

2020

Pillar 3 | Disclosure Report





Santander



Pillar 3 - Disclosures Report

Pillar 3





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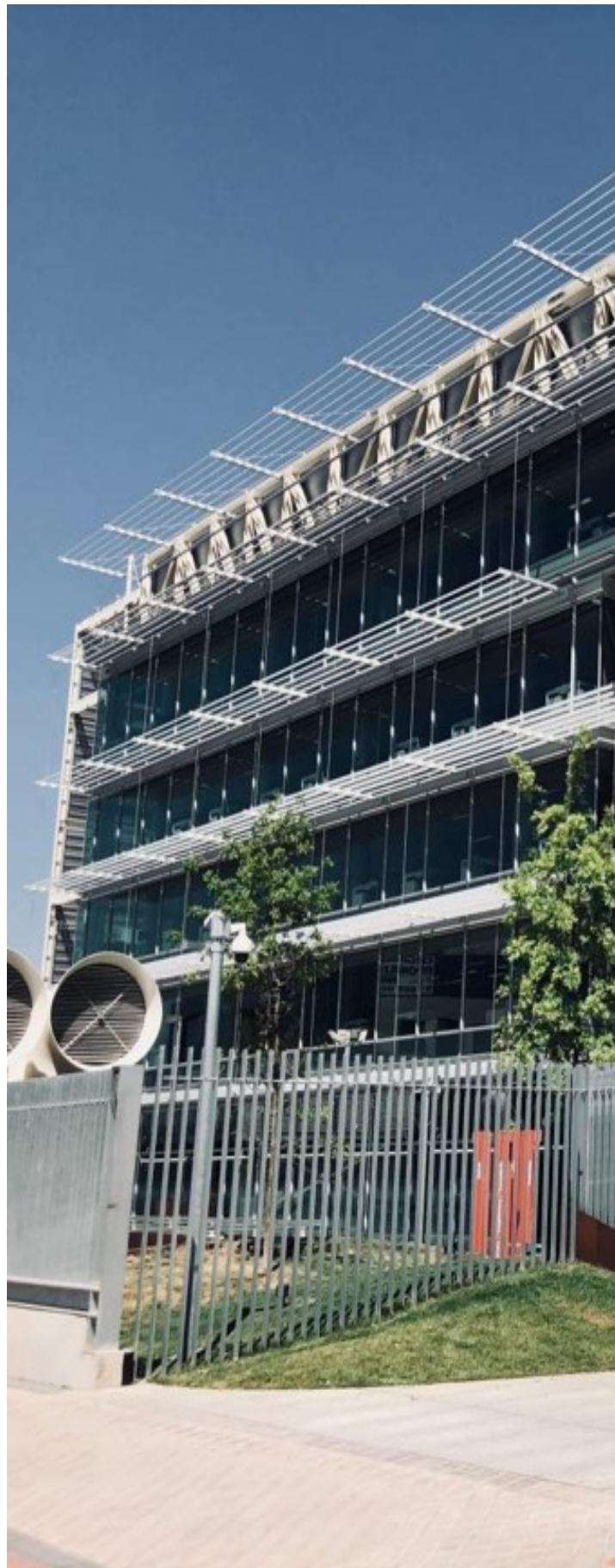


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Santander



1. Introduction

1.1. Executive summary

Santander is one of the largest banks in the eurozone. As of December 2020, we had EUR 1,508,250 million of assets and EUR 1,056,127 million of total funds. Our market capitalization had reached EUR 44,011 million.

Our purpose is to help people and businesses prosper in a way that is Simple, Personal and Fair. We do not merely meet our legal and regulatory obligations, but also aspire to exceed expectations. We focus on areas where our activity can have the greatest impact, helping economic growth in an inclusive and sustainable way.

We engage in all types of typical banking activities, operations and services. Our scale, business model and diversification drive our aim to be the best open digital financial services platform, acting responsibly and earning the lasting loyalty of our stakeholders (customers, shareholders, people and communities).

In 2020, against the backdrop of the pandemic, our commitment to our stakeholders was even stronger:

- Our priority was to safeguard the health and safety of our 191,189 employees, by implementing measures such as redefining our way of working, with more than 100,000 employees working from home at the peak of the pandemic, and gradual returns to the workplaces amid de-escalation. We followed local governments' recommendations at all times and based our procedures on three pillars: developing and implementing of health and safety protocols, prioritizing the health of our employees, and tracking and tracing (through health apps).
- For our 148 million customers, we strengthened our proposition, and implemented support measures to ensure the necessary financial assistance through pre-approved lines of credit, payment deferrals and special policies, as well as facilitating the granting of state-guaranteed business loans in all countries.
- For our shareholders, we kept all channels open to increase their trust, which was reflected in an increase of more than 30,000 shareholders in the year to 4,018,817.
- In line with our commitment, we contributed to the well-being of society. We implemented actions and mobilized resources together with governments and institutions to help combat the health crisis, with more than EUR 105 million dedicated to solidarity initiatives.

As the global pandemic intensified, we accelerated our digital transformation, focusing on our multi-channel strategy and digitalization of processes and businesses.

As a result, loyal and digital customers and activity continued to grow. The number of loyal customers reached 23 million (+6% in the year), picking up in individuals and corporates. Digital customers rose 15% to more than 42 million.

On average, our customers accessed digital touchpoints close to 190 million times per week and 44% of total sales were digital (36% in 2019). We also aim to be one of the top three banks for customer satisfaction in our main markets.

Besides digital channels, we interact with our customers through our global network of 11,236 branches, which we are optimizing and adapting to our customers' needs including universal offices and specialist centres for certain customer segments. We also have new collaborative spaces with increased digital capabilities (Work Café, SmartBank and Ágil branches).

Economic Context

In 2020, Santander operated in an extraordinarily complex environment characterized by the pandemic and the measures to alleviate its economic impact. The crisis has been global, severe and abrupt, and has generated enormous uncertainty given the impossibility of predicting its scope and duration. Most of the economies in which the bank operates responded with tough policies and notable coordination between their fiscal, financial and monetary counterparts to limit permanent damage from lockdown measures. Nonetheless, hopes raised by better treatments, more targeted outbreak responses and the effective vaccines announced in the final months of the year contained the situation towards the end of the year and led to better expectations that were reflected in financial markets.

2020 Grupo Santander's results highlights

Grupo Santander's results in the year were affected by the health crisis caused by the spread of covid-19, which is reflected in a weaker economic environment, lower interest rates and a sharp depreciation of some currencies.

Total income fell in the year from lower activity and exchange rates. Excluding their impact, total income remained in line with 2019, as the decrease in activity and lower interest rates were offset by higher volumes, sound market volatility management and the lower cost of deposits.

Cost reduction through the optimization plans implemented in recent years, along with additional savings measures adopted since the start of the crisis. This was reflected in the fall in real terms in the majority of our markets.

Greater loan-loss provisions due to credit growth and the worsening of economic conditions arising from the pandemic and the consequent expected impact on credit quality. Cost of credit ended the year at 1.28%, in line with our expectations.

We adjusted the goodwill ascribed to some units and to deferred tax assets in the second quarter as a result of the worsening economic outlook, totalling EUR 12,600 million, resulting in an attributable profit to the Group of -EUR 8,771 million in 2020.

Excluding the above adjustments and other costs and provisions that are outside the ordinary course of our business, underlying attributable profit to the parent was EUR 5,081 million, with net operating income of EUR 23,633 million, 2% more in constant euros than in 2019.

Capital Management and adequacy

Grupo Santander's capital management aims to guarantee solvency and maximize profitability, while complying with internal objectives and regulatory requirements.

It is a key strategic tool for local and corporate decision making, enabling us to set a common framework of actions, criteria, policies, functions, metrics and processes.

Our active capital management applies strategies on efficient capital allocation to business lines, and considers securitizations, asset sales and issuances of capital instruments (capital hybrids and subordinated debt).

Our economic capital model aims to ensure our capital allocation is right for the risks inherent in our operations and risk appetite to optimize value creation for our group and business units.

To optimize value creation, we measure the real economic capital an activity requires and its return, and select those activities that maximize returns. We do this under both expected as well as unlikely but plausible economic scenarios, and with the solvency level decided by the Group.

Capital ratios in 2020

The ratios of this report are calculated by applying the CRR and IFRS9 transitory schedules.

- At year-end, the CET1 ratio reached 12.34% after increasing 69 bps in the year (including 104 bps of organic generation).
- The total capital ratio was 16.18% (+113 bps in the year).
- Our active capital management culture strengthened throughout the organization.

We have a strong capital base, comfortably meeting the minimum levels required by the European Central Bank on a consolidated basis (13.01% for total capital ratio and 8.85% for the CET1 ratio). This resulted in a CET1 management buffer of 349 bps, compared to a covid-19 buffer of 189 bp.

In the year, the CET1 ratio increased 69 bps. Of note was the strong underlying capital generation of 104 bps, partially offset by the impact of restructuring costs, corporate transactions and market performance. It also includes 9 bps related to an accrual for 2020 dividend payments, based on the limit established by recommendation 2020/63 of the ECB on 15 December 2020, which allows a maximum payment of EUR 0.0275 per share.

Had the IFRS 9 transitional arrangement not been applied, the total impact on the CET1 ratio was 45 bps, leading to a CET1 ratio of 11.89%. For more information, see Appendix XII.

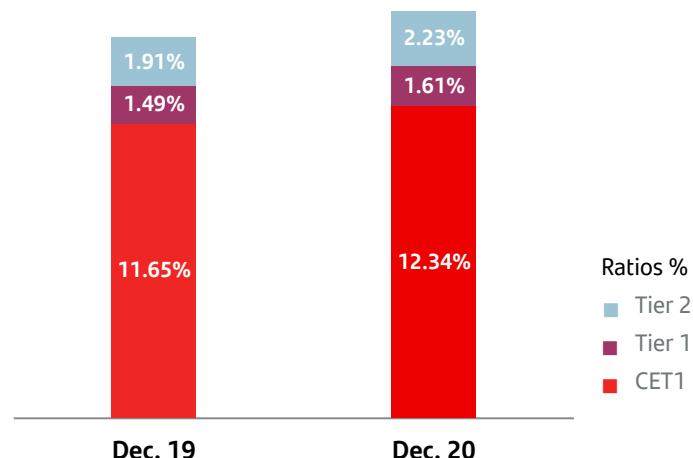
The leverage ratio stood at 5.33%. Had the IFRS9 transitional arrangement not been applied, the leverage ratio stood at 5.15%.

With regards to regulatory ratios, Santander exceeded the 2020 minimum regulatory requirements by 317 bps, taking into account the shortfalls in AT1 and T2.

In short, from a qualitative point of view, Santander has solid capital ratios, aligned with its business model, balance sheet structure and risk profile.

**The Group's CET1 capital ratio increased to 12.34%,
above the target rate of 11% - 12%**

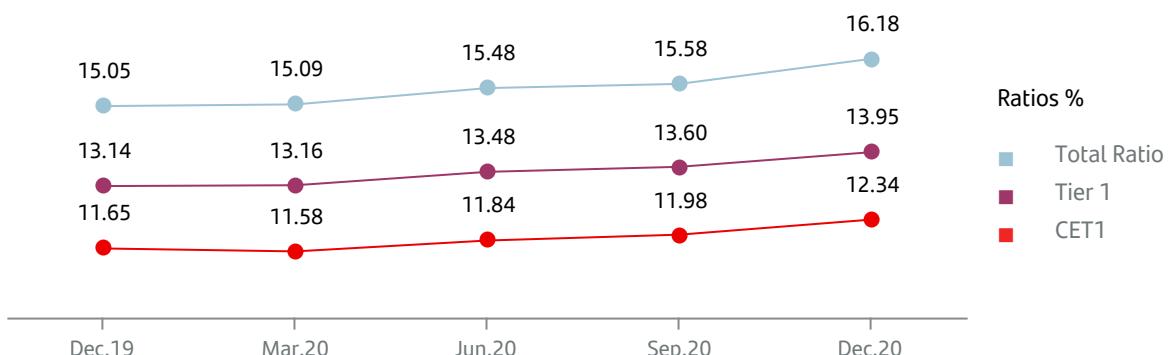
Changes in main Capital ratios' figures



	Million euros	Dec-2020	Dec-2019
Common Equity (CET1)	69,399	70,497	
Tier 1	78,501	79,536	
Total capital	91,015	91,067	
Risk weighted assets	562,580	605,244	
CET1 Ratio	12.34%	11.65%	
Tier 1 Ratio	13.95%	13.14%	
Total capital ratio	16.18%	15.05%	
Leverage Ratio	5.33%	5.15%	

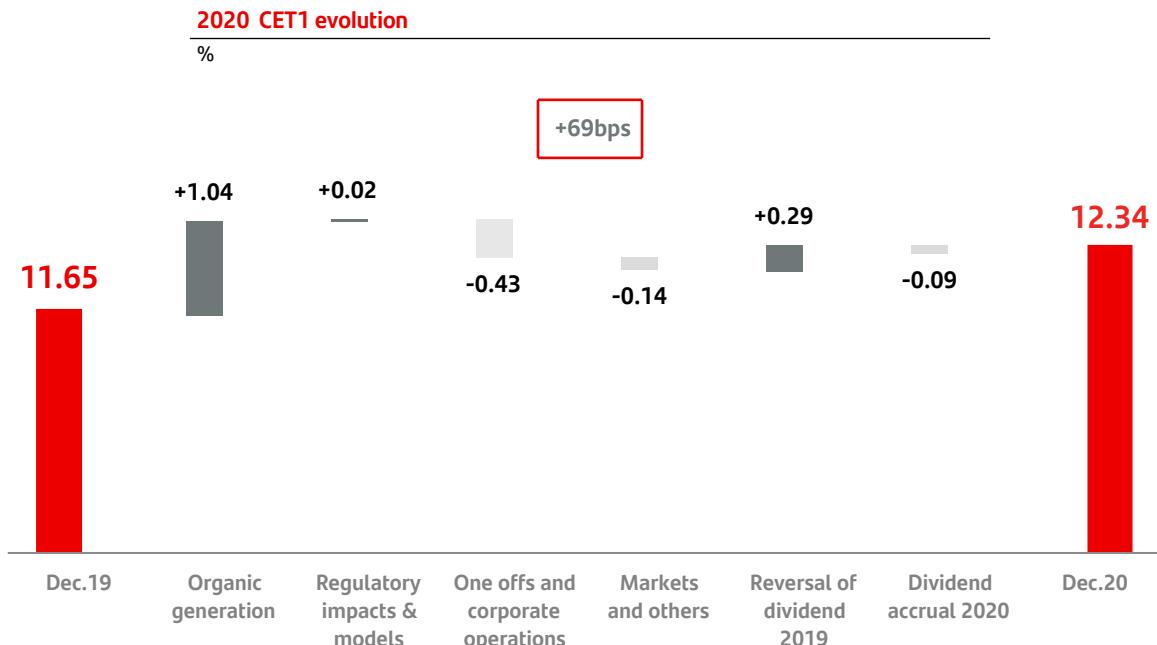
2020 and 2019 data has been calculated under application of CRR and IFRS 9 transitional arrangements, unless otherwise indicated.

Capital ratios



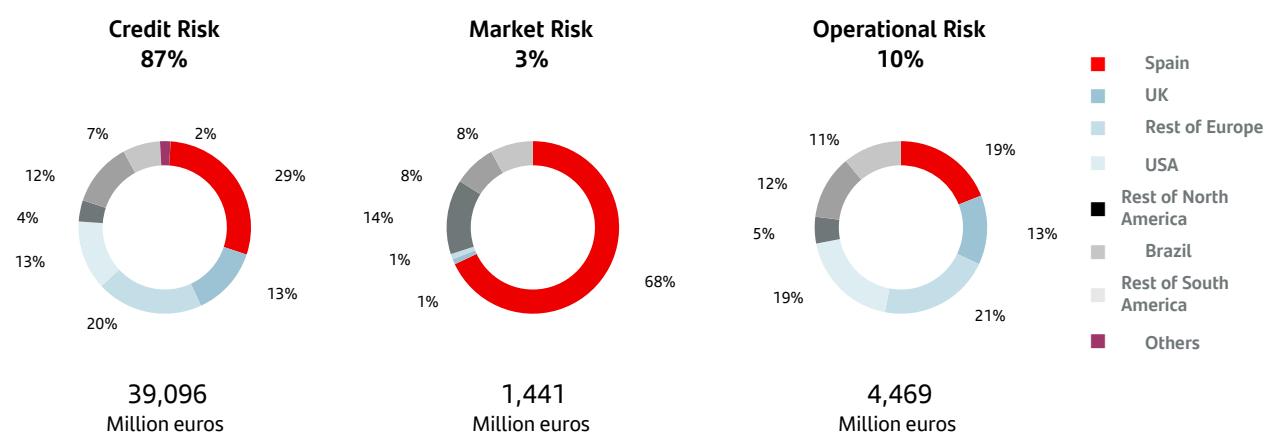
Note: this English version is a translation of the original in Spanish for information purposes only. In the event of discrepancy, the original Spanish-language version prevails.

In 2020 there has been an increase of 69 bps,
104 bps for organic growth



Distribution of capital requirements by risk type and geography

31 Dec. 2020



1.2. Santander Group Pillar 3 report overview



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

1.2.1. Background information on Santander Group

Banco Santander, S.A. is a private-law entity subject to the rules and regulations applicable to banks operating in Spain. In addition to its direct operations, Banco Santander is the head of a group of subsidiaries engaged in a range of business activities that comprise Santander Group. The Capital Requirements Regulation (CRR), Capital Requirements Directive (CRD) IV and its transposition through Bank of Spain Circular 2/2016, on supervision and capital adequacy, are applicable at a consolidated level to the whole of Santander Group.

The exemption under Article 49 of the CRR is not used, so table INS1 on non-deducted holdings in insurance companies does not need to be published.

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 at 31 December 2020. None of the exemptions under applicable regulations have been used for any other Santander Group subsidiaries.

Santander is one of the banks that have not required state aid in any of the countries in which they operate.

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

At 31 December 2020, none of the financial institutions consolidated in Santander Group had less than the minimum capital required under applicable regulations.

1.2.2. Governance: approval and publication

Santander Group publishes its annual Pillar 3 disclosures report following board approval, pursuant to the official disclosure policy. Prior to the board of directors' approval on 22 February 2021, the report was reviewed by the risk supervision, regulation and compliance committee at a meeting on 19 February and by the capital committee at a meeting on 21 January 2021.

The report was reviewed by the audit committee on 19 February 2021.

Quarterly information has been published since March 2015 in compliance with the European Banking Association (EBA)'s Guidelines on materiality, proprietary and confidentiality and on disclosure frequency, and article 432, sections 1 and 2, and article 433 of Regulation (EU) 575/2013.

Appendix II lists the location of the information disclosed in accordance with the relevant articles of Part Eight of the Regulation.

The information in this report has been reviewed by the external auditor (PwC), who did not find any issues with regard to the reasonableness of the disclosures and compliance with the reporting requirements established in the CRD IV and the CRR.

Certification by governing bodies

The board of directors of Santander Group 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.

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

Further information on Santander Group's internal control model (ICM) can be found in section VIII of the Corporate governance chapter of the 2020 Annual report.

The external auditors perform an ex-ante review and Internal Audit's work plans for recurring reviews also cover this report.

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



[Access 2020 Pillar 3 available on the Santander Group Website](#)

Disclosures by Santander Group subsidiaries.

In addition to the information contained in this report, Santander Group 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, in relation to own funds, capital requirements, capital buffers, credit risk adjustments, remuneration policy and the application of credit risk mitigation techniques.



[Access 2020 Annual Report available on the Santander Group website](#)

1.2.3. Transparency enhancements

Santander Group has noted the recommendation issued by international bodies with the aim of improving the transparency of the information published each year in the Pillar 3 disclosures report.

Santander Group includes all information requirements published by the EBA, the Basel Committee and the European Commission relating to transparency vis-à-vis the market. Details of the documents can be found in Appendix I.

The main improvements in transparency include the following:

- As a result of the global health crisis, the EBA published guidelines on reporting the impact of covid-19, called "EBA guidelines on reporting and disclosure of exposures subject to measures applied in response to the covid-19 crisis" whereby it is indicated that three quantitative templates must be published semi-annually, containing information on the scope of the payment holidays.
- The EBA also published "EBA guidelines on supervisory reporting and disclosure requirements in compliance with the CRR 'quick fix' in response to the covid-19 pandemic", containing measures to adapt the disclosure to the new requirements of the CRR, such as backstops or the leverage ratio. The latter required adaptation of the "LRCom" table to provide narrative information about the fact that excluded central bank exposures have been disclosed. (see section 11 of chapter 3)

In March 2020, the EBA published its "ITS on institutions' Pillar 3 disclosures", assessing institutions' public disclosures in line with new reporting and internal consistency requirements. In these, Santander Group is listed for its best practices in different aspects such as: Liquidity risk, Prudent Valuation, improvements in general sections, information presentation and other navigability aspects.

Furthermore, the Appendix II lists the location of the information required in accordance with the relevant articles of Part Eight of the CRR.

Additionally, on Santander Group's website (Financial and Economic Information > Pillar III), you can find a file with all tables shown in this document, in editable format for easier processing.



[Access file 2020 Pillar 3 Appendices available
on the Santander Group website](#)

1.2.4. Disclosure criteria used in this report

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

In addition, the ratios of this report are calculated by applying the CRR and IFRS9 transitory schedules.

Details of the types of information where there are discrepancies 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:
 - Not only current exposures but also potential 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 is more conservative than those used for preparing the disaggregated information provided in the annual report.

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1.3. Scope of consolidation

The Santander Group companies included in the scope of consolidation for calculating the capital adequacy ratio under the CRR are the same as those included in the scope of consolidation for accounting purposes under Bank of Spain Circular 2/2018.

1.3.1. Differences between the accounting consolidation method and the consolidation method for calculating regulatory capital

In application of Part I (General Provisions) of the CRR, some Santander Group companies are consolidated using a different method to that used for accounting consolidation.

The companies for which different consolidation methods are used, depending on the regulations applied, are listed in Appendix V of the 2020 Pillar 3 Appendix file available on the Santander Group website. At present, holdings in significant financial institutions and insurance companies are exempt from deductions under Article 49 of the CRR.

For the purposes of calculating the capital adequacy ratio based on the nature of their business activities, Santander 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 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.

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



[Access file 2020 Pillar 3 Appendices available on the Santander Group website](#)

Table 1. Differences between accounting and regulatory scopes of consolidation and mapping of financial statements categories with regulatory risk categories (L1)

Million euros

	31 Dec. 2020						
			Carrying values of items:				Not subject to capital requirement s or subject to deduction from capital
	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	
Assets							
Cash and cash balances at central banks	153,839	153,907	153,907	—	—	0	—
Financial assets held for trading	114,945	114,923	—	67,131	16	114,906	—
Financial assets not held for trading valued mandatorily at fair value through profit or loss	4,486	3,120	806	—	557	1,758	—
Financial assets designated at fair value through profit or loss	48,718	46,182	—	25,856	—	36,701	—
Financial assets at fair value through other comprehensive income	120,953	106,584	102,791	—	3,794	—	—
Financial assets at amortised cost	958,378	962,153	928,201	32,104	1,801	—	46
Derivatives - Hedge accounting	8,325	8,325	—	8,325	—	—	—
Fair value changes of the hedged items in portfolio hedge of interest rate risk	1,980	1,980	—	—	—	—	1,980
Investments in subsidiaries, joint ventures and associates	7,622	8,705	6,946	—	—	—	1,759
Reinsurance assets	261	—	—	—	—	—	—
Tangible assets	32,735	30,572	30,572	—	—	—	—
Intangible assets	15,908	16,135	—	—	—	—	16,135
Tax assets	24,586	24,636	23,539	—	—	—	1,097
Other assets	11,070	9,990	9,354	—	—	—	635
Non-current assets and disposal groups classified as held for sale	4,445	4,574	4,574	—	—	—	—
Total assets	1,508,250	1,491,784	1,260,689	133,416	6,168	153,365	21,652
Liabilities							
Financial liabilities held for trading	81,167	81,174	—	64,476	—	81,174	—
Financial liabilities designated at fair value through profit or loss	48,038	27,868	—	14,641	—	27,868	—
Financial liabilities measured at amortised cost	1,248,188	1,252,912	—	—	—	—	1,252,912
Derivatives – Hedge accounting	6,869	6,912	—	6,912	—	—	—
Fair value changes of the hedged items in portfolio hedge of interest rate risk	286	286	—	—	—	—	—
Liabilities under insurance contracts	910	—	—	—	—	—	—
Provisions	10,852	10,849	700	—	—	—	10,149
Tax liabilities	8,282	8,148	—	—	—	—	8,148
Other liabilities	12,336	12,333	—	—	—	—	12,621
Total liabilities	1,416,928	1,400,482	700	86,029	—	109,042	1,283,830

The difference in total assets between the public and the reserved scopes is not material and corresponds to the exclusion of financial institutions and the inclusion of jointly controlled and intragroup entities. The most notable differences in this regard are in financial assets at fair value through other comprehensive income (€14.369 billion) and in financial liabilities at fair value through profit or loss (€20.17 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 2. Main sources of differences between regulatory exposure amounts and carrying amounts in the financial statements (LI2)

Million euros

		31 Dec. 2020			
	Total	Credit risk framework	CCR framework	Securitisation framework	Market risk framework
Asset carrying value amount under scope of regulatory consolidation (as per template EU LI1)	1,553,638	1,260,689	133,416	6,168	153,365
Liabilities carrying value amount under regulatory scope of consolidation (as per template EU LI1)	(195,771)	(700)	(86,029)	—	(109,042)
Total net amount under regulatory scope of consolidation	1,357,868	1,259,989	47,387	6,168	44,323
Off-balance sheet amounts	302,547	302,547	—	—	—
Regulatory Add-on	34,404	—	34,404	—	—
Differences in valuations	—	—	—	—	—
Differences due to different netting rules, other than those already included in row 2	(65,227)	—	(20,904)	—	(44,323)
Non-eligibility of the balances corresponding to accounting hedges (derivatives)	(8,325)	—	(8,325)	—	—
Securitisations with risk transfer	—	(37,833)	—	37,833	—
Other	8,611	12,526	—	(3,914)	—
Differences due to consideration of provisions	(15,173)	(14,998)	—	(176)	—
Differences due to CRMs	(22,203)	(6,657)	(14,951)	(596)	—
Differences due to CCFs	(221,067)	(221,067)	—	—	—
Exposure amounts considered for regulatory purposes (EAD)	1,371,434	1,294,507	37,611	39,316	—

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 (+€302.547 billion) and the application of CCFs (-€221.067 billion). The regulatory add-on (+€34.404 billion) and the differences resulting from the various offsetting rules (-€65.227 billion).

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

1.3.2. Substantial amendments due to a change in the perimeter and corporate transactions

For more information on the main acquisitions and disposals of holdings in other companies and other major corporate transactions by Santander Group last year, refer to section 3 of the Notes to the consolidated financial statements in the Audit Report section of the 2020 Annual Report.



[Access 2020 Annual Report available on the Santander Group website](#)



[Access file 2020 Pillar 3 Appendices available on the Santander Group website](#)

1.4. Regulatory framework

A. 2020 prudential framework: Key aspects on Solvency and Resolution

The financial institutions must meet a set of minimum capital and liquidity requirements. These minimum requirements are regulated by the European capital requirements regulation, better known as CRR, and in the Capital Requirements

Directive (CRD). In June 2019 these regulations were significantly modified, so that references to CRR2 and CRDV are understood as such regulations with the latest modifications incorporated respectively.

Among the amendments to the CRR2, it is worth highlighting the introduction of the minimum requirement of TLAC (Total Loss Absorbing Capacity) applicable only to entities of global systemic importance (G-SIBs). This requirement is a minimum requirement for own funds and eligible liabilities (in terms of a percentage of the total risk exposure amount, currently 16% and, after the transitional period, 18%; in terms of a percentage of the total exposure measure, currently 6% and, after the transitional period, 6.75%).

The CRDV, as a directive, must be transposed into the national legal system to be applicable in the Member States. In Spain, the transposition is expected to be developed during 2021. The CRDV includes relevant amendments such as the regulation of Pillar 2 Guidance requirements.

Regarding to the resolution regulations, financial institutions must have an adequate financing structure that allows them, in the event of financial difficulties, to recover their situation or to resolve it, ensuring the protection of depositors and the financial stability.

The directive that regulates the aforementioned resolution framework is the Restructuring and Resolution Directive, BRRD. Like CRR2 and CRDV, BRRD was amended in June 2019. BRRD2 refers BRRD as amended. The transposition of this directive in Spain is also planned for 2021.

The BRRD2 has introduced important modifications to the minimum requirement for own funds and eligible liabilities (MREL). Thus, for example, the aforementioned TLAC requirement is now considered a Pillar 1 resolution requirement for G-SIBs. For large banks (which are defined as those whose total assets exceed EUR 100 billion euros) or those that the resolution authority otherwise considers systemic, the BRRD2 establishes a minimum subordination requirement of 13.5% of risk-weighted assets, or 5% of the exposure of the leverage ratio, whichever is higher. Other entities' subordination requirement will be determined on a case-by-case basis by the resolution authority.

B. Regulatory response to the impacts of COVID 19

The severe economic disruption caused by the covid-19 pandemic in 2020 has revealed the importance of institutions' funding functions in contributing to recovery. The competent authorities (national, European and international) have acted by reducing liquidity, capital and operational requirements so financial institutions can continue to provide financing to the economy, while ensuring that such institutions continue to act prudently as they can also be negatively affected by the deterioration of the economic situation.

As part of these measures, the European Central Bank issued a recommendation in March 2020 urging European banks to refrain from paying dividends against 2019 and 2020 financial years. On 27 July, the ECB extended that recommendation to 1 January 2021. On 15 December 2020, the ECB issued its recommendation 2020/35, repealing previous referred recommendations, and by which it recommended that banks under the scope of its direct supervision exercise extreme prudence on dividends and share buy-backs. The ECB asks the banks to consider not distributing any cash dividends or

conducting share buybacks, or to limit such distributions until 30 September 2021. Given the persisting uncertainty over the economic impact of the covid-19 pandemic, the ECB also considers that it would not be prudent for credit institutions to consider making a distribution and share buy-backs amounting to more than 15% of their accumulated profit for the financial years 2019 and 2020, or more than 20 basis points in terms of the CET1 ratio, whichever is lower.

The national governments have taken measures to address the economic and social impact of covid-19, specifically in the form of legislative moratoria that were aimed at containing non-performing loans (NPLs) and helping the population to meet liquidity needs. Throughout 2020, the European Banking Authority (EBA) adopted a series of guidelines, including the Guidelines on legislative and non-legislative moratoria applied in the context of the covid-19 crisis on 2 April 2020. These guidelines clarify the requirements for public and private moratoria to avoid classification of exposures affected by moratoria as forbearance exposures.

Although these guidelines were initially expected to apply to moratoria granted before 30 June 2020, the EBA decided on 2 December 2020 that these guidelines would apply to moratoria requested before 31 March 2021.

Other measures adopted to provide flexibility in complying with these requirements have been the approval and entry into force of the 'quick fix' of the CRR (urgent and extraordinary regulatory measures aimed at making the regulatory framework more flexible in response to covid-19), which modifies CRR2. Among the amendments introduced by the quick fix, it is worth highlighting the extension of the transitional period granted before the pandemic due to the entry into force of IFRS 9, as a result of the sudden and significant increase in provisions for expected credit losses that must be recognized. Additionally, the application of certain provisions of CRR2 has been delayed, such as those relating to the leverage ratio buffer (whose application date is postponed until 1 January 2023), and includes the possibility to exclude from the calculation of such ratio exposures to central banks. Similarly, the date of application of other favourable provisions for entities, such as the support factor for small and medium enterprises (SMEs) and the support factor for infrastructure has been brought forward, as well as the new treatment of software assets (applicable since the day following the publication of the Delegated Regulation where it is developed).

C. Other regulations: Sustainability

With regard to the integration of sustainable finance in the financial sector, the Taxonomy Regulation (Regulation 2020/852) has been published, which establishes the criteria for determining whether an economic activity qualifies as environmentally sustainable and also lays down disclosure obligations for the financial services sector to be applied on 2022. This taxonomy supplements the rules on sustainability-related disclosures in the financial services sector laid down in Regulation (EU) 2019/2088. In addition, the ECB and Banco de España (Spain's central bank) supervisory expectations will gradually incorporate into the supervisory dialogue the management and disclosure of climate and environmental risks.

1.4.1. Regulatory changes in 2020

The main event in 2020 was the explosion of covid-19, which disrupted regulatory agendas and priorities at the European and international levels. Regulators reacted by adopting a set of relief measures for capital and liquidity requirements, along with other operational measures, to help financial institutions channel funding to the economy. Against the backdrop of this pandemic, it has also become clear that the crisis management framework needs to be reviewed to ensure its effectiveness in systemic scenarios. The European legislative agenda on climate change and sustainable financing was already one of the key items on the agenda in recent years, but it is now even more of a priority given the way the pandemic has unfolded. The digital agenda has also occupied a large part of the current regulatory environment. This includes issues such as the possibility of adopting new technologies, the competition framework for large platforms and discussions about the supervisory and regulatory framework that needs to be applied to non-banking players.

International prudential framework

In 2020, international authorities acted in a coordinated way to implement a raft of exceptional measures in response to the outbreak of the covid-19 pandemic. The Basel Committee on Banking Supervision (BCBS) considered that priority should be given to the use of capital buffers to support the real economy and absorb losses, stating that supervisors should give banks sufficient time to restore their buffers. Highlights:

- **Basel III standards.** The BCBS has agreed to delay the implementation of the Basel III standards by one year, to 1 January 2023.
- **Technical guidelines** on the treatment of provisions in relation to exceptional moratoria and guarantee measures and the amendment of the transitional provisions for the treatment of expected credit losses in regulatory capital.

In addition to covid-19 measures, the BCBS continued to work on the following in 2020:

- **Interaction and cooperation between prudential and anti-money laundering supervision.** The BCBS has amended the guidelines on robust risk management for anti-money laundering and combating the financing of terrorism to introduce additional guidelines on cooperation and information exchange between prudential and anti-money laundering and terrorist financing supervisory authorities.
- **Pillar III disclosure requirements.** During the year the BCBS worked on: (i) Sovereign exposure disclosure templates, the implementation of which is voluntary, unless requested by national supervisors; (ii) Revisions to market risk exposure disclosure templates, to reflect the changes introduced by the final standard on minimum capital requirements for market risk. Both final standards are pending publication by the BCBS.
- **Credit valuation adjustment risk (CVA).** The BCBS has published revisions to the CVA risk framework, which replaces the 2017 version. These recalibrate risk weightings, establish different treatment for certain derivatives with customer compensation and provide for a comprehensive recalibration of the standardised and basic approaches. This will come into effect on 1 January 2023.

- **Securitisations of non-performing loans.** The BCBS has published a technical amendment establishing prudential treatment for securitisations of non-performing loans.
- **Operational risk and operating resilience:** the BCBS has launched a review of existing principles for good operational risk management and a new set of principles for operational resilience. These are designed to bolster banks' ability to withstand events such as pandemics, cyber-incidents, technological failures and natural disasters. Authorities are also watching the financial sector's growing dependence on technology providers more closely, and working out how to ensure that financial institutions adequately manage third party risks, plus the question of concentration risk (e.g. in the provision of cloud services). The FSB and IOSCO published consultations during the year on these specific issues.

Crisis management framework

In 2020, the Financial Stability Board (FSB) continued monitoring the implementation of Total Loss-Absorbing Capacity (TLAC) across the various jurisdictions. It estimates that all G-SIBs now meet their 2022 TLAC requirement.

In November 2020, the FSB updated the list of G-SIBs for 2021. Santander remains within the least systemically important group of banks and is subject to the minimum additional capital buffer for global systemically important banks (1%).

Other

In the **digital arena**, the fintech phenomenon and the need to review the regulatory and supervisory framework are increasingly pressing issues for international authorities. In 2020, various authorities (FSB, BIS, IMF) published important reports concerning the need for cooperation between authorities in the regulation and supervision of technology firms that provide financial services. This was specifically to overcome the lack of information and regulation on these entities, especially in the area of lending.

The OECD is leading the multilateral **initiatives to address the tax challenges** resulting from the digitalisation of the economy, to ensure that digital companies pay tax wherever they have consumers and their activities generate profits. This year, considerable progress has been made in defining Pillar 1 (rules on how to establish the fiscal nexus and attribute tax capacity to states) and Pillar 2 (a global minimum tax), although negotiations have been held up by the pandemic and the US elections. Agreement is now expected in mid 2021.

European regulation

European authorities have adopted various packages of measures coordinated by European Union authorities to tackle the pandemic, many in response to actions by international authorities.

Prudential European Commission

- **Implementation of Basel III standards.** The European Commission postponed its plans to publish the legislative proposal after the BCBS decided to delay the implementation date to 1 January 2023. The legislative proposal is expected to be published in 2021.

- **The CRR "Quick Fix".** This amendment was published and came into force in June. It aims to maximise the capacity of financial institutions to provide financing and absorb losses related to the covid-19 pandemic while ensuring their resilience. This Quick Fix brought forward the implementation of certain elements of the prudential framework, having a positive impact on capital (such as the SME and infrastructure support factor and the new treatment of software assets, applicable since the day following the publication of the Delegated Regulation where it is developed), while delaying other elements with a negative impact (e.g. the global systemic institutions' buffer for the leverage ratio, transitional provisions in relation to the dynamic component of IFRS9 provisions and the impact of unrealised losses on the sovereign debt portfolio).
- **Capital Markets Recovery Package.** The European Commission issued a legislative proposal for a capital market recovery plan to be published in 2021, aimed at making it easier for companies to raise capital in the markets. This modifies the regulations for MIFID II, prospectuses and the securitisation framework.
- **Non-Performing Loans Action Plan.** The European Commission has published a plan to prevent a potential build-up of non-performing loans across the European Union as a result of the covid-19 crisis.
- **Capital Markets Union Action Plan.** Following on from the 2015 plan, and successive updates, the European Commission has published this new plan aimed at making sure funding flows smoothly through the capital market in Europe, to the benefit of consumers, investors and companies, wherever they may be. It also revises the prudential framework for securitisation and the capital requirements for long-term holdings by financial institutions in small and medium-sized enterprises.

EBA

- **When the crisis began,** the EBA issued a statement on measures to mitigate the impact of covid-19 in the banking sector, including postponing the stress test to 2021 across the EU and recommending that competent authorities make use of the flexibility contained in the regulatory framework. It also published clarifications of its expectations in relation to remuneration policies, guidance on how to implement flexibility in supervisory reporting obligations and reminders of the measures needed to prevent money laundering and terrorist financing.
- **Guidelines on legislative and non-legislative moratoria.** The EBA published guidelines in April. These guidelines clarify the cases and conditions under which granting moratoria would not require provisions to be made. These guidelines initially expired on 30 June and were subsequently extended to 30 September. In December, the EBA decided to reinstate these guidelines in light of the second wave of the pandemic, setting an expiration date of 31 March 2021.

- **Software.** In October, the EBA published draft technical standards on the prudential treatment of software assets, to encourage banks to invest in software. Under these standards, banks' capital requirements are revised by only deducting the amount of the investment from CET1 in part, rather than in full. These technical standards are expected to be published, come into force and be implemented along 2021.
- **Final guidelines on loan origination and monitoring,** to be applied from 30 June 2021. These guidelines attempt to clarify the governance and internal control framework for granting credit, establish requirements to gather information and data from borrowers, and set out the documentation and requirements for assessing creditworthiness. The guidelines also include: environmental, social and governance, anti-money laundering and counter-terrorist financing, and technological innovation factors.

European Central Bank (ECB)

- The ECB has provided **temporary relief in terms of capital and operational requirements** in response to the coronavirus pandemic: (i) allowing banks to operate below the level of capital defined by P2G, the capital conservation buffer and the liquidity coverage ratio (LCR), (ii) allowing the partial use of AT1 and Tier 2 instruments to meet P2R requirements, by anticipating the implementation of the changes introduced by CRR II in this area, (iii) by issuing a no-objection decision on measures such as reducing the counter-cyclical buffer by macro-prudential authorities, and (iv) other measures, such as providing temporary relief from market risk capital requirements.
- With regard to **the distribution of dividends and share buybacks**, the ECB issued a recommendation to financial institutions to restrict distributions until 1 October 2020. This was later extended until January 2021 with clarification of the timetable for restoring capital buffers. In December 2020, the ECB issued a communication allowing banks to distribute dividends or buy back shares provided that this does not exceed 15% of their accumulated profit in 2019–2020 or 20 basis points of CET1, until 30 September at least, but calling on them to exercise extreme caution. They will only be able to do so if they are profitable and have robust capital positions. The ECB also called on banks again to exercise extreme restraint in terms of variable pay for executives. The regulator justified these constraints by pointing to the continuing uncertainty about the economic impact of the coronavirus pandemic.

Crisis management framework

Europe also continues to make progress with the implementation of the crisis management framework. The Single Resolution Mechanism (SRM), the second pillar of Banking Union after the Single Supervisory Mechanism, has been operational since 1 January 2016. The Single Resolution Board and the national resolution authorities have defined the framework to determine the MREL (Minimum Requirement for own funds and Eligible Liabilities) and are making further progress in ensuring the effectiveness of the resolution framework.

With regard to the Single Resolution Fund managed by the Single Resolution Board, the period of gradual mutualisation will enable transition from national resolution funds to the Single Resolution Fund, which will be fully implemented by 2024. The funding target of the Single Resolution Fund is 1% of covered deposits in 2024.

In December 2020, it was agreed that national parliaments would sign and ratify a new ESM treaty in 2021. They have also agreed to bring forward the implementation of the backstop from 2024 to 2022. This backstop will mean that the Single Resolution Fund will have access to credit lines, which will subsequently have to be returned by the Fund, i.e. by the banks, if the amount is not enough for the resolution of one or more entities. ESM support is limited to the same amount as the Resolution Fund.

Negotiations have resumed this year on the third pillar of the Banking Union, EDIS (European Deposit Insurance Scheme), for which the European Commission presented a proposal in 2015. These are advancing slowly and are expected to continue next year.

In late 2020, the Commission started to prepare the revision of the resolution and deposit guarantee directive (BRRD/SRMR/DGSD). Consultations are planned for 2021.

The European Commission is continuing to enhance the anti-money laundering and counter-terrorist financing framework. The Commission has presented an action plan setting out the measures it will take over the coming months to improve the strengthening, monitoring and coordination of EU rules in this area. The key areas of the plan include drafting a regulation to resolve current areas of disagreement, and strengthening supervision by considering creating a European supervisory authority.

There has been further important progress in the legislative agenda in relation to climate change and sustainable financing. In the last year a series of key initiatives have been approved, including the European Union Taxonomy Regulation, which will be used as a framework for classifying sustainable economic activities according to six environmental objectives. From 2022, companies and financial institutions will have to publicly demonstrate how their activities are aligned with the taxonomy activities, using a series of indicators yet to be defined. In 2021, the European Commission and the European Supervisory Agencies (ESAs) will do further work on completing the taxonomy framework, with criteria for the identification of the four remaining environmental objectives. They will also decide whether to extend the framework to identify activities that are harmful to environmental objectives (the "brown taxonomy") and activities with social objectives.

