on critical concerns.

Grupo Santander has corporate frameworks for matters considered to have a material impact on its risk profile, such as risk, capital, liquidity, compliance, financial crime, technology, auditing, accounting, finance, strategy, human resources, outsourcing, cybersecurity, special situations management communications and brand and responsible banking. These frameworks, which are mandatory, also specify:

- How the Group should supervise and exert control over subsidiaries;
- The Group's involvement in subsidiaries' decision-making (and vice versa).

In addition, compliance function is embedded in the process of reviewing ESG labelled transactions from a wider reputational and conduct risk perspective, with a particular focus on governance. A methodology has been developed for reviewing client governance related aspects with respect to labelled transactions in consideration of the minimum social safeguards under the EU Taxonomy, which focuses on competition, corruption and financial crime and taxation considerations. The internal methodology also gives consideration to broader issues such as allegations of greenwashing, ethics and integrity, DE&I, board composition and customer protection.

In relation to the analysis of our clients' governance, it is assessed in:

1. The elaboration of our **clients' credit ratings**. In the development of CIB's client credit ratings, we assess aspects of our clients' governance such as the application of good governance codes on our stakeholders like Sarbanes-Oxley and their involvement in management issues.
2. In **customer tiering**: phasing it progressively in accordance with our decarbonisation targets, beginning with power generation (more detail in the climate finance report, section 5 'Metrics and targets').
3. In the **screening and assessment process of the ESCC of clients' activities** in committed sectors (subject to the ESCC Policy) such as oil and gas, power, soft commodities, mining and metals.

Throughout this process, questionnaires are updated annually to assess aspects of our clients' governance and risk management:

- The **ethical considerations and inclusiveness** assessment includes, among others, actions and policies on non-discrimination at work, working conditions, populations requiring special attention, human rights.
- The **strategy and risk management assessment** includes the analysis of the quality and ambition of the customer's quantitative GHG emissions targets and the credibility of the customer's decarbonization strategy to achieve their emissions reduction targets (e.g. policies on climate change action; business strategy consideration of climate change risks and opportunities; and action plans to achieve their decarbonization targets).
- The disclosure assessment focuses on the **transparency** of the customer's reporting on past emissions performance across all relevant scopes, the level of assurance, as well as the degree of reporting alignment with the TCFD. Where possible, it may also include assessment as to whether or not previous greenhouse gas (GHG) emission targets were achieved.
- In relation to **conflict of interest**, Santander evaluates whether both its customers and their suppliers may have activities in prohibited areas according to the Group's regulations and whether there is any process to mitigate this.

Additionally, it analyses whether its customer's policies evaluate aspects of non-discrimination at work, working conditions, populations requiring special attention, human rights of its suppliers.

- Regarding the **internal communication of critical concerns**, we evaluate how internal client communication works, for example, in terms of grievance mechanisms for workers.

In addition, a governance assessment is conducted on the level of management oversight and governance of a customer's transition strategy. We assess the level of seniority of executives accountable for climate strategy; board committee oversight of climate change issues; and how executive remuneration is aligned with climate change performance. Having a c-suite responsible for climate-related issues and a responsible board member ensures that there is internal communication of critical climate concerns throughout the organization.

A financial manager completes a questionnaire before a team of analysts conducts an overall assessment of the client's ESCC risks in the applicable sectors.

The ESCC risk and compliance departments delve deeper into cases that uncover red flags. They submit the findings of their analysis (and its impact on credit and other risks) to the bank's risk approval committees, who use them in decision-making. As a result of the evaluation of the questionnaires, as a preventive measure, key decisions can be escalated to the Reputational Risk Forum and even to the board of directors.

4. As part of the customer due diligence process, the Group analyses publicly available information to assess the financial crime risk of our potential or existing customers (**adverse media screening**). If a relevant risk is identified during this process, it is escalated to the Financial Crime Prevention function for review and determination of mitigating actions.

5. According to the **defence sector policy**, Grupo Santander will not be involved in the financing or support in relation to the manufacture, trade, distribution or maintenance services of the prohibited materials mentioned in the policy.

With the entry into force of the *Corporate Sustainability Reporting Directive* (CSRD), additional aspects of governance risk assessment for our clients will be incorporated.

Additionally, Compliance area will continue to deepen its analysis of our clients' governance, particularly in the context of our ongoing client due diligence analysis in accordance with our policies and procedures and ESG labelling, in order to broaden the focus on aspects such as ethics and integrity, board diversity and equality and customer protection.

10.4 Credit quality of exposures

This template provides information on exposures to non-financial companies operating in sectors that significantly contribute to climate change, including, among other things, information on the credit quality of the exposures and on financed emissions.

ESG disclosure in Pillar 3 follows the implementing technical standards on prudential disclosures on ESG risks defined by the EBA for this purpose. Therefore, the ESG information disclosed in this template of Pillar 3 is not necessarily aligned with other Group's ESG management reports.

The perimeter includes exposures in the banking book, including loans and advances, debt securities and equity instruments to non-financial corporations, other than those held for trading.

Santander has an exposure of €353 billion, distributed between those sectors identified by the EBA as major climate change contributors (77% – NACE A–I and L) and other less polluting sectors (23% – NACE K, J, M–U).

The template also requires the identification of exposures excluded from benchmarks aligned with the Paris Agreement. To this end, we have applied sections d) through g) of Article 12.1, and Article 12.2 of Commission Delegated Regulation (EU) 2020/1818. Companies are identified based on the following criteria:

- 1% or more of their revenues derive from exploration, mining, extraction, distribution or refining of hard coal and lignite.
- 10% or more of their revenues derive from the exploration, extraction, distribution or refining of oil fuels.
- 50% or more of their revenues derive from the exploration, extraction, manufacturing or distribution of gaseous fuels.
- At least 50% of its revenue comes from electricity generation with a greenhouse gas emission intensity of more than 100g CO₂ equivalent/kWh.

In order to apply these criteria to our portfolio, we have used information from external providers regarding revenues of the companies by sector of activity obtained, when available.

The resulting list has been complemented with those companies not included in the information provided by external providers but included by the Group in sectors with decarbonization commitments.

In relation to the publication of financed emissions, we have adopted a progressive approach. We start with the sectors for which we have established an emissions-based commitment: power generation, energy, steel, aviation and auto manufacturing. Likewise, we have established our strategic commitment to stop financing the thermal coal sector by 2030; therefore, it is not expressed in terms of emissions.

Financed emissions have been calculated following the methodological and design decisions used in the process of

aligning our portfolios (i.e. exposure, reference year, emissions by scope etc.). For further information on the design decisions applied, see the 2023 annual report. Emissions have been assigned according to the Group's main activity, in accordance with the corresponding NACE codes.

The information needed to calculate financed emissions is obtained from various data sources for emissions, physical intensities and production data. Primarily, information on emissions and production is obtained from the publication of annual reports by our clients. Additionally, we use S&P Global Trucost and Asset Resolution as alternative sources. Finally, we use Transition Pathway Initiative to collect information regarding physical emissions intensity in certain sectors, such as steel, auto manufacturing and energy.

Regarding the percentage of the portfolio covered by real emissions of the counterparties, these has been estimated based on the EAD according to the design choices applied in the calculation of alignment metrics, as described in Section 10.6.

In line with EBA ITS on Pillar 3 disclosures on ESG, the Group will make an orderly transition to comply with the requirements and disclose financed emissions for the entire non financial corporation portfolio by June 2024. We are, therefore, working in calculating financed emissions based on the standard of the Partnership for Carbon Accounting Financials (PCAF), using the counterparties actual emissions, where available, and completing the rest of the portfolio with average PCAF emissions factors.

Regarding the column 'of which environmentally sustainable (CCM)', in accordance with the technical standards for the application of Pillar 3 ESG, we have started to disclose this content in the December 2023 report. For the construction of this field, it has been done consistently with the aligned exposures subject to NFRD reported in the GAR template that contribute to the climate change mitigation objective.

Table 87.ESG 1 - Banking book- Climate Change transition risk: Credit quality of exposures by sector, emissions and residual maturity

Sector/subsector	a	b	c	d	e
	Gross carrying amount (MIn EUR)				
		Of which exposures towards companies excluded from EU Paris-aligned Benchmarks in accordance with points (d) to (g) of Article 12.1 and in accordance with Article 12.2 of Climate Benchmark Standards Regulation	Of which environmentally sustainable (CCM)	Of which stage 2 exposures	Of which non-performing exposures
1 Exposures towards sectors that highly contribute to climate change*	270,553	10,882	1,381	21,935	11,131
2 A - Agriculture, forestry and fishing	10,447	2	4	910	528
3 B - Mining and quarrying	10,205	4,094	24	163	42
4 B.05 - Mining of coal and lignite	—	—	—	—	—
5 B.06 - Extraction of crude petroleum and natural gas	3,595	1,644	—	10	9
6 B.07 - Mining of metal ores	2,965	849	8	21	3
7 B.08 - Other mining and quarrying	515	69	—	98	27
8 B.09 - Mining support service activities	3,130	1,532	15	33	3
9 C - Manufacturing	56,395	2,912	298	3,080	1,979
10 C.10 - Manufacture of food products	14,445	118	—	667	494
11 C.11 - Manufacture of beverages	2,616	—	—	96	70
12 C.12 - Manufacture of tobacco products	922	—	—	1	—
13 C.13 - Manufacture of textiles	800	—	—	95	64
14 C.14 - Manufacture of wearing apparel	735	—	—	97	93
15 C.15 - Manufacture of leather and related products	452	—	—	71	57
16 C.16 - Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	926	—	—	81	51
17 C.17 - Manufacture of pulp, paper and paperboard	1,830	—	14	101	43
18 C.18 - Printing and service activities related to printing	626	—	—	97	43
19 C.19 - Manufacture of coke oven products	2,189	1,355	2	49	8
20 C.20 - Production of chemicals	4,805	1,147	2	228	52
21 C.21 - Manufacture of pharmaceutical preparations	1,689	—	—	33	30
22 C.22 - Manufacture of rubber products	1,913	—	—	150	66
23 C.23 - Manufacture of other non-metallic mineral products	1,943	—	7	173	61
24 C.24 - Manufacture of basic metals	3,393	132	99	52	116

25	C.25 - Manufacture of fabricated metal products, except machinery and equipment	2,959	—	—	285	143
26	C.26 - Manufacture of computer, electronic and optical products	2,257	—	—	64	19
27	C.27 - Manufacture of electrical equipment	2,099	—	22	88	202
28	C.28 - Manufacture of machinery and equipment n.e.c.	1,885	1	7	136	69
29	C.29 - Manufacture of motor vehicles, trailers and semi-trailers	3,900	28	51	173	31
30	C.30 - Manufacture of other transport equipment	1,598	106	93	61	152
31	C.31 - Manufacture of furniture	618	—	—	89	41
32	C.32 - Other manufacturing	1,006	8	1	110	32
33	C.33 - Repair and installation of machinery and equipment	790	17	1	85	41
34	D - Electricity, gas, steam and air conditioning supply	15,852	2,137	901	809	266
35	D35.1 - Electric power generation, transmission and distribution	15,107	1,652	893	760	230
36	D35.11 - Production of electricity	10,761	797	537	695	216
37	D35.2 - Manufacture of gas; distribution of gaseous fuels through mains	637	485	8	11	1
38	D35.3 - Steam and air conditioning supply	108	—	—	38	36
39	E - Water supply; sewerage, waste management and remediation activities	1,836	—	1	143	41
40	F - Construction	18,605	450	71	1,634	914
41	F.41 - Construction of buildings	10,234	1	26	900	383
42	F.42 - Civil engineering	3,828	6	23	256	167
43	F.43 - Specialised construction activities	4,543	443	23	479	364
44	G - Wholesale and retail trade; repair of motor vehicles and motorcycles	82,525	893	15	6,272	3,714
45	H - Transportation and storage	17,652	394	37	2,256	1,170
46	H.49 - Land transport and transport via pipelines	9,484	393	35	631	344
47	H.50 - Water transport	2,090	—	1	979	134
48	H.51 - Air transport	604	—	—	51	125
49	H.52 - Warehousing and support activities for transportation	5,330	1	1	580	551
50	H.53 - Postal and courier activities	144	—	—	15	15
51	I - Accommodation and food service activities	11,571	—	—	2,139	1,146
52	L - Real estate activities	45,465	—	30	4,528	1,330
53	Exposures towards sectors other than those that highly contribute to climate change*	82,776	4,226	337	4,464	2,471
54	K - Financial and insurance activities	—	—	—	—	—
55	Exposures to other sectors (NACE codes J, M - U)	82,776	4,226	337	4,464	2,471
56	TOTAL	353,330	15,108	1,718	26,399	13,602

* In accordance with the Commission delegated regulation (EU) 2020/1818 supplementing regulation (EU) 2016/1011 as regards minimum standards for EU Climate Transition Benchmarks and EU Paris-aligned Benchmarks -Climate Benchmark Standards Regulation - Recital 6: Sectors listed in Sections A to H and Section L of Annex I to Regulation (EC) No 1893/2006

Table 87.ESG 1 - Banking book- Climate Change transition risk: Credit quality of exposures by sector, emissions and residual maturity

Sector/subsector	f	g	h	
	Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions (MIn EUR)			
		Of which Stage 2 exposures	Of which non-performing exposures	
1 Exposures towards sectors that highly contribute to climate change*	-6,360	-913	-4,767	
2 A - Agriculture, forestry and fishing	-304	-42	-231	
3 B - Mining and quarrying	-32	-7	-17	
4 B.05 - Mining of coal and lignite	—	—	—	
5 B.06 - Extraction of crude petroleum and natural gas	-7	-3	-1	
6 B.07 - Mining of metal ores	-4	—	-1	
7 B.08 - Other mining and quarrying	-18	-4	-13	
8 B.09 - Mining support service activities	-3	-1	-1	
9 C - Manufacturing	-1,193	-181	-909	
10 C.10 - Manufacture of food products	-286	-38	-219	
11 C.11 - Manufacture of beverages	-41	-4	-34	
12 C.12 - Manufacture of tobacco products	—	—	—	
13 C.13 - Manufacture of textiles	-36	-6	-29	
14 C.14 - Manufacture of wearing apparel	-50	-9	-39	
15 C.15 - Manufacture of leather and related products	-31	-4	-25	
16 C.16 - Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	-29	-5	-22	
17 C.17 - Manufacture of pulp, paper and paperboard	-29	-5	-21	
18 C.18 - Printing and service activities related to printing	-29	-4	-22	
19 C.19 - Manufacture of coke oven products	-17	-13	-3	
20 C.20 - Production of chemicals	-36	-10	-20	
21 C.21 - Manufacture of pharmaceutical preparations	-10	-1	-7	
22 C.22 - Manufacture of rubber products	-47	-7	-34	
23 C.23 - Manufacture of other non-metallic mineral products	-43	-14	-26	
24 C.24 - Manufacture of basic metals	-68	-2	-61	
25 C.25 - Manufacture of fabricated metal products, except machinery and equipment	-96	-16	-71	
26 C.26 - Manufacture of computer, electronic and optical products	-18	-4	-10	
27 C.27 - Manufacture of electrical equipment	-43	-3	-38	
28 C.28 - Manufacture of machinery and equipment n.e.c.	-48	-6	-36	
29 C.29 - Manufacture of motor vehicles, trailers and semi-trailers	-26	-12	-11	

30	C.30 - Manufacture of other transport equipment	-127	-2	-123
31	C.31 - Manufacture of furniture	-31	-6	-23
32	C.32 - Other manufacturing	-21	-5	-14
33	C.33 - Repair and installation of machinery and equipment	-29	-4	-21
34	D - Electricity, gas, steam and air conditioning supply	-180	-15	-49
35	D35.1 - Electric power generation, transmission and distribution	-177	-15	-48
36	D35.11 - Production of electricity	-169	-14	-44
37	D35.2 - Manufacture of gas; distribution of gaseous fuels through mains	-1	—	-1
38	D35.3 - Steam and air conditioning supply	-1	—	-1
39	E - Water supply; sewerage, waste management and remediation activities	-26	-5	-16
40	F - Construction	-592	-90	-471
41	F.41 - Construction of buildings	-289	-52	-222
42	F.42 - Civil engineering	-97	-9	-84
43	F.43 - Specialised construction activities	-207	-30	-165
44	G - Wholesale and retail trade; repair of motor vehicles and motorcycles	-2,404	-239	-1,933
45	H - Transportation and storage	-487	-68	-371
46	H.49 - Land transport and transport via pipelines	-225	-47	-156
47	H.50 - Water transport	-27	-8	-11
48	H.51 - Air transport	-62	-2	-59
49	H.52 - Warehousing and support activities for transportation	-163	-10	-138
50	H.53 - Postal and courier activities	-10	-1	-7
51	I - Accommodation and food service activities	-479	-79	-380
52	L - Real estate activities	-663	-188	-391
53	Exposures towards sectors other than those that highly contribute to climate change*	-1,582	-324	-1,085
54	K - Financial and insurance activities	—	—	—
55	Exposures to other sectors (NACE codes J, M - U)	-1,582	-324	-1,085
56	TOTAL	-7,942	-1,236	-5,853

Table 87.ESG 1 - Banking book- Climate Change transition risk: Credit quality of exposures by sector, emissions and residual maturity

Sector/subsector	i	j
	GHG financed emissions (scope 1, scope 2 and scope 3 emissions of the counterparty) (in tons of CO2 equivalent)	
		Of which Scope 3 financed emissions
1 Exposures towards sectors that highly contribute to climate change*	37,080,995	27,866,242
2 A - Agriculture, forestry and fishing	—	—
3 B - Mining and quarrying	27,432,362	25,194,821
4 B.05 - Mining of coal and lignite	—	—
5 B.06 - Extraction of crude petroleum and natural gas	27,432,362	25,194,821
6 B.07 - Mining of metal ores	—	—
7 B.08 - Other mining and quarrying	—	—
8 B.09 - Mining support service activities	—	—
9 C - Manufacturing	4,569,853	2,671,421
10 C.10 - Manufacture of food products	—	—
11 C.11 - Manufacture of beverages	—	—
12 C.12 - Manufacture of tobacco products	—	—
13 C.13 - Manufacture of textiles	—	—
14 C.14 - Manufacture of wearing apparel	—	—
15 C.15 - Manufacture of leather and related products	—	—
16 C.16 - Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	—	—
17 C.17 - Manufacture of pulp, paper and paperboard	—	—
18 C.18 - Printing and service activities related to printing	—	—
19 C.19 - Manufacture of coke oven products	—	—
20 C.20 - Production of chemicals	—	—
21 C.21 - Manufacture of pharmaceutical preparations	—	—
22 C.22 - Manufacture of rubber products	—	—
23 C.23 - Manufacture of other non-metallic mineral products	—	—
24 C.24 - Manufacture of basic metals	1,898,431	—
25 C.25 - Manufacture of fabricated metal products, except machinery and equipment	—	—
26 C.26 - Manufacture of computer, electronic and optical products	—	—
27 C.27 - Manufacture of electrical equipment	—	—
28 C.28 - Manufacture of machinery and equipment n.e.c.	—	—

29	C.29 - Manufacture of motor vehicles, trailers and semi-trailers	2,671,421	2,671,421
30	C.30 - Manufacture of other transport equipment	—	—
31	C.31 - Manufacture of furniture	—	—
32	C.32 - Other manufacturing	—	—
33	C.33 - Repair and installation of machinery and equipment	—	—
34	D - Electricity, gas, steam and air conditioning supply	4,237,814	—
35	D35.1 - Electric power generation, transmission and distribution	4,237,814	—
36	D35.11 - Production of electricity	4,237,814	—
37	D35.2 - Manufacture of gas; distribution of gaseous fuels through mains	—	—
38	D35.3 - Steam and air conditioning supply	—	—
39	E - Water supply; sewerage, waste management and remediation activities	—	—
40	F - Construction	—	—
41	F.41 - Construction of buildings	—	—
42	F.42 - Civil engineering	—	—
43	F.43 - Specialised construction activities	—	—
44	G - Wholesale and retail trade; repair of motor vehicles and motorcycles	—	—
45	H - Transportation and storage	840,965	—
46	H.49 - Land transport and transport via pipelines	—	—
47	H.50 - Water transport	—	—
48	H.51 - Air transport	840,965	—
49	H.52 - Warehousing and support activities for transportation	—	—
50	H.53 - Postal and courier activities	—	—
51	I - Accommodation and food service activities	—	—
52	L - Real estate activities	—	—
53	Exposures towards sectors other than those that highly contribute to climate change*		
54	K - Financial and insurance activities		
55	Exposures to other sectors (NACE codes J, M - U)		
56	TOTAL	37,080,995	27,866,242

Table 87.ESG 1 - Banking book- Climate Change transition risk: Credit quality of exposures by sector, emissions and residual maturity

Sector/subsector	k	l	m	n	o	p
	GHG emissions (column i): gross carrying amount percentage of the portfolio derived from company- specific reporting	<= 5 years	> 5 year <= 10 years	> 10 year <= 20 years	> 20 years	Average weighted maturity
1 Exposures towards sectors that highly contribute to climate change*	41 %	224,488	27,708	12,880	5,477	3.2
2 A - Agriculture, forestry and fishing	— %	9,063	895	340	150	3.0
3 B - Mining and quarrying	— %	8,198	1,408	563	36	3.1
4 B.05 - Mining of coal and lignite	— %	—	—	—	—	4.1
5 B.06 - Extraction of crude petroleum and natural gas	— %	2,814	651	118	13	3.0
6 B.07 - Mining of metal ores	— %	2,937	26	—	2	1.2
7 B.08 - Other mining and quarrying	— %	437	59	1	18	3.0
8 B.09 - Mining support service activities	— %	2,010	672	444	4	5.1
9 C - Manufacturing		50,174	4,271	1,185	765	2.4
10 C.10 - Manufacture of food products	— %	13,506	718	81	139	2.1
11 C.11 - Manufacture of beverages	— %	2,461	101	28	25	1.2
12 C.12 - Manufacture of tobacco products	— %	921	—	—	—	1.0
13 C.13 - Manufacture of textiles	— %	708	55	18	19	2.9
14 C.14 - Manufacture of wearing apparel	— %	630	52	32	21	3.1
15 C.15 - Manufacture of leather and related products	— %	393	29	6	24	2.5
16 C.16 - Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	— %	820	73	19	14	2.9
17 C.17 - Manufacture of pulp, paper and paperboard	— %	1,258	545	9	17	3.2
18 C.18 - Printing and service activities related to printing	— %	536	51	17	22	3.0
19 C.19 - Manufacture of coke oven products	— %	1,728	55	406	—	3.2
20 C.20 - Production of chemicals	— %	4,024	506	220	55	2.4
21 C.21 - Manufacture of pharmaceutical preparations	— %	1,380	207	—	102	3.0
22 C.22 - Manufacture of rubber products	— %	1,735	132	17	28	2.6
23 C.23 - Manufacture of other non-metallic mineral products	— %	1,730	168	9	36	2.4
24 C.24 - Manufacture of basic metals	96 %	3,206	157	5	26	2.0
25 C.25 - Manufacture of fabricated metal products, except machinery and equipment	— %	2,600	232	41	85	2.6

26	C.26 - Manufacture of computer, electronic and optical products	— %	2,182	43	23	9	1.3
27	C.27 - Manufacture of electrical equipment	— %	1,955	80	51	13	1.7
28	C.28 - Manufacture of machinery and equipment n.e.c.	— %	1,681	141	24	41	2.5
29	C.29 - Manufacture of motor vehicles, trailers and semi-trailers	— %	3,419	450	5	27	2.2
30	C.30 - Manufacture of other transport equipment	— %	1,161	283	142	12	5.0
31	C.31 - Manufacture of furniture	— %	517	74	11	16	3.2
32	C.32 - Other manufacturing	— %	928	53	6	20	2.4
33	C.33 - Repair and installation of machinery and equipment	— %	695	65	15	16	3.0
34	D - Electricity, gas, steam and air conditioning supply	90 %	11,347	2,806	1,437	261	4.1
35	D35.1 - Electric power generation, transmission and distribution	90 %	10,746	2,719	1,417	224	4.2
36	D35.11 - Production of electricity	90 %	7,442	2,027	1,091	200	4.6
37	D35.2 - Manufacture of gas; distribution of gaseous fuels through mains	— %	536	80	19	3	1.9
38	D35.3 - Steam and air conditioning supply	— %	66	7	1	34	3.0
39	E - Water supply; sewerage, waste management and remediation activities	— %	1,378	263	158	37	4.9
40	F - Construction	— %	15,347	1,612	1,352	293	3.9
41	F.41 - Construction of buildings	— %	9,155	659	297	122	3.5
42	F.42 - Civil engineering	— %	2,714	622	463	29	4.3
43	F.43 - Specialised construction activities	— %	3,478	331	592	142	4.6
44	G - Wholesale and retail trade; repair of motor vehicles and motorcycles	— %	76,025	2,642	803	3,054	2.0
45	H - Transportation and storage	— %	12,216	3,678	1,624	134	4.9
46	H.49 - Land transport and transport via pipelines	— %	7,862	1,403	157	63	3.8
47	H.50 - Water transport	— %	683	765	642	1	7.0
48	H.51 - Air transport	— %	542	57	2	4	3.0
49	H.52 - Warehousing and support activities for transportation	— %	3,001	1,441	823	65	5.7
50	H.53 - Postal and courier activities	— %	129	13	2	1	3.5
51	I - Accommodation and food service activities	— %	7,524	2,393	1,504	150	5.4
52	L - Real estate activities	— %	33,215	7,741	3,913	596	4.4
53	Exposures towards sectors other than those that highly contribute to climate change*		69,492	7,216	3,048	3,020	3.3
54	K - Financial and insurance activities		—	—	—	—	—
55	Exposures to other sectors (NACE codes J, M - U)		69,492	7,216	3,048	3,020	3.3
56	TOTAL	41 %	293,980	34,924	15,929	8,497	3.3

10.5 Energy efficiency of the collateral

The purpose of this template is to measure the energy efficiency of the loans collateralized with commercial and residential immovable property and of repossessed real estate collaterals, in terms of their consumption as expressed in kWh/m² and/or their energy performance certificates (EPCs).

