5. Research, development and innovation (R&D&I)

Research, development and innovation activities

Innovation and technological development are fundamental to Santander's strategy. We aim to focus on operational excellence and customer experience in response to fresh challenges that emanate from digital transformation.

Moreover, the information from our new technological platforms helps us better understand the customer journey and enable us to design a more accurate digital profile to generate more confidence and increase customer loyalty.

As well as competition from other banks, financial entities must watch out for new entrants to the financial system, whose use of new technology is both a differentiating factor and a competitive advantage.

Developing a sound strategic technology plan must provide:

- greater capacity to adapt to customers' needs (customized products and services, full availability, and excellent, secure service across all channels);
- enhanced processes for Santander's professionals to ensure greater reliability and productivity; and
- proper risk management, supplying teams with the necessary infrastructures to help identify and assess all business-related, operational, reputational, regulatory and compliance risks.

As a global systemically important bank, Santander and its subsidiaries face increasing regulatory demands that impact system models and their underlying technology. Therefore they must make considerable additional investments to guarantee compliance and legal security.

As in previous years, the European Commission's 2021 EU Industrial R&D Investment Scoreboard (based on 2020 data) ranked our technological effort first among Spanish companies and our R&D investment second among global banks.

The equivalent investment in R&D&I to that considered in the ranking was EUR 1,325 million. See note 18 to the consolidated financial statements.

Technological strategy

To meet business and customer needs, we must integrate new digital capabilities such as agile methodologies, public and private cloud-based products and core systems development. We must also broaden our data and technological capabilities (APIs - Application Programming Interface, artificial intelligence, robotics, blockchain, etc.).

Our technological strategy aligns with the three pillars of the Group's strategy: One Santander, PagoNxt and Digital Consumer Bank. Our technological pillars (cloud, agile, data, core evolution and deep tech skills), a flexible and common architecture and a global operating model, and better risk and associated cost management, help us achieve this.

To ensure the technology strategy is consistent in all the Group's entities, the Santander Architecture Review Board (SARB) holds monthly meetings that bring together the chief technology officers (CTOs) of the different units and businesses to actively participate in key architecture decision-making. The SARB oversees everything; the analysis of potential assets, the migration to the cloud, the review of data lake reference architectures and other measures. The use of a single technology stack and reference architectures are key to achieving Santander Common Architecture. Based on simplification, component recycling and the principle of composable architecture, the SARB also guarantees the use of technologies that matches the business of the future.

To implement our technological strategy we rely on internal regulation, the Group's commitment and experience in relations with our entities, and a governance model that articulates projects and initiatives that help crystallize it in all our markets.

The development of our technology and operations (T&O) model will help us cultivate new business, especially in terms of global products and digital services. Some 5,000 Santander Global Technology & Operations professionals in Spain, the UK, Portugal, Poland, the US, Mexico, Brazil and Chile are gradually incorporating the global product portfolio agreed on by the Group's entities, our global businesses and the T&O division, guaranteeing the not only quality of digital services and products, but also their security.

Technological infrastructure

Santander has a network of high-quality data centres (CPDs) interconnected by a redundant communications system. The CPDs are spread across strategic markets to support and develop our activity. They combine traditional information technology (IT) systems with the capabilities supplied by an on-premise private cloud, which, thanks to its swift adoption, enables integrated management of the business areas' technology, accelerates digital transformation and allows us to save costs significantly.

Santander has migrated more than 75% of its technology infrastructure to the cloud and expects to complete the roll-out by 2023. Our cloud strategy enables us to improve processes, innovate swiftly and improve service quality. Our Local Cloud Centres of Excellence (local CCoEs), which the Global CCoE coordinates, guarantee consistent and rigorous cloud adoption across our entities. This minimizes risks in accordance with our Public Cloud policy. The process will also help fulfil Santander's responsible banking goals as we expect it to save 70% of the energy our technology infrastructure consumes.

Cybersecurity

Cybersecurity is one of Santander's main priorities and a crucial element in supporting our purpose of helping people and businesses prosper, as well as offering excellent digital services to our customers.

The new cyber services and capabilities created during the 3-year Cybersecurity Transformation Plan completed in 2020 have moved to business as usual (BAU) operations in line with the Group's Cybersecurity Framework. It enabled us to set the organizational foundations and governance for cyber security globally; establish global cybersecurity services in the Group; strengthen defences according to existing best practices and latest technology tools; and drive a security-aware culture among employees and clients. During the transformation, Santander opened a Global Cybersecurity Centre in Madrid which proactively identifies, monitors and responds to cyber threats 24/7 to protect all Group entities, systems and customers.

At the same time, as cyber threats and attack techniques become more sophisticated, we must continuously evolve our cyber defences. In 2021, we established these key strategic cyber security pillars and initiatives to help us develop our cyber defences against emerging threats and technologies:

- Level the playing field: The current threat landscape is increasingly challenging and new weaknesses, techniques and procedures are reported on a daily basis. Deterrence, deception and automation techniques are crucial to make attacks more difficult;
- Defend the (hyper-connected) "Bank of the Future": Banks'platforms, cloud and supply chains are increasingly hyper-connected and interdependent. Cybersecurity teams have been working on implementing new defence paradigms such as "Zero Trust" and other innovative solutions; and
- Generate value and trust: Helping customers stay safe online is key to continue building trust and helping everyone prosper in the digital world. Santander promoted public-private partnerships and collaborations to tackle cybercrime to protect customers and society as a whole. For Santander this has translated into several initiatives in 2021, detailed in section 'Acting responsibly towards customers' of the Responsible banking chapter.

Internal and external audits of information systems occur periodically. The Group identifies IT assets, systems and information (including those in third parties), and regularly reviews the relevant risks and levels of protection to proactively discover and remedy any weakness through frequent security testing such as vulnerability scanning, penetration testing and red team exercises that simulate real cyber-attack scenarios.

Santander also actively participates in various coordinated cyber-exercises in collaboration with public and private organizations. In 2021, Santander placed first and third against 29 teams in the "Capture the Flag" exercise the SANS Institute in Spain had organized. We also placed seventh out of 200 teams from 48 countries in the World Economic Forum's Cyberpolygon exercise.

In addition to regular testing and reviews, independent certification authorities such as the International Organization for Standardization (ISO) 27001 and the Statement on Standards for Attestation Engagements (SSAE) 18 certify our critical cyber security services.

For more details on the different on how we measure, monitor and control cybersecurity risks and their respective mitigation plans, see section 6.2 'Operational risk management' of the Risk management and compliance chapter.

Digitalization and fintech ecosystem

To make headway in our digital transformation, in addition to the technological strategy, infrastructure development and cybersecurity initiatives, we created PagoNxt in 2020. This new brand enables us to accelerate business for merchants and enhance their ecosystem connecting customers and business partners, through our cloud-native, data-driven global payments platform, coupled with Santander's large-scale distribution and proven capabilities to provide access to the open market. Further details are given in section 4 'Financial information by segment' in this chapter.

Moreover, Santander combined Santander Consumer Finance's scale and leading position in Europe with Openbank's platform. Openbank's technology (digital banking API, with a Banking as a Service model) and data management capabilities drive growth by offering new services and operational improvements.

For more details about our digital and innovative products and services for individuals and corporates, as well as references to cybersecurity policies, see section 2 'Inclusive and sustainable growth' in the Responsible banking chapter.

6. Significant events since year end

No significant events occurred from 1 January 2022 to the date on which these consolidated financial statements were authorized for issue, other than those described in these consolidated annual accounts.

7. Trend information 2022

This director's report contains certain prospective information on the directors' plans, forecasts and estimates, based on what they consider to be reasonable assumptions.

Readers of this report should take into account that such prospective information must not be considered a guarantee of our future performance. As the plans, forecasts and estimates are subject to numerous risks and uncertainties, our future performance may not match initial expectations. These risks and uncertainties are described in the Risk management chapter of this report and in note 53 of the consolidated financial statements.

The economic outlook for 2022 is subject to considerable uncertainty owing to the spread of new covid-19 variants in Europe and the US in the final stretch of 2021, the risk they will spread to other regions and doubts about the transience of the 2021 inflation upturn.

The impact of the omicron variant and any future variants or outbreaks on activity is difficult to gauge and will largely depend on the resulting pressure on hospital capacity, which is not easy to foresee given the varying contagiousness and virulence of each covid-19 variant. Higher inflation will have an adverse effect on consumption and on financial conditions.

Our baseline scenario assumes that the measures to contain the virus will have a moderate effect on business activity, inflation gradually subsides but remains above the target for the year, and, with some exceptions, the withdrawal of monetary stimulus will be very gradual. Among the bank's most relevant economies, growth in Europe and the US is expected to stay strong growth, but it may be more imbalanced in Latin America.

The macroeconomic forecast for 2022 by country/region is as follows:

Eurozone

Although growth recorded in 2021 may be slightly more hesitant at the start of 2022, it is expected to continue into the year, underpinned by continued expansionary financial conditions, loose fiscal policy, a greater weight of Next Generation EU funds, a downturn in the pandemic and a gradual decline in inflation.

In several countries, upcoming elections and the reforms and credibility of countries' fiscal consolidation plans will be important in a year in which the restoration of the Stability and Growth Pact may be announced and monetary and prudential measures against the pandemic will be gradually withdrawn.

Spain

In Europe, the deployment of EU funds (particularly crucial for Spain), the potential improvement in international tourism, the expected further recovery in household consumption and the anticipated reactivation of home construction indicate remarkable growth that could push GDP close to pre-pandemic levels.

The success of ongoing structural reforms (partly related to EU funds) will be fundamental in the short- and medium-term.

United Kingdom

A favourable outlook points to another year of strong recovery. The main unknown is the UK's ability to adapt to Brexit and the implications it will have for supply (mainly in the labour market which has shown some tension due to labour shortages in some segments).

Overall, financial conditions are expected to remain expansionary and inflation is projected to fall, which will boost confidence and activity as long as the spread of covid-19 reduces.

Portugal

The economy is forecast to grow above pre-pandemic levels as early as 2022, thanks to consumption growth (backed by accumulated savings), Next Generation EU funds and the hope of an upturn in tourism. The labour market is already at pre-pandemic employment levels, but is suffering from worker shortages, as the job vacancy rate suggests that unemployment will fall even further, to around 6%. The commitment to putting public accounts in order will remain a priority.

Poland

GDP growth was surprisingly positive in 2021 and it seems as though the economy is starting 2022 strongly. That could keep annual GDP growth close to 5%. Positive outlooks for the highly competitive and diversified manufacturing and export sector (which will benefit from ongoing positive growth abroad). While high inflation has not affected corporate profit margins, it did lead to a 165 bp rise in interest rates in Q4'21 to 1.75%, a trend that is expected to continue.

United States

The US economy is forecasted to grow around 4% in 2022 supported by pick ups in activity, wealth-backed private consumption and inventory rebuilding. However, the withdrawal of fiscal and monetary stimulus and effects of potential further covid-19 waves will have a negative impact. Inflation will start the year suffering from supply-side strains; however it is expected to moderate but at high rates. The Federal Reserve (Fed) is expected to end tapering in March and begin to raise interest rates.

Mexico

Mexico's outlook is positive in light of the dynamism in the US, the credibility of monetary and fiscal policies and expected easing of the recent bottlenecks. The Fed's interest rate hike is not expected to have a major influence on the central bank's plans to continue raising rates given that it has already raised them significantly.

Brazil

Inflation, the sharp tightening of financial conditions and the uncertainty generated by the presidential elections are expected to have a strong impact on business in 2022. Once political uncertainty subsides, economic recovery may be stronger.

Chile

Following the strong economic expansion in 2021, growth is expected to be subdued in 2022, due to the withdrawal of fiscal stimulus and the tighter monetary policy, amid lower inflation than in the previous year but still higher than the central bank's target.

Argentina

Argentina's economy is expected to grow moderately in 2022, in light of its economic stabilization programme with the International Monetary Fund (agreed in the first quarter of 2022), to refinance its debt maturities with the organization.

→ Financial markets

Inflationary pressures, less fiscal and, especially, monetary support, and geopolitical risk, mean more vulnerable financial markets in 2022.

Our expectation of inflation moderating gradually throughout the year and slower but above potential economic growth after a strong post-covid-19 recovery will help equities adjust to the transition to monetary policy normalization. However, in light of the gap between real interest rates and inflation expectations at maximum levels and given the current high stock prices, moments of instability could befall the stock markets during this adjustment.

We expect the Fed to end its net purchase programme in March 2022, potentially opening the door to rate hikes. The more laggard ECB will exhaust its pandemic programme before considering raising the deposit rate. The landscape suggests bond yields may rebound (albeit moderately in any case), although the ECB's gradual withdrawal could put pressure on peripheral spreads. The US dollar will likely remain strong against the euro in the short term, but a gradual appreciation of the euro is possible in the medium term as the US-Europe growth differential narrows and the US is encumbered by fiscal and trade deficits.

The risks that emerged in Latin America in the second half of 2021 fuel uncertainty regarding 2022. At the domestic level, there are two main obstacles: increased concerns that public finances in the Latin American countries that increased debt the most to cope with the pandemic will become unsustainable amid rising interest rates; and on the political front, Brazil's presidential elections may spur market volatility.

The banking environment will be conditioned by inflation and central banks' response, both in mature and emerging countries. In general, a gradual normalization of monetary policy would not negative for business; but central banks must get the pace and communication of their measures right.