In 2020, progress has been made on defining disclosure requirements for financial market participants and financial advisers on how they are integrating sustainability factors into investment policies. Under the Sustainable Finance Disclosure Regulation adopted last year, this information will have to be provided on websites, in pre-contractual product information and in regular reports. The first requirements should be implemented from March 2021. ESAs are expected to complete the additional requirements in early 2021, for implementation in 2022.

The EBA is continuing the mandates relating to sustainable financing received through the review of the CRD and CRR: the possibility of including environmental, social and corporate governance risks (ESG) in the SREP; greater disclosure for companies with regard to ESG risk; and the mandate enabling the EBA to analyse the viability of setting capital requirements for banks (green/brown factor).

In the retail arena, the Commission has published its New Consumer Agenda, presenting the EU's consumer policies from 2020 to 2025, focusing on five priority areas: the ecological transition, digital transformation, respect for consumer rights, the needs of certain groups, revision of the consumer credit directive and international cooperation.

This year, the European Commission also started work on the revision of significant directives in the retail field, particularly the mortgage credit directive and the consumer credit directive. Santander Group has and communicates views from the corporate and local levels on the matters being discussed where they affect its activities. The corporate and local Public Policy functions identify the regulatory alerts and establish Santander Group's position, in coordination with the business and support units concerned in each case.

The main resulting actions include:

- Santander Group is an active participant in the main banking associations worldwide and in Europe, and in the main markets in which we operate, submitting responses to regulatory consultations.
- Santander Group maintains proactive and constructive dialogue with policy-makers through all available channels (public hearings, consultations, forums and conferences) and sends individual replies to official consultations on issues it considers relevant.
- Because of its subsidiary and "multiple point of entry" resolution models, Santander Group firmly believes in the strength of its organisational model, with autonomous subsidiaries that control their own capital and liquidity, the benefits of our geographic diversification and the equivalence of the third-country jurisdictions where we operate.
- Santander is also convinced that the regulatory framework should enable banks to play an active role in the new digital economy, implementing their transformations with a level playing field so that they can continue to respond to changing consumer needs.

2 Capital





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2. Capital



This chapter looks at Santander Group's principle capital management and capital adequacy aspects, in addition to the main capital figures and solvency ratios, including Pillar 2 metrics. For further information on own funds requirements by risk type, see the chapters dedicated to each specific risk.

Table 3. Main capital figures and capital adequacy ratios

	Million euros			
	CRR Fully loaded		CRR Phased-in	
	Dec-2020	Dec-2019	Dec-2020	Dec-19
Common Equity Tier 1 (CET1)	69,399	70,497	69,399	70,497
Tier 1	78,126	78,964	78,501	79,536
Total capital	90,933	90,937	91,015	91,067
Risk weighted assets	562,580	605,244	562,580	605,244
CET1 Ratio	12.34 %	11.65 %	12.34 %	11.65 %
Tier 1 Ratio	13.89 %	13.05 %	13.95 %	13.14 %
Total capital ratio	16.16 %	15.02 %	16.18 %	15.05 %
Leverage Ratio	5.31 %	5.11 %	5.33 %	5.15 %

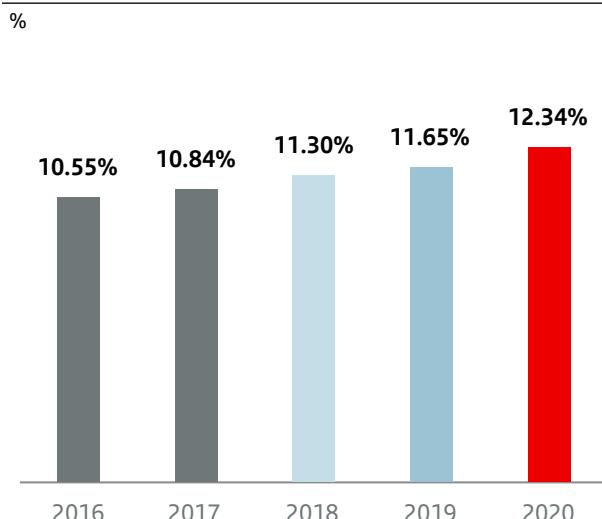
Note: 2019 and 2020 figures are calculated applying the transitional arrangements of CRR unless specified otherwise.

2.1. Capital

Capital management and control at Santander Group is a fully transversal process that seeks to ensure the bank's solvency, while complying with regulatory requirements and maximising profitability. 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 Santander Group applies to capital management:

- Establish adequate capital planning, so as to meet with needs and provide the necessary resources to cover 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.
- Ensure that Santander Group and its companies have adequate capital to cover needs resulting from the increase in risks derived from deteriorated macroeconomic conditions.

CET1 Fully loaded Capital evolution



Note: 2019 and 2020 figures are calculated applying the transitional arrangements of CRR unless specified otherwise.

- Optimise capital use through appropriate capital allocation among the businesses, based on the relative returns on regulatory and economic capital and taking the risk appetite, growth and strategic objectives into account.

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

Santander Group's capital adequacy ratios at 31 December 2020 are as shown in table 3. The phased-in ratios are calculated by applying the Basel III transitory schedules, while the fully-loaded ratios are calculated without applying any schedule (i.e. with the final regulations).

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 7-year transitional period.

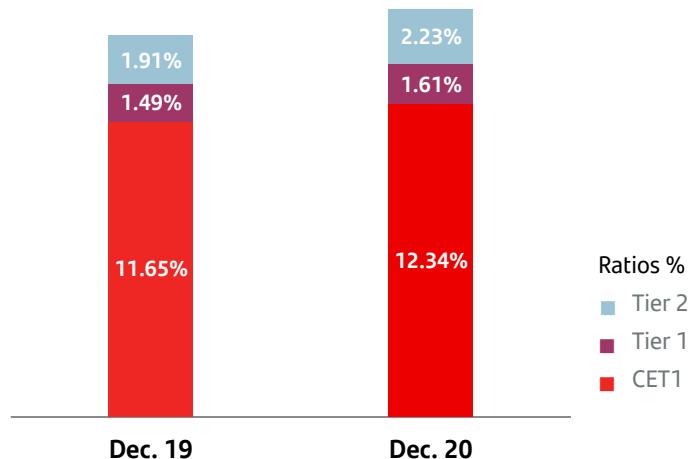
If IFRS 9 transitional arrangement had not been applied, the total impact on the fully loaded CET 1 ratio as of December would have been -45bp. See Appendix XII for further details.

CET1 Ratio in December stood at 12.34%, increasing by 69 bp during the year. The fully-loaded capital ratio was 16.16%, up 114 bp during the year.



[Access file 2020 Pillar 3 Appendices
available on the Santander Group website](#)

Changes in main Capital ratios' figures



2020 CET1 evolution



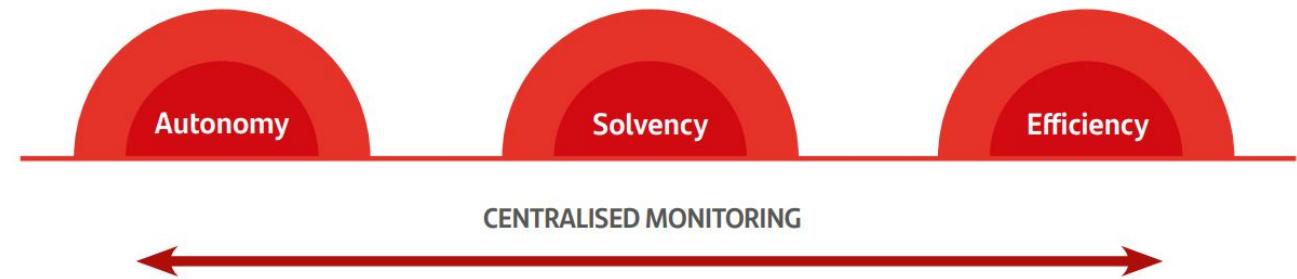
In the year, the increase was 69 basis points. Of note was the strong underlying capital generation of 104 pb, partially offset by the impact of restructuring costs, corporate transactions and market performance. It also includes 9 bps related to an accrual for 2020 dividend payments, based on the limit established by recommendation 2020/63 of the ECB on 15 December 2020, which allows a maximum payment of EUR cents 2.75 per share.

From a qualitative point of view, Santander Group has solid ratios that are suited to its business model, the structure of its balance sheet and its risk profile. Santander Group exceeds the 2020 minimum regulatory capital requirements for the total ratio by 317 basis points, taking into account the shortfalls of AT1 and T2.



For further information, see section 2.1.5.

Strategic principles of the capital function



• Autonomy. The Group's corporate structure is based on a legally independent subsidiary model, each responsible for its own capital and liquidity. This provides advantages when raising funds and limits the risk of contagion, thus reducing systemic risk. Under this structure, subsidiaries are subject to two tiers of supervision and internal control: local and global. Each unit must raise and manage its own financial resources accordingly in order to maintain the required levels of capital at all times. Local units must have the necessary capital to carry on their activity autonomously and meet local regulatory requirements and the expectations of their local market.

• Solvency. The Group and its subsidiaries must ensure at all times that the structure and level of their capital is suitable in view of the risks to which they are exposed. Capital must be allocated accordingly so as to ensure the effective management of the risks assumed within the subsidiaries and it should be assigned to these risks.

• Efficiency. The Group and its subsidiaries must carry out mechanisms to actively seek and promote an efficient use of capital and to ensure that the value created by an investment exceeds at least the cost of the capital invested. Capital is a scarce commodity that must be used as efficiently as possible, given the high cost of generating capital, whether organically or through the markets. Subsidiaries must have on-going monitoring mechanisms in place to optimise their capital consumption.

a corporate environment of global coordination and review (every business, every geography). The first level of monitoring, by the local units themselves, is complemented by the monitoring activity of the corporate units. One of the main ways the Group achieves this is by defining and applying standard policies, metrics, methodologies and tools across the Group, though these may be adapted accordingly to bring them in line with local regulations and supervisory requirements and to reflect the degree of progress made by each subsidiary.

2.1.1. Capital Function

The core principles establish the basic guidelines governing the actions of Santander Group entities in capital management, monitoring and control processes.

2.1.1.1. 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 twin objectives to be met: preserve the subsidiary's financial autonomy while retaining coordinated monitoring at Group level.

Santander Group's risk management and control model is based on three lines of defence. The first line comprises the business functions or activities that assume or generate exposure to risk. Risks undertaken or generated within the first line of defence must be compatible with the risk appetite and limits in place. The first line of defence must have the resources to identify, measure, address and report the risks assumed, to perform its function. The second line of defence comprises the Risk Control and Supervision function and the Compliance function. This second line of defence is charged with effective control of risks and ensures that they are managed in accordance with the established risk appetite.

Internal Audit is the third line of defence and the last layer of control, and regularly assesses policies, methods and procedures to ensure they are suitable, and also checks they are operational.

The risk control function, the compliance function and the internal audit function are sufficiently separate and independent from each other and also regarding the other functions they control and supervise when carrying out their tasks. They likewise have access to the board of directors and/or to its committees at the highest level.

2.1.1.2. Capital governance

Santander Group has developed a structure of agile and efficient governing bodies, ensuring the Capital function operates properly when it comes to both decision-making and supervision and control. This ensures the involvement of all the areas concerned and the necessary involvement of senior management. Santander Group's characteristic subsidiary-based structure means the governance structure of the Capital function must be adapted to preserve the autonomy of each subsidiary's capital, while allowing centralised monitoring and coordinated management at Group level. There are also various committees that have responsibilities at the regional level and also for coordination at Group level. The local committees must report to the corporate committees in due time.

Governance of the Capital function

Statutory committees	Board of directors	Determines the "target" level of capital adequacy considered sufficient for the entity to operate satisfactorily. Promotes efficient capital management by establishing minimum profitability requirements and allocating capital appropriately. Analyses and approves public disclosures.
Executive-level committees	Risk supervision, regulation and compliance committee	Assists the board in approving the capital strategy and oversees its implementation and alignment with the risk appetite. Pre-board approval of the internal capital adequacy assessment process (ICAAP) and the disclosures on solvency and capital (Pillar 3 Disclosures) to ensure the content is sufficiently relevant and representative of the Group's situation.
Support forums	Capital Committee  14 meetings in 2020	Technical committee responsible for supervision, approval and assessment of all factors related to the Group's capital and its adequacy. <ul style="list-style-type: none">▪ Oversees compliance with capital adequacy requirements.▪ Supervises and reviews the procedures established to ensure efficient capital management, based on monitoring advanced metrics and review and validation of planning and stress tests.▪ Deploys and reviews the use of advanced approaches in Santander Group and approves implementation of improvements and developments of these approaches.▪ Coordinates relations with supervisors and the flow of information to the market.▪ Intermediation and coordination of decision-making regarding liquidity and capital.
Support forums	Capital Operations forum 15 meetings in 2020	Forum with powers delegated by the capital committee responsible for support functions and reviews of certain issues within its remit. It reports to the capital committee

2.1.2. Capital management and adequacy

The aim of capital management and adequacy at Santander Group is to guarantee the entity's solvency and maximise its profitability, while ensuring compliance with internal capital targets and regulatory requirements.

Capital management is a fundamental strategic tool for decision making at both local and corporate level and serves to create a common framework of action by establishing uniform definitions of capital management criteria, policies, functions, metrics and processes.

Key capital figures

The Group works with the following variables relating to the concept of capital:

Regulatory capital

- **Capital requirements:** The minimum amount of capital the supervisory authority requires the entity to safeguard its solvency, based on the amount of risk assumed, in terms of credit, market and operational risk.
- **Eligible capital:** The capital the regulator considers eligible to meet with capital requirements. The main components of eligible capital are accounting capital and reserves.

Economic capital

- **Capital adequacy:** The minimum amount of capital that the Group needs with a specified level of probability to absorb unexpected losses deriving from its current exposure to all risks taken on by the entity (including risks additional to those contemplated under the regulatory capital requirements).
- **Available capital:** The amount of capital the Group itself considers eligible, on management criteria, to meet with capital needs.

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. This cost of capital represents a "cut-off rate" or "minimum return" to be achieved and allows comparisons between the business units to assess their efficiency.

Leverage ratio

A regulatory measure that monitors the financial solidity and strength of the financial institution by linking its size and capital. This is calculated as the ratio between Tier 1 and the leverage exposure, which takes into account the size of the balance sheet and adjustments due to derivatives, securities financing transactions and off-balance-sheet items.

Return on risk-adjusted capital (RoRAC)

The return (profit after tax) on internally required economic capital. Therefore, an increase in economic capital decreases RoRAC. The Group therefore requires transactions or business involving higher capital consumption to deliver higher returns. RoRAC takes investment risk into account, providing a risk-adjusted measure of return.

The use of RoRAC allows the Bank to manage its activities better, assess the real risk-adjusted return of businesses and be more efficient in its investment decisions.

Return on Risk Weighted Asset (RoRWA)

Defined as the return (understood as net profit after tax) on a business' risk-weighted assets.

The use of RoRWA allows the Bank to set up strategies to allocate regulatory capital and ensure the maximum return is obtained.

Value creation

Any profit generated above and beyond the cost of economic capital. The Bank will create value when the risk-adjusted return, measured by RoRAC, is higher than its cost of capital. Otherwise value will be destroyed. It measures the risk-adjusted return in absolute terms (monetary units), supplementing the RoRAC result.

Expected loss

Average credit risk losses that are expected over the course of an economic cycle. From the point of view of expected loss, defaults are considered a "cost" that could be eliminated or reduced through appropriate selection of borrowers.

The Group's Capital function is carried out on two levels:

- **Regulatory capital:** regulatory capital management is based on an analysis of the capital base, the solvency ratios as defined by applicable regulations and the scenarios used in capital planning. The objective is for the capital structure to be as efficient as possible, in terms of both cost and compliance with regulatory requirements. Active capital management includes strategies for the allocation of capital and its efficient use in business units, securitisations, asset sales and issuances of equity instruments (capital and subordinated debt hybrids).
- **Economic capital:** the objective of the economic capital model is to ensure that the Group has adequately allocated its available capital to cover all the risks to which it is exposed as a result of its activity and risk appetite. It also aims to optimise value creation in the Group and all of the business units that comprise it.

The real economic measurement of the capital needed for an activity, together with its return, enables value creation to be optimised by selecting those activities that maximise the return on capital. This allocation is carried out under different economic scenarios, both expected as well as unlikely but plausible, and with the level of solvency set by Santander Group.

2.1.3. Priorities and main activities in capital management

Santander Group's most notable capital management activities are:

- Establishing solvency and capital contribution targets aligned with minimum regulatory requirements and internal policies, to guarantee robust capital levels consistent with our risk profile and efficient use of capital to maximise shareholder value.
- Developing a capital plan to meet those objectives, in line with the strategic plan. Capital planning is an essential part of executing the three-year strategic plan.
- Assessing capital adequacy to ensure that the capital plan is also consistent with our risk profile and risk appetite framework in stress scenarios.
- Developing the annual capital budget as part of the group's budgeting process.
- Monitoring and controlling the group's budget execution and drawing up action plans to correct any deviations from the budget.
- Integrating capital metrics into business management to ensure consistency with Group objectives.
- Preparing internal capital reports, and reports for the supervisory authorities and the market.
- Planning and management of other loss absorbing instruments (MREL and TLAC)

Details of the most significant actions undertaken are set out below:

Issues of hybrid capital and other loss absorbing instruments

At 31 December 2020, Banco Santander S.A. has issued a total of €3,756 million of subordinated debt, including €2,256 million of T2 subordinated debt and €1,500 million of contingent convertible preference shares (CCPS). The contingent convertible preference shares were issued in place of the early repayment of an equivalent issue in euros.

At 31 December 2020, Banco Santander S.A. has also issued €7,006 million of senior non-preferred debt.

Dividend policy

In view of the ECB's recommendation calling on European banks not to pay dividends for financial years 2019 and 2020, on 2 April 2020 the board of directors decided to cancel the payment of the final dividend for 2019 and the dividend policy for 2020. On 27 July, the ECB extended its recommendation until 1 January 2021.

Based on this new recommendation, the board of directors agreed to submit the approval of a capital increase to the General Shareholders' Meeting on 27 October. This involves the distribution of new shares equivalent to €0.10 per share as supplementary remuneration for 2019. This brings the total remuneration corresponding to 2019 profit to €0.20 per share. The board of directors also said that it intended to pay €0.10 per share in 2021 from the share premium reserve, subject to the ECB's recommendations and provided it is authorised. The General Shareholders' Meeting approved both resolutions on 27 October.

On 15 December 2020, the ECB issued a third recommendation limiting the payment of interim dividends from the profits of 2019 and 2020 to either 15% of the accumulated profit in 2019 and 2020 or 0.2% of the CET1 ratio, whichever was lower. It also restricted the payment of any interim dividend from 2021 profits until September 2021.

In some areas not subject to ECB supervision, local supervisors have also recommended that no dividends were paid in 2020. As a result, subsidiaries in Poland, Portugal, Mexico and SCF have not paid out any dividends in 2020. Santander Brazil paid out 25% of its profits, as this is the legal minimum. The Chile and Uruguay subsidiaries were able to pay dividends without any constraint. The USA subsidiary has only paid out the dividend for the first quarter of 2020. In the UK, the PRA announced on 10 December 2020 that it was lifting the suspension on dividend payments announced in March 2020, limiting it to a maximum of 25% of accumulated profits in 2019 and 2020 or 0.2% of the CET1 ratio.

See the Corporate governance chapter (section 3.3) of the 2020 Annual report for more information.

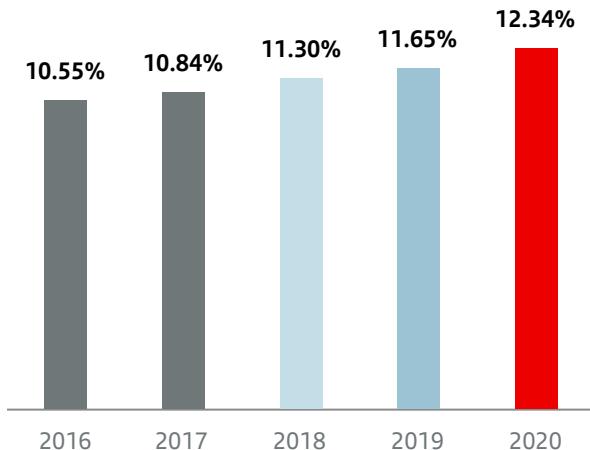


[Access 2020 Annual Report available on the Santander Group website](#)

2.1.4. Capital targets

Santander Group is working towards a CET1 ratio from 11% to 12% in the medium term.

CET1 Fully loaded Capital evolution



Note: 2019 and 2020 figures are calculated applying the transitional arrangements of CRR unless specified otherwise.

The continuous improvement in the capital ratios reflects Santander Group's profitable growth strategy and a culture of active capital management at all levels of the organisation.

Highlights:

- The reinforcement of teams dedicated to capital management and greater coordination with the corporate centre and local teams.
- All countries and business units have developed individual capital plans focused on achieving a business that maximises the return on capital.
- A higher weighting of capital management in incentives. Certain aspects relating to capital management and returns are taken into account when setting the variable remuneration payable to members of the senior management:
 - The relevant metrics include the Group's CET1, the capital contribution of the countries to the Group ratio or the return on tangible equity (RoTE).
 - The qualitative aspects considered include the proper management of regulatory changes affecting capital, effective management of capital relating to business decisions, capital generation sustainable over time and an effective capital allocation.

At the same time, the Group has completed this year a programme of action to ensure the ongoing improvement of infrastructure, processes and methodologies that support all aspects relating to capital, with the aim of encouraging ever more active capital management, enabling the Group to respond in a more agile way to the numerous and growing number of regulatory requirements and carrying out all associated activities more efficiently.

2.1.5. Capital buffers and eligible capital requirements

Santander Group must always comply with the combined capital buffer requirement, which is defined as the total CET1 capital necessary to meet the following obligations:

- **Capital conservation buffer (CCB):** mandatory for all entities from 1 January 2016. The buffer for banks in 2021 is 2.5%.
- **Buffers for systemically important banks (G-SIB and D-SIB):** applicable from 1 January 2016. There are two types, each with their own methodologies, which classify financial institutions into buckets. These buckets determine the bank's systemic risk (either global or domestic) and the applicable buffer rate. Where an institution is subject to both buffers at the same consolidation level, the higher of the two shall apply. The two types are:
 - G-SIB (global systemically important banks) buffer: common methodology following the Basel framework. Applicable at the consolidated level. CRD V added an additional methodology that considers the eurozone as a single jurisdiction, allowing the competent authority to classify a G-SIB in a lower bucket, reducing the applicable G-SIB buffer accordingly.
 - D-SIB (domestic systemically important banks) buffer: common methodology following EBA guidelines. This is applied at the consolidated, sub-consolidated or individual level.

- **Systemic risk buffer (SRB):** national competent authorities may require this buffer to mitigate non-cyclical systemic risks that are not covered by the countercyclical buffer or the systemically important financial institutions buffer and that could trigger a disturbance in the financial system with serious consequences for both it and the real economy. Application by the authorities is discretionary. A buffer may be required for the entire financial sector or for one or more of its sub-sectors (households, business, etc.).

If the SRB is required for the whole financial sector, the highest of the three systemic buffer rates will be applied. If the SRB applies to one or more sectors, the SRB buffer will be added to the greater of the other two systemic buffers (G-SIB or D-SIB). The previous rule will no longer apply following the transposition of CRD V, so that the buffer against systemic risks will always be in addition to the others.

- **Countercyclical capital buffer (CCyB):** this is applied when the national authorities consider that lending is growing excessively in a jurisdiction, with the aim of containing it. This buffer is calculated specifically for each entity or group and consists of the weighted average of the countercyclical buffer rates applied in regions in which the bank's significant exposures are located. As with the other buffers, this has also been applicable since 1 January 2016.

The table below summarises the required regulatory rates based on the different capital buffers to be applied and Banco Santander's position in 2021:

Application	Buffers (% RWAs)	2021
All entities	Conservation (CCoB)	2.5 %
Designated entities	G-SIB entities ⁽¹⁾ (1%-3.5%)	100% of the buffer
	D-SIB entities ⁽²⁾	100% of the buffer
At the discretion of competent national authority	Systemic risk (SRB) ⁽³⁾	0%-5%
	Countercyclical (CCyB) ⁽⁴⁾	0% - 2.5%
	Consolidated combined buffer	CCoB + CCyB + Max ⁽⁵⁾ (G-SIB, D-SIB, SRB)

1) Bank of Spain requires a 1% buffer from Santander Group for 2021

2) This requirement is 0% for Santander Group

3) % countercyclical buffer applicable during 2021 according to data from the European Systemic Risk Board (ESRB):

- a) Exposures to customers resident in Spain: 0%, according to Bank of Spain data for the first quarter of 2021
 - b) Exposures to customers resident in the United Kingdom: 0% (from 11 March)
 - c) Exposures to customers resident in Belgium: 0% (from 1 April)
 - d) Exposures to customers resident in Bulgaria: from 1% to 0.5% (from 1 April)
 - e) Exposures to customers resident in the Czech Republic: from 1% to 0.5% (from 1 July)
 - f) Exposures to customers resident in Denmark: from 2% to 0% (from 12 March)
 - g) Exposures to customers resident in France: from 0.5% to 0% (from 1 April)
 - h) Exposures to customers resident in Norway: from 2.5% to 1% (from 13 March)
 - i) Exposures to customers resident in Germany: from 0.25% to 0% (from 1 April)
 - j) Exposures to customers resident in Iceland: from 2% to 0% (from 18 March)
 - k) Exposures to customers resident in Ireland: from 1% to 0% (from 1 April)
 - l) Exposures to customers resident in Lithuania: from 1% to 0% (from 1 April)
 - m) Exposures to customers resident in Luxembourg: 0.25%. This is expected to increase to 0.5% from 1 January 2021
 - n) Exposures to customers resident in Slovakia: from 2% to 1% (from 1 August)
 - o) Exposures to customers resident in Sweden: from 2.5% to 0% (from 16 March)
- 5) The highest of the three buffers applies if the SRB buffer covers all exposures. Otherwise, the higher of G-SIB and D-SIB plus the SRB buffer applies.

The geographic breakdown of significant lending exposures for calculating the countercyclical capital buffer is available in Appendix XI on Santander Group's website.



[Access file 2020 Pillar 3 Appendices available on the Santander Group website](#)

Eligible capital requirements

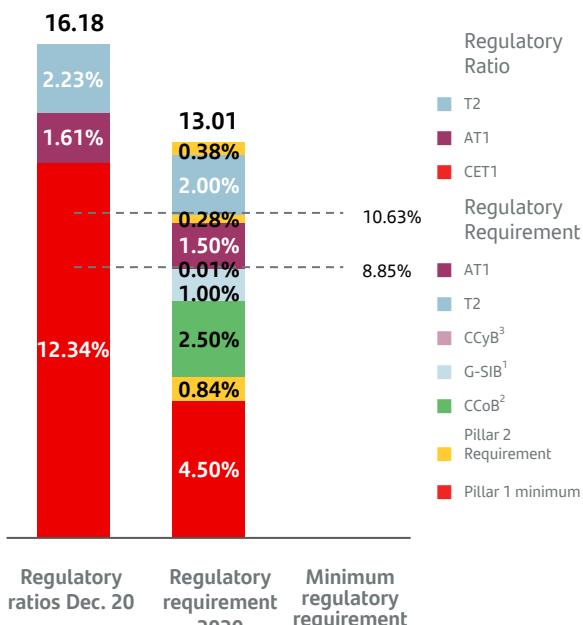
The capital decision resulting from the Supervisory Review and Evaluation Process (SREP) under the European Central Bank's (ECB) Single Supervisory Mechanism comprises a Pillar 2 Requirement (Pillar 2R) and Pillar 2 Guidance (Pillar 2G). Pillar 2R is binding and failure to comply may have direct consequences for banks. Pillar 2G is not directly binding. Failure to comply has no bearing on the maximum distributable amount (MDA) threshold. 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.

At 1 January 2021, at consolidated level, the Group must maintain a minimum capital ratio of 8.85% of CET1 (i.e. 4.50% of the Pillar 1 requirement, 0.84% of the Pillar 2R requirement, 2.50% of the capital conservation buffer requirement, 1.00% of the G-SIB requirement and 0.01% of the countercyclical capital buffer requirement).

Santander Group must also maintain a minimum capital ratio of 10.63% for Tier 1 and a minimum total ratio of 13.01%.

In 2020, the established target solvency ratio was achieved. Santander's CET1 ratio was 12.34% at year-end; demonstrating its organic capital generation capacity.

Regulatory Capital vs Regulatory requirement



1. Global systemically important banks buffer

2. Capital conservation buffer

3. Countercyclical capital buffer

At 31 December 2020, Banco Santander had a CET1 regulatory capital ratio of 12.34% and a total ratio of 16.18% phased-in, applying CRR and IFRS9 transitional arrangements.

2.1.5.1. Global systemically important institutions

Santander Group is one of 30 entities designated as global systemically important banks (G-SIB) in 2020.

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 Group to meet additional requirements, mainly relating to:

- Its capital buffer (Santander Group is included in the group of banks with the smallest capital buffer, 1%)
- 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
- Requirement to submit special reports to the supervisors.

The BCBS and the Financial Stability Board jointly decide which banks qualify as being global systemically important, using a method based on five indicators: size, cross-jurisdictional activity, interconnectedness with other financial institutions, substitutability of financial services/infrastructure and complexity. Each of these categories has an equal weighting of 20%.

This methodology has been changed and will come into effect from January 2022. The main changes in the methodology are: inclusion of a trading volume indicator, modifying the weighting of the remaining indicators in the substitutability category, and inclusion of insurance companies in the reporting scope. A new measurement for cross-jurisdictional indicators will also be included, which will consider the EU as one jurisdiction, possibly reducing the indicator to +/-10 bp.

Indicators for 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 markets	Measures whether the bank's activity can be substituted by 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

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: 76 banks were considered in December 2019. 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 buffer ranging from 1% to 3.5%).

In November 2020, the Financial Stability Board (FSB) published its list of global systemically important banks based on the December 2019 data. This will be fully applicable in 2022. Meeting these requirements makes Santander Group a more robust bank than its domestic rivals. Santander Group is currently subject to a systemic capital buffer of 1%, which will become fully effective in 2021.



For more details regarding Quantitative Indicators, access file "G-SIBs indicadores cuantitativos", under section Shareholders and Investors/Other presentations (April month) on the Santander Group website.

Global systemically important institutions

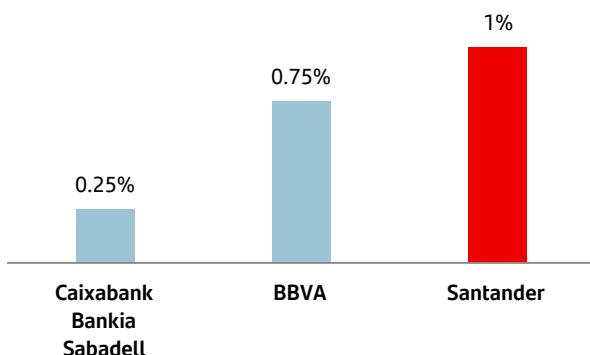
Capital buffer	Entity
5 (3.50%)	(Empty)
4 (2.50%)	JP Morgan Chase
3 (2.00%)	Citigroup HSBC
	Bank of China Barclays BNP Paribas Deutsche Bank Goldman Sachs
2 (1.50%)	Industrial and Commercial Bank of China Limited Mitsubishi UFJ FG Wells Fargo
	Agricultural Bank of China Bank of New York Mellon China Construction Bank Credit Suisse Group BpsCE Group Crédit Agricole ING Bank Mizuho FG Morgan Stanley Royal Bank of Canada Santander Société Générale Standard Chartered State Street Sumitomo Mitsui FG UBS Unicredit Group
1 (1,00%)	

2.1.5.2. Domestic Systemically Important Institutions

When identifying domestic systemically important banks (D-SIBs), the Bank of Spain, 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. The Bank of Spain conducts an annual review of this classification. The following institutions are included on its 2021 list:

Systemical buffer

Domestic Systemically Important Institutions



Santander Group is on the lists of both global and domestic systemically important banks. The Bank of Spain requires the higher of the two buffers to be applied, under rule 23 of Circular 2/2016. As both buffers are the same for Banco Santander, the applicable buffer in 2021 will be 1%.

2.2. Pillar 1 - Regulatory capital

The current regulatory framework for capital calculation 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 when carrying out 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.

2.2.1. Eligible capital

Equity at 31 December 2020 stood at €91.322 billion, down €19.338 billion from the year before.

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

Table 4. Reconciliation of accounting capital with regulatory capital

Million euros	31 Dec. 2020	31 Dec. 2019
Subscribed capital	8,670	8,309
Share premium account	52,013	52,446
Reserves	62,777	56,526
Treasury shares	(69)	(31)
Attributable profit	(8,771)	6,515
Approved dividend	—	(1,662)
Shareholders' equity on public balance sheet	114,620	122,103
Valuation adjustments	(33,144)	(22,032)
Non-controlling interests	9,846	10,588
Total equity on public balance sheet	91,322	110,659
Goodwill and intangible assets	(15,711)	(28,478)
Eligible preference shares and participating securities	9,102	9,039
Accrued dividend	(478)	(1,761)
Other adjustments	(5,734)	(9,923)
Tier 1 (Phased-in)	78,501	79,536

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

Table 5. Eligible capital

Million euros	31 Dec. 2020	31 Dec. 2019
Common Equity Tier 1 (CET1)	69,399	70,497
Capital	8,670	8,309
(-) Treasury shares and own shares financed	(126)	(63)
Share premium	52,013	52,446
Reserves	64,766	57,368
Other retained earnings	(34,937)	(22,933)
Minority interests	6,669	6,441
Attributable profit net of dividends	(9,249)	3,092
Deductions	(18,407)	(34,163)
Goodwill and intangible assets	(15,711)	(28,478)
Others	(2,696)	(5,685)
Additional Tier 1 (AT1)	9,102	9,039
Eligible instruments AT1	8,854	9,209
T1 excesses - subsidiaries	248	(170)
Residual value of intangibles	—	—
Deductions	—	—
Tier 2 (T2)	12,514	11,531
Eligible instruments T2	13,351	12,360
Gen. funds and surplus loan loss prov. IRB	—	—
T2 excesses - subsidiaries	(837)	(829)
Others	—	—
Total eligible capital	91,015	91,067

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

This regulation provides for a phase-in period that will give institutions time to adapt to the new requirements in the European Union. This phase-in applies to Santander Group under Regulation (EU) 2016/445 of the European Central Bank on the exercise of options and national discretions published on 14 March 2016.

Without considering the phase-in schedule, CET1 comprises:

- Subscribed share capital, which in December 2020 totalled €8,670 million, increased by a total of €361 million on the previous period, as a result of the issuance of 722,526,720 ordinary shares.
- 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.
- Profit attributable to the group, which stood at -€9,249 million in December 2020. Due to the deterioration in the economic outlook in the second quarter, an adjustment was made to the goodwill of certain units and deferred tax assets amounting to €12,600 million.
- 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 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 resulting from the requirements for prudent valuation; and defined benefit pension fund assets shown on the balance sheet.

Tier 1 capital comprises CET1 capital plus Additional Tier 1 capital (AT1) including preferred securities issued by Santander Group.

Tier 2 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.

Table 6. Regulatory capital. Changes

	31 Dec. 2020
Common Equity Tier 1 (CET1)	
Starting figure (31/12/2018)	70,497
Shares issued during the year and share premium account	(72)
Treasury shares and own shares financed	(63)
Reserves	4,306
Attributable profit net of dividends	(9,249)
Other retained earnings	(12,004)
Minority interests	228
Decrease/(increase) in goodwill and other intangibles	12,767
Other	2,988
Ending figure (31/12/2019)	69,399
Additional Tier 1 (AT1)	
Starting figure (31/12/2018)	9,039
Eligible instruments AT1	(355)
T1 excesses - subsidiaries	418
Residual value of intangibles	—
Deductions	—
Ending figure (31/12/2019)	9,102
Tier 2 (T2)	
Starting figure (31/12/2018)	11,531
Eligible instruments T2	990
Gen. funds and surplus loan loss prov. IRB	—
T2 excesses - subsidiaries	(7)
Deductions	—
Ending figure (31/12/2019)	12,514
Deductions from total capital	—
Final figure for total capital (31/12/2019)	91,015
Eligible capital over time	
-0,01%	
91,067	91,015
2019	2020

In addition to movements in equity, changes in regulatory capital reflect the €477 million dividend not distributed in 2020, so that attributable profit net of dividends amounted to -€9,249 million.

The movement in the other retained earnings item is mainly due to the impact of the depreciation of Latin American currencies against the euro.

In relation to goodwill and other intangible assets, of particular note is the write off of goodwill to the due to the worsening economic environment as a result of covid-19, which has led to a decrease of €10,100 million.

The change included in deductions and prudential filters was reduced as a result of changes in the shortfall of provisions for expected loss and the adjustments in deferred tax assets as a result of the write off carried out.

The fall in Tier 1 capital is mainly explained by the loss of eligibility of issues in the period. Banco Santander, S.A. launched a preference issue for €1,500 million applicable to Tier 1 capital.

The increase in Tier 2 capital is mainly due to the subordinated debt issuances made by Banco Santander, S.A. for the amount of €1,000 million and \$1,500 million.

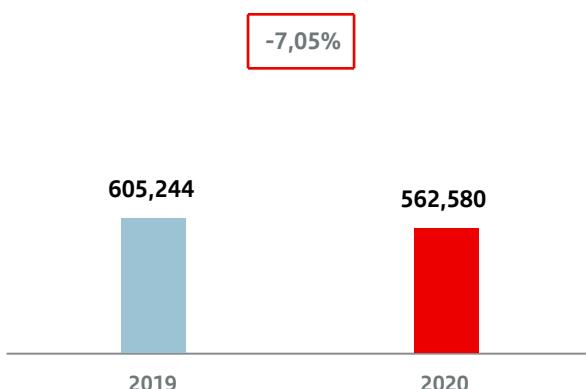
2.2.2. Capital requirements

This section gives details of capital requirements by geography (see table 8).

Table 7 shows that capital requirements have barely changed from 2019, maintaining a Pillar I risk distribution similar to that of the prior year: credit risk 87%, market risk 3% and operational risk 10%.

Capital requirements for credit risk decreased by 7.2% compared to 2019 to EUR 39,096 million, while capital requirements for market risk decreased by 21.1% and those for operational risk another 6.8% compared to the previous year.

RWA Evolution



Distribution of capital requirements by risk type and geography

31 Dec. 2020



Shown below is a general overview of the total RWAs by risk.
The following sections provide additional breakdowns.

Table 7. Overview of RWAs (OV1)

Million euros

	RWA			Minimum Capital Requirements
	2020	Sep-20	Dec-19	2020
Credit risk (excluding CRR)	447,927	441,683	483,341	35,834
Of which, standardised approach (SA)	246,284	241,109	283,385	19,703
Of which, the foundation IRB (FIRB) approach*	30,797	31,799	35,583	2,464
Of which, the advanced IRB (AIRB) approach	168,096	166,370	161,548	13,448
Of which, Equity IRB under the Simple risk weight or the IMA	2,750	2,405	2,825	220
CCR	10,239	10,827	11,070	819
Of which, mark to market method (IRB)	7,083	7,785	7,549	567
Of which, mark to market method (Standardised)	2,195	2,163	2,274	176
Of which, risk exposure amount for contributions to the default fund of a CCP	241	185	259	19
Of which, CVA	720	694	988	58
Settlement risk	0	0	2	0
Securitisation exposures in the banking book (after the cap)	8,159	7,595	6,629	653
Of which, IRB approach	—	—	2,374	—
Of which, SEC-IRBA approach	4,731	4,597	2,030	378
Of which, SEC-SA approach	1,821	1,580	1,014	146
Of which, SEC-ERBA approach	1,607	1,418	866	129
Of which, standardised approach	—	—	346	—
Market risk	18,008	19,237	21,807	1,441
Of which, standardised approach	5,071	5,834	7,596	406
Of which, IMA	12,936	13,403	14,211	1,035
Operational risk	55,865	53,973	59,661	4,469
Of which standardised approach	55,865	53,973	59,661	4,469
Amounts below the thresholds for deduction (subject to 250% risk weight)	22,382	21,808	22,734	1,791
Floor adjustment	—	—	—	—
Total	562,580	555,122	605,244	45,006

* Includes equities under the PD/LGD approach.

As of 31 December 2020, Santander Group had no additional capital requirements arising from the floors set by 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, in Part Ten, Title 1.

[Chapter 3. Credit Risk](#)

[Chapter 4. Counterparty Credit Risk](#)

[Chapter 5. Credit Risk - Securitisations](#)

[Chapter 6. Market Risk](#)

[Chapter 7. Operational Risk](#)

The table below shows capital requirements by geography:

Table 8. Capital requirements by geographical region

Million euros	31 Dec. 2020								
	Total	Europe	Of which, Spain	Of which, UK	North America	Of which, US	South America	Of which, Brazil	Other
Credit risk	36,401	22,492	9,977	5,047	6,342	4,863	6,860	4,340	706
Of which, internal rating-based (IRB) approach (*)	15,884	12,574	5,891	3,663	1,168	481	1,536	1,271	605
Central governments and Central Banks	31	1	1	—	1	—	15	3	15
Institutions	509	286	72	73	110	52	35	4	78
Corporates – SME	9,760	6,876	3,946	1,242	1,052	425	1,484	1,262	348
of which, Specialised Lending	1,283	999	350	381	167	33	67	—	50
of which, Other	1,813	1,700	1,424	87	75	1	38	36	1
Retail - Secured by real estate SME	65	64	64	0	1	1	0	—	0
Retail - Secured by real estate non-SME	3,238	3,226	939	2,050	2	1	1	0	8
Retail - Qualifying revolving	321	321	112	148	0	0	0	0	0
Retail - Other SME	329	328	201	1	0	0	0	0	0
Retail - Other non-SME	1,631	1,472	556	149	2	0	1	0	155
Other non-credit-obligation assets	—	—	—	—	—	—	—	—	—
Of which, standardised approach (SA)	19,703	9,104	3,271	1,384	5,174	4,382	5,324	3,069	101
Central governments or central banks	1,197	758	741	0	83	0	353	317	2
Regional governments or local authorities	17	9	6	—	0	0	8	8	—
Public sector entities	31	4	—	—	14	14	13	0	0
Multilateral Development Banks	—	—	—	—	—	—	—	—	—
International Organisations	—	—	—	—	—	—	—	—	—
Institutions	350	118	70	9	119	109	107	87	6
Corporates	3,623	1,922	358	471	695	648	994	362	11
Retail	7,584	2,886	296	508	2,507	2,206	2,111	1,589	81
Secured by mortgages on immovable property	2,570	872	190	37	802	615	895	256	0
Exposures in default	524	262	127	16	77	51	185	84	0
Items associated with particular high risk	156	28	0	13	16	16	112	13	—
Covered bonds	13	13	—	13	—	—	—	—	—
Claims on institutions and corporates with a short-term credit assessment	6	2	2	—	3	0	2	—	—
Collective investments undertakings (CIU)	21	22	7	0	—	0	—	—	—
Equity exposures	23	18	—	—	—	—	5	—	—
Other items	3,588	2,191	1,475	317	859	722	537	353	1
Of which, Equity IRB	814	814	814	—	—	—	—	—	—
Simple method	220	220	220	—	—	—	—	—	—
Under the PD/LGD method	594	594	594	—	—	—	—	—	—
Counterparty credit risk	253	153	79	37	58	48	41	24	—
Of which, standardised approach	176	94	25	32	53	47	29	20	—
Of which, risk exposure amount for contributions to the default fund of a CCP	19	19	16	2	0	—	0	0	—
Of which, CVA	58	41	37	2	5	1	12	4	—
Settlement risk	0	0							
Securitisations exposures in banking book (after cap)	653	450	174	141	188	157	13	13	2
Market risk	1,441	1,002	973	14	207	7	232	116	—
Of which, Standardised approach (SA)	406	274	245	14	8	7	123	116	
Of which, internal model approaches (IMA)	1,035	728	728	—	199	—	108	—	—
Operational risk	4,469	2,349	854	566	1,078	830	1,042	565	—
Of which, Standardised approach	4,469	2,349	854	566	1,078	830	1,042	565	—
Amount below the threshold for deduction (subject to 250% risk weight)	1,791	1,242	1,128	20	77	0	470	399	2
Floor adjustments									
Total	45,006	27,688	13,184	5,825	7,950	5,904	8,657	5,455	711

* Including counterparty credit risk

2.2.2.1. Plan to deploy advanced internal models and supervisory approval

Santander Group remains committed to adopting the Basel II advanced internal ratings-based (AIRB) approach for its banks, increasing the amount of exposure managed using internal models. This approach will be applied progressively over the coming years. The commitment to the supervisor means adapting the advanced approaches in Santander Group's core markets.