ESG disclosure in Pillar 3 follows the implementing technical standards on prudential disclosures on ESG risks defined by the EBA for this purpose. Therefore, the ESG information disclosed in this template of Pillar 3 is not necessarily aligned with other Group's ESG management reports.

With the aim of promoting the energy efficiency of buildings, the Energy Performance of Buildings Directive (2010/31/EU) and the Energy Efficiency Directive (2012/27/EU) introduced EPCs in Europe. Following their entry into force, these certificates are compulsory for the sale and rent of immovable property in the Eurozone.

However, when analysing the information provided, the following should be taken into account:

- Transactions (sales/renting) prior to the date of entry into force of the directive were not subject to the obligation of providing an EPC.
- The directive is applicable across the European Union and, as such, does not cover all jurisdictions where Santander operates.
- Even at the European Union level, as recognised by the European Banking Authority (EBA) in the Implementing Technical Standards on Prudential Disclosures on ESG risks, application of the Directive is not standardised.
- Depending on the legal provisions in each geography, an EPC's obligation to carry out the transaction does not always imply that the financial institution involved in the transaction has access to such information.

Given that the directive is applicable in the European Union, the Group has worked to obtain EPCs for the main collateralized portfolios in this region (Spain and Portugal), as well as the United Kingdom, since it has a EPC system that is similar to that of the European Union. For these regions, the Group is currently collecting this information for new originations or has initiatives in place to obtain it. These efforts have made it possible to include actual EPC information for the new originations in Germany.

For these geographies, work has been done to obtain EPCs and energy consumption (in kWh/m²), drawing from various sources of information:

- Firstly, information already available internally has been used.
- Additionally, in Spain, UK and Portugal, this has been supplemented by information obtained by external suppliers (Gloval and Landmark).

- In regard to immovable property for which real data was not available, for those immovable properties subject to EPCs this has been modelled both internally (in the case of Spain), as well as by an external supplier (in the case of Portugal and the United Kingdom), in order to cover a large percentage of the portfolio and allowing us to cover almost the entire portfolio in both countries. Additionally, in the case of Poland, information of energy consumption is included even though there are no actual EPCs.

As per EBA guidelines, whereas in the report on exposure by energy certificate (EPC label) only actual energy certificates were considered, the report by energy consumption (kWh/m²) used real consumption in addition to estimated consumption. Given this, energy consumption has been estimated for both the portion of the portfolio for which no EPC label was available, and for the part of the portfolio with EPC label where real consumption information was not available.

For Spain, the methodology to estimate energy consumption has been maintained based on PCAF (Partnership for Carbon Accounting Financials) standards. However, these values have been updated, modifying the distribution of energy consumption that we had.

Additionally, for the cases where a contract has more than one collateral associated (commonly Commercial Real Estate), the Group has worked to improve the EPC label assignment to the collaterals associated with their respective contracts decreasing the actual EPCs in non-EU areas.

In the case of the UK, Spain, Portugal and Germany, actual EPCs have been reported for 61% of the portfolio, with estimated EPCs available for a further 35%. For Poland, according to local regulation there is no EPC label, so only EP score information is included.

Additionally, EPC information is being considered in the pricing for those operations with better EPCs (EPC A or B in Spain, and A+ or A in Portugal).

For the remaining regions, such as the United States and Latin America, given the current lack of European Union equivalent regulations in this respect, the exposure of these geographies are being reported as not having EPCs.

However, the portfolios collateralized by immovable property in geographies without EPC schemes or an equivalent in place represent less than 26% of the Group's total portfolio.

Table 88.ESG 2 - Banking book - Climate change transition risk: Loans collateralised by immovable property - Energy efficiency of the collateral

Counterparty sector	a	b	c	d	e	f	g
	Total gross carrying amount amount (in MEUR)						
	Level of energy efficiency (EP score in kWh/m ² of collateral)						
	0; <= 100	> 100; <= 200	> 200; <= 300	> 300; <= 400	> 400; <= 500	> 500	
1 Total EU area	144,680	35,531	66,122	11,681	1,142	250	154
2 Of which Loans collateralised by commercial immovable property	29,000	8,098	9,643	1,284	222	52	61
3 Of which Loans collateralised by residential immovable property	110,471	27,422	56,447	10,394	919	197	93
4 Of which Collateral obtained by taking possession: residential and commercial immovable properties	5,208	11	32	2	—	—	—
5 Of which Level of energy efficiency (EP score in kWh/m ² of collateral) estimated	100,838	30,345	61,301	8,916	260	13	4
6 Total non-EU area	301,604	25,275	51,344	90,953	30,709	8,045	5,082
7 Of which Loans collateralised by commercial immovable property	28,617	232	894	1,542	1,192	1,175	1,787
8 Of which Loans collateralised by residential immovable property	272,600	25,043	50,450	89,411	29,518	6,869	3,295
9 Of which Collateral obtained by taking possession: residential and commercial immovable properties	387	—	—	—	—	—	—
10 Of which Level of energy efficiency (EP score in kWh/m ² of collateral) estimated	42,018	847	6,095	25,797	6,581	1,402	1,295

Table 88.ESG 2 - Banking book - Climate change transition risk: Loans collateralised by immovable property - Energy efficiency of the collateral

Counterparty sector	h	i	j	k	l	m	n	o	p
	Total gross carrying amount amount (in MEUR)								
	Level of energy efficiency (EPC label of collateral)							Without EPC label of collateral	
	A	B	C	D	E	F	G		Of which level of energy efficiency*
1 Total EU area	3,352	3,347	3,600	5,414	11,645	2,336	2,556	112,429	74 %
2 Of which Loans collateralised by commercial immovable property	412	734	631	781	740	214	177	25,312	62 %
3 Of which Loans collateralised by residential immovable property	2,941	2,613	2,969	4,632	10,905	2,122	2,380	81,911	82 %
4 Of which Collateral obtained by taking possession: residential and commercial immovable properties	—	—	1	—	—	1	—	5,206	1 %
5 Of which Level of energy efficiency (EP score in kWh/m ² of collateral) estimated	—	—	—	—	—	—	—	82,775	100 %
6 Total non-EU area	743	27,057	42,620	67,189	25,406	5,256	1,121	132,210	32 %
7 Of which Loans collateralised by commercial immovable property	102	611	791	631	263	61	137	26,021	16 %
8 Of which Loans collateralised by residential immovable property	641	26,447	41,828	66,559	25,144	5,195	984	105,802	36 %
9 Of which Collateral obtained by taking possession: residential and commercial immovable properties	—	—	—	—	—	—	—	387	— %
10 Of which Level of energy efficiency (EP score in kWh/m ² of collateral) estimated	—	—	—	—	—	—	—	42,018	100 %

*Energy consumption in kWh/m² of the actual guarantee

10.6 Alignment metrics

The purpose of this template is to show information on the emissions of institutions according to the sector to which the counterparty belongs and according to the alignment metrics defined by the International Energy Agency (IEA) for the various sectors.

To this end, we are adopting a gradual approach and beginning with the most significant sectors. Santander carries out regular materiality assessments to determine which portfolios are most relevant in relation to physical and transition-based risks. This materiality assessment is the basis on which we prioritise sectors when we define objectives.

In February 2021, the Group's board of directors approved the ambitious objective of achieving net zero carbon emissions by 2050. This vision applies to the Group's operations and to the emissions of our financing, advisory and investment services.

As part of our net zero ambition, we are a founding member of the Net Zero Banking Alliance (NZBA), under which we are committed to defining interim objectives for 2030 (more information in the 2022-2023 climate finance report). As such, we have marked the three-year objectives requested in the template as "Not available". Nevertheless, the evolution of our objectives is continuously monitored against the objectives defined for each sector.

To maintain consistency, the portfolio alignment methodology and assumptions applied in this template (i.e. exposure, reference year, emissions by scope etc.) are based on the design choices used to define the objectives in each sector. For further information on the design choices made, see the 2023 annual report and the 2022-2023 climate finance report.

One of these design choices is the metric to express the targets. Except for the energy sector (absolute emissions), targets are set in terms of physical intensity, based on attributed production, i.e., the company's or project finance's emission intensity weighted by their production and adjusted by the attribution factor according to the methodology defined by PCAF. In each sector, the metrics are defined according to:

- For power generation sector, the scope is limited to corporates and project finance on electricity generation activity, where the majority of emissions take place. The choice of the alignment metric is physical intensity (tonnes of CO₂e/MWh) including scope 1 of our credit portfolio.

- In the energy sector, we are focusing on upstream companies and integrated companies with substantial revenues coming from E&P activities- and pure upstream companies. The objective is to reduce the absolute CO₂e financed emissions (scope 1, 2 and 3) for our credit portfolio measured in tonnes of CO₂e and calculated according to PCAF standards.
- In the steel sector the objective is to reduce the CO₂e emission intensity (scope 1 and 2) of our credit portfolio in steel producers measured in tCO₂e/tCS.
- Regarding aviation sector the focus is on passenger airlines and aircraft leasing companies. The objective to reduce the CO₂e emission intensity measured in grCO₂e/RPK -scope 1 and 2- of our credit portfolio.
- In the 2023 annual report, we publish two additional decarbonisation targets for the automotive sector. These targets focus on the main sources of emissions in the automotive value chain: (i) emissions from cars produced by manufacturers – scope 3 – use of goods sold, and (ii) emissions from cars financed to end users. Only their first objective - the one relating to automobile manufacturers - has been included in the template, given that the Pillar 3 report includes commitments with non-financial corporations, while the other commitment mainly includes domestic and family exposures. The objective is to reduce the CO₂ emissions intensity, measured in grCO₂/vehicle-km (scope 3), of our credit portfolio.

With regards to the remaining sectors included in the portfolio alignment table, they will be published progressively as decarbonization targets are made, in accordance with the Pillar 3 ESG's implementing standards.

Several data sources are used for performing these calculations, including: emissions are obtained mainly from S&P Global Trucost, emissions intensities from Transition Pathway Initiative (TPI) and gaps have been filled by consulting companies' annual reports.

To set science-based decarbonization targets for our financed sectors, we choose a credible scenario that draws a pathway to reach net zero emissions by 2050 and will limit temperature rise to 1.5° C. The scenario we have chosen for sectors for which we have released decarbonization targets is the "International Energy Agency - Net Zero Emissions by 2050 Scenario" (IEA-NZE). Our aviation target is aligned to the expected adoption of current technologies, while our expectation is that breakthrough innovation could further accelerate its achievement.

Table 89.ESG 3 - Banking book - Climate change transition risk: Alignment metrics

	a	b	c	d	e	f	g
Sector	NACE Sectors (a minima)	Portfolio gross carrying amount (Mn EUR)	Alignment metric	Year of reference	Distance to IEA NZE2050 in %*	Target (year of reference + 3 years)	
1 Power	D351	10,226	0.19 tCO e/MWh	2021	40	Not available	
2 Fossil fuel combustion	B6	8,250	27.43 mtCO e	2021	62	Not available	
3 Automotive	C291	3,902	138 grCO2/vkm	2021	34	Not available	
4 Aviation	H5110	2,024	97.21 grCO e/RPK	2021	78	Not available	
5 Maritime transport							
6 Cement, clinker and lime production							
7 Iron and steel, coke, and metal ore production	C241	1,424	1.36 tCO2e/tonne steel	2021	27	Not available	
8 Chemicals							
9 Iron and steel, coke, and metal ore production (Steel)							

*PiT distance to 2030 NZE2050 scenario in % (for each metric)

Regarding the column "Distance to AIE NZE2050 in %", the reported criteria have been modified compared to the December 2022 Pillar 3 report. The template reported in December 2023 maintains the criteria of the June 2023¹⁴ report[1].

10.7. Exposure to the top 20 polluting companies

The objective of this template is to show aggregate exposure to the 20 most carbon-intensive companies globally.

The perimeter includes loans and advances, debt securities and equity instruments, classified under the accounting portfolios in the banking book, excluding financial assets held for trading and held for sale assets.

The list of the 20 most polluting companies used by the Group in previous years was published by Thomson Reuters. However, this list has been updated, the methodology has been modified and it is no longer the most representative of Santander's business. For this reason, the template used in the December 2023 report is

based on the list published by Carbon Majors, which reflects a higher proportion of our financing to companies historically related to fossil fuels. This change will also allow for greater alignment with our peers, which facilitates comparison with other financial institutions in the market. The publication date of the Carbon Majors list is 2020 and aggregates the total CO2 emissions generated by each company during the period 1965-2018.

Regarding the column 'of which environmentally sustainable (CCM)', in accordance with the technical standards for the application of Pillar 3 ESG, we have started to disclose this content in the December 2023 report. For the construction of this field, it has been done consistently with the aligned exposures subject to NFRD reported in the GAR template that contribute to the climate change mitigation objective.

Table 90.ESG 4 - Banking book - Climate change transition risk: Exposures to top 20 carbon-intensive firms

EUR million					
	a	b	c	d	e
Gross carrying amount (aggregate)		Gross carrying amount towards the counterparties compared to total gross carrying amount (aggregate)*	Of which environmentally sustainable (CCM)	Weighted average maturity	Number of top 20 polluting firms included
1	6,825	0.53 %	6.7	2.2	11

*For counterparties among the top 20 carbon emitting companies in the world

¹⁴ From June 2023 onwards, the Pillar 3 report is calculated as $[(\text{Base year metric} - \text{IEA scenario metric in 2030}) / (\text{IEA metric in 2030} * 100) - \text{IEA metric in 2030} / \text{IEA metric in 2030} * 100]$.

10.8. Exposures subject to physical risk

The purpose of this template is to identify exposures subject to acute and chronic physical risk, including exposures collateralized by immovable property, exposures by business sector and foreclosed assets.

ESG disclosure in Pillar 3 follows the implementing technical standards on prudential disclosures on ESG risks defined by the EBA for this purpose. Therefore, the ESG information disclosed in this template of Pillar 3 is not necessarily aligned with other Group's ESG management reports.

The perimeter includes exposures in the banking book, including loans and advances, debt securities and equity instruments not held-for-trading and not held-for-sale. Physical risk are defined as risks which arise from the physical effects of climate change and environmental degradation. They can be categorised either as acute - if they arise from climate and weather-related events and an acute destruction of the environment, or chronic - if they arise from progressive shifts in climate and weather patterns or a gradual loss of ecosystem services.

In order to assess the physical risk of its portfolio, Santander has requested information on acute and chronic physical risk from its supplier, Munich RE, to cover the main countries across over 1,250 regions. This information provided by the supplier has been improved in the assessment of chronic risks, considering additional climate change variables that strengthen the assessment valuation, ensuring highest data accuracy.

The methodology applied by Munich RE follows the basis developed by the UNEP-FI working teams led by Acclimatise on physical risk, an example proposed by the EBA in the report on management and supervision of ESG risks for credit institutions and investment firms.

Munich RE's methodology, incorporates rating levels for the 13 threats identified and 8 vulnerability factors to adjust these hazards' impact on various economic activities in each geography. Including vulnerabilities in models allows us to identify the main physical events that each economic activity may be affected.

For each one of the regions or subdivisions of the NUTS 3 administrative units (same granularity used by the ECB in the 2022 climate risk stress test) and selected sectors (activities added to level 2 of the NACE codes), Munich RE has provided an assessment of the risks (8 acute and 5 chronic) identifying the risk associated with each one on a scale of 1 to 5, from lowest to highest risk, respectively. This analysis has been performed for the main climate-related scenarios (RCP 2.6, RCP 4.5 and RCP 8.5) and the following time horizons: current, 2030, 2040, 2050 and 2100.

The template requires determining which exposures are sensitive to the impact of physical risk, but the instructions of the European Banking Authority do not set forth under which specific metric or threshold this determination should be made. To this end, using the scale mentioned earlier, Santander has applied the conservative criteria

suggested by the provider, deeming that an activity in a geography is sensitive to the impact of physical risks when at least one hazard provided by the external supplier is assessed as four or higher.

The scenario used for this assessment is RCP 4.5, which is deemed appropriate as it serves as a middle ground between the scenario that achieve the Paris Agreement target (RCP 2.6) and a scenario more typical of stress exercise (RCP 8.5).

The chosen time horizons have been deemed consistent with the average portfolio maturities, with conservative criteria. As such, for unsecured exposures, a time horizon of 2030 has been taken into account, which comfortably covers the average maturity of these portfolios. Moreover, for the longer-term secured portfolios, a time horizon of 2050 has been taken into account.

A more granular analysis was conducted in the main countries for the collateralized portfolio, the aim being to better identify regions with a large percentage of whose territory sensitive to the most relevant physical risks (flooding and storms), under the criteria explained earlier.

In relation to the location used for the assessment of the physical risk, the Group, like the rest of the financial industry, is working to improve the granularity of the information available to assess the physical risks and the location of its customers' activities. For the purpose of this exercise, Santander has assessed the location of the collateral, as well as customers' main offices for unsecured portfolio, at NUTS3 level, in line with the granularity used by the ECB in the Climate stress test conducted in 2022.

Given that in Pillar 3 of June 2023 with respect to the information published in February 2023, the reporting criteria for the following columns was modified: "of which exposures sensitive to impact from chronic climate change events" and "of which exposures sensitive to impact from acute climate change events", reporting exposures sensitive to impact from chronic or acute climate change events only. Therefore, to provide greater transparency, a summary table with data as of December 2022 is published with this new criterion.

Table 91.ESG 5 - Banking book - Climate change physical risk: Exposures subject to physical risk

	a	b	h	i	j
	Gross carrying amount in December 2022 (MIn EUR)				
	of which exposures sensitive to impact from climate change physical events				
Europe			of which exposures sensitive to impact from chronic climate change events	of which exposures sensitive to impact from chronic climate change events	of which exposures sensitive to impact both from chronic and acute climate change events
1 A - Agriculture, forestry and fishing		4,023	2,320	133	13
2 B - Mining and quarrying		4,166	232	492	34
3 C - Manufacturing		32,254	6,631	688	6
4 D - Electricity, gas, steam and air conditioning supply		9,747	3,048	2,092	0
5 E - Water supply; sewerage, waste management and remediation activities		1,098	—	25	0
6 F - Construction		14,595	970	396	182
7 G - Wholesale and retail trade; repair of motor vehicles and motorcycles		47,375	126	1,209	20
8 H - Transportation and storage		11,178	170	307	5
9 L - Real estate activities		23,989	—	2,222	—
10 Loans collateralised by residential immovable property		333,953	—	43,665	—
11 Loans collateralised by commercial immovable property		37,468	—	6,005	—
12 Repossessed colaterals		6,169	—	36	—
13 Other relevant sectors (breakdown below where relevant)					

Table 91.ESG 5 - Banking book - Climate change physical risk: Exposures subject to physical risk

	a	b	h	i	j
	Gross carrying amount in December 2022 (MIn EUR)				
	of which exposures sensitive to impact from climate change physical events				
North America			of which exposures sensitive to impact from chronic climate change events	of which exposures sensitive to impact from chronic climate change events	of which exposures sensitive to impact both from chronic and acute climate change events
1 A - Agriculture, forestry and fishing		1,013	448	49	162
2 B - Mining and quarrying		1,181	50	9	711
3 C - Manufacturing		8,486	445	640	40
4 D - Electricity, gas, steam and air conditioning supply		4,253	9	1,976	575
5 E - Water supply; sewerage, waste management and remediation activities		253	1	0	0
6 F - Construction		1,443	69	41	92
7 G - Wholesale and retail trade; repair of motor vehicles and motorcycles		10,997	786	1,376	300
8 H - Transportation and storage		2,895	19	1,052	34
9 L - Real estate activities		14,410	34	2,719	—
10 Loans collateralised by residential immovable property		27,483	549	2,678	—
11 Loans collateralised by commercial immovable property		11,375	166	1,785	—
12 Repossessed colaterals		82	6	15	—
13 Other relevant sectors (breakdown below where relevant)					

Table 91.ESG 5 - Banking book - Climate change physical risk: Exposures subject to physical risk

	a	b	Gross carrying amount in December 2022 (MIn EUR)		
			h	i	j
			of which exposures sensitive to impact from climate change physical events		
South America			of which exposures sensitive to impact from chronic climate change events	of which exposures sensitive to impact from chronic climate change events	of which exposures sensitive to impact both from chronic and acute climate change events
1 A - Agriculture, forestry and fishing		3,666	1,069	582	168
2 B - Mining and quarrying		3,314	606	0	1,190
3 C - Manufacturing		19,331	5,051	0	5
4 D - Electricity, gas, steam and air conditioning supply		3,017	855	96	73
5 E - Water supply; sewerage, waste management and remediation activities		204	13	—	1
6 F - Construction		2,626	303	0	55
7 G - Wholesale and retail trade; repair of motor vehicles and motorcycles		16,401	2,628	325	300
8 H - Transportation and storage		4,374	193	91	21
9 L - Real estate activities		3,578	3	0	—
10 Loans collateralised by residential immovable property		31,960	897	1	—
11 Loans collateralised by commercial immovable property		8,901	471	0	—
12 Repossessed colaterals		182	—	—	—
13 Other relevant sectors (breakdown below where relevant)					

In general, and by following the methodology described, there was limited exposure affected by (acute and/or chronic) physical risk in the Grupo Santander's total portfolio. Activity such as agriculture, mining and some manufacturing activities that use natural resources such as water intensively are found to be more exposed to chronic risk. Despite in some cases immovable property are subject to chronic risks, the effect associated with these events is limited, with acute risks being the most significant.

The results obtained have been aggregated by analysis regions that are reported on in other reports by the Group (Europe/North America/South America).