The tightening of monetary policy may be followed by the withdrawal of liquidity support measures, but gradually, allowing banks to adjust to the new conditions. Lastly, the private sector remains vulnerable to an economic downturn, especially in those sectors most affected by social distancing and mobility measures. Even so, at the moment most institutions have a solvency position sound enough to cope, as demonstrated by several stress tests conducted on the main banking systems.

In addition to the economic environment, banks must deal with faster business digitalization while understanding and managing climate change risks.

→Financial regulation

In 2022, we expect sustainability and digitalization will remain at the top of the regulatory agenda, alongside prudential and financial matters.

Prudential. Talks about implementing the Basel III reforms in Europe will take centre stage. The most important matters include the treatment of operational risk, the output floor (a measure that sets a lower limit on risk-weighted assets that banks calculate when using their internal models) and EU-specific scenarios relating to SME and infrastructure support. The new rules will take effect on 1 January 2025, regardless of their approval date.

The authorities will continue to assess the impact of the crisis and the interaction of regulatory framework in matters such as current capital buffers (which banks have not used despite supervisors' recommendations). The European Commission is expected to review the macroprudential framework before the year is out. The Basel Committee will continue to issue proposals on the prudential treatment of financial entities' cryptoasset exposures.

Finance: In 2022, the EU will commence a third revision of the Bank Recovery and Resolution Directive (BRRD) aiming to improve the application of the framework, eliminate incentives to bail out failing banks with public money and ensure the framework is suitable for small and medium-sized banks.

A first revision of the Deposit Guarantee Schemes Directive (DGSD) is planned. Negotiations on the creation of a common European deposit guarantee fund (European Deposit Insurance Scheme – EDIS) will also continue.

Sustainability: To enhance the green taxonomy, the European Commission will work on drafting the four remaining environmental objectives and determining one taxonomy for activities that harm the environment and another for activities with social aims. Further work will be done on setting European and international sustainable reporting standards and on finalizing details of the ESG information to be included in the Pillar 3 report from 2023.

The legislative proposal on sustainable corporate governance to help companies introduce ESG objectives into their strategies will be published. Progress will be made in with sustainability labels and standards linked to the Taxonomy, such as the European Green Bond Standard (EGBS). The Basel Committee will continue the work it started in 2021 on recommendations for the management and supervision of sustainability-related risks.

Digitalization: The Digital Markets Act (DMA) could possibly be passed in Q1. It would prove a turning point in the EU's digital strategy by setting criteria for considering a large online platform a "gatekeeper" as well as obligations that ensure a fairer environment where all businesses could market their services.

The authorities acknowledge that data will be at the centre of the digital transformation. Further talks are expected on a regulatory framework for data sharing (Data Act). Debates will intensify on so-called "open finance", which considers the possibility that banks (and also insurers and asset managers) may have to share more data than the Payment Services Directive (PSD2) requires.

While talks on reforming PSD2 will begin, the European Commission could issue a proposal on instant cross-border payments.

Technological innovation: In 2022, talks about the Commission's 2019 regulatory proposals to strengthen the Digital Operational Resilience Act (DORA) and regulate markets in cryptoassets (MiCA) will continue. Those could be passed during the year. Legislative procedures will continue to pass those submitted in 2021 to regulate the use of artificial intelligence and create a European digital identity (eIDAs2) which could be used to access financial services, for example.

The ECB will continue its analysis of the digital euro. In 2021, it began a two-year study into the feasibility of issuing a digital euro. Almost all of the world's central banks are examining digital currencies.

Retail banking: Several initiatives underway are seeking to boost consumer protection and adapt laws to the digital landscape. Legislators are expected to approve proposed reforms of the Consumer Credit Directive and the Mortgage Credit Directive.

The key obligations that will apply from 2022 fall under the Taxonomy Regulation on environmentally sustainable activities), including banks' disclosure of the proportion of eligible assets held on their balance sheets.

These are the main management priorities for 2022 in our core regions and segments:

Europe

Our priority in Europe is to integrate all businesses within a common operating model to boost cost efficiency and improve service quality. Our main action lines in 2022 are:

→ Continuing to grow our digital capabilities in the region, accelerating customer-to-digital conversion for better service and higher customer satisfaction, while reducing the cost base.

→ Delivering on our EUR 1 billion cost savings commitment.

→ Leveraging our global businesses, SCIB and WM&I, and the connection with PagoNxt to allocate capital to the most profitable segments faster and more efficiently and thereby improve the overall profitability.

→ Excelling in risk management and maintaining and reinforcing our balance sheet strength.

The cornerstone of our strategy in Spain is customer service. We aim to:

- grow the customer base through excellent service quality and seamless interaction with both customers and non-customers through digital channels;
- increase customer loyalty with better customer experience when acquiring products through simple, digital processes;
- achieve operational excellence and improve NPS;
- develop low capital-intensive revenue streams (i.e. funds and insurance); and
- continue to revise the cost structure in light of the new, more efficient model.

Santander UK's priorities remain largely unchanged. In 2022, specific focus will be on managing revenue and simplifying the business as well as:

- increasing customer loyalty by improving customer experience when interacting with the bank;
- reducing the cost of deposits and maximizing the margin of the mortgage portfolio;
- furthering the digital transformation, optimizing the branch network and simplifying processes;
- engaging, motivating and developing a talented and diverse team; and
- being a responsible and sustainable business.

Due to our market leadership in Portugal, we can focus on:

- consolidating the commercial and digital interaction model;
- strengthening our lending leadership and focusing on organic growth from transactions with the highest return on capital;
- increasing customer loyalty with a diversified Daily Banking proposition and by attracting off-balance sheet funds;
- maintaining our position as market leaders in efficiency, with a better cost base; and
- maintaining an appropriate risk policy, with high credit quality and a strong capital position.

Our strategy is based on the following pillars:

- customers: continuing to improve customer satisfaction, to remain top 3 or better;
- digitalization: increasing sales, loyalty and our customer base atop the foundations we've laid for digital interaction with customers;
- simplification: leveraging One Europe to evolve our business into a more agile, dynamic and profitable bank; and
- responsible banking: continuing to support our customers' transition to a sustainable economy.

North America

In North America, we will strive to generate synergies by leveraging the Group's global presence and strength, capitalizing on our advantages over competitors and running cross-cutting One Santander initiatives. We aim to:

→ Generate new business opportunities on the back of cross-border, US-Mexico collaboration, as well as operational efficiencies, including technology.

→ Continue to execute our regional collaboration strategy, sharing best practices and know-how between countries, increasing our common value proposition and profitability, leveraging our global strength as part of the Group.

→ Take advantage of new and improved value propositions and improved interactions to drive customer loyalty, NPS and CX.

→ Simplify the regional business model to reduce duplications (platforms and architecture) and optimize expenses.

→ Continue consolidating regional IT under a single leadership, in pursuit of faster time to market and greater efficiencies.

→ Continue developing value-added products that meet customers' needs.

→ Capitalize on recent acquisitions to expand market capabilities while also driving organic growth.

Our goal is to maintain above cost of capital returns across our core businesses. To do so, we will:

- continue to refocus our business on our consumer finance franchise;
- develop a global hub in CIB for capital markets and investment banking; while capitalizing on the APS acquisition to broaden our product offering and fee income;
- remain among the top 10 CRE and multifamily lenders in commercial banking; and
- complete the integration of the acquisition in Wealth Management and leverage the Group's connectivity to gain market share, backed by our leading brand in Latin America.

Our strategic agenda aimed at becoming the best bank for our customers is based on:

- leveraging digital solutions and process enhancement to improve customer experience;
- developing appropriate, innovative and profitable solutions for the country's mass market, such as the Like-U credit card and the Samsung Members debit account to significantly expand our customer base;
- remaining a market leader with value-added products for corporates and leverage existing relationships to attract individuals;
- executing our multi-year plan to improve our operating model and IT security and further drive our technological and digital transformation; and
- focusing on profitability, by proactively allocating capital in businesses with higher potential and profitability.

South America

The Group's priorities in South America are to:

→ Accelerate profitable growth, with a strategy that seeks to boost connectivity across South America through regional projects, seizing on business opportunities and anticipating trends.

→ Maintain high profitability and best-in-class efficiency, while expanding our customer base and increasing customer loyalty to remain a leader in the region and our markets.

→ Improve our customers' banking experience by making further progress with our digital transformation through the development of digital platforms and a more efficient model.

→ Administer strict risk controls, with credit growth mainly in secured products.

Santander Brasil's management priorities for 2022 are to:

- build a more integrated, market-leading distribution platform and strengthen connections between businesses in order to allow us to seize on opportunities faster;
- grow our customer base and make it more profitable while increasing customer loyalty;
- maintain controlled credit quality levels, by continuously enhancing our risk models, with a focus on anticipating trends;
- strengthen our high productivity culture, optimize our channels and review our processes to improve operational efficiency; and
- innovate in order to adapt to different scenarios and maintain profitability.

Santander Chile's strategy will focus on:

- continuing to improve our service quality to maintain our leadership position in NPS;
- expanding Getnet to become a platform for our customers (particularly corporates);
- continuing to strengthen our position in the mass segment, through Life and Superdigital; and
- increasing green finance, our use of renewable energy and financially empowering our customers to fulfil our ESG strategy.

In Argentina, our strategy will focus on:

- expanding our customer base, increasing loyalty and ensuring the best customer service though our multi-channel strategy;
- developing new businesses and commercial alliances further;
- continuing our efficiency and simplification process through digital transformation;
- boosting profitable growth, optimizing capital consumption and maintaining the quality of our portfolio; and
- accelerating cultural transformation through a more collaborative and agile environment.

In Uruguay, our priorities for 2022 are to:

- further consolidate the business, leverage Getnet's roll-out and strengthen our SME offering;
- enhance and expedite our technological and digital development model; and
- make progress with new ways of working and distribution models, by integrating talent and brand management among the Group's companies.

Our strategy in the Andean region will focus on:

In Peru, we aim to continue driving greater synergies and expanding our microfinance business to expand our global, corporate and retail customer base.

In Colombia, we will focus on increasing profitability in each of the business areas and generating synergies between them: capitalizing on the new financial entity in Consumer, developing Prospera and broadening our *Multilatinas* proposition in Corporates, while enhancing digitalization by adopting automation tools.

Digital Consumer Bank

Our priorities for 2022 are to:

- Secure leadership in global digital consumer lending (on the shoulders of Santander Consumer Finance's existing footprint and the business and technology stack of Openbank's digital platform) by focusing on growth and transformation to:
  - leverage the successful global insurance model while optimizing capital consumption and expanding into new markets to strengthen Auto positioning;
  - gain market share in consumer lending and develop buy now, pay later (BNPL) 2.0 to strengthen our current top 3 position in Europe; and
  - simplify for efficiency, increase competitiveness and gain scale benefits with the finalization of the new legal and operational structure with three hubs.
- Launch a large global transformation project, re-platforming the auto, consumer and retail banking businesses completely to seize on the fast-growing transition to online to support digital customer base expansion and maintain high profitability and one of the best efficiency ratios in the sector.
- Increase profits on the back of the strategic operations initiated in 2021 (e.g. Stellantis Agreement in Auto, and BNPL business in Non-Auto).

SECONDARY SEGMENTS

SCIB

In 2022, we will focus on:

- partnering with our clients as strategic advisors and strengthening our value-added services, with an increased focus on ESG and digital solutions to transform our business;
- leveraging the pan-European platform to strengthen our advisory capabilities, better serve the needs of our global customers and improving our position in Europe;
- bolstering our leadership and going from being multinational to pan-regional to become the leading CIB player in most countries and products in South America; and
- raising the level of our CIB franchise to compete on a level playing field in the US and integrating Amherst Pierpont Securities (once the acquisition is completed), a step towards meeting our growth expectations.

PagoNxt

PagoNxt strategy for 2022 is to:

- enhance our Getnet franchise and continue to develop and grow Santander's acquiring business, leverage our agreements with One Santander in Europe, North and South America and SCIB, bring innovations from one region to another and expand our products and value-added services as a multi-regional provider with a growing global presence, and tailor our solutions to local merchants' needs. The commercial expansion will leverage both the distribution through Santander channels and through third parties and alliances in the open market;
- expand our global platforms; continue delivering on Getnet's plan to migrate payment volumes from local operations, as we further expand our gateways convergence and technical interoperability; roll out One Trade platform services to Santander banks under a SaaS model, according to our plans to migrate payment volumes from the Group to the global platform and to integrate financing solutions, as well as our plan to implement Payments Hub's instant functionality in Spain, the UK and SCIB; and gradually migrate Superdigital's volumes from our local operations to the global platform.
- accelerate our commercial activity in the open market through direct marketing and partnerships; continue to expand Getnet's channels in the open market, focusing on Brazil, Mexico and the EU; deliver One Trade's and Payments Hub's direct digital marketing of e-money services in the Eurozone and the UK; use our APIs to access GBP and EUR payment schemes (subject to regulatory approvals); and accelerate Superdigital's plan to launch of its global payment services platform in Latin American markets to reach seven countries by year end and gradually introduce new services such as credit.
- continue fulfilling our strong commitment to ESG, focused on driving financial inclusion by empowering micro-entrepreneurs and underbanked communities to overcome barriers and access our services, supporting the development of vulnerable customers.