Santander Group continued to pursue this objective during 2020 through its plan to gradually implement the necessary technology platforms and methodological improvements to enable the progressive application of advanced internal models for calculating regulatory capital in the rest of the Group's units.

Santander Group 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.

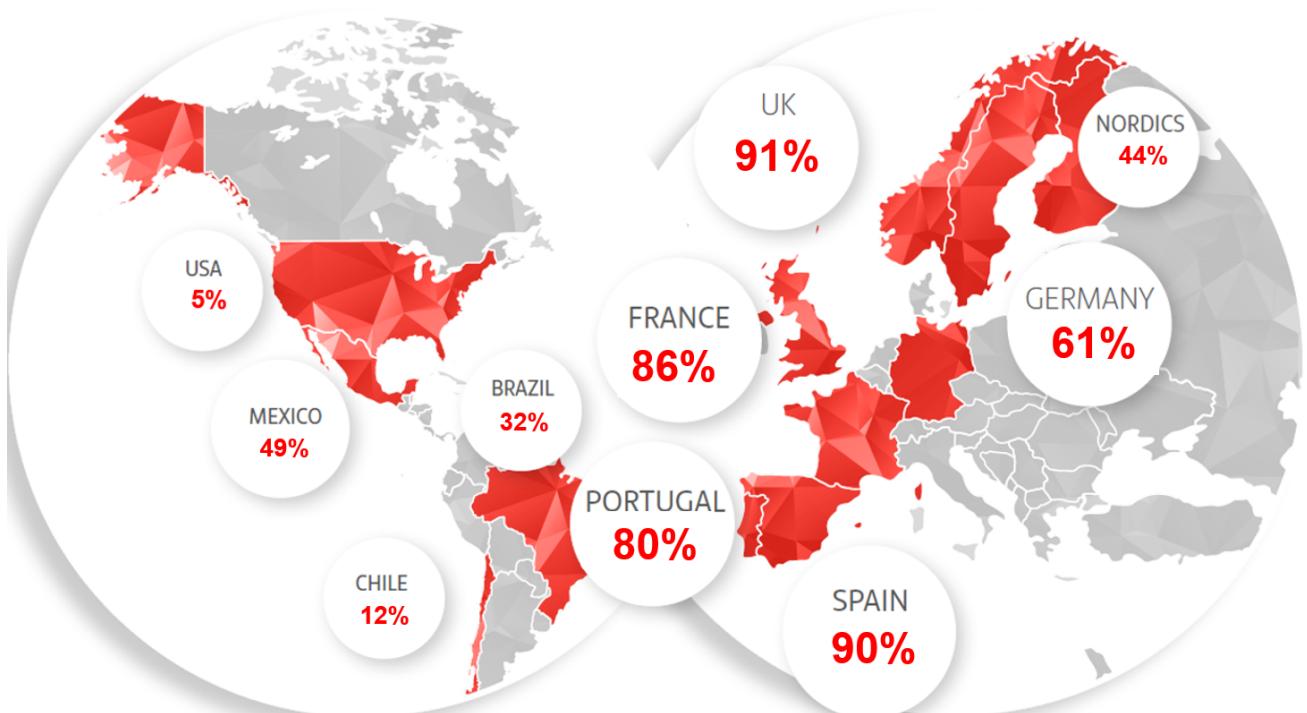
Supervisory approval was received for the individualised companies portfolio in Santander Brazil during 2020.

The implementation strategy for the Basel regulations in Santander Group focuses on using advanced approaches for the main American and European banks.

The following chart shows the percentage of IRB coverage by geography:

IRB coverage by region

%



Stripping out sovereign bonds in local currency and non-financial assets, which are not subject to the implementation plan for internal models, Santander Group reported 65% of its exposure at default (EAD) using IRB at December 2020.

By geography, the main contributors are Spain (28%), the United Kingdom (24%), the global portfolio of companies in Chile and the USA (1%), Brazil (3%), Portugal (3%), Germany (2%), Mexico (2%), the Nordic countries (1%) and France (1%).

The medium-term coverage objective of the Group's IRB approaches must be considered together with the current supervisory focus on the robustness and suitability of the approaches it has available to it, and with the simplification strategy recently agreed with the ECB; a practical example of which is the recent supervisory approval of the reversion to the standardised approach for sovereign bonds in foreign currency.

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)
United Kingdom	Santander UK PLC	Institutions, Corporates, Corporates SMEs, Corporates Project Finance, Mortgages, Qualifying Revolving, Other Retail.
	Abbey National Treasury Services	Institutions, Corporates, Corporates SMEs, Corporates Project Finance.
	Abbey Covered Bonds LLP	Institutions
Spain	Banco Santander, S.A.	Sovereigns, 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.
Portugal	Santander Consumer Finance, S.A.	Corporates, Corporates SMEs, Qualifying Revolving, Other Retail.
	Banco Santander Totta	Institutions, Corporates, Corporates SMEs, Corporates Project Finance, Mortgages, Qualifying Revolving, Retail SMEs, Other Retail.
Brazil	Banco Santander Brazil	Corporates
	Santander Brazil EFC	Corporates
Germany	Santander Consumer Bank AG	Corporates, Corporates SMEs, Mortages, Revolving and Other Retail
Mexico	Banco Santander Mexico	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	Sovereigns, Institutions and Corporates

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 Agente de Valores Limitada	Trading book
	Santander Investment Chile Limitada	Trading book
	Santander Corredores de Bolsa Limitada	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 6.

Santander 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 Mexico, following the approval granted in 2016 for Brazil.



For further information on the Operational Risk, see chapter 7.

As additional information, Appendix XIII shows a breakdown of exposure according to the capital calculation method used in each region and for each portfolio.

Supervisory validation process

As established by the European Parliament, the first key element of banking union is the Single Supervisory Mechanism (SSM). Under this mechanism, direct banking supervision falls to the European Central Bank. This ensures that the largest European banks are independently supervised by just one entity and are subject to a common set of standards. Eurozone states are required to participate. Participation is voluntary for non-eurozone EU Member States.

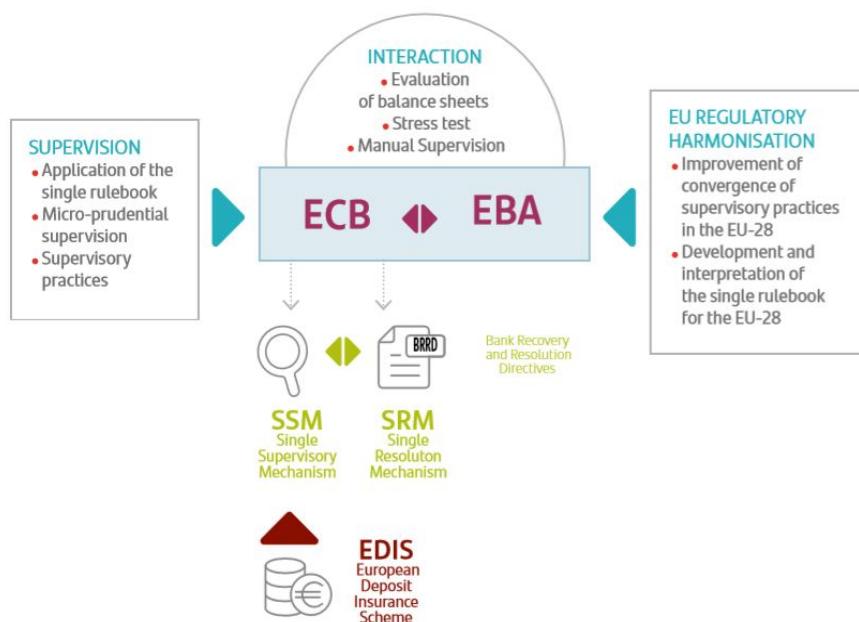
The second key element is the Single Resolution Mechanism (SRM), which is responsible for preparing for the worst-case scenario, i.e. bank failure. The objective is to ensure that such situations can be resolved in an orderly fashion and at the minimum cost to taxpayers. The focus on shielding taxpayers from the costs of future bank resolutions led to a change in the underlying regulations, namely the Bank Recovery and Resolution Directive (BRRD), so that the bank's shareholders and creditors will bear the brunt of the resolution costs. Under certain circumstances, banks may also obtain supplementary financing from the recently-created Single Resolution Fund (SRF), which is financed by the banking sector. The SRF is expected to meet its target funding level by 2023.

The SSM and the SRM are both operational: the SSM became effective on 4 November 2014 while the SRM became operational on 1 January 2016.

The SRM started developing resolution plans for banks in January 2015 and has been fully operational since January 2016, with a full range of resolution tools.

The European Central Bank has gradually been deploying its new structure and functions, developing into the single European supervisor. The European Banking Authority (EBA) will continue to collaborate actively in adapting the regulations. The responsibilities of each of these bodies are:

Supervisory validation process



The European supervisor has put in place a new governance process, which involves:

- The Joint Supervisory Team (JST), consisting of a mixed team of experts, which analyses the entity's situation and issues a technical report to the ECB's Supervisory Board.
- The Supervisory Board then submits its preliminary decisions to the Governing Council.
- The Governing Council then issues a final decision authorising or rejecting the use of internal models.

The supervisor uses the documentation provided by the entity as the basis for its assessment of whether the minimum requirements for using advanced models to calculate regulatory capital have been met. This information must be sufficiently thorough and detailed to provide a third party with a clear idea of the entity's rating systems, methodologies, technological infrastructure, capital calculation process and internal governance, and to be able to replicate the outputs of the model. The unit itself is responsible for preparing this documentation, which forms part of the formal application required for the validation process established by the supervisors of entities seeking to implement advanced models to calculate regulatory capital.

A preparatory "pre-application" phase has been introduced as part of the supervisory approval process for major changes to advanced models to calculating regulatory capital. This involves the entity providing the supervisor with the necessary documentation beforehand, so that the supervisor can assess whether the minimum requirements have been met to continue the formal approval process. If the European Central Bank considers the entity to be initially ready, the request is sent and the supervisor begins a formal review process of the regulatory models.

The approval of changes in Santander Group's models sometimes involves supervisors from various jurisdictions, often subject to different legislation, criteria and implementation calendars. This often hinders and slows joint decisions on the approval of internal models on the basis of consolidation and may affect authorisations at the local level.

Targeted Review of Internal Models

The on-site performance of the TRIM (Targeted Review of Internal Models) was completed in 2019. Banco Santander has reviewed several portfolios through on-site inspections this year. The final conclusions (findings, requirements and limitations) of the inspections were received in 2020. It is expected that all the pending ECB conclusions will be received, and that the final horizontal results of the entire TRIM exercise will be published, over the next few months.

In 2018 Banco Santander launched two strategic programmes to improve the quality of its internal models to comply with regulatory expectations and requirements, and to address the weaknesses found during the TRIM. These have been shared with the ECB. They are the IRB 2.0 (internal credit risk models) and MRAP or Market Risk Advanced Platform (internal market risk models), and will be performed over the next few years.



Furthermore, we have strengthened our focus on ensuring high quality models fully meeting supervisory expectations. In this regard, we have reinforced our organisation by accelerating the creation of the Global Models & Data Unit, aiming to deliver better, more efficient and central execution of model builds, whilst exploiting the synergies of combining models and data. The new Single Validation Office will help to ensure higher standards, better consistency and coordination among all validation activities.

2.2.3. Leverage ratio

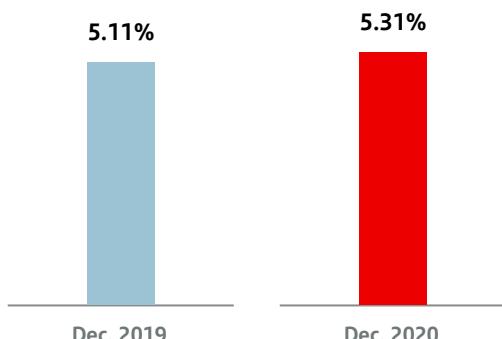
Basel III established the leverage ratio as a non-risk-sensitive measure to limit excessive growth of the balance sheet relative to available capital.

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:

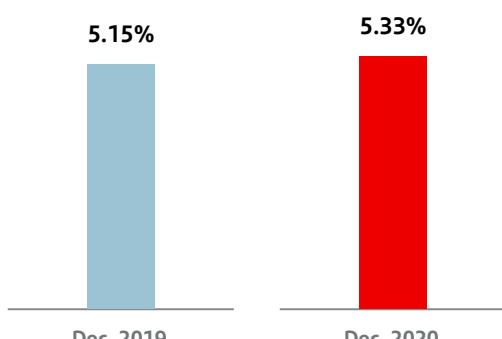
- Asset value, without derivatives and without elements considered as deductions in Tier 1 (for example, the loan balance is included but not goodwill).
- Off-balance-sheet accounts (mainly guarantees, undrawn credit limits and letters of credit) weighted by the conversion factors for the standardised approach to credit risk.
- Inclusion of the net value of derivatives (gains and losses against a single counterparty are netted, minus collateral when certain criteria are met) plus a buffer for potential future exposure.
- A buffer for the potential risk of financing securities transactions.
- Lastly, a buffer is included for risk relating to unhedged credit derivatives (CDS).

The following tables illustrate the ratios published by Santander Group since December 2019. These show that the bank's ratio is stable with an upward trend.

CRR Fully loaded leverage ratio*



CRR Phased-in leverage ratio*



*2020 and 2019 data has been calculated under application of CRR and IFRS 9 transitional arrangements

The BCBS revised the definition of the leverage ratio in 2017. This involved a series of technical adjustments to the method for calculating total exposure (the denominator of the leverage ratio), mainly relating to exposure to derivatives and the treatment of off-balance-sheet exposure.

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 buffer of 50% of the ratio of the buffer applicable to the global systemically important financial institution (G-SIFI). Adjustments to its calculation are also included, chief among which are the exclusion of certain exposures from the measure of total exposure: public loans, transfer loans and officially supported export credits.

On 24 June 2020, Regulation (EU) No 575/2013 (CRR) was amended in response to the covid-19 pandemic (CRR II Quick Fix). This allowed entities to implement two of the measures proposed in CRR II in advance: the exclusion of reserves at Eurosystem central banks from leveraged exposure and the special treatment of regular-way purchases and sales awaiting settlement under Articles 500b and 500d of Regulation 2020/873 respectively.

Banks must implement the final definition of the leverage ratio by June 2021 and comply with the new ratio calibration (the additional buffer for G-SIBs) from January 2023.

Santander Group's leverage ratio at 31 December 2020 was as follows:

Table 9. Leverage ratio

Million euros

	31 Dec. 2020	
	CRR Fully loaded	CRR Phased -In
Tier 1	78,126	78,501
Exposure	1,471,480	1,471,480
Leverage Ratio	5.31 %	5.33 %

The following table gives a breakdown of the ratio calculation:

Table 10. Leverage ratio details

Million euros

Item	Amounts Consol. Balance Sheet	31 Dec. 2020			Comment
		To be eliminated	To be included	Leverage exposure	
Derivatives	75,456	75,456	25,219	25,219	Substitution of carrying amount by EAD net of collateral
Securities financing transactions	67,441		2,358	69,799	A buffer is added for these transactions
Assets deducted in Tier 1	18,151	18,151		—	Deletion to avoid duplication
DTAs	1,101	1,101			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	1,328,442	66,648		1,261,794	Excludes Eurosystem central bank reserves (CRR2 quick fix)
Total Assets	1,490,591	161,355	27,577	1,356,813	
Total Off-Balance-Sheet items	318,873	204,206		114,668	Balances are weighted according to their risk
Total Exposure (denominator)				1,471,480	
Tier 1 (numerator)				78,501	
Leverage ratio	1,329,235				5.33 % Minimum recommended 3%

The leverage ratio is calculated and monitored by Santander Group every month and reported to the capital committee and other governing bodies. This ensures adequate monitoring of the risk of excessive leverage under the 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 solvency 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). 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.

Despite the covid-19 crisis, which has necessitated higher levels of liquidity for our customers, at no point did the leverage ratio rise above the limits established in the Risk Appetite Framework in 2020.

Tables LRSum, LRCom, LRSpl and LRQua can be found in Appendix X of the Pillar 3 2020 Appendices file, which is available on Santander Group's website.



[Access file 2020 Pillar 3 Appendices available on the Santander Group website](#)

2.3. Pillar 2 - Economic capital

Economic capital is the capital needed to support the risks of our activity with a certain level of solvency. It is measured using an internal model.

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

For more information on economic capital, including RoRAC, value creation and capital planning, see section 3.5 of the Economic and financial report of the 2020 Annual report.



[Access 2020 Annual Report available on the Santander Group website](#)

2.4. Recovery and resolution plans and special situations response framework

For details on the main developments by Santander Group in crisis management, specifically in relation to viability and resolution plans, and the special situations management framework, see section 3.5 of the Economic and financial report of the 2020 Annual report.



[Access 2020 Annual Report available on the Santander Group website](#)

2.5. Total Loss-Absorbing Capacity (TLAC) and Minimum Requirement for own funds and Eligible Liabilities (MREL)

Information on TLAC and MREL can be found in section 3.5 of the Economic and financial report of the 2020 Annual Report.



[Access 2020 Annual Report available on the Santander Group website](#)

For further details on TLAC and MREL, see Fixed Income Presentation available on the Santander Group Website.



[Access Fixed Income Presentation available on the Santander Group website.](#)

3

Credit risk

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3. Credit risk



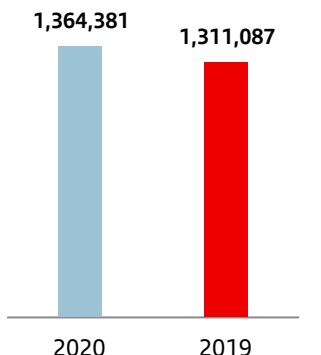
Credit risk is the risk of financial loss due to failure to comply with or deterioration of the credit rating of a customer or a third party, that has been financed or through which a contractual obligation has been assumed.

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

EAD Variation

Million euros

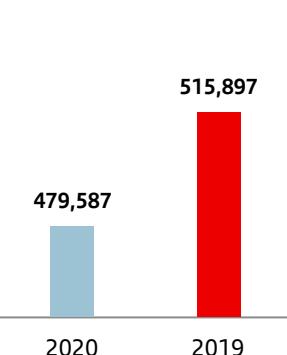
4.1%



RWA Variation

Million euros

(7.0)%



Main figures *

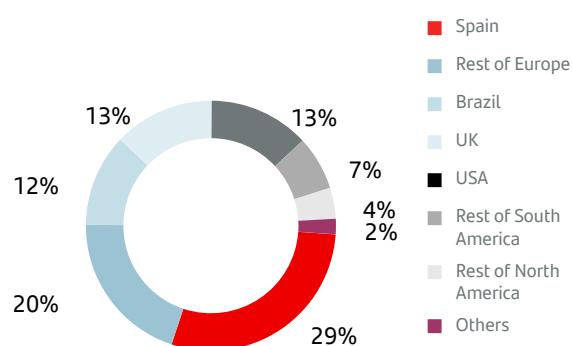
Million euros

	EAD		RWA	
	2020	2019	2020	2019
Credit Risk	1,364,381	1,311,087	479,587	515,897
Of which, with standard method (SA)	617,135	684,054	261,557	300,771
Of which, IRB method	747,246	627,033	218,030	215,126

* It does not include securitisations and includes counterparty credit risk.

RWA by geography *

* Includes Counterparty Credit risk



Santander Group ensures that its risk profile remains within the defined risk appetite levels and other limits through the advanced and comprehensive management of all risks, in a robust control environment, based on pillars aligned with its strategy.

For further details on policies and objectives of risk management (CRR article 435) see Corporate Governance chapter and Risk Management Report (Sections 1 and 2) in the Annual Report.



[Access 2020 Annual Report available on the Santander Group website](#)

3.1. General aspects

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.

Santander Group's profile is mainly retail, with an adequate diversification of credit risk between mature and emerging markets.

Table 11. Credit risk exposure and CRM effects (IRB approach) (CR4)

Million euros

	31 Dec. 2020					
	Exposures before CCF and CRM		Exposures post CCF and CRM		RWAs and RW	
	On-balance-sheet amount	Off-balance-sheet amount	On-balance-sheet amount	Off-balance-sheet amount	RWAs	RW
Central governments or central banks	2,731	1,007	1,549	51	393	25 %
Institutions	35,593	14,302	30,723	4,473	6,356	18 %
Corporates	196,293	116,973	173,119	36,689	122,002	58 %
Of Which: Specialised Lending	21,245	5,269	21,179	1,520	16,037	71 %
Of Which: SME	43,733	9,835	34,322	2,460	22,666	62 %
Retail	342,228	40,150	335,776	24,630	69,799	19 %
Secured by real estate property	280,451	15,542	280,842	10,305	41,285	14 %
SME	3,471	86	3,451	26	813	23 %
Non-SME	276,980	15,456	277,390	10,279	40,472	14 %
Qualifying Revolving	3,215	18,860	3,253	11,856	4,018	27 %
Other Retail	58,562	5,749	51,681	2,470	24,496	45 %
SME	14,611	3,749	8,944	1,336	4,111	40 %
Non-SME	43,951	2,000	42,738	1,133	20,385	46 %
Equity	10,126	—	10,126	—	19,480	192 %
Total IRB approach	586,972	172,432	551,293	65,843	218,030	35 %

Note: Securitisations not included. Including counterparty credit risk.

Table 12. Credit risk exposure and CRM effects (Standardised approach) (CR4)

Million euros

	31 Dec. 2020					
	Exposures before CCF and CRM		Exposures post CCF and CRM		RWAs and RW	
	On-balance-sheet amount	Off-balance-sheet amount	On-balance-sheet amount	Off-balance-sheet amount	RWAs	RW
Central governments or central banks	263,841	13,887	303,869	5,980	26,307	8 %
Regional governments or local authorities	6,642	44	13,475	808	215	2 %
Public sector entities	1,713	345	1,531	70	389	24 %
Multilateral Development Banks	1,818	0	4,672	—	—	0 %
International Organisations	9	—	9	—	—	0 %
Institutions	17,584	21,981	15,052	14,668	5,202	18 %
Corporates	56,539	29,702	46,550	5,201	48,299	93 %
Retail	140,932	68,024	131,741	1,273	94,860	71 %
Secured by mortgages on immovable property	85,169	8,985	84,406	339	32,125	38 %
Exposures in default	6,177	273	6,102	179	6,550	104 %
Items associated with particularly high risk	1,285	137	1,283	15	1,948	150 %
Covered bonds	1,674	—	1,674	—	167	10 %
Claims on institutions and corporates with a short-term credit assessment	95	190	96	0	79	82 %
Collective investments undertakings (CIU)	212	1,308	212	10	286	129 %
Equity exposures	282	—	282	—	282	100 %
Other exposures	69,786	17,216	71,764	3,720	44,848	59 %
Total Standardised approach	653,759	162,093	682,720	32,263	261,557	37 %

Note: Securitisations not included. Including counterparty credit risk.

3.2. Capital requirements for credit risk

3.2.1. Internal ratings-based approach (IRB)

The following table shows the main changes in capital requirements for credit risk under the IRB approach:

Table 13. EU CR8 – RWA flow statements of credit risk exposures under the IRB approach

	31 Dec. 2020	
	RWA	Capital Requirements
RWA as Sep. 2020	200,574	16,046
Asset size	(345)	(28)
Asset quality		
Model updates	3,870	310
Methodology and policy	370	30
Acquisitions and disposals	—	—
Foreign exchange movements	371	30
Other	(3,197)	(256)
RWA as Dec. 2020	201,643	16,131

* Includes credit risk only excluding RWA under the STD method (see table 7: OV1)

The variation in RWA in the fourth quarter of 2020 (+1,069 million) was mainly due to the impact of the TRIM - Targeted Review of Internal Models (+3,870 million), which was offset by the origination of securitizations that led to the elimination of underlying assets (-3,197 million), mainly in Consumer and Spain. There was also a decline in Retail Banking business in Spain and the UK, partially offset by business growth in Santander Consumer, Brazil and Wholesale Banking in Europe.

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).

The distribution of exposures and average parameters by segment and geography is as follows:

Table 14. AIRB approach. Credit risk exposures by portfolios class and PD range (CR6)

Million euros

31 Dec. 2020

PD scale	S&P Levels	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	RW	EL	Value adjustments and provisions
Central banks and central governments												
0.00 < 0.15	AAA to BBB+	1,278	216	21.49 %	797	0.04 %	20	45.69 %	981	151	19 %	0
0.15 < 0.25	BBB+ to BBB	255	0	50.00 %	12	0.22 %	4	50.00 %	1,603	9	76 %	0
0.25 < 0.50	BBB to BB+	—	0	26.67 %	0	0.34 %	1	50.00 %	591	0	58 %	—
0.50 < 0.75	BB+ to BB	—	—	0 %	—	0 %	—	0 %	—	—	0 %	—
0.75 < 2.50	BB to B+	690	19	20.48 %	38	0.90 %	9	50.00 %	1,457	49	129 %	0
2.50 < 10.00	B+ to B-	436	1	12.80 %	15	5.49 %	7	70.00 %	1,686	44	297 %	1
10.00 < 100.00	B- to C	108	1	49.61 %	3	13.98 %	2	85.54 %	1,370	12	456 %	0
100.00 (Default)	D	—	—	0 %	—	0 %	—	0 %	—	—	0 %	—
Total 2020		2,767	237	21.49 %	865	0.21 %	43	46.48 %	1,024	265	31 %	1
Total 2019		3,008	568	26.03 %	2,761	0.12 %	49	45.34 %	1,538	778	28 %	2
Institutions												
0.00 < 0.15	AAA to BBB+	22,603	11,329	31.54 %	27,907	0.05 %	1475	43.28 %	389	3,727	13 %	6
0.15 < 0.25	BBB+ to BBB	2,949	926	38.14 %	1,602	0.17 %	267	42.98 %	442	519	32 %	1
0.25 < 0.50	BBB to BB+	2,192	277	37.73 %	867	0.34 %	216	43.05 %	559	444	51 %	1
0.50 < 0.75	BB+ to BB	1,598	114	29.60 %	510	0.66 %	221	43.83 %	924	429	84 %	1
0.75 < 2.50	BB to B+	2,702	398	44.50 %	1,584	1.06 %	752	16.15 %	1,561	655	41 %	3
2.50 < 10.00	B+ to B-	452	6	76.75 %	181	3.32 %	68	18.40 %	1,472	112	62 %	1
10.00 < 100.00	B- to C	35	—	0%	—	0%	20	0%	—	—	0%	—
100.00 (Default)	D	19	3	0%	19	100.00 %	40	30.55 %	931	4	21 %	5
Total 2020		32,550	13,052	32.53 %	32,671	0.20 %	3059	41.81 %	468	5,890	18 %	19
Total 2019		30,712	15,179	37.57 %	38,283	0.19 %	3,198	42.54 %	528	7,718	20 %	20

Million euros

31 Dec. 2020

PD scale	S&P Levels	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
Corporates													
0.00 < 0.15	AAA to BBB+	32,751	43,544	38.39 %	49,190	0.08 %	4,179	42.76 %	812	11,672	23.73 %	16	(269)
0.15 < 0.25	BBB+ to BBB	20,268	16,762	31.06 %	22,918	0.21 %	7,031	44.12 %	612	9,495	41.43 %	21	(25)
0.25 < 0.50	BBB to BB+	36,401	19,042	29.48	40,535	0.38 %	21,521	46.69 %	724	23,467	57.89 %	72	(365)
0.50 < 0.75	BB+ to BB	20,259	7,016	27.28 %	12,877	0.64 %	11,390	45.98 %	711	9,530	74.01 %	38	(25)
0.75 < 2.50	BB to B+	32,664	8,754	29.87 %	27,226	1.40 %	50,033	44.40 %	768	22,886	84.06 %	168	(148)
2.50 < 10.00	B+ to B-	17,159	4,591	29.89 %	12,575	4.47 %	30,736	41.36 %	775	13,393	106.50 %	230	(268)
10.00 < 100.00	B- to C	4,626	543	29.90 %	2,753	17.18 %	4,143	43.58 %	886	5,462	198.40 %	203	(200)
100.00 (Default)	D	7,900	1,112	22.45 %	8,149	100.00 %	9,793	46.07 %	865	1,390	17.05 %	3,703	(3,456)
Total 2020		172,028	101,363	33.39 %	176,223	5.61 %	138,825	44.39 %	753	97,295	55.21 %	4,450	(4,754)
Total 2019		158,340	88,731	33.68 %	168,004	5.81 %	106,043	43.05 %	774	83,936	49.96 %	3,639	(3,530)
Of which, SMEs													
0.00 < 0.15	AAA to BBB+	42	28	28.46 %	50	0.09 %	2,024	41.02 %	897	8	16.68 %	0	—
0.15 < 0.25	BBB+ to BBB	1,216	159	27.68 %	521	0.22 %	4,150	41.38 %	907	151	29.02 %	0	(1)
0.25 < 0.50	BBB to BB+	7,697	1,770	30.18	7,226	0.37 %	14,518	47.54 %	913	3,203	44.33 %	12	(318)
0.50 < 0.75	BB+ to BB	3,173	525	33.34 %	2,674	0.62 %	7,740	48.56 %	844	1,470	54.98 %	8	(5)
0.75 < 2.50	BB to B+	16,284	2,893	30.86 %	12,276	1.47 %	40,780	44.83 %	845	8,309	67.68 %	80	(75)
2.50 < 10.00	B+ to B-	9,958	2,060	32.90 %	6,951	4.74 %	25,592	40.51 %	862	5,927	85.27 %	132	(111)
10.00 < 100.00	B- to C	1,247	165	27.36 %	1,096	18.59 %	3,115	39.57 %	1,167	1,487	135.61 %	79	(56)
100.00 (Default)	D	4,156	148	22.78 %	4,190	100.00 %	7,203	45.59 %	909	662	15.81 %	1,887	(1,816)
Total 2020		43,773	7,748	31.11 %	34,984	14.14 %	105,122	44.69 %	881	21,218	60.65 %	2,199	(2,382)
Total 2019		27,991	7,403	31.59 %	30,196	8.68 %	63,019	43.31 %	813	17,512	58.00 %	935	(909)

Table 15. FIRB approach. Credit risk exposures by portfolios class and PD range (CR6)

Million euros											31 Dec. 2020		
PD scale	S&P Levels	Original on-balance-sheet gross	Off-balance-sheet exposures pre-CCF	Average CCF	EAD	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RW	EL	Value adjustments and provisions
Central banks and central governments													
0.00 < 0.15	AAA to BBB+	735	—	0%	735	0.04 %	2	45.00 %	900	128	17.37 %	0	
0.15 < 0.25	BBB+ to BBB	—	—	0%	—	0%	—	0%	—	—	0%	—	
0.25 < 0.50	BBB to BB+	—	—	0%	—	0%	—	0%	—	—	0%	—	
0.50 < 0.75	BB+ to BB	—	—	0%	—	0%	—	0%	—	—	0%	—	
0.75 < 2.50	BB to B+	—	—	0%	—	0%	—	0%	—	—	0%	—	
2.50 < 10.00	B+ to B-	—	—	0%	—	0%	—	0%	—	—	0%	—	
10.00 < 100.00	B- to C	—	—	0%	—	0%	—	0%	—	—	0%	—	
100.00 (Default)	D	—	—	0%	—	0%	—	0%	—	—	0%	—	
Total 2020		735	—	0%	735	0.04 %	2	45.00 %	900	128	17.37 %	0	
Total 2019		488	—	0%	488	0.02 %	1	45.00 %	900	65	13.28 %	0	
Institutions													
0.00 < 0.15	AAA to BBB+	2,122	1,664	12.05 %	2,323	0.06 %	243	44.96 %	226	336	14 %	1	
0.15 < 0.25	BBB+ to BBB	76	106	10.55 %	87	0.18 %	54	44.16 %	507	40	45 %	0	
0.25 < 0.50	BBB to BB+	80	179	5.43 %	90	0.32 %	57	45.00 %	810	65	73 %	0	
0.50 < 0.75	BB+ to BB	19	23	3.35 %	20	0.66 %	34	45.00 %	764	20	101 %	0	
0.75 < 2.50	BB to B+	0	24	19.96 %	5	1.09 %	7	45.00 %	255	5	107 %	0	
2.50 < 10.00	B+ to B-	0	0	0%	0	2.89 %	1	45.00 %	900	0	165 %	0	
10.00 < 100.00	B- to C	—	—	0%	—	0%	—	0%	—	—	0%	—	
100.00 (Default)	D	—	—	0%	—	0%	—	0%	—	—	0%	—	
Total 2020		2,297	1,995	11.37 %	2,525	0.08 %	396	44.94 %	261	466.08	18.46 %	1	
Total 2019		2,386	1,648	15.04 %	2,634	0.09 %	372	44.64 %	429	609.49	23.14 %	1	
Corporates													
0.00 < 0.15	AAA to BBB+	821	546	52.63 %	1,237	0.07 %	21	45.00 %	863	347	28.01 %	0	
0.15 < 0.25	BBB+ to BBB	1,048	1,267	59.99 %	1,904	0.16 %	67	45.00 %	789	803	42.17 %	1	
0.25 < 0.50	BBB to BB+	1,633	165	51.99 %	1,656	0.32 %	1,460	45.00 %	885	973	58.79 %	2	
0.50 < 0.75	BB+ to BB	1,078	309	5.39 %	942	0.55 %	401	45.00 %	893	723	76.71 %	2	
0.75 < 2.50	BB to B+	2,402	761	12.61 %	2,250	1.29 %	1,777	44.36 %	900	2,248	99.89 %	13	
2.50 < 10.00	B+ to B-	2,289	373	15.88 %	2,317	3.75 %	2,562	43.74 %	903	2,950	127.32 %	(71)	
10.00 < 100.00	B- to C	311	82	6.53 %	313	13.69 %	625	43.48 %	906	626	199.92 %	19	
100.00 (Default)	D	258	20	46.65 %	267	100.00 %	267	45.00 %	789	—	0%	120	
Total 2020		9,839	3,522	37.46 %	10,887	4.04 %	7,180	44.56 %	872	8,670	79.63 %	196	
Total 2019		12,284	3,070	40.93 %	13,235	4.06 %	7,053	44.56 %	889	9,420	71.18 %	238	

Table 16. AIRB approach. Credit risk exposures by portfolios class and PD range. Retail portfolios (CR6)

Million euros

31 Dec. 2020

PD scale	S&P Levels	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD	Average PD	Number of obligors	Average LGD	RWA	RW	EL	Value adjustments and provisions
Residential Mortgages												
0.00 < 0.15	AAA to BBB+	42,071	1,015	100.71 %	43,093	0.07 %	643,347	14.45 %	1,274	2.96 %	5	(57)
0.15 < 0.25	BBB+ to BBB	15,488	966	80.21 %	16,262	0.20 %	188,989	19.40 %	1,345	8.27 %	6	(9)
0.25 < 0.50	BBB to BB+	69,050	9,381	63.01 %	75,041	0.36 %	537,963	7.90 %	3,848	5.13 %	22	(21)
0.50 < 0.75	BB+ to BB	20,071	1,415	63.73 %	21,020	0.59 %	194,321	9.10 %	1,738	8.27 %	11	(10)
0.75 < 2.50	BB to B+	76,720	2,429	62.68 %	78,408	1.23 %	500,738	9.02 %	10,532	13.43 %	89	(71)
2.50 < 10.00	B+ to B-	38,453	240	60.74 %	38,665	4.37 %	254,730	11.27 %	13,895	35.94 %	200	(102)
10.00 < 100.00	B- to C	11,536	55	44.68 %	11,589	26.27 %	98,222	11.76 %	7,073	61.03 %	336	(172)
100.00 (Default)	D	7,066	38	6.34 %	7,068	100.00 %	84,992	24.70 %	1,579	22.34 %	1,709	(1,540)
Total 2020		280,454	15,539	66.31 %	291,146	4.54 %	2,503,302	10.91 %	41,285	14.18 %	2,378	(1,982)
Total 2019		288,444	16,498	66.89 %	299,878	5.08 %	2,554,419	11.33 %	44,537	14.85 %	3,031	(2,692)
Qualifying Revolving												
0.00 < 0.15	AAA to BBB+	431	5,147	54.11 %	3,216	0.08 %	2,511,939	58.87 %	100	3.10 %	2	(3)
0.15 < 0.25	BBB+ to BBB	101	4,770	85.43 %	4,176	0.17 %	6,485,042	67.47 %	280	6.70 %	5	(2)
0.25 < 0.50	BBB to BB+	124	2,575	35.68 %	1,043	0.30 %	1,657,020	48.01 %	78	7.44 %	2	(91)
0.50 < 0.75	BB+ to BB	125	1,016	63.21 %	768	0.60 %	772,209	55.29 %	120	15.60 %	3	(2)
0.75 < 2.50	BB to B+	732	3,745	61.11 %	3,025	1.37 %	3,400,195	56.21 %	874	28.90 %	23	(11)
2.50 < 10.00	B+ to B-	992	1,309	71.78 %	1,943	4.95 %	2,011,713	60.28 %	1,467	75.52 %	58	(37)
10.00 < 100.00	B- to C	486	264	77.92 %	712	25.69 %	673,165	59.77 %	1,075	150.90 %	108	(68)
100.00 (Default)	D	224	33	0.26 %	224	100.00 %	130,317	81.89 %	24	10.89 %	182	(169)
Total 2020		3,215	18,860	62.86 %	15,108	3.72 %	17,641,600	60.35 %	4,018	26.60 %	382	(382)
Total 2019		3,481	17,944	60.78 %	14,427	3.72 %	17,107,586	61.19 %	4,174	28.93 %	347	(258)

Million euros

31 Dec. 2020

PD scale	S&P Levels	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD	Average PD	Number of obligors	Average LGD	RWA	RW	EL	Value adjustments and provisions
Retail Others												
0.00 < 0.15	AAA to BBB+	1,531	294	52.92 %	1,681	0.08 %	214,114	41.89 %	158	9.42 %	1	(2)
0.15 < 0.25	BBB+ to BBB	6,158	610	45.78 %	5,759	0.20 %	836,131	44.46 %	1,040	18.06 %	5	(5)
0.25 < 0.50	BBB to BB+	6,741	698	73.82 %	6,850	0.34 %	742,366	42.71 %	1,748	25.52 %	10	(55)
0.50 < 0.75	BB+ to BB	8,621	336	50.44 %	7,114	0.59 %	763,836	47.76 %	2,606	36.63 %	20	(65)
0.75 < 2.50	BB to B+	19,627	1,281	50.71 %	17,630	1.21 %	1,897,351	47.10 %	8,929	50.65 %	101	(91)
2.50 < 10.00	B+ to B-	12,099	987	60.66 %	10,254	4.04 %	1,071,970	47.65 %	6,929	67.57 %	196	(148)
10.00 < 100.00	B- to C	2,744	165	46.67 %	2,515	27.86 %	417,757	47.60 %	2,592	103.06 %	342	(212)
100.00 (Default)	D	2,323	98	25.67 %	2,348	100.00 %	392,313	75.33 %	494	21.04 %	1,730	(1,703)
Total 2020		59,843	4,468	55.27 %	54,151	6.93 %	6,335,838	47.54 %	24,496	45.24 %	2,404	(2,281)
Total 2019		51,346	7,386	46.89 %	54,254	6.59 %	8,055,306	47.48 %	25,753	47.47 %	2,133	(1,859)
Of which, SMEs												
0.00 < 0.15	AAA to BBB+	26	251	52.99 %	158	0.07 %	66,061	54.97 %	12	7.79 %	0	—
0.15 < 0.25	BBB+ to BBB	1,439	219	43.56 %	857	0.20 %	69,952	54.44 %	154	18.01 %	1	(1)
0.25 < 0.50	BBB to BB+	724	326	56.96 %	555	0.35 %	48,822	48.27 %	123	22.13 %	1	(2)
0.50 < 0.75	BB+ to BB	2,781	290	45.66 %	1,408	0.65 %	94,242	54.15 %	510	36.24 %	5	(51)
0.75 < 2.50	BB to B+	4,950	814	43.01 %	3,138	1.28 %	234,505	47.03 %	1,328	42.33 %	19	(21)
2.50 < 10.00	B+ to B-	4,202	583	66.38 %	2,754	3.86 %	190,811	45.98 %	1,473	53.48 %	49	(32)
10.00 < 100.00	B- to C	668	93	34.25 %	476	24.33 %	63,128	46.09 %	399	83.76 %	54	(48)
100.00 (Default)	D	912	84	25.60 %	934	100.00 %	86,449	81.69 %	112	11.96 %	754	(727)
Total 2020		15,701	2,659	50.26 %	10,280	11.76 %	853,970	51.64 %	4,111	39.99 %	883	(881)
Total 2019		9,388	3,073	42.00 %	10,116	11.45 %	775,900	50.65 %	4,453	44.02 %	757	(710)

The distribution of exposures and average parameters by segment and geography are as follows:

Table 17. Exposures and parameters by segment and geography*

Million euros

31 Dec. 2020

	Central governments and central banks	Institutions	Corporates	Retail Mortgages	Retail SME	Retail Other	Retail Qualifying Revolving	Total
Santander Group								
EAD	1,600	35,177	178,693	284,078	9,346	42,457	14,884	566,235
Average LGD in %	45.80 %	42.03 %	43.60 %	10.02 %	47.63 %	44.95 %	59.87 %	27.26 %
Average PD in %	0.13 %	0.14 %	0.82 %	2.17 %	2.95 %	2.66 %	2.27 %	1.66 %
Europe								
EAD	865	30,908	138,325	284,078	9,346	42,457	14,884	520,862
Average LGD in %	46.48 %	43.26 %	43.46 %	10.02 %	47.63 %	44.95 %	59.87 %	25.88 %
Average PD in %	0.21 %	0.08 %	1.11 %	2.17 %	2.95 %	2.66 %	2.27 %	1.82 %
Latam								
EAD	735	1,643	26,427	—	1	—	—	28,806
Average LGD in %	45.00 %	44.90 %	44.98 %	0 %	60.49 %	0 %	0 %	44.98 %
Average PD in %	0.04 %	0.09 %	1.00 %	0 %	0.46 %	0 %	0 %	0.92 %
North America								
EAD	—	2,626	13,941	—	—	—	—	16,568
Average LGD in %	0 %	25.70 %	42.33 %	0 %	0 %	0 %	0 %	39.69 %
Average PD in %	0 %	0.81 %	0.80 %	0 %	0 %	0 %	0 %	0.80 %

* EAD and parameters without default.