Table 91.ESG 5 - Banking book - Climate change physical risk: Exposures subject to physical risk

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
Europe	Gross carrying amount (Mln EUR)														
	of which exposures sensitive to impact from climate change physical events														
	Breakdown by maturity bucket												Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions		
	<= 5 years	> 5 year <= 10 years	> 10 year <= 20 years	> 20 years	Average weighted maturity	of which exposures sensitive to impact from chronic climate change events	of which exposures sensitive to impact from acute climate change events	of which exposures sensitive to impact both from chronic and acute climate change events	Of which Stage 2 exposures	Of which non-performing exposures	of which Stage 2 exposures	of which non-performing exposures			
1	A - Agriculture, forestry and fishing	3,598	1,850	168	40	46	3	1,980	113	13	373	130	-104	-19	-80
2	B - Mining and quarrying	4,946	786	7	—	6	1	204	583	12	50	9	-10	-1	-9
3	C - Manufacturing	30,084	8,029	658	43	118	3	8,398	449	1	742	467	-268	-45	-207
4	D - Electricity, gas, steam and air conditioning supply	8,225	2,273	924	742	49	6	1,963	2,025	—	148	160	-97	-4	-7
5	E - Water supply; sewerage, waste management and remediation activities	1,109	5	10	1	—	7	—	16	—	—	—	—	—	—
6	F - Construction	14,078	1,364	126	53	65	3	1,003	423	181	266	135	-95	-11	-81
7	G - Wholesale and retail trade; repair of motor vehicles and motorcycles	49,510	989	114	45	17	3	248	911	6	133	76	-58	-15	-38
8	H - Transportation and storage	9,867	306	69	11	4	4	145	245	—	19	65	-15	-1	-13
9	L - Real estate activities	23,182	2,033	312	147	4	4	—	2,497	—	308	264	-45	-10	-32
10	Loans collateralised by residential immovable property	320,685	1,594	3,759	11,970	24,507	22	—	41,831	—	3,449	737	-158	-42	-104
11	Loans collateralised by commercial immovable property	36,661	3,807	1,146	822	82	5	—	5,856	—	731	632	-154	-30	-116
12	Repossessed collaterals	5,208	—	—	—	22	—	—	22	—	—	—	-9	—	—
13	Other relevant sectors (breakdown below where relevant)														

Table 91.ESG 5 - Banking book - Climate change physical risk: Exposures subject to physical risk

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	
	North America	Gross carrying amount (Mln EUR)														
		of which exposures sensitive to impact from climate change physical events														
		Breakdown by maturity bucket						of which exposures sensitive to impact from chronic climate change events	of which exposures sensitive to impact from acute climate change events	of which exposures sensitive to impact both from chronic and acute climate change events	Of which Stage 2 exposures	Of which non-performing exposures	Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions			
		<= 5 years	> 5 year <= 10 years	> 10 year <= 20 years	> 20 years	Average weighted maturity							of which Stage 2 exposures	Of which non-performing exposures		Of which non-performing exposures
1	A - Agriculture, forestry and fishing	1,216	816	5	—	24	2	520	77	248	22	11	-11	-2	-5	
2	B - Mining and quarrying	1,862	809	255	—	1	3	1,001	—	64	3	—	-2	—	—	
3	C - Manufacturing	7,402	1,340	—	—	31	2	944	259	167	28	15	-14	-2	-6	
4	D - Electricity, gas, steam and air conditioning supply	4,286	558	350	55	1	4	172	190	603	3	24	-25	—	-8	
5	E - Water supply; sewerage, waste management and remediation activities	223	2	—	—	2	15	2	2	—	2	—	-2	-1	—	
6	F - Construction	1,598	133	1	44	5	4	89	—	94	5	1	-2	-1	—	
7	G - Wholesale and retail trade; repair of motor vehicles and motorcycles	13,781	3,031	52	—	40	2	888	1,984	250	41	10	-17	-2	-5	
8	H - Transportation and storage	2,662	205	65	—	2	5	34	178	60	1	2	-2	—	-1	
9	L - Real estate activities	18,908	1,346	531	1	—	4	28	1,850	—	65	—	-7	-1	—	
10	Loans collateralised by residential immovable property	28,734	757	557	505	44	9	613	1,250	—	52	53	-18	-2	-11	
11	Loans collateralised by commercial immovable property	12,822	821	62	—	1	2	160	724	—	50	12	-5	—	-1	
12	Repossessed collaterals	134	—	—	—	3		3	—	—	—	—	—	—	—	
13	Other relevant sectors (breakdown below where relevant)															

Table 91.ESG 5 - Banking book - Climate change physical risk: Exposures subject to physical risk

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	South America	Gross carrying amount (Mln EUR)													
		of which exposures sensitive to impact from climate change physical events											Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions		
		Breakdown by maturity bucket				Average weighted maturity	of which exposures sensitive to impact from chronic climate change events	of which exposures sensitive to impact from acute climate change events	of which exposures sensitive to impact both from chronic and acute climate change events	Of which Stage 2 exposures	Of which non-performing exposures	of which Stage 2 exposures	Of which non-performing exposures		
		<= 5 years	> 5 year <= 10 years	> 10 year <= 20 years	> 20 years										
1	A - Agriculture, forestry and fishing	5,631	3,525	145	3	9	2	2,369	986	327	166	126	-87	-10	-67
2	B - Mining and quarrying	3,396	1,593	133	—	2	3	1,142	—	587	80	10	-12	-6	-4
3	C - Manufacturing	18,901	8,903	788	23	3	2	9,715	—	3	237	140	-123	-13	-92
4	D - Electricity, gas, steam and air conditioning supply	3,339	1,151	403	36	4	4	1,429	75	90	32	1	-2	—	—
5	E - Water supply; sewerage, waste management and remediation activities	504	8	1	—	—	3	8	—	1	1	1	-1	—	-1
6	F - Construction	2,926	521	25	5	2	3	477	—	76	46	40	-34	-4	-28
7	G - Wholesale and retail trade; repair of motor vehicles and motorcycles	19,209	3,815	254	31	3	3	3,537	460	106	318	1,008	-728	-36	-677
8	H - Transportation and storage	5,119	186	31	82	1	7	167	118	15	14	10	-8	-1	-6
9	L - Real estate activities	3,369	8	—	—	—	3	8	—	—	—	—	—	—	—
10	Loans collateralised by residential immovable property	33,653	56	24	126	644	28	849	—	—	96	57	-6	-2	-5
11	Loans collateralised by commercial immovable property	8,134	15	4	9	7	13	34	—	—	7	2	-2	-1	—
12	Repossessed collaterals	253	—	—	—	—	—	—	—	—	—	—	—	—	—
13	Other relevant sectors (breakdown below where relevant)														

10.9. Green Asset Ratio (GAR)

In 2020, the European Union adopted the Taxonomy Regulation establishing a list of activities that can qualify as environmentally sustainable and the obligation for companies subject to the Non-Financial Reporting Directive (NFRD)¹⁵ disclose how their operations align with the EU Taxonomy.

For the first time in 2023, financial institutions are required to publish the green asset ratio (GAR) for two climate objectives and the eligibility ratio of the four remaining objectives. To be aligned to the European taxonomy, activities must meet the specific taxonomy criteria and ensure that it causes no significant harm to any of the other environmental objectives (DNSH) and meets minimum social safeguards (MSS).

In the Pillar 3, according to the EBA/ITS/2022/ we disclose the GAR based on the turnover alignment of the counterparty for the general purpose lending part. Although, according to the Commission Delegated Regulation (EU) in the Annual Report we disclose the GAR twice, based on the turnover and the CAPEX taxonomy alignment of the counterparty for general purpose lending exposures.

As required under the Disclosures Delegated Act, our GAR represents the exposures aligned with the EU Taxonomy in the numerator divided by total on-balance sheet volumes¹⁶, and 2.4% (turnover-based)¹⁷. The exposures aligned to the EU Taxonomy and included in the numerator are:

- Aligned exposures in the household loan portfolio: residential property loans (mortgages) and vehicle loans.¹⁸
- Aligned exposures to financial and non-financial corporations subject to NFRD based on the alignment ratio publicly disclosed by the counterparties (both CapEx and turnover based alignment).

As for the eligible volumes, our eligibility ratio for the two climate-related objectives is 36% (both CapEx and turnover based), considering eligible vehicles, mortgages and building renovation portfolios, as well as information disclosed by financial and non-financial counterparties.

The difference between the eligible volumes and aligned volumes (i.e., eligibility ratio vs GAR) is mainly driven by three reasons:

- European Taxonomy criteria is strict. Many activities which do not meet its thresholds, do contribute to the transition of a greener economy. In fact, the Platform for Sustainable Finance recently released a report showing that the average CAPEX alignment ratio from corporates disclosing the information was 18%.
- The numerator and denominator are not symmetric. Santander has 18% of the adjusted balance sheet exposure (GAR denominator) to non-financial corporations not subject to NFRD (mainly SMEs and companies from outside EU), which cannot be included as eligible or aligned financing, therefore environmentally sustainable.
- There are limitations to the available data and documentation. For example, according to the Platform report, only ~1,400 corporates subject to NFRD are disclosing alignment information (whereas the universe is ~11,500). Also, there is still a lack of robust evidence to verify alignment in specific purpose lending, especially when it comes to validate DNSH and MSS.

As informed in the annual report, based on a voluntary disclosure, we complement the GAR with an additional ratio to overcome some of these limitations:

Voluntary GAR (European & symmetric): 6.1%

- The numerator of this ratio remains the same as in the previous ratio, purely exposures to the EU Taxonomy aligned in Europe.
- In the denominator, we only keep portfolios where we can tag exposures as environmentally sustainable: NFRD European financial and non-financial corporations, households, and local governments. We excluded (non-exhaustive list): Non-NFRD companies (since they do not have reporting obligations), cash & interbank loans, derivatives, goodwill, etc

In the following pages there is the complete disclosure, including the templates set out in the Taxonomy Regulation.

¹⁵ NFRD applies to large, listed companies, banks, or insurance companies that meet certain criteria, such as having a balance sheet total in excess of EUR 20 million, a turnover in excess of EUR 40 million, or an average number of employees in excess of 500 during the fiscal year.

¹⁶ Not including exposure to sovereigns, central banks, and the trading portfolio.

¹⁷ For the flow of volumes, the Green Asset Ratio is 1,6% (turnover-based).

¹⁸ Following the technical screening criteria of the EU Taxonomy Regulation. As for compliance with DNSH criteria, we followed EU Taxonomy requirements based on prudence and efficient assessment. We ran MSS criteria validation according to the recommendations of the Platform on Sustainable Finance and respective regulation.

10.9.1. Summary of key performance indicators (KPIs) on the Taxonomy-aligned exposures

This template provides an overview of the KPIs calculated on the basis of templates included in sections 10.9.2 and

10.9.3. including the green asset ratio (GAR) for the stock and flow.

Table 92.ESG 6 - Summary of GAR KPIs

	KPI			% coverage (over total assets)*
	Climate change mitigation	Climate change adaptation	Total (Climate change mitigation + Climate change adaptation)	
GAR stock	2.4 %	— %	2.4 %	70.3 %
GAR flow	1.6 %	— %	1.6 %	50.6 %

* % of assets covered by the KPI over banks' total assets

10.9.2. Mitigating actions: assets for the calculation of GAR

The perimeter of this template includes loans and advances, debt securities and equity instruments on their banking book, with a breakdown of the information by type of counterparty, including financial corporations, non-financial corporations, households, local governments as well as real estate lending towards households, and the taxonomy eligibility and taxonomy alignment of the exposures with regards to the environmental objectives of climate change mitigation and climate change adaptation.

Table 93.ESG 7 - Mitigating actions: Assets for the calculation of GAR

	a	b	c	d	e	f	g	h	i	j	k	
Disclosure reference date december 2023												
	Total gross carrying amount	Climate Change Mitigation (CCM)					Climate Change Adaptation (CCA)					
		Of which towards taxonomy relevant sectors (Taxonomy-eligible)					Of which towards taxonomy relevant sectors (Taxonomy-eligible)					
		Of which environmentally sustainable (Taxonomy-aligned)					Of which environmentally sustainable (Taxonomy-aligned)					
			Of which specialised lending	Of which transitional	Of which enabling		Of which specialised lending	Of which adaptation	Of which enabling			
GAR - Covered assets in both numerator and denominator												
1	Loans and advances, debt securities and equity instruments not HFT eligible for GAR calculation	661,433	464,201	31,142	—	6,834	799	474	9	—	1	8
2	Financial corporations	28,156	7,899	310	—	4	208	373	—	—	—	—
3	Credit institutions	22,517	6,892	1	—	—	—	15	—	—	—	—
4	Loans and advances	20,257	5,883	1	—	—	—	15	—	—	—	—
5	Debt securities, including UoP	2,261	1,009	—	—	—	—	—	—	—	—	—
6	Equity instruments	—	—	—	—	—	—	—	—	—	—	—
7	Other financial corporations	5,639	1,006	309	—	4	208	358	—	—	—	—
8	of which investment firms	1,987	280	172	—	—	155	41	—	—	—	—
9	Loans and advances	1,455	127	19	—	—	2	41	—	—	—	—
10	Debt securities, including UoP	313	153	153	—	—	153	—	—	—	—	—
11	Equity instruments	219	—	—	—	—	—	—	—	—	—	—
12	of which management companies	141	99	17	—	—	—	—	—	—	—	—
13	Loans and advances	141	99	17	—	—	—	—	—	—	—	—
14	Debt securities, including UoP	—	—	—	—	—	—	—	—	—	—	—

Table 93.ESG 7 - Mitigating actions: Assets for the calculation of GAR

	a	b	c	d	e	f	g	h	i	j	k
Disclosure reference date december 2023											
	Total gross carrying amount	Climate Change Mitigation (CCM)					Climate Change Adaptation (CCA)				
		Of which towards taxonomy relevant sectors (Taxonomy-eligible)					Of which towards taxonomy relevant sectors (Taxonomy-eligible)				
		Of which environmentally sustainable (Taxonomy-aligned)					Of which environmentally sustainable (Taxonomy-aligned)				
			Of which specialised lending	Of which transitional	Of which enabling		Of which specialised lending	Of which adaptation	Of which enabling		
15	Equity instruments	—	—	—	—	—	—	—	—	—	—
16	of which insurance undertakings	1,892	317	—	—	—	317	—	—	—	—
17	Loans and advances	1,892	317	—	—	—	317	—	—	—	—
18	Debt securities, including UoP	—	—	—	—	—	—	—	—	—	—
19	Equity instruments	—	—	—	—	—	—	—	—	—	—
20	Non-financial corporations (subject to NFRD disclosure obligations)	25,910	8,855	1,718	—	260	591	101	9	—	1
21	Loans and advances	24,347	8,617	1,509	—	258	552	83	9	—	1
22	Debt securities, including UoP	1,563	237	208	—	2	39	18	—	—	—
23	Equity instruments	—	—	—	—	—	—	—	—	—	—
24	Households	607,245	447,326	29,115	—	6,569	—	—	—	—	—
25	of which loans collateralised by residential immovable property	366,626	356,979	22,545	—	—	—	—	—	—	—
26	of which building renovation loans	528	528	—	—	—	—	—	—	—	—
27	of which motor vehicle loans	89,820	89,820	6,569	—	6,569	—	—	—	—	—
28	Local governments financing	122	122	—	—	—	—	—	—	—	—
29	Housing financing	75	75	—	—	—	—	—	—	—	—

Table 93.ESG 7 - Mitigating actions: Assets for the calculation of GAR

	a	b	c	d	e	f	g	h	i	j	k
Disclosure reference date december 2023											
	Total gross carrying amount	Climate Change Mitigation (CCM)					Climate Change Adaptation (CCA)				
		Of which towards taxonomy relevant sectors (Taxonomy-eligible)					Of which towards taxonomy relevant sectors (Taxonomy-eligible)				
		Of which environmentally sustainable (Taxonomy-aligned)					Of which environmentally sustainable (Taxonomy-aligned)				
			Of which specialised lending	Of which transitional	Of which enabling		Of which specialised lending	Of which adaptation	Of which enabling		
30	Other local governments financing	46	46	—	—	—	—	—	—	—	—
31	Collateral obtained by taking possession: residential and commercial immovable properties	5,595	—	—	—	—	—	—	—	—	—
32	TOTAL GAR ASSETS	667,028	464,201	31,142	—	6,834	799	474	9	—	1
Assets excluded from the numerator for GAR calculation (covered in the denominator)											
33	EU Non-financial corporations (not subject to NFRD disclosure obligations)	141,389									
34	Loans and advances	139,095									
35	Debt securities	2,140									
36	Equity instruments	155									
37	Non-EU Non-financial corporations (not subject to NFRD disclosure obligations)	186,005									
38	Loans and advances	174,209									
39	Debt securities	10,877									
40	Equity instruments	919									
41	Derivatives	5,421									
42	On demand interbank loans	11,911									
43	Cash and cash-related assets	8,621									

Table 93.ESG 7 - Mitigating actions: Assets for the calculation of GAR

	a	b	c	d	e	f	g	h	i	j	k
Disclosure reference date december 2023											
Total gross carrying amount	Climate Change Mitigation (CCM)						Climate Change Adaptation (CCA)				
	Of which towards taxonomy relevant sectors (Taxonomy-eligible)						Of which towards taxonomy relevant sectors (Taxonomy-eligible)				
	Of which environmentally sustainable (Taxonomy-aligned)						Of which environmentally sustainable (Taxonomy-aligned)				
	Of which specialised lending		Of which transitional		Of which enabling		Of which specialised lending		Of which adaptation		Of which enabling
44 Other assets (e.g. Goodwill, commodities etc.)	267,923										
45 TOTAL ASSETS IN THE DENOMINATOR (GAR)	1,288,300										
Other assets excluded from both the numerator and denominator for GAR calculation											
46 Sovereigns	137,606										
47 Central banks exposure	230,835										
48 Trading book	176,800										
49 TOTAL ASSETS EXCLUDED FROM NUMERATOR AND DENOMINATOR	545,242										
50 TOTAL ASSETS	1,833,542										

Table 93.ESG 7 - Mitigating actions: Assets for the calculation of GAR

	l	m	n	o	p
	Disclosure reference date december 2023				
	TOTAL (CCM + CCA)				
	Of which towards taxonomy relevant sectors (Taxonomy-eligible)				
	Of which environmentally sustainable (Taxonomy-aligned)				
			Of which specialised lending	Of which transitional/adaptation	Of which enabling
GAR - Covered assets in both numerator and denominator					
1 Loans and advances, debt securities and equity instruments not HFT eligible for GAR calculation	464,675	31,151	—	6,835	807
2 Financial corporations	8,272	310	—	4	208
3 Credit institutions	6,907	1	—	—	—
4 Loans and advances	5,898	1	—	—	—
5 Debt securities, including UoP	1,009	—	—	—	—
6 Equity instruments	—	—		—	—
7 Other financial corporations	1,365	309	—	4	208
8 of which investment firms	321	172	—	—	155
9 Loans and advances	168	19	—	—	2
10 Debt securities, including UoP	153	153	—	—	153
11 Equity instruments	—	—		—	—
12 of which management companies	99	17	—	—	—
13 Loans and advances	99	17	—	—	—
14 Debt securities, including UoP	—	—	—	—	—
15 Equity instruments	—	—	—	—	—

Table 93.ESG 7 - Mitigating actions: Assets for the calculation of GAR

	l	m	n	o	p
	Disclosure reference date december 2023				
	TOTAL (CCM + CCA)				
	Of which towards taxonomy relevant sectors (Taxonomy-eligible)				
	Of which environmentally sustainable (Taxonomy-aligned)				
			Of which specialised lending	Of which transitional/adaptation	Of which enabling
16 of which insurance undertakings	634	—	—	—	—
17 Loans and advances	634	—	—	—	—
18 Debt securities, including UoP	—	—	—	—	—
19 Equity instruments	—	—		—	—
20 Non-financial corporations (subject to NFRD disclosure obligations)	8,955	1,727	—	262	598
21 Loans and advances	8,700	1,518	—	260	560
22 Debt securities, including UoP	255	208	—	2	39
23 Equity instruments	—	—		—	—
24 Households	447,326	29,115	—	6,569	—
25 of which loans collateralised by residential immovable property	356,979	22,545	—	—	—
26 of which building renovation loans	528	—	—	—	—
27 of which motor vehicle loans	89,820	6,569	—	6,569	—
28 Local governments financing	122	—	—	—	—
29 Housing financing	75	—	—	—	—
30 Other local governments financing	46	—	—	—	—

Table 93.ESG 7 - Mitigating actions: Assets for the calculation of GAR

		l	m	n	o	p
		Disclosure reference date december 2023				
		TOTAL (CCM + CCA)				
		Of which towards taxonomy relevant sectors (Taxonomy-eligible)				
		Of which environmentally sustainable (Taxonomy-aligned)				
				Of which specialised lending	Of which transitional/adaptation	Of which enabling
31	Collateral obtained by taking possession: residential and commercial immovable properties	—	—	—	—	—
32	TOTAL GAR ASSETS	464,675	31,151	—	6,835	807
Assets excluded from the numerator for GAR calculation (covered in the denominator)						
33	EU Non-financial corporations (not subject to NFRD disclosure obligations)					
34	Loans and advances					
35	Debt securities					
36	Equity instruments					
37	Non-EU Non-financial corporations (not subject to NFRD disclosure obligations)					
38	Loans and advances					
39	Debt securities					
40	Equity instruments					
41	Derivatives					
42	On demand interbank loans					
43	Cash and cash-related assets					
44	Other assets (e.g. Goodwill, commodities etc.)					

Table 93.ESG 7 - Mitigating actions: Assets for the calculation of GAR

	l	m	n	o	p
	Disclosure reference date december 2023				
	TOTAL (CCM + CCA)				
	Of which towards taxonomy relevant sectors (Taxonomy-eligible)				
	Of which environmentally sustainable (Taxonomy-aligned)				
		Of which specialised lending	Of which transitional/adaptation	Of which enabling	
45	TOTAL ASSETS IN THE DENOMINATOR (GAR)				
	Other assets excluded from both the numerator and denominator for GAR calculation				
46	Sovereigns				
47	Central banks exposure				
48	Trading book				
49	TOTAL ASSETS EXCLUDED FROM NUMERATOR AND DENOMINATOR				
50	TOTAL ASSETS				

10.9.3. GAR (%)

Based on the information included in template included in 10.9.2 Mitigating actions: assets for the calculation of GAR, we disclose in this template the GAR.

Table 94.ESG 8 - Mitigating actions GAR (%)

	a	b	c	d	e	f	g	h	i	j
	Disclosure reference date december 2023: KPIs on stock									
	Climate Change Mitigation (CCM)					Climate Change Adaptation (CCA)				
% (compared to total covered assets in the denominator)	Proportion of eligible assets funding taxonomy relevant sectors					Proportion of eligible assets funding taxonomy relevant sectors				
	Of which environmentally sustainable					Of which environmentally sustainable				
		Of which specialised lending	Of which transitional	Of which enabling		Of which specialised lending	Of which adaptation	Of which enabling		
1 GAR	36.0	2.4	—	0.5	0.1	—	—	—	—	—
2 Loans and advances, debt securities and equity instruments not HFT eligible for GAR calculation	70.2	4.7	—	1.0	0.1	0.1	—	—	—	—
3 Financial corporations	28.1	1.1	—	—	0.7	1.3	—	—	—	—
4 Credit institutions	30.6	—	—	—	—	0.1	—	—	—	—
5 Other financial corporations	17.8	5.5	—	0.1	3.7	6.4	—	—	—	—
6 of which investment firms	14.1	8.7	—	—	7.8	2.1	—	—	—	—
7 of which management companies	70.2	12.0	—	—	—	—	—	—	—	—
8 of which insurance undertakings	16.7	—	—	—	—	16.8	—	—	—	—
9 Non-financial corporations subject to NFRD disclosure obligations	34.2	6.6	—	1.0	2.3	0.4	—	—	—	—
10 Households	73.7	4.8	—	1.1	—					
11 of which loans collateralised by residential immovable property	97.4	6.1	—	—	—					
12 of which building renovation loans	100.0	—	—	—	—					
13 of which motor vehicle loans	100.0	7.3	—	7.3	—					
14 Local government financing	100.0	—	—	—	—					
15 Housing financing	100.0	—	—	—	—					
16 Other local governments financing	100.0	—	—	—	—	—	—	—	—	—
17 Collateral obtained by taking possession: residential and commercial immovable properties	—	—	—	—	—					

Table 94.ESG 8 - Mitigating actions GAR (%)

	k	l	m	n	o	p
	Disclosure reference date december 2023: KPIs on stock					Proportion of total assets covered
	TOTAL (CCM + CCA)					
	Proportion of eligible assets funding taxonomy relevant sectors					
Of which environmentally sustainable						
% (compared to total covered assets in the denominator)			Of which specialised lending	Of which transitional/adaptation	Of which enabling	
1 GAR	36.1	2.4	—	0.5	0.1	70.3
2 Loans and advances, debt securities and equity instruments not HFT eligible for GAR calculation	70.3	4.7	—	1.0	0.1	36.1
3 Financial corporations	29.4	1.1	—	—	0.7	1.5
4 Credit institutions	30.7	—	—	—	—	1.2
5 Other financial corporations	24.2	5.5	—	0.1	3.7	0.3
6 of which investment firms	16.1	8.7	—	—	7.8	0.1
7 of which management companies	70.2	12.0	—	—	—	—
8 of which insurance undertakings	33.5	—	—	—	—	0.1
9 Non-financial corporations subject to NFRD disclosure obligations	34.6	6.7	—	1.0	2.3	1.4
10 Households	73.7	4.8	—	1.1	—	33.1
11 of which loans collateralised by residential immovable property	97.4	6.1	—	—	—	20.0
12 of which building renovation loans	100.0	—	—	—	—	—
13 of which motor vehicle loans	100.0	7.3	—	7.3	—	4.9
14 Local government financing	100.0	—	—	—	—	—
15 Housing financing	100.0	—	—	—	—	—
16 Other local governments financing	100.0	—	—	—	—	—
17 Collateral obtained by taking possession: residential and commercial immovable properties	—	—	—	—	—	0.3

Table 94.ESG 8 - Mitigating actions GAR (%)

	q	r	s	t	u	v	w	x	y	z
	Disclosure reference date december 2023: KPIs on flows									
	Climate Change Mitigation (CCM)					Climate Change Adaptation (CCA)				
% (compared to total covered assets in the denominator)	Proportion of new eligible assets funding taxonomy relevant sectors					Proportion of new eligible assets funding taxonomy relevant sectors				
	Of which environmentally sustainable					Of which environmentally sustainable				
		Of which specialised lending	Of which transitional	Of which enabling		Of which specialised lending	Of which adaptation	Of which enabling		
1 GAR	16.9	1.6	—	0.9	0.1	—	—	—	—	—
2 Loans and advances, debt securities and equity instruments not HFT eligible for GAR calculation	58.6	5.7	—	3.2	0.5	0.1	—	—	—	—
3 Financial corporations	30.1	1.7	—	—	1.4	0.1	—	—	—	—
4 Credit institutions	30.3	—	—	—	—	—	—	—	—	—
5 Other financial corporations	27.8	16.7	—	0.1	13.6	1.3	—	—	—	—
6 of which investment firms	29.2	27.6	—	—	27.6	—	—	—	—	—
7 of which management companies	—	—	—	—	—	—	—	—	—	—
8 of which insurance undertakings	0.5	—	—	—	—	43.8	—	—	—	—
9 Non-financial corporations subject to NFRD disclosure obligations	33.8	7.6	—	0.8	2.9	0.4	—	—	—	—
10 Households	66.1	6.0	—	3.9	—					
11 of which loans collateralised by residential immovable property	98.9	6.1	—	—	—					
12 of which building renovation loans	100.0	—	—	—	—					
13 of which motor vehicle loans	100.0	12.0	—	12.0	—					
14 Local government financing	100.0	—	—	—	—					
15 Housing financing	100.0	—	—	—	—					
16 Other local governments financing	100.0	—	—	—	—	—	—	—	—	—
17 Collateral obtained by taking possession: residential and commercial immovable properties	—	—	—	—	—					

Table 94.ESG 8 - Mitigating actions GAR (%)

	aa	ab	ac	ad	ae	af
	Disclosure reference date december 2023: KPIs on flows					Proportion of total new assets covered
	TOTAL (CCM + CCA)					
	Proportion of new eligible assets funding taxonomy relevant sectors					
	Of which environmentally sustainable					
			Of which specialised lending	Of which transitional/adaptation	Of which enabling	
% (compared to total covered assets in the denominator)						
1 GAR	17	2	—	1	—	51
2 Loans and advances, debt securities and equity instruments not HFT eligible for GAR calculation	59	6	—	3	—	15
3 Financial corporations	30	2	—	—	1	2
4 Credit institutions	30	—	—	—	—	1
5 Other financial corporations	29	17	—	—	14	—
6 of which investment firms	29	28	—	—	28	—
7 of which management companies	—	—	—	—	—	—
8 of which insurance undertakings	44	—	—	—	—	—
9 Non-financial corporations subject to NFRD disclosure obligations	34	8	—	1	3	2
10 Households	66	6	—	4	—	11
11 of which loans collateralised by residential immovable property	99	6	—	—	—	4
12 of which building renovation loans	100	—	—	—	—	—
13 of which motor vehicle loans	100	12	—	12	—	4
14 Local government financing	100	—	—	—	—	—
15 Housing financing	100	—	—	—	—	—
16 Other local governments financing	100	—	—	—	—	—
17 Collateral obtained by taking possession: residential and commercial immovable properties	—	—	—	—	—	—

10.10. Other climate change mitigating actions

The purpose of this template is to report all exposures to clients that are designed to facilitate climate change adaptation and mitigation objectives and are not reported in the RAG templates.