WM&I

In 2022, the key management aims will be:

In Private Banking:

- continuing to leverage our scale so clients benefit globally and fostering cooperation across countries (+43% in 2021) and segments;
- continuing to expand our product range in line with market trends, with a focus on discretionary management, secured lending, alternative products, investment banking and ESG; and
- continuing to focus on strengthening our technological capabilities, with an ambitious strategy to maximize operational efficiency and provide the best digital experience to our customers.

In Santander Asset Management:

- following a systematic and quantitative management approach to support our unchanged ambition to improve performance and market share via our distribution networks, and to continue to create a global value proposition of such highly successful products as Santander Future Wealth, Santander GO and the Santander ON range of solutions geared towards our clients' needs;
- continuing to develop the alternative business with the aim of expanding our institutional client base and addressing our Private Banking clients' specific needs;
- strengthening our ESG fund offering, making responsible and profitable investment solutions available to our clients in line with our strong commitment to sustainability; and
- implementing digital robo-advisor investment platforms in certain markets where we operate.

In Insurance:

- continuing to develop our value proposition consistent with the new needs of individual and corporate customers;
- ensuring the best customer experience in taking-out, renewing and using insurance;
- focusing on use of data to customize and simplify our insurance value proposition; and
- providing an end-to-end digital insurance proposition for all interested customers, with support from the other channels.

8. Alternative performance measures (APMs)

In addition to the financial information prepared under IFRS, this consolidated directors' report contains financial measures that constitute alternative performance measures (APMs) to comply with the guidelines on alternative performance measures issued by the European Securities and Markets Authority on 5 October 2015 and non-IFRS measures.

The financial measures contained in this consolidated directors' report that qualify as APMs and non-IFRS measures have been calculated using our financial information but are not defined or detailed in the applicable financial information framework or under IFRS and have neither been audited nor reviewed by our auditors.

We use these APMs and non-IFRS measures when planning, monitoring and evaluating our performance. We consider these APMs and non-IFRS financial measures to be useful metrics for management and investors to facilitate operating performance comparisons from period to period. While we believe that these APMs and non-IFRS financial measures are useful in evaluating our business, this information should be considered as supplemental in nature and is not meant as a substitute of IFRS measures. In addition, the way in which Santander defines and calculates these APMs and non-IFRS measures may differ from the calculations used by other companies with similar measures and, therefore, may not be comparable.

The APMs and non-IFRS measures we use in this document can be categorized as follows:

Underlying results

In addition to IFRS results measures, we present some results measures which are non-IFRS measures and which we refer to as underlying measures. These underlying measures allow, in our view, a better year-on-year comparability as they exclude items outside the ordinary course performance of business which are grouped in the non-IFRS line net capital gains and provisions and are further detailed at the end of section 3.2 'Results' of this chapter.

In addition, the results by business areas in section 4 'Financial information by segment' are presented only on an underlying basis in accordance with IFRS 8. The use of this information by the Group's Governance bodies and reconciled on an aggregate basis to our IFRS consolidated results can be found in note 51.c to our consolidated financial statements.

Profitability and efficiency ratios

The purpose of the profitability and efficiency ratios is to measure the ratio of profit to capital, to tangible capital, to assets and to risk weighted assets, while the efficiency ratio measures how much general administrative expenses (personnel and other) and amortization costs are needed to generate revenue.

The goodwill adjustments have been removed from the RoTE numerator as, since they are not considered in the denominator, we believe this calculation is more correct.

Ratio	Formula	Relevance of the metric
RoE (Return on Equity)	Profit attributable to the parent / Average stockholders' equity [A] (excl. minority interests)	This ratio measures the return that shareholders obtain on the funds invested in the bank and as such measures the bank's ability to pay shareholders.
Underlying RoE	Underlying profit attributable to the parent / Average stockholders' equity [A] (excl. minority interests)	This ratio measures the return that shareholders obtain on the funds invested in the bank excluding results from operations outside the ordinary course of business.
RoTE (Return on Tangible Equity)	Profit attributable to the parent [B] / Average stockholders' equity [A] (excl. minority interests)	This is a very common indicator, used to evaluate the profitability of the company as a percentage of a its tangible equity. It's measured as the return that shareholders receive as a percentage of the funds invested in the bank less intangible assets.
Underlying RoTE	Underlying profit attributable to the parent / Average stockholders' equity [A] (excl. minority interests) - intangible assets	This indicator measures the profitability of the tangible equity of a company arising from ordinary activities, i.e. excluding results from operations outside the ordinary course of business.
RoA (Return on Assets)	Consolidated profit / Average total assets	This metric measures the profitability of a company as a percentage of its total assets. It is an indicator that reflects the efficiency of the bank's total assets in generating profit over a given period.
Underlying RoA	Underlying consolidated profit / Average total assets	This metric measures the profitability of a company as a percentage of its total assets excluding results from operations outside the ordinary course of business. It is an indicator that reflects the efficiency of the bank's total assets in generating profit over a given period.
RoRWA (Return on Risk-Weighted Assets)	Consolidated profit / Average risk-weighted assets	The return adjusted for risk is a derivative of the RoA metric. The difference is that RoRWA measures profit in relation to the Group's risk-weighted assets.
Underlying RoRWA	Underlying consolidated profit / Average risk weighted assets	This relates the underlying consolidated profit (excluding results from operations outside the ordinary course of business) to the Group's risk weighted assets.
RoRAC (Return on Risk-Adjusted Capital)	Underlying consolidated profit / Average economic capital	This is the return on economic capital required internally (necessary to support all risks inherent in our activity).
Economic Value Added	Underlying consolidated profit – (average economic capital x cost of capital)	Economic value added is the profit generated in excess of the cost of economic capital employed. This measures risk adjusted returns in absolute terms, complementing the RoRAC approach.
Efficiency (Cost-to-income)	Operating expenses [C] / Total income	One of the most commonly used indicators when comparing productivity of different financial entities. It measures the amount of resources used to generate the bank's operating income.

A. Stockholders' equity = Capital and Reserves + Accumulated other comprehensive income + Profit attributable to the parent + Dividends.
B. Excluding the adjustment to the valuation of goodwill.
C. Operating expenses = Administrative expenses + amortizations.

Profitability and efficiency [A B] (EUR million and %)	2021	2020	2019
RoE	**9.66%**	**-9.80%**	**6.62%**
Profit attributable to the parent	8,124	-8,771	6,515
Average stockholders' equity (excluding minority interests)	84,133	89,459	98,457
Underlying RoE	**10.29%**	**5.68%**	**8.38%**
Profit attributable profit to the parent	8,124	-8,771	6,515
(-) Net capital gains and provisions	-530	-13,852	-1,737
Underlying profit attributable to the parent	8,654	5,081	8,252
Average stockholders' equity (excluding minority interests)	84,133	89,459	98,457
RoTE	**11.96%**	**1.95%**	**11.44%**
Profit attributable to the parent	8,124	-8,771	6,515
(-) Goodwill impairment	-6	-10,100	-1,491
Profit attributable to the parent (excluding goodwill impairment)	8,130	1,329	8,006
Average stockholders' equity (excluding minority interests)	84,133	89,459	98,457
(-) Average intangible assets	16,169	21,153	28,484
Average stockholders' equity (excl. minority interests) - intangible assets	67,964	68,306	69,973
Underlying RoTE	**12.73%**	**7.44%**	**11.79%**
Profit attributable to the parent	8,124	-8,771	6,515
(-) Net capital gains and provisions	-530	-13,852	-1,737
Underlying profit attributable to the parent	8,654	5,081	8,252
Average stockholders' equity (excl. minority interests) - intangible assets	67,964	68,306	69,973
RoA	**0.62%**	**-0.50%**	**0.54%**
Consolidated profit	9,653	-7,708	8,116
Average total assets	1,563,899	1,537,552	1,508,167
Underlying RoA	**0.65%**	**0.40%**	**0.65%**
Consolidated profit	9,653	-7,708	8,116
(-) Net capital gains and provisions	-530	-13,866	-1,710
Underlying consolidated profit	10,183	6,158	9,826
Average total assets	1,563,899	1,537,552	1,508,167
RoRWA	**1.69%**	**-1.33%**	**1.33%**
Consolidated profit	9,653	-7,708	8,116
Average risk-weighted assets	572,136	578,517	609,170
Underlying RoRWA	**1.78%**	**1.06%**	**1.61%**
Consolidated profit	9,653	-7,708	8,116
(-) Net capital gains and provisions	-530	-13,866	-1,710
Underlying consolidated profit	10,183	6,158	9,826
Average risk-weighted assets	572,136	578,517	609,170
RoRAC	**14.97%**	**8.51%**	**12.91%**
Consolidated profit	9,653	-7,708	8,116
(-) Net capital gains and provisions	-530	-13,866	-1,710
Underlying consolidated profit	10,183	6,158	9,826
Average economic capital	68,042	72,389	76,105
Economic value added	**3,327**	**-2,529**	**3,509**
Underlying consolidated profit	10,183	6,158	9,826
(-) Average economic capital x cost of capital	-6,856	-8,687	-6,317
Average economic capital	68,042	72,389	76,105
Cost of capital	10.08 %	12.00 %	8.30 %
Efficiency ratio	**46.15%**	**47.01%**	**47.04%**
Underlying operating expenses	21,415	20,967	23,280
Operating expenses	21,415	21,130	23,280
Net capital gains and provisions impact in operating expenses [C]	—	-163	—
Underlying total income	46,404	44,600	49,494
Total income	46,404	44,279	49,229
Net capital gains and provisions impact in total income [C]	—	321	265

A. Averages included in the RoE, RoTE, RoA and RoRWA denominators are calculated using 13 months (from December to December).
B. The risk-weighted assets included in the denominator of the RoRWA metric are calculated in line with the criteria laid out in the CRR (Capital Requirements Regulation).
C. Following the adjustments in note 51.c to the consolidated financial statements.

Efficiency ratio by business areas (EUR million and %)

	2021			2020		
	%	Total income	Operating expenses	%	Total income	Operating expenses
Europe	**51.0**	**16,312**	**8,318**	**56.4**	**14,673**	**8,275**
Spain	47.7	7,006	3,340	53.2	6,782	3,607
United Kingdom	53.3	4,863	2,592	63.8	3,980	2,539
Portugal	42.0	1,341	563	45.5	1,296	590
Poland	40.2	1,646	663	41.3	1,524	629
North America	**45.2**	**10,986**	**4,967**	**42.4**	**11,034**	**4,677**
US	43.3	7,383	3,197	41.8	7,360	3,079
Mexico	45.9	3,579	1,643	42.5	3,651	1,552
South America	**35.0**	**15,353**	**5,380**	**36.0**	**14,868**	**5,357**
Brazil	29.7	10,884	3,236	32.6	10,866	3,541
Chile	38.4	2,457	942	39.8	2,263	900
Argentina	57.8	1,393	805	56.0	1,128	632
Digital Consumer Bank	**45.0**	**5,339**	**2,405**	**45.1**	**5,166**	**2,329**

Underlying RoTE by business area (EUR million and %)

	2021			2020		
	%	Underlying profit attributable to the parent	Average stockholders' equity (excl. minority interests) - intangible assets	%	Underlying profit attributable to the parent	Average stockholders' equity (excl. minority interests) - intangible assets
Europe	**7.36**	**2,978**	**40,478**	**3.61**	**1,413**	**39,178**
Spain	6.33	957	15,108	3.30	517	15,674
United Kingdom	11.71	1,570	13,411	3.02	391	12,966
Portugal	11.85	482	4,065	8.73	338	3,875
Poland	5.00	161	3,211	5.05	162	3,204
North America	**13.10**	**3,053**	**23,300**	**6.95**	**1,472**	**21,182**
US	13.62	2,326	17,086	4.66	731	15,690
Mexico	13.91	835	6,001	14.38	762	5,298
South America	**20.28**	**3,328**	**16,411**	**17.72**	**2,907**	**16,409**
Brazil	21.49	2,325	10,821	19.16	2,113	11,028
Chile	19.28	637	3,304	13.19	432	3,278
Argentina	27.44	274	997	26.24	179	681
Digital Consumer Bank	**14.05**	**1,332**	**9,479**	**11.77**	**1,133**	**9,620**

Credit risk indicators

The credit risk indicators measure the quality of the credit portfolio and the percentage of non-performing loans covered by provisions.

Ratio	Formula	Relevance of the metric
NPL ratio (Non-performing loans ratio)	Credit impaired loans and advances to customers, customer guarantees and customer commitments granted / Total Risk [A]	The NPL ratio is an important variable regarding financial institutions' activity since it gives an indication of the level of risk the entities are exposed to. It calculates risks that are, in accounting terms, declared to be credit impaired as a percentage of the total outstanding amount of customer credit and contingent liabilities.
Total coverage ratio	Total allowances to cover impairment losses on loans and advances to customers, customer guarantees and customer commitments granted / Credit impaired loans and advances to customers, customer guarantees and customer commitments granted	The total coverage ratio is a fundamental metric in the financial sector. It reflects the level of provisions as a percentage of the credit impaired assets. Therefore it is a good indicator of the entity's solvency against client defaults both present and future.
Cost of Credit	Allowances for loan-loss provisions over the last 12 months / Average loans and advances to customers over the last 12 months	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 credit quality.

A. Total risk = Total loans and advances and guarantees to customers (including credit impaired assets) + contingent liabilities that are credit impaired.