* EAD does not include neither equities nor specialised lending.

* North America includes the United States and Mexico

Table 18. Specialised lending (CR10)

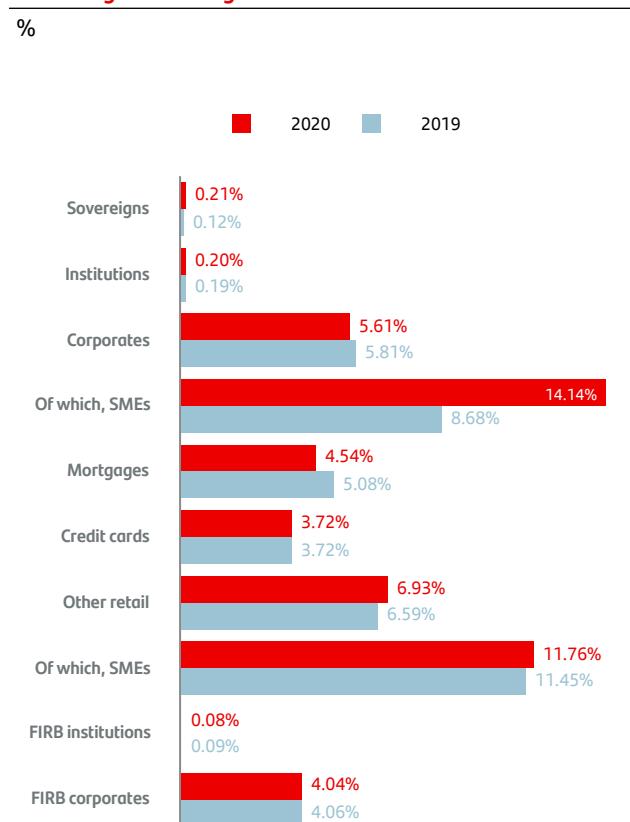
Million euros

31 Dec. 2020

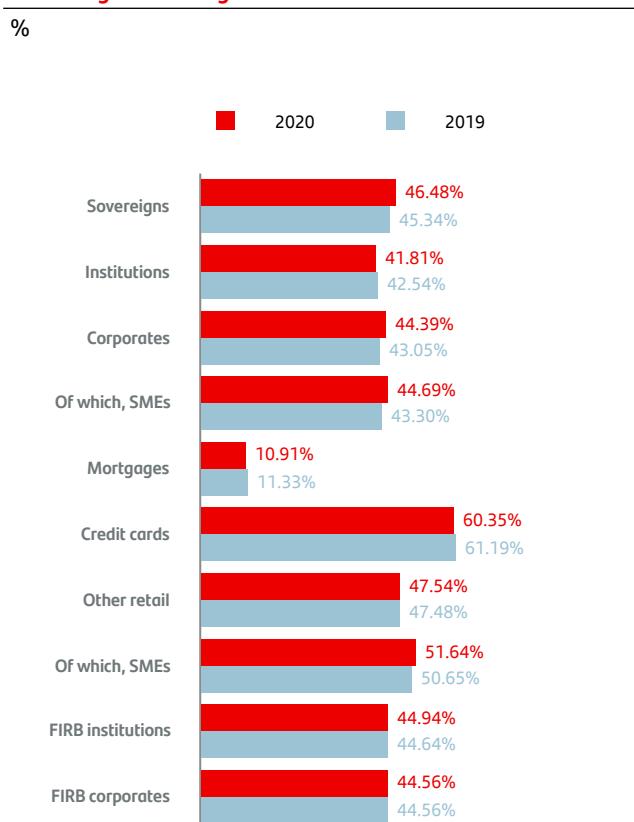
Regulatory Categories	Remaining maturity	On-balance- sheet amount	Off-balance- sheet amount	RW	EAD	RWA	Expected loss
Category 1	< 2,5 years	660	161	41 %	742	302	0
	>= 2,5 years	2,615	613	59 %	2,789	1,634	14
Category 2	< 2,5 years	5,272	1,475	67 %	5,689	3,796	31
	>= 2,5 years	10,199	2,609	76 %	10,932	8,306	89
Category 3	< 2,5 years	391	21	102 %	393	401	10
	>= 2,5 years	1,429	418	93 %	1,528	1,421	33
Category 4	< 2,5 years	35	0	222 %	35	77	3
	>= 2,5 years	41	23	223 %	46	102	4
Category 5	< 2,5 years	174	3	0%	176	—	88
	>= 2,5 years	365	11	0%	369	—	184
Total		< 2,5 years	6,531	65 %	7,034	4,575	132
		>= 2,5 years	14,648	73 %	15,664	11,462	324

The following tables show the distribution by portfolio of the EAD weighted averages for PD and LGD, as well as the exposure in millions of euros and the percentage of EAD it represents.

EAD-weighted average PD

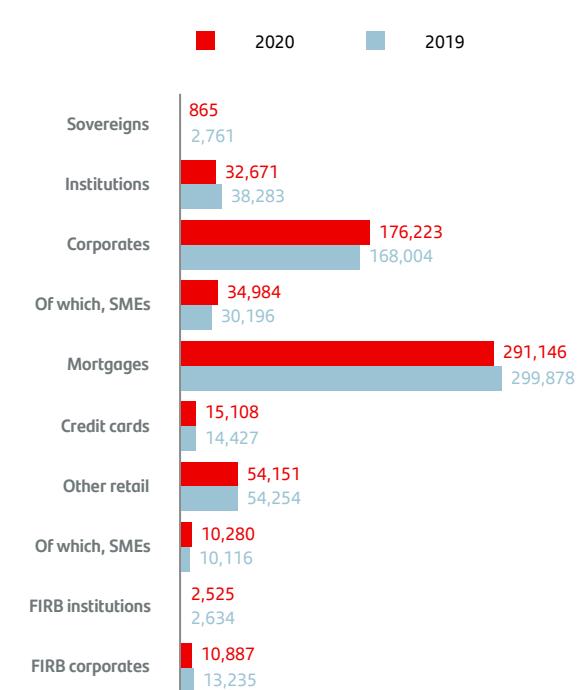


EAD-weighted average LGD

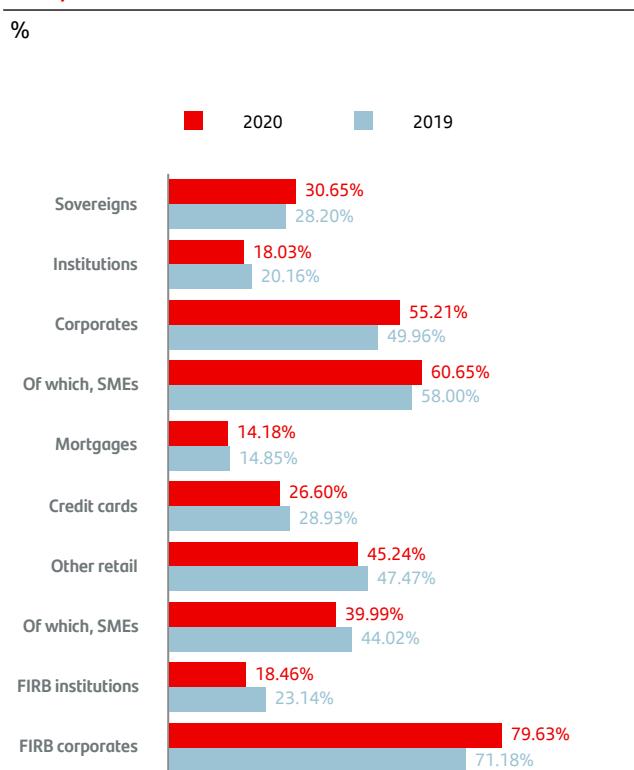


Exposure

Million euros



RWA/EAD



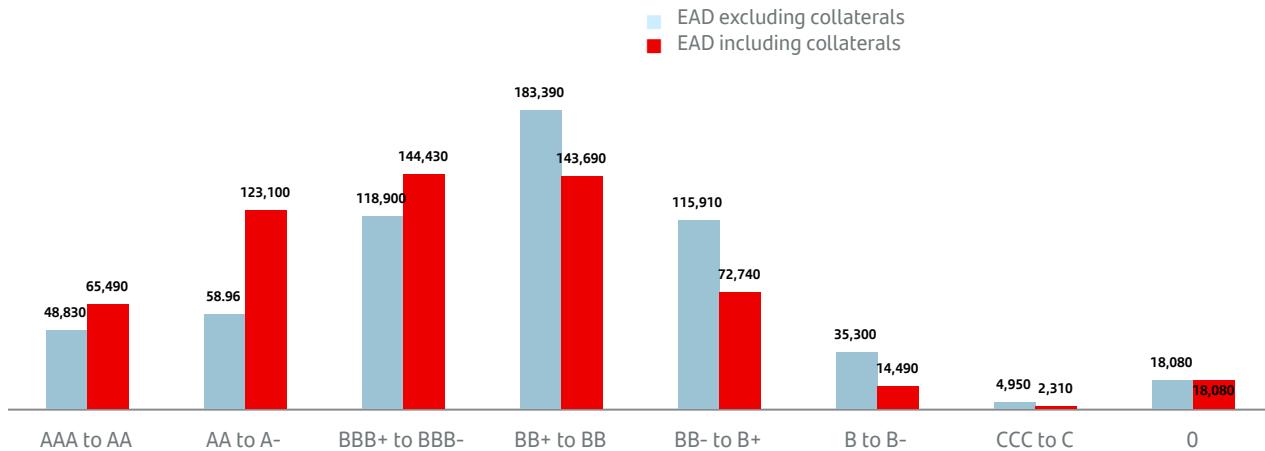
The following chart depicts exposures using the IRB approach approved in December 2020 (excluding Equities and Specialised Lending), based on the internal credit quality associated with its external rating.

For EAD distribution including guarantees, expected losses have been assigned to the different tranches of PD taking a

LGD of 45% in each bucket. It shows that the risk profile of the whole portfolio improves significantly when factoring in guarantees, especially mortgage collateral.

Distribution of IRB exposures associated with its external rating (Dec. 2020)

Million euros



3.2.2. Equity investments and capital instruments not included in the 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 Santander Group significant influence, but not control or joint control. This capacity usually involves 20% or more of the voting rights 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 Santander 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. 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 19. Equities (CR10)

Million euros

31 Dec. 2020

	Tranches:	Weighted average PD	Original exposure	EAD	EAD-weighted average LGD	RWA	PE/EAD	RW
PD/LGD Approach								
	1	0.09 %	9	9	65.0 %	6	0.06 %	70 %
	2	0.13 %	977	977	88.2 %	1,108	0.11 %	113 %
	3	0.15 %	1,584	1,584	90.0 %	1,937	0.13 %	122 %
	4	0.26 %	1,328	1,328	88.3 %	2,068	0.23 %	156 %
	5	2.20 %	1,078	1,078	65.0 %	2,308	1.43 %	214 %
	Default	100.00 %	45 %	45 %	65.0 %	0 %	65.00 %	0 %
Total 2020		0.63 %	4,977	4,977	83.7 %	7,427	0.44 %	149 %
Total 2019		0.49 %	6,243	6,243	82.8 %	9,125	0.35 %	146 %
<hr/>								
Simple-risk weighted approach								
Exposure in private equity			1,392	1,392	0%	2,645	0.80 %	190 %
Exposure in equity traded in organised markets			36	36	0%	105	0.80 %	290 %
Other exposures in equities								
Total 2020		—	1,428	1,428	—	2,750	—	—
Total 2019		—	1,439	1,439	—	2,825	—	—
<hr/>								
Internal models approach 2020		—	—	—	—	—	—	—
Internal models approach 2019		—	—	—	—	—	—	—
<hr/>								
Financial participations Dec. 2020		3,722	3,722	—	9,304			250 %
Financial participations Dec. 2019		3,049	3,049	—	7,622			250 %
<hr/>								
Total 2020		10,126	10,126		19,480			
Total 2019		—	10,731	10,731	—	19,572	—	—

Note: Grupo Santander does not hold off-balance sheet exposures in equities.

The total unrealised losses on equity and equity instruments not included in the trading book included in CET1 at December 2020 amounted to €284 million.

Table 20. Equity instruments through other comprehensive income

Million euros

31 Dec. 2020

	Carrying value	Fair value	Valuation adjustment
Quoted	1,425	1,425	493
Unquoted	1,360	1,360	(765)
Total	2,784	2,784	(272)

Table 21. Equity instruments mandatorily at fair value through profit and loss

Million euros

	31 Dec. 2020
	Fair Value
Quoted	90
Investment funds	350
Unquoted	1,318
Total	1,758

Refer to notes 2.d.iii and 8 of the auditor's report and 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 and with mandatory classification at fair value through profit or loss.



[Access 2020 Annual Report available on the Santander Group website](#)

Table 22. Equity instruments through other comprehensive income. Consolidated gross valuation adjustments

Million euros

	Valuation adjustment
Prior-year balance	644
Revaluation gains and losses	(916)
Current-year balance	(272)

Refer to note 29 of the auditor's report and 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 2020 Annual Report available on the Santander Group website](#)

With respect to holdings accounted for using the equity method at year-end 2020, the amounts for associates and jointly controlled entities were EUR 6,161 million and EUR 530 million respectively.

There are also investments in Group entities totalling EUR 2,014 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 2020.

3.2.3. Standardised approach

Santander Group uses the external rating agencies designated as eligible by the ECB (European Central Bank) for calculation of regulatory capital under the standardised approach. The agencies used for the capital calculation as of 31 December 2020 are Fitch, Moody's, DBRS, Standard & Poor's and Japan Credit Rating Agency.

For the central government and central banks category, if the requirements of article 137 of the CRR are met, Santander 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).

The assignment of risk weights according to credit ratings is compliant 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
1	AAA a AA-	AAA a AA3	AAA a AA-	AAA a AAL	AAA a AA
2	A+ a A-	A1 a A3	A+ a A-	AH a AL	A
3	BBB+ a BBB-	BAA1 a BAA3	BBB+ a BBB-	BBBH a BBBL	BBB
4	BB+ a BB-	BA1 a BA3	BB+ a BB-	BBH a BBL	BB
5	B+ a B-	B1 a B3	B+ a B-	BH a BL	B
6	Inferior a B-	Inferior a B3	Inferior a B-	CCCH e inferior	CCC a inferior

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%

Santander Group does not currently have a process in place for assigning the credit ratings of publicly issued securities to comparable assets that are not included in the trading portfolio.

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

The tables below show the value of the net exposure value after impairment loss allowances after risk mitigation, by segment and credit quality grade.

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 simple valuation method for financial collateral under Article 222 of the CRR or the comprehensive method under Article 223.

Table 23. Standardised approach (including a breakdown of exposures post conversion factor and post mitigation techniques) (CR5)

Million euros

	31 Dec. 2020															Total	Of which unrated	
	Risk Weight																	
	0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1250%	Other	Deduc.		
Central governments or central banks	287,320	—	—	—	612	—	2,970	—	—	11,579	13	5,231	—	—	—	—	307,724	302,467
Regional government or local authorities	13,853	—	—	—	269	—	0	—	—	161	—	—	—	—	—	—	14,283	14,007
Public sector entities	452	—	—	—	898	—	84	—	—	167	0	—	—	—	—	—	1,601	596
Multilateral development banks	4,672	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4,672	4,672
International organisations	9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9	9
Institutions	—	—	—	—	13,403	—	769	—	—	1,471	34	—	—	—	—	—	15,677	4,690
Corporates	—	—	—	—	530	—	62	—	—	49,094	518	—	—	—	—	—	50,205	49,501
Retail	—	—	—	—	—	1,548	—	—	131,427	—	—	—	—	—	—	—	132,975	132,975
Secured by mortgages on immovable property	—	—	—	—	—	67,583	12,320	—	2,573	2,261	8	—	—	—	—	—	84,745	84,738
Exposures in default	—	—	—	—	—	—	—	—	—	5,743	538	—	—	—	—	—	6,281	6,281
Exposures associated with particularly high risk	—	—	—	—	—	—	—	—	—	—	1,299	—	—	—	—	—	1,299	1,299
Covered bonds	—	—	—	1,674	—	—	—	—	—	—	—	—	—	—	—	—	1,674	0
Institutions and corporates with a short-term credit assessment	—	—	—	—	1	—	42	—	—	46	8	—	—	—	—	—	97	20
Collective investment undertakings	—	—	—	—	—	—	—	—	—	—	—	—	—	—	212	212	212	212
Equity	—	—	—	—	—	—	—	—	—	282	—	—	—	—	—	—	282	282
Other items	21,387	197	—	—	11,287	—	18	—	71	42,525	—	—	—	—	—	—	75,484	75,484
Total	327,692	197	—	1,674	26,998	69,130	16,264	—	134,071	113,328	2,419	5,231	—	—	212	—	697,218	677,234

3.3. Distribution of exposures

The tables below give a breakdown of the exposures to credit and dilution risk of Santander 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 credit risk excluding securitisations.

Table 24. Credit quality of exposures by exposure classes and instruments (CR1-A)

Million euros

						31 Dec. 2020
	Gross carrying values of		Specific credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period	Net values
	Defaulted exposures	Non- defaulted exposures				
IRB approach						
Central governments or central banks	—	3,738	1	—	—	3,738
Institutions	22	49,873	26	0	—	49,869
Corporates	9,845	303,422	5,321	1,143	810	307,945
Of which, Specialised Lending	556	25,957	315	2	21	26,198
Of which, SME	4,441	49,127	2,511	203	186	51,057
Retail	9,782	372,597	4,645	486	909	377,733
Secured by real estate property	7,104	288,889	1,982	60	146	294,011
SME	1,210	2,347	353	33	18	3,205
Non-SME	5,894	286,542	1,629	28	129	290,806
Qualifying Revolving	257	21,817	382	55	112	21,692
Other Retail	2,421	61,890	2,281	370	651	62,030
SME	996	17,364	881	85	132	17,479
Non-SME	1,425	44,526	1,400	285	519	44,551
Equity	0	10,126	—	—	—	10,126
Total IRB approach	19,649	739,755	9,992	1,630	1,719	749,412
Standard approach						
Central governments or central banks	3	277,736	8	0	0	277,728
Regional governments or local authorities	7	6,688	2	0	1	6,686
Public sector entities	7	2,060	2	0	0	2,058
Multilateral Development Banks	—	1,818	—	—	0	1,818
International Organisations	—	9	—	—	—	9
Institutions	4	39,584	18	46	44	39,566
Corporates	1,518	87,357	1,115	722	634	86,242
of which, SME	260	19,511	161	287	291	19,350
Retail	6,743	214,969	6,013	6,066	8,398	208,956
of which, SME	971	39,244	679	415	777	38,565
Secured by mortgages on immovable property	4,591	94,749	594	206	516	94,154
of which, SME	841	19,490	184	29	204	19,306
Items associated with particularly high risk	158	1,502	80	2	—	1,421
Covered bonds	—	1,674	0	—	—	1,674
Claims on institutions and corporates with a short-term credit assessment	—	285	0	—	—	285
Collective investments undertakings (CIU)	—	1,521	—	—	—	1,521
Equity exposures	—	282	—	—	—	282
Other exposures	190	87,554	552	43	30	87,001
Total Exposures in default (STD Approach only)			6,612	—	—	6,450
Total Standardised approach	13,062	817,788	14,998	7,085	9,624	815,852
Total	32,711	1,557,543	24,990	8,715	11,343	1,565,264

Notes:

- 1) The row of Total Exposures in default (SA approach only) is the sumatory of all the defaulted exposures and is included to show the defaulted exposures' Specific credit risk adjustment.
- 2) Non-performing exposures do not include high-risk exposures.

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

Table 25. Credit quality of exposures by industry or counterparty type (CR1-B)

Million euros

	31 Dec. 2020				
	Gross carrying values of:				
	Defaulted exposures	Non-defaulted exposures	Adjustment for specific Credit risk	Accumulated write-offs	Credit risk adjustment charges
Agriculture, forestry and fishing	860	12,152	535	139	250
Mining and quarrying	181	4,590	64	24	945
Manufacturing	2,125	59,619	1,580	415	2,192
Electricity, gas, steam and air conditioning supply	361	16,807	234	125	1,298
Water supply	17	668	15	1	428
Construction	781	16,429	651	113	3,027
Wholesale and retail trade	1,368	53,366	1,193	209	2,037
Transport and storage	896	16,056	467	38	1,108
Accommodation and food service activities	707	7,159	514	66	820
Information and communication	7	2,399	10	2	972
Real estate activities	951	47,584	932	157	16,433
Professional, scientific and technical activities	404	13,276	289	286	3,183
Administrative and support service activities	95	2,028	81	4	924
Public administration and defence, compulsory social security	158	295,405	133	17	92
Education	136	5,958	100	30	96
Human health services and social work activities	450	28,063	452	316	966
Arts, entertainment and recreation	31	989	19	2	334
Other services	23,183	974,997	17,722	6,769	230,902
Total	32,711	1,557,543	24,990	8,715	266,007
					1,565,264

Table 26. Credit quality of exposures by geography (CR1-C)

Million euros

	31 Dec. 2020				
	Gross carrying values of:				
	Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period
Europe	23,882	1,040,186	13,526	2,503	2,333
Of which, Spain	16,159	404,991	7,861	1,236	1,500
Of which, UK	2,545	359,346	1,518	282	345
North America	2,413	241,210	5,535	3,108	5,250
Of which, USA	1,599	171,845	4,435	2,227	4,522
South America	6,001	238,732	5,665	3,031	3,596
Of which, Brazil	3,820	145,131	4,104	2,393	2,180
Others	415	37,414	265	72	164
Total	32,711	1,557,543	24,990	8,715	11,343
					1,565,264

The following table presents an overview of the credit quality of restructured or refinanced exposures:

Table 27. Credit quality of forbearance exposures

Million euros

	31 Dec. 2020							
	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 forbearance exposures		
	Non-performing forbearance			On performing forbearance exposures	On non-performing forbearance exposures	Of which collateral and financial guarantees received on non-performing exposures with forbearance measures		
	Performing forbearance	Of which defaulted	Of which impaired					
Loans and advances	14,308	15,162	15,162	15,161	(1,784)	(6,295)	15,823	7,247
Central banks	—	—	—	—	—	—	—	—
General governments	25	5	5	5	—	(1)	7	3
Credit institutions	—	—	—	—	—	—	—	—
Other financial corporations	50	84	84	84	(2)	(23)	88	59
Non-financial corporations	5,009	8,123	8,123	8,122	(350)	(3,552)	7,024	3,725
Households	9,224	6,950	6,950	6,950	(1,432)	(2,719)	8,704	3,460
Debt Securities	25	338	338	327	(1)	(206)	73	73
Loan commitments given	478	75	75	75	3	1	107	39
Total	14,811	15,575	15,575	15,563	(1,782)	(6,500)	16,003	7,359

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

Table 28. Credit quality of performing and non-performing exposures by past due days

Million euros	31 Dec. 2020												
	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, in default			
Loans and advances	984,663	979,213	5,450	31,566	13,149	3,266	3,119	3,963	4,084	1,398	2,587	31,566	
Central banks	21,993	21,993	—	—	—	—	—	—	—	—	—	—	—
General governments	22,852	22,843	9	32	15	1	1	5	3	4	3	32	
Credit institutions	49,644	49,644	—	—	—	—	—	—	—	—	—	—	
Other financial corporations	68,416	68,409	7	232	25	6	143	27	20	1	10	232	
Non-financial corporations	300,415	299,593	822	14,362	6,292	917	947	1,703	2,380	647	1,476	14,362	
Of which SMEs	118,726	118,104	622	8,381	2,694	570	688	1,212	1,795	412	1,010	8,381	
Households	521,343	516,731	4,612	16,940	6,817	2,342	2,028	2,228	1,681	746	1,098	16,940	
Debt securities	121,082	121,082	—	419	419	—	—	—	—	—	—	419	
Central banks	5,412	5,412	—	—	—	—	—	—	—	—	—	—	—
General governments	86,183	86,183	—	—	—	—	—	—	—	—	—	—	—
Credit institutions	6,979	6,979	—	3	3	—	—	—	—	—	—	3	
Other financial corporations	13,449	13,449	—	—	—	—	—	—	—	—	—	—	
Non-financial corporations	9,059	9,059	—	416	416	—	—	—	—	—	—	416	
Off-balance-sheet exposures	317,928			947								947	
Central banks	—			—								—	
General governments	4,120			3								3	
Credit institutions	27,487			5								5	
Other financial corporations	22,089			15								15	
Non-financial corporations	159,398			797								797	
Households	104,834			127								127	
Total	1,423,673	1,100,295	5,450	32,932	13,568	3,266	3,119	3,963	4,084	1,398	2,587	32,932	

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

Table 29. Performing and non-performing exposures and related provisions

Million euros

	31 Dec. 2020														
	Gross carrying amount/nominal amount				Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions				Non-performing exposures – 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 1	Of which, stage 2							
Loans and advances	984,663	871,937	66,082	31,566	—	31,549	(10,081)	(4,393)	(5,688)	(13,859)	—	(13,853)	(631)	658,314	13,616
Central banks	21,993	12,512	—	—	—	—	—	—	—	—	—	—	—	10,223	—
General governments	22,852	19,962	244	32	—	31	(16)	(13)	(3)	(17)	—	(17)	—	3,708	3
Credit institutions	49,644	37,507	—	—	—	—	(6)	(6)	0	—	—	—	—	21,123	—
Other financial corporations	68,416	51,467	514	232	—	232	(56)	(47)	(9)	(77)	—	(77)	—	43,301	152
Non-financial corporations	300,415	263,936	30,756	14,362	—	14,357	(3,136)	(1,352)	(1,784)	(6,586)	—	(6,585)	(557)	175,722	6,230
Of which SMEs	118,726	104,444	12,712	8,381	—	8,377	(1,282)	(556)	(726)	(4,193)	—	(4,192)	(196)	82,282	3,424
Households	521,343	486,553	34,568	16,940	—	16,929	(6,867)	(2,975)	(3,892)	(7,179)	—	(7,174)	(74)	404,237	7,231
Debt securities	121,082	120,129	73	419	—	402	(26)	(24)	(2)	(264)	—	(257)	—	883	73
Central banks	5,412	5,412	—	—	—	—	—	—	—	—	—	—	—	—	—
General governments	86,183	86,176	8	—	—	—	(7)	(7)	—	—	—	—	—	448	—
Credit institutions	6,979	6,978	—	3	—	3	(1)	(1)	—	—	—	—	—	—	—
Other financial corporations	13,449	12,889	—	—	—	—	(1)	(1)	—	—	—	—	—	435	—
Non-financial corporations	9,059	8,674	65	416	—	399	(17)	(15)	(2)	(264)	—	(257)	—	—	73
Off-balance-sheet exposures	317,928	310,977	6,950	947	—	947	554	372	182	145	—	145	—	5,808	187
Central banks	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General governments	4,120	4,005	115	3	—	3	1	1	—	—	—	—	—	10	—
Credit institutions	27,487	27,485	2	5	—	5	6	6	—	—	—	—	—	221	—
Other financial corporations	22,089	21,868	221	15	—	15	11	10	1	—	—	—	—	133	1
Non-financial corporations	159,398	153,723	5,675	797	—	797	297	163	134	132	—	132	—	4,894	182
Households	104,834	103,896	937	127	—	127	239	192	47	13	—	13	—	550	4
Total	1,423,673	1,303,043	73,105	32,932	—	32,898	(9,553)	(4,045)	(5,508)	(13,978)	—	(13,965)	(631)	665,005	13,876

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

Table 30. Collateral obtained by taking possession and execution processes

Million euros	31 Dec. 2020	
	Collateral obtained by taking possession	
	Value at initial recognition	Accumulated negative changes
Property, plant and equipment (PP&E)	—	—
Other than PP&E	8,040	3,208
Residential immovable property	1,223	282
Commercial Immovable property	6,531	2,884
Movable property (auto, shipping, etc.)	219	42
Equity and debt instruments	67	—
Other	—	—
Total	8,040	3,208

The following table shows the annual changes in provisions for loans:

Table 31. EU CR2-A – Changes in the stock of general and specific credit risk adjustments - write offs

Million euros	31 Dec. 2020	
	Stage 3	Stage 1 and 2
Opening balance	14,553	8,482
Increases due to amounts set aside for estimated loan losses during the period	13,018	8,153
Decreases due to amounts reversed for estimated loan losses during the period	(3,905)	(3,709)
Decreases due to amounts taken against accumulated credit risk adjustments - writte offs	(8,715)	—
Impact of exchange rate differences	(1,318)	(1,275)
Other adjustments	476	(1,544)
Closing balance	14,110	10,107
Recoveries on credit risk adjustments recorded directly to the statement of profit or loss	1,231	—
Specific credit risk adjustments recorded directly to the statement of profit or loss	—	—

The following table shows the stock of loans and debt instruments classified as default between the close of the previous year and the end of current year.

Table 32. EU CR2-B – Changes in the stock of defaulted and impaired loans and debt securities

Million euros	31 Dec. 2020
	Gross book value of defaulted exposures
Opening balance	35,526
Loans and debt securities that have defaulted or impaired since the last reporting period (1)	11,292
Returned to non-defaulted status and other changes	(10,073)
Amounts written off	(8,715)
Closing balance	32,869

Table 33. Net amount of exposures (CRB-B)

Million euros

	31 Dec. 2020	Avarege exposure over the period
	Net exposure at the end of the period	
Central governments or central banks	3,738	3,703
Institutions	49,869	51,834
Corporates	307,945	305,915
Of Which: Specialised Lending	26,198	26,238
Of Which: SME	51,057	46,812
Retail	377,733	373,662
Secured by real estate property	294,011	291,245
SME	3,205	3,548
Non-SME	290,806	287,697
Qualifying Revolving	21,692	21,328
Other Retail	62,030	61,088
SME	17,479	15,688
Non-SME	44,551	45,400
Equity	10,126	10,387
Total IRB approach	749,412	745,501
Central governments or central banks	277,728	242,002
Regional governments or local authorities	6,686	6,722
Public sector entities	2,058	9,559
Multilateral Development Banks	1,818	1,946
International Organisations	9	28
Institutions	39,566	43,966
Corporates	86,242	81,542
of which: SME	19,350	14,892
Retail	208,955	214,637
of which: SME	38,565	35,456
Secured by mortgages on immovable property	94,154	97,298
of which: SME	19,306	21,057
Exposures in default	6,450	6,219
Items associated with particularly high risk	1,421	1,411
Covered bonds	1,674	1,840
Claims on institutions and corporates with a short-term credit assessment	285	183
Collective investments undertakings (CIU)	1,521	1,732
Equity exposures	282	288
Other exposures	87,001	80,728
Total Standardised approach	815,852	790,101
Total	1,565,264	1,535,602

Note: Securitisations not included.

Santander Group's average net exposure decreased by 0.68%, mainly due to the drop of exposure in the categories of regional governments or local authorities, corporates and secured by mortgages on immovable property under the standardised approach.

The following graph shows the distribution, by geographical area, of Santander Group's exposure to credit and dilution risk.

Table 34. EU CRB-C – Geographical breakdown of exposures

Million euros

	31 Dec. 2020								
	Net original exposure								
	Europe	Of which, Spain	Of which, UK	North America	Of which, USA	South America	Of which, Brazil	Others	Total
IRB Approach									
Central governments or central banks	1,667	434	112	205	194	788	47	1,079	3,738
Institutions	31,462	15,553	5,947	9,361	6,338	2,689	268	6,357	49,869
Corporate	215,138	109,910	44,263	40,169	24,385	35,918	28,515	16,720	307,945
Retail	372,042	110,126	211,625	257	149	180	55	5,255	377,733
Equity	9,784	9,751	—	—	—	342	311	—	10,126
Total IRB Approach	630,093	245,773	261,948	49,991	31,065	39,916	29,195	29,411	749,412
Standard Approach									
Central governments or central banks	177,622	84,467	50,866	44,970	22,870	52,180	36,427	2,956	277,728
Regional governments or local authorities	6,413	4,282	0	15	15	254	186	4	6,686
Public sector entities	431	0	—	1,467	1,467	160	—	—	2,058
Multilateral Development Banks	1,818	—	1,530	—	—	0	0	—	1,818
International Organizations	—	—	—	—	—	9	—	—	9
Institutions	18,621	11,550	1,908	10,730	8,802	6,773	5,829	3,442	39,566
Corporate	47,678	8,977	13,035	21,471	17,988	16,840	6,077	252	86,242
Retail	80,801	11,132	20,747	55,617	45,603	71,063	45,157	1,474	208,955
Secured by mortgages on immovable property	27,980	6,387	906	34,409	27,509	31,757	8,952	9	94,154
Exposures in default	3,221	1,585	183	960	630	2,264	999	6	6,450
Items associated with particularly high risk	311	0	188	173	173	937	109	—	1,421
Covered Bonds	1,674	—	1,579	—	—	—	—	—	1,674
Claims on institutions and corporates with a short-term credit assessment	210	20	—	49	—	26	—	—	285
Collective investments undertakings (CIU)	210	52	1	1,310	2	1	1	—	1,521
Equity exposures	221	—	—	—	—	61	—	—	282
Other exposures	53,236	39,064	7,483	16,927	12,885	16,827	11,915	10	87,001
Total SA approach	420,449	167,516	98,426	188,097	137,944	199,153	115,652	8,153	815,852
Total	1,050,543	413,289	360,374	238,089	169,009	239,068	144,847	37,564	1,565,264

Note: Securitisations not included.

The geographical distribution of standard portfolios is concentrated mainly in Brazil, Spain and the United States.

The most important segments remain central administrations (with strong presence in Spain, Brazil and the UK), retailers and corporates, which have a prominent presence in Brazil, the United States and the UK.

Most of the exposure in IRB portfolios is concentrated in the retail and corporate segments in Spain and the UK.

Exposures by geographical area

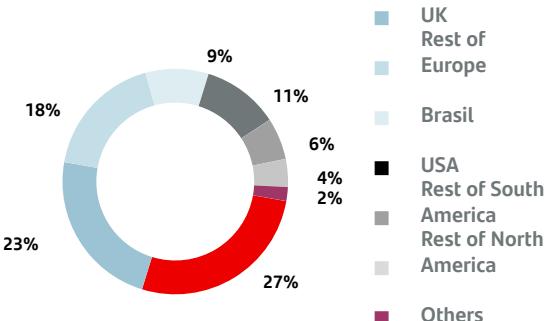


Table 35. EU CRB-D – Concentration of exposures by industry or counterparty types

Million euros

31 Dec. 2020

Net original exposure	Real estate activities	Accommodation and food service activities	Construction	Manufacturing	Other services	Other Retail (Individuals)	Primary Sector	Public Sector	Professional Services	Utilities	Transport and storage	Total
IRB Approach												
Central governments or central banks	—	—	—	—	2,997	—	—	741	—	—	—	3,738
Institutions	1,141	2,580	1,138	2,062	35,195	—	166	2,736	2,754	1,360	736	49,869
Corporates	11,101	15,542	5,422	33,759	201,545	—	8,183	10,006	5,027	9,848	7,514	307,945
Retail	8,760	5,145	2,318	3,114	1,448	329,379	3,357	19,888	1,181	2,000	1,142	377,733
Equity	1,255	6	866	46	6,269	—	3	—	1,623	—	61	10,126
Total IRB approach	22,257	23,273	9,744	38,980	247,454	329,379	11,709	33,370	10,585	13,208	9,453	749,412
Standardised Approach												
Central governments or central banks	—	—	—	—	—	—	—	277,728	—	—	—	277,728
Regional governments or local authorities	—	—	—	—	—	—	—	6,686	—	—	—	6,686
Public sector entities	—	—	—	—	—	—	—	2,058	—	—	—	2,058
Multilateral Development Banks	—	—	—	—	1,818	—	—	—	—	—	—	1,818
International Organisations	—	—	—	—	9	—	—	—	—	—	—	9
Institutions	—	—	—	—	39,566	—	—	—	—	—	—	39,566
Corporates	7,252	18,406	2,966	13,287	29,664	—	2,903	1,880	740	4,191	4,953	86,242
Retail	1,466	10,470	1,557	4,668	405	187,096	743	746	542	91	1,172	208,956
Secured by mortgages on immovable property	15,846	3,384	790	2,406	65,131	—	1,472	963	3,405	94	663	94,154
Exposures in default	562	743	252	723	3,484	—	328	48	146	16	147	6,450
Items associated with particularly high risk	164	9	1,184	7	56	—	1	—	0	—	—	1,421
Covered bonds	—	—	—	—	1,674	—	—	—	—	—	—	1,674
Claims on institutions and corporates with a short-term credit assessment	—	—	0	—	285	—	—	—	—	—	—	285
Collective investments undertakings (CIU)	—	—	—	—	1,521	—	—	—	—	—	—	1,521
Equity exposures	—	—	—	—	282	—	—	—	—	—	—	282
Other exposures	55	4,606	67	92	82,024	—	29	13	15	4	96	87,001
Total standardised approach	25,346	37,618	6,816	21,183	225,919	187,096	5,476	290,121	4,849	4,396	7,032	815,852
Total	47,602	60,891	16,560	60,164	473,373	516,475	17,185	323,492	15,433	17,604	16,485	1,565,264

Note: Securitisations not included

Some sectors have been grouped, taking them from 19 to 11, based on the representative nature of their figures, to simplify analysis of the exposure:

- Primary sector: Agriculture, forestry and fishing; Mining and quarrying.
- Utilities: Electricity, gas, steam and air conditioning supply; Water supply.
- Accommodation and food service activities; Wholesale and retail trade.
- Professional Services: Professional, scientific and technical activities; Administrative and support service activities.

- Other services: Information and communication; education; arts, entertainment & recreation and another services.
- Public sector: Public administration and defense, compulsory social security; human health services and social work activities

The business sectors with the highest percentage exposure under the standardised approach are: individuals, other services and industrial. The sectors with the highest exposure under the IRB approach are individuals, the public sector and other services.

Table 36. EU CRB-E – Maturity of exposures

Million euros

Net values of on-balance-sheet exposures	31 Dec. 2020				
	On demand	<= 1 year	r > 1 year <= 5 years	> 5 years	No stated maturity
IRB Approach					
Central governments or central banks	—	262	2,173	—	—
Institutions	763	13,442	8,903	1,968	3
Corporates	272	59,797	110,950	9,834	429
Retail	4,439	16,112	119,300	195,650	2,075
Equity	—	—	—	—	10,126
Total IRB approach	5,474	89,613	241,326	207,451	12,633
Standardised Approach					
Central governments or central banks	131,292	52,952	28,602	44,843	6,152
Regional governments or local authorities	0	2,923	609	3,108	1
Public sector entities	13	235	386	1,080	0
Multilateral Development Banks	—	96	1,381	341	—
International Organisations	—	9	—	—	9
Institutions	575	4,368	2,842	9,501	298
Corporates	1,458	11,777	26,963	13,030	3,312
Retail	18,161	24,977	68,743	21,433	7,619
Secured by mortgages on immovable property	649	1,043	7,686	75,618	174
Exposures in default	219	958	1,054	3,878	69
Items associated with particularly high risk	0	665	468	152	—
Covered bonds	—	45	1,397	231	—
Claims on institutions and corporates with a short-term credit assessment	—	—	95	—	—
Collective investments undertakings (CIU)	—	—	212	—	—
Equity exposures	—	—	—	—	282
Other exposures	2,502	23,665	8,817	2,165	32,637
Total standardised approach	154,869	123,714	149,254	175,380	50,542
Total	160,343	213,327	390,581	382,831	63,175
1,210,256					

Note: Securitisations not included.

3.4. Internal rating systems

Santander Group uses its own internal rating and scoring models to measure the credit quality of customers and transactions since 1993. Each rating or scoring 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 Santander Group's credit approval and risk monitoring process.

The global rating tools are those used for SCIB segments: corporates, financial institutions and specialised funding, which are managed centrally in Santander Group, in terms of both allocating the rating and risk monitoring. The rating these tools assign to each customer is obtained using an expert-judgement model, which relies on an analyst's opinion supported by a quantitative or automatic module based on balance sheet ratios or macroeconomic variables.

In the global models, the quantitative module is calibrated using the market price of credit default swaps. A model has been constructed that relates the market-implied probability of default (PD) extracted from the CDS spreads to country macroeconomic data or company balance sheet data. Consequently, this data can be used to estimate PD even for entities for which no liquid CDS quotes are available.

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, as in the case of SCIB Corporates, ratings are also adjusted when the company belongs to a group from which it receives explicit support.

The parent entity of Santander Group 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). In this case the rating is determined by an automatic module which uses initial analyst input that may be supplemented at a later stage. The automatic module determines the rating in two phases: a quantitative phase and a qualitative phase. The qualitative phase is based on a corrective questionnaire, which allows the analyst to modify the automatic score by a limited number of rating points. Santander Group is moving towards a new rating methodology that aims to incorporate all available information (internal behaviour, external sources, etc.) in a more structured manner. This will assign a weight to the (automatic) objective score and the (expert) subjective score statistically in accordance with the customer's characteristics and the analyst's view of the capacity to contribute value. This will simplify and improve the assignment of ratings.

Customer ratings are reviewed regularly to take into account the 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.

Santander Group has scoring tools for the Retail segment (Individuals and SMEs) that automatically assign scores 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.

The models committee has approved the following list of internal ratings and their probability of default for global portfolios.

Mapping of internal ratings and PD

Corporate		Banks		Financial institutions non banks	
Rating	PD	Rating	PD	Rating	PD
9.3	0.008 %	9.3	0.008 %	9.3	0.002 %
9.2	0.008 %	9.2	0.009 %	9.2	0.002 %
9.0	0.010 %	9.0	0.011 %	9.0	0.003 %
8.5	0.017 %	8.5	0.018 %	8.5	0.006 %
8.0	0.029 %	8.0	0.030 %	8.0	0.012 %
7.5	0.049 %	7.5	0.050 %	7.5	0.024 %
7.0	0.083 %	7.0	0.083 %	7.0	0.050 %
6.5	0.140 %	6.5	0.138 %	6.5	0.103 %
6.0	0.236 %	6.0	0.229 %	6.0	0.212 %
5.5	0.397 %	5.5	0.378 %	5.5	0.437 %
5.0	0.668 %	5.0	0.624 %	5.0	0.900 %
4.5	1.122 %	4.5	1.030 %	4.5	1.853 %
4.0	1.879 %	4.0	1.694 %	4.0	3.814 %
3.5	3.128 %	3.5	2.776 %	3.5	7.853 %
3.0	5.166 %	3.0	4.515 %	3.0	16.169 %
2.5	8.415 %	2.5	7.264 %	2.5	33.289 %
2.0	13.418 %	2.0	11.483 %	2.0	45.000 %
1.5	20.723 %	1.5	17.687 %	1.5	45.000 %
1.0	30.600 %	1.0	26.248 %	1.0	45.000 %

These PDs are applied uniformly across the whole Santander Group, 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.