The financial instruments included in this template, loans and bonds, contribute to the mitigation of transitional and physical risks arising from climate change. The definition of these terms follows Article 18a of EBA/ITS/2022/01. Based on the nature and characteristics of the assets included in this template and the availability of current information, these exposures have been considered to contribute to the mitigation of transitional risks and a subset of them (mostly related to agriculture and biodiversity) to the mitigation of physical risks.

Therefore, the following activities have been included in the lending section for financial corporations, non-financial corporations, households and other counterparties:

- Activities that support counterparties in the process of transition and adaptation to climate change, even if they are not assessed or fully aligned with the EU taxonomy, but are considered green under other frameworks such as the SFICS: agriculture, forestry and livestock; and biodiversity and conservation projects.

We have classified exposures according to the Sustainable Finance and Investment Classification System (SFICS) in place, our internal guidance which includes criteria for considering whether an asset is green, social or sustainable across the Group's units and businesses. More information on the SFICS can be found in the 2023 annual report.

- Activities that contribute to climate change mitigation and adaptation objectives and meet the significant contribution criteria of the European Taxonomy, due to the lack of robust evidence to verify alignment in specific purpose lending, especially when it comes to validate DNSH and MSS.
- Sustainability linked loans with sustainability KPIs (also included in SFICS). They adhere to recognised principles and guidelines, such as the LMA's Sustainability Lending Principles.
- Financing of plug-in hybrid and gas vehicles (i.e., natural gas or LPG internal combustion engine), as these are alternative fuels that have the potential to decarbonise the transport sector.

In the bonds section, information is provided on investments in bonds issued by financial and non-financial corporations in line with the Green, Social and Sustainable Corporate Bond Principles. In addition to green bonds, we also report on sustainability-linked bonds focused on reducing greenhouse gas emissions (scopes 1 and 2), food waste and packaging.

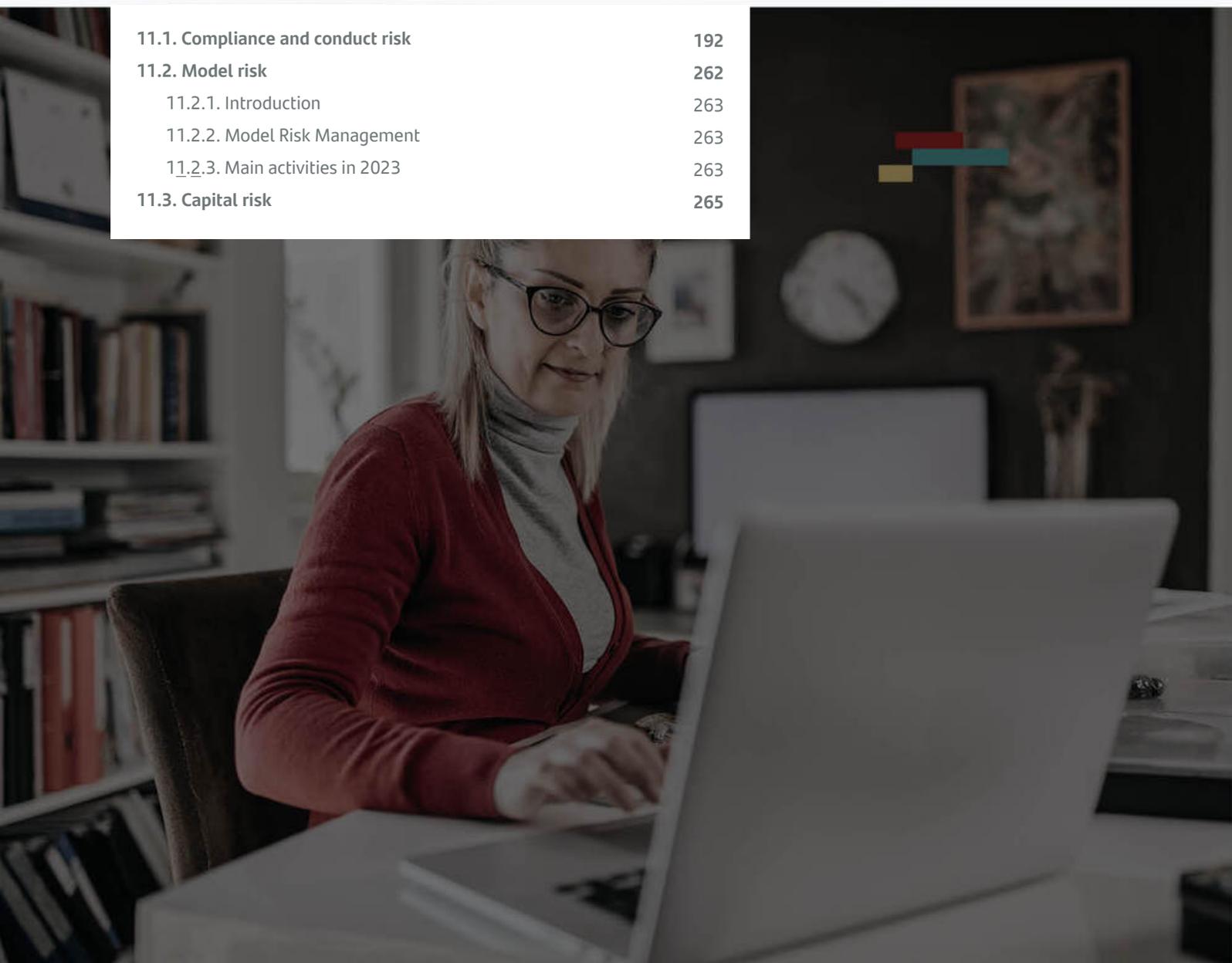
Table 95.ESG 10 - Other climate change mitigating actions that are not covered in the EU Taxonomy

a	b	c	d	e	f
Type of financial instrument	Type of counterparty	Gross carrying amount (million EUR)	Type of risk mitigated (Climate change transition risk)	Type of risk mitigated (Climate change physical risk)	Qualitative information on the nature of the mitigating actions
1	Financial corporations	176	Yes	No	Including sustainability-linked bonds
2	Non-financial corporations	632	Yes	Yes	Including sustainability-linked bonds
3	Of which Loans collateralised by commercial immovable property	—			N/A
4	Households	—			N/A
5	Of which Loans collateralised by residential immovable property	—			N/A
6	Of which building renovation loans	—			N/A
7	Other counterparties	1	Yes	No	Including green bonds
8	Financial corporations	1,881	Yes	No	Mainly, it is included: sustainability-linked loans, activities related to agriculture, biodiversity, power generation, water supply, building acquisition and renovation and auto loans
9	Non-financial corporations	17,762	Yes	Yes	Mainly, it is included: sustainability-linked loans, activities related to agriculture, biodiversity, power generation, water supply, building acquisition and renovation and auto loans
10	Of which Loans collateralised by commercial immovable property	5,461	Yes	Yes	Mainly, it is included: sustainability-linked loans and building acquisition and renovation of commercial real estate loans
11	Households	19,563	Yes	Yes	Mainly, building acquisition and renovation and auto loans are included as well as sustainable agriculture financing
12	Of which Loans collateralised by residential immovable property	13,404	Yes	Yes	Building acquisition loans are included
13	Of which building renovation loans	519	Yes	No	Mainly, building renovation activities are included
14	Other counterparties	1,230	Yes	No	Mainly, auto loans are included



11. Other risks

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11. OTHER RISKS

This chapter discusses different types of risk, such as compliance and conduct risk, model risk and capital risk.

11.1. Compliance and conduct risk

Under the current configuration of the three lines of defence, Compliance and Conduct is a second line of defence which conducts independent control of risks, reporting organisationally to the Group Chief Risk Officer (CRO). It reports directly and regularly to the Board of Directors and its committees, through the Group chief compliance officer (GCCO).

The Compliance and Conduct function covers all matters related to regulatory compliance, financial crime compliance (FCC), product governance and consumer protection, and reputational risk.

The main responsibility for Compliance and Conduct risks lies with the first lines of defence, which identify, assess and manage these risks. The Compliance and Conduct function is responsible for monitoring and overseeing these risks and assessing the impact on our risk appetite and risk profile.

To this effect, the Compliance function fosters Santander's adherence to rules, supervisory requirements, ethical principles and values of good conduct by setting standards and control standards and mechanisms, and discussing, advising and reporting, in the interests of employees, customers, shareholders and society in general.

Grupo Santander's risk appetite in this area takes the form of a declaration of zero appetite for non-financial risk arising from material weaknesses in the controls that could pose a risk for violation of regulatory rules, laws and requirements, as well as non-compliance with the Group's policies and the occurrence of high impact reputational events. To ensure this, Compliance and Conduct Risk performs consistent management of this area, using a common methodology and taxonomy, which is fully aligned with the Risk function's principles, and establishes a series of compliance and conduct risk indicators, assessment matrices and qualitative statements.

In 2023, as in previous years, the annual process of preparing the risk appetite was completed towards the end of the year, with the aim of verifying that the current model is appropriate for measuring the Compliance and Conduct function's risk appetite and ensuring that it is aligned with the Group's risk appetite.

To this end, the composition of the indicators and their corporate thresholds were reviewed to ensure that they continue to provide a true picture of the function's strategy, the financial sector environment and its risk tolerance. The definition of the indicators and the setting of their thresholds were approved by the relevant committees and communicated to the various units.

For further details on Compliance and Conduct risk, see the Risk, compliance & conduct management on the 2023 Annual Report.



[Access 2023 Annual Report available on the Santander Group website](#)

11.2. Model risk

11.2.1. Introduction

A model is a system, approach or a quantitative method that applies statistical, economic, financial or mathematical theories, techniques and assumptions to transform data into quantitative estimates.

We use models mainly for credit scoring/rating, performance, capital and provisioning, market and structural risk, operational, compliance and liquidity risk, and financial accounting and control, among others.

The use of models entails certain risks, such as the potential negative consequences of decisions based on poorly developed, poorly implemented or incorrectly used models. Model risk can lead to financial losses, inappropriate business or strategic decisions or damage to the Group's operations.

11.2.2. Model Risk Management

The model risk function in Grupo Santander has evolved and matured in recent years, enabling robust management both in the corporation and in the main subsidiaries.

For the proper management of model risk, we have clear internal regulations that establish the principles, responsibilities and processes of the model's life cycle, and describe their inventory, governance, management and validation.

The intensity of model risk management is relative to the importance of each model. The concept of tiering is the main attribute used to summarise the level of importance of non-regulatory models. The regulatory models, given their particular relevance for the Group, follow the most intense control and management standards.

At Grupo Santander we define the following phases of the model's life cycle



1. Identification

The identified models must be included in the scope of model risk control. For sound management, a complete inventory of all models in use is key. There is a Group centralized inventory, a single platform based on an uniform taxonomy for all models used in the business units. The inventory contains all relevant information of each model, enabling to closely monitor them according to their relevance and the tiering criteria.

2. Planning

An internal annual exercise approved by our subsidiaries' governance bodies and ratified by the global team, which formulates strategic measures for models managed by the Model Risk area and pinpoints needs for any models to be developed, reviewed or implemented during the year.

3. Development

The methodology unit, both at corporate and local level, is responsible for the development of the models according to the needs of each subsidiary following the Group methodological standards that promotes the quality of the models. Development by a specialized team guarantees a more efficient execution.

4. Internal validation

Independent model validation is a regulatory requirement and key feature of our model risk management and control.

A specialist unit that is totally independent from developers and users issues technical assessments of internal model suitability. These assessments are expressed through a rating that summarizes the model risk associated to it. Validation intensity and frequency are well-defined and risk-driven.

We have an unique validation approach led by the Single Validation Office, which strengthen the second line of defence ensuring a consistent and standardized model risk management across the Group. It has allowed a greater decentralised organizational structure.

5. Approval

Before the model's implementation and use, internal governing bodies must approve it through a governance circuit in place for our model inventory, based on its level of importance.

6. Implementation and use

In this phase, we add new models to our IT systems. Because this is another source of model risk, technical teams and model owners test proper model integration based on methodology and expectations.

7. Monitoring and control

We regularly review models to ensure they are working correctly and that they are suitable for their purpose. Otherwise, they must be adapted and redesigned. Control teams must make sure models are managed according to the general model risk framework and other related internal rules.

11.2.3. Main activities in 2023

The MRM Next strategic plan (2022-2025) was launched in 2022 with the aim of strengthening the Group's model risk culture and positioning Santander as a benchmark in this area in the industry. During 2023, the strategy focused on:

- strengthening the binding role of internal validation to meet increasing regulatory requirements;
- definition of the IV Next project to evolve the validation function, prioritising key actions through a global management of validation recommendations and including mitigation elements to focus on the most material risks;
- optimising the exploitation of model risk management data;
- and continuous improvement of regulatory models (IRB and IMA) to ensure that they are fully aligned with supervisory expectations.

11.3. Capital risk

The Group takes into account, in the context of structural risk, the risk of maintaining an insufficient quantity or quality of capital to meet internal business objectives, regulatory requirements or market expectations.

The Capital Risk function, as part of the second line of defence, controls and monitors the capital activities of the first line, verifying that capital adequacy and coverage are consistent with our risk profile. It also oversees and monitors those transactions that could be considered significant risk transfer (SRT).

Through a range of processes such as capital planning and adequacy and the resulting implementation and monitoring of the budget, along with continuous measurement of capital and reporting and disclosure of information on capital, as shown below:



This control and oversight is carried out independently, mainly through the following processes:

- **Supervision of capital planning and adequacy** to ensure that capital levels fit with our risk profile and are adequate and consistent with the group's strategy.
- **Ongoing supervision of the measurement of the group's regulatory capital** by identifying the key metrics for the calculation, setting tolerance levels and reviewing significant variations and the consistency of the calculations, including individual transactions that impact capital. The performance of capital initiatives is also reviewed and challenged, in line with the risk appetite and planning.
- **Monitoring the effective risk transfer** of those securitisations that allow for the release of risk-weighted assets according to the applicable regulatory criteria.

The function aims to provide complete and regular monitoring and control of capital risk by verifying that capital coverage and adequacy reflect the Group's risk profile.

Main initiatives in 2023

During 2023, we continued to continuously monitor compliance with the units' capital contribution targets, so that the various threats and/or opportunities to the achievement of the capital targets in the year would be visible from risk. We also monitored the impact of market variables on capital levels.

In parallel, and within the risk appetite framework, the function, together with the first line of defence, established the solvency appetite limits, maintaining a calibration in line with a low average global risk and resilient to stress conditions.

In order to make the risk appetite framework more robust, the new formulation of the exercise has included "distance to MDA" as a new metric applied at Group level.

As regards planning exercises, the review carried out by the second line in relation to the Recovery Plan, both for the Group and subsidiaries, was deepened during the year, promoting certain aspects of improvement in terms of measures and assumptions.

With regard to SRT securitisation supervision, the reporting and governance of corporate supervision at the origination stage continued to improve, with a greater degree of standardisation. The monitoring process has also been further strengthened through greater involvement of subsidiaries in regular exercises, and improved automation of the process through the use of a corporate tool.

For further details on capital risk, see the 'Risk, compliance and conduct management' chapter of the 2023 Annual Report.

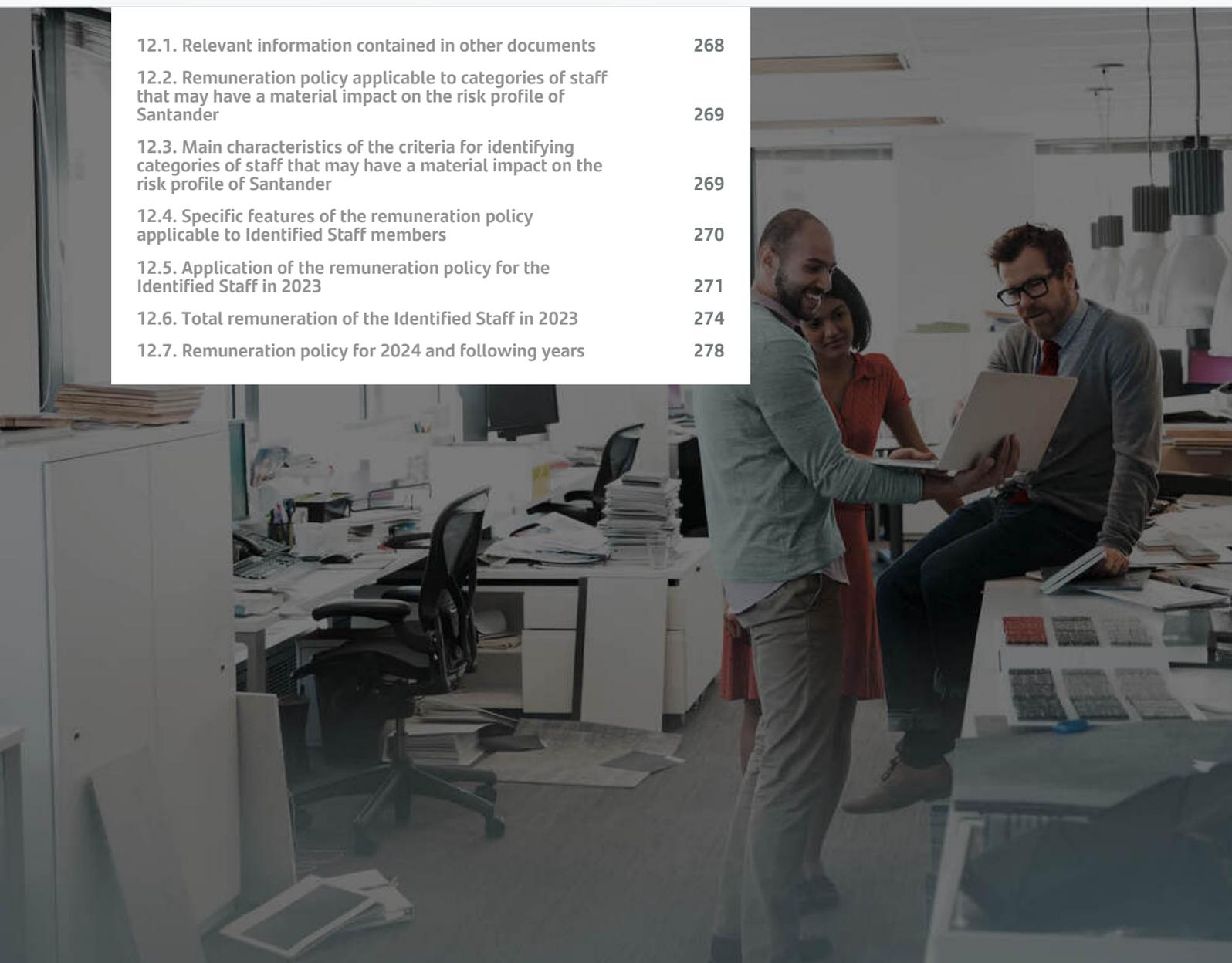
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Risk takers remunerations and Appendices



12. Risk takers remunerations

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12. RISK TAKERS REMUNERATIONS

This chapter presents various information on Grupo Santander's Remuneration Policies, including the total remuneration of the group in 2023 and the remuneration policy for 2024 and subsequent years (2025-2026).

12.1. Relevant information contained in other documents

This section covers the qualitative requirement REMA - Remuneration policy.

The corporate governance chapter in the 2023 Annual Report, which was published together with the call to the 2024 General Shareholders' Meeting, describes:

- The functions of the remuneration committee regarding the remuneration of directors, members of senior management and other executives whose work could have a material impact on the Group's risk profile.
- The composition of the remuneration committee, directors' attendance at meetings, the involvement of board members on other committees, the approximate time dedicated to each task and how the committee operates.
- The principles of the remuneration policy of directors, in their capacity as such or for their performance of executive duties, and the corporate governance principles regulating remuneration.
- The 2023 remuneration policy for directors and senior management, focusing especially on variable remuneration and how it was applied in the year.
- And the changes in the principles or in the composition of the Board Members' remuneration in terms of the performance of their supervisory tasks and collective decision-making, with respect to those established in 2023, for the years 2024, 2025 and 2026

The Board of Directors is responsible for approving the remuneration of directors and senior management, as well as the core payment terms of other executives and employees who, while not belonging to senior management, take on risks, carry out control functions (i.e. Internal Audit, Risk Management and Compliance) or receive total remuneration that places them in the same remuneration bracket as senior management, and employees who take on risk and whose professional activities may have a material impact on the Group's risk profile. All of these, together with the senior management and the Company's Board of Directors, are known as "identified staff" or Material Risk Takers).

The corporate governance chapter of the Annual Report also includes the following Pillar 3 disclosures:

- The decision-making process for setting the remuneration policy of directors, senior management and the core elements of the remuneration of identified staff.
- The basic features of the remuneration components.
- Information on the criteria applied for assessing the metrics that determine the variable remuneration of directors and senior management and their adjustment according to risk, as well as the results of the metrics for directors.
- The deferral policy and other conditions linked to the payment of variable remuneration, including the application of malus and clawback provisions.

12.2. Remuneration policy applicable to categories of staff that may have a material impact on the risk profile of Santander

Santander has specific guidelines in its remuneration policy for those professionals qualified internally as identified staff or material risk takers. These guidelines contain:

- The principles and criteria that determine which people have a material impact on the Group's risk profile, based on Commission Delegated Regulation (EU) 2021/923 of 25 March 2021 as explained in the section below.
- The specifics that modify the general remuneration policy for its application to this group, taking into account all applicable rules and European Banking Authority (EBA) guidelines, are described below.
- The mandate to apply the Group's remuneration policy, as adapted in each case so as to comply with local regulatory requirements and recommendations issued by supervisory bodies.