Credit risk (I) (EUR million and %)	2021	2020	2019
NPL ratio	**3.16%**	**3.21%**	**3.32%**
Credit impaired loans and advances to customers, customer guarantees and customer commitments granted	33,234	31,767	33,799
Gross loans and advances to customers registered under the headings "financial assets measured at amortized cost" and "financial assets designated at fair value through profit or loss" classified in stage 3 (OCI), excluding POCI (Purchased or Originated Credit Impaired) that is currently impaired	31,288	30,318	31,826
POCI exposure (Purchased or Originated Credit Impaired) that is currently impaired	358	497	706
Customer guarantees and customer commitments granted classified in stage 3	1,578	941	1,250
Doubtful exposure of loans and advances to customers at fair value through profit or loss	10	11	17
Total risk	1,051,115	989,456	1,016,507
Impaired and non-impaired gross loans and advances to customers	995,646	939,795	964,450
Impaired and non-impaired customer guarantees and customer commitments granted	55,469	49,662	52,057

Credit risk (II) (EUR million and %)	2021	2020	2019
Total coverage ratio	**71%**	**76%**	**68%**
Total allowances to cover impairment losses on loans and advances to customers, customer guarantees and customer commitments granted	23,698	24,272	22,965
Total allowances to cover impairment losses on loans and advances to customers measured at amortised cost and designated at fair value through OCI	22,964	23,577	22,229
Total allowances to cover impairment losses on customer guarantees and customer commitments granted	734	695	736
Credit impaired loans and advances to customers, customer guarantees and customer commitments granted	33,234	31,767	33,799
Gross loans and advances to customers registered under the headings "financial assets measured at amortized cost" and "financial assets designated at fair value through profit or loss" classified in stage 3 (OCI), excluding POCI (Purchased or Originated Credit Impaired) that is currently impaired	31,288	30,318	31,826
POCI exposure (Purchased or Originated Credit Impaired) that is currently impaired	358	497	706
Customer guarantees and customer commitments granted classified in stage 3	1,578	941	1,250
Doubtful exposure of loans and advances to customers at fair value through profit or loss	10	11	17
Cost of credit	**0.77%**	**1.28%**	**1.00%**
Underlying allowances for loan-loss provisions over the last 12 months	7,436	12,173	9,321
Allowances for loan-loss provisions over the last 12 months	7,436	12,431	9,321
Net capital gains and provisions impact in allowances for loan-loss provisions	—	-258	—
Average loans and advances to customers over the last 12 months	968,931	952,358	935,488

NPL ratio by business areas (EUR million and %)

	2021			2020		
	%	Credit impaired loans and advances to customers, customer guarantees and customer commitments granted	Total risk	%	Credit impaired loans and advances to customers, customer guarantees and customer commitments granted	Total risk
Europe	**3.12**	**19,822**	**636,123**	**3.34**	**20,272**	**606,997**
Spain	5.77	12,758	221,100	6.23	13,796	221,341
United Kingdom	1.43	3,766	262,869	1.24	3,138	252,255
Portugal	3.44	1,442	41,941	3.89	1,584	40,693
Poland	3.61	1,210	33,497	4.74	1,496	31,578
North America	**2.42**	**3,632**	**149,792**	**2.23**	**2,938**	**131,626**
US	2.33	2,624	112,808	2.04	2,025	99,135
Mexico	2.73	1,009	36,984	2.81	913	32,476
South America	**4.50**	**6,387**	**141,874**	**4.39**	**5,688**	**129,590**
Brazil	4.88	4,182	85,702	4.59	3,429	74,712
Chile	4.43	1,838	41,479	4.79	2,051	42,826
Argentina	3.61	198	5,481	2.11	93	4,418
Digital Consumer Bank	**2.13**	**2,490**	**116,989**	**2.17**	**2,525**	**116,381**

Coverage ratio by business areas (EUR million and %)

	2021			2020		
	%	Total allowances to cover impairment losses on loans and advances to customers, customer guarantees and customer commitments granted	Credit impaired loans and advances to customers, customer guarantees and customer commitments granted	%	Total allowances to cover impairment losses on loans and advances to customers, customer guarantees and customer commitments granted	Credit impaired loans and advances to customers, customer guarantees and customer commitments granted
Europe	**49.4**	**9,800**	**19,822**	**50.3**	**10,199**	**20,272**
Spain	52.2	6,660	12,758	47.1	6,495	13,796
United Kingdom	25.8	971	3,766	44.7	1,403	3,138
Portugal	71.7	1,033	1,442	66.5	1,053	1,584
Poland	73.9	895	1,210	70.7	1,058	1,496
North America	**134.9**	**4,901**	**3,632**	**182.6**	**5,364**	**2,938**
US	150.3	3,943	2,624	210.4	4,261	2,025
Mexico	95.0	958	1,009	120.8	1,103	913
South America	**98.3**	**6,279**	**6,387**	**97.4**	**5,540**	**5,688**
Brazil	111.2	4,651	4,182	113.2	3,880	3,429
Chile	63.3	1,164	1,838	61.4	1,260	2,051
Argentina	153.8	305	198	275.1	257	93
Digital Consumer Bank	**107.8**	**2,684**	**2,490**	**113.3**	**2,862**	**2,525**

Cost of credit (EUR million and %)

	2021			2020		
	%	Underlying allowances for loan-loss provisions over the last 12 months	Average loans and advances to customers over the last 12 months	%	Underlying allowances for loan-loss provisions over the last 12 months	Average loans and advances to customers over the last 12 months
Europe	**0.39**	**2,294**	**591,703**	**0.58**	**3,344**	**579,501**
Spain	0.92	1,833	199,243	1.01	2,001	198,273
United Kingdom	-0.09	-245	258,636	0.27	677	255,038
Portugal	0.09	38	39,805	0.51	193	37,951
Poland	0.67	200	29,777	1.10	330	30,073
North America	**0.93**	**1,210**	**130,635**	**2.92**	**3,917**	**134,187**
US	0.43	419	97,917	2.86	2,937	102,662
Mexico	2.44	791	32,434	3.03	979	32,287
South America	**2.60**	**3,251**	**125,089**	**3.32**	**3,924**	**118,138**
Brazil	3.73	2,715	72,808	4.35	3,018	69,421
Chile	0.85	341	40,344	1.50	594	39,534
Argentina	3.01	140	4,667	5.93	226	3,813
Digital Consumer Bank	**0.46**	**527**	**115,156**	**0.83**	**957**	**114,747**

Other indicators

The market capitalization indicator provides information on the volume of tangible equity per share. The loan-to-deposit ratio (LTD) identifies the relationship between net customer loans and advances and customer deposits, assessing the proportion of loans and advances granted by the Group that are funded by customer deposits.

The Group also uses gross customer loan magnitudes excluding reverse repurchase agreements (repos) and customer deposits excluding repos. In order to analyse the evolution of the traditional commercial banking business of granting loans and capturing deposits, repos and reverse repos are excluded, as they are mainly treasury business products and highly volatile.

Ratio	Formula	Relevance of the metric
TNAV per share (Tangible net asset value per share)	$\frac{\text{Tangible book value}^{A}}{\text{Number of shares excluding treasury stock}}$	This is a very commonly used ratio used to measure the company's accounting value per share having deducted the intangible assets. It is useful in evaluating the amount each shareholder would receive if the company were to enter into liquidation and had to sell all the company's tangible assets.
Price / tangible book value per share (X)	$\frac{\text{Share price}}{\text{TNAV per share}}$	Is one of the most commonly used ratios by market participants for the valuation of listed companies both in absolute terms and relative to other entities. This ratio measures the relationship between the price paid for a company and its accounting equity value.
LtD (Loan-to-deposit)	$\frac{\text{Net loans and advances to customers}}{\text{Customer deposits}}$	This is an indicator of the bank's liquidity. It measures the total (net) loans and advances to customers as a percentage of customer funds.
Loans and advances (excl. reverse repos)	Gross loans and advances to customers excluding reverse repos	In order to aid analysis of the commercial banking activity, reverse repos are excluded as they are highly volatile treasury products.
Deposits (excl. repos)	Customer deposits excluding repos	In order to aid analysis of the commercial banking activity, repos are excluded as they are highly volatile treasury products.
PAT + After tax fees paid to SAN (in Wealth Management & Insurance)	Net profit + Fees paid from Santander Asset Management and Santander Insurance to Santander, net of taxes, excluding Private Banking customers	Metric to assess Wealth Management & Insurance's total contribution to Group's profits

A. Tangible book value = Stockholders' equity - intangible assets.

Others (EUR million and %)	2021	2020	2019
TNAV (tangible book value) per share [B]	**4.12**	**3.79**	**4.18**
Tangible book value	70,346	65,568	72,384
Number of shares excl. treasury stock (million) [B]	17,063	17,312	17,332
Price / tangible book value per share (X)	**0.71**	**0.67**	**0.86**
Share price (euros) [B]	2.941	2.538	3.575
TNAV (tangible book value) per share [B]	4.12	3.79	4.18
Loan-to-deposit ratio	**106%**	**108%**	**114%**
Net loans and advances to customers	972,682	916,199	942,218
Customer deposits	918,344	849,310	824,365
PAT + After tax fees paid to SAN (in WM&I) (Constant EUR million)	**2,313**	**2,061**	
Profit after tax	943	841	
Net fee income net of tax	1,370	1,220	

B. 2019 data adjusted for the capital increase in December 2020.

Impact of exchange rate movements on profit and loss accounts

The Group presents, at both the Group level as well as the business unit level, the real changes in the income statement as well as the changes excluding the exchange rate effect, as it considers the latter facilitates analysis, since it enables businesses movements to be identified without taking into account the impact of converting each local currency into euros.

Said variations, excluding the impact of exchange rate movements, are calculated by converting P&L lines for the different business units comprising the Group into our presentation currency, the euro, applying the average exchange rate for 2021 to all periods contemplated in the analysis. The table below shows the average exchange rates of the main currencies in which the Group operates.

Impact of exchange rate movements on the balance sheet

The Group presents, at both the Group level as well as the business unit level, the real changes in the balance sheet as well as the changes excluding the exchange rate effect for loans and advances to customers excluding reverse repos and customer funds (which comprise deposits and mutual funds) excluding repos. As with the income statement, the reason is to facilitate analysis by isolating the changes in the balance sheet that are not caused by converting each local currency into euros.

These changes excluding the impact of exchange rate movements are calculated by converting loans and advances to customers excluding reverse repos and customer funds excluding repos, into our presentation currency, the euro, applying the closing exchange rate on the last working day of 2021 to all periods contemplated in the analysis. The table below shows the period-end exchange rates of the main currencies in which the Group operates.

Exchange rates: 1 euro/currency parity

	Average		Period-end	
	2021	2020	2021	2020
US dollar	1.182	1.140	1.133	1.227
Pound sterling	0.859	0.889	0.840	0.898
Brazilian real	6.372	5.814	6.319	6.373
Mexican peso	23.980	24.364	23.152	24.438
Chilean peso	897.123	902.072	964.502	871.819
Argentine peso	112.383	79.555	116.302	103.159
Polish zloty	4.564	4.441	4.597	4.559

Impact of inflation on operating expenses

Santander presents, for both the Group and the business units included in the primary segments, the changes in operating expenses, as well as the changes excluding the exchange rate effect, and the changes of the latter excluding the effect of average inflation in 2021. The reason is that the two latter facilitate analysis for management purposes.

Inflation is calculated as the arithmetic average of the last twelve months for each country and, for the regions, as the weighted average of each country comprising the region's inflation rate, weighed by each country's operating expenses in the region. The table below shows the average inflation rates calculated as indicated for each of the regions and countries.

Average inflation

%

	2021
Europe	**2.9**
Spain	3.1
United Kingdom	2.6
Portugal	1.3
Poland	5.1
North America	**5.0**
US	4.7
Mexico	5.7
South America	**13.7**
Brazil	8.3
Chile	4.5
Argentina	48.1
Digital Consumer Bank	**2.6**
Total Group	**6.0**

Risk management and compliance

1. Risk management and compliance

Our risk and compliance culture is a key pillar of Grupo Santander's strategy and underpins our safe and robust business model

In 2021, we continued to support our customers and all our stakeholders to encourage a sustainable and responsible economic recovery.

The Risk and Compliance function kept its commitment to the digitalization and fulfilment of our strategic goals and initiatives such as One Santander, PagoNxt and Digital Consumer Bank.

Management of ESG-related risks (with special focus on the effects of climate-related risk and the achievement of our ambitious net zero goals) is also one of our priorities.

1.1 Executive summary and 2021 highlights

This section outlines Santander's risk management and risk profile in 2021 based on key risk indicators and their performance.

The subsequent sections in this chapter (accessible via the links provided) provide additional information on each risk factor, as well as our analysis of top and emerging risks.

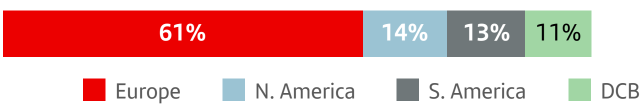
Credit risk

> Section 3

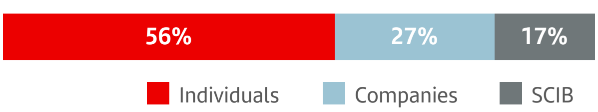
Our risk management and control model together with our solid risk culture contributed to the bank's strong performance in 2021 while improving the way we serve our customers.