3.5. Rating assignment process and parameter estimation

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 the following 12 months. The PD used for regulatory capital is long-term, or TtC (through-the-cycle) PD, as it 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 Bank¹ Solvency Regulation, 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.

The event to be modelled in non-retail portfolios is customer default, whereas PD is estimated at the contract level in retail portfolios.

Calculations of PD are based on the entity's own internal experience, i.e. on past observations of defaults by rating level or scoring.

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.

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

In addition to the estimation of downturn LGD to be used for performing transactions, a specific loss estimate is made for those in default. This is determined using the LGD and 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, showing the percentage of the balance not currently utilised (off-balance-sheet amount) that would be being 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. They also consider the new definition of default included in "Guidelines on default definition" and the materiality thresholds set by the competent authorities.

As mentioned before, 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, considering the current economic environment. As explained in section 3.10, recent observed default frequencies (ODFs) are below the regulatory PDs in geographies with 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, to calculate the expected losses and capital requirements associated with the unit's exposure.

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

¹ Regulation (EU) No 575/2013 of the European Parliament and Council of 26 June 2013 on prudential requirements for credit institutions and investment firms.

Low default portfolios: 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 Through the Cycle (TtC) estimates, but rather the annual observed frequency of default. The observations are averaged out over an economic cycle by external rating levels to obtain the TtC PD. This TtC PD is assigned to all counterparties with external ratings, which later helps to calibrate the internal rating. The PD therefore, does not depend on the counterparty's external rating but on its internal rating, and this also is applied to customers with no external rating.

The parameters estimated for global portfolios are the same for all Santander 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.

In contrast to low default portfolios, Corporates portfolios have specific rating systems in each Santander 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. LGD estimates must be associated with a period of economic crisis or downturn for regulatory use. 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 include the age of the transactions, whether there are any guarantees, the type of guarantee and the loan to value ratio. These explanatory variables must be of statistical significance and make good business sense. Estimated ELBE and LGD are also calculated for transactions in default.

Finally, EAD is estimated by comparing the percentage use of committed facilities 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 reference for assigning PD is the transaction, not the customer.

PDs are calculated by observing new defaults and relating each new default 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 XIV, which contains several tables summarising the parameter models used in the geographies.



[Access file 2020 Pillar 3 Appendices available on the Santander Group website](#)

3.6. 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, 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), nominal CAP². 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 get an idea of how each unit is contributing to value creation in Santander Group.

The use of economic capital figures in determining compensation and setting capital and RoRAC-related targets for the business units further reinforces the integration of economic capital into 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, assessment of potential risk levels in stress situations.

For further details on IFRS 9, see the Risk management and control chapter (section 3.4) of the 2020 annual report.



[Access 2020 Annual Report available on the Santander Group website](#)

3.7. Credit risk mitigation techniques

The Group applies various credit risk mitigation techniques, based on factors such as customer and product type. Some are inherent to specific operations (such as real estate collateral) while others apply to a series of transactions (such as netting or collateral).

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 supervisor can be recognised in capital calculations.

Guarantees arising on credit derivatives

Credit derivatives are financial instruments that are mainly used to hedge credit risk. By buying protection from a third party, the Bank 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:

² Maximum nominal amount of a risk transaction, excluding market transactions and with maximum terms according to the type of transaction.

Table 37. Guarantees by external rating

Million euros		
31 Dec. 2020		
Corporates		
External Rating	Exposures in default	Exposures not in default
AAA/AA	—	310
A	—	8,186
BBB	—	17,920
BB	12	3,871
B	0	1,174
Resto	167	484
Sin rating	—	—
Total	179	31,944
Banks		
External Rating	Exposures in default	Exposures not in default
AAA/AA	—	4,512
A	—	2,616
BBB	—	180
BB	—	—
B	—	—
Resto	—	—
Sin rating	—	—
Total	—	7,309
Other financial institutions		
External Rating	Exposures in default	Exposures not in default
AAA/AA	—	23
A	—	7,755
BBB	—	808
BB	—	—
B	—	—
Resto	—	5
Sin rating	—	—
Total	—	8,591
Sovereign		
External Rating	Exposures in default	Exposures not in default
AAA/AA	—	10,097
A	—	28,896
BBB	—	4,056
BB	—	11
B	—	—
Resto	—	—
Sin rating	—	—
Total	—	43,060

Around 99.50% of transactions involved 15 financial institutions, all of them with a BBB+ rating or higher (97.65% with an A- rating or above) and only two institutions with a BBB- and BBB+ rating, on the Standard & Poor's scale.

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. Pledged collateral may also be classified as follows:

- Real estate guarantees implemented as first lien 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 relevant kind of financial collateral is the posted collateral, that is used for reducing counterparty risk in the same way as netting technique does. Collateral consists of instruments with certain economic value and high liquidity that are deposited or 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.

- Other collateral (second lien or 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 policies and procedures described in this document. 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.

Only collateral that meets the minimum quality requirements specified in the Basel agreements is taken into account for regulatory capital calculation purposes.

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.

Establishing a net balance by counterparty

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 38. Credit risk mitigation techniques - IRB and SA (CR3)

Million euros

				31 Dec. 2020	
	Exposures unsecured – Carrying amount	Exposures secured - carrying amount	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
Total IRB exposures (after CCFs)	415,700	323,586	316,381	7,205	—
of which, default	6,151	6,352	6,133	218	—
Total STD exposures	774,589	41,263	18,722	22,541	—
of which, default	6,374	76	74	3	—

Note: Net original exposure. Equity not included.

3.7.1. Recognition of credit risk mitigation

Credit risk mitigation techniques affect the value of the risk parameters used to determine capital when calculating regulatory capital. Identifying and valuing the security associated with the contracts is essential here and a distinction is drawn between the types of security: collateral and personal guarantees. This mitigation process is performed whenever the validity of the guarantee has been checked and it is believed they may be enforced. The mitigation process is described in the following section.

Firstly, personal guarantees are assessed in portfolios where PD is assigned at the customer level. Personal guarantees affect the final PD value by effectively replacing the counterparty's PD in the transaction with the guarantor's PD. Here, we compare the Risk Weight (RW) of the transaction obtained by applying the customer's PD with the RW of the transaction calculated by employing the guarantor's PD. The final PD is the one that generates the lowest RW value.

Secondly, the existence of any associated collateral is verified for all transaction types (retail and non-retail). Under the IRB approach, the existence of collateral impacts the final value of the LGD used to calculate capital. The process also factors in potentially significant factors such as product type and the transaction balance. In the case of mortgage collateral, the LGD of the transaction will depend on the loan-to-value (LTV) ratio.

The tables below show the original exposure covered by type of guarantee and by exposure category. Only in cases where the guarantee could have been used to mitigate the capital requirements:

Table 39. IRB approach. Credit risk mitigation techniques: credit derivatives and personal guarantees

Million euros	31 Dec. 2020		31 Dec. 2019	
Original hedged exposure by collateral type and exposure category	Financial guarantees	Personal guarantees	Financial Guarantees	Personal guarantees
IRB Approach				
Central administrations and banks	—	2,426	—	3,041
Institutions	144	12,984	149	11,862
Corporates	1,707	46,386	7,207	32,069
Retail	—	8,188	—	589
Total	1,852	69,984	7,356	47,560

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

Table 40. Effect on RWA of credit derivatives used as CRM techniques (CR7)*

Million euros	31 Dec. 2020	
	Pre-credit derivatives RWAs	Actual RWAs
Exposures under Foundation IRB		
Central governments or central banks	128	128
Institutions	466	466
Corporates - SME	1,449	1,449
Corporates - Specialised Lending	16,037	16,037
Corporates - Other	7,221	7,221
Exposures under Advanced IRB		
Central governments or central banks	265	265
Institutions	5,850	5,890
Corporates - SME	21,218	21,218
Corporates - Specialised Lending	—	—
Corporates - Other	76,324	76,077
Retail - Secured by real estate SME	813	813
Retail - Secured by real estate non-SME	40,472	40,472
Retail - Qualifying revolving	4,018	4,018
Retail - Other SME	4,111	4,111
Retail - Other non-SME	20,385	20,385
Equity IRB	19,480	19,480
Other non credit-obligation assets		
Total	218,236	218,030

*It does not include CCPs.

3.8. Internal rating system control

A crucial part of the process carried out by Santander Group to implement advanced models entails the Internal Validation and Internal Audit areas establishing robust control and review mechanisms to effectively monitor and validate the valuation models and their integration into risk management, risk parameters, the integrity and quality of information, documentation of the capital calculation process, governance, the risk model and the technological environment.

The functional segregation model applicable to Santander Group involves a model with various levels of control structured around three lines of defence with a clearly defined and independent organisational structure and functions:

- 1st line (model owner and methodology),
- 2nd line (Model Risk, Internal Validation, Capital Risk, and Risk Control and Supervision Units) and
- 3rd line (Internal Audit).

This separate organisational and functional structure ensures compliance with the regulatory requirements established for the IRB models:

- a) Existence of a strong governance for the models.
- b) Existence, separation and independence of the Risk Control and Supervision, Internal Validation and Internal Audit areas.
- c) Independent annual reviews by Internal Validation and Internal Audit.
- d) Communication procedures with management, which ensure all associated risks are reported.

3.8.1. Model risk

1. Introduction

A model is a system, approach or quantitative method that uses theories, techniques and statistical, economic, financial or mathematical assumptions to transform input data into quantitative estimations. These are simplified representations of real-world relationships between characteristics, values and observed facts that allow Santander Group to focus on specific aspects.

We use models mainly for processes associated with acceptance (score/rating), capital calculation, performance, provisions, market and operational risk, compliance and liquidity.

The use of models implies the existence of model risk. This risk comprises the potentially negative consequences of taking decisions that are based on incorrect or inadequate models or an incorrect use of such models.

The sources of this risk are:

- The model itself, due to incorrect or incomplete data or the modelling method used in the systems.
- Improper use or implementation of the model.

Model risk may lead to financial loss, inadequate commercial and strategic decisions or losses in Santander Group's transactions.

Santander Group has been defining, managing and controlling model risk for several years. After years of work, the role of model risk has been reinforced and consolidated across the Group. This role is fulfilled at both the corporate level and by the main entities. Santander Group has defined a set of policies and procedures to ensure proper model risk management, which establish the principles, responsibilities and processes of the models' life cycles and describe their organisation, governance, management and validation processes.

Supervision and control of model risk is proportional to the importance of each model. The tiering concept is the main attribute used to summarise the level of importance of a model and determines the intensity to be applied to risk management.

Our multi-year strategy plan, Model Risk Management 2.0 (MRM 2.0), was launched to improve model risk management in the Group. The governance phase of each model has been reviewed and adapted to the ECB's 2018 Guide to internal models. The MRM 2.0 plan is currently underway and a large number of initiatives have already been completed. In particular, the project has covered several initiatives during 2020, focusing on the following topics:

- **Key aspects:** Several initiatives have been rolled out in relation to strengthening governance, defining risk appetite, the scope of risk management and simplifying risk policies, with the improvement of our framework for regulatory models taking center stage.

- **Processes:** Various actions have been carried out to improve the model life cycle phases, focusing on increasing the degree of automation of our main processes.

- **Reports:** Senior management have become more aware of model risk issues; we have a strong forward-looking agenda where relevant issues are regularly analysed and escalated, where appropriate.

- **Model risk facilitators:** Continuous improvement of our infrastructure and tools, as well as contributing to disseminate the model culture across the Group.

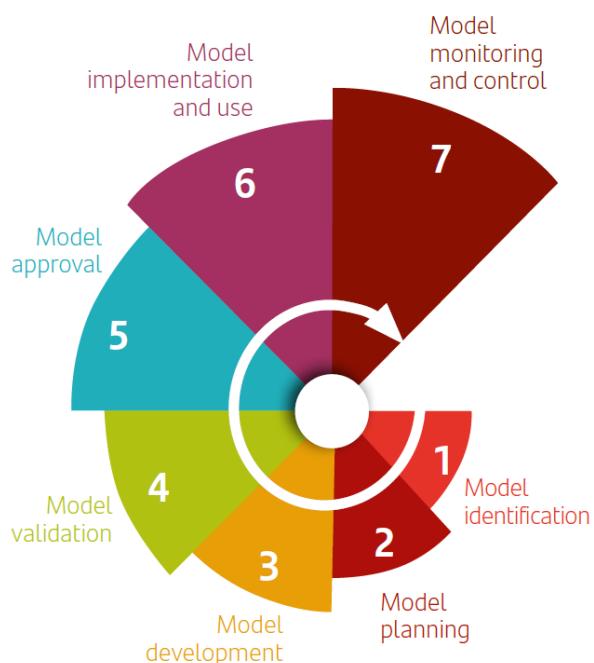
We have continued to make progress on our strategic MRM 2.0 plan, ensuring that all new regulatory requirements are properly incorporated.

In addition to MRM 2.0, which is focused on model governance, we have two specific projects underway with our regulatory credit and market risk models under scope. Both projects have the target to follow up on the TRIM (Targeted Review of Internal Models) actions, and to ensure the fulfilment of the new regulatory requirements for the coming years.

The main focus in 2021 will be to continue strengthening our regulatory model landscape, in order to fulfil ECB requirements by 2022. A high number of model changes will be delivered to the ECB, which will require formal approval before implementation.

2. Model Risk Management

Model risk management and control are structured processes known as the "model life cycle". At Santander Group, the model life cycle phases are:



1.- Identification

The models identified should be included in the control perimeter of model risk.

A complete inventory of all models used is essential to ensure proper management of model risk.

Santander Group keeps a centralised inventory, based on a uniform taxonomy for all the models used in the business units. This inventory contains detailed information on each model, allowing close monitoring, according to their importance and to tiering criteria.

2.- Planning

This is an annual internal exercise, approved by the governing bodies of the local units and validated by the global team. It establishes a strategic action plan for the models included in the model risk function management area. It identifies resource requirements relating to the models to be developed, reviewed and implemented over the year.

3.- Development

Development is the construction phase of the risk model's life cycle, based on econometric factors and carried out by specialists in methodology. The models are developed according to the unit's needs, as specified in the annual model plan.

In order to ensure the quality and consistency of the models, the development must be in line with the Group's common methodological standards, defined by the global team. The recent creation of the Global Models and Data Unit is aimed towards a better, more efficient and centralised execution of modelling, while taking advantage of the synergies of combining models and data.

4.- Internal validation

Independent validation of models is a regulatory requirement and a key feature of our management and control of model risk.

An independent specialist unit, integrated into the model risk function, analyses and issues technical opinions on the suitability of internal models. The validation opinion of each model is expressed through a rating which summarises the model risk associated with it. Internal validation covers all models in the model risk control domain; the intensity and frequencies of validation tasks are well defined and follow a risk-based approach.

The scope of the validation includes the theory, the methodology, the technological systems and the quality of the data used to ensure their effectiveness. This also includes a detailed analysis of the model's performance, as well as other aspects of risk management (controls, reports, uses and senior management involvement, among others).

A key task in internal validation is the consistency analysis process carried out by those in charge of validation, who review the recommendations issued, their severity and the ratings assigned. This acts as an important point of control for the uniformity and comparability of the validation tasks. The validation tasks are only concluded once this consistency stage has been passed. In addition, the Single Validation Office plays a key role in ensuring maximum consistency between validations of all the Group's models.

5.- Approval

Before implementation and use, each model must be submitted to the internal governing bodies for approval. For our inventory of models, there is a governance path that varies depending on the model tiering.

6.- Implementation and use

During this phase, the new models developed are implemented in the technological systems. This implementation phase is another possible source of model risk. Therefore, the technical teams and model owners must carry out tests to certify that the model has been implemented according to its methodological definition and that it works as planned and expected.

7.- Monitoring and control

We must regularly review the models to ensure that they are working correctly and are suitable for their intended use. If not, they must be adapted or redesigned.

Control teams must ensure that model risk management procedures are carried out in accordance with the principles and standards laid down in the model risk framework and all related internal rules and regulations.

3. Key metrics

The risk level of a model is reflected in the rating assigned to it. This is usually generated by independent validation of the model.

The risk appetite at the Group and local levels establishes various thresholds, based on the average rating of the models. Changes in the distribution of the ratings are also monitored, focusing on the lowest ratings.

Therefore, the model risk appetite metrics focus on the quality of the models, based on internal validation ratings. Appetite levels differ depending on the relevance of the models and are most demanding for the main models, including regulatory models.

The metrics are monitored on a monthly basis and action plans must be prepared if there are any deviations from established levels. Monitoring of recommendations and the inclusion of the impact on metrics in the planning process are natural management processes to align the quality of the models with the risk appetite path in the event of deviation.

3.8.2. Internal Audit

Internal Audit applies the definition of internal audit by the Institute of Internal Auditors. Internal Audit 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, solvency and reputation. Internal Audit 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.

The scope of Internal Audit's 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.

The scope defined in the preceding sections includes the activities, businesses and processes carried out (directly and through outsourcing), the existing organisation and commercial networks. 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 supervisors and (viii) compliance with international standards for the function.

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

Internal Audit's authority comes directly from the board of directors. Internal Audit reports to the audit committee and complies with the information 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 has direct access to the board when it considers this appropriate.

The Group chief audit executive is responsible for submitting a corporate framework for Internal Audit to the board of directors for approval. 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.

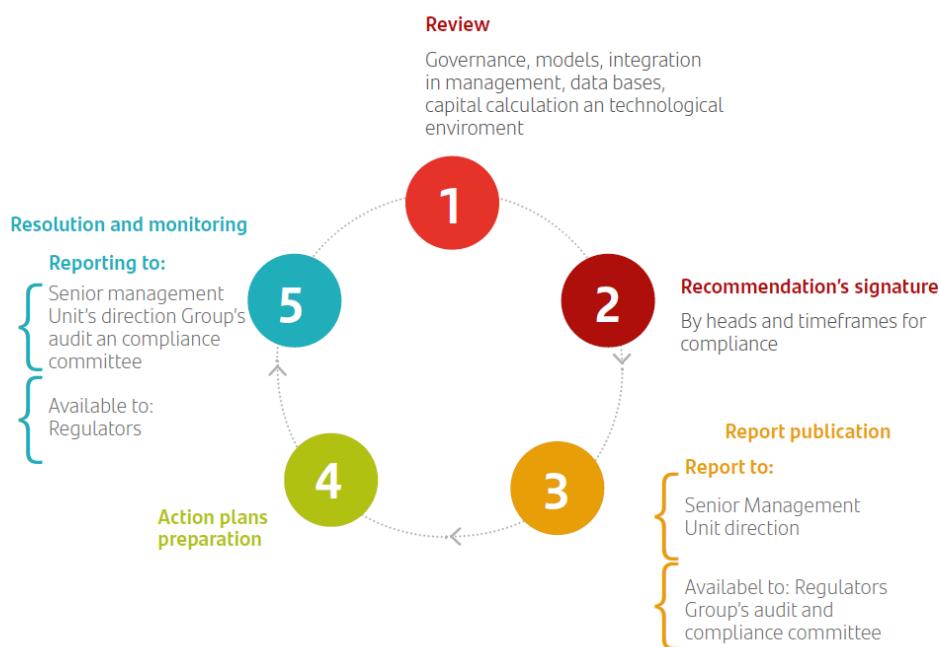
Internal Audit prepares a plan based on an assessment of the risks to which the Group is exposed. This is approved by the audit committee. In terms of solvency, this plan is defined in accordance with the cycle of capital audits, taking into account the results of engagements in previous years and other criteria, such as the rate of implementation of recommendations issued, the results of regulatory inspections and changes in mandatory regulations.

The Internal Audit function uses this cycle to issue a full opinion on the key capital processes defined by Santander Group in the period established, using specialised capital teams. 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, risk management processes, and crisis management and resolution.

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 focused on the aspects in each geography that present the greatest risks in the following major lines of action:

1. Reviewing compliance with Santander Group's internal governance model and supervisory requirements for the approval and maintenance of advanced models.
2. Managing models and their adequacy and integration.
3. Analysis of 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.

4. Reviewing the regulatory capital calculation and reporting process.
5. Analysing the technical aspects and applications of the technological environment.



3.9. Impairment losses: influencing factors and comparative analysis

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

Credit risk should be monitored continuously and comprehensively, to ensure the early identification of incidents involving risk that could affect customers' credit ratings. This monitoring involves regular reviews of all customers, the allocation of a monitoring score, the establishment of pre-defined actions associated with each category and the implementation of specific measures (predefined or ad-hoc) to correct any deviations that could impact the entity.

The analysis of credit risk involves continuous and systematic comparison to budgets, limits and standards, and 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 key metrics used to measure and control the cost of credit risk at Santander Group include:

- 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.
- Concentration: in the individuals and SMEs segments, the monitoring of high risk profile (HRP) portfolios prevents concentration in portfolios with a risk profile that does not match the Group's medium-low risk target. For SCIB segments, corporates and institutions concentration limits are monitored for sectors, single names, large exposures,

underwriting, specialised lending and counterparties with ratings of <5.0.

- EL (expected loss): the value of expected credit losses is the estimate of the present value of non-payment at the due date considering a time horizon of the next twelve months or over the expected life of the financial instrument. The basic structure for the impairment recognition phases is as follows, from lower to higher credit quality impairment (phases 1 to 3):
 - Phase 1: expected credit losses over the next twelve months
 - Phase 2: forecast of the expected credit losses over the life of the instrument
 - Phase 3: recognition of the expected credit losses over the life of the instrument

Therefore, a significant impairment in credit quality determines the transition from the first phase to the second phase.

The Recovery function also includes the management of non-productive assets (NPAs) relating to the forborne loan, doubtful loan and foreclosed asset portfolios, and the write-off portfolio, where the Bank can use accelerated reduction mechanisms, such as sales of loan books or foreclosed assets.

While these metrics measure the same reality and therefore converge in the long term, differences may exist at certain points in time. These are especially significant at the start of a change of cycle. These differences may be due to accounting law and regulations (for example, the write-off timeline for mortgages is different to that for consumer loans), changes in policies (such as coverage or write-off), changes in portfolio composition, doubtful assets acquired from new investees, changes in accounting regulations (such as IFRS 9) and portfolio sales.

For further details on credit risk key metrics', see the Risk Management and Control chapter (section 3.4) on the 2020 Annual Report.



[Access 2020 Annual Report available on the Santander Group website](#)

3.10. Backtesting of IRB parameters

3.10.1. PD backtest

The aim of backtesting PD is to assess the suitability of regulatory PDs by comparing them with 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 disclosing information for the backtesting of PD in accordance with EBA Template 24: – IRB approach – Backtesting of PD per exposure class.

Detailed information on backtesting of PD, reported in the table CR9, can be found in Appendix XV. A summary of the conclusions from the results obtained can be found below.

- 1) There is no major difference between the average exposure-weighted PD and the simple average in each band, indicating that exposure is fairly uniformly distributed among the various transactions. This result is quite typical of retail portfolios, but less so in the case of corporate portfolios, where certain individuals may have significant exposures. However, as may be observed in the results shown below, there are no appreciable differences in the corporate portfolios either.
- 2) In general, regulatory PDs are fairly similar to the actual default rates observed for all the major group portfolios, although the following material facts should be noted:
 - In general, regulatory PDs are on average higher than actual default rates. However, there are some differences to this rule. For example, for the band 10% <= PD < 100% in portfolios such as SC Spain Corporates and Corporates Mexico
 - The situation during this last year is the reflection of an environment of economic crisis which puts the actual default rates above their historical averages in a large number of local portfolios, and all the more so for PD bands in which the population with average and low credit quality is located.

For further details on PD backtesting, see Appendix XV.



[Access file 2020 Pillar 3 Appendices available on the Santander Group website](#)

3.10.2. EAD backtest

Credit Conversion Factors (CCF) were tested by comparing the balance at the time the transactions defaulted with the regulatory EAD assigned 12 months prior to the default.

The ratio of estimated EAD to actual EAD: this is known as the coverage ratio and gives an idea of the accuracy of the EAD estimate.

The tables and diagrams provide a comparison between estimated EAD and actual EAD for the most significant portfolios with committed limits.

The data is broken down by the percentage use of the limits, as this is the main driver used to estimate CCFs and, therefore, to allocate EAD.

It should be pointed out that coverage ratios are very finely tuned in some cases, where the total ratio is around 100%. This is the case of Spain Retail Cards, UK Mortgages, Spain Cards, Germany Corporates and Germany retail.

In other portfolios, EAD estimates are slightly conservative, since the relationship between exposure and balance in default generates a ratio around an interval of [114-134] %.

This is the case for Portugal, Spain Retail Credit and SC Spain Corporates. Meanwhile, other Spanish and Brazilian portfolios (Corporates) have more conservative coverage ratios, and the ratio rises for bands with lower percentage uses, especially in Cards portfolios. Finally, a high coverage ratio has also been observed for the band with the highest off-balance sheet exposure in the UK Mortgages portfolio.

For further details on EAD backtesting, see Appendix XVI.



[Access file 2020 Pillar 3 Appendices available on the Santander Group website](#)

3.10.3. Backtest of expected loss

To compare regulatory expected loss with actual losses on the portfolio, a procedure has been devised to compare the observed loss figures with estimated losses under regulatory parameters. This allows us to reach conclusions on the following points:

- The stability of estimated losses over the life of the study period.
- The volatility of observed losses based on the macroeconomic environment, meaning the extent to which these values exceed estimated losses in periods of economic recession and undershoot the estimates in periods of expansion.

It is important to note that the study period for various portfolios is largely characterised as being a period of economic recession, whereas estimated losses are based on parameters that embrace a longer period in which periods of recession and expansion better reflect a typical economic cycle.

Data from the recovery processes concluded in each year analysed were used to estimate Observed Loss.

The following tables and charts refer to the key portfolios in each geography.

Estimated losses based on regulatory parameters remain stable in the period under analysis for the majority of geographies. In the case of observed losses, the results are more volatile, as expected. Aside from the fluctuations caused by the macroeconomic climate, it is important to bear in mind that the method of carrying out this comparison is very sensitive to any one-off recovery policies that may occur in a particular year, where the losses observed in that year may be attributed to default events originating in previous years.

Specifically, the following can be seen:

- 1) In most portfolios, levels of expected loss are well above those of observed losses during the same period.

- 2) For some geographies, in the years under analysis, a rise was seen in observed losses to above estimated losses during periods associated with a worse economic environment. This is mainly driven by the large number of defaults that occurred during the economic recession and one-off recovery measures affecting new default events during the same period.
- 3) However, in more recent years (2018, 2019 and 2020), a certain convergence towards average levels of observed losses has been seen in these geographies, which puts them below estimated losses, in general, with the gap between the two growing wider as the national economy improves.

For further details on backtesting, of expected loss, see Appendix XVII.



[Access file 2020 Pillar 3 Appendices available on the Santander Group website](#)

3.11. Covid-19

In response to the negative economic impact derived from the crisis caused by covid-19, the European Union implemented a series of measures to support the real economy of the financial sector. As part of these measures, Member States implemented a series of legislative moratoriums on loan repayments, in order to alleviate the operational and liquidity challenges faced by debtors.

During 2020, the EBA published the 2020/02 Guidelines on legislative and non-legislative moratoriums on loan repayments implemented in light of the covid-19 crisis, which defined the scope, nature and criteria for granting moratoriums.

In order to track the moratoriums and additional support measures devised, as well as to provide homogeneous public breakdowns, the EBA published the 2020/07 Guidelines on reporting and disclosure of exposures subject to measures applied in response to the covid-19 crisis.

For more information and details on the measures related to covid-19, please refer to section 3.3 Credit Risk Management - covid-19, within the Risk Management and Compliance block of the 2020 Annual Report. And in the Notes 6, 7, 10 and 53 of the Financial Statements.



[Access 2020 Annual Report available on the Santander Group website](#)

In accordance with the requirements of Annex 3 of the aforementioned EBA 2020/07 Guidelines, the following is a breakdown of the required quantitative templates:

The first table shows a generic summary of those loans and advances subject to moratorium.

Table 41: Information on loans and advances subject to legislative and non-legislative moratoria

	Gross carrying amount		Non performing			
	Performing		Of which: exposures with forbearance measures	Of which: Instruments with significant increase in credit risk since initial recognition but not credit-impaired (Stage 2)	Of which: exposures with forbearance measures	Of which: Unlikely to pay that are not past-due or past-due <= 90 days
Loans and advances subject to moratorium	111,836	108,143	3,668	16,256	3,694	1,149
of which: Households	89,887	87,063	3,224	11,400	2,825	711
of which: Collateralised by residential immovable	69,937	68,390	1,034	8,093	1,547	403
of which: Non-financial corporations	21,947	21,080	444	4,851	867	439
of which: Small and Medium-sized Enterprises	10,241	9,717	240	1,715	524	259
of which: Collateralised by commercial immovable property	3,950	3,591	53	927	359	262
						296

Table 41: Information on loans and advances subject to legislative and non-legislative moratoria

	Accumulated impairment, accumulated negative changes in fair value due to credit risk					Gross carrying amount		
	Performing		Non performing		Of which: exposures with forbearance measures	Of which: Instruments with significant increase in credit risk since initial recognition but not credit-impaired (Stage 2)	Of which: exposures with forbearance measures	Of which: Unlikely to pay that are not past-due or past-due <= 90 days
	Of which: exposures with forbearance measures	Instruments with significant increase in credit risk since initial recognition but not credit-impaired (Stage 2)	Of which: exposures with forbearance measures	Of which: Instruments with significant increase in credit risk since initial recognition but not credit-impaired (Stage 2)				
Loans and advances subject to moratorium	(4,276)	(2,850)	(911)	(1,452)	(1,426)	(453)	(661)	1,144
of which: Households	(3,484)	(2,411)	(866)	(1,166)	(1,073)	(272)	(424)	797
of which: Collateralised by residential immovable property	(435)	(223)	(30)	(165)	(212)	(71)	(117)	252
of which: Non-financial corporations	(792)	(439)	(45)	(285)	(353)	(181)	(237)	347
of which: Small and Medium-sized Enterprises	(548)	(305)	(36)	(200)	(243)	(119)	(149)	217
of which: Collateralised by commercial immovable property	(170)	(57)	(4)	(42)	(113)	(94)	(105)	50

The following table shows the volume of loans and advances subject to legislative and non-legislative moratoriums divided by their residual maturity

Table 42: Breakdown of loans and advances subject to legislative and non-legislative moratoria by residual maturity of moratoria

Number of obligors	Gross carrying amount		Of which: expired	Residual maturity of moratoria					
	Of which: legislative moratoria	<= 3 months <= 6 meses		> 3 months		> 6 months <= 9 months	> 9 months <= 12 months	> 1 year	
				<= 3 months <= 6 meses	> 3 months	<= 9 months	<= 12 months	> 1 year	
Loans and advances for which moratorium was offered	5,063	119,804							
Loans and advances subject to moratorium	4,821	111,836	70,178	88,509	11,695	4,717	380	6,486	
of which: Households		89,887	60,995	72,660	9,626	4,360	289	2,951	
of which: Collateralised by residential immovable property		69,937	56,935	55,019	7,917	3,886	258	2,857	
of which: Non-financial corporations		21,947	9,182	15,846	2,068	357	91	3,535	
of which: Small and Medium-sized Enterprises		10,241	6,161	6,754	991	176	48	2,262	
of which: Collateralised by commercial immovable property		3,950	1,814	1,936	285	37	34	1,649	
								10	

Finally, the last table collects the information of those new loans and advances that are subject to new guarantee programs derived in response to the covid-19 crisis

Table 43: Information on newly originated loans and advances provided under newly applicable public guarantee schemes introduced in response to COVID-19 crisis

	Gross carrying amount	Maximum amount of the guarantee that can be considered	Gross carrying amount	Inflows to non-performing exposures
	of which: forborne	Public guarantees received		
Newly originated loans and advances subject to public guarantee schemes	38,313	9	29,088	50
of which: Households	1,688			3
of which: Collateralised by residential immovable property	2			—
of which: Non-financial corporations	36,620	9	27,720	47
of which: Small and Medium-sized Enterprises	28,178			43
of which: Collateralised by commercial immovable property	125			—

4

Counterparty credit risk





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4. Counterparty credit risk



Counterparty credit risk is the risk that a counterparty to a transaction could default before the final settlement of the transaction's cash flows.

This chapter gives a detailed analysis of Santander Group's counterparty credit risk profile from several angles: region, type of financial contract, calculation method and notional value. It also focuses on regulatory indicators (EAD and RWA).

Main figures

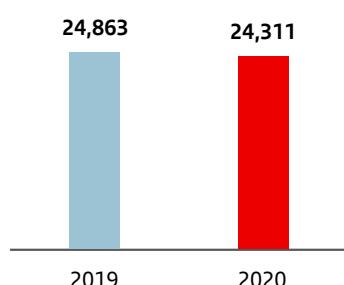
Million euros

	EAD		RWA	
	2020	2019	2020	2019
Counterparty credit risk	32,533	33,925	10,239	11,070
Of which, market appreciation	24,311	24,863	9,278	9,823
Of which, CCP default	507	587	241	259
Of which, CVA	7,715	8,475	720	988

EAD variation*

Million euros

(2.2)%

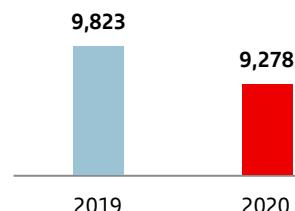


Note: Does not include CCPs or CVA.

RWA variation*

Million euros

(5.5)%



Note: Does not include CCPs or CVA.

4.1 Counterparty credit risk definition and framework

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 Group includes counterparty credit risk in its credit risk framework. For management purposes, it also has a specific counterparty credit risk model and policy.

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 Santander Group unit.

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 regions and for some products.

We also calculate the capital at risk or unexpected loss, i.e. the loss in economic capital once expected loss is subtracted, net of guarantees and recoveries.

4.2. Collateral agreements and guarantees

Transactions subject to collateral agreements are marked to market daily and 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.

4.3. 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 Santander 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.

The Group 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. 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.

4.4. Credit rating downgrade

It is estimated that if Santander Group's 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 parent's credit rating, it is estimated that the resulting impact of the collateral it would have to post would be €121 million.

4.5. 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.

Table 44. Credit valuation adjustment capital charge (CCR2)*

Million euros

	31 Dec. 2020	
	Exposure value	RWA
Total portfolios subject to the Advanced Method		
(i) VaR component (including the 3×multiplier)	—	—
(ii) Stressed VaR component (including the 3×multiplier)	—	—
All portfolios subject to the Standardised Method	7,715	720
Based on Original Exposure Method	—	—
Total subject to the CVA capital charge	7,715	720

* Figures applying 1 year floor.

4.6. Central counterparties

The clearing of transactions through central counterparties is a common market practice for Santander Group. 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 45. Exposures to central counterparties (CCR8)

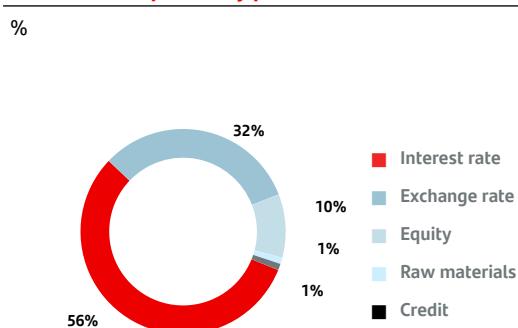
Million euros

	31 Dec. 2020	
	EAD (post CRM)	RWA
Exposures to QCCPs (total)	13,807	507
Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which	10,078	202
(i) OTC derivatives	7,993	160
(ii) Exchange-traded derivatives	—	—
(iii) Securities financing transactions	2,086	42
(iv) Netting sets where cross-product netting has been approved	—	—
Segregated initial margin	—	—
Non-segregated initial margin	3,222	64
Pre-funded default fund contributions	507	241
Alternative calculation of own funds requirements for exposures	—	—
Exposures to non-QCCPs (total)	—	—
Exposures for trades at CCPs non-qualified (excluding initial margin and fund contributions); of which	—	—
(i) OTC derivatives	—	—
(ii) Exchange-traded derivatives	—	—
(iii) Securities financing transactions	—	—
(iv) Netting sets where cross-product netting has been approved	—	—
Segregated initial margin	—	—
Non-segregated initial margin	—	—
Pre-funded default fund contributions	—	—
Alternative calculation of own funds requirements for exposures	—	—

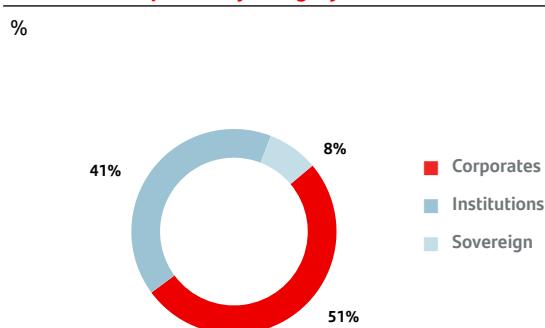
4.7. Credit counterparty credit risk indicators

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

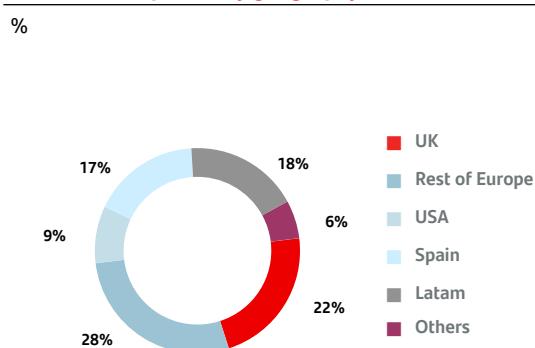
Derivatives exposure by product



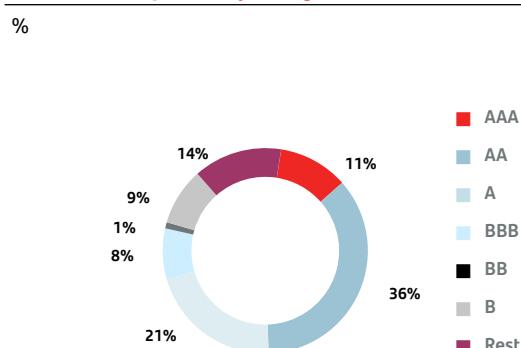
Derivatives exposure by category



Derivatives exposure by geography



Derivatives exposure by rating



In 2020, exposure to counterparty credit risk from derivative transactions was concentrated in counterparties with high credit quality, so that around 76% of the exposure was with counterparties rated A or higher. The distribution by type of counterparty was 41% Institutions and 51% Corporates.

As regards geographic distribution, 22% of the exposure was accounted for by UK counterparties (mainly Santander UK's operations) with the remainder being accounted for by Spain (17%), the rest of Europe (28%), Latin America (18%), the United States (9%) and the rest of the world (5%).

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

Table 46. Analysis of the counterparty credit risk (CCR) exposure by approach (CCR1)*

Million euros

							31 Dec. 2020
	Notional	Replacement cost/ Current market value	Potential future exposure	EEPE	Multiplier	EAD postCRM	RWA
Mark to market		181,948	11,552			22,047	8,757
Original exposure							
Standardised approach							
Internal Model Method (for derivatives and SFTs)							
Of which securities financing transactions							
Of which derivatives and long settlement transactions							
Of which from contractual cross-product netting							
financial collateral simple method (for SFTs)						395	13
Financial collateral comprehensive method (for SFTs)						1,869	242
VaR for SFTs							
Total							9,012

*Does not include CCPs

EAD fell in comparison to the previous year, largely due to lower exposure with sovereign counterparties in local currency.

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 47. Standardised approach – CCR exposures by regulatory portfolio and risk (CCR3)

Million euros

	Risk Weight													31 Dec. 2020	
	0 %	2 %	4 %	10 %	20 %	35 %	50 %	70 %	75 %	100 %	150 %	Deduc.	Others	Of which unrated	
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Central governments or central banks	2,050	—	—	—	47	—	26	—	—	2	—	—	2,125	68	
Regional government or local authorities	—	—	—	—	—	—	—	—	—	0	—	—	—	0	
Public sector entities	0	—	—	—	—	—	—	—	—	—	—	—	—	0	
Multilateral development banks	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
International organisations	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Institutions	—	13,301	—	—	222	—	416	—	—	105	—	—	14,043	763	
Corporates	—	—	—	—	2	—	4	—	—	1,536	5	—	1,546	84	
Retail	—	—	—	—	—	—	—	—	40	—	—	—	—	40	
Institutions and corporates with a short-term credit assessment	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Exposure against collective investment institutions (CIIs)	—	—	—	—	—	—	—	—	—	10	—	—	—	10	
Other items	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Total	2,050	13,301	—	—	270	—	446	—	40	1,653	5	—	17,764	915	

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

Table 48. IRB approach- CCR exposures by portfolio and PD scale (CCR4)

PD Scale	31 Dec. 2020						
	EAD post CRM	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RW
AIRB. Central banks and central governments							
0.00 < 0.15	296	0.05 %	12	48.44 %	3.45	37	12.57 %
0.15 < 0.25	—	0 %	—	0 %	—	—	0 %
0.25 < 0.50	—	0 %	—	0 %	—	—	0 %
0.50 < 0.75	—	0 %	—	0 %	—	—	0 %
0.75 < 2.50	—	0 %	—	0 %	—	—	0 %
2.50 < 10.00	—	0 %	—	0 %	—	—	0 %
10.00 < 100.00	—	0 %	—	0 %	—	—	0 %
100.00 (Default)	—	0 %	—	0 %	—	0	0 %
Sub-total	296	0.05 %	12	48.44 %	3.45	37	13 %
AIRB. Institutions							
0.00 < 0.15	7,411	0.06 %	923	44.35 %	1.86	1,060	14.30 %
0.15 < 0.25	279	0.19 %	74	44.28 %	2.32	104	37.44 %
0.25 < 0.50	117	0.33 %	97	43.67 %	0.60	47	40.01 %
0.50 < 0.75	205	0.65 %	59	44.62 %	3.80	193	93.96 %
0.75 < 2.50	70	1.12 %	25	44.91 %	2.93	76	109.35 %
2.50 < 10.00	11	2.88 %	1	45.00 %	1.91	14	126.91 %
10.00 < 100.00	—	0 %	—	0 %	—	—	0 %
100.00 (Default)	3	100 %	5	99.69 %	1.08	0	0.07 %
Sub-total	8,096	0.14 %	1,184	44.38 %	1.91	1,494	18 %
AIRB. Corporates							
0.00 < 0.15	4,645	0.08 %	387	43.99 %	3.57	1,466	31.55 %
0.15 < 0.25	771	0.24 %	191	44.92 %	3.59	445	57.67 %
0.25 < 0.50	705	0.39 %	1,356	35.20 %	2.47	516	73.20 %
0.50 < 0.75	582	0.65 %	590	41.65 %	3.13	490	84.13 %
0.75 < 2.50	429	1.37 %	3,879	26.04 %	3.65	471	109.69 %
2.50 < 10.00	115	5.38 %	2,866	26.36 %	3.46	139	120.43 %
10.00 < 100.00	29	17.80 %	373	31.06 %	4.11	63	219.81 %
100.00 (Default)	11	100 %	590	19.40 %	1.81	0	0.21 %
Sub-total	7,288	0.55 %	10,232	41.63 %	3.44	3,589	49 %
AIRB. Retail							
0.00 < 0.15	—	0 %	—	0 %	—	—	0 %
0.15 < 0.25	—	0 %	—	0 %	—	—	0 %
0.25 < 0.50	—	0 %	—	0 %	—	—	0 %
0.50 < 0.75	—	0 %	—	0 %	—	—	0 %
0.75 < 2.50	0	1.59 %	1	24.33 %	5.00	—	25.73 %
2.50 < 10.00	0	2.97 %	3	38.88 %	1.20	0	46.91 %
10.00 < 100.00	46	11.59 %	20,867	40.00 %	1.61	33	70.37 %
100.00 (Default)	1	100 %	146	40.00 %	1.61	0	13.75 %
Sub-total	47.23	13.24 %	21,017	40.00 %	1.61	33	69 %

PD Scale	31 Dec. 2020						
	EAD post CRM	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RWA density
FIRB. Institutions							
0.00 < 0.15	1,492	0.06 %	77	45 %	0.65	214	14 %
0.15 < 0.25	50	0.19 %	19	45 %	0.91	21	42 %
0.25 < 0.50	20	0.35 %	26	45 %	1.17	11	56 %
0.50 < 0.75	4	0.66 %	11	45 %	1.96	3	76 %
0.75 < 2.50	—	0 %	—	0 %	—	—	0 %
2.50 < 10.00	—	0 %	—	0 %	—	—	0 %
10.00 < 100.00	—	0 %	—	0 %	—	—	0 %
100.00 (Default)	—	0 %	—	0 %	—	—	0 %
Sub-total	1,567	0.07 %	133	45 %	0.67	250	16 %
FIRB. Corporates							
0.00 < 0.15	232	0.13 %	22	45 %	1.99	80	35 %
0.15 < 0.25	38	0.24 %	10	45 %	2.20	20	53 %
0.25 < 0.50	13	0.40 %	9	45 %	2.50	9	73 %
0.50 < 0.75	34	0.65 %	48	45 %	2.47	31	91 %
0.75 < 2.50	13.72	1.12 %	5	45 %	2.50	15	112 %
2.50 < 10.00	9.37	4.61 %	2	45 %	2.50	16	169 %
10.00 < 100.00	—	0 %	—	0 %	—	—	0 %
100.00 (Default)	—	0 %	—	0 %	—	—	0 %
Sub-total	340	0.37 %	96	45 %	2.12	172	51 %
Total	17,634	0.34 %	32,674	43.37 %	2.46	5,575	32 %

The following table shows the effects of netting agreements and collateral for exposure to counterparty credit risk in addition to the type of collateral exchanged in derivatives transactions and securities financing transactions.