The remuneration of identified staff in 2023 is in line with the criteria in the Group's remuneration policy, which is reviewed annually to ensure that it is aligned with the long-term interests of shareholders, the Group's strategic targets and regulatory requirements.

The subsidiaries formally adhere to the Group's corporate remuneration policy, which implies the alignment of their practices with the principles it contains.

12.3. Main characteristics of the criteria for identifying categories of staff that may have a material impact on the risk profile of Santander

The Identified Staff have been defined according to the provisions of Law 10/2014, of 26 June, on the restructuring, supervision and capital adequacy of credit institutions, (Law 10/2014 or LOSS), transposing into Spanish law the text of Directive 2013/36/EU of the European Parliament and Council of 26 June 2013, on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms (Directive CRD IV) and its successor, CRD V, is transposed through Royal Decree-Law 7/2021, of 27 April.

In accordance with the CRD V, people who may have a material impact on the Bank's risk profile are deemed to include senior management, employees who assume risks, employees who exercise control functions and all employees who receive total remuneration that includes them in the same remuneration bracket as senior management and employees who assume risks. In addition to the previous definition, European legislation, through the publication of Commission Delegated Regulation (EU) No. 2021/923, 25 March 2021, supplementing CRD V with regard to the regulatory technical standards on appropriate qualitative and quantitative criteria for identifying personnel categories whose professional activities have a material impact on an institution's risk profile (hereinafter, "Delegated Regulation 2021/923"), that together with Directive 2019/879, establishes a closed list of those relating to the application of reduction (malus) and recovery (clawback) clauses.

Santander implements the quantitative and qualitative criteria in the regulation to determine the members of identified staff and has further supplemented these criteria with additional internal criteria. The following persons generally qualify as identified staff based on these criteria:

- Based on qualitative criteria, staff members who work at a material business unit, such as:
 - Members of the management body and senior management.
 - Members of staff with managerial responsibilities with regard to the entity's control functions or significant business units.
 - Those responsible for legal affairs, sound accounting policies and procedures, finance, including taxation and budgeting, conducting economic analysis, anti-money laundering and counter-terrorism financing, human resources, developing and implementing remuneration policy, information technology, information security, management of outsourcing arrangements for essential or important functions.
 - Members of senior risk committees and executives with powers to initiate, approve or veto significant credit and market risk proposals.
 - Traders authorised to take substantial positions in market risk.

- Members of the new products committee.
- By quantitative criteria:
 - Staff who have received significant remuneration in the previous financial year.
 - Managers receiving total remuneration of over €750 thousand in 2022.
 - Managers of companies with more than 1,000 employees whose remuneration is in the 0.3% highest in their country.
- By internal criteria:
 - Executives of EU entities with a given level of credit or market risk responsibility at certain non-material units.
 - Heads of business units with a banking licence.
 - Managers of the managers identified by any of the qualitative criteria.

Additional criteria have also been defined to identify and classify the units to which the above criteria are applied. These criteria are based on simple and widely recognised parameters (such as capital, gross income, profit before taxes, franchise value or asset under management) and reflect the relative importance of each identified unit with an impact on the Group's risk profile.

Current legislation, best practices and market trends are taken into account when defining the proportionality standards. These apply to both the relative importance of the units and the degrees of responsibility of the positions occupied by the individuals, to facilitate implementation.

According to these criteria, the identified staff comprised 1,152 executives across Santander at year-end 2023, accounting for approximately 0.54% of total staff.

Finally, it is indicated that the entity has benefited from the exception established in Article 94, Section 3 b), of Directive 2013/36/EU. In particular, the entity applied the exception of a staff member whose annual variable remuneration does not exceed EUR 50,000 and does not represent more than one third of the staff member's total annual remuneration.

12.4. Specific features of the remuneration policy applicable to the identified staff

In general:

- Fixed remuneration must represent a significant proportion of total compensation.
- Variable remuneration for the year shall not exceed 100% of the fixed remuneration, in any event, of the members of the independent control functions, and generally for other employees that are part of the identified staff, unless the General Shareholders' Meeting has authorised a higher percentage for these, which may not exceed 200%. In this respect, the General Shareholders' Meeting, held on 31 March 2023, authorised the increase up to 200% of the maximum percentage permitted, for a maximum of 703 members of the identified staff in 2023 and up to 50 additional beneficiaries, up to a maximum of 753 people in total.

Variable remuneration typically comprises:

- An incentive to be received partly in cash and partly in instruments. Payment of this incentive is deferred for a period of four to five years (up to seven years in the United Kingdom). Performance measurement elements in line with the strategy and long-term interests of shareholders. These elements, take into consideration quantitative metrics, a multiplier and qualitative criteria that reflect the entity's results, return, capital performance, conduct in respect of customers and quality of the services provided thereto, risk management and compliance with legislation.
- Malus and clawback clauses, which are triggered in situations in which there is poor financial performance by the Bank as a whole, specific divisions or areas, or the exposure generated by the staff, attributable to the management of the person(s) in charge, based on the presence of, at least, some of the following factors:
 - Significant failures in risk management by the Bank, a business or a risk control unit.
 - Increases in capital requirements in the Bank or one of its business units that were not planned at the time that exposure was generated.
 - Regulatory penalties or legal convictions for events that might be attributable to the unit or staff responsible for them. Failure to comply with the Bank's internal codes of conduct.
 - Improper conduct, whether individual or collective. Negative effects deriving from the marketing of unsuitable products and the liability of persons or bodies making such decisions will be considered especially significant.

In addition to the existing policy on malus and clawback clauses of our remuneration policy, the board of directors of Banco Santander at its meeting held on 28 November 2023, following the proposal from the remuneration committee on 27 November 2023, approved an addendum to our remuneration policy to comply with new SEC (US Securities and Exchange Commission) regulations relating to the

recoupment of compensation erroneously received by the executive directors of Banco Santander, S.A., and senior management, in the event of a financial restatement (according to the regulation) resulting from material noncompliance with financial reporting requirements under federal securities laws. The new addendum to our remuneration policy, entitled "Financial Statement Restatement Compensation", is included as an exhibit to our Annual Report on Form 20-F report filed with the SEC.

- Ban on hedging deferred or retained shares or instruments and on transferring these in the twelve months following their delivery.

For control functions, the total remuneration package must be competitive within the market to attract sufficiently qualified and experienced employees. The individual objectives of these positions must be pegged to the performance of the control function rather than business results. Performance of the control function must be assessed by staff members who are independent of the business units being supervised.

12.5. Application of the remuneration policy for the identified staff in 2023

The remuneration policy and the essential remuneration conditions of individuals belonging to the identified staff have been approved by Banco Santander's Board of Directors at the proposal of the remuneration committee. The human resources function and the risk and compliance functions in each Santander company have duly confirmed that this policy and the remuneration practices comply with applicable law and regulations.

This is confirmed by the third independent report issued in application of article 33.2 of Act 10/2014 of 26 June on the ordering, supervision and solvency of credit institutions. The risk supervision, regulation and compliance committee

supervises the remuneration policy and remuneration schemes with the greatest impact to ensure that they are suitably aligned with risk management.

The essential elements with regard to variable remuneration include:

- The metrics used to determine the variable remuneration of senior management and other top executives, which have also been used to determine the variable remuneration of other members of the identified staff. These metrics are described in section 6.3.B ii) of the corporate governance chapter of the 2023 Annual Report.
- Deferral percentages and periods for the identified staff based on their category:
 - For the Group's executive directors and Promontorio executives:

	Immediate Payment Percentage	Deferred Percentage (**)	Deferral Period (**)	Deferred Portion Subject to Objectives (**)
Executive Directors, members of senior management(*) and those beneficiaries of the Award whose target(**) total variable remuneration is ≥ €2.7 mill.	40%	60%	5 years	Last 3 years (3/5 of Deferred Percentage)
Remaining members of senior management(*) and those beneficiaries of the Award whose target(**) total variable remuneration is ≥ €1.7 mill. (< €2.7 mill.).	50%	50%	5 years	Last 3 years (3/5 of Deferred Percentage)
Rest of Beneficiaries of the Award A.	60%	40%	4 years	Last 2 years (2/4 of Deferred Percentage)

(*) For the purposes of these Regulations, senior management comprises all the members included in Banco de España's Register of senior officers.

(**) In certain countries, the deferral percentage and the deferral period may also be different to comply with applicable local regulations or with the requirements of the competent authority in each case. Similarly, the deferred part subject to objectives can be applied to years that are not the last ones, but not before the third year.

- For the other members of the identified staff:

	Immediate Payment Percentage	Deferred Percentage (*)	Deferral Period (*)
Beneficiaries of the Award whose target total variable remuneration is \geq €2.7 mill.	40%	60%	5 years
Beneficiaries of the Award whose target total variable remuneration is \geq €1.7 mill. (< €2.7 mill.).	50%	50%	5 years
Other Beneficiaries of the Award.	60%	40%	4 years

(*) In certain countries, the deferral percentage and the deferral period may also be different to comply with applicable local regulations or with the requirements of the competent authority in each case.

Note: Reference variable remuneration for an standard compliance (100% of the objectives).

- Pegging a part of the deferred amounts to fulfilment of multi-year objectives for executive directors, senior management and other executives based on their category. These metrics are described in section 6.3.B (iv) of the corporate governance chapter of the 2023 Annual Report.
- The suitability of financial instruments used for the portion of deferred remuneration in financial instruments: use of shares in Banco Santander S.A. or in any of its listed subsidiaries (such as Brazil and Poland) or equivalent instruments (Chile); and the ratio between these instruments.
- Defining the events that might trigger the application of malus and clawback provisions on the variable remuneration accruing in 2023. These events are described in the previous section and apply to all the identified staff.
- No discount is applied to deferred variable remuneration when calculating the ratio of variable to fixed components.

In addition to the general scheme of variable remuneration metrics, the corporate and investment banking business (Santander Corporate & Investment Banking, SCIB) follows a model that is widely applied across all geographies where the business carries out its activities. The model provides remuneration for achieving results using a partial pay-out system, pegging variable remuneration to the division's ordinary net profit, including provisions and other assimilated costs, and the budget objectives, with additional impact from the Group's results, ensuring alignment with it. The model includes the same categories of metrics – including capital, risks and customers – as used for senior management, although they may be adapted for the needs and requirements of the individual business.

For further details, see the Corporate governance chapter of the 2023 Annual Report.



[Access 2023 Annual Report available on the Santander Group website](#)

12.6. Total remuneration of the identified staff in 2023

The following table shows the total remuneration of the identified staff in 2023, distinguishing between the supervisory function of the management body, the management function of the management body, other senior management and other identified staff:

Table 96.REM1 - Remuneration awarded for the financial year

EUR Thousands

		2023			
		a	b	c	d
		MB Supervisory function	MB Management function	Other senior management	Other identified staff
1		Number of identified staff			
		13	2	14	1,123
2		Total fixed remuneration			
		8,702	9,470	27,904	442,613
3		Of which: cash-based			
		8,702	6,796	19,226	368,868
EU-4a	Fixed remuneration	Of which: shares or equivalent ownership interests			
		—	—	—	—
5		Of which: share-linked instruments or equivalent non-cash instruments			
		—	—	—	—
EU-5x		Of which: other instruments			
		—	—	—	—
7		Of which: other forms			
		—	2,674	8,678	73,746
9		Number of identified staff			
		13	2	14	1,123
10		Total variable remuneration			
		—	14,111	28,904	596,822
11		Of which: cash-based			
		—	6,690	13,956	323,965
12		Of which: deferred			
		—	3,690	6,600	126,133
EU-13a	Variable remuneration	Of which: shares or equivalent ownership interests			
		—	6,690	11,432	248,315
EU-14a		Of which: deferred			
		—	3,690	5,485	123,227
EU-13b		Of which: share-linked instruments or equivalent non-cash instruments			
		—	—	2,723	23,050
EU-14b		Of which: deferred			
		—	—	1,315	13,525
EU-14x		Of which: other instruments			
		—	—	—	1,287
EU-14y		Of which: deferred			
		—	—	—	1,025
15		Of which: other forms			
		—	731	793	206
16		Of which: deferred			
		—	731	793	206
17	Total remuneration	8,702	23,581	56,808	1,039,435

The detail in the following table (REM 2) includes the special payments to personnel whose professional activities have a material impact on institutions' risk profile (identified staff):

Table 97.REM2 - Special payments to staff whose professional activities have a material impact on institutions' risk profile (identified staff)

EUR Thousands		2023			
		a	b	c	d
		MB Supervisory function	MB Management function	Other senior management	Other identified staff
Guaranteed variable remuneration awards					
1	Guaranteed variable remuneration awards - Number of identified staff	—	—	—	62
2	amount	—	—	—	139,852
3	Of which guaranteed variable remuneration awards paid during the financial year, that are not taken into account in the bonus cap	—	—	—	56,259
Severance payments awarded in previous periods, that have been paid out during the financial year					
4	Severance payments awarded in previous periods, that have been paid out during the financial year - Number of identified staff	—	—	—	18
5	Severance payments awarded in previous periods, that have been paid out during the financial year - Total amount	—	—	—	1,504
Severance payments awarded during the financial year					
6	Severance payments awarded during the financial year - Number of identified staff	—	—	—	43
7	Severance payments awarded during the financial year - Total amount	—	—	—	38,364
8	Of which paid during the financial year	—	—	—	38,364
9	Of which deferred	—	—	—	—
10	financial year, that are not taken into account in the bonus cap	—	—	—	38,364
11	Of which highest payment that has been awarded to a single person	—	—	—	4,247

The table REM 5 refers to the information on the remuneration of personnel whose professional activities have a material impact on the institution's risk profile (identified staff).

The Investment Banking area includes members of identified staff who belong to businesses related to corporate and investment banking (Santander Corporate & Investment Banking).

The Retail and Commercial Banking area covers all customer banking businesses, including all the people who provide support in the geographies, whether they are local senior executives or other categories.

Table 98.REM5 - Information on remuneration of staff whose professional activities have a material impact on institutions' risk profile (identified staff)

EUR Thousands											2023
		a	b	c	d	e	f	g	h	i	j
		Management body remuneration				Business areas					
		MB Supervisory function	MB Management function	Total MB	Investment banking	Retail banking	Asset management	Corporate functions	Independent internal control functions	All other	Total
1	Total number of identified staff										1,152
2	Of which: members of the MB	13	2	15							
3	Of which: other senior management				1	—	1	9	3	—	
4	Of which: other identified staff				153	657	18	51	244	—	
5	Total remuneration of identified staff	8,702	23,581	32,283	217,212	612,106	22,115	103,186	141,624	—	
6	Of which: variable remuneration	—	14,111	14,111	141,264	356,636	11,595	54,629	61,602	—	
7	Of which: fixed remuneration	8,702	9,470	18,173	75,948	255,470	10,521	48,557	80,022	—	

The total amount of severance payments and other benefits associated with contract termination, including pre-retirement payments, awarded during the year to members of the identified staff amounted to €38 million (just one member of senior management during 2023 has accrued a non-compete payment, which will be paid during 2 years) for a total of 43 people with average seniority of 14.6 years. Out of that total, 18 people received an amount corresponding to more than two annual fixed remuneration payments, with a total vested value of severance payments of €26.9 million. The maximum amount of a single award was €4.2 million.

The area of independent control functions includes risk management, internal audit and compliance functions.

Corporate functions cover people belonging to the identified staff of corporate support areas (such as Human Resources, Technology and Operations, Intervention and management control, as well as other functions related to the control of regulatory capital, Communication, Executive Secretary, Strategy, Financial Planning, etc.).

The sum of variable components in 2023 for each member of the identified staff did not exceed the limit established in each case for 2023, which was either 100% or 200%, as authorised by the General Shareholders' Meeting. Specifically, the ratio of variable components of remuneration to fixed components for all the identified staff was 148% and the limits prescribed for each component were duly observed in all cases.

Table 99.REM3 - Deferred remuneration

EUR Thousands									2023
		a	b	c	d	e	f	EU - g	EU - h
Deferred and retained remuneration		Total amount of deferred remuneration awarded for previous performance periods	Of which due to vest in the financial year	Of which vesting in subsequent financial years	Amount of performance adjustment made in the financial year to deferred remuneration that was due to vest in the financial year	Amount of performance adjustment made in the financial year to deferred remuneration that was due to vest in future performance years	Total amount of adjustment during the financial year due to ex post implicit adjustments (i.e. changes of value of deferred remuneration due to the changes of prices of instruments)	Total amount of deferred remuneration awarded before the financial year actually paid out in the financial year	Total of amount of deferred remuneration awarded for previous performance period that has vested but is subject to retention periods
1	MB Supervisory function	11,413	6,455	4,958	-2,191	—	1,258	3,754	1,877
2	Cash-based	5,484	3,206	2,278	-1,095	—	—	1,877	938
3	Shares or equivalent ownership interests	4,270	2,420	1,850	-1,095	—	1,258	1,307	654
4	Share-linked instruments or equivalent non-cash instruments	1,659	830	830	—	—	—	570	285
5	Other instruments	—	—	—	—	—	—	—	—
6	Other forms	—	—	—	—	—	—	—	—
7	MB Management function	37,471	23,139	14,332	-4,943	—	4,117	15,672	7,836
8	Cash-based	15,277	8,844	6,434	-2,493	—	—	5,325	2,663
9	Shares or equivalent ownership interests	14,072	7,885	6,186	-2,449	—	4,117	9,483	4,742
10	Share-linked instruments or equivalent non-cash instruments	2,574	1,287	1,287	—	—	—	864	432
11	Other instruments	—	—	—	—	—	—	—	—
12	Other forms	5,548	5,123	425	—	—	—	—	—
13	Other senior management	60,258	37,027	23,231	-8,148	—	8,488	25,829	12,914
14	Cash-based	24,017	14,867	9,151	-4,074	—	—	9,626	4,813
15	Shares or equivalent ownership interests	27,455	15,267	12,187	-4,074	—	8,488	16,086	8,043
16	Share-linked instruments or equivalent non-cash instruments	1,100	550	550	—	—	—	117	58
17	Other instruments	—	—	—	—	—	—	—	—
18	Other forms	7,686	6,343	1,343	—	—	—	—	—
19	Other identified staff	190,429	117,663	72,766	-22,566	—	101,640	286,314	143,157
20	Cash-based	66,436	41,447	24,989	-11,208	—	—	141,917	70,959
21	Shares or equivalent ownership interests	108,271	68,322	39,950	-11,358	—	101,640	141,259	70,630
22	Share-linked instruments or equivalent non-cash instruments	14,215	7,108	7,108	—	—	—	3,137	1,569
23	Other instruments	558	107	451	—	—	—	—	—
24	Other forms	948	678	269	—	—	—	—	—
25	Total amount	299,572	184,284	115,287	-37,847	—	115,503	331,568	165,784

1. On each delivery of deferred cash amounts, a inflation adjustment has been paid (as appropriate in each case). In the financial year 2023, this adjustment amounted to a total of EUR 3,557 thousand (EUR 224 thousand in the case of the Executive Chair and the former CEO).

Lastly, the breakdown of the remuneration by salary band of the members of the identified staff in the whole of Santander is shown below:

Table 100.REM4 - Remuneration of 1 million EUR or more per year

		2023
		a
EUR	Identified staff that are high earners as set out in Article 450(i) CRR	
1	1 000 000 to below 1 500 000	186
2	1 500 000 to below 2 000 000	64
3	2 000 000 to below 2 500 000	38
4	2 500 000 to below 3 000 000	17
5	3 000 000 to below 3 500 000	12
6	3 500 000 to below 4 000 000	7
7	4 000 000 to below 4 500 000	7
8	4 500 000 to below 5 000 000	5
9	5 000 000 to below 6 000 000	6
10	6 000 000 to below 7 000 000	4
11	7 000 000 to below 8 000 000	2
12	8 000 000 to below 9 000 000	—
13	9 000 000 to below 10 000 000	3
14	10 000 000 to below 11 000 000	1
15	11 000 000 to below 12 000 000	1
16	12 000 000 to below 13 000 000	2
17	13 000 000 to below 14 000 000	2
28	Total	357

(*) Remuneration assigned in financial year 2023 including deferred variable remuneration subject to long-term objectives at fair value that will be paid in 2026, 2027 and, where appropriate, 2028, depending on the level of achievement of the plan.

The number of individuals included in this disclosure have increased in 2023 (357 vs. 278 in 2022) mainly due to hirings in the US and, in general, larger bonuses in 2023 due to the very good results (record attributable profit of EUR 11,076 million and very high total shareholder return of 40.5%, 5% above the average of our official group of nine peers in relative terms).

This chart includes a especially high concentration of US based and UK based executives (respectively 32% and 15%) where local pay and competition for talent are very high.

It is also important to note that turnover has a relevant effect in this chart, as it includes severance payment and non-compete payments, as well as sign-on bonuses for new hirings (especially in corporate and investment banking), which all lead to very large amounts for several individuals that are not strictly connected to 2023. Those bonuses are in many cases deferred, and in the case of sign-ons, may not be received if the executive leaves the organization during 2024.

12.7. Remuneration policy for 2024 and following years

The 2024 remuneration policy for directors is described in section 6.4 of the corporate governance chapter of the Annual Report. The main principles of the policy, along with the fixed and variable remuneration components and the variable remuneration policy for members of the identified staff, will comply with the rules and procedures for executive directors set out in the report referred to above. In particular, as regards the variable remuneration policy:

- The existence of a single incentive, which will be determined by a set of quantitative and qualitative metrics.
- The quantitative metrics and a qualitative assessment which will include risk, compliance and ESG aspects, in the short-term incentive.
- Long-term metrics for senior managers: return on tangible equity (RoTE), relative performance of Banco Santander's total shareholder return (TSR) in relation to the weighted TSR of a reference group and metrics linked to environmental, social and corporate governance (ESG) criteria: percentage of women in senior executive positions, financial inclusion, socially responsible investments and supporting transition (business raised and facilitated).
- Part payment in cash or other instruments.
- Continued-employment, malus and clawback provisions

- Other conditions, such as the ban on hedging and transferring shares in the twelve months following their delivery (three years in the case of executive directors unless the director already holds shares for an amount equivalent to 200% of their net annual salary (calculated on the basis of their gross annual salary). In such case, the regulatory obligation to hold shares is for one year from their grant date.

Delivery is conditional on the beneficiary remaining in the Group's employment, and is subject to the deferral rules and other regulatory restrictions, such as malus and clawback provisions.

Likewise, the Board of Directors, upon recommendation of the remuneration committee, may approve a new incentive to boost the transformation process of Banco Santander, being part of the variable remuneration of Group's employees, including members of identified staff.

For further details, see the Corporate Governance chapter of the 2023 Annual Report.



Deferral periods for members of the identified staff are as follows:

- For the Group's executive directors and Promontorio executives:

	Immediate Payment Percentage	Deferred Percentage (**)	Deferral Period (**)	Deferred Portion Subject to Objectives (**)
Executive Directors, members of senior management(*) and those beneficiaries of the Award whose target(**) total variable remuneration is ≥ €2.7 mill.	40%	60%	5 years	Last 3 years (3/5 of Deferred Percentage)
Remaining members of senior management(*) and those beneficiaries of the Award whose target(**) total variable remuneration is ≥ €1.7 mill. (< €2.7 mill.).	50%	50%	5 years	Last 3 years (3/5 of Deferred Percentage)
Rest of Beneficiaries of the Award A.	60%	40%	4 years	Last 2 years (2/4 of Deferred Percentage)

(*) For the purposes of these Regulations, senior management comprises all the members included in Banco de España's Register of senior officers.

(**) In certain countries, the deferral percentage and the deferral period may also be different to comply with applicable local regulations or with the requirements of the competent authority in each case. Similarly, the deferred part subject to objectives can be applied to years that are not the last ones, but not before the third year.

- For the other members of the identified staff:

	Immediate Payment Percentage	Deferred Percentage (*)	Deferral Period (*)
Beneficiaries of the Award whose target total variable remuneration is \geq €2.7 mill.	40%	60%	5 years
Beneficiaries of the Award whose target total variable remuneration is \geq €1.7 mill. (< €2.7 mill.).	50%	50%	5 years
Other Beneficiaries of the Award.	60%	40%	4 years

(*)In certain countries, the deferral percentage and the deferral period may also be different to comply with applicable local regulations or with the requirements of the competent authority in each case.

Note: Reference variable remuneration for an standard compliance (100% of the objectives).