[29]

TOTAL RISK BY REGION[30]



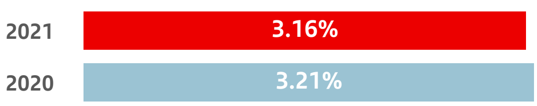
TOTAL RISK BY SEGMENT



Credit quality indicators maintained their positive trend through the year.

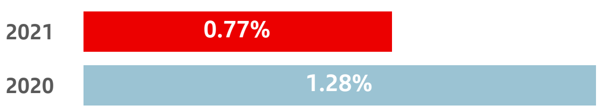
NON-PERFORMING LOANS RATIO

Loan growth coupled with positive portfolio performance drove the NPL rate down.



COST OF CREDIT[20]

Cost of credit improved owing to the good performance of the portfolio and the additional provisions made in 2020 to cover potential losses that could arise as a result of the covid pandemic.



Digital Consumer Bank (DCB) and Santander Corporate & Investment Banking (SCIB)
[29] Includes gross lending to customers, guarantees and documentary credits.
[30] 'Others' not included represent 1% (Corporate Centre).
[20] Cost of credit is the ratio of 12-month loan-loss provisions to average lending on the same period.

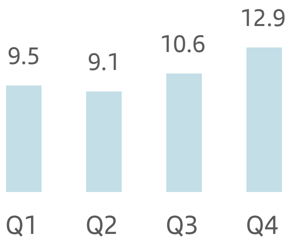
Market, structural and liquidity risk

> Section 4

Risk levels in trading activity remained low, in an environment where volatility was lower than in 2020.

2021 AVG. VALUE AT RISK (VaR)

EUR million. Dec.21



Max.
EUR 15.9mn

Min.
EUR 6.8mn

VaR remained stable averaging EUR 10.5 million. It peaked in September (EUR 15.9 million) due to supply chain disruptions and rising energy prices.

▲164% The liquidity ratio (LCR) was stable in 2021 and always remained above the regulatory threshold.

We managed liquidity buffers effectively to maintain a sound risk profile (within regulatory limits) and a profitable balance sheet.

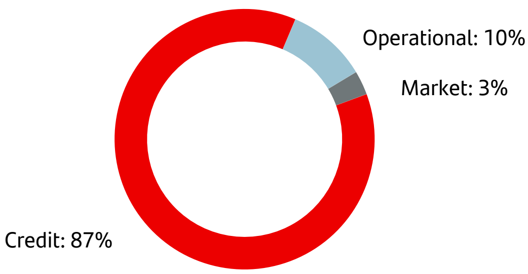
Our subsidiaries have a strong balance sheet and a stable funding structure, supported by a large customer deposit base. This strength is demonstrated in stress scenarios developed under homogeneous corporate criteria.

Capital risk

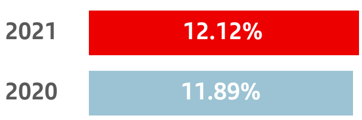
> Section 5

RWA[31] BY RISK TYPE

Credit risk, which is our core business, stands out among RWA.



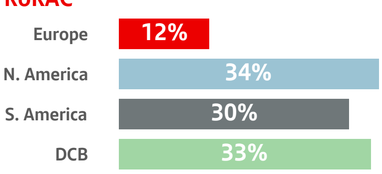
FULLY LOADED CET1



▲12.12%

▲ 23 bp in 2021 placing CET1 at the top of our 11-12% target

RoRAC[33]



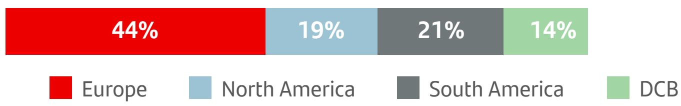
▲ 15.0%

▲ 6 pp in 2021

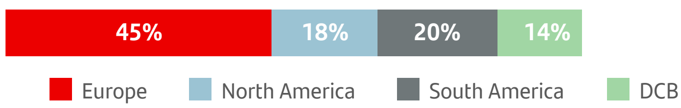
RWA BY REGION

Diversified and balanced distribution.

2021 EUR 579 bn



2020 EUR 563 bn



Others not included represent 2% in 2021 and 3% in 2020.

The CET1 ratio increased due to strong organic capital generation based on underlying profits and efficient RWA management.

The strength of our diversified retail banking business model is demonstrated by our positive performance in all eight regulatory stress tests performed since 2008.

RoRAC methodology allows us to compare homogeneously the return on loans, customers, portfolios and businesses, helping to identify those that obtain a risk-adjusted return above the cost of capital.

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[31] Risk weighted assets.
[32] Credit includes counterparty risk, securitizations and amounts below deduction thresholds.
[33] The Group's total RoRAC includes the operative units and the Corporate Centre, reflecting the Group's economic capital and its return.

Operational risk

> Section 6

Our operational risk profile remained stable despite the exceptional circumstances. With the goal of reinforcing existing controls, our 2021 priorities were:

Operational management model

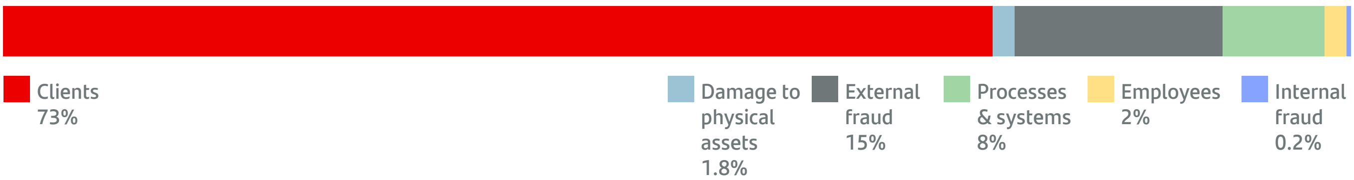
Progress implementation and improvements in instruments related to risk appetite, risk assessment and control, business continuity plans, as well as in the analysis and integration within the monitoring and control of non-financial risks (transformation risk and climate).

Relevant operational risks

Several initiatives in place to mitigate emerging risks (technological, cyber, etc.) and also adapt to regulatory framework changes, focusing on strengthening capacities to recover from disruptive events that affect our main business operations.

OPERATIONAL LOSSES BY BASEL CATEGORY

Dec.2021



Compliance and conduct risk

> Section 7

Main initiatives in 2021:

- **Transformation:** Continued development of One FCC strategic transformation plan; use of artificial intelligence techniques to improve root-cause analysis of customer complaints and for proactive conduct risk management in commercialization; exploration of RegTech tools.
- **Process redesign to improve effectiveness:** Use of homogeneous management methodologies and tools in subsidiaries: Heracles, CCM, Annual compliance program, Product and service approval. Stronger governance under a risk-based approach for the supervision of our subsidiaries.
- **Compliance & conduct risk management by the first line of defence**:
  - Designation of an executive responsible for FCC at subsidiary/business level.
  - More robust compliance and conduct risk management in terms of dealing with vulnerable customers, conduct risk control, better reputational risk management and regulatory agenda with GDPR and Anti-Trust requirements.
- **Risk culture:** Fine-tuning of team capabilities according to strategic objectives, gender and diversity initiatives, talent review in succession planning.

Model risk

> Section 8

- We continue to make progress with our Model Risk Management (MRM 2.0) strategic plan, with two achievements: better management of our regulatory models (IRB and IMA) and compliance with supervisory expectations.
- Our digitalization progress helped us improve real-time decision-making through more agile admission models.

Strategic risk

> Section 9

- 2021 strategic focus was to see how economic recovery fared against the uncertainty generated by new covid-19 variants and the progress of vaccination campaigns in various geographies; and to monitor the progress of our transformational projects.
- Challenging strategic plans, reviewing our business model, identifying and monitoring top risks, assessing and validating new products and coordinating the risk analysis for corporate development transactions.

Climate and environmental risk

> Section 10

- Climate-related and environmental risk further embedded in our core risk management processes. Major 2021 milestones include a new quantitative metric in our risk appetite statement that allows us to closely monitor our commitment to reduce thermal coal exposure.
- Progress also made with increasing granularity and scope (e.g. Santander Consumer Finance and Private Banking) of credit risk materiality assessments.
- Continued support for our public commitments on climate change and for our customers' transition to a more sustainable economy.
- In 2021, progress was made in developing the Group's capabilities to assess portfolios with scenario analysis techniques. Among other management uses, it is also enabling to meet growing regulatory requirements, including the Climate Biennial Exploratory Scenarios (CBES) in the UK and the Single Supervisory Mechanism (SSM) climate risk stress test for 2022.
- Progress in credit approval process according to EBA guidelines; and the adaptation of our policy to comply with environmental commitments.

Grupo Santander's risk profile could be affected by the macroeconomic environment, regulations and competition.

This financial information, prepared with the same Group-wide principles, aggregates figures for our various markets and business subsidiaries, based on accounting data and internal management system reporting.

The segments shown are differentiated by the geographical area where profits are earned and by type of business. The financial information of each reportable segment is prepared by aggregating the figures for the Group's various geographical areas and business units. The information relates to both the accounting data of the units integrated in each segment and that provided by internal management information systems. In all cases, the same general principles as those used in the Group are applied.

The notes to the consolidated financial statements contain additional information on Grupo Santander's provisions, legal proceedings, taxes and other risks.

For additional information on segments, please see '4.1 Description of segments' of the Economic and financial review chapter.

1.2 2021 key achievements

Our Risk and Compliance function is forward-looking, pragmatic and a reference in the market. It is also guided by a clear and reinforced strategy with lessons learnt throughout the crisis that enables us to be better prepared.

Covid-19 close monitoring

- Unprecedented level of support to customers (EUR 150 bn).
- Integrated Health reports and stats into BAU reporting for effective & timely updates.
- Closely following most affected sectors/clients supported by clear segmentation.
- Fully prepared Collections & Recoveries teams were instrumental in helping manage the crisis including Conduct approach.
- Detailed & regular assessments of provisions alongside a robust control environment.

Operational excellence

- Strong customer-centric credit management with excellent results in the ECB's stress test.
- ONE Compliance strategy in motion and accelerating One FCC transformation programme through global standards implementation and detection activities.
- Considerable cyber risk progress made with the launch of Europe's hub.
- Climate & environmental factors integration into the admission process.
- Constantly raising up the bar in credit risk digitalisation and automation to improve customer experience (time to yes/time to cash).

Creating value

- Capital accuracy: continuous optimization through model enhancements and other initiatives.
- Consolidation of Monet as the Group's tool supporting our consistent model risk management framework.
- Integration of compliance & conduct risk assessments/ indicators into one process under the same methodology through the enhancements made to our Heracles tool.
- Compliance & conduct governance, process, methodologies and tool simplification to better engage with subsidiaries and be more effective and efficient.
- Leverage new advanced analytics techniques in risk management: conduct and customer voice, reputational risk, credit risk, FCC.

New ways of working

- Simplified key processes through state of the art modelling techniques and robotics.
- New regional heads in place accelerating shared services/ common solutions.
- Introduced Flexi-working to better reconcile work-life balance and protect employees during covid.
- Broadened Risk Culture to include cyber, compliance & conduct and climate.

1.3 Santander's top and emerging risks

For forward-looking management and strict control, we regularly measure top and emerging risks under various stress scenarios. We detect, analyse and monitor major internal and external threats that could affect our strategic plan and compromise our profitability and solvency. Top and emerging risks could lead to deviations from our targets, as (by definition) their potential impact is not included in current plans. Still, management measures can mitigate impact severity.

In 2021, the covid pandemic and vaccine rollouts (especially in OECD countries, where they have prompted faster economic recovery than expected) still affected our top risks identification process. The risk of new virus variants remains under close observation, particularly in geographies where vaccination rates are low.

Grupo Santander is monitoring and adopting measures to mitigate strategic risks, such as:

A macroeconomic scenario in which recovery is restrained:

Ongoing inflation in the US and Europe over recent months and signs of some economic indicators' slowdown have cast doubts about global economic recovery. Extreme scenarios even suggest the return of stagflation.

Following lockdowns, global manufacturing and services have not been able to keep up with increasing demand and changing consumption patterns prompted by covid. Global supply chains have not yet recovered their full capacity, which was diminished by pandemic restrictions. Examples of this are the maritime shipping woes and the semi-conductor shortage that is especially affecting the auto industry.

Food and commodity prices are on the rise, and many markets (including the US and the UK) are seeing labour shortages. Amid the inflationary tension (which central banks will have to tackle), fiscal and monetary stimulus measures to reverse the economic slowdown spurred by the pandemic which are gradually being reduced. There is the risk that economic recovery will be affected by these ongoing supply shocks, leading to higher, more structural inflation. Furthermore, if job market instability pushes inflation forecasts above targets, due to the so called "second-round effects", the pressure for tighter monetary policies will be greater.

Our balanced diversification between mature and developing markets and our wide range of products leave us more resilient to macroeconomic threats. We also managed to reduce the potential severity of these risks through mitigating measures we took at the onset of the pandemic and adapted throughout 2021. They include:

- robust risk policies and processes and proactive management, which kept our risk profile within the parameters set out in our risk appetite statement;
- our recoveries and collections teams' full capacity after adapting to the new environment through a Group-wide preparedness plan initiated in 2020 and finalized in 2021;
- continuous monitoring of the social and political situation regarding countries and industries where we have considerable exposure, and adjustments of our limits and positions according to our risk appetite; and
- regular reviews of our risk profile and commercial, market and macroeconomic dynamics, and new action plans to remain on track with established plans.