Table 49. Impact of netting and collateral held on exposure values (CCR5-A)*

Million euros

						31 Dec. 2020
	Gross positive fair value or net carrying amount (1)	Add-on	Netting benefits	Netted current credit exposure	Collateral held	Net credit exposure
Derivatives	75,456	10,556	48,325	37,688	16,232	21,455
SFTs	149,177	2,198	26,870	124,505	121,650	2,856
Cross-product netting	—	—	—	—	—	—
Total	224,633	12,754	75,194	162,193	137,882	24,311

*Does not include CCPs.

(1) Gross positive fair value before applying any mitigation technique. In case of securities financing operations, information is included on the value of the securities or cash delivered to the counterparty.

Table 50. IRB approach. Composition of collateral for exposures to counterparty credit risk (CCR5-B)

Million euros

	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		
Cash - domestic currency	112	6,554	0	6,969	31,469	26,683
Cash - other currencies	1	5,605	1	5,003	12,084	12,742
Domestic sovereign debt	360	1,510	469	86	47,669	55,686
Other sovereign debt	1,029	79	1,098	800	11,344	12,270
Government agency debt	0	—	103	—	24	47
Corporate bonds	191	78	39	—	11,060	14,490
Shares	65	647	—	—	7,068	8,672
Other collateral	—	—	—	—	932	742
Total	1,759	14,473	1,711	12,859	121,650	131,332

Table 51. EU CCR6 – Credit derivatives exposures

Million euros

31 Dec. 2020

	Credit derivatives hedges		
	Protection bought	Protection sold	Other credit derivatives
Notionals			
Single-name credit default swaps	4,257	684	
Index credit default swaps	7,099	2,257	
Total return swaps		234	
Credit options			
Other credit derivatives			
Total notional	11,356	3,174	
Fair values	(197)	127	
Positive fair value (asset)	13	132	
Negative fair value (liability)	(210)	(6)	

*Bought credit derivatives do include loan coverage

For more information, see the Risk management and control chapter (section 3.6) of the 2020 annual report

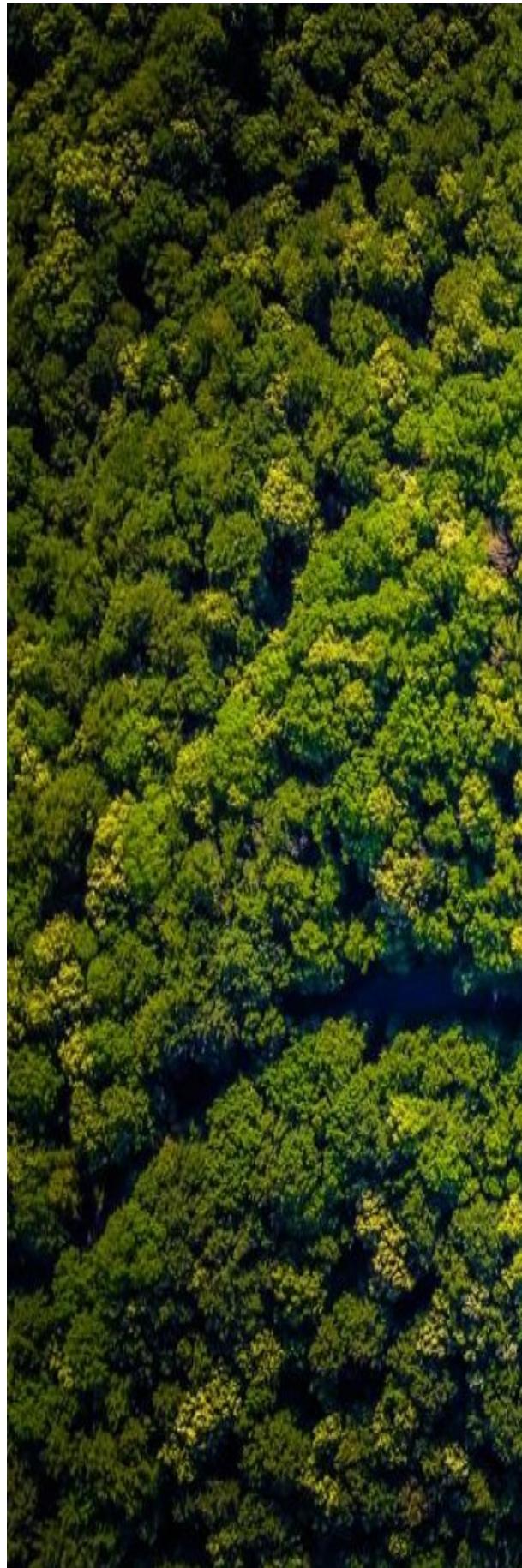


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5

Credit risk - Securitisations

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5. Credit risk - Securitisations



This chapter describes Santander Group's securitisation activity. It also looks at the basic concepts relating to securitisations and summarises the goals and functions of the securitisation management activity at Santander Group.

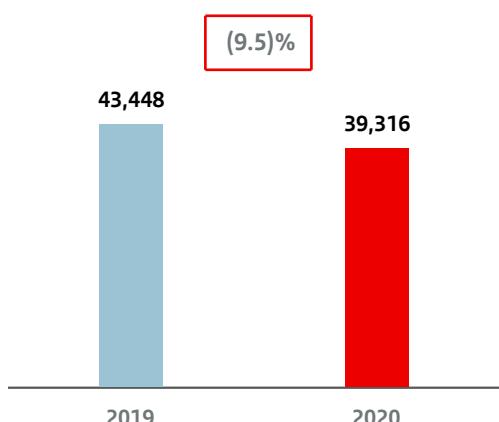
Main figures

Million euros

	EAD	RWA		
	2020	2019	2020	2019
Securitisation exposures in banking book	39,316	43,448	8,159	6,629

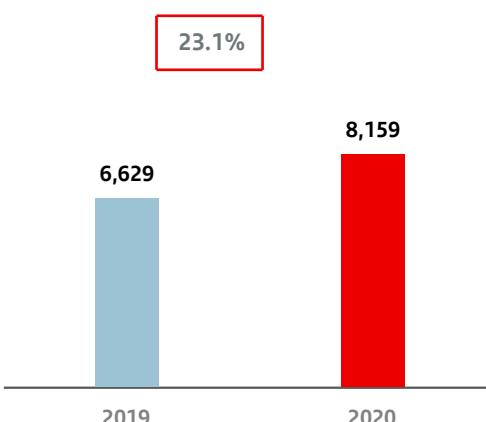
EAD variation

Million euros



RWA variation

Million euros



5.1. Theoretical considerations on securitisation

At Santander Group, securitisation is treated as stipulated in chapter 5 of the CRR. The assessment of the characteristics to determine whether or not securitisation exists, and consequently, the transaction has to be processed under the conditions described in this section, is based on the legal format and economic basis of the transaction.

Pursuant to the CRR, the following concepts shall be interpreted using these regulatory definitions:

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

- a. Payments for the transaction or scheme are dependent upon the performance of the exposure or pool of exposures.
- b. 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.

Tranche: a contractually established segment of the credit risk associated with an exposure or pool of exposures, where a position in the segment entails a risk of credit loss greater or less than a position of the same amount in each of the other segments, without taking account of credit protection provided by third parties directly to the holders of positions in the segment or any of the other segments. In this respect, the whole securitisation position either forms part of a tranche or is a tranche in itself. The following terms can also be used.

- **First loss tranche:** this tranche is given a weighting of 1250%.
- **Mezzanine tranche:** this is the tranche, other than a first loss tranche, that ranks below the most senior position in the securitisation and below any position in the securitisation assigned a credit rating of 1 in the case of securitisations under the standardised approach, or a rating of 1 or 2 in the case of securitisations under the IRB approach.
- **Senior tranche:** 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.

Traditional securitisations: a securitisation involving the economic transfer of the exposures being securitised to a securitisation special purpose entity (SSPE) that issues securities. This may be accomplished by the transfer of ownership of the securitised exposures from the originator institution to an SSPE or through sub-participation by an SSPE, which shall include, for this purpose, mortgage participation certificates, mortgage transfer certificates and similar securities. The securities issued by the vehicle do not represent payment obligations of the originator institution.

Synthetic securitisation: a securitisation where the transfer of risk is achieved by the use of credit derivatives or guarantees, and the exposures being securitised remain exposures of the originator institution.

Resecuritisation: securitisation where the risk associated with an underlying pool of exposures is divided into tranches and at least one of the underlying exposures is a securitisation position.

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.

Investment entity: any institution or subject, other than the originator or sponsor institution, holding a securitisation position.

Originator institution: is an institution that:

- a. 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
- b. Purchases a third party's exposures for its own account and then securitises them.

Sponsor institution: 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.

5.2. Securitisation accounting policies

The rule for derecognising securitised assets is that set by IFRS 9 Financial instruments for the derecognition of financial assets (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, along 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 income 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. The following are also recognised for accounting purposes:
 - a. 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.
 - b. 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 income statement 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:
 - a. 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.
 - b. 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 they generate 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.

There is no specific accounting treatment for synthetic securitisations or assets awaiting securitisation.

5.3. Management of the securitisation activity at Santander Group

5.3.1. Santander Group securitisation objectives and management

Santander Group pursues various objectives through its securitisation activity:

- Management and diversification of credit risk: the Group aims to reduce credit risk concentrations that arise naturally from its commercial activity through securitisation transactions and the subsequent sale of the bonds in the market. The effective transfer of risks achieved through these transactions enables the Group to optimise its credit risk exposure and contributes to value creation by reducing the Bank's need to retain own funds.
- Obtaining liquidity: securitisation enables Santander Group 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 funding.
- Diversifying funding sources: the liquidity obtained from securitisation allows Santander Group to diversify its funding sources, in terms of maturity and product type.
- Optimisation of capital consumption: in 2020, 15 new securitisations were originated, all involving significant risk transfer.

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

5.3.2. Santander Group securitisation functions

Santander Group's role in the securitisation process is mainly that of originator of the underlying assets being securitised. Nevertheless, in addition to originating the underlying payments, the Group also plays a role in servicing the loans and granting subordinated loans. It also acts as a counterparty, when needed, in the interest rate swap agreement for the SSPE that acquires the loans.

Santander Group also acts as an investor, acquiring positions in SSPEs originated by non-Group entities and/or retaining a portion of the positions originated by the Bank itself.

Santander Group is the sponsor of a securitisation whose underlying consists of loans granted by various financial institutions to SSPEs of mortgage-backed bonds to cover the reserve fund.

Santander Group also structures and places its own securitisations, 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 situated in the context of a revival of securitisation as a tool for channelling credit to the real economy, with a special focus on SMEs.

The following table gives a breakdown of the securitisation positions purchased or retained by securitised asset class and the Bank's role in the securitisation at 31 December 2020:

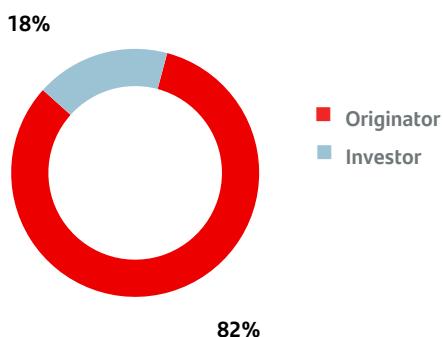
Table 52. Securitisation positions purchased and retained with risk transfer by exposure type in the banking book

Million euros

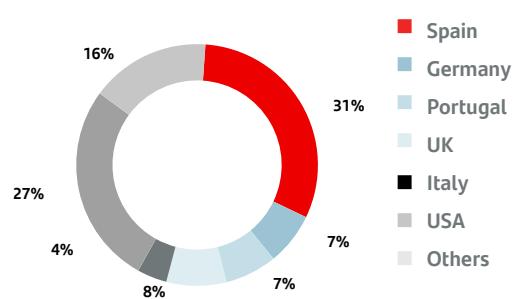
	2020						2019					
	Exposure			RWA			EAD			RWA		
	Originator	Investor	Sponsor	Originator	Investor	Sponsor	Originator	Investor	Sponsor	Originator	Investor	Sponsor
Traditional securitisations	1,392	11,071		454	2,154		3,933	8,252	0	578	1,351	0
Residential mortgages	6	1,670		1	371		19	1,891	—	3	201	—
Commercial mortgages	—	—		—	—		—	—	—	—	—	—
Credit cards	—	105		—	39		—	70	—	—	9	—
Leasing	—	297		—	145		—	140	—	—	76	—
Loans to corporates or to SMEs treated as corporates	—	2		—	0		—	1,330	—	—	324	—
Consumer loans	1,386	4,032		453	687		3,914	1,930	—	575	226	—
Receivables	—	0		—	0		—	898	0	—	131	0
Securitisation positions	—	—		—	—		—	1,010	—	—	173	—
Others	—	4,966		—	913		—	983	—	—	210	—
Resecuritisations							—	—	0	—	—	0
Securitisation positions							—	—	0	—	—	0
Synthetic securitisations	26,647	205		5,300	251		31,262	—	—	4,700	—	—
Loans to corporates or to SMEs treated as corporates	7,606	102		954	143		17,952	—	—	2,455	—	—
Consumer loans	4,190	—		651	—		6,023	—	—	993	—	—
Receivables	—	—		—	—		7,287	—	—	1,252	—	—
Others	14,852	102		3,695	107		—	—	—	—	—	—
Total	28,040	11,276		5,754	2,405		35,195	8,252	0	5,278	1,351	0

The following diagram depicts the geographical distribution of Santander Group's securitisation activity as of 31 December 2020.

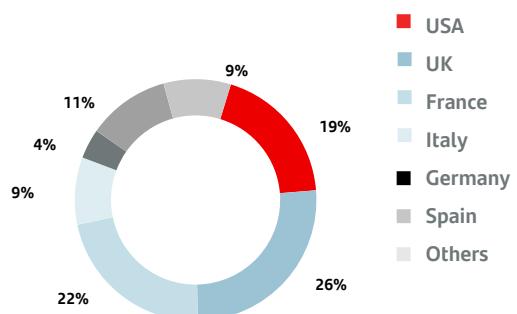
Distribution of the group's securitisation function



Originator activity



Investor activity



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

As indicated in the graph, originator activity accounts 82% of Santander Group securitisation activity, with investment activity accounting for 18%.

66% of the volume of securitisations originated by Santander Group is concentrated Spain, USA, and the United Kingdom.

On the investment side, 68% of acquisitions of investment positions are concentrated in the United Kingdom (26%), France (22%) and United States (19%).

5.3.3. Risk inherent to the securitisation activity at Santander Group

Securitisation offers advantages in terms of lower funding costs and better risk management. However, it exposes investors to certain inherent risks. Santander Group is not exposed to any additional risk by acting as the originator or sole investor in a securitisation. In fact, doing so reduces liquidity risk by transforming illiquid assets (the loans originated) into liquid assets (securitisation bonds).

Acting as the originator and as one of the investors in the issue, subjects Santander Group to the following risks:

- **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. At Santander Group, the maximum exposure in the banking book is limited by rating (AAA, AA, A, BBB, BB) 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 securitisation, so that the securitisation positions mature before the contractual maturity date of the underlying assets. Calculations of the average life, return and duration of securitisation positions is subject, among other things, to assumptions about the rate at which the underlying assets will be prepaid, which may vary. This risk is practically non-existent at Santander Group as the contractual maturity of the securities issued is usually longer than that of any underlying.
- **Basis risk:** this risk arises when there is a mismatch between the interest rates or maturities of the securitised assets and those of the securitisation positions. At Santander Group this risk is usually hedged with swaps.
- **Exchange rate risk:** this exists in securitisations where the securitised assets and the securitisation positions are denominated in different currencies. At Santander Group, the risk arising from the currency mismatch between the underlying and the issue is usually hedged in the structure through a swap (excluding synthetic securitisations). The P&L risk assumed in non-euro bonds is managed by the Active Credit Portfolio Management (ACPM) area.
- **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 Group 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:** there are no portfolio sales to Special Purpose Vehicles (SPV) in synthetic securitisations. The Bank buys financial guarantees from an SPV (which then issues a Credit Link Note (CLN)) or the end investor to transfer risk. The financial guarantees received can be funded or unfunded. In the latter case, the Bank has to reclaim the losses from the investor, which generates counterparty risk.

5.3.4. Santander Group securitisation activity

Santander Group originated eight securitisations in 2020, aiming to achieve significant risk transfer.

Santander Group also originates and holds positions in traditional securitisation funds whose underlying portfolios mainly comprise mortgages, and consumer and corporate loans.

Santander Group is also the originator of 24 synthetic securitisation funds, three of which were originated in 2020. The underlying assets of those originated this year are loans to SMEs (in one case), project finance loans (in one case) and consumer loans (in one case).

Santander Group is awarded a rating by one or more of the following external rating agencies for each of these traditional structures, 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.

For two of the synthetic securitisations, two external ratings have been requested.

With regard to investment activity, Santander Group holds positions in securitisation funds originated by entities outside Santander Group whose underlying assets mainly comprise receivables, credit cards, and corporate, SME and mortgage loans. As Santander Group limits its maximum exposure by rating (AAA, AA, A, BBB, BB), it does not usually employ hedging techniques to mitigate the risk.

Monitoring process for changes in associated risk:

- Securitisation positions originated: regular monitoring is the responsibility of the securitisation fund managers (trustees/management companies), who prepare regular reports updating the rating performance of the underlying portfolios for the bonds.
- Reverse securitisation positions: 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 risks of both securitisation and re-securitisation exposures.

The performance of the underlying assets particularly affects the duration of the tranches. It is unlikely that this will affect the principal bearing in mind the high levels of subordination and continuous monitoring.

The following tables show the distribution, by type of underlying asset, of the securitisation positions issued and repurchased by Santander Group as an originator, investor and sponsor at 31 December 2020, in both the banking book and trading portfolio.

The following table shows the exposure of all securitisations in the banking book, distinguishing between wholesale and retail underlyings:

Table 53. Securitisation exposures in the banking book (SEC1)*

Million euros

	31 Dec. 2020								
	Bank acting as originator			Bank acting as sponsor			Bank acting as investor		
	Traditional	Synthetic	Subtotal	Traditional	Synthetic	Subtotal	Traditional	Synthetic	Subtotal
Retail (total)	23,259	5,263	28,521	—	—	—	5,841	—	5,841
Residential mortgages	7,885	—	—	—	—	—	1,670	—	1,670
Credit card	—	—	—	—	—	—	105	—	105
Other retail exposures	15,373	5,263	28,521	—	—	—	4,066	—	4,066
Resecuritisation	—	—	—	—	—	—	—	—	—
Wholesales (total)	337	24,265	24,601	—	—	—	5,435	—	5,435
Corporate loans	337	9,788	10,125	—	—	—	2,538	—	2,538
Commercial mortgage	—	—	—	—	—	—	—	—	—
Finance leases and receivables	—	921	921	—	—	—	1,969	—	1,969
Other wholesale exposures	—	13,555	13,555	—	—	—	928	—	928
Mortgage covered bonds	—	—	—	—	—	—	—	—	—
Others	—	—	—	—	—	—	—	—	—
Resecuritisation	—	—	—	—	—	—	—	—	—
Total	23,595	29,527	53,123	—	—	—	11,276	—	11,276

*The securitisation portfolio has been considered as a whole (positions bought and retained)

Table 54. Securitisation exposures in the trading book (SEC2)

Million euros

	31 Dec. 2020								
	Bank acting as originator			Bank acting as sponsor			Bank acting as investor		
	Traditional	Synthetic	Subtotal	Traditional	Synthetic	Subtotal	Traditional	Synthetic	Subtotal
Retail (total)	3	—	3	—	—	—	68	—	68
Residential mortgages	—	—	—	—	—	—	52	—	52
Credit card	—	—	—	—	—	—	—	—	—
Other retail exposures	3	—	3	—	—	—	17	—	17
Resecuritisation	—	—	—	—	—	—	—	—	—
Wholesales (total)	—	—	—	—	—	—	—	—	—
Corporate loans	—	—	—	—	—	—	—	—	—
Commercial mortgage	—	—	—	—	—	—	—	—	—
Finance leases and receivables	—	—	—	—	—	—	—	—	—
Other wholesale exposures	—	—	—	—	—	—	—	—	—
Resecuritisation	—	—	—	—	—	—	—	—	—
Correlation portfolios	—	—	—	—	—	—	—	—	—
Total	3	—	3	—	—	—	68	—	68

Finally, in its role as originator and investment entity for securitisations, Santander Group complies with the requirements of Part Five of the CRR relating to the 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 Group always retains a minimum of 5% of the net economic interest.
- Santander Group makes 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:

- Santander 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.
- Santander Group verifies that the originators of the securitisations in which it invests retain a 5% net economic interest.

In terms of regulatory compliance, we must distinguish between:

- Securitisations originated between 1 January 2011 and 31 December 2019, and investment positions in securities issued before 1 January 2019, Santander Group complies with the requirements in Regulation (EU) No 575/2013 in the version applicable on 31 December 2018.
- In securitisations and investment positions in securitisations originated from 1 January 2019, Santander Group complies with the requirements of Regulation 2017/2402 of the European Parliament and of the Council.

Therefore, as Santander Group complies with these requirements, no capital surcharge is applied.

5.4. Capital requirements - Securitisations

Santander Group calculates regulatory capital under the securitisation approach for positions held in originated securitisations only if the regulatory conditions established in the CRR for significant risk transfer are met. Otherwise, capital is calculated for the securitised exposures as if they had never been securitised. Capital is also calculated for investment positions in securitisation funds originated by third parties.

Regulation (EU) 2017/2401 on securitisations entered into force on 1 January 2019.

This new framework modifies the calculation methods for capital requirements. Firstly, with the aim of ruling out any form of automatic recourse to external ratings, the entity must use its own calculation of regulatory capital requirements so long as it is authorised to apply the internal ratings-based approach for securitisations (SEC-IRBA). Entities that cannot use the SEC-IRBA must apply the standardised approach (SEC-SA) to securitisations. The SEC-SA must be based on a formula which takes as its input data the capital requirements calculated under the standardised approach for credit risk. When neither of these two approaches are available, the entities must adopt the external ratings-based approach for securitisations (SEC-ERBA). In accordance with SEC-ERBA, capital requirements must be assigned to securitisation tranches on the basis of their external rating. Capital requirements for securitisation 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 securitised portfolio.

For new securitisations generated in 2020, capital requirements are calculated using the new approaches under the new Regulation (EU) 2017/2401 on securitisations.

The following table shows 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 55. Breakdown of repurchased positions in SSPEs with risk transfer, distributed by function and approach used

Million euros

	31 Dec. 2020					31 Dec. 2019				
	On-balance sheet exposures	Off-balance sheet exposures	EAD	EAD after capital reductions	RWA	On-balance sheet exposures	Off-balance sheet exposures	EAD	EAD after capital reductions	RWA
Originator – standardised approach						691	—	669	669	171
Originator – SEC standardised approach	3,496	—	2,699	2,699	393	3,149	—	3,142	3,139	471
Originator – SEC ERB approach	1,516	—	1,063	1,038	630	1,248	—	1,218	1,183	719
Originator – RB approach	—	—	—	—	—	7,499	1	7,501	7,498	956
Originator – SF approach	—	—	—	—	—	9,307	767	10,074	10,065	932
Originator – IRB approach	28,921	43	24,248	24,182	4,731	12,588	—	12,588	12,520	2,030
Originator – 1250%	5,804	—	30	—	—	3	—	3	2	—
Total originator	39,738	43	28,040	27,919	5,754	34,485	768	35,195	35,076	5,278
Investor – standardised approach						233	—	233	233	176
Investor – SEC standardised approach	8,820	8,820	8,814	1,428		3,219	—	3,219	3,219	543
Investor – SEC ERB approach	2,455	2,455	2,455	977		323	—	323	323	147
Investor – RB approach	—	—				4,477	—	4,477	4,477	486
Investor – SF approach	—	—				—	—	—	—	—
Investor – IRB approach	—	—				—	—	—	—	—
Investor – 1250%	—	—				—	—	—	—	—
Total investor	11,276	—	11,276	11,269	2,405	8,253	—	8,252	8,252	1,351
Sponsor – standardised approach						—	—	—	—	—
Sponsor – SEC standardised approach						—	—	—	—	—
Sponsor – SEC ERB approach						—	—	—	—	—
Sponsor – RB approach						—	0	0	0	—
Sponsor – SF approach						—	—	—	—	—
Sponsor – IRB approach						—	—	—	—	—
Sponsor – 1250%						—	—	—	—	—
Total sponsor	—	0	0	—	0	—	0	0	0	0
Total	51,013	43	39,316	39,188	8,159	42,738	768	43,448	43,328	6,629
Of which: traditional securitisations	19,510	43	12,463	12,438	2,608	12,210	1	12,185	12,172	1,929
Of which: synthetic securitisations	31,503		26,852	26,751	5,551	30,528	767	31,262	31,156	4,700

On and off-balance sheet totals before provisions and after outflows to other regulatory reports.

EAD IRB (RBA & SFA): exposures net of collateral, before provisions and deductions and after outflows to other regulatory reports.

EAD SA: 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 SA: 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 55, exposure decreased by 9,51%, due to the drop in exposures in securitisations originated by Santander Group. This year, 15 new securitisations with significant risk transfer were originated, with the main goal of 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 portfolio 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 establishes more favourable treatment for preferential tranches of STS (simple, transparent and standardised) securitisation tranches or those which, with certain conditions, foster funding for SMEs.

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 Santander Group acts as originator or sponsor

Table 56. Securitisation exposures in the banking book and associated regulatory capital requirements (Bank acting as originator or sponsor) (SEC3)

Million euros

	Exposure values (by risk weight bands)						Exposure values (by regulatory approach)						31 Dec. 2020
	<= 20%	> 20% to 50%	> 50% to 100%	> 100% to 1250%	1250%	IRB RBA	IRB SFA	SA	SEC IRBA	SEC SA	SEC ERBA	1250%	
Total exposure	17,938	9,625	53	302	121	—	—	—	24,182	2,699	1,038	121	
Traditional securitisation	56	1,264	53	—	19	—	—	—	1,064	—	309	19	
Of which, securitisation	56	1,264	53	—	19	—	—	—	1,064	—	309	19	
Of which, retail underlying	56	1,264	53	—	19	—	—	—	1,064	—	309	19	
Of which, wholesale underlying	—	—	—	—	—	—	—	—	—	—	—	—	
Of which, resecuritisation	—	—	—	—	—	—	—	—	—	—	—	—	
Of which, preference	—	—	—	—	—	—	—	—	—	—	—	—	
Of which, non-preference	—	—	—	—	—	—	—	—	—	—	—	—	
Synthetic securitisation	17,882	8,362	—	302	101	—	—	—	23,117	2,699	729	101	
Of which, securitisation	17,882	8,362	—	302	101	—	—	—	23,117	2,699	729	101	
Of which, retail underlying	5,189	—	—	23	50	—	—	—	3,265	1,496	450	50	
Of which, wholesale underlying	12,693	8,362	—	279	51	—	—	—	19,852	1,203	279	51	
Of which, resecuritisation	—	—	—	—	—	—	—	—	—	—	—	—	
Of which, preference	—	—	—	—	—	—	—	—	—	—	—	—	
Of which, non-preference	—	—	—	—	—	—	—	—	—	—	—	—	

Million euros

	RWA (by regulatory approach)						Capital change after cap						31 Dec. 2020	
	IRB RBA	IRB SFA	SA	SEC IRBA	SEC SA	SEC ERBA	1250%	IRB RBA	IRB SFA	SA	SEC IRBA	SEC SA	SEC ERBA	
Total exposure	—	—	—	4,731	411	639	—	—	—	—	378	31	50	—
Traditional securitisation	—	—	—	336	—	118	—	—	—	—	27	—	9	—
Of which, securitisation	—	—	—	336	—	118	—	—	—	—	27	—	9	—
Of which, retail underlying	—	—	—	336	—	118	—	—	—	—	27	—	9	—
Of which, wholesale underlying	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Of which, resecuritisation	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Of which, preference	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Of which, non-preference	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Synthetic securitisation	—	—	—	4,395	411	520	—	—	—	—	352	31	41	—
Of which, securitisation	—	—	—	4,395	411	520	—	—	—	—	352	31	41	—
Of which, retail underlying	—	—	—	505	224	109	—	—	—	—	40	16	8	—
Of which, wholesale underlying	—	—	—	3,890	187	412	—	—	—	—	311	15	33	—
Of which, resecuritisation	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Of which, preference	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Of which, non-preference	—	—	—	—	—	—	—	—	—	—	—	—	—	—

RWA does not include tranches that have a risk weight of 1250% due to they are deducted from Common Equity Tier 1.

The following table shows the aggregate value of securitisation positions purchased and retained in the trading portfolio.

Table 57. Aggregate amount of securitisation positions purchased and retained. Trading book

Million euros

	31 Dec. 2020					
	Investor positions		Originator positions		Sponsor positions	
	Mark to market	RWA	Mark to market	RWA	Mark to market	RWA
ABS PORTFOLIO						
SEC - SA approach	51	87	—	—	—	—
10-12%	17	22	—	—	—	—
12-20%	34	65	—	—	—	—
SEC - ERBA approach	17	25	2.6	—	—	—
10-12%	14	17	1.6	—	—	—
12-20%	3	6	1.0	—	—	—
20-40%	0	1	—	—	—	—
40-100%	0	1	—	—	—	—
Total ABS Portfolio	68	112	3	—	—	—
CORRELATION PORTFOLIO						
SEC - ERBA approach	—	—	—	—	—	—
40-75 %	—	—	—	—	—	—
100%	—	—	—	—	—	—
250%	—	—	—	—	—	—
Supervisory formula method	—	—	—	—	—	—
FS	—	—	—	—	—	—
Total correlation portfolio	—	—	—	—	—	—
Total	68	112	3	—	—	—

Note: The table does not include the RWA of short position correlation, since it does not consume capital.

Table 58. Securitisation exposures in the banking book and associated regulatory capital requirements (bank acts as an investor) (SEC4)

Million euros

31 Dec. 2020

	Exposure values (by risk weight bands)					Exposure values (by regulatory approach)					
	< 20%	> 20% to 50%	> 50% to 100%	> 100% to 1250%	1250%	IRB RBA	IRB SFA	SA	SEC IRBA	SEC SA	SEC ERBA
Total exposure	9,261	1,412	267	330	7	—	—	—	8,814	2,455	7
Traditional securitisation	9,261	1,412	267	330	7	—	—	—	8,814	2,455	7
Of which, securitisation	9,261	1,412	267	330	7	—	—	—	8,814	2,455	7
Of which, retail underlying	5,561	16	148	109	7	—	—	—	4,518	1,316	7
Of which, wholesale underlying	3,700	1,395	119	221	0	—	—	—	4,296	1,139	—
Of which, resecuritisation	—	—	—	—	—	—	—	—	—	—	—
Of which, preference	—	—	—	—	—	—	—	—	—	—	—
Of which, non-preference	—	—	—	—	—	—	—	—	—	—	—
Synthetic securitisation	—	—	—	—	—	—	—	—	—	—	—
Of which, securitisation	—	—	—	—	—	—	—	—	—	—	—
Of which, retail underlying	—	—	—	—	—	—	—	—	—	—	—
Of which, wholesale underlying	—	—	—	—	—	—	—	—	—	—	—
Of which, resecuritisation	—	—	—	—	—	—	—	—	—	—	—
Of which, preference	—	—	—	—	—	—	—	—	—	—	—
Of which, non-preference	—	—	—	—	—	—	—	—	—	—	—

Million euros

31 Dec. 2020

	RWA (by regulatory approach)						Capital charge after cap					
	IRB RBA	IRB SFA	SA	SEC IRBA	SEC SA	SEC ERBA	IRB RBA	IRB SFA	SA	SEC IRBA	SEC SA	SEC ERBA
Total exposure	—	—	—	—	1,428	977	—	—	—	—	114	78
Traditional securitisation	—	—	—	—	1,428	977	—	—	—	—	114	78
Of which, securitisation	—	—	—	—	1,428	977	—	—	—	—	114	78
Of which, retail underlying	—	—	—	—	666	454	—	—	—	—	53	36
Of which, wholesale underlying	—	—	—	—	762	523	—	—	—	—	61	42
Of which, resecuritisation	—	—	—	—	—	—	—	—	—	—	—	—
Of which, preference	—	—	—	—	—	—	—	—	—	—	—	—
Of which, non-preference	—	—	—	—	—	—	—	—	—	—	—	—
Synthetic securitisation	—	—	—	—	—	—	—	—	—	—	—	—
Of which, securitisation	—	—	—	—	—	—	—	—	—	—	—	—
Of which, retail underlying	—	—	—	—	—	—	—	—	—	—	—	—
Of which, wholesale underlying	—	—	—	—	—	—	—	—	—	—	—	—
Of which, resecuritisation	—	—	—	—	—	—	—	—	—	—	—	—
Of which, preference	—	—	—	—	—	—	—	—	—	—	—	—
Of which, non-preference	—	—	—	—	—	—	—	—	—	—	—	—

Santander Group, as an originator institution, retains positions in the funds with risk transfers issued by Group entities. Santander Group also acquires positions in SSPEs originated by non-Group entities and is the sponsor of a securitisation fund.

The increase of originator positions is motivated by the origination of 15 new securitisations in 2020.

The following table shows the current situation of the underlying portfolio for originated securitisations with risk transfer and the changes compared to 2019.

Table 59. Securitisation structures with risk transfer

Million euros

	Outstanding balance	Of which, in default	Value adjustments in the period	2020		2019		
				RWA	Outstanding balance	Of which, in default	Value adjustments in the period	RWA
Traditional SPVs								
Residential mortgages	411	83	0	1	794	—	—	3
Commercial mortgages	—	—	—	—	—	—	—	—
Loans to corporates or to SMEs treated as corporates	—	—	—	—	—	—	—	—
Consumer loans	7,577	131	66	453	6,873	4	(159)	575
Others	—	—	—	—	—	—	—	—
Resecuritisations								
Securitisation positions					11	—	—	0
Total traditional SPVs	7,988	214	66	454	7,679	4	(159)	578
Synthetic securitisation SPVs								
Loans to corporates or to SMEs treated as corporates	8,539	71	39	954	20,098	12	(72)	2,455
Consumer loans	5,159	45	56	651	7,227	11	(16)	993
Others	16,042	176	15	3,695	7,889	261	(12)	1,252
Total synthetic securitisation SPVs	29,740	291	110	5,300	35,214	284	(101)	4,700
Total	37,728	505	176	5,754	42,893	288	(260)	5,278

Note: The value adjustments in the period include the value adjustments by asset and provision (generic and specific) deterioration.

As shown in Table 59, the outstanding balance of securitised exposures fell during 2020, mainly due to the reduction in the number of securitised loans to companies, SMEs and consumers.

In securitisation funds without risk transfer, Santander Group retains the majority of its positions in the originated securitisation funds, as they do not meet the regulatory conditions for significant risk transfer. For these funds, capital is calculated for the securitised exposures as if the exposures had not been securitised.

The underlying assets securitised in the SPVs originated by Santander Group continue to mainly consist of residential mortgages and consumer loans.

6 Market risk





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6. Market risk



Market risk is the risk of loss of value of financial instruments arising from changes in market parameters, the volatility of these parameters and correlations between them.

This chapter provides information about activities subject to market risk and the performance of market risks and results in 2019, distinguishing between trading activity and structural risks. It also describes the methodologies and metrics used by Santander Group.

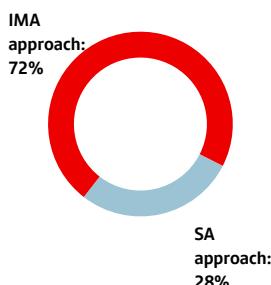
Main figures

Million euros

	RWA 2020	RWA 2019
Market risk	18,008	21,807
Of which, standardised approach	5,071	7,596
Of which, IMA	12,936	14,211

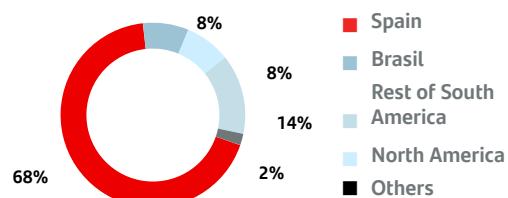
RWA by calculation approach

%



RWA by geography

%



6.1. Activities subject to market risk

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) and from the liquidity risk of the products and markets in which Santander Group operates.

The activities are segmented according to the purpose of the risk, as follows:

- a. **Trading:** this includes financial services for customers, trading and the taking of positions, mainly in fixed income, equities and currency products.
- b. **Structural risks:** these are composed of the market risks inherent to the balance sheet, excluding the trading portfolio. 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 available-for-sale portfolios of equity positions

6.2. 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. Santander Group's consumption of regulatory capital for market risk at the end of December 2020 breaks down as follows:

Table 60. Regulatory capital requirements for market risk

Million euros

	31 Dec. 2020	31 Dec. 2019
Position risk - Trading book* - Standardised approach	174	348
Commodity Risk - Standardised approach	28	22
Specific risk in the correlation trading risk portfolio	—	—
Currency risk - standardised approach	202	238
Position and currency risk - Tradingbook - Internal models	1,035	1,137
Spain	617	632
Santander London Branch	110	127
Chile	108	219
Mexico	199	159
Total	1,439	1,745

*Includes structural equity considered as business.

At year-end 2020, Santander Group had authorisation for the use of the internal market risk model for the calculation of regulatory capital in the trading portfolios of the Spain, Chile and Mexico units and the London Branch, by extension of Spain's internal model.

Santander Group aims to gradually extend this approval to the rest of the units with significant market positions.

The other geographic units calculate capital consumption by market risk through the standardised approach.

Consolidated regulatory capital under the internal market risk model for Santander Group 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 Santander Group's capital, as it takes no account of the capital savings arising from the geographic diversification effect.

The regulatory capital of the trading activity for the perimeter concerned is calculated with advanced approaches, using VaR, Stressed VaR (SVaR) and IRC (incremental risk charge) as the core metrics, in line with the new bank capital requirements under the Basel accords, specifically, the CRR. -

The capital resulting from the VaR and SVaR metrics is adjusted using a Kr coefficient, derived from the number of backtesting overshootings for each unit in its local internal model.

This year, 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 61. Capital requirements for market risk. Internal model

Million euros

					31 Dec. 2020	
	CR (VaR)	CR (SVaR)	IRC	Risk Not in VaR	Add-On	Total
Spain	106	291	221	—	—	617
Santander London Branch	33	74	4	—	—	110
Chile	34	55	4	16	—	108
Mexico	71	122	6	—	—	199
Total	244	541	234	16	—	1,035

Below is a breakdown of capital requirements and RWAs for market risk with internal model approval from 2019 to 2020:

Table 62. Market risk under IMA approach (MR2-A)

Million euros

		31 Dec. 2020
	Capital RWA	requirements
VaR (higher of values a and b)	3,047	244
a. Previous day's VaR (Article 365(1) of the CRR (VaRt-1))	629	50
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	3,047	244
SVaR (higher of values a and b)	6,767	541
a. Latest SVaR (Article 365(2) of the CRR (SVaRt-1))	1,301	104
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)	6,767	541
IRC (higher of values a and b)	2,928	234
a. Most recent IRC value (incremental default and migration risks calculated in accordance with Article 370 and Article 371 of the CRR)	1,288	103
b. Average of the IRC number over the preceding 12 weeks	2,928	234
Comprehensive risk measure (higher of values a, b and c)	—	—
a. Most recent risk number for the correlation trading portfolio (Article 377 of the CRR)	—	—
b. Average of the risk number for the correlation trading portfolio over the preceding 12 weeks	—	—
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)	—	—
Other	194	16
Total	12,936	1,035

Table 63. RWA flow statements of market risk exposures under IMA (MR2-B)

Million euros

	VaR	SVaR	IRC	Comprehensive risk measure	Other	Total RWAs	31 Dec. 2020 Total capital requirements
RWAs sep-20	3,284	7,070	2,952	—	97	13,403	1,072
Regulatory adjustment	2,434	5,412	1,830	—	—	9,676	774
RWAs at the previous quarter-end (end of the day)	850	1,659	1,122	—	97	3,727	298
Movement in risk levels	(237)	(303)	(24)	—	97	(467)	(37)
Model updates/changes							
Methodology and policy							
Acquisitions and disposals							
Foreign exchange movements							
Other							
RWAs at the end of the reporting period (end of the day)	629	1,301	1,288		194	3,413	273
Regulatory adjustment	2,418	5,465	1,639	—	—	9,523	(762)
RWAs dec-20	3,047	6,767	2,928		194	12,936	1,035

Spain: Upward variations in the SVaR caused by increased exposure to sovereign credit positions and covered bonds. Increase in the IRC due to increased exposure of the bond portfolio.