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VI. CC2 - reconciliation of regulatory own funds to balance sheet in the audited financial statements	XIV. CR9 - AIRB Back-testing of PD per exposure class (fixed PD scale)
VII. CCA - Main features of regulatory own funds instruments and eligible liabilities instruments	XV. CR9 - AIRB Retail Back-testing of PD per exposure class (fixed PD scale)
VIII. CC1 - Composition of regulatory own funds	XVI. CR9 - FIRB approach - Back-testing of PD per exposure class (fixed PD scale)
IX. CCyB1 - Geographical distribution of credit exposures relevant for the calculation of the countercyclical buffer	XVII. CR9.1 - AIRB approach - Back-testing of PD per exposure class (only for PD estimates according to point (f) of Article 180(1) CRR)
X. CCyB2 - Amount of institution-specific countercyclical capital buffer	XVIII. CR9.1 - FIRB approach - Back-testing of PD per exposure class (only for PD estimates according to point (f) of Article 180(1) CRR)
XI. CCA - Capital and TLAC instruments main features - Own Funds	XIX. List of SPPEs
XII. CCA - Capital and TLAC instruments main features - Eligible Liabilities	XX. PV1 - Prudent valuation adjustments (PVA)
	XXI. MR4 - Comparison of VaR estimates with gains/losses

Appendix I - Location of disclosures

IMPLEMENTING TECHNICAL STANDARDS ON PUBLIC DISCLOSURES BY INSTITUTIONS UNDER PART EIGHT OF REGULATION (EU) NO 575/2013

Requirement	2023 Pillar 3 Location	
Annex I. Disclosure of key metrics and overview of risk-weighted exposure amounts		
Annex II. Disclosure of key metrics and overview of risk-weighted exposure amounts (instructions)		
KM1	Key metrics template	Table 1
OV1	Overview of risk weighted exposure amounts	Table 9
INS1	Insurance participations	N/A ¹
OVC	ICAAP information	Section 2.7
Annex III. Disclosure of risk management policies and objectives		
Annex IV. Disclosure of risk management policies and objectives (instructions)		
OVA	Institution risk management approach	Section 3.1, 3.2, 4.1, 5.1, 6.1, 7.1, 8.1, 9
OVB	Disclosure on governance arrangements	Section 3.2
Annex V. Disclosure of the scope of application		
Annex VI. Disclosure of the scope of application (instructions)		
LI1	Differences between accounting and regulatory scopes of consolidation and mapping of financial statement categories with regulatory risk categories	Table 2
LI2	Main sources of differences between regulatory exposure amounts and carrying values in financial statements	Table 3
LI3	Outline of the differences in the scopes of consolidation (entity by entity)	Appendix V
LIA	Explanations of differences between accounting and regulatory exposure amounts	Section 1.4
LIB	Other qualitative information on the scope of application	Section 1.4
PV1	Prudent valuation adjustments (PVA)	Appendix XX
Annex VII. Disclosure of own funds		
Annex VIII. Disclosure of own funds (instructions)		
CC1	Composition of regulatory own funds	Appendix VIII
CC2	Reconciliation of regulatory own funds to balance sheet in the audited financial statements	Appendix VI
CCA	Main features of regulatory own funds instruments and eligible liabilities instruments	Appendix VII
Annex IX. Disclosure of countercyclical capital buffers		
Annex X. Disclosure of countercyclical capital buffers (instructions)		
CCyB1	Geographical distribution of credit exposures relevant for the calculation of the countercyclical buffer	Appendix IX
CCyB2	Amount of institution-specific countercyclical capital buffer	Appendix X
Annex XI. Disclosure of the leverage ratio		
Annex XII. Disclosure of the leverage ratio (instructions)		
LR1	LRSum: Summary reconciliation of accounting assets and leverage ratio exposures	Table 13
LR2	LRCom: Leverage ratio common disclosure	Table 14
LR3	LRSpI: Split-up or on balance sheet exposures (excluding derivatives, SFIs and exempted exposures)	Table 15
LRA	Free format text boxes for disclosure on qualitative items	Section 2.5
Annex XIII. Disclosure of liquidity requirements		
Annex XIV. Disclosure of liquidity requirements (instructions)		
LIQA	Liquidity risk management	Section 9
LIQ1	Quantitative information of LCR	Table 84
LIQB	Qualitative information on LCR, which complements template EU LIQ1	Table 85
LIQ2	Net Stable Funding Ratio	Table 86
Annex XV. Disclosure of credit risk quality		
Annex XVI. Disclosure of credit risk quality (instructions)		
CRA	General qualitative information about credit risk	Section 4.1
CRB	Additional disclosure related to the credit quality of assets	Section 4.3
CR1	Performing and non-performing exposures and related provisions	Table 39
CR1-A	Maturity of exposures	Table 37
CR2	Changes in the stock of non-performing loans and advances	Table 38

¹ The exemption under Article 48 of the CRR is not used, so table INS1 on non-deducted holdings in insurance companies does not need to be published.

CR2-A	Changes in the stock or non-performing loans and advances and related net accumulated recoveries	N/A ²
CQ1	Credit quality of forbore exposures	Table 43
CQ2	Quality of forbearance	N/A ³
CQ3	Credit quality of performing and non-performing exposures by past due days	Table 40
CQ4	Quality of non-performing exposures by geography	Table 41
CQ5	Credit quality of loans and advances by industry	Table 42
CQ6	Collateral valuation - loans and advances	N/A ⁴
CQ7	Collateral obtained by taking possession and execution processes	Table 44
CQ8	Collateral obtained by taking possession and execution processes – vintage breakdown	N/A ⁵
Annex XVII. Disclosure of the use of credit risk mitigation techniques		
Annex XVIII. Disclosure of the use of credit risk mitigation techniques (instructions)		
CRC	Qualitative disclosure requirements related to CRM techniques	Section 4.7
CR3	CRM techniques overview: Disclosure of the use of credit risk mitigation techniques	Table 47
Annex XIX. Disclosure of the use of standardised approach		
Annex XX. Disclosure of the use of standardised approach (instructions)		
CRD	Qualitative disclosure requirements related to standardised model	Section 4.2.4
CR4	Standardised approach – Credit risk exposure and CRM effects	Table 35
CR5	Standardised approach	Table 36
Annex XXI. Disclosure of the use of the IRB approach to credit risk		
Annex XXII. Disclosure of the use of the IRB approach to credit risk (instructions)		
CRE	Qualitative disclosure requirements related to IRB approach	Section 4.2.3 Appendix XIII
CR6	IRB approach – Credit risk exposures by exposure class and PD range	Table 24, Table 25, Table 26
CR6-A	Scope of the use of IRB and SA approaches	Table 20
CR7	IRB approach – Effect on the RWEAs of credit derivatives used as CRM techniques	Table 49
CR7-A	IRB approach – Disclosure of the extent of the use of CRM techniques	Table 50
CR8	RWEA flow statements of credit risk exposures under the IRB approach	Table 21
CR9	AIRB Back-testing of PD per exposure class (fixed PD scale)	Appendix XIV
CR9	AIRB Retail Back-testing of PF per exposure class (fixed PD scale)	Appendix XV
CR9	FIRB Back-testing of PD per exposure class (fixed PD scale)	Appendix XVI
CR9.1	AIRB approach – Back-testing of PD per exposure class (only for PD estimates according to point (f) of Article 180(1) CRR)	Appendix XVII
CR9.1	FIRB approach – Back-testing of PD per exposure class (only for PD estimates according to point (f) of Article 180(1) CRR)	Appendix XVIII
Annex XXIII. Disclosure of specialised lending		
Annex XXIV. Disclosure of specialised lending (instructions)		
CR10	Specialised lending and equity exposures under the simple riskweighted approach	Table 27, Table 28, Table 29, Table 30, Table 31
Annex XXV. Disclosure of exposures to counterparty credit risk		
Annex XXVI. Disclosure of exposures to counterparty credit risk (instructions)		
CCRA	Qualitative disclosure related to CCR	Section 5.1
CCR1	Analysis of CCR exposure by approach	Table 53
CCR2	Transactions subject to own funds requirements for CVA risk	Table 51
CCR3	Standardised approach – CCR exposures by regulatory exposure class and risk weights	Table 54
CCR4	IRB approach – CCR exposures by exposure class and PD scale	Table 55, Table 56
CCR5	Composition of collateral for CCR exposures	Table 57
CCR6	Credit derivatives exposures	Table 58
CCR7	RWEA flow statements of CCR exposures under the IMM	N/A ⁶
CCR8	Exposures to CCPs	Table 52

² Requirement CR2A of the EBA Disclosure ITS are not published because the NPL ratio does not exceed 5%

³ Requirement CQ2 of the EBA Disclosure ITS are not published because the NPL ratio does not exceed 5%.

⁴ Requirement CQ6 of the EBA Disclosure ITS are not published because the NPL ratio does not exceed 5%.

⁵ Requirement CQ8 of the EBA Disclosure ITS are not published because the NPL ratio does not exceed 5%.

⁶ Statement of flows of risk-weighted amounts of counterparty exposures subject to IMM is not included as Santander does not have an internal model to calculate counterparty risk EAD.

Annex XXVII. Disclosure of exposures to securitisation positions

Annex XXVIII. Disclosure of exposures to securitisation positions (instructions)

SECA	Qualitative disclosure requirements related to securitisation exposures	Section 6.1, 6.3
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SEC2	Securitisation exposures in the trading book	Table 61
SEC3	Securitisation exposures in the non-trading book and associated regulatory capital requirements - institution acting as originator or as sponsor	Table 66
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SEC5	Exposures securitised by the institution - Exposures in default and specific credit risk adjustments	Table 65
List of SPPEs	List of SPPEs	Appendix XIX

Annex XXIX. Disclosure of the use of standardised approach and internal model for market risk

Annex XXX. Disclosure of the use of standardised approach and internal model for market risk (instructions)

MRA	Qualitative disclosure requirements related to market risk	Section 7.1
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MRB	Qualitative disclosure requirements for institutions using the internal Market Risk Models	Section 7.1
MR2-A	Market risk under the internal Model Approach (IMA)	Table 70
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Annex XXXI. Disclosure of operational risk

Annex XXXII. Disclosure of operational risk (instructions)

ORA	Qualitative information on operational risk	Section 8.1 and 8.2
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Annex XXXIII. Disclosure of remuneration policy

Annex XXXIV. Disclosure of remuneration policy (instructions)

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Annex XXXV. Disclosure of encumbered and unencumbered assets

Annex XXXVI. Disclosure of encumbered and unencumbered assets (instructions)

AE1	Encumbered and unencumbered assets	Table 80
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AE3	Sources of encumbrance	Table 82
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IMPLEMENTING TECHNICAL STANDARDS ON DISCLOSURE OF INFORMATION ON EXPOSURES TO INTEREST RATE RISK ON POSITIONS NOT HELD IN THE TRADING BOOK

Table	Table Title	2023 Pillar 3 Location
IRRBB1	Interest rate risks of non-trading book activities	Table 77
IRRBBA	IRRBB qualitative information	Section 7.4

GUIDELINES ON UNIFORM DISCLOSURES UNDER ARTICLE 473A OF REGULATION (EU) NO 575/2013 AS REGARDS THE TRANSITIONAL PERIOD FOR MITIGATING THE IMPACT OF THE INTRODUCTION OF IFRS 9 ON OWN FUNDS - EBA/GL/2018/01

Table	Table title	2023 Pillar 3 Location
IFRS 9-FL Template	Comparison of equity, capital ratios and leverage of entities with or with out the application of the transitional arrangements of IFRS 9 or analog ECL	Table 8

IMPLEMENTING TECHNICAL STANDARDS ON DISCLOSURE AND REPORTING OF MREL AND TLAC

Table	Table title	2022 Pillar 3 Location
KM2	Key metrics – MREL and, where applicable, G-SII requirement for own funds and eligible liabilities	Tabla 16
TLAC1	Composition – MREL and, where applicable, the G-SII requirement for own funds and eligible liabilities	Tabla 17
TLAC3	Creditor ranking – resolution entity	Tabla 18
CCA - Own funds	Capital and TLAC instruments main features - Own Funds	Appendix XI
CCA - Eligible Liabilities	Capital and TLAC instruments main features - Eligible Liabilities	Appendix XII

IMPLEMENTING TECHNICAL STANDARDS (ITS) ON PRUDENTIAL DISCLOSURES ON ESG RISKS IN ACCORDANCE WITH ARTICLE 449a CRR⁷

Table	Table title	2022 Pillar 3 Location
ESG1	Banking book- Climate Change transition risk: Credit quality of exposures by sector, emissions and residual maturity	Table 87
ESG2	Banking book - Climate change transition risk: Loans collateralised by immovable property - Energy efficiency of the collateral	Table 88
ESG3	Banking book - Climate change transition risk: Alignment metrics	Table 89
ESG4	Banking book - Climate change transition risk: Exposures to top 20 carbon-intensive firms	Table 90
ESG5	Banking book - Climate change physical risk: Exposures subject to physical risk	Table 91
ESG6	Summary of GAR KPIs	Table 92
ESG7	Mitigating actions: Assets for the calculation of GAR	Table 93
ESG8	Mitigating actions GAR (%)	Table 94
ESG10	Other climate change mitigating actions that are not covered in the EU Taxonomy Page Size Break	Table 95

⁷ According to art.449a CRRII the templates 6 *Summary of KPIs on the Taxonomy-aligned exposures*, 7 *Mitigating actions: Assets for the calculation of GAR*, 8 *GAR (%)* shall apply as of end 2023. In addition, template 9 *Mitigating actions: BTAR* shall apply as of end June 2024

Appendix II -CRR Mapping

The following table links the CRR's articles on divulging information (Part 8) to the various sections of the document that provide the information required. The 'Location' column specifies the section of Pillar 3 or other public document in which the information is dealt with, in whole or in part. This information may be distributed throughout the document on a piecemeal basis.

Article	Brief Description	2023 P3DR Location	Tables	2023 Annual Report Location
431. Scope of disclosures requirements				
431.1	Requirement to publish Pillar 3 disclosures.	Pillar 3 Disclosures Report (Santander corporate website)		
431.2	Permission granted by the competent authorities under Part Three for the instruments and methodologies referred to in Title III shall be subject to the public disclosure by institutions of the information laid down therein.	Section 2.4.2.1.		
431.3	Institution must have a policy covering the frequency of disclosures, their verification, comprehensiveness and appropriateness, as well as policies for assuring the overall comprehension of their risk profile by market participants.	Section 1.2.2.		
431.4	All quantitative disclosures shall be accompanied by a qualitative narrative and any other supplementary information that may be necessary			
431.5	Explanation of SMEs ratings decision upon request.	Section 4.4.		
432. Non-material, proprietary or confidential information				
432.1	Institutions may omit information that is not material if certain conditions are respected.	Sections 1.2.1. and 1.2.3.		
432.2	Institutions may omit information that is proprietary or confidential if certain conditions are respected.	Section 1.2.2.		
432.3	Where 432.2 applies this must be stated in the disclosures, and more general information must be disclosed.	Section 1.2.2.		
433. Frequency of disclosure				
433	Institutions shall publish the disclosures required under Titles II and III in the manner set out in Articles 433a, 433b and 433c.	Section 1.2.2.		
433a. Disclosures by large institutions				
433a	Large institutions shall disclose the information outlined below with the following frequency:	Section 1.2.2.		
433b. Disclosures by small and non-complex institutions				
433b	Small and non-complex institutions shall disclose the information outlined below with the following frequency	N/A		
433c. Disclosures by other institutions				
433c	Institutions that are not subject to Article 433a or 433b shall disclose the information outlined below with the following frequency	N/A		
434. Means of disclosure				
434.1	Institutions shall disclose all the information required under Titles II and III in electronic format and in a single medium or location.	Section 1.2.1.		
434.2	Disclosures made under other requirements (e.g. accounting, listing) can be used to satisfy Pillar 3 requirements, if appropriate.	Section 1.2.1.		
434a. Uniform disclosure formats				

Article	Brief Description	2023 P3DR Location	Tables	2023 Annual Report Location
434a	EBA shall develop draft implementing technical standards specifying uniform disclosure formats, and associated instructions in accordance with which the disclosures required under Titles II and III shall be made.	N/A		
435. Risk management objectives and policies				
435.1	Disclose information for each separate category of risk:			
435.1.a	The strategies and processes to manage risks.	Chapters 3 to 10		Risk, compliance & conduct management
435.1.b	Structure and organization of the risk management function.	Chapters 3 to 10		Risk, compliance & conduct management
435.1.c	Risk reporting and measurement systems.	Chapters 3 to 10		Risk, compliance & conduct management
435.1.d	Hedging and mitigating risk - policies, strategies and processes.	Chapters 3 to 10		Risk, compliance & conduct management chapter
435.1.e	A declaration of adequacy of risk management arrangements approved by the Board.	Section 3.1.3.		Risk, compliance & conduct management chapter
435.1.f	Inclusion of a concise risk statement approved by the Board.	Sections 1.4.1. and 3.1.3.		Risk, compliance & conduct management chapter
435.2	Information on governance arrangements, including information on Board composition and recruitment, and risk committees.			
435.2.a	Number of directorships held by Board members.	Section 3.2.1.		Risk, compliance & conduct management chapter & Corporate Governance Chapter
435.2.b	Recruitment policy for the selection of Board members, their actual knowledge, skills and expertise.	Section 3.2.1.1		Corporate Governance Chapter
435.2.c	Policy on diversity of Board membership, objectives, and achievement status.	Section 3.2.		Corporate Governance Chapter
435.2.d	Existence of a dedicated risk committee, and number of meetings during the year.	Section 3.2.2.		Risk, compliance & conduct management chapter & Corporate Governance Chapter
435.2.e	Description of the information flow on risk to the Board.	Section 3.1.1.2		Risk, compliance & conduct management chapter & Corporate Governance Chapter
436. Scope of application of the requirements				
436	Institutions shall disclose the following information regarding the scope of application of the requirements of this Regulation in accordance with Directive 2013/36/EU:			
436.a	Name of institution to which the requirements of this Regulation applies.	Section 1.2.1.		
436.b	Difference in the basis of consolidation for accounting and prudential purposes, briefly describing entities that are: (i) fully consolidated (ii) proportionally consolidated (iii) deducted from own funds (iv) neither consolidated nor deducted	Section 1.4.2.	Table 2 (L1) Table 3 (L2) Appendix V (L3)	
436.c	a breakdown of assets and liabilities of the consolidated financial statements prepared in accordance with the requirements on regulatory consolidation pursuant to Sections 2 and 3 of Title II of Part One	Section 1.4.2.	Table 2 (L1)	
436.d	a reconciliation identifying the main sources of differences between the carrying value amounts in the financial statements under the regulatory scope of consolidation as defined in Sections 2 and 3 of Title II of Part One	Section 1.4.2.	Table 2 (L1) Table 3 (L2)	
436.e	a breakdown of the amounts of the constituent elements of an institution's prudent valuation adjustment, by type of risks, and the total of constituent elements separately for the trading book and non-trading book positions;		Appendix XXIV (PV1)	
436.f	Impediments to transfer of own funds between parent and subsidiaries.	Sections 1.3.1. and 2.3.3.		

Article	Brief Description	2023 P3DR Location	Tables	2023 Annual Report Location
436.g	Capital shortfalls in any subsidiaries outside the scope of consolidation.	Section 2.4.1		
436.h	The circumstance of making use of articles on derogations from: a) Prudential requirements b) Liquidity requirements for individual subsidiaries/entities.	Section 2.4.1		
437. Disclosure of own funds				
437.1	Institutions shall disclose the following information regarding their own funds:			
437.1.a	A full reconciliation of Common Equity Tier 1 items, Additional Tier 1 items, Tier 2 items and filters and deductions applied pursuant to Articles 32 to 35, 36, 56, 66 and 79 to own funds of the institution and the balance sheet in the audited financial statements of the institution.		Tables 4 y 5 Appendix VI (CC2) Appendix VIII (CC1) Appendix VII (CCA)	
437.1.b	Description of the main features of the Common Equity Tier 1 and Additional Tier 1 instruments and Tier 2 instruments issued by the institution.	Section 2.4.1.	Appendix VII (CCA) Appendix VIII (CC1)	
437.1.c	Dull terms and conditions of all Common Equity Tier 1, Additional Tier 1 and Tier 2 instruments.	Section 2.4.1.	Appendix VII (CCA) Appendix VIII (CC1)	
437.1.d	Disclosure of the nature and amounts of the following:	Sections 2.4.1	Appendix VIII (CC1)	
437.1.d.i	Each prudential filter applied pursuant to Articles 32 to 35;	Sections 2.2. and 2.3.	Appendix VIII (CC1)	
437.1.d.ii	Each deduction made pursuant to Articles 36, 56 and 66;	Sections 2.2. and 2.3.	Appendix VIII (CC1)	
437.1.d.iii	Items not deducted in accordance with Articles 47, 51, 56, 66 and 79.	Sections 2.2. and 2.3.	Appendix VIII (CC1)	
437.1.e	Description of all restrictions applied to the calculation of own funds in accordance with this Regulation and the instruments, prudential filters and deductions to which those restrictions apply.	Section 2.4.1.	Appendix VIII (CC1)	
437.1.f	Explanation of the calculation basis of the disclosed capital ratios estimated using elements of own funds determined, on a basis other than that laid down in this Regulation.	2.2.3		
437a. Disclosure of own funds and eligible liabilities				
437a	Institutions that are subject to Article 92a or 92b shall disclose the following information regarding their own funds and eligible liabilities: (a) the composition of their own funds and eligible liabilities, their maturity and their main features; (b) the ranking of eligible liabilities in the creditor hierarchy; (c) the total amount of each issuance of eligible liabilities instruments referred to in Article 72b; (d) the total amount of excluded liabilities referred to in Article 72a(2).	Sections 1.2.4. and 1.3.		
438. Capital requirements				
438	Institutions shall disclose the following information regarding their compliance with Article 92 of this Regulation and with the requirements laid down in Article 73 and in point (a) of Article 104(1) of Directive 2013/36/EU:			
438.a	a summary of their approach to assessing the adequacy of their internal capital to support current and future activities;	Section 2.1.		Economic and Financial Review Chapter
438.b	the amount of the additional own funds requirements	Sections 2.4.1, 2.4.3. and 2.5.	Table 1 (KM1)	
438.c	upon demand from the relevant competent authority, the result of the institution's internal capital adequacy assessment process;	Section 2.6.		Economic and Financial Review Chapter
438.d	the total risk-weighted exposure amount and the corresponding total own funds requirement determined in accordance with Article 92, to be broken down by the different risk categories set out in Part Three and, where applicable, an explanation of the effect on the calculation of own funds and risk-weighted exposure amounts that results from applying capital floors and not deducting items from own funds;	Section 2.4.2.	Table 9 (OV1)	

Article	Brief Description	2023 P3DR Location	Tables	2023 Annual Report Location
438.e	The on- and off-balance-sheet exposures, the risk-weighted exposure amounts	Section 4.2	Tables 27 - 31 (CR10)	
438.f	The exposure value and the risk-weighted exposure amount of own funds instruments held in any insurance undertaking, reinsurance undertaking or insurance holding company that the institutions do not deduct from their own funds	N/A		
438.g	The supplementary own funds requirement and the capital adequacy ratio of the financial conglomerate	N/A		
438.h	The variations in the risk-weighted exposure amounts of the current disclosure period compared to the immediately preceding disclosure period that result from the use of internal models, including an outline of the key drivers explaining those variations.		Table 21 (CR8) Table 71 (MR2-B)	
439. Exposure to counterparty credit risk				
439	Institutions shall disclose the following information regarding the institution's exposure to counterparty credit risk as referred to in Part Three, Title II, Chapter 6:			
439.a	Description of process to assign internal capital and credit limits to CCR exposures.	Sections 5, 5.1. and 5.6.	Table 52 (CCR8)	
439.b	Discussion of policies for securing collateral and establishing credit reserves.	Section 5.2.	Table 57 (CCR5)	
439.c	Discussion of management of wrong-way risk exposures.	Section 5.3.		
439.d	Disclosure of collateral to be provided (outflows) in the event of a ratings downgrade.	Section 5.4.		
439.e	The amount of segregated and unsegregated collateral received and posted per type of collateral,		Table 57 (CCR5)	
439.f	For derivative transactions, the exposure values before and after the effect of the credit risk mitigation		Table 53 (CCR1)	
439.g	For securities financing transactions, the exposure values before and after the effect of the credit risk mitigation		Table 53 (CCR1)	
439.h	The exposure values after credit risk mitigation effects and the associated risk exposures for credit valuation adjustment capital charge	Section 5.5.	Table 51 (CCR2)	
439.i	The exposure value to central counterparties and the associated risk exposures	Section 5.6.	Table 52 (CCR8)	
439.j	The notional amounts and fair value of credit derivative		Table 58 (CCR6)	
439.k	The estimate of alpha where the institution has received the permission of the competent authorities to use its own estimate of alpha		Table 53 (CCR1)	
439.l	Separately, the disclosures included in point (e) of Article 444 and point (g) of Article 452;		Table 53 (CCR1) Table 54 (CCR3) Tables 55 and 56 (CCR4) Table 57 (CCR5) Table 58 (CCR6)	
439.m	For institutions using the methods set out in Sections 4 to 5 of Chapter 6 of Title II Part Three, the size of their on- and off-balance-sheet derivative business		Table 53 (CCR1)	
440. Capital buffers				
440	Disclosure of the following information in relation to its compliance with the requirement for a countercyclical capital buffer referred to in Title VII, Chapter 4 of Directive 2013/36/EU:			