Growing regulatory pressure

In light of our international footprint and status as a global systemically important bank, we are subject to substantial capital requirements that could increase owing to new regulation or to a review by the supervisor of the existing criteria. This could reduce our profitability and return on capital while raising our cost of funding. In the coming years, banks must implement capital and leveraging requirements in accordance with Basel III reforms, aimed to enhance the comparability of capital ratios at the industry level.

Key mitigation measures:

- Continued enhancement of our models and multiple initiatives on each risk factor to optimize capital.
- Participation in all forums to debate and work with banking associations, regulators and supervisors on new regulation and requirements.
- Appropriate capital planning that allows us to absorb new regulation impacts preventing them from affecting our solvency levels.

Cyber risk in a digital business model

Cybersecurity threats are increasing rapidly in terms of frequency, sophistication and impact. Ransomware and data breaches continued to dominate the external threat landscape during 2021. Additionally, new vulnerabilities that can be rapidly exploited are also on the rise.

As cyber threats continue to grow and new attack techniques are developed, continuous evolution of cyber defences is essential. Cybersecurity initiatives, described on the Cyber risk paragraph on section 6.2 'Operational risk management', are helping Grupo Santander to evolve its defences in line with emerging threats and technologies.

The increase in digital transactions and the expansion of remote working schemes seen in recent times can also have an effect on cyber risks and threats. These are the measures Grupo Santander has taken to combat them:

- We tightened controls (e.g., patching, browsing control, data protection and remote connections from the call centre), anticipating the worst scenarios in order to create a "defence in depth" to prevent, detect, react and recover.
- We standardized and continued to bolster existing defences through agile, sustainable and risk-driven management.

Risk in the execution of our transformational projects

In the new digital environment driven by covid-19, growing competition between existing companies and new players is causing banks to rethink their business models, customer experience and market demands, spurring faster digitalization. Regulation plays a fundamental role and may give rise to asymmetries between new and traditional competitors, and between markets.

To adapt, Grupo Santander is executing a transformation plan that is complex owing to the number of countries, systems and regulation it involves. If we fail to execute these key strategic projects, it could damage our business plan and worsen efficiency as well as regulatory expectations.

Key mitigation measures:

- Continuing to make progress in digitalization to make the bank an open financial services platform. This has been vital in the new environment. Our agreements and joint ventures have been playing a fundamental role in our transformation.
- Sharing best practices and commercial solutions in order to continue to embed a culture of fast experimentation in Grupo Santander.
- Establish a strategic project management office with robust governance to monitor and report to the risk control and strategy committees on strategic projects.
- We carefully measure and monitor risks stemming from inadequate project execution. Projects must be closely overseen by specific departments.

Inclusion of climate-related risks within risk management

Climate-related risks have become a priority for broader society. Governments, international organizations, regulators and supervisors continue to develop initiatives to comprehend the magnitude of this risk, with stricter transparency and market disclosure requirements in regard to climate-related risks to banks' profitability, resilience and business strategies.

We split climate-related risk into two categories: (1) risks from the transition to a low-carbon economy and (2) risks from the physical effects of climate change. To identify and respond to them properly, proactive management is key.

In 2022, European banks will undergo their first-ever climate-related stress test to measure the Eurosystem's balance sheet exposure to climate-related risk. Furthermore, as the Supervisory Review and Evaluation Process (SREP) gradually includes environmental risks, they could eventually have an effect on regulatory capital.

Key mitigation measures:

- Direct participation of senior managers to support Grupo Santander's strategic objectives, in accordance with our established governance.

For more details on those objectives, see section 10. 'Climate and environmental risk' in this chapter.

- Climate-related project, with Responsible Banking, Corporate & Investment Banking (CIB) and Risks at the helm, to develop risk measurement approaches, climate-related metrics, strategies, new policies and frameworks; set out a robust risk appetite statement; and design green products to satisfy the growing demand. Stronger internal resources and capabilities to meet increasing requirements.
- Financing for renewable energy and smart infrastructure to aid customers' transition to reducing their own carbon emissions. Support for inclusive and sustainable growth in consideration of risks and opportunities.
- Active role in international forums and working groups to promote the energy transition programme, including the United Nations Environment Programme Finance Initiative's (UNEP FI) pilot programme to develop scenarios, models and metrics to measure climate-related risks and opportunities in the future.

As part of our risk identification process, we also defined other events, which could affect our strategy and transformation plan in the longer-term, such as significant shifts in market tendencies and the business environment; consumer behaviour; geopolitics; political fragmentation; social and demographic changes; asymmetric access to natural resources; extended use of crypto assets; and potential legal loopholes. We conducted Board Risk Strategy sessions to discuss with board members new and fast emerging key trends.

2. Risk management and control model

Our risk management and control model is underpinned by common principles, a strong risk culture, a solid governance structure and advanced risk management processes and tools

2.1 Risk principles and culture

Our risk principles below are compulsory. They comply with regulatory requirements and are inspired by best market practices:

1. **All employees are risk managers** who must understand the risks associated with their functions and not assume risks with an impact that exceeds the Group's risk appetite or is unknown.

2. **Involvement of senior managers,** with consistent risk management and control through their conduct, actions and communications, as well as oversight of our risk culture and make sure we maintain our risk profile within the defined risk appetite.

3. **Independent risk management and control functions,** according to our three lines of defence model, described in detail under section 2.3 'Risk and Compliance governance' of this chapter.

4. **A forward-looking, comprehensive approach to risk management and control** for all businesses and risk types.

5. **Complete and timely information** to identify, assess, manage and disclose risks to the appropriate level.

Grupo Santander's holistic control structure stands on these principles and includes strategic tools and processes set out in the risk appetite statement, such as annual and budget planning, scenario analysis, the risk reporting structure and risk identification and assessment.

Risk culture - *Risk Pro*

Santander has a strong risk culture called *Risk Pro* (or *I AM RISK* in the UK and the US), based on the principle that all employees are risk managers. Risk Pro is a pillar of 'The Santander Way' group culture and considers all risks to promote socially responsible management and long-term sustainability.

For more details, see the section 'Risk pro: our risk culture' in the Responsible Banking chapter.

2.2 Risk factors

Grupo Santander's risks categorization ensures effective risk management, control and reporting. Our risk framework distinguishes these risk types:

1 **Credit risk** relates to financial loss arising from the default or credit quality deterioration of a customer or counterparty, to which Santander has directly financed or assumed a contractual obligation.

2 **Market risk** results of loss and detriment to profits or capital stemming from movements in interest rates, exchange rates, stock and commodity prices and its potential impact on capital requirements.

3 **Liquidity risk** occurs if liquid financial resources are insufficient or too costly to obtain in order to meet liabilities when they fall due.

4 **Structural risk** is the risk that market movements or balance sheet behaviour will change the value or profit generation of assets or liabilities in the banking book. It covers insurance and pension risks, as well as the risk that Santander will not have sufficient capital (in terms of quantity or quality) to meet internal business targets, regulatory requirements or market expectations.

5 **Operational risk** is the possibility of losses due to shortcomings and failures relating to processes, employees and internal systems, even as a result of external events. It includes legal, regulatory compliance and conduct risks.

6 **Financial crime risk** is the risk of loss due to criminal or illegal activity involving Santander's resources, products and services. Such activity includes money laundering, terrorism financing, violation of international sanctions, corruption, bribery and tax evasion.

7 **Model risk** involves potential losses due to inaccurate forecasting or from a model being implemented or misused that can result in poor decision-making.

8 **Reputational risk** is the risk of current or potential negative economic impact due to damage to the bank's reputation among employees, customers, shareholders, investors and broader society.

9 **Strategic risk** relates to losses due to strategic decisions or their poor implementation that affect our core stakeholders' medium-to-long-term interests or to an inability to adapt to a changing environment.

Environmental and climate-related risk drivers are considered as factors that could impact the existing risks in the medium-to-long-term.

These elements include, on the one hand, those derived from the physical effects of climate change, generated by one-off events as well as by chronic changes in the environment and, on the other hand, those derived from the process of transition to a development model with lower emissions, including changes on legislation, technology or economic agents' behaviour.

2.3 Risk and Compliance governance

Grupo Santander´s robust risk and compliance governance structure allows us to conduct effective oversight in line with our risk appetite. It stands on three lines of defence, a structure of committees and strong Group-subsidiary relations, guided by our risk culture, Risk Pro.

Lines of defence

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

- **First line:** formed by businesses and functions that take or originate exposure to risk, it recognizes, measures, controls, monitors and reports on risks according to internal risk management regulation. Risk origination must be consistent with the approved risk appetite and related limits.
- **Second line:** formed by the Risk and Compliance and Conduct functions, it independently oversees and challenges the first line's risk management. Its duties include ensuring that risks are managed according to the risk appetite defined by senior management and strengthening our risk culture throughout Grupo Santander.
- **Third line:** the Internal Audit function, which is independent to ensure the board of directors and senior managers with high-quality and efficient internal controls, governance and risk management systems, helping to safeguard our value, solvency and reputation.

The Risk, Compliance & Conduct and Internal Audit functions are separate and independent. Each has direct access to the board of directors and its committees.

Risk and Compliance committees' structure

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

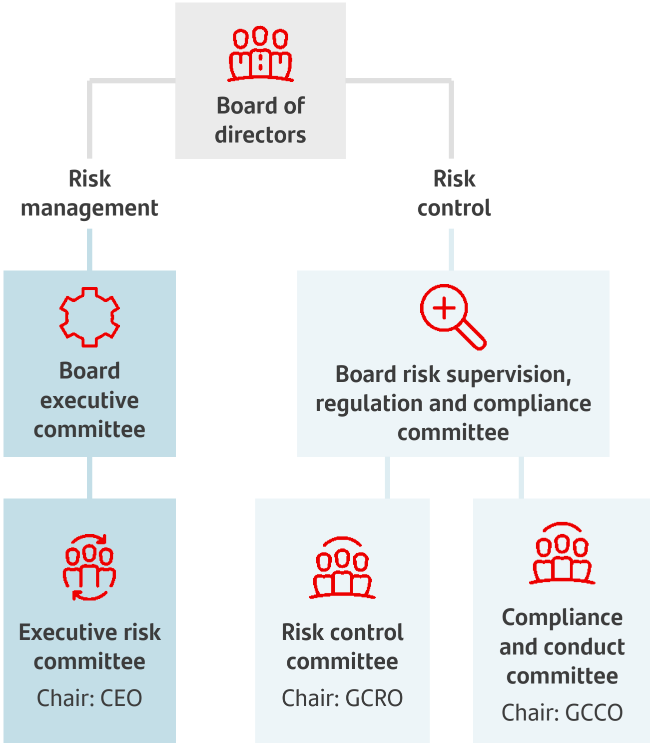
For more details, see section 4.8 'Risk supervision, regulation and compliance committee activities in 2021' of the chapter on Corporate governance.

The **Group chief risk officer (Group CRO)**, who decides risk strategy and promotes proper risk culture, is in charge of overseeing all risks and challenging and advising business lines on risk management.

The **Group chief compliance officer (Group CCO)**, who decides compliance and conduct strategy, is in charge of controlling the risks within their purview and must provide the Group CRO with a complete overview on the situation of risks being monitored.

Both the Group CRO and the Group CCO have direct access and report to the risk supervision, regulation and compliance committee and the board of directors.

Risk governance keeps risk control and risk-taking lines separate:



The executive risk, risk control and compliance and conduct committees (described below) are executive committees and have been delegated powers by the board.

	Executive risk committee (ERC)	Risk control committee (RCC)	Compliance and conduct committee
Functions:	Manages risks according to the powers it has been delegated by the board. It is authorized to approve, alter or scale significant models as well as any measures or transactions that may pose substantial risk to Grupo Santander. It makes the highest-level risk decisions according to the group's risk appetite.	Controls and provides a holistic overview of risks. It makes sure business lines are managed according to risk appetite. It also identifies, monitors and assesses the impact of existing and emerging risks on Santander's risk profile.	The committee monitors and reviews compliance and conduct risk management. It also oversees corrective measures for new risks and risks detected among management-related deficiencies.
Chair:	CEO	Group CRO	Group CCO
Composition:	Appointed executive directors and other senior managers, representing the risk, finance and compliance and conduct functions. The Group CRO reserves the right to veto the committee's decisions.	Senior managers from the risk, compliance & conduct, finance, accounting and management control functions. From time to time, each CRO from subsidiaries attend to report on their respective risk profiles.	Senior managers representing the compliance & conduct, risk, accounting and management control functions. The chair reserves the right to veto the committee's decisions.
Meetings:	Weekly	Monthly	Monthly
Forums:	• Model approval forum • Risk proposal forum	• Forum on market, structural, liquidity and capital risk control • Credit risk control forum • Provisions forum	• Corporate product governance forum • Financial crime prevention forum • Reputational risk forum

In addition, for each risk factor there are forums and regular meetings to manage and control the risks within their purview. Executive committees also delegate part of their duties to subordinate forums.

Their responsibilities include:

- reporting to the Group CRO, the Group CCO, the risk control committee and the compliance and conduct committee on risk management according to risk appetite;
- monitoring and ensuring proper management of each risk factor; and
- overseeing measures to comply with supervisors and auditors' expectations.