Chile: The increase in the RNIM is caused by the positions of sovereign bonds over which the RNIM is calculated. Decrease in VaR following a decline in the exchange rate position and a reduction in its volatility (USD/CLP)

Mexico: Reduction in capital arising from the effects of XVA coverage.

SLB: No major differences.

Table 64. Market risk under standardised approach (MR1)

Million euros

	31 Dec. 2020 RWA	Capital requirements
Outright products		
Interest rate risk (general and specific)	1,635	131
Equity risk (general and specific)	366	29
Foreign exchange risk	2,521	202
Commodity risk	350	28
Options		
Simplified approach		
Delta-plus method	64	5
Scenario approach		
Securitisation (specific risk)	112	9
Total	5,047	404

Changes in capital requirements and RWAs for market risk using approved standardised models from 2019 to 2020 are shown below:

**Table 65. Capital requirements for market risk.
Standardised approach**

Million euros

	31 Dec. 2020	
	Capital	RWAs
Starting figure (31 Dec. 2019)	608	7,596
Changes in business	(204)	(2,549)
Ending figure (31 Dec. 2020)	404	5,047

Prudent Valuation Adjustments (PVA)

There is also a breakdown in Appendix XVIII of the constituent elements of the Bank's PVA for all assets measured at fair value (marked to market or marked to model) for which PVAs are required.

This information is published as per Template PV1 of the document Pillar 3 disclosure requirements - consolidated and enhanced framework, published by the BCBS in March 2017.

In 2020, capital consumption by market risk has been heavily impacted by the covid-19 pandemic, which has severely disrupted global financial markets, particularly in the first half of the year.

Major global stock market indices slumped, volatility and intra-day fluctuations surged, and sovereign bond yields reached new lows. CDS spreads also increased, reflecting greater medium-term uncertainty and significant risks in economic activity in the world's most important economies.

There were episodes of low liquidity and diverging prices provided by the main providers of information and market prices.



[Access files 2020 Pillar3 Appendices 2020 Pillar3 tables available on the Santander Group website](#)

6.2.1. Internal initiatives on methods for calculating market risk

Santander is forging ahead with its new global Market Risk Advanced Platform (MRAP) initiative. This adapts, transforms and strengthens our current market risk calculation, in line with the new requirements of the regulatory framework for market risk published by Basel (FRTB), and adapts the internal risk models to the latest TRIM (Targeted Review of Internal Models) guidelines and to the supervisor's expectations.

This programme adopts a multidisciplinary and multi-geography approach. It involves all of our entities that perform activities exposed to market risk and all relevant stakeholders, including Market Risk, Technology, Front Office, and Regulatory Affairs and Compliance.

The MRAP programme introduces significant improvements in terms of functional and IT architecture and operating models, leading to a change in the culture established in the Group and the generation of synergies among all initiatives and resources.

In 2020, a great deal of work has been done to improve and adapt the IRC model. The new model is expected to be launched in 2021, once the ECB has approved the improvements and developments introduced for this purpose.

2020 saw the introduction of the tools resulting from the Capital Tools project, to strengthen the calculation, validation and reporting processes of regulatory capital for market risk.

6.3. Trading activity

Trading activity at Santander Group is monitored by the local market risk units, under the principle of independence of market units, monitoring market risk positions on a daily basis and analysing the value of a set of metrics identified and approved by the Group to control existing market risk.

These functions carry out regular monitoring to assess and evaluate trends in the market risk metrics and any significant changes, and to ensure compliance with the approved limits for these metrics.

Based on the value of 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, as well as communication to senior management and other internal and external stakeholders.

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 portfolios. 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 as follows:

- VaR and Stressed VaR
- Equivalent and/or nominal positions³
- Sensitivities⁴ of the 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
 - Sensitivity to credit risk
- The 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

Three categories of limits are established based on their scope of approval and control:

- Global approval and control limits,
- Global approval limits with local control, and
- Local approval and control limits

The limits are requested by the head of the business in each country/subsidiary, considering the particular nature of the business in order to achieve the budget targets, seeking consistency between the limits and the risk/return ratio. These are approved by the corresponding risk bodies, as defined in their governance process.

Business units must comply with the approved limits at all times. If a limit is exceeded, local business executives have to explain, in writing and on the same day, the reasons for the excess and the action plan to correct the situation. This may, in general, consist of reducing the position until it is once again within the defined limits or setting out a strategy that justifies an increase in the limits.

The basic metric used to control market risk for trading activity in Santander Group is value at risk (VaR). VaR measures the maximum expected loss for a given confidence level and time horizon. The other risk metrics described above are also used in addition to this VaR metric to monitor all the market risks arising from Santander Group's trading activities.

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 portfolios. 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).

6.3.1. Value at Risk

Santander Group'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 some portfolios,

³ At Santander, positions are used to quantify the net volume of the market values of portfolio transactions, grouped by main risk factor, considering the delta value of any futures or options. All risk positions can be expressed in the base currency of the local unit and the currency used for standardising information. The changes recorded in the positions are monitored on a daily basis to detect any incidents so they can be corrected immediately.

⁴ Measurements of market risk sensitivity estimate the variation (sensitivity) of the market value of an instrument or portfolio to any changes in a risk factor. The sensitivity of the value of an instrument to changes in market factors can be obtained using analytical approximations through partial derivatives or through a complete revaluation of the portfolio.

applies historical simulation using 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 VaR reported is the higher of these two figures. Simultaneously, Value at Earnings (VaE) is 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 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 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 Basel Committee 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 2020, Santander Group 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 figure using the internal model is calculated as the linear sum of the individual regulatory capital figures of the units that have received approval for the internal model, i.e. without considering diversification.

Santander Group entities that do not have approval to calculate regulatory capital using internal models calculate capital using the standardised approach. 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 Group maintained its strategy of concentrating its trading activity on customer business, minimising net exposure to directional risk as much as possible and maintaining geographic and risk factor diversification.

Risk levels in the trading portfolio remained low, despite the covid-19 crisis, the low interest rate environment, trade disputes between China and the USA, and to a lesser extent other countries, and the uncertainty caused by the Brexit negotiations during 2020. Risk management processes also proved to be sound, robust and effective, despite spikes in VaR observed at certain times during the year.

This was reflected in the VaR of the trading portfolio, which, despite market volatility, especially with regard to interest and exchange rates, remained mostly below the trend of the last three years and closed December at EUR10.2 million. This

means that the contribution of trading risks to capital has been substantially lower 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.

At the end of September 2020, the Group had the following exposures in this regard:

- Hedge funds: exposure was EUR 100 million, all of which was indirect, acting as a counterparty in derivative transactions. The risk with this type of counterparty is analysed on a case-by-case basis, establishing percentages of collateralization on the basis of the features and assets of each fund.
- Monolines: no exposure at the end of September 2020.

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. This activity mainly takes place in the Spain, Brazil, UK and Mexico units.

In comparison with other similar financial groups, Santander Group's trading risk profile can be classified as low. Dynamic management of risk enables Santander Group to adopt changes in strategy to unlock opportunities in an uncertain environment.

For more information, see the Risk Management chapter (section 4) of the 2020 annual report.



[Access 2020 Annual Report available on the Santander Group website](#)

At year-end 2020, VaR by geography was as follows:

Table 66. EU MR3 – IMA values for trading portfolios

Million euros				
Spain	2020	2019	Variation	
Var (10 days - 99%)				
1 Maximum	114.0	36.9	209%	
2 Average	29.2	18.6	57%	
3 Minimum	15.3	13.5	13%	
4 End of period	26.6	26.8	(1%)	
Stressed VaR (10 days - 99%)				
5 Maximum	109.7	182.5	(40%)	
6 Average	73.6	88.7	(17%)	
7 Minimum	52.9	50.5	5%	
8 End of period	62.1	61.3	1%	
Incremental Risk Charge (99.9%)				
9 Maximum	159.3	242.4	(34%)	
10 Average	105.9	149.2	(29%)	
11 Minimum	57.9	84.6	(32%)	
12 End of period	98.1	85.5	15%	
Comprehensive risk capital charge (99.9%)				
13 Maximum	—	—	0%	
14 Average	—	—	0%	
15 Minimum	—	—	0%	
16 End of period	—	—	0%	
Santander London Branch				
	2020	2019	Variation	
Var (10 days - 99%)				
1 Maximum	26.8	9.7	175%	
2 Average	9.6	5.8	65%	
3 Minimum	4.0	3.9	1%	
4 End of period	7.4	6.8	9%	
Stressed VaR (10 days - 99%)				
5 Maximum	28.1	35.2	(20%)	
6 Average	19.3	20.0	(4%)	
7 Minimum	13.0	13.2	(2%)	
8 End of period	18.3	25.5	(28%)	
Incremental Risk Charge (99.9%)				
9 Maximum	26.7	103.3	(74%)	
10 Average	3.8	18.2	(79%)	
11 Minimum	0.1	0.1	0%	
12 End of period	1.6	0.1	3057%	
Comprehensive risk capital charge (99.9%)				
13 Maximum	—	—	0%	
14 Average	—	—	0%	
15 Minimum	—	—	0%	
16 End of period	—	—	0%	

Chile	2020	2019	Variation
Var (10 days - 99%)			
1 Maximum	36.1	45.4	(21%)
2 Average	11.5	8.7	32%
3 Minimum	4.8	3.7	29%
4 End of period	6.7	13.3	(49%)
Stressed VaR (10 days - 99%)			
5 Maximum	38.3	36.1	6%
6 Average	24.7	26.6	(7%)
7 Minimum	10.3	18.9	(46%)
8 End of period	11.1	33.0	(67%)
Incremental Risk Charge (99.9%)			
9 Maximum	10.3	17.8	(42%)
10 Average	3.5	11.2	(69%)
11 Minimum	0.1	0.2	(12%)
12 End of period	1.4	0.2	689%
Comprehensive risk capital charge (99.9%)			
13 Maximum	—	—	0%
14 Average	—	—	0%
15 Minimum	—	—	0%
16 End of period	—	—	0%
Mexico	2020	2019	Variation
Var (10 days - 99%)			
1 Maximum	45.0	16.2	177%
2 Average	20.8	9.8	113%
3 Minimum	8.5	3.7	130%
4 End of period	9.6	11.1	(14%)
Stressed VaR (10 days - 99%)			
5 Maximum	41.5	40.7	2%
6 Average	25.9	22.6	15%
7 Minimum	12.6	12.3	3%
8 End of period	12.6	25.7	(51%)
Incremental Risk Charge (99.9%)			
9 Maximum	21.1	11.8	79%
10 Average	3.3	4.8	(32%)
11 Minimum	0.3	1.0	(68%)
12 End of period	1.9	2.1	(11%)
Comprehensive risk capital charge (99.9%)			
13 Maximum	—	—	0%
14 Average	—	—	0%
15 Minimum	—	—	0%
16 End of period	—	—	0%

6.3.2. Stressed VaR

In addition to standard VaR, Stressed VaR is 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:** The stressed VaR calculation uses a window of 260 data readings, 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 Stressed VaR are the same as for 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 2020: Spain, Chile, Mexico and the Santander London Branch.

The windows currently used to calculate stressed VaR are:

Stress window

	Period
Spain	13/10/2008 - 10/10/2009
SLB	13/10/2008 - 10/10/2009
Chile	06/05/2008 - 19/05/2009
Mexico	18/09/2008 - 30/09/2009

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.

6.3.3. 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. The IRC metric is calculated for public and private fixed-income bonds, bond derivatives and credit derivatives in the trading portfolio.

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 says that a default event occurs when a company's assets fall below a certain level of its debts. This internally developed model comprises direct measurements of the distribution queues of losses caused by the credit events considered, 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, there being no other liquidity horizons of less than one year. The IRC calculation methodology uses a loss distribution generated through Monte Carlo simulation, using two transition matrices: one for corporate issues and one for sovereign issues. The transition matrices used in the IRC model are based on the historical transition probabilities published by the rating agencies. These probabilities are processed to remove the non-rated category and adjusted to include the internally estimated probability of default. This calibration process is run once a year to incorporate the latest information. The model does not assume the regular renewal of positions (roll-over), but rather a model of constant positions along the one-year capital and liquidity horizon, maintaining the same positions along this horizon independently of the maturity of each of them.

This is a corporate model that incorporates the portfolios from the various geographies in which the IRC has been approved for calculating independent IRC figures.

6.3.4. 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 (1 day and 10 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 10-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 CRR model are.

Table 67. Stress scenario: Maximum volatility (worst case)

Million euros

	31 Dec. 2020					31 Dec. 2019						
	Interest rate	Equities	Foreign currency	Credit spread	Commodities	Total	Interest rate	Equities	Foreign currency	Credit spread	Commodities	Total
Total Trading	(40.6)	(25.2)	(7.3)	(4.9)	—	(77.8)	(33.2)	(26.4)	(11.9)	(12.2)	—	(83.8)
Europe	(21.0)	(24.5)	(3.0)	(4.6)	—	(53.0)	(2.6)	(18.7)	(7.5)	(10.8)	—	(39.5)
South America	(18.0)	(0.5)	(3.3)	(0.3)	—	(22.0)	(24.9)	(7.7)	(3.5)	—	—	(36.1)
USA	(1.6)	(0.1)	(1.0)	—	—	(2.7)	(4.4)	—	(0.6)	—	—	(5.1)
Global Activities	—	—	—	—	—	—	—	—	(0.1)	(1.4)	—	(1.5)
Asia	—	—	—	—	—	—	(1.2)	—	(0.3)	—	—	(1.5)

The stress test reveals that the economic loss suffered by Santander Group in its trading portfolios, at market prices, if the stress movements defined in the scenario materialised in the market, would be €77.8 million. This loss would be concentrated in Europe (in the following order: equities, interest rates and credit spread) and Latin America (in the following order: interest rates, exchange rates and equities)

- **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 2020, broken down by risk factor (interest rate, equities, foreign currency, credit spread, commodities and their volatilities), in a scenario in which volatility equivalent to six standard deviations in a normal distribution is applied. The scenario is defined by taking the change that produces the highest potential loss in the global portfolio for each risk factor.

At the end of June 2020, this scenario implied, for the global portfolio, increases in interest rate curves in South American markets and decreases in North American markets, downturns in stock markets, depreciation of all currencies against the euro and increased credit spreads.

6.3.5. Backtesting (MR4)

The backtesting exercise consists of comparing the VaR forecasts, with 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.

The backtesting is analysed at the local level by the local Market Risk Control units. The Market Risk Consolidation unit is responsible for reporting the backtesting at the consolidated level. 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 the portfolio and sub-portfolio levels.

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 the bank 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, to compute the number of regulatory 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 the "actual P&L" that is not included in the VaR is also not included in the "hypothetical P&L". Hypothetical P&L is obtained from the Front Office platforms by the Market Risk function, without considering intra-day results or changes in portfolio positions. This P&L, like the "actual P&L" is used for regulatory backtesting in accordance with article 366 (3) of the CRR, in order to calculate the number of regulatory 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 intra-day 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 the "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.

Santander Group performed the required benchmark tests and analyses regularly throughout 2020 to calibrate and control the effectiveness of its internal market risk measurement and management systems, concluding that the model was reliable.

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 overshooting. The number (or percentage) of overshootings recorded is one of the most intuitive indicators of the model's 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	0.00
1	0.00
2	0.00
3	0.00
4	0.00
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 backtesting (MR4) at the end of December 2020 for each unit with internal model approval (see Appendix XIX)



[Access file 2020 Pillar 3 Appendices available on the Santander Group website](#)

The following table includes backtesting overshootings for units with approved internal models that account for over 3% of total RWAs for market risk. The number of overshootings at 31 December 2020 for the main units with internal model approval are shown below.

Table 68. Exceptions at units with internal model

	31 Dec. 2020	
	Exceptions	Model Status
Spain	—	Valid
SLB	2	Valid
Chile	2	Valid
Mexico	1	Valid

Overshootings in Spain relate mainly to movements in the interest rates curve, credit spreads and exchange rates. In the last few months of the year, there was also a depreciation of the Brazilian real, which created major volatility in the Madrid offshore portfolios in Brazil, particularly for fixed income positions.

Overshootings in Mexico relate to abrupt movements in the MXN/USD exchange rate, with movements in the dollar interest rate curve also affecting the overshooting on 20 November.

Overshootings in Chile are mainly the result of movements in the USD/CLP exchange rate and in the dollar interest rate curve.

Valuation adjustments

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 Santander 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).

6.3.6. Internal validation of the models

Market, counterparty and other non-financial risk models

In 2020, in accordance with the model risk policies, the Internal Validation team performed independent review exercises for the main models used in the Group's 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).

During these exercises, recommendations were issued aimed at improving the models and correcting their weaknesses. The resolution of the recommendations addressed was certified and an independent opinion was issued on the changes made to the models, in accordance with the policy on material changes.

The Group has also continued to monitor the VaR & SVaR models used to calculate regulatory capital for market risk on a quarterly basis, based on key indicators of the quality of the models, to proactively and independently monitor the functioning of these models.

6.4. Structural balance sheet risks

IRRBB (interest rate risk in the banking book) management in the Group aims to ensure the stability and recurrence of the net interest margin on commercial activity and economic value, maintaining risk levels always below those permitted by the risk appetite approved by the board of directors.

Structural risk is inherent to the banking business and arises from the existence of balance sheet items that behave differently in response to changes in interest rates. 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 of Santander Group.

The principles governing the control of structural risk at Santander Group are as follows:

- Autonomy in management, whereby each entity autonomously manages its balance sheet structure and its capital.
- Control and supervision that means all control and oversight mechanisms must exist for the risks assumed.
- Robust systems and quality internal data.
- Use of standardised and metrics that can be aggregated.
- Use of methodologies and models which are standardised and documented.
- Establishment and adaptability of limits.
- Adjustment to the global regulatory environment.

For more information, see the Risk management and control chapter (section 4.1) of the 2020 annual report.



[Access 2020 Annual Report available on the Santander Group website](#)

6.4.1. Main interest rate risk in the banking book (IRRBB) metrics

The metrics used in the management and control of structural interest rate risk are calculated under various scenarios and provide a static and/or dynamic overview of balance sheet exposure and the net interest margin in response to adverse interest rate movements. The main metrics used in the measurement of structural interest rate risk are the following:

a) Repricing gap:

This is the basic concept for identifying the Group's interest rate risk profile. 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 (buckets). This provides an immediate approximation of the sensitivity of the entity's balance sheet and its net interest margin and market value of equity to changes in interest rates.

b) Net interest margin and its sensitivity:

The net interest margin is calculated as the difference between interest income as a percentage of assets and the interest cost of the liabilities of the banking book for a determined time horizon (typically from one to three years, with one year being the standard period for measuring net interest margin risk in the Group and for regulatory purposes). Its sensitivity reflects the impact of changes in interest rates on net interest margin 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.

c) Economic value and its sensitivity:

Economic value of equity (EVE) and its sensitivity: EVE measures the market value of equity and its sensitivity measures the impact of changes in interest rates on EVE. EVE is calculated as the sum of the assets less the present value of the liabilities in the banking book, excluding own equity and other instruments that do not generate interest. These present values are obtained by discounting the projected cash flows from assets and liabilities in the relevant discount curve(s). EVE sensitivity is calculated as the difference between the EVE in a selected scenario and the EVE 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.

d) Value at risk (VaR) for the purpose of calculating economic capital:

Measurements of value at risk are used to assess the possible impact of changes in market variables on the economic value of equity (EVE). The risk factors to be considered for the calculation of VaR are interest rates and sovereign spreads. The latter of these are considered for those currencies where this risk is considered high and confined to the spread risk of the ALCO portfolio.

VaR represents the maximum level of estimated losses on the economic value of own funds calculated over a two-year period and expected to be exceeded only in a percentage of cases (1% confidence level) over a one-month time horizon.

In addition, the possible impact of changes in market variables on Group earnings is also assessed when calculating economic capital (with both losses in the net interest margin and losses from price changes in assets recognised at fair value being considered):

1. The same standard is used to estimate net interest margin losses as is used for VaR, with the only difference being the time horizon for the transactions (one year).
2. 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 combines a statistical component, as it is calibrated according to past performances observed in the market, with a forward-looking component, which uses stress scenarios generated by the Group based on macro-economic analysis.

For further details, see the Risk Management and Control chapter (section 4.5) on the 2020 Annual Report.



[Access 2020 Annual Report available on the Santander Group website](#)

System for controlling limits

The measurement, analysis and control of structural interest rate risk metrics guarantees that the level of structural balance sheet interest rate risk is aligned with the Group's policies, approved limits and risk appetite.

Limits are set for IRRBB (interest rate risk in the banking book) as part of the framework of the annual limits plan, responding to the Group's risk appetite levels. The main limits are:

- Net interest margin sensitivity limit at one year
- Market value of equity sensitivity limit

The internal metrics used to monitor interest rate risk are based on the sensitivity of economic value and net interest margin to interest rate shocks (-100 bp, -75 bp, -50 bp, -25 bp, +25 bp, +50 bp, +75 bp and +100 bp), to provide a harmonised overview of the risk in the Group entities.

- There are also metrics for monitoring the potential impact that the bond portfolio used by the ALCO to manage the balance sheet interest rate could have on own funds given its accounting classification (fair value with changes in equity).

If one of these limits or their sub-limits is exceeded, the heads of risk management must explain the reasons and facilitate a corrective action plan.

Methodologies

The calculation of structural interest rate risk metrics requires the use of three main elements:

- 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 main models used in the management and control of balance sheet interest rate risk are described below, by product type:

a) Treatment of non-maturing liabilities

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 corporate model for non-maturity deposits (NMDs) is divided into three sub-models:

- Volumes model: the volumes model is based on the fact that, with the passage of time, changes in non-maturing account balances depend more on customer behaviour and macroeconomic variables (such as the opportunity cost of not investing in other markets, the housing market or

interest rates) than on the bank's commercial departments. In this case, a statistical approach is considered, based on the selection of the lower limit of a confidence interval constructed by removing a certain amount of the standard deviations from the trend balance sheet. The balance sheet is split into stable and unstable balances. The model focuses on the stable balances, treating unstable balances with an immediate maturity.

- Run-off model: this sub-model assumes that these balances naturally decline, as the existing accounts are liquidated with the passage of time. The model creates a function that produces a fall in the balance down to a maximum maturity defined for the account.
- Beta model: this sub-model defines the relationship between benchmark interest rates in the market and the remuneration paid to customers.

This model requires a variety of inputs:

- Parameters inherent in the product.
- Customer and/or Bank behavioural parameters (in this case analysis of historic data is combined with expert judgement on the business).
- Market data.
- Historic data of the portfolio.

Internal policies establish the need to review the prices assigned to non-maturity deposits (NMDs) on an annual basis, or more frequently if required by market conditions. The most recent review of the parameters used in the valuation of NMD in Group units was 53 days ago on average.

b) Treatment of non-maturing assets

The model used on the asset side for products such as credit cards is based on the non-maturing accounts model, sharing some of the same methodology and assumptions.

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 mainly affects fixed-rate products, such as fixed-rate mortgages, in a market where the yield curves for these portfolios 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 rates: the difference 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.
- Seasoning: the trend whereby prepayment is low at the beginning of the instrument life-cycle (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:
 - a) Age, which defines low rates of prepayment.
 - b) 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.
 - c) Other: such as geographic mobility, demographic, social and disposable income factors.

Major developments in the work carried out on models in 2020 include:

- Internal validation of all the models used in the Group units, with around 80% of the models in use having been validated at year-end.
- Development of interest-rate conditional models
- Change in the method of calculating the input of the P&L vector for the VaR-EaR used in economic capital, adapting it to the new conditional parameters defined in the models

The following tables show the bank's changes in the Economic Value of Equity (EVE) and Net Interest Income (NII) for every interest rate prescribed scenario and for every currency.

Table 69. Quantitative information on IRRBB

Million euros				
Total	VaR EVE		VaR NII	
Period	Dec 20	Dec 19	Dec 20	Dec 19
Parallel up	1,243	(273)	1,716	97
Parallel down	(1,867)	(4,728)	(740)	(961)
Steepener	2,726	2,551		
Flatterner	(4,731)	(5,098)		
Short rate up	(2,894)	(3,633)		
Short rate down	(463)	(288)		
Maximum	(4,731)	(5,098)	(740)	(961)
Period	Dec 20		Dec 19	
Tier 1 capital	78,126		78,964	

Note: the scenarios assume the shocks established by Basel for each currency before applying management floors limiting their impact on currencies with negative or extremely low interest rates. Parallel shocks of +/-200 bp are used for NII

Note: The aggregation of EVE sensitivities used follows the criteria set out in the EBA/GL/2018/02 Guidelines on the management of interest rate risk arising from non-trading book activities. For each interest-rate scenario, the positive and negative changes occurring in each currency are added linearly, with a 50% weighting for positive change. The aggregate NII sensitivities used are obtained using internal methodology.

EUR				
Period	VaR EVE		VaR NII	
Period	Dec 20	Dec 19	Dec 20	Dec 19
Parallel up	7,660	8,423	1,195	1,316
Parallel down	(1,477)	(4,051)	(439)	(734)
Steepener	2,696	2,504		
Flatterner	(594)	(754)		
Short rate up	1,466	1,881		
Short rate down	(1,427)	(2,480)		
Maximum	(1,477)	(4,051)	(439)	(734)

Cumulative interest rate cuts in 2020 led to the fall from the downward shock as far as the activation levels of the management floor being reduced and sensitivity also decreasing with it.

USD				
Period	VaR EVE		VaR NII	
Period	Dec 20	Dec 19	Dec 20	Dec 19
Parallel up	(600)	(1,136)	192	86
Parallel down	(449)	(1,105)	85	(28)
Steepener	541	484		
Flatterner	(987)	(1,234)		
Short rate up	(746)	(997)		
Short rate down	188	890		
Maximum	(987)	(1,234)	192	(28)

Fall triggered by the decline in yields and the replacement of wholesale funding (FHLB, warehouses and securitisations) with retail funding

GBP	VaR EVE		VaR NII	
Period	Dec 20	Dec 19	Dec 20	Dec 19
Parallel up	1,619	(219)	599	360
Parallel down	(860)	(610)	(425)	(240)
Steepener	1,547	1,367		
Flatterner	(1,702)	(1,562)		
Short rate up	(407)	(1,134)		
Short rate down	(211)	792		
Maximum	(1,702)	(1,562)	(425)	(240)

Increased sensitivity in falling-interest-rate scenarios as a result of the shortening of the yield curve following the BoE base rate cut of March-20, which increased "margin compression" between mortgages and savings accounts.

In rising-interest-rate scenarios, sensitivity moves from negative to positive especially with the impact in March-20 of the repricing to 0% of GBP 4 billion worth of current accounts due to the BoE's rate cut, with them becoming treated as non-sensitive (they become fixed) and so losing market value in scenarios where rates are increasing. Additionally, GBP 2.4 billion of deposits with no defined maturity were also included in April-20, which add greater market value in rate-rise scenarios

BRL	VaR EVE		VaR NII	
Period	Dec 20	Dec 19	Dec 20	Dec 19
Parallel up	(1,096)	(1,732)	(132)	(148)
Parallel down	862	1,881	132	148
Steepener	752	315		
Flatterner	(1,007)	(628)		
Short rate up	(1,250)	(1,225)		
Short rate down	1,192	1,356		
Maximum	(1,250)	(1,732)	(132)	(148)

For further details, see the Risk Management chapter (section 4) on the 2020 Annual Report.

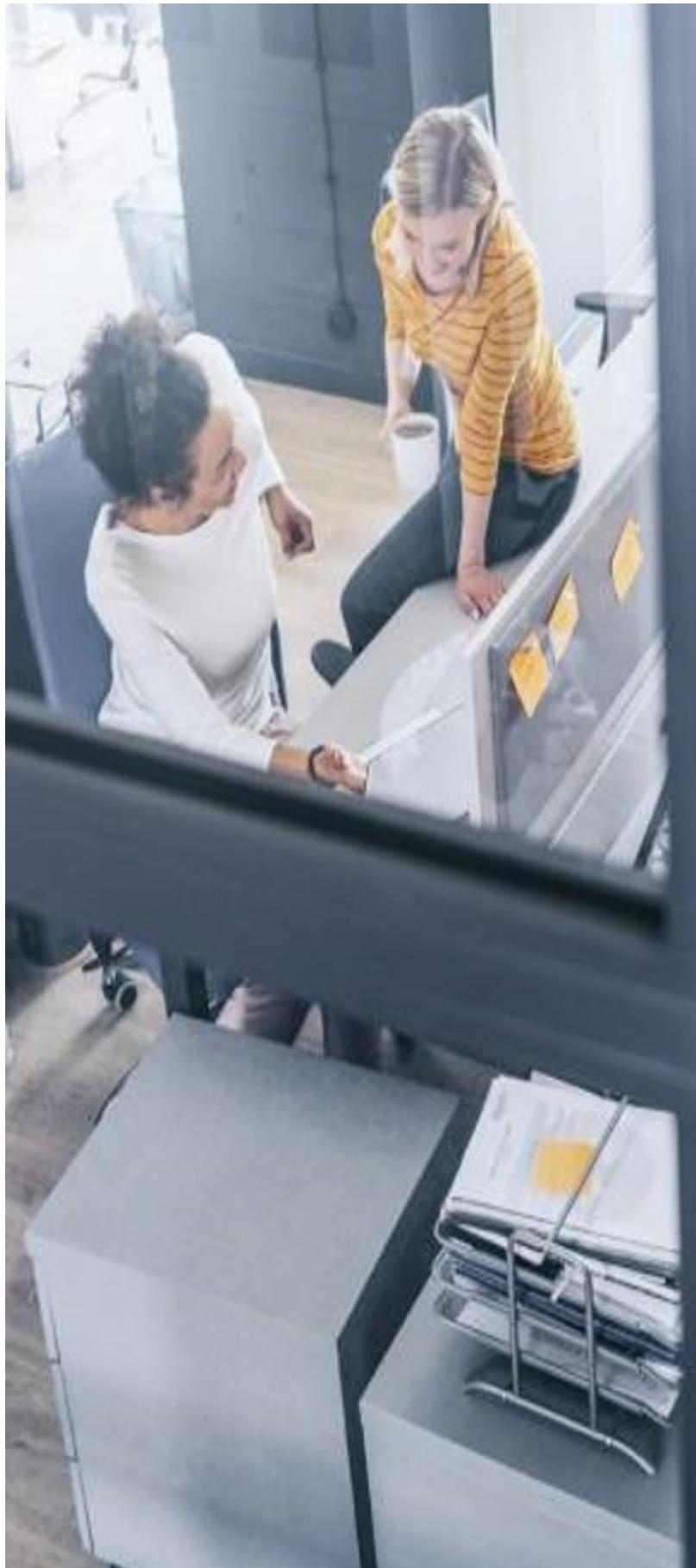


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7

Operational risk

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7. Operational risk



Operational risk is the risk of losses resulting from deficient or failed processes, people or information systems or from external events to Santander Group.

This chapter looks at the Group's targets in the areas of operational risk management and control and includes the main capital figures and changes seen in 2020.

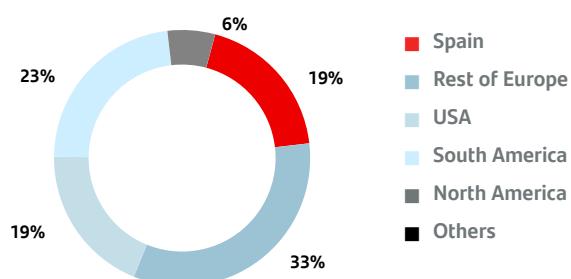
Main figures

Million euros

	RWA 2020	RWA 2019
Operational risk	55,865	59,661
Of which, standardised approach	45,707	47,986
Of which, alternative standardised approach	10,158	11,675

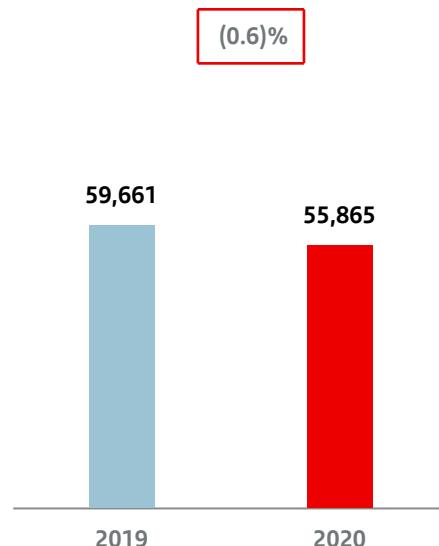
RWA by geography

%



RWA variation

Million euros



7.1. Definition and objectives

Santander Group controls and manages operational risk by focusing on identifying, assessing, mitigating and reporting sources of operational risk, whether or not they have materialised, ensuring that risk management priorities are properly established. Santander Group expressly recognises that while a certain volume of operational losses can be expected, severe unexpected losses resulting from failures in business controls are unacceptable.

This year the focus was on managing risks that have arisen or increased due to the covid-19 pandemic, while maintaining the activities of the operational risk management model. Amid this disruption, the bank has adapted quickly and efficiently to the new operating environment, providing all necessary services to customers and protecting the health of its employees.

In 2020, risk management and analysis in the operational risk management model is being improved in various ways: new risk appetite metrics were defined; an independent methodology was developed to assess and challenge countries' risk and control profiles to help with oversight; and improvements were made to contingency, business continuity and crisis management plans, also providing coverage for emerging risks.

In the management area, specific measures were promoted for the management of operational risks during the pandemic (focusing on information security, IT, fraud and process risks), while continuing to monitor mitigation plans for other important areas (e.g. supplier control and transformation risk).

For more information, see the Risk management and control chapter (section 6) of the 2020 annual report



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7.2. Capital requirements for Operational Risk

Santander Group uses the standardised approach to calculate 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 the Bank of Spain'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

The CRR also defines the following segmentation of business lines for this method:

- a) Corporate finance
- b) Trading and sales
- c) Retail brokerage
- d) Retail and commercial banking
- e) Retail banking
- f) Payment and settlement
- g) Agency services
- h) 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:

$$\frac{\{\sum \text{años } 1 - 3 \text{Max}[\sum (IR1 - 8 \times \beta1 - 8), 0]\}}{3}$$

Where:

RI1-8 = Relevant income of each business line, with the appropriate sign, in accordance with the CRR.

B1-8 = 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 Group 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.

1) Main segments:

- a) Europe:** includes all the business activities in the region. Detailed financial information is provided on Spain, Portugal, Poland, Santander Consumer Finance (which incorporates all the business activities in the region, including the three countries already mentioned) and the UK.
 - b) North America:** includes all business activities in Mexico and the US, which includes the holding company (SHUSA) and the businesses of Santander Bank, Santander Consumer USA, Banco Santander International's specialised unit and the New York branch. Banco Santander Puerto Rico, which was included with the US, was sold in September 2020.
 - c) South America:** includes all the financial activities performed by the Group through its banks and subsidiary banks in the region. Detailed information is provided on Brazil, Chile, Argentina, Uruguay, Peru and Colombia.
 - d) Santander Global Platform:** integrates our global digital services under one unit. This includes Global Payment Services (Global Trade Services, Global Merchant Services, Superdigital and Pago FX), our digital bank Openbank and Open Digital Services, and Digital Assets (Digital knowledge centres, InnoVentures and Digital Assets).
- 2) Secondary segments.** the Group is structured into Retail and Commercial Banking, Santander Corporate & Investment Banking, Wealth Management & Insurance and Santander Global Platform at this secondary level of segment reporting.
- a) Retail and commercial banking:** this covers all customer banking businesses, including consumer finance, except those of corporate banking, which are managed through Santander Corporate & Investment Banking, and asset management and private banking, which are managed by Wealth Management and Insurance, and 50% of the income from the countries' digital services, which are included in Santander Global Platform. The results of the hedging positions in each country within the scope of their assets and liabilities committees are also included in this business.
 - b) Santander Corporate & Investment Banking (SCIB):** this business includes revenue from global corporate banking, investment banking and markets worldwide, including trading desks managed globally (always after the appropriate distribution with Retail and Commercial Banking customers), as well as the equities business.
 - c) Wealth Management & Insurance:** includes the asset management business (Santander Asset Management), the corporate Private Banking unit, International Private Banking in Miami and Switzerland (Santander Private Banking), and the insurance business (Santander Insurance).
 - d) Santander Global Platform:** integrates our global digital services in a single unit (see composition in the definition of the main segment) and 50% of the results generated by these services in the retail networks.

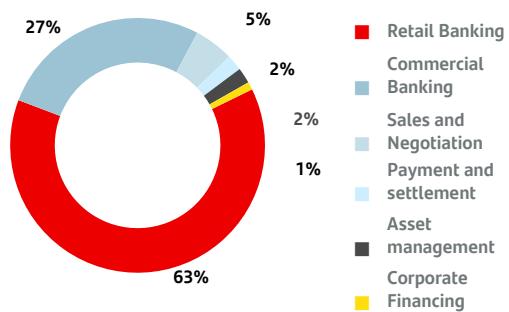
In addition to these units operating in both the main and secondary segments, the Group continues to maintain the corporate centre, which includes centralised management businesses relating to financial holdings, financial management of the structural exchange rate position, performed within the scope of the Group's assets and liabilities committee, and management of liquidity and own funds through issuances.

As a supplement to the Management Control area's aggregated information at the business unit level, Santander Group uses business area information broken down by segment, product, etc., to distribute relevant income among the business lines defined by the CRR.

Any difference between the total figure for relevant income and the Group's published consolidated information is allocated to the business line with the highest capital consumption.

The following chart shows the distribution of capital by business line as of 31 December 2020.

Capital distribution by business line



Changes in capital requirements and RWAs for operational risk from 2019 to 2020 are shown below:

Table 70. Changes in capital requirements for operation risk

Million euros	31 Dec. 2020	
	Capital	RWAs
Starting figure (31/12/2019)	4,773	59,661
Perimeter	(11)	(137)
Exchange rate effect	(424)	(5,306)
Change in business	131	1,647
Ending figure (31/12/2020)	4,469	55,865

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.

8 Other risks

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8. Other risks



This chapter describes different types of risk, such as liquidity and funding risk, compliance and conduct risk, and capital risk.

More information on other risks not contemplated in this document can be found in the Risk Management and Control chapter² of the 2020 Annual Report.



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For more information on other risks not covered in this document, see the chapter on Risk management and control in the 2020 annual report.



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8.1. Liquidity and funding

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.

The aim of liquidity risk management is to guarantee that funds are available at the right time and cost to enable the entity to meet its obligations and carry out its operations.

Risk profile:

- Management of liquidity and funding is an essential component of business strategy.
- The liquidity and funding model is decentralised and based on autonomous subsidiaries responsible for covering their own liquidity needs.
- Needs arising from business activity in the medium/long term must be funded by medium-term and long-term instruments.
- A large proportion of customer deposits, from an essentially retail banking balance sheet.
- Diversification of sources of wholesale funding in terms of instruments/investors, markets/currencies and maturities.
- Limited recourse to short-term wholesale funding.
- Availability of sufficient liquidity reserves, including a discount capacity with central banks to be used in adverse situations.

For further details, see the Risk Management chapter (section 4) on the 2020 Annual Report.



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8.1.1. 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 established for that subsidiary. These individual limits are more stringent than the regulatory requirements and are reflected in the risk appetite of each subsidiary.

This financing model has proven itself to be highly effective during times of high market stress, since it effectively prevents problems at one division from impacting the borrowing capacity of other areas and, therefore, of the Group as a whole, which can happen with centralised financing models.

The breakdown of the LCR ratio shown here is essentially the sum of the individual ratios at each Group unit, stripping out any one-off intra-group transactions.

For more information, see the LCR table in Appendix XX.



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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 these considerations, there is no significant risk of concentration of funding. Even so, the Group deploys metrics and limits to monitor any concentration of funding sources.

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 mismatch in the LCR

Santander Group prepares its consolidated LCR ratio for each of its identified significant currencies, which reflect the geographies in which the Group's units operate: 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. The main risk here comes from the positions held in Latin American countries, where the local currencies are not directly convertible. Positions held in foreign currencies are therefore closely monitored, through currency-specific stress scenarios, for example.

Other items in the LCR calculation not captured in the LCR disclosure template that the institution considers relevant for its liquidity profile.

Santander 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 94% 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.

For further details, see the Economic and financial report chapter (section 3.4) and the Risk Management and Control chapter (section 4.6) in the 2020 annual report.



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8.1.2. Asset Encumbrance

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 Santander Group required by Commission Delegated Regulation (EU) 2017/2295.

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 575/2013.

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 71, the vast majority of unencumbered assets are loans that could be pledged as collateral.

Table 71. Encumbered and unencumbered assets (AE1)

Million euros	31 Dec. 2020					
	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	
Assets of the reporting institution	341,253	56,040		1,178,619	190,472	
Equity instruments	5,090	3,633		7,816	2,729	
Debt securities	58,068	51,412	58,398	51,487	97,395	61,798
Of which, covered bonds	1,250	1,099	1,265	1,113	1,905	1,688
Of which, asset-backed securities	4,642	3,268	4,771	3,346	672	427
Of which, issued by general governments	49,666	48,878	49,803	48,847	66,758	55,586
Of which, issued by financial corporations	6,701	3,320	6,768	3,375	16,528	10,632
Of which, issued by non-financial corporations	1,093	528	1,133	466	8,673	229
Other assets	279,485	858		1,078,767	126,010	
Of which, loans	248,377	858		900,979	113,882	

Table 72. Collateral received and own debt securities issued (AE2)

Million euros	31 Dec. 2020			
	Unencumbered			
	Fair value of encumbered collateral received or own debt securities issued	Fair value of collateral received or own debt securities issued available for encumbrance		
	Of which, notionally eligible EHQLA and HQLA	Of which, EHQLA and HQLA		
Collateral received by the reporting institution	86,827	83,058	51,287	44,876
Loans on demand	—	—	—	—
Equity instruments	4,032	3,290	5,431	3,729
Debt securities	80,948	78,464	45,806	40,924
Of which, covered bonds	931	903	1,563	1,054
Of which, asset-backed securities	3,180	2,003	4,476	2,320
Of which, issued by general governments	73,023	72,873	36,402	35,952
Of which, issued by financial corporations	8,133	6,066	7,003	3,712
Of which, issued by non-financial corporations	488	342	412	247
Loans and advances other than loans on demand	—	—	3	—
Other collateral received	982	952	43	—
Own debt securities issued other than own covered bonds or asset-backed securities	4	—	898	—
Own covered bonds and asset-backed securities issued and not yet pledged			7,717	—
Total assets, collateral received and own debt securities issued	427,332	142,518		

Where our own covered bonds and asset-backed securities are retained and used, the pledged asset is included in table 71 under loans and the related liability in table 73.