Article	Brief Description	2023 P3DR Location	Tables	2023 Annual Report Location
440.a	Geographical distribution of credit exposures relevant for the calculation of countercyclical capital buffer.	Section 2.4.3	Appendix X (CCyB1)	
440.b	Amount of the specific countercyclical capital buffer.	Section 2.4.3.	Appendix XI (CCyB2)	
441. Indicators of global systemic importance				
441	Disclosure of the indicators of global systemic importance.	Section 2.4.3.		
442. Credit risk adjustments				
442	Institutions shall disclose the following information regarding the institution's exposure to credit risk and dilution risk:			
442.a	The scope and definitions that they use for accounting purposes of 'past due' and 'impaired' and the differences, if any, between the definitions of 'past due' and 'default' for accounting and regulatory purposes;	Section 4.5.		Risk, compliance & conduct management chapter
442.b	A description of the approaches and methods adopted for determining specific and general credit risk adjustments;		Table 65 (SEC1)	Risk, compliance & conduct management chapter
442.c	Information on the amount and quality of performing, non-performing and forborne exposures for loans, debt securities and off-balance-sheet exposures, including their related accumulated impairment, provisions and negative fair value changes due to credit risk and amounts of collateral and financial guarantees		Table 42 (CQ5) Table 34 (CQ4) Table 43 (CQ1) Table 53 (CR1) Table 44 (CQ7)	
442.d	An ageing analysis of accounting past due exposures;		Table 40 (CQ3)	Risk, compliance & conduct management chapter
442.e	The gross carrying amounts of both defaulted and non-defaulted exposures, the accumulated specific and general credit risk adjustments, the accumulated write-offs taken against those exposures and the net carrying amounts and their distribution by geographical area and industry type and for loans, debt securities and off balance-sheet exposures;		Table 39 (CR1) Table 42 (CQ5) Table 31 (CQ4)	Risk, compliance & conduct management chapter
442.f	Any changes in the gross amount of defaulted on- and off-balance-sheet exposures, including, as a minimum, information on the opening and closing balances of those exposures, the gross amount of any of those exposures reverted to non-defaulted status or subject to a write-off;		Table 38 (CR2)	Risk, compliance & conduct management chapter
442.g.	The breakdown of loans and debt securities by residual maturity		Table 37 (CR1-A)	
443. Unencumbered assets				
443	Institutions shall disclose information concerning their encumbered and unencumbered assets. For those purposes, institutions shall use the carrying amount per exposure class broken down by asset quality and the total amount of the carrying amount that is encumbered and unencumbered.	Section 10.1.3.	Table 80 (AE1) Table 81 (AE2) Table 82 (AE3)	Economic and Financial Report Chapter
444. Use of ECAs				
444	For institutions calculating the risk-weighted exposure amounts in accordance with Part Three, Title II, Chapter 2, the following information shall be disclosed for each of the exposure classes specified in Article 112:			
444.a	Names of the ECAs used in the calculation of Standardised approach risk-weighted assets and reasons for any changes.	Section 4.2.3.		
444.b	Exposure classes associated with each ECAI.	Section 4.2.3.		
444.c	Description of the process used to transfer credit assessments to non-trading book items.	Section 4.2.3.		
444.d	Mapping of external rating to credit quality steps (CQS).	Section 4.2.3.		
444.e	Exposure value pre and post-credit risk mitigation, by CQS.		Table 35 (CR4) Table 36 (CR5) Table 54 (CCR3)	
445. Exposure to market risk				

Article	Brief Description	2023 P3DR Location	Tables	2023 Annual Report Location
445	Disclosure of position risk, large exposures exceeding limits, FX, settlement and commodities risk.	Section 7.2.	Table 72 (MR1)	
446. Operational risk				
446	Institutions shall disclose the following information about their operational risk management:			
446.a	The approaches for the assessment of own funds requirements for operation risk that the institution qualifies for;	Chapter 8	Table 79 (OR1)	
446.b	A discussion of the relevant internal and external factors being considered in the institution's advanced measurement approach;	Chapter 8	Table 79 (OR1)	
446.c	In the case of partial use, the scope and coverage of the different methodologies used.	Chapter 8	Table 79 (OR1)	
447. Disclosure of key metrics				
447	Institutions shall disclose the following key metrics in a tabular format:			
447.a	The composition of their own funds and their own funds requirements as calculated in accordance with Article 92;		Table 1 (KM1)	
447.b	The total risk exposure amount as calculated in accordance with Article 92(3);		Table 1 (KM1)	
447.c	Where applicable, the amount and composition of additional own funds which the institutions are required to hold		Table 1 (KM1)	
447.d	Their combined buffer requirement which the institutions are required to hold		Table 1 (KM1)	
447.e	Their leverage ratio and the total exposure measure as calculated in accordance with Article 429		Table 1 (KM1)	
447.f	Information in relation to their liquidity coverage ratio		Table 1 (KM1)	
447.g	Information in relation to their net stable funding requirement		Table 1 (KM1)	
447.h	Their own funds and eligible liabilities ratios and their components, numerator and denominator			
448. Exposure to interest rate risk on positions not included in the trading book				
448.1	As from 28 June 2021, institutions shall disclose the following quantitative and qualitative information on the risks arising from potential changes in interest rates that affect both the economic value of equity and the net interest income of their non-trading book activities			
448.1.a	The changes in the economic value of equity calculated under the six supervisory shock scenarios for the current and previous disclosure periods;	Sections 7.4. and 7.4.1.	Table 77 (IRRBB1)	Risk, compliance & conduct management chapter
448.1.b	The changes in the net interest income calculated under the two supervisory shock scenarios for the current and previous disclosure periods;	Sections 7.4. and 7.4.1.	Table 77 (IRRBB1)	Risk, compliance & conduct management chapter
448.1.c	A description of key modelling and parametric assumptions used to calculate changes in the economic value of equity and in the net interest income	Sections 7.4. and 7.4.1.	Table 77 (IRRBB1)	
448.1.d	An explanation of the significance of the risk measures disclosed under points (a) and (b) of this paragraph and of any significant variations of those risk measures since the previous disclosure reference date;	Sections 7.4. and 7.4.1.	Table 77 (IRRBB1)	
448.1.e	The description of how institutions define, measure, mitigate and control the interest rate risk of their nontrading book activities for the purposes of the competent authorities' review	Sections 7.4. and 7.4.1.	Table 77 (IRRBB1)	
448.1.e.i	A description of the specific risk measures that the institutions use to evaluate changes in their economic value of equity and in their net interest income;	Sections 7.4. and 7.4.1.	Table 77 (IRRBB1)	

Article	Brief Description	2023 P3DR Location	Tables	2023 Annual Report Location
448.1.e.ii	A description of the key modelling and parametric assumptions used in the institutions' internal measurement systems that would differ from the common modelling and parametric assumptions referred to in Article 98(5a) of Directive 2013/36/EU for the purpose of calculating changes to the economic value of equity and to the net interest income, including the rationale for those differences;	Sections 7.4. and 7.4.1.	Table 77 (IRRBB1)	
448.1.e.iii	A description of the interest rate shock scenarios that institutions use to estimate the interest rate risk	Sections 7.4. and 7.4.1.	Table 77 (IRRBB1)	
448.1.e.iv	The recognition of the effect of hedges against those interest rate risks, including internal hedges that meet the requirements laid down in Article 106(3)	Sections 7.4. and 7.4.1.	Table 77 (IRRBB1)	
448.1.e.v	An outline of how often the evaluation of the interest rate risk occurs	Sections 7.4. and 7.4.1.	Table 77 (IRRBB1)	
448.1.f	The description of the overall risk management and mitigation strategies for those risks;	Sections 7.4. and 7.4.1.	Table 77 (IRRBB1)	
448.1.g	Average and longest repricing maturity assigned to non-maturity deposits.	Sections 7.4. and 7.4.1.	Table 77 (IRRBB1)	
448.2	By way of derogation from paragraph 1 of this Article, the requirements set out in points (c) and (e)(i) to (e) (iv) of paragraph 1 of this Article shall not apply to institutions that use the standardised methodology or the simplified standardised methodology referred to in Article 84(1) of Directive 2013/36/EU.	Sections 7.4. and 7.4.1.	Table 77 (IRRBB1)	

449. Exposure to securitisation positions

449	Institutions calculating risk-weighted exposure amounts in accordance with Chapter 5 of Title II of Part Three or own funds requirements in accordance with Article 337 or 338 shall disclose the following information separately for their trading book and non-trading book activities:			
449.a	A description of their securitisation and re-securitisation activities, including their risk management and investment objectives in connection with those activities	Sections 6.1.1, 6.1.2 and 6.1.2		
449.b	The type of risks they are exposed to in their securitisation and re-securitisation activities by level of seniority of the relevant securitisation positions	Sections 6.1.3. and 6.2		
449.c	Their approaches for calculating the risk-weighted exposure amounts that they apply to their securitisation activities	Section 6.4.	Table 66 (SEC3)	
449.d	A list of SSPEs falling into any of the following categories, with a description of their types of exposures to those SSPEs, including derivative contracts.	N/A		
449.e	A list of any legal entities in relation to which the institutions have disclosed that they have provided support	N/A		
449.f	A list of legal entities affiliated with the institutions and that invest in securitisations originated by the institutions or in securitisation positions issued by SSPEs sponsored by the institutions;	N/A		
449.g	A summary of their accounting policies for securitisation activity, including where relevant a distinction between securitisation and re-securitisation positions;	Section 6.3.		
449.h	The names of the ECALs used for securitisations and the types of exposure for which each agency is used;	Section 6.2.2.		
449.i	A description of the Internal Assessment Approach as set out in Chapter 5 of Title II of Part Three,	6.4		
449.j	Separately for the trading book and the non-trading book, the carrying amount of securitisation exposures,		Table 60 (SEC1) Table 61 (SEC2)	
449.k	For the non-trading book activities, the following information:		Table 67 (SEC3) Table 65 (SEC4)	
449.k.i	The aggregate amount of securitisation positions where institutions act as originator or sponsor and the associated risk-weighted assets and capital requirements by regulatory approaches		Table 67 (SEC3) Table 65 (SEC4)	
449.k.ii	The aggregate amount of securitisation positions where institutions act as investor and the associated risk weighted assets and capital requirements by regulatory approaches		Table 67 (SEC3) Table 65 (SEC4)	

Article	Brief Description	2023 P3DR Location	Tables	2023 Annual Report Location
449.l	For exposures securitised by the institution, the amount of exposures in default and the amount of the specific credit risk adjustments made by the institution during the current period, both broken down by exposure type.		Table 65 (SEC5)	
449a. Disclosure of environmental, social and governance risks (ESG risks)				
449a	From 28 June 2022, large institutions which have issued securities that are admitted to trading on a regulated market of any Member State, as defined in point (21) of Article 4(1) of Directive 2014/65/EU, shall disclose information on ESG risks, including physical risks and transition risks, as defined in the report referred to in Article 98(8) of Directive 2013/36/EU.	Chapter 9	Table 87 (ESG 1) Table 88 (ESG 2) Table 89 (ESG 3) Table 90 (ESG 4) Table 91 (ESG 5) Table 95 (ESG 10)	
450. Remuneration policy				
450	Remuneration disclosures (Material Risk Takers):	Chapter 11	Table 96 (REM1) Table 97 (REM2) Table 99 (REM3) Table 100 (REM4) Table 98 (REM5)	Corporate Governance Chapter
451. Leverage				
451.1	Institutions that are subject to Part Seven shall disclose the following information regarding their leverage ratio.			
451.1.a	The leverage ratio and how the institutions apply Article 499(2);		Appendix XIII (LR2)	
451.1.b	A breakdown of the total exposure measure referred to in Article 429(4), as well as a reconciliation of the total exposure measure with the relevant information disclosed in published financial statements;		Appendix XII (LR1) Appendix XIII (LR2) Appendix XIV (LR3)	
451.1.c	Where applicable, the amount of exposures and the adjusted leverage ratio		Appendix XIII (LR2)	
451.1.d	A description of the processes used to manage the risk of excessive leverage;	Section 11.4	Table 12	
451.1.e	A description of the factors that had an impact on the leverage ratio during the period to which the disclosed leverage ratio refers.	Section 11.4	Table 12	
451.2	Public development credit institutions as defined in Article 429a(2) shall disclose the leverage ratio without the adjustment to the total exposure measure determined in accordance with point (d) of the first subparagraph of Article 429a(1).		Appendix XIII (LR2)	
451.3	Large institutions shall disclose the leverage ratio and the breakdown of the total exposure measure.		Appendix XIII (LR2)	
451a. Use of the IRB Approach to credit risk				
451a.1	Institutions that are subject to Part Six shall disclose information on their liquidity coverage ratio, net stable funding ratio and liquidity risk management in accordance with this Article.	Sections 10.1.1. and 10.1.2.		
451a.2	Institutions shall disclose the following information in relation to their liquidity coverage ratio as calculated in accordance with the delegated act referred to in Article 460(1)			
451a.2a	The average or averages, as applicable, of their liquidity coverage ratio based on end-of-the-month observations over the preceding 12 months for each quarter of the relevant disclosure period		Appendix XXVI (LIQ1)	
451a.2b	The average or averages, as applicable, of total liquid assets, after applying the relevant haircuts, included in the liquidity buffer pursuant to the delegated act referred to in Article 460(1), based on end-of-the-month observations over the preceding 12 months for each quarter of the relevant disclosure period, and a description of the composition of that liquidity buffer		Appendix XXVI (LIQ1)	
451a.2c	the averages of their liquidity outflows, inflows and net liquidity outflows as calculated in accordance with the delegated act referred to in Article 460(1), based on end-of-the-month observations over the preceding 12 months for each quarter of the relevant disclosure period and the description of their composition		Appendix XXVI (LIQ1)	

Article	Brief Description	2023 P3DR Location	Tables	2023 Annual Report Location
451a.3	Institutions shall disclose the following information in relation to their net stable funding ratio as calculated in accordance with Title IV of Part Six		Appendix XXVIII (LIQ2)	
451a.4	Institutions shall disclose the arrangements, systems, processes and strategies put in place to identify, measure, manage and monitor their liquidity risk in accordance with Article 86 of Directive 2013/36/EU.	Section 10.1.		Risk, compliance & conduct management chapter
452. Use of the IRB Approach to credit risk				
452	Institutions calculating the risk-weighted exposure amounts under the IRB Approach shall disclose the following information:			
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452.b	For each exposure class referred to in Article 147, the percentage of the total exposure value of each exposure class subject to the Standardised Approach or to the IRB Approach, as well as the part of each exposure class subject to a roll-out plan.		Appendix IX (CR6-A)	
452.c	The control mechanisms for rating systems at the different stages of model development, controls and changes, which shall include	Sections 3.3. and 4.5.		
452.c.i	The relationship between the risk management function and the internal audit function;	Sections 3.3. and 4.5.		
452.c.ii	The rating system review;	Sections 3.3. and 4.5.		
452.c.iii	The procedure to ensure the independence of the function in charge of reviewing the models from the functions responsible for the development of the models;	Sections 3.3. and 4.5.		
452.c.iv	The procedure to ensure the accountability of the functions in charge of developing and reviewing the models;	Sections 3.3. and 4.5.		
452.d	The role of the functions involved in the development, approval and subsequent changes of the credit risk models;	Sections 3.3.2. and 10.3.		
452.e	The scope and main content of the reporting related to credit risk models;		Appendix XVII (CRE)	
452.f	A description of the internal ratings process by exposure class, including the number of key models used with respect to each portfolio and a brief discussion of the main differences between the models within the same portfolio, covering:		Appendix XVII (CRE)	
452.f.i	The definitions, methods and data for estimation and validation of PD		Appendix XVII (CRE)	
452.f.ii	Were applicable, the definitions, methods and data for estimation and validation of LGD		Appendix XVII (CRE)	
452.f.iii	Where applicable, the definitions, methods and data for estimation and validation of conversion factors		Appendix XVII (CRE)	
452.g	As applicable, the following information in relation to each exposure class referred to in Article 147:		Tables 24 - 26 (CR6) Table 35 (CR4)	
452.g.i	Their gross on-balance-sheet exposure;		Tables 24 - 26 (CR6) Table 35 (CR4)	
452.g.ii	Their off-balance-sheet exposure values prior to the relevant conversion factor;		Tables 24 - 26 (CR6) Table 35 (CR4)	
452.g.iii	Their exposure after applying the relevant conversion factor and credit risk mitigation;		Tables 24 - 26 (CR6) Table 35 (CR4)	
452.g.iv	Any model, parameter or input relevant for the understanding of the risk weighting and the resulting risk exposure amounts disclosed across a sufficient number of obligor grades (including default) to allow for a meaningful differentiation of credit risk;		Tables 24 - 26 (CR6) Table 35 (CR4)	

Article	Brief Description	2023 P3DR Location	Tables	2023 Annual Report Location
452.g.v	Separately for those exposure classes in relation to which institutions have received permission to use own LGDs and conversion factors for the calculation of risk-weighted exposure amounts, and for exposures for which the institutions do not use such estimates, the values referred to in points (i) to (iv) subject to that permission;		Tables 24 - 26 (CR6) Table 35 (CR4)	
452.h	Institutions' estimates of PDs against the actual default rate for each exposure class over a longer period		Appendix XIV (CR9)	
453. Use of credit risk mitigation techniques				
453	Institutions applying credit risk mitigation techniques shall disclose the following information:			
453.a	Use of on and off-balance sheet netting.	Sections 4.7. and 5.7.	Table 47 (CR3), Table 48, 49 (CR7) Table 50 (CR7-A), Table 57(CCR5)	Risk, compliance & conduct management chapter
453.b	How collateral valuation is managed.	Section 4.7.		Risk, compliance & conduct management chapter
453.c	Description of types of collateral used by the institution.	Section 4.7.		Risk, compliance & conduct management chapter
453.d	Main types of guarantor and credit derivative counterparty, creditworthiness.	Sections 4.7. and 4.7.1.	Table 47 (CR3) Table 48 Table 49 (CR7) Table 50 (CR7-A)	Risk, compliance & conduct management chapter
453.e	Market or credit risk concentrations within risk mitigation exposures.	Section 4.7.	Table 46	
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455.a.i	Disclosure of the characteristics of the market risk models used;	Sections 7.2, 7.3.1, 7.3.2. and 7.3.3.		

Article	Brief Description	2023 P3DR Location	Tables	2023 Annual Report Location
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455.a.iii	Descriptions of stress tests applied to the portfolios;	Sections 7.3.4. and 7.3.5.		
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Appendix IV -Glossary

Advanced IRB approach: all the credit risk parameters are estimated internally by the entity, including the CCFs for calculating the EAD.

Alignment metrics: decarbonization targets to align a portfolio's emissions with the Paris Agreement targets.

ALM (Asset liability management): a series of techniques and procedures to ensure correct decision-making on investments and funding at the entity, taking into consideration the interrelation between the various on- balance-sheet and off- balance-sheet items.

AMA (Advanced Measurement Approach): an operational risk measurement technique set forth in Basel capital adequacy norms, based on an internal modelling methodology.

AQR (Asset Quality Review): asset quality review exercise performed by the European Central Bank.

Asset-backed commercial paper (ABCP) programme: a securitisation programme in which the securities issued predominantly take the form of commercial paper with an original maturity of one year or less.

AT1 (Additional Tier 1): capital which consists primarily of hybrid instruments.

Backtesting: the use of historical data to monitor the performance of the risk models.

Basel III: a set of amendments to the Basel II regulations published in December 2010, scheduled to take effect in January 2013 and to be gradually implemented until January 2019.

Basic IRB approach: all the risk parameters are determined by the regulator except for the probability of default, which is estimated internally by the bank. The CCFs required to calculate EAD are determined by the regulator.

BCBS: Basel Committee on Banking Supervision.

BEI (banking environment initiative): group of global banks, convened by the University of Cambridge Institute for Sustainability Leadership (CISL), committed to pioneering actionable pathways towards a sustainable economy.

BIS: Bank for International Settlements.

BRRD (Bank Recovery and Resolution Directive): approved in 2014, the BRRD establishes the framework for the recovery and resolution of banks with the objective of minimising the costs for taxpayers.

CBE 2/2016: Banco de España Circular of 2 February 2016 on the supervision and solvency of credit institutions, which completes the adaptation to Spanish law of Directive 2013/36/EU and Regulation (EU) No 575/2013. The new Circular repeals Banco de España Circular 3/2008 to credit institutions on the determination and control of minimum own funds (except the parts referred to in Circular 5/2008 regarding the regime established therein) and section 11 of Banco de España Circular 2/2014.

CBE 3/2008: Banco de España Circular of 22 May 2008 on the calculation and control of minimum capital requirements.

CBE 4/2004: Banco de España Circular of 22 December 2004 on public and confidential financial reporting standards and model financial statement forms.

CBE 9/2010: Banco de España Circular of 22 December 2010 amending Circular 3/2008.

CCAR (Comprehensive Capital Analysis Review): a framework introduced by the Federal Reserve to review the capital planning and adaptation processes of the main US financial institutions.

CCF (Credit conversion factor): a conversion factor used for converting off-balance-sheet credit risk balances into credit exposure equivalents. Under the AIRB approach Santander applies the CCFs in order to calculate the EAD value of the items representing contingent liabilities and commitments.

CCoB (Conservation Buffer): a capital buffer equal to 2.5% of risk-weighted assets (and comprised fully of high-quality liquid assets) to absorb losses generated from the business.

CCP (Central Counterparty Clearing House): entity defined in article 2.1 of Regulation (EU) no. 648/2012.

CCyB (Counter Cyclical Buffer): a buffer whose objective is to mitigate or prevent cyclical risks arising from excessive credit growth at aggregate level. Accordingly, the CCB is designed to build up capital buffers during expansionary phases with a dual objective: to enhance the solvency of the banking system and to stabilise the credit cycle.

CET1 (Common Equity Tier 1): the highest quality capital of a bank.

CoCos (Contingent Convertible Bonds): debt securities that are convertible into capital if a specified event occurs.

Common equity: a capital measure that considers, among other components, ordinary shares, the share premium and retained profits. It does not include preference shares.

Companies excluded from EU Paris-aligned Benchmarks: companies that have a certain percentage of their revenues derived from activities considered polluting are not included in the benchmarks aligned with the Paris agreements.

Concentration risk: the risk of loss due to large exposures to a small number of debtors to which the entity has lent money.

Confidence level: in the context of value at risk (VaR) and economic capital, this is the level of probability that the actual loss will not exceed the potential loss estimated by value at risk or economic capital.

COP 21: United Nations Climate Change Conference held in 2015.

Cost of capital: The minimum return required by investors (shareholders) as compensation for the opportunity cost and risk assumed when investing their capital in the entity. It represents a "cut-off rate" or "minimum return" to be achieved, enabling analysis of the activity of business units and evaluation of their efficiency

Counterparty credit risk: the risk that a counterparty will default on a derivatives contract before its maturity. The risk could arise from derivatives transactions in the trading portfolio or the banking portfolio and, as with other credit exposures, it is subject to a credit limit.

Credit default swap: a derivatives contract that transfers the credit risk of a financial instrument from the buyer (who

receives the credit protection) to the seller (who guarantees the solvency of the instrument).

Credit risk: the risk that customers are unable to meet their contractual payment obligations. Credit risk includes default, country and settlement risk.

Credit risk mitigation: a technique for reducing the credit risk of a transaction by applying coverage such as personal guarantees or collateral.

CRM (Comprehensive Risk Measure): the estimate of risk in the correlation trading portfolio.

CRR (Capital Requirements Regulation) and CRD IV (Capital Requirements Directive): directive and regulation transposing the Basel II framework into European Union law.

CSP: Commercial strategic plan.

CSRD (Corporate Sustainability Reporting Directive): EU directive that require large companies and listed companies to publish regular reports on the social and environmental risks they face and the impact of their activities.

CVA (Credit Valuation Adjustment): the difference between the value of the risk-free portfolio and the true portfolio value, taking into account counterparty credit risk.

DEBA: European Banking Authority. Created in 2010, it entered into operation in 2011. The EBA acts as a coordinator between the national entities responsible for safeguarding values such as the stability of the financial system, transparency of markets and financial products, and the protection of bank customers and investors.

Default risk: the risk that counterparties will not meet their contractual payment obligations.

Derivatives: financial instruments that derive their value from one or more underlying assets, e.g. bonds or currencies.