In order to establish an adequate control environment for the management of each risk factors, the Risk and Compliance and Conduct functions have effective internal regulation to create the right environment to manage and control all risks.

Grupo Santander can also dictate new governance measures for special situations. For the Brexit transition process, it set up separate steering committees and working groups with Santander UK. Also, to cope with the covid crisis, it created special situation forums, in which close coordination with subsidiaries, local contingency plan activation (including scenario analysis) enhanced allocated resources and governance to ensure the efficiency of the measures.

The Group's relationship with its subsidiaries

Our subsidiaries' risk and compliance management and control models is consistent with the frameworks approved by the group's board of directors, which they adhere to through their own boards and can only adapt according to local law and regulation. In its duty to carry out aggregate risk oversight, Grupo Santander validates and challenges subsidiaries' internal regulation and transactions, which results in a common risk management model across the group.

In 2021, we continued to strengthen our regional subsidiary relations model, based on regions, to find synergies for common operations and platforms building on our global and regional scale; to streamline processes; and to tighten control mechanisms so our business can grow, allocate capital more efficiently and offer the best service to our customers.

Local CRO interact regularly with their regional head of risk, the Group CRO and the Group CCO in periodic regional or country control meetings. Local and global Risk and Compliance functions also hold follow-up meetings to address special matters. The Group CRO and the Group CCO and regional heads of risk are involved in appointing, setting of objectives, reviewing and compensating their local counterparts to ensure proper risk management.

Grupo Santander enhances its relations with subsidiaries and its advanced risk management model through:

- close collaboration between countries in the same region to carry out common initiatives efficiently;
- structural change, subsidiary benchmarks and a strategic vision for the function to implement advanced risk management infrastructures and practices
- the exchange of best practices to strengthen processes and drive innovation in order to achieve a quantitative impact.
- identification of talent in risk and compliance teams, promoting international mobility through a global risk talent programme and tightening succession plans.

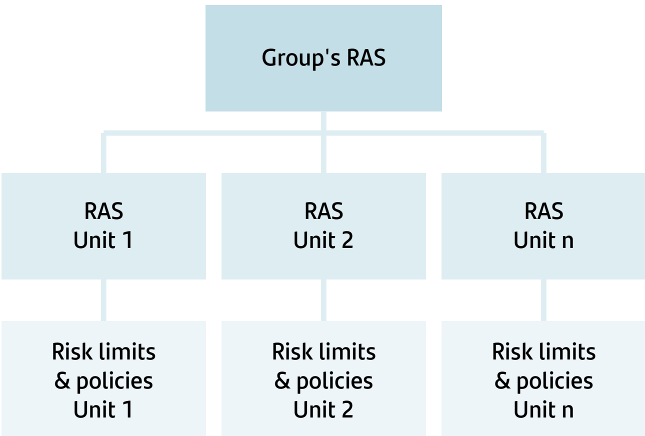
For more details on our relationship with our subsidiaries, see section 7 'Group structure and internal governance' of the chapter on Corporate Governance.

2.4 Risk management processes and tools

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

Risk appetite and structure of limits

Risk appetite is the volume and type of risks we deem prudent for our business strategy, even in unforeseen circumstances. It considers adverse scenarios that could have a negative impact on capital, liquidity and profitability. The board sets the Group's risk appetite statement (RAS) every year. Our subsidiaries' boards also set their own risk appetites annually. Each of those risk appetites translates into risk management limits and policies based on risk type, portfolio and segment.



Business model and risk appetite fundamentals

Santander's risk appetite is consistent with our risk culture and our business model built on customer focus, scale and diversification. At the core of our risk appetite are:

- a medium-low and predictable target risk profile that is centred on retail and commercial banking, internationally diversified operations and strong market share;
- stable, recurrent earnings and shareholder remuneration, sustained by a sound base of capital, liquidity and sources of funding;
- independent subsidiaries that manage their own capital and liquidity, with risk profiles that do not compromise the Group's solvency;
- an independent risk function with involvement by senior management to embed a strong risk culture and drive a sustainable return on capital;
- a global, holistic outlook through extensive control and monitoring of risks, businesses and markets;
- a focus on products we know well;
- a conduct model that protects our customers; and
- a remuneration policy that aligns employees and executives' interests with risk appetite and long-term results.

Our risk appetite principles

The principles that inform our risk appetite are:

- **the board and senior management's responsibility** for risk appetite;
- **an enterprise-wide view of risk, backtesting and challenge of risk profile** based on quantitative metrics and qualitative indicators;
- **a forward-looking view** based on plausible assumptions and adverse/stress scenarios to reflect our desired risk profile in the short and medium term;
- **strategic and business plans embedded in daily management** by policies and limits;
- **common standards** that align each subsidiary's appetite with the Group's; and
- **regular reviews, best practice and regulatory requirements,** with mechanisms in place to keep the risk profile stable and mitigate non-compliance.

Limits structure, monitoring and control

Our risk appetite is expressed in qualitative terms and limits structured on these five core elements.

1 Earnings volatility

Maximum loss Santander can tolerate in an acute-but-plausible stress scenario.

2 Solvency

- Minimum capital position Santander can tolerate in a stress scenario.
- Maximum leverage Santander can tolerate in a stress scenario.

3 Liquidity

- Minimum structural liquidity position.
- Minimum liquidity horizon Santander can tolerate in peak stress scenarios.
- Minimum liquidity coverage position.

4 Concentration

- Concentration in single-names, industries and portfolios.
- Concentration in non-investment-grade counterparties.
- Concentration in large exposures.

5 Non-financial risks

- Maximum operational risk losses.
- Maximum risk profile.
- Non-financial risk indicators:
  - Financial crime compliance (FCC)
  - Cyber and security risk
  - Model risk
  - Reputational risk

While risk appetite limits are regularly monitored, specialized control functions report on risk profile and compliance with limits to the board and its committees every month. The link between risk appetite limits and the limits used to manage business units and portfolios is key to making risk appetite an effective tool for managing risks. Management policies and limits are based on the risk appetite statement (see sections 3.2 'Credit risk management', 4.2 'Market risk management' and 4.4 'Structural balance sheet risk management' of this chapter).

Key initiatives in 2021

Santander continued to thoroughly review the impact of covid and the adequacy of our risk appetite to cope with the new landscape. We strengthened our controls and metrics to monitor our commitment to the environment and to the Paris Agreement for the transition to a low-carbon and climate-resilient economy more closely. Having achieved our aim to be carbon neutral in 2020, our ambition is to be net-zero in carbon emissions by 2050. We set our first decarbonization objectives, which are to stop providing financial services to power generation customers with a revenue dependency on coal of over 10% and to reduce our worldwide exposure to coal mining production to zero, a key step in fighting climate change.

Risk profile assessment (RPA)

Identification and assessment are central to the management, control and reporting of Grupo Santander's risk. To assess the Group's risk profile systematically, we use a single, robust methodology that allows us to analyse the various risk types described in our risk framework (outlined under section 2.2 'Risk factors'). In addition, it classifies them by different levels and unit according to a points system with four categories ("low", "medium-low", "medium-high" and "high").

The RPA methodology is based on the main principles of the identification and risk assessment model, such as: self-assessment and exercise suitability; efficiency; and holistic, in-depth risk analysis (with common approaches and alignment for decision-making). The three lines of defence take part in the assessment, strengthening our risk culture by reviewing how risks change and pinpointing areas for improvement.

Risk profile assessment covers:

- **risk performance** (to measure exposure to each type of risk);
- **control environment** (to measure the target operating model of our advanced risk management according to regulation and best market practice); and
- **forward-looking analysis** (to measure threats that can affect business planning and strategic objectives).

In 2021, we revised and strengthened our control environment standards, adding an internal self-assessment questionnaire on the management of risks relating to environment and climate-related risks to check the implementation of measures designed to achieve net-zero emissions by 2050.

At the end of 2021, Grupo Santander's risk profile returned to "medium-low". Our core profitability and credit quality indicators improved due to efficient risk management, a sustained low liquidity risk profile and the reopening of the economy spurred by vaccination and government stimulus in our geographies.

Furthermore, the severity of the emerging risks on our risk profile declined, as health indicators improved and the global economy shows signs of recovery. Grupo Santander maintains a robust risk control environment.

Scenario analysis

Scenario analyses are a useful risk management tool to measure our resilience to stress situations under a forward-looking approach and, if necessary, prepare mitigating plans for expected loss, capital and liquidity. Our Research department plays a key role in determining analysis scenarios based on macroeconomic and other variables that can affect our risk profile in our markets. The governance and control of the entire process, including the review by our three lines of defence and senior management, is also a fundamental aspect to ensure its consistency and robustness, to which it also contributes:

- develop and execute models that estimate future metric values (e.g. credit losses);
- backtesting (in order to challenge model outcomes regularly);
- our teams' expert opinions and vast understanding of portfolios; and

- thorough monitoring of models, scenarios, assumptions, results and mitigating management measures.

Grupo Santander has repeatedly obtained excellent quantitative and qualitative scores in the European Banking Authority's (EBA) stress tests.

Scenario analysis applications

We run a systematic review of our risk exposure under a base scenario and several adverse and favourable scenarios to predict potential solvency and liquidity changes. These exercises are fundamental for:

- **Regulatory exercises** according to instructions given by EU and local supervisors.
- **Internal capital and liquidity adequacy assessment processes** (ICAAP and ILAAP), in which Grupo Santander follows its own approach to measure capital and liquidity under various scenarios.
- **Risk appetite**, which includes stressed metrics to determine the highest risk we can assume. Though risk appetite and capital and liquidity stress exercises are closely related, they have different time frames and granularity.
- **Recurrent risk management** also uses scenario analyses for:
  - **budget and strategy planning,** when implementing a new risk approval policy or reviewing the Group's risk profile, monitoring specific portfolios and business lines;
  - **systematic top risk identification and impact analysis** (where each top risk relates to a macroeconomic or idiosyncratic scenario);
  - **our annual Recovery Plan**, which specifies the tools Grupo Santander can use to survive a severe financial crisis. The plan includes financial and macroeconomic stress scenarios with varying levels of severity, plus idiosyncratic and systemic events.
  - **IFRS 9**: Since 1 January 2018, regulation for estimating provisions have required scenario analysis models and methodologies.
  - **Credit and market risk stress testing exercises,** simulating changes to expected losses or estimating required capital to absorb losses resulting from unforeseen events.

In the covid-19 pandemic context, scenario analyses continued to be instrumental in 2021 to check if the additional provisions recognized in 2020 were sufficient to cover expected losses caused by the health crisis. In the Group we have developed a new tool (Delphi) to review the calculation of provisions, using the latest best practices available in the industry, to better anticipate and manage the impacts of covid.

Across our geographies, macroeconomic conditions were differently affected by the progress of vaccination campaigns, government relief programmes and monetary and tax policies. Accordingly, our scenario analyses helped us recognize points of action, develop adequate commercial responses and adapt our risk strategy to conserve our strength and solvency.

For more details on scenario analysis, see sections 3.2 'Credit risk management', 4.2 'Market risk management' and 4.6 'Liquidity risk management' and Note 53 section 'Expected loss estimation' in this report

- Grupo Santander made significant inroads with **climate-related analysis** in 2021. We added the Network for Greening in the Financial System (NGFS) climate scenarios and created others to account for risks posed by the transition to a low-carbon economy and by potential climate events in certain geographies. Our 2021 ICAAP showed improvement against environmental and climate-related risks, and we anticipate further progress in 2022. We will also take part in pilot stress tests led by the Single Supervisory Mechanism (SSM) in 2022, which will be included in the Supervisory review and evaluation process (SREP).

For more details, see 'Monitoring' in section 10.2 'Climate and environmental risk management' in this chapter

Risk reporting structure (RRS)

To provide senior managers with a complete, up-to-date understanding of our risk profile, the Enterprise-wide risk management team regularly consolidates and reports on current and future risks so the right decisions can be made in a timely manner.

We continue to change our reporting, as we simplify and automate processes, tighten controls and adapt to new needs. In 2021, to report on the covid crisis, we monitored such critical topics as the macroeconomic situation, health indicators, relief measures for our customers and risk areas, which helped us make decisions. We also vigorously accounted for initiatives relating to our strategic objectives, such as new regional structures and new business units.

Our risk reporting covers all factors set out in our risk framework, especially environmental, social and climate-related risks, as well as all those fundamental aspects that may be necessary for our risk assessment. We issue weekly, monthly and group-wide reports for senior managers; as well as monthly subsidiary risk reports and reports on each risk factor found in our risk framework. Our robust risk reporting structure is characterized by:

- balanced data analysis and qualitative commentary (with future measures, alerts, risk appetite limits and emerging risks);
- holistic, accurate overviews of risk factors, subsidiaries and markets;
- consistent risk analysis structure and standards; and
- metric reporting according to our corporate data framework, guaranteeing information quality and consistency.

This ensures complete, agile and dynamic reporting that provides a clear overview of current and future risks and enables us to adapt to emerging risks.

2.5 Models & Data Unit

In 2021, Grupo Santander made progress towards becoming the best open financial services platform, using advanced analytics and artificial intelligence (AI) to enrich its understanding of current and potential customers' needs and to earn their trust.