The main sources and types of encumbrances and the level of over-collateralisation are set out in the following table:

Table 73. Sources of encumbrance (AE3)

Million euros

	31 Dec. 2020
	Assets, collateral received and own debt securities issued other than covered bonds and ABSs encumbered
	Matching liabilities, contingent liabilities or securities lent
Carrying amount of selected financial liabilities	273,268
Derivatives	23,400
Of which, Over-The-Counter	17,804
Deposits	167,835
Of which, Repurchase agreements	72,566
Of which, central banks	7,090
Of which, Collateralised deposits other than repurchase agreements	99,502
Of which, central banks	90,517
Of which, Debt securities issued	83,933
Of which, covered bonds issued	52,121
Of which, asset-backed securities issued	30,851
Other sources of encumbrance	40,405
Nominal of loan commitments received	3,884
Nominal of financial guarantees received	481
Fair value of securities borrowed with non cash-collateral	18,681
Other	18,063
Total sources of encumbrance	311,368
	427,332

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 74. Own covered bonds and asset-backed securities issued

Million euros

31 Dec. 2020

	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	12,235	7,717
Retained covered bonds issued	4,610	1,256
Retained asset-backed securities issued	8,060	6,756

The contribution to the Group's level of asset encumbrance on a consolidated basis by the various units is uneven across geographies. The assets of the United States unit are relatively more encumbered, due to the high weight of the consumer business (Santander Consumer USA). In the units operating in the Eurozone and the United Kingdom, where covered bonds and securitisations are highly developed, the level of asset encumbrance is similar and close to the group average. Asset encumbrance is also significant in Mexico, which is very active in asset repurchase agreements. The Latin American and Poland units have a relatively low level of asset encumbrance. 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.

For further details on unencumbered assets (article 443 of the CRR), see the Economic and financial report chapter (section 3.4: Liquidity and funding management) of the 2020 annual report



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8.2. Compliance and conduct

Under the current configuration of the three lines of defence, Compliance and Conduct is a second independent line of defence, 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 primary responsibility for management of compliance and conduct risk lies with the first lines of defence, jointly with the business units that directly originate such risks and the Compliance and Conduct function, by assigning compliance activities or tasks to the first line or directly by the Compliance and Conduct function itself.

The Compliance function fosters adherence by Santander Group to rules, supervisory requirements and principles and values of good conduct by setting standards, discussing, advising and reporting in the interests of employees, customers, shareholders and society in general.

Santander Group's risk appetite in this area essentially takes the form of a declaration of zero appetite for risks of this type, with the clear objective of minimising any economic, regulatory or reputational impact on Santander Group. 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 2020, 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 function's risk appetite and aligned with the Group's risk appetite.

The composition of the indicators has been reviewed and some of their corporate thresholds have been adjusted, to provide a more accurate view and to ensure proper alignment with the function's strategy and risk tolerance. These adjustments were approved by the relevant committees and passed on to the units concerned.

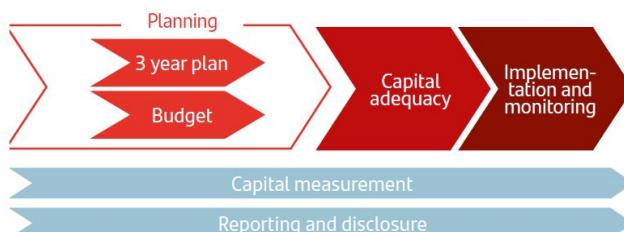
For more information on compliance and conduct risk, see the chapter on Risk management (section 7) of the 2020 annual report.



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8.3. Capital risk

Capital risk oversight and control revolves around the capital management model in place at Santander Group. This involves 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 oversight and control is carried out independently, mainly through the following processes:

- Supervision of capital planning and adequacy to ensure that capital levels 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 of securitisations that could involve Significant Risk Transfer (SRT) and, therefore, generate a reduction in risk-weighted assets under current prudential regulations.

The function aims to provide complete and regular monitoring of capital risk by verifying that capital coverage and adequacy reflect Santander Group's risk profile.

For further details of capital risk, see the Risk management chapter (section 5) of the 2020 annual report.



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Remuneration policies





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9. Remuneration policies



This chapter provides different information on Santander Group's remuneration policies, including the total remuneration for identified staff in 2020, and the remuneration policy for 2021 and thereafter.

9.1. Relevant information contained in other documents

The corporate governance chapter in the 2020 annual report, which was published together with the call to the 2021 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 Santander 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 2020 remuneration policy for directors and senior management, focusing especially on variable remuneration and how it was applied in the year.
- The remuneration measures adopted on 23 March 2020 applying to the Group executive chairman, the chief executive officer and the other members of the board of directors, as a sign of their commitment in the context of the covid-19 health crisis.

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 Santander 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 basic characteristics of the 2020 digital transformation award.
- The deferral policy and other conditions linked to the payment of variable remuneration, including the application of malus and clawback provisions.

9.2. Remuneration policy applicable to categories of staff that may have a material impact on the risk profile of Santander Group

Santander Group 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 Santander Group's risk profile, based on Commission Delegated Regulation (EU) 604/2014 of 4 March 2014, 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 Santander 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 2020 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.

9.3. Main characteristics of the criteria for identifying categories of staff that may have a material impact on the risk profile of Santander Group

The identified staff have been defined according to the provisions of Law 10/2014, of 26 June, on the restructuring, supervision and solvency 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 (CRD IV).

In accordance with the LOSS, 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 604/2014, of 4 March, supplementing CRD IV with regard to the regulatory technical standards (RTS) on appropriate qualitative and quantitative criteria for identifying categories of staff whose professional activities have a material impact on an institution's risk profile (Delegated Regulation 604/2014), establishes a closed list of specific criteria that entities must consider in the identification process.

Santander Group 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, executive or supervisory committees.
 - The first line of the unit.
 - Heads of material business sub-units in that country or business and their direct superiors.

- Heads of Risk, Audit and Compliance and their direct superiors, who effectively perform control functions.
- Heads of legal affairs, finance, taxation, budgeting, human resources, remuneration policy, information technology and economic analysis.
- Members of senior risk committees and executives with powers to initiate, approve or veto significant credit and market risk proposals.
- Traders who can take major market risk positions.
- Members of the new products committee.
- Managers of the directors identified by any of the above criteria.
- Based on quantitative criteria:
 - Executives receiving total remuneration of over €500 thousand in 2019.
 - Executives whose remuneration falls within the top 0.3% in Santander Group or their country.
 - Executives who in the past year earned more than the member of the identified staff with the lowest remuneration, factoring in the business positions identified in the qualitative criteria.
- Because of internal criteria:
 - Executives with significant responsibility for representing Santander Group at non-material units.
 - Executives with a given level of credit or market risk responsibility at certain material units.
 - Heads of business units with a banking licence.

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 and gross income, and reflect the relative importance of each identified unit with an impact on Santander 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 1,394 executives across the Group at year-end 2020, accounting for approximately 0.73% of the total headcount.

9.4. 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 of the members of the independent control functions or, generally, other employees who are part of the identified staff, unless the General Shareholders' Meeting has authorised a higher percentage for these, which may not exceed 200%. The General Shareholders' Meeting held on 3 April 2020 authorised an increase in the maximum percentage permitted to 200% for a maximum of 1,052 members of the identified staff in 2020.

Variable remuneration typically comprises:

- An incentive to be received partly in cash and partly in shares or other eligible financial instruments. Payment of this incentive is deferred for a period of three 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, consider quantitative and qualitative criteria that reflect the entity's results, returns, capital performance, conduct in respect of customers and quality of services provided, 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. The following factors must be considered:
 - (i) Significant failures in risk management by the Bank, a business or a risk control unit.
 - (ii) Increases in capital requirements in the Bank or one of its business units that were not planned at the time that exposure was generated.
 - (iii) 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.
 - (iv) 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 is considered especially significant.
- 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.

9.5. Application of the remuneration policy for the identified staff in 2020

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 Group 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 2020 Annual Report.
- Deferral percentages and periods for the identified staff based on their category:

	Percentage for immediate payment	Deferred percentage	Deferred period (*)
Executive directors and members of the material risk takers group with total variable remuneration of \geq EUR 2.7 million	40%	60%	5 years
Senior management and country heads that represent at least 1% of Santander Group's economic capital and other members of the identified staff with total target variable remuneration of \geq EUR 1.7 million and $<$ EUR 2.7 million	50%	50%	5 years
Other members belonging to the material risk takers	60%	40%	3 years

* Up to 7 years in certain jurisdictions.

Note: Variable reference remuneration for standard compliance (100% of objectives).

- Linking 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 2020 Annual Report.
- The suitability of the 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, Mexico and Santander Consumer USA) or equivalent instruments (Chile and Poland) 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 2020. These events are described in the previous section and apply to all the identified staff.
- No discounts are 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 2020 Annual Report.



[Access 2020 Annual Report available on the Santander Group website](#)

9.6. Total remuneration of the identified staff in 2020

The following table shows the total remuneration of the identified staff in 2020:

Table 75. Total remuneration

Thousand euros

Identified Staff	2020			2019				
	Admin. Executives	Other senior managers ⁽⁵⁾	Rest of staff ⁽⁶⁾	Total	Admin. Executives	Other senior managers ⁽⁵⁾	Rest of staff ⁽⁶⁾	Total
Number of persons	3	18	1,373	1,394	3	18	1,363	1,384
Total fixed remuneration ⁽¹⁾	13,539	33,056	423,123	469,718	12,317	35,533	442,308	490,158
Total variable remuneration ^(2,3)	7,697	24,362	309,493	341,552	11,475	31,116	380,102	422,693
Payable immediately								
In cash	1,555	5,976	90,254	97,785	2,573	7,668	110,962	121,203
In instruments ⁽⁴⁾	1,555	5,976	92,297	99,828	2,573	7,668	107,951	118,192
Deferred payment								
in cash	1,913	4,887	55,346	62,146	3,165	6,840	74,610	84,614
in instruments ⁽⁴⁾	2,675	7,524	71,595	81,793	3,165	8,940	86,579	98,683
Payment for new contracts								
Total guaranteed remuneration	—	2,495	7,927	10,422	—	—	6,822	6,822
Number of beneficiaries	—	1	8	9	—	—	8	8

(1) Includes fixed salary and supplements, attendance fees and by law-stipulated allotments for executive directors, as well as benefits (including pensions classified as fixed in nature).

(2) The variable remuneration includes EUR 1,798 thousand in variable component pensions. Variable remuneration does not include EUR 8,186 thousand in buyouts or sign on amounts.

(3) Annual bonus is included at its fair value. Fair value has been determined on the date it was awarded, based on an expert assessment report and taking account of different possible scenarios for the performance of the different variables set out in the plan during the measurement periods.

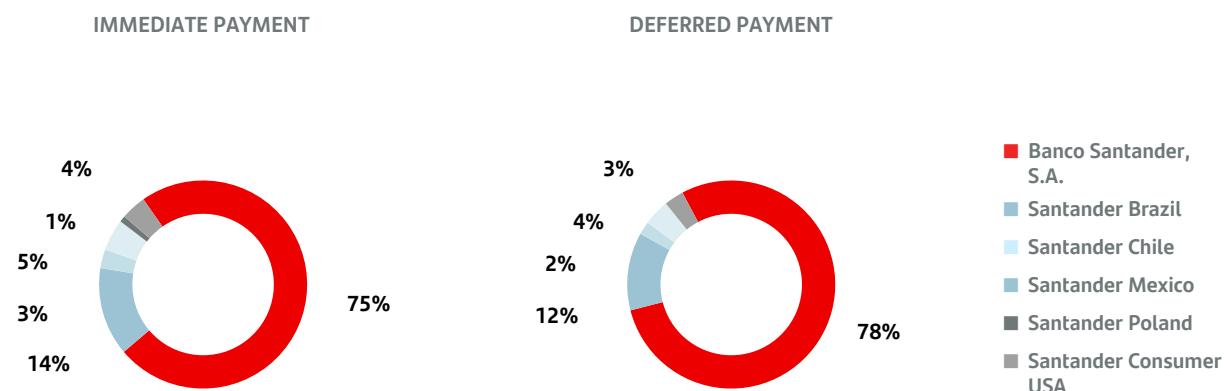
(4) The following charts show the distribution of instruments according to the companies of Santander Group to which they correspond.

(5) This column includes the remuneration of the members of senior management (excluding executive directors) as at 31 December 2020 and 2019, respectively.

(6) This column includes the remuneration of senior management who resigned their duties during 2020.

The following table shows the distribution of deferred instruments in qualifying Santander Group companies:

Distribution of deferred instruments according to the Group company to which they correspond



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 €50.2 million (of which 4.96 million Euros correspond to three senior executives who held the position at some point in 2020, as a result of non-competition agreements) for a total of 66 people with average seniority of 11 years. Out of that total, 16 people received an amount corresponding to more than two annual fixed remuneration payments, with a total vested value of severance payments of €39.1 million. The maximum amount of a single award was €4.0 million.

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.

The breakdown of total remuneration by area of activity is as follows:

Table 76. Remuneration by activity area

Thousand euros	31 Dec. 2020								
	Admin. Executives	Non-executive directors	Investment banking	Commercial Banking	Asset Management	Corporate Functions	Independent control functions	Other	Total
No. Of persons	3	14	273	637	72	100	295	—	1,394
Top-Management	3	—	1	1	1	11	4	—	21
Rest of Identified Staff	—	14	272	636	71	89	291	—	1,373
Total Remuneration	21,237	4,498	199,178	307,321	41,875	103,492	133,671	—	811,270
Top-Management	21,237	—	4,568	3,704	3,794	32,967	12,385	—	78,654
Rest of Identified Staff	—	4,498	194,610	303,617	38,081	70,525	121,286	—	732,615
Areas' fix/variable average ratio	63 %	0 %	121 %	70 %	71 %	70 %	48 %	0 %	75 %

The Independent Control Functions area includes all functions related to risk management, internal audit, compliance, and financial accounting and control, as well as others associated with control of regulatory capital.

The following table shows the remuneration schemes for the identified staff, in which the right to receive shares originated in previous years and for which the vesting targets and/or conditions were fulfilled in 2020 or are pending fulfilment.

The corporate functions include people belonging to the identified staff of the corporate support areas (e.g. Human Resources, Technology and Operations, Communication, General Secretariat, Strategy and Financial Planning).

The sum of variable components in 2020 for each member of the identified staff did not exceed the limit established in each case for 2020, which was either 100% or 200%, as authorised by the General Shareholders' Meeting. The ratio of variable components of remuneration to fixed components for all the identified staff was 75% and the limits prescribed for each component were duly observed in all cases.

Table 77. Vested rights

Thousand euros

	31 Dec. 2020				31 Dec. 2019			
	Admin. Executives	Other senior managers	Rest of staff	Total	Admin. Executives	Other senior managers	Rest of staff	Total
Other remuneration entitlement from previous years: consolidated and unpaid (to be consolidated from 2020)								
Cash	3,215	6,355	53,011	62,581	3,206	6,298	84,421	93,926
Number of Santander shares	601,643	1,507,645	9,618,453	11,727,742	673,841	1,356,729	9,508,591	11,539,161
Number of Santander Brazil shares	125,686	—	956,940	1,082,625	—	—	1,223,911	1,223,911
Number of Santander Chile shares	—	—	34,494,169	34,494,169	—	—	43,873,308	43,873,308
Number of Santander Mexico shares	—	—	2,750,262	2,750,262	—	—	2,824,468	2,824,468
Number of Santander Poland shares*	—	—	11,193	11,193	—	—	8,838	8,838
Number of Santander Consumer USA shares	—	—	84,470	84,470	—	—	55,888	55,888
Number of phantom shares	—	—	5,575	5,575	—	—	10,832	10,832

*An instrument of Santander Poland (Zachodni WBK) has a value equal to one share of the company

Table 78. Unvested rights

Thousand euros

	31 Dec. 2020				31 Dec. 2019			
	Admin. Executives	Other senior managers	Rest of staff	Total	Admin. Executives	Other senior managers	Rest of staff	Total
Other remuneration entitlement from previous years: Non-consolidated and unpaid (to be consolidated from 2020)								
Cash	7,102	16,393	80,990	104,486	8,722	18,773	141,588	169,083
Number of Santander shares	1,475,757	4,231,814	17,880,009	23,587,580	1,813,998	3,942,548	15,040,239	20,796,785
Number of options over Santander shares	269	1,496	8,863,238	10,628,112	—	—	—	—
Number of Santander Brazil shares	161	—	1,254,992	1,416,484	—	—	1,687,722	1,687,722
Number of Santander Chile shares	—	—	43,204,864	43,204,864	—	—	47,933,722	47,933,722
Number of Santander Mexico shares	—	—	3,817,397	3,817,397	—	—	4,076,259	4,076,259
Number of Santander Polonia shares*	—	—	15,300	15,300	—	—	10,418	10,418
Number of Santander Consumer USA shares	—	—	93,159	93,159	—	—	58,659	58,659
Number of phantom shares	—	—	—	—	—	—	5,575	5,575

*An instrument of Santander Poland (Zachodni WBK) has a value equal to one share of the company

The breakdown of the remuneration by salary band of the members of the identified staff in the whole of Santander Group is shown below:

Table 79. Remuneration by salary band*

Salary band	No. of people	2020
1,0 - 1,5	67	
1,5 - 2,0	34	
2,0 - 2,5	16	
2,5 - 3,0	7	
3,0 - 3,5	6	
3,5 - 4,0	2	
4,0 - 4,5	2	
4,5 - 5,0	3	
5,0 - 6,0	1	
6,0 - 7,0	3	
Total	141	

* Does not include the deferred part of the 2020 incentive subject to multi-year objectives, the performance and attainment of which will be reviewed in 2023. Payment will be made from 2024 onward, but may be zero, depending on the extent to which the objectives have been met. Notes 5 and 47 of the Group's annual report contain further information on how the plan works, and amount of the deferred remuneration.

- Long-term metrics for senior managers: earnings per share, total shareholder return and ESG targets (women in senior positions, people financially empowered and green finance).
- Part payment in cash and in shares 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.

In 2021, the board of directors of Banco Santander, S.A. will approve the third cycle of the digital transformation incentive, as part of the 2021 variable remuneration policy. The 2021 digital transformation incentive is applicable to up to 250 employees of Santander Group whose activity is essential for the Group's digital transformation and growth, including certain members of the identified staff (not including Banco Santander directors). This incentive is awarded 50% in Banco Santander shares and 50% in Banco Santander share options. Its payment is subject to certain objectives in the digital transformation process for 2021 being met.

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.

For further details, see the corporate governance chapter of the 2020 Annual Report.



[Access 2020 Annual Report available on the Santander Group website](#)

Deferral periods for members of the identified staff are as follows:

Deferral of the identified collective

	31 Dec. 2020			31 Dec. 2019		
	Percentage paid immediately	Deferred percentage	Deferred periods' (*)	Percentage paid immediately	Deferred percentage	Deferred periods' (*)
Executive directors and members of the material risk takers of the group with total target variable remuneration of ≥ EUR 2.7 million (**)	40 %	60 %	5 years	40 %	60 %	5 years
Senior management and country heads that represent at least 1% of Santander Group's economic capital and other members of the identified staff with total target variable remuneration of ≥ EUR 1.7 million and < EUR 2.7 million €. (**)	50 %	50 %	5 years	50 %	50 %	5 years
Other members belonging to the material risk takers	60 %	40 %	3 years	60 %	40 %	3 years

* Up to 7 years in certain jurisdictions.

** Variable remuneration not denominated in Euros is calculated using the average closing exchange rates in the fifteen trading sessions immediately prior to the Friday, exclusive, of the week before the date on which the board of directors agrees the variable remuneration of the Bank's executive directors.

10 Appendices





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- VI. Reconciliation: balance under accounting consolidation / balance under regulatory consolidation
- VII. Capital instruments main features template
- VIII. Transitional own funds disclosure template
- IX. List of specialised management companies within the scope of regulatory consolidation - SPVs
- X. Leverage Ratio (LRSum, LRCom and LRSpl tables)
- XI. Countercyclical capital buffer (institution-specific amount and geographical distribution)
- XII. IFRS 9-FL Template: Comparison of institutions' own funds and capital and leverage ratios with and without the application of transitional arrangements for IFRS 9 or analogous ECLs
- XIII. Breakdown of exposure by approach to calculating capital employed
- XIV. IRB parameter models by region
- XV. Backtesting PD - CR9
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- XVIII. Prudent Valuation Adjustments (PVA) (PV1)
- XIX. Comparison of VaR estimates with gains/losses (MR4)
- XX. LCR disclosure template



[Access file 2020 Pillar 3 Appendices available on the Santander Group website](#)

Appendix I - Transparency enhancements

GUIDELINES ON DISCLOSURE REQUIREMENTS - EBA/GL/2016/11

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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	2020 P3DR Location	Tables	2020 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 2.2.2.1.		
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.	Sections 1.2.2. and 1.2.3.		
431.4	Explanation of SMEs ratings decision upon request.	Section 3.4.		
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 1.2.2.		
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.	N/A		
432.4	Use of 432.1, 432.2 or 432.3 is without prejudice to scope of liability for failure to disclose material information.	N/A		
433. Frequency of disclosure				
433	Disclosures must be published on an annual basis at a minimum, and more frequently if necessary.	Section 1.2.2.		
434. Means of disclosure				
434.1	To include all disclosures in one appropriate medium, or provide clear cross-references to the synonymous information in the other media.	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.		
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 8		Risk Management Chapter 2. Risk Management and Control Model
435.1.b	Structure and organization of the risk management function.	Chapters 3 to 8		Risk Management Chapter 2. Risk Management and Control Model

Article	Brief Description	2020 P3DR Location	Tables	2020 Annual Report Location
435.1.c	Risk reporting and measurement systems.	Chapters 3 to 8		Risk Management Chapter 2. Risk Management and Control Model
435.1.d	Hedging and mitigating risk - policies, strategies and processes.	Chapters 2 to 8		Risk Management Chapter 3.2. Credit risk management 3.5. Other credit risk aspects 4. Trading market risk, structural and liquidity risk 5. Capital risk 6. Operational risk 7. Compliance and conduct risk 8. Model risk 9. Strategic risk
435.1.e	A declaration of adequacy of risk management arrangements approved by the Board.	Section 1.2.2.		Risk Management Chapter 2. Risk Management and Control Model
435.1.f	Inclusion of a concise risk statement approved by the Board.	Section 1.2.2.		Risk Management Chapter 2. Risk Management and Control Model
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.			Corporate Governance Chapter
435.2.b	Recruitment policy for the selection of Board members, their actual knowledge, skills and expertise.			Corporate Governance Chapter
435.2.c	Policy on diversity of Board membership, objectives, and achievement status.			Corporate Governance Chapter
435.2.d	Existence of a dedicated risk committee, and number of meetings during the year.	Section 2.1.1.2.		Corporate Governance Chapter Risk Management Chapter
435.2.e	Description of the information flow on risk to the Board.	Section 2.1.1.2.		Corporate Governance Chapter Risk Management 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	Sections 1.2.1. and 1.3.	Table 1 (L1) Table 2 (L2) Appendix V (L3) Appendix VI	

Article	Brief Description	2020 P3DR Location	Tables	2020 Annual Report Location
436.c	Impediments to transfer of own funds between parent and subsidiaries.	Section 2.1.3.		
436.d	Capital shortfalls in any subsidiaries outside the scope of consolidation.	N/A		
436.e	The circumstance of making use of articles on derogations from: a) Prudential requirements b) Liquidity requirements for individual subsidiaries/entities.	Section 1.2.1.		
437. 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.	Section 2.2.1.	Tables 4 and 5 Appendix VI Appendix VIII	
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 2.2.1.	Appendix VII Appendix VIII	
437.1.c	Dull terms and conditions of all Common Equity Tier 1, Additional Tier 1 and Tier 2 instruments.	Section 2.2.1.	Appendix VII Appendix VIII	
437.1.d	Disclosure of the nature and amounts of the following:			
437.1.d.i	Each prudential filter applied pursuant to Articles 32 to 35;	Section 2.2.1.	Appendix VIII	
437.1.d.ii	Each deduction made pursuant to Articles 36, 56 and 66;	Section 2.2.1.	Appendix VIII	
437.1.d.iii	Items not deducted in accordance with Articles 47, 51, 56, 66 and 79.	Section 2.2.1.	Appendix VIII	
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 2.2.1.	Appendix VIII	
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.	Section 2.2.1.	Appendix VIII	
438. Capital requirements				
438	Institutions shall disclose the following information regarding the compliance by the institution with the requirements laid down in Article 92 of this Regulation and in Article 73 of Directive 2013/36/EU:			
438.a	Summary of the institution's approach to assessing adequacy of capital levels.	Sections 2.1., 2.2. and 2.3.		
438.b	Result of ICAAP on demand from authorities.	Sections 2.1.5. and 2.3.		
438.c	Capital requirements for each Standardised approach credit risk exposure class.	Sections 2.2.2. , 3.2.3. , 4.7. , 5.3.4, and 5.4.	Tables 7 (OV1) and 8 Tables 12 (CR4) and 23 (CR5) Tables 56 (SEC3) and Table 58 (SEC4)	
438.d	Capital requirements for each Internal Ratings Based Approach credit risk exposure class.	Sections 2.2.2. , 3.2.3. , 4.7. , 5.3.4, and 5.4.	Tables 7 (OV1) and 8 Tables 11, 13 (CR8), 14 to 16 (CR6), 17, and 18 to 19 (CR10) Tables 56 (SEC3) and 58 (SEC4) Appendix XIV	

Article	Brief Description	2020 P3DR Location	Tables	2020 Annual Report Location
438.e	Capital requirements for market risk or settlement risk.	Sections 2.2.2. and 6.2.	Table 7 (OV1) Tables 60, 61, 62 (MR2-A), 63 (MR2-B), 64 (MR1) and 65	
438.f	Capital requirements for operational risk, separately for the Basic Indicator Approach, the Standardised Approach, and the Advanced Measurement Approaches as applicable.	Sections 2.2.2. and 7.2.	Tablas 7 (OV1) y 67	
438 last paragraph	Requirement to disclose specialised lending exposures and equity exposures in the banking book falling under the simple risk weight approach.	Section 3.2.2.	Tables 18 and 19 (CR10)	
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.	Chapter 4		
439.b	Discussion of policies for securing collateral and establishing credit reserves.	Chapter 4		
439.c	Discussion of management of wrong-way risk exposures.	Chapter 4		
439.d	Disclosure of collateral to be provided (outflows) in the event of a ratings downgrade.	Chapter 4		
439.e	Derivation of net derivative credit exposure.	Chapter 4	Tables 44 (CCR2), 45 (CCR8), 46 (CCR1), 49 (CCR5-A) and 50 (CCR5-B)	
439.f	Exposure values for mark-to-market, original exposure, standardised and internal model methods.	Chapter 4	Tables 44 (CCR2), 45 (CCR8) and 46 (CCR1)	
439.g	Notional value of credit derivative hedges and distribution of current credit exposure by type of exposure.	Chapter 4	Table 51 (CCR6)	
439.h	Notional amounts of credit derivative transactions.	Chapter 4	Table 51 (CCR6)	
439.i	Estimate of alpha, if applicable.	N/A	Table 46 (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:			
440.a	Geographical distribution of credit exposures relevant for the calculation of countercyclical capital buffer.	Section 2.1.5.	Appendix XI	
440.b	Amount of the specific countercyclical capital	Section 2.1.5.	Appendix XI	
441. Indicators of global systemic importance				
441	Disclosure of the indicators of global systemic importance.	Section 2.1.5.		
442. Credit risk adjustments				
442	Institutions shall disclose the following information regarding the institution's exposure to credit risk and dilution risk:			
442.a	Definitions, for accounting purposes, of past due and impaired exposures.	Section 3.3.		Risk Management Chapter 3.3. Credit risk - Key metrics

Article	Brief Description	2020 P3DR Location	Tables	2020 Annual Report Location
442.b	Description of the approaches adopted for calculating specific and general credit risk adjustments.	Section 3.3.		Risk Management Chapter 3.3. Credit risk - Key metrics
442.c	Disclosure of pre-CRM EAD by exposure class.	Section 3.3.	Table 24 (CR1-A) Table 33 (CRB-B)	
442.d	Disclosure of pre-CRM EAD by geography and exposure class.	Section 3.3.	Table 34 (CRB-C)	Risk Management Chapter 3.3. Credit risk - Key metrics
442.e	Disclosure of pre-CRM EAD by industry and exposure class.	Section 3.3.	Table 35 (CRB-D)	Risk Management Chapter 3.3. Credit risk - Key metrics
442.f	Disclosure of pre-CRM EAD by residual maturity and exposure class.	Section 3.3.	Table 36 (CRB-E)	
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442.h	Impaired and past due exposures, broken down by geographical area, and the amounts of specific and general credit risk adjustments related to each geographical area.	Section 3.3.	Table 24 (CR1-A) Table 25 (CR1-B) Table 26 (CR1-C)	Risk Management Chapter 3.3. Credit risk - Key metrics
442.i.(i-v)	Reconciliation of changes in specific and general credit risk adjustments for impaired exposures.	Section 3.3.	Tables 27 to 30 Table 31 (CR2-A) Table 32 (CR2-B)	
442 last paragraph	Specific credit risk adjustments recorded to income statement are disclosed separately.	Section 3.3.	Tables 27 to 30 Table 31 (CR2-A) Table 32 (CR2-B)	
443. Unencumbered assets				
443	Disclosures of unencumbered assets.	Section 8.1.2.	Table 71 (AE1) Table 72 (AE2) Table 73 (AE3)	Economic and Financial Report Chapter 3. Group financial performance (Liquidity and funding management)
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 3.2.3.		
444.b	Exposure classes associated with each ECA.	Section 3.2.3.		
444.c	Description of the process used to transfer credit assessments to non-trading book items.	Section 3.2.3.		
444.d	Mapping of external rating to credit quality steps (CQS).	Section 3.2.1. and 3.2.3.	Tables 14, 15 and 16 (CR6)	
444.e	Exposure value pre and post-credit risk mitigation, by CQS.	Section 3.2.1. y 4.7.	Tables 11 (CR4), 23 (CR5) and 47 (CCR3)	
445. Exposure to market risk				
445	Disclosure of position risk, large exposures exceeding limits, FX, settlement and commodities risk.	Section 6.2.	Tables 63 (MR2-B) and 64 (MR1)	
446. Operational risk				
446	Scope of approaches used to calculate operational risk.	Section 7.2.		
447. Exposures in equities not included in the trading book				

Article	Brief Description	2020 P3DR Location	Tables	2020 Annual Report Location
447	Institutions shall disclose the following information regarding the exposures in equities not included in the trading book:			
447.a	Differentiation of exposures based on their objectives and an overview of accounting techniques and valuation methodologies used.	Section 3.2.2.	Tables 19 (CR10) and 20 to 22	
447.b	The balance sheet value, the fair value and, for those exchange-traded, a comparison to the market price where it is materially different from the fair value.	Section 3.2.2.	Tables 19 (CR10) and 20 to 22	
447.c	The types, nature and amounts of exchange-traded exposures, private equity exposures in sufficiently diversified portfolios, and other exposures.	Section 3.2.2.	Tables 19 (CR10) and 20 to 22	
447.d	Cumulative realised gains or losses arising from sales and liquidations in the period.	Section 3.2.2.	Tables 19 (CR10) and 20 to 22	
447.e	Total unrealised gains or losses, the total latent revaluation gains or losses, and any of these amounts included in the original or additional own funds.	Section 3.2.2.	Tables 19 (CR10) and 20 to 22	
448. Exposure to interest rate risk on positions not included in the trading book				
448	Institutions shall disclose the following information on their exposure to interest rate risk on positions not included in the trading book:			
448.a	Nature of the interest rate risk and the key assumptions, and frequency of measurement of the interest rate risk.	Section 6.4.	Table 69	Risk Management Chapter 4.4. Structural balance sheet risks management
448.b	Variation in earnings, economic value or other relevant measure used by the bank for upward and downward rate shocks according to the banks method for measuring the interest rate risk, broken down by currency.	Section 6.4.	Table 69	Risk Management Chapter 4.4. Structural balance sheet risks management
449. Exposure to securitisation positions				
449	Institutions calculating risk weighted exposure amounts in accordance with Part Three, Title II, Chapter 5 or own funds requirements in accordance with Article 337 or 338 shall disclose the following information, where relevant, separately for their trading and non-trading book:			
449.a	Objectives in relation to securitisation activity	Section 5.3.1.		
449.b	Nature of other risks in securitised assets, including liquidity.	Section 5.3.3.		
449.c	Risks in re-securitisation activity stemming from seniority of underlying securitisations and ultimate underlying assets.	Sections 5.3.4. and 5.4.		
449.d	Roles played by the institution in the securitisation process.	Section 5.3.2.		
449.e	Extent of the institution's involvement in each of the securitisation roles	Section 5.3.4. and 5.4.	Tables 51, 53 (SEC1), 54 (SEC2) 57 and 59	
449.f	Processes in place to monitor changes in credit and market risks of securitisation exposures, and how the processes differ for re-securitisation exposures.	Section 5.3.4.		
449.g	Description of the institution's policies with respect to hedging and unfunded protection, and identification of material hedge counterparties, by relevant type of risk exposure.	N/A		
449.h	Approaches to the calculation of risk-weighted assets for securitisations mapped to types of exposures.	Section 5.4.	Table 55	

Article	Brief Description	2020 P3DR Location	Tables	2020 Annual Report Location
449.i	Types of SSPEs used to securitise third-party exposures as a sponsor.	Sections 5.3 and 5.4	Appendix IX	
449.j	A summary of the institution's accounting policies for securitisation activities, including:			
449.j.i	whether the transactions are treated as sales or financings;	Section 5.2.		
449.j.ii	the recognition of gains on sales;	Section 5.2.		
449.j.iii	the methods, key assumptions, inputs and changes from the previous period for valuing securitisation positions;	Section 5.2.		
449.j.iv	the treatment of synthetic securitisations if not covered by other accounting policies;	Section 5.2.		
449.j.v	how assets awaiting securitisation are valued and whether they are recorded in the institution's non-trading book or the trading book;	Section 5.2.		
449.j.vi	policies for recognising liabilities on the balance sheet for arrangements that could require the institution to provide financial support for securitised assets.	Section 5.2.		
449.k	Names of ECAs used for securitisations and type.	Section 5.3.4.		
449.l	Full description of Internal Assessment Approach.	N/A		
449.m	Explanation of significant changes in quantitative disclosures, since the last reporting period.	Sections 5.3.4. and 5.4.		
449.n	As appropriate, separately for the Banking and trading book securitisation exposures:			
449.n.i	amount of outstanding exposures securitised;	Sections 5.3.4. and 5.4.	Tables 51, 53 (SEC1), 54 (SEC2), 55, 56 (SEC3), 57, 58 (SEC4) y 59	
449.n.ii	on balance sheet securitisation retained or purchased, and off balance sheet exposures;	Section 5.4.	Tabla 52	
449.n.iii	amount of assets awaiting securitisation;	Section 5.3.4.		
449.n.iv	early amortisation treatment, aggregate drawn exposures and capital requirements for securitised facilities;	Section 5.3.3.		
449.n.v	Deducted or 1250%-weighted securitisation positions;	Sections 5.3.4. and 5.4.	Tables 56 (SEC3) and 58 (SEC4)	
449.n.vi	summary of the securitisation activity of the current period.	Sections 5.3.4. and 5.4.	Tables 52, 53 (SEC1), 54 (SEC2), 55, 56 (SEC3), 57, 58 (SEC4) y 59	
449.o	Banking and trading book securitisations:			
449.o.i	Retained and purchased positions and associated capital requirements, broken down by risk-weight bands;	Sections 5.3.4. and 5.4.	Tables 54 (SEC3) and 58 (SEC4)	
449.o.ii	Retained and purchased re-securitisation positions before and after hedging and insurance; exposure to financial guarantors broken down by guarantor credit worthiness.	N/A: Sections 5.3.4. and 5.4.	Tables 56 (SEC3), 58 (SEC4) y 59	
449.p	Impaired assets and recognised losses related to banking book securitisations, by exposure type.	Section 5.4.	Table 59	
449.q	Exposure and capital requirements for trading book securitisations, separated into traditional and synthetic, and exposure type.	Sections 5.4. and 6.2.	Tables 57 and 64	
449.r	Whether the institution has provided non-contractual financial support to securitisation vehicles.	N/A		
450. Remuneration policy				
450	Remuneration disclosures (Material Risk Takers):	Chapter 9	Tables 75 to 79	Corporate Governance Chapter
451. Leverage				

Article	Brief Description	2020 P3DR Location	Tables	2020 Annual Report Location
451.1. (a,b)	Leverage ratio, and breakdown of the total exposure measures, including the reconciliation to financial statements.	Section 2.2.3.	Tables 9 and 10 Appendix X	
451.c	If applicable, the total amount of the derecognized fiduciary items.	N/A		
451.(d,e)	Description of the processes used to manage the risk of excessive leverage, and factors that impacted the leverage ratio during the year.	Section 2.2.3.		
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:			
452.a	Permission for use of the IRB approach from the competent authority.	Section 2.2.2.1.		
452.b	Explanation and review of:			
452.b.i	Structure of internal rating systems and relation between internal and external ratings;	Sections 3.2.1., 3.4., 3.5., 3.6., 3.7., 3.8. and 3.10.	Tables 14 to 16 (CR6), 17 and 18 to 19 (CR10)	
452.b.ii	Use of internal ratings for purposes other than capital requirement calculations;	Section 3.6.		
452.b.iii	Management and recognition of credit risk mitigation process;	Section 3.7.1.		
452.b.iv	Controls mechanisms for rating systems;	Section 3.8.		
452.c.(i-v)	Description of ratings processes for each IRB asset class, provided separately.	Sections 3.2.1. and 3.5.	Tables 14 to 16 (CR6), 17 and 18 to 19 (CR10)	
452.d	Exposure values by IRB exposure class, separately for Advanced and Foundation IRB.	Section 3.2.1.	Tables 14 to 16 (CR6), 17 and 18 to 19 (CR10)	
452.e.(i-iii)	For each exposure class, disclosed separately by obligor grade, institutions shall disclose: total exposure, separating loans and undrawn exposures where applicable, and exposure-weighted average risk weight.	Section 3.2.1. y 4.7.	Tables 14 to 16 (CR6), 17 and 18 to 19 (CR10)	
452.f	For the retail exposure class, the disclosures outlined in article 452.e, to allow for a meaningful differentiation of credit risk on a pooled basis.	Section 3.2.1.	Table 16 (CR6)	
452.g	Actual specific risk adjustments for the period and explanation of changes.	Sections 3.2.1. y 3.3.	Tables 14 to 16 (CR6) and 24 (CR1-A)	
452.h	Description of the factors that impacted on the loss experience in the preceding period.	Sections 3.2.1., 3.3., 3.9. y 3.10	Appendix XVII	
452.i	Analysis of the historical estimates of losses against actual losses in each exposure, to help assess the performance of the rating system over a sufficient period.	Section 3.10.	Appendices XV to XVII	
452.j	For all IRB exposure classes:			
452.j.(i-ii)	Where applicable, PD and LGD by each country where the bank operates.	Section 3.2.1.	Table 17	
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 3.7. and 4.7.		Risk Management Chapter 3.2. Credit risk management
453.b	How collateral valuation is managed.	Sections 3.7. and 4.7.		Risk Management Chapter 3.2. Credit risk management

Article	Brief Description	2020 P3DR Location	Tables	2020 Annual Report Location
453.c	Description of types of collateral used by the institution.	Sections 3.7. and 4.7.		Risk Management Chapter 3.2. Credit risk management
453.d	Main types of guarantor and credit derivative counterparty, creditworthiness.	Sections 3.7. and 4.7.		Risk Management Chapter 3.2. Credit risk management
453.e	Market or credit risk concentrations within risk mitigation exposures.	Sections 3.7. and 4.7.	Table 37	
453.f	Standardised or Foundation IRB Approach, exposure value covered by eligible collateral.	Sections 3.3. , 3.7.1. and 4.7.	Tables 11 a 12 (CR4) Table 38 (CR3) Tables 49 (CCR5-A), 50 (CCR5-B) and 51 (CCR6)	
453.g	Exposures covered by guarantees or credit derivatives.	Sections 3.3. , 3.7. and 4.7.	Tables 11 to 12 (CR4) Table 38 (CR3) Table 40 (CR7) Tables 49 (CCR5-A), 50 (CCR5-B) and 51 (CCR6)	
454. Use of the Advanced Measurement Approaches to operational risk				
454	Description of the use of insurance or other risk transfer mechanisms to mitigate operational risk.	N/A		
455. Use of Internal Market Risk Models				
455	Institutions calculating their capital requirements in accordance with Article 363 shall disclose the following information:			
455.a	For each sub-portfolio covered:			
455.a.i	Disclosure of the characteristics of the market risk models used;	Sections 2.2.2.1. , 6.2. and 6.3.		
455.a.ii	Disclosure of the methodologies used to measure incremental default and migration risk;	Sections 2.2.2.1. , 6.2. and 6.3.		
455.a.iii	Descriptions of stress tests applied to the	Sections 6.2. and 6.3.4.		
455.a.iv	Methodology for back-testing and validating the models.	Sections 6.2. , 6.3.5. and 6.3.6.		
455.b	Scope of permission for use of the models.	Section 6.2.		
455.c	Policies and processes to determine trading book classification, and to comply with prudential valuation requirements.	Section 6.3.		
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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.

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 liability management (ALM): 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.

Asset securitisation: a financial mechanism that consists of converting certain assets into fixed-income securities that can be traded on a secondary securities market.

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.

BIS: Bank for International Settlements.

BBRRD (Bank Recovery and Resolution Directive): approved in 2014, the BBRRD establishes the framework for the recovery and resolution of banks with the objective of minimising the costs for taxpayers.

CBE 2/2016: Bank of Spain 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 Bank of Spain 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 Bank of Spain Circular 2/2014.

CBE 3/2008: Bank of Spain Circular of 22 May 2008 on the calculation and control of minimum capital requirements.

CBE 4/2004: Bank of Spain Circular of 22 December 2004 on public and confidential financial reporting standards and model financial statement forms.

CBE 9/2010: Bank of Spain 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 Group 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.

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.

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.

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.

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 Group 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).

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.

ESRB (European Systemic Risk Board): the body that has been charged with macroprudential supervision of the financial system in the European Union in order to contribute to preventing or mitigating systemic risks to financial stability.

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.

FSB (Financial Stability Board): international institution that monitors and makes recommendations on the global el financial system.

Fully-Loaded: denotes full compliance with Basel III solvency requirements (which become mandatory in 2019).

GHOS (Group of Governors and Heads of Supervision): supervisory body of the Basel Committee.

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.

IRC (Incremental Risk Charge): an estimate of the credit risk associated with unsecuritised positions in the trading book.

IRP: This report, titled Pillar III Disclosures in the English version. (the acronym is for the Spanish Informe de Relevancia Prudencial).

IRRBB: 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 Group 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.

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.

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.

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.

Over-the-counter (OTC): off-exchange, that is, trading done between two parties (in derivatives, for example) without the supervision of an organised exchange.

Phased-in: refers to compliance with current solvency requirements bearing in mind the transitional period for Basel III implementation.

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 I and the use of more sophisticated methodologies than Pillar I.

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.

RDL: Royal Decree Law.

Risk appetite: the amount and type of risks considered reasonable to assume in the execution of its business strategy, so that Santander Group 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.

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.

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.

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.

Standardised 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-standardised 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.

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.

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.

TRIM: Targeted Review of Internal Models.

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.

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.

ESG: Environmental, Social and Governance