DLGD (Downturn LGD): the LGD estimated in adverse economic conditions.

DNSH (Do not significantly harm): principle that requires an assessment to ensure that the investment does not adversely affect one or more of the six environmental objectives defined in the EU Taxonomy.

DTA: deferred tax assets.

D-SIIs: Domestic Systemically Important Institutions.

EAD (Exposure at Default): the amount that the entity could lose in the event of counterparty default.

ECAI: External Credit Assessment Institution, such as Moody's Investors Service, Standard & Poor's Ratings Group and Fitch Group.

ECB Governing Council: the main decision-making body of the ECB, consisting of all members of the Executive Board and the governors of the national central banks of the Euro area countries.

ECB Supervisory Board: the body which undertakes the planning and execution of the ECB's supervisory tasks, carrying out preparatory work and making proposals for decisions for approval by the ECB Governing Board.

Economic capital: the figure that demonstrates to a high degree of certainty the quantity of capital resources that

Santander needs at a given point in time to absorb unexpected losses arising from its current exposure.

EDTF (Enhanced Disclosure Task Force): task force that issues recommendations to enhance the transparency of financial institution disclosures to the market.

EL (Expected loss): a regulatory calculation of the average amount expected to be lost on an exposure, using a 12-month time horizon. EL is calculated by multiplying probability of default (a percentage) by exposure at default (an amount) and LGD (a percentage).

Energy efficiency: energy consumption of a collateral in kWh/m².

EPC label: letter code representing the energy performance of the collateral, from A (the most efficient from the point of view of energy saving) to G (the least efficient).

EP score: energy consumption of a collateral in kWh/m².

EPS (earnings per share): an indicator used to measure a company's profitability over a specified period of time. EPS is calculated by dividing the company's profit for the period by the number of shares comprising its share capital.

Equator Principles: common baseline and risk management framework for financial institutions to identify, assess and manage environmental and social risks when financing projects.

ESCC Policy (Environmental, Social & Climate Change): Grupo Santander's criteria for (i) investing in entities, and/or (ii) providing financial products and/or services to customers involved in oil & gas, power generation and transmission, mining, metals and soft commodities activities.

ESG (Environmental, Social and Governance): is an evaluation of a firm's collective conscientiousness for social and environmental factors. It is typically a score that is compiled from data collected surrounding specific metrics related to intangible assets within the enterprise. It can be considered a form of corporate social credit score.

ESG risks: environmental, social and governance risks.

EU Taxonomy: Classification system, developed by the European Commission, that establishes a list of sustainable economic activities from an environmental point of view available to companies and investors.

Exposure: the gross amount that the entity could lose if the counterparty is unable to meet its contractual payment obligations, without taking into consideration any guarantees, credit enhancements or credit risk mitigation transactions.

Financed emissions: greenhouse gas emissions that are associated with a given loan or provision of financial services to a counterparty. It breaks down by three scopes:

- **Scope 1:** direct GHG emissions that occur from sources owned or controlled by the reporting company, such as emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.
- **Scope 2:** indirect GHG emissions from the generation of purchased or acquired electricity, steam, heating, or cooling consumed by the reporting company.
- **Scope 3:** all other indirect GHG emissions (not included in Scope 2) that occur in the value chain of the company.

First-loss tranche of a securitisation: the most subordinated tranche of a securitisation, which is the first tranche to bear losses on the securitised exposures and therefore provides protection for the second-loss tranche and, where applicable, the senior tranches.

FSB (Financial Stability Board): international institution that monitors and makes recommendations on the global financial system.

FSC (forest stewardship council): global not-profit organization dedicated to promoting responsible and sustainable forest management.

Fully-Loaded: denotes full compliance with Basel III solvency requirements (which become mandatory in 2019).

GHG: greenhouse gas.

GHOS (Group of Governors and Heads of Supervision): supervisory body of the Basel Committee.

Greenwashing: the practice of gaining an unfair competitive advantage by marketing a financial product as environmentally friendly when, in fact, it does not meet basic environmental requirements.

Global rating tools: these assign a rating to each customer using a quantitative or automatic module.

G-SIB (Global Systemically Important Bank) or SIFI (Systemically Important Financial Institution): financial institutions which, because of their size, complexity and systemic interconnectedness, if allowed to fail could cause major disruptions to the financial system and economic activity.

HQLA: High Quality Liquid Assets.

HVCRE: High Volatility Commercial Real Estate.

ICAAP: internal capital adequacy assessment process.

IFRS: International Financial Reporting Standards.

ILAAP (Internal Liquidity Adequacy Assessment Process): process for the identification, measurement, management and control of liquidity implemented by the entity in compliance with article 86 of Directive 2013/36/EU.

Implicit LGD: this is used to back-test the regulatory LGD estimates. It is based on taking NPLMV as proxy for the Observed Loss, and then dividing the Observed Loss by the PD gives an implicit or observed LGD that can be compared to the regulatory LGD.

Interest rate risk: exposure of the bank's financial position to adverse movements in interest rates. Acceptance of this risk is a normal part of the banking business and can be a source of significant returns and creation of shareholder value.

Internal ratings-based approach (IRB): an approach based on internal ratings for the calculation of risk-weighted exposures.

Internal validation: a pre-requisite for the supervisory validation process. A sufficiently independent specialised unit of the entity obtains an expert opinion on the adequacy of the internal models for the relevant internal and regulatory purposes, and issues a conclusion on their usefulness and effectiveness.

Investment entity of a securitisation: any institution or subject, other than the originator or sponsor institution, holding a securitisation position.

IRC (Incremental Risk Charge): an estimate of the credit risk associated with unsecuritised positions in the trading book.

IRP: This report, titled Pillar 3 Disclosures in the English version. (the acronym is for the Spanish Informe de Relevancia Prudencial).

IRBBB: Interest Rate Risk in the Banking Book.

ISDA (International Swaps and Derivatives Association): OTC derivative transactions between financial institutions are usually carried out under a master agreement established by this organisation which details the definitions and general terms and conditions of the contract.

ITS: Implementing Technical Standards.

JST (Joint Supervisory Team): one of the main forms of cooperation between the ECB and the national supervisors.

LCR (Liquidity Coverage Ratio): a ratio that ensures that a bank has an adequate stock of unencumbered high quality liquid assets that can be converted, easily and immediately, into cash in private markets, to meet its liquidity needs for a 30 calendar day liquidity stress scenario.

LDP: low-default portfolio.

Leverage Ratio: a complementary (non-risk based) regulatory capital measure that attempts to guarantee banks' financial resilience. The ratio is calculated by dividing eligible Tier 1 capital by exposure.

LGD (Loss Given Default): the portion of EAD not recovered at the end of the loan recovery process. It is equal to 1 minus the recovery rate (i.e.: $LGD = 1 - \text{recovery rate}$). The definition of loss used to estimate LGD must be a definition of economic loss, not an accounting loss.

Liquidity risk: the risk that Santander might be unable to meet all its payment obligations when they fall due or might only be able to meet them at an excessive cost.

LTV (Loan to value): amount of credit extended / value of guarantees and collateral.

Mark-to-market approach: in regulatory terms, an approach for calculating the value of the credit risk exposure of counterparty derivatives (present market value plus a margin, i.e. the amount that takes into consideration the potential future increase in market value).

Market risk: the risk arising from uncertainty regarding changes in market prices and rates (including interest rates, share prices, exchange rates and commodity prices), the correlations between them and their levels of volatility.

MDA: Maximum Distributable Amount.

Mezzanine tranche of a securitisation: a securitisation position that is subordinated to the senior securitisation position, senior to the first-loss tranche and subject to a risk weight of less than 1250% and more than 25%.

Model validation: the process of assessing the effectiveness of a credit risk model using a pre-defined set of criteria, such as the model's discriminatory power, the appropriateness of the inputs and expert opinions.

MPE (Multiple Point of Entry): a resolution approach based on multiple points of entry.

MREL (Minimum Requirement of Eligible Liabilities): the final loss absorption requirement established in European legislation for institutions based on an assessment of their resolution plans.

MSS (Minimum Social Safeguards): due diligence to avoid any negative impacts and comply with the human and labour rights standards.

Netting: a bank's ability to reduce its credit risk exposure by setting off the value of its rights against its obligations with the same counterparty.

Non-standardised customers: customers who have been assigned a risk analyst due to the risk assumed. This category includes wholesale banking customers, financial institutions and certain enterprises in retail banking.

NSFR (Net Stable Funding Ratio): a ratio designed to ensure a bank has a balanced balance sheet structure, in which stable funding requirements are funded by stable liabilities.

NZAMi (Net Zero Asset Management initiative): international group of asset managers committed to supporting the goal of net zero greenhouse gas emissions by 2050.

NZBA (Net-Zero Banking Alliance): group of 43 of the world's leading banks with a focus on delivering the banking sector's ambition to align its climate commitments with the Paris Agreement goals.

Operational risk: the risk of incurring losses with regard to employees, contractual specifications and documentation, technology, infrastructure failures and disasters, projects, external influences and customer relations. This definition includes legal and regulatory risk but does not include business and reputational risk.

Originator institution of a securitisation: is an institution that:

- itself or through related entities was, directly or indirectly, involved in the original agreement that created the obligations or potential obligations of the debtor or potential debtor giving rise to the exposure being securitised; or
- purchases a third party's exposures for its own account and then securitises them.

Over-the-counter (OTC): off-exchange, that is, trading done between two parties (in derivatives, for example) without the supervision of an organised exchange.

Paris Agreement: international treaty on climate change. It stipulates that the involved parties will take the necessary actions to limit further increases in global average temperatures to well below 2°C and ideally to below 1.5°C.

PCAF (Partnership for Carbon Accounting Financials): initiative created in 2019 that aims to establish an international methodology for measuring and disclosing financed greenhouse gas emissions to financial institutions.

Phased-in: refers to compliance with current solvency requirements bearing in mind the transitional period for Basel III implementation.

Physical risk: risk of losses arising from any negative financial impact on the institution stemming from the current or prospective impacts of the physical effects of environmental factors on the institution's counterparties or invested assets.

- **Acute:** physical risks that include harsh meteorological events such as cyclones, hurricanes or floods, as well as the increased severity of these.
- **Chronic:** physical risks that include longer-term shifts in climate patterns (e.g., sustained higher temperatures) that may cause sea level rise or chronic heat waves.

Pillar 1 – Minimum Capital Requirements: the part of the New Basel Capital Accord that establishes the minimum regulatory capital requirements for credit, market and operational risk.

Pillar 2 – Supervisory Review Process: an internal capital adequacy assessment process reviewed by the supervisor with possible additional capital requirements for risk that are not included in Pillar 1 and the use of more sophisticated methodologies than Pillar 1.

Pillar 3 – Market Discipline: this pillar is designed to complete the minimum capital requirements and the supervisory review process and, accordingly, enhance market discipline through the regulation of public disclosure by the entities.

Point-in-time (PIT) PD: the probability of default at a particular point in time or in particular state of the economic cycle.

Probability of default (PD): this represents the likelihood that a customer or a transaction will fall into default. It is the probability that an event (the default) will occur within a given time horizon.

QIS (Quantitative Impact Study): ad-hoc requests by the EBA for studies analysing and calibrating the impact of new changes in regulation.

Qualifying central counterparty (QCCP): a central counterparty that has either been authorised under article 14 of Regulation (EU) no. 648/2012, or been recognised under article 25 of said Regulation.

Rating: the result of the objective assessment of the counterparties' future economic situation based on current characteristics and assumptions. The methodology for assigning the ratings depends largely on the type of customer and the available data. A wide range of methodologies for assessing credit risk is applied, such as expert systems and econometric methods.

RCP (representative concentration pathways): climate change projection scenarios estimated by the Intergovernmental Panel on Climate Change (IPCC).

RDL: Royal Decree Law.

Regulatory Capital requirements: the minimum amount of capital the regulatory authority requires the entity to hold to safeguard its capital adequacy, based on the amount of credit, market and operational risk.

Eligible capital: the volume of capital the regulatory authority considers eligible to meet capital requirements. The main components of eligible capital are accounting capital and reserves.

Risk appetite: the amount and type of risks considered reasonable to assume in the execution of its business strategy, so that Santander can maintain its ordinary activity in the event of unexpected circumstances. Severe scenarios are taken into account that could have a negative impact on the levels of capital, liquidity, profitability and/or the share price.

Risk limits: approval tools for certain risk types and levels.

Risk-weighted assets (RWA): calculated by assigning a level of risk, expressed as a percentage (risk weighting), to an exposure in accordance with the relevant rules under the standardised approach or the IRB approach.

RoRAC: Return on Risk Adjusted Capital.

RoRWA: Return on Risk-Weighted Assets.

ROTA (Return On Total Assets): ratio between net income and total average assets, or the amount of financial and operational income a company receives in a financial year as compared to the average of that company's total assets. The ratio is considered to be an indicator of how effectively a company is using its assets to generate earnings.

RPK: revenue passenger-kilometer.

RSPO (roundtable on sustainable palm oil): established in 2004 with the objective of promoting the growth and use of sustainable palm oil products through global standards and multistakeholder governance.

RTS: Regulatory Technical Standards.

RWA density: ratio that compares institutions' total weighted assets and their total balance sheet, and can be interpreted as an average relative risk measure -according to regulatory criteria- of a bank's overall operations.

SDG (Sustainable Development Goals): universal set of goals, targets and indicators that UN member states will be expected to use to frame their agendas and policies over the next years.

Senior tranche of a securitisation: all tranches other than the first loss or mezzanine tranches. Within the senior tranche, the super senior tranche is the top tranche in the priority of payments, without taking into account for these purposes of any amounts owed under interest rate or currency derivatives, brokerage charges or similar payments.

Securitisation: a financial transaction or scheme whereby the credit risk associated with an exposure or pool of exposures is divided into tranches, with both of the following characteristics:

- Payments for the transaction or scheme are dependent upon the performance of the exposure or pool of exposures.
- The subordination of the tranches determines the distribution of losses during the ongoing life of the transaction or scheme

Securitisation position: exposures arising from securitisations. For these purposes, the providers of credit risk hedges for specific securitisation positions are considered to hold positions in the securitisation.

SFT (Securities Financing Transactions): any transaction where securities are used to borrow cash, or vice versa. They

mostly include repurchase agreements (repos), securities lending activities and sell/buy-back transactions.

Slotting Criteria: an approach used for calculating risk weights for specialised lending exposures, which consists of mapping the internal ratings to five supervisory categories, each with its own specific risk weight.

Special-purpose vehicle (SPV): a company created for the sole purpose of acquiring certain assets or derivative exposures and of issuing liabilities that are associated solely with these assets or exposures.

Sponsor institution of a securitisation: an institution other than the originator that establishes and manages an asset-backed commercial paper programme, or other securitisation scheme, that purchases exposures from third-party entities and to which liquidity or credit facilities or other credit enhancements are generally granted.

SRB (Single Resolution Board): the single resolution authority, which is the second pillar of the Banking Union after the Single Supervisory Mechanism.

SRB: Systemic Risk Buffer.

SREP (Supervisory Review and Evaluation Process): a review of the systems, strategies, processes and mechanisms applied by credit institutions and of their risks.

SRF: Single Resolution Fund.

SRM: Single Resolution Mechanism.

SSM (Single Supervisory System): the system of banking supervision in Europe. It comprises the ECB and the competent supervisory authorities of the participating EU countries.

Standardised approach: an approach for calculating credit risk capital requirements under Pillar I of Basel II. Under this approach, the risk weightings used in the capital calculation are determined by the regulator.

Standardized customers: customers which have not been expressly assigned a risk analyst. This category generally includes individuals, individual entrepreneurs and retail banking enterprises not classified as non-standardized customers.

Stress testing: used to describe various techniques for measuring the potential vulnerability to exceptional but plausible events.

Stressed VaR: measures the level of risk in stressed historical or simulated market situations.

Sustainable Finance and Investment Classification System (SFICS): internal guide with harmonized criteria to classify green, social and sustainable assets in all the Group's units and businesses.

Synthetic securitisation: transactions that involve a basket of credit swap agreements and bonds serving as collateral. They are called synthetic as rather than containing physical bonds, they carry credit derivatives, also known as synthetic contracts.

TCFD (Task Force on Climate-related Financial Disclosures): created by the Financial Stability Board to improve and increase reporting of climate-related financial information.

tCS: tonnes of crude steel.

Through-the-cycle (TTC) PD: probability of default adjusted to a full economic cycle. It may be taken as a long-term average of the point-in-time PD.

Tier 1: core capital less hybrid instruments.

Tier 2: supplementary capital instruments, mainly subordinated debt and general loan loss allowances, which contribute to the robustness of financial institutions.

TLAC (Total Loss Absorbency Capacity): an additional requirement to the minimum capital requirements set out in the Basel III framework for the absorption of total losses and effecting a recapitalisation that minimises any impact on financial stability, ensures the continuity of critical functions and avoids exposing taxpayers to losses. This requirement is applicable to all G-SIBs.

TLTRO: Targeted Longer-Term Refinancing Operations.

Traditional securitisations: a securitisation in which the economic interest in the securitized exposures is transferred by the transfer of ownership of those exposures from the originator to an SSPE (securitisation special purpose entity) or by sub-participation of an SSPE, where the securities issued do not represent payment obligations of the originator.

TPI (Transition Pathway Initiative): global initiative led by asset owners and supported by asset managers that assess the progress that companies are making on the transition to a low-carbon economy.

Transition risks: risk arising from political, legal, technological and market changes generated by the transition to a lower carbon economy.

TRIM: Targeted Review of Internal Models.

TSC (Technical screening criteria): specific requirements and thresholds that each activity covered in the EU Taxonomy will need to meet in order to be considered as significantly contributing to a sustainable objective.

TSR (Total Shareholder Return): relative performance of total shareholder returns. An indicator of the returns obtained by owners of a company over a period of one year on capital provided to the company.

UNEP FI: United Nations Environment Programme Finance Initiative.

Unexpected loss: unexpected losses (not covered by allowances) must be covered by capital.

VaR (Value at Risk): estimate of the potential losses that could arise in risk positions as a result of movements in market risk factors within a given time horizon and for a specific confidence level.

Value creation: Any profit generated above the cost of economic capital. Santander creates value when risk-adjusted returns (measured by RoRAC) exceed its cost of capital, and destroys value when the reverse occurs. It measures the risk-adjusted return in absolute terms (monetary units), supplementing the RoRAC result.

IMPORTANT INFORMATION

Non-IFRS and alternative performance measures

This report contains financial information prepared according to International Financial Reporting Standards (IFRS) and taken from our consolidated financial statements, as well as alternative performance measures (APMs) as defined in the Guidelines on Alternative Performance Measures issued by the European Securities and Markets Authority (ESMA) on 5 October 2015, and other non-IFRS measures. The APMs and non-IFRS measures were calculated with information from Grupo Santander; however, they are neither defined or detailed in the applicable financial reporting framework nor audited or reviewed by our auditors. We use these APMs and non-IFRS measures when planning, monitoring and evaluating our performance. We consider them to be useful metrics for our management and investors to compare operating performance between periods. APMs we use are presented unless otherwise specified on a constant FX basis, which is computed by adjusting comparative period reported data for the effects of foreign currency translation differences, which distort period-on-period comparisons. Nonetheless, the APMs and non-IFRS measures are supplemental information; their purpose is not to substitute IFRS measures. Furthermore, companies in our industry and others may calculate or use APMs and non-IFRS measures differently, thus making them less useful for comparison purposes. APMs using ESG labels have not been calculated in accordance with the Taxonomy Regulation or with the indicators for principal adverse impact in SFDR. For further details on APMs and Non-IFRS Measures, including their definition or a reconciliation between any applicable management indicators and the financial data presented in the consolidated financial statements prepared under IFRS, please see the 2022 Annual Report on Form 20-F filed with the U.S. Securities and Exchange Commission (the SEC) on 1 March 2023 (<https://www.santander.com/content/dam/santander-com/en/documentos/informacion-sobre-resultados-semestrales-y-anales-suministrada-a-la-sec/2023/sec-2022-annual-20-f-2022-en.pdf>), as well as the section "Alternative performance measures" of Banco Santander, S.A. (Santander) Q4 2023 Financial Report, published on 31 January 2024 (<https://www.santander.com/en/shareholders-and-investors/financial-and-economic-information#quarterly-results>). Underlying measures, which are included in this report, are non-IFRS measures.

The businesses included in each of our geographic segments and the accounting principles under which their results are presented here may differ from the businesses included and local applicable accounting principles of our public subsidiaries in such geographies. Accordingly, the results of operations and trends shown for our geographic segments may differ materially from those of such subsidiaries.

Non-financial information

This report contains, in addition to financial information, non-financial information (NFI), including environmental, social and governance-related metrics, statements, goals, commitments and opinions.

NFI is not audited nor reviewed by an external auditor. NFI is prepared following various external and internal frameworks, reporting guidelines and measurement, collection and verification methods and practices, which are materially different from those applicable to financial information and are in many cases emerging and evolving. NFI is based on various materiality thresholds, estimates, assumptions, judgments and underlying data derived internally and from third parties. NFI is thus subject to significant measurement uncertainties, may not be comparable to NFI of other companies or over time or across periods and its inclusion is not meant to imply that the information is fit for any particular purpose or that it is material to us under mandatory reporting standards. NFI is for informational purposes only and without any liability being accepted in connection with it except where such liability cannot be limited under overriding provisions of applicable law.

Forward-looking statements

Santander hereby warns that this report contains "forward-looking statements" as per the meaning of the U.S. Private Securities Litigation Reform Act of 1995. Such statements can be understood through words and expressions like "expect", "project", "anticipate", "should", "intend", "probability", "risk", "VaR", "RoRAC", "RoRWA", "TNAV", "target", "goal", "objective", "estimate", "future", "commitment", "commit", "focus", "pledge" and similar expressions. They include (but are not limited to) statements on future business development, shareholder remuneration policy and NFI.

While these forward-looking statements represent our judgement and future expectations concerning our business developments and results may differ materially from those anticipated, expected, projected or assumed in forward-looking statements.

In particular, forward looking statements are based on current expectations and future estimates about Santander's and third-parties' operations and businesses and address matters that are uncertain to varying degrees and may change, including, but not limited to:

- expectations, targets, objectives, strategies and goals relating to environmental, social, safety and governance performance, including expectations regarding future execution of Santander's and third-parties' (including governments and other public actors) energy and climate strategies, and the underlying assumptions and estimated impacts on Santander's and third-parties' businesses related thereto;
- Santander's and third-parties' approach, plans and expectations in relation to carbon use and targeted reductions of emissions, which may be affected by conflicting interests such as energy security;
- changes in operations or investments under existing or future environmental laws and regulations;

- changes in rules and regulations, regulatory requirements and internal policies, including those related to climate-related initiatives;
- our own decisions and actions including those affecting or changing our practices, operations, priorities, strategies, policies or procedures;
- and the uncertainty over the scope of actions that may be required by us, governments and others to achieve goals relating to climate, environmental and social matters, as well as the evolving nature of underlying science and industry and governmental standards and regulations.

In addition, the important factors described in this report and other risk factors, uncertainties or contingencies detailed in our most recent Form 20-F and subsequent 6-Ks filed with, or furnished to, the SEC, as well as other unknown or unpredictable factors, could affect our future development and results and could lead to outcomes materially different from what our forward-looking statements anticipate, expect, project or assume.

Forward-looking statements are therefore aspirational, should be regarded as indicative, preliminary and for illustrative purposes only, speak only as of the date of this report, are informed by the knowledge, information and views available on such date and are subject to change without notice. Santander is not required to update or revise any forward-looking statements, regardless of new information, future events or otherwise, except as required by applicable law. Santander does not accept any liability in connection with forward-looking statements except where such liability cannot be limited under overriding provisions of applicable law.

Not a securities offer

This report and the information it contains does not constitute an offer to sell nor the solicitation of an offer to buy any securities.

Past performance does not indicate future outcomes

Statements about historical performance or growth rates must not be construed as suggesting that future performance, share price or results (including earnings per share) will necessarily be the same or higher than in a previous period. Nothing in this report should be taken as a profit and loss forecast.

Third Party Information

In this report, Santander relies on and refers to certain information and statistics obtained from publicly-available information and third-party sources, which it believes to be reliable. Neither Santander nor its directors, officers and employees have independently verified the accuracy or completeness of any such publicly-available and third-party information, make any representation or warranty as to the quality, fitness for a particular purpose, non-infringement, accuracy or completeness of such information or undertake any obligation to update such information after the date of this report. In no event shall Santander be liable for any use by any party of, for any decision made or action taken by any party in reliance upon, or for inaccuracies or errors in, or omission from, such publicly-available and third-party information contained herein. Any sources of publicly-available information and third-party information referred or contained herein retain all rights with respect to such information and use of such information herein shall not be deemed to grant a license to any third party.