The leading data scientists and analysts that make up the group's Models & Data unit (part of the Risk and Technology & Operations divisions) used state-of-the-art algorithms and models to help us achieve our targets and get the most out of data in a responsible way. During 2021, they worked on two priorities:

a. Strengthening the business, where AI and digitalization enable Santander to scale up and grow efficiently. The Models & Data teams in headquarters and each of our geographies help by:

- **growing the customer base:** We select quality potential customers and get to know their needs and behaviours to boost onboarding and conversion rates. AI has been useful for customer approval, especially at Santander Brasil, where new account openings climbed from 51% to 76%. When combined with better digital customer experience, it proves highly beneficial at scale.

- **increasing customer loyalty:** We meet expectations and offer smart services throughout the customer life cycle. In particular, Santander España created and applied a machine learning model to split the Spanish economy into high-growth industries (in collaboration with Tresmares[1]); identify SMEs in those industries; and design a value proposition that meets existing and potential customers' needs.

- **maximizing profitability:** Grupo Santander is increasing efficiency by using cognitive robotics to automate repetitive tasks. Santander México uses this type of robotics to review 20,000 digitalized collateral documents per month.

b. Enhancing risk management: Our data and models are key to regulatory compliance.

In 2021, Grupo Santander worked on internal ratings-based (IRB) 2.1 models programme to comply with the EBA Repair Programme (and other regulatory requirements), which sets out new provisions for internal models developed under the IRB approach. The programme posed significant planning and resource challenges for the industry. Our Data & Models teams created models to delve deeper into our portfolios and better manage their risks.

They also developed Reg-Tech apps to upgrade anti-money laundering practices in geographies as Santander Brasil. The apps use AI to prioritize major risk alerts for analysts and help scale anti-money laundering processes.

In the future, Santander will continue to innovate its risk management based on two pillars:

- Boosting sustainable growth and climate risk management. In accordance with EBA requirements, the Models & Data teams quantify transition and physical risks from natural and climate-related disasters based on geography and exposure.

- Promoting the use of new analysis techniques (AI) in risk models (especially for regulatory capital). Banco Santander took part in a study on machine learning models' prediction of credit default published by Banco de España[2] in early 2021, which showed that advanced models have greater predictive power than traditional ones.

  Grupo Santander commits to promoting changes to risk management in banking through the responsible use of advanced analytics (machine learning and AI).

[1] Tresmares is a financing platform specialized in SMEs with the collaboration of Santander España.
[2] Understanding the performance of Machine Learning Models to predict credit default: a novel approach for supervisory evaluation.

3. Credit risk

3.1 Introduction

Credit risk is the risk of financial loss due to the failure to pay or impaired credit of a customer or counterparty Santander has financed or maintains a contractual obligation with. It is our most significant risk in terms of exposure and capital consumption, and includes counterparty risk, country risk and sovereign risk.

3.2 Credit risk management

We take a holistic view of the credit risk cycle, which includes the transaction, the customer and the portfolio to identify, analyse, control and decide on credit risk.

Credit risk identification is key to managing and controlling our portfolios effectively. We classify external and internal risks in each business and adopt corrective and mitigating measures when needed through the following processes:

1. Planning

Our planning helps us set business targets and draw up concrete action plans within our risk appetite statement.

Strategic commercial plans (SCPs) are a risk management and control tool the business and risk areas prepare for our credit portfolios. They determine commercial strategies, risk policies, resources and infrastructure, ensuring a holistic view of portfolios.

In addition, they provide us with an updated view of portfolio credit quality to measure credit risk; run internal controls over the strategy with regular monitoring; detect significant deviations in risk and potential impacts; and take corrective actions when necessary.

The SPCs align with our risk appetite and our subsidiaries' capital targets, and are approved and monitored by senior managers at each subsidiary before the group reviews and validates them.

2. Risk assessment and credit rating

To analyse customers' ability to meet contractual obligations, we use assessment and parameter estimation models in each of our segments. Our credit quality assessment models are based on credit rating engines, which we monitor to calibrate and adjust the decisions and ratings they assign. Depending on each segment, engines can be:

1. **Rating**: From mathematical algorithms that use a quantitative module based on balance sheet ratios or macroeconomic variables, and a qualitative module supplemented by credit analysts' expert judgement. It is used in the SCIB, corporate and institutions, and SME segments (individually).
2. **Scoring**: Automated loan application assessment that assigns a score to retail customers and small enterprises that do not have an assigned analyst for subsequent decision-making.

Our parameter estimation models follow econometric models built on our portfolios' historical defaults and losses. We use them to calculate economic and regulatory capital as well as IFRS 9 provisions for each portfolio.

We regularly monitor and evaluate models' suitability, predictive capacity, performance, granularity, compliance with policies and other related factors. We review ratings with the latest financial and other relevant information. We increased the reviews for customers who are subject to close observation or automatic warnings in risk management systems.

3. Credit risk mitigation techniques

Risk approval is generally determined by the borrowers' ability to pay when financial obligations fall due, regardless of any additional collateral or personal guarantees we require from them. We analyse funds or net cash flows from their businesses or income with no guarantors or assets pledged as collateral. When approving a loan, we always consider guarantors and collateral as a secondary means of recourse if the first channel fails.

Guarantees are a reinforcement measure in a credit transaction to mitigate a loss if the borrower defaults on their payment obligation.

We have credit risk mitigation techniques for various types of customer and product. Some are for specific transactions (e.g. property) while others apply to a series of transactions (e.g. derivatives netting and collateral). They can be grouped into personal and real guarantees or with credit derivatives coverage.

4. Limits, pre-classifications and pre-approvals

We use SCPs to manage credit portfolios, defining limits for each of them and for new originations in line with our credit risk appetite and our target risk profile. Introducing our risk appetite into portfolio management strengthens controls over our credit portfolios.

Our limits setting processes, pre-classifications and pre-approvals determine the risk we can assume with each customer. Limits are approved by the executive risk committee (or delegated committees) and should reflect a transaction's expected risk-return. We use different limits models based on the segment:

- **Large corporates** are subject to a pre-classification model based on a system for measuring and monitoring economic capital. Pre-classification models set the level of risk we are willing to assume in transactions with customers or groups in terms of capital at risk (CaR), nominal CAP and maximum tenors, depending on the transaction type. To manage limits with financial entities, we use credit equivalent risk (CER), which includes current and expected risks with customers according to risk appetite and credit policies.

- **Corporates and institutions** that meet certain requirements (strong relationships, rating, etc.) are subject to a simpler pre-classification model with an internal limit that benchmarks a customer's risk level against their repayment capacity, overall indebtedness and pool of banks.

  Transactions with large corporates, corporates and institutions above certain limits or with special characteristics could require approval from a senior credit analyst or a committee.

- For **individual customers and SMEs** with low turnover, we manage large volumes of credit transactions with automated decision models to classify customers and transactions.

5. Scenario analysis

In line with section 2.4 'Management processes and tools' of this chapter, our scenario analyses determine potential risks in credit portfolios; give us a better understanding of their performance under various macroeconomic conditions; and enable us to employ management strategies that will avoid future deviations from set plans and targets.

They simulate the impact of alternative scenarios in portfolios' credit parameters (PD, LGD) and expected credit losses. We compare findings with the portfolio's credit profile indicators to find the right measures for managers to take. The credit risk management of portfolios and SCPs incorporate scenario analyses.

6. Monitoring

Regularly monitoring business performance and checking it according to our original plans is key to our risk management. Our holistic customer monitoring aids the early detection of impacts on risk performance and credit quality. We assign customers a monitoring classification with a pre-determined course of action and ad hoc measures to correct any deviations.

In monitoring customers, local and global risk teams consider transaction forecasts and characteristics as well as changes in classification. It is based on the following customer segmentation:

- Monitoring in SCIB is a function of business managers and risk analysts and provide an up-to-date view of customers' credit quality to predict a potential customer's deterioration.

- For corporates, institutions and SMEs with an assigned credit analyst, we monitor more closely those customers that require so and review their ratings based on relevant indicators.

- For individual customers, businesses and smaller SMEs, we use automatic alerts to detect shifts in portfolio performance.

Our monitoring function uses the Santander Customer Assessment Note (SCAN). It helps set individual monitoring levels and frequencies, policies and actions for customers.

In addition to monitoring customer credit quality, we draw up control procedures to analyse portfolios and performance, as well as any possible deviations from planning or approved alert levels.

7. Collections and recoveries

The Collections and Recoveries function is key to risk management and control. It sets a global strategy with general lines of action for our subsidiaries based on the economic landscape, business model and other local recovery conditions. Recovery management follows the EBA guidelines on the management of credit impaired and forborne exposures.

Its sustained value creation is based on effective and efficient collections management, for which digital channels that develop new customer relations are key. Our diverse customer base requires segmentation to manage recoveries competently. The highly technological and digital procedures we follow help us attend to large groups of customers with similar profiles and products. Our personalized management, however, focuses on customer profiles that require an assigned manager and tailored approach.

We split recovery management into four phases: arrears, credit impaired loans, write-offs and foreclosed assets. We may use mechanisms like portfolios sales and foreclosed assets in order to rapidly reduce deteriorated assets. We constantly seek alternatives to legal action in order to collect debt.

We include debt instruments in the write-off loans category (even if they are not past-due) if an individual analysis showing a noticeable and irreversible impairment leads us to believe recovery is remote. Though this may lead to full or partial cancellation and de-recognition of the gross carrying amount of debt, we never interrupt negotiations and existing legal proceedings to recover debt. In countries with high exposure to property risk, we have efficient sales management instruments that help maximize recovery and optimize balance sheet stocks.

Forbearance

Grupo Santander's internal forbearance policy is a reference for our subsidiaries locally and follows regulations and supervisory expectations such as the EBA Guidelines on the management of credit impaired and forborne exposures. It defines forbearance as the modification of a transaction's payment terms to enable a customer who is experiencing (or may foreseeably experience) financial difficulties to fulfil their payment obligations; otherwise, there would be reasonable certainty that the customer would not be able to meet those obligations.

This policy also sets out rigorous criteria for assessing, classifying and monitoring forbearances to ensure the strictest possible care and diligence in recovering due amounts. Forbearance must focus on recovering due amounts and adapting payment obligations to customers' current circumstances. Thus, we must recognize losses as soon as we deem any amounts irrecoverable. The loans we put into forbearance to recognize risks appropriately must remain classified as credit impaired or on a watch-list for as long as necessary to ensure reasonable certainty of repayment. Forbearance may never be used to delay the immediate recognition of losses or hinder the appropriate recognition of risk of default.

Total forbearance amounted to EUR 36,042 million at the end of December 2021. After years of important decreases, due to the positive macroeconomic situation of the Group's main geographies, forbearance stock remained flat in 2020. The portfolio increased by 24% in 2021, as a result of greater volume of forbearance carried out to attend to the needs of customers facing financial difficulties. In terms of credit quality, 43% are classified as doubtful with a coverage of 41%

KEY FORBEARANCE FIGURES

EUR million

	2021	2020	2019
Performing	20,504	14,164	15,199
Credit impaired	15,538	14,995	17,276
Total forborne	**36,042**	**29,159**	**32,475**
% Total coverage[A]	**23%**	**28%**	**28%**

A. Total forbearance portfolio loan-loss allowances/total forborne portfolio.

Identifying and managing most vulnerable sectors

Grupo Santander has implemented a quarterly sectoral monitoring process that enables the identification of sectors that could potentially be of concern. This process considers, among other things, the following information at the sector level:

- Market information: Industries' stock market performance.
- Analysts' EBITDA forecasts for the coming years.
- Internal information: Changes in credit exposure, defaults (in different timelines) and stagings.
- Our industry experts' opinion, based on specific details about our exposures and our relationships with customers.

As at December 2021, we considered the industries listed in the table below as vulnerable based on our analysis and the covid landscape, including their exposure (excluding individuals):

EXPOSURE TO VULNERABLE SECTORS

EUR million

Industry	Exposure	Stage 1	Stage 2	Stage 3
Automobile	31,600	90.6 %	7.7 %	1.7 %
Hotels, leisure, cruises & restaurants[A]	16,400	57.4 %	27.5 %	15.1 %
Transport	17,100	85.1 %	9.2 %	5.7 %
Oil & Gas	22,100	96.5 %	2.3 %	1.2 %
Retail (non-food)	21,700	87.1 %	9.1 %	3.8 %
Construction[B]	12,800	78.5 %	12.1 %	9.4 %

A. Catering and others not included.
B. Property development not included.

Total exposure to the most vulnerable industries fell 3.1% from last year to EUR 121.700 million at year end. Exposure to the most short-term affected industries (hotels, leisure, cruises and restaurants; oil and gas; retail (non-food); and passenger transport) was EUR 65.300 million, down 1.4% compared to 2020.

Our findings were consistent with similar analyses conducted by the ECB, Banco de España and rating agencies.

Credit risk target operating model (ATOMiC)

We launched our advanced target operating model in collaboration (ATOMiC) to bolster our credit risk strategy, permanently challenge the Group's credit targets, and create the best bank in risk management in all of the markets where we operate. Its objective is to implement, extend, continuously improve and promote (under a realistic and medium-term goal) the credit target operating model (TOM) in our subsidiaries based on best practice in the Group and across the industry.

ATOMiC's success lies in the collaboration and best practice of experts from several geographies (Champions/Boosters/ATOMiC Team). Their over 40 success case studies (SCS) allowed to quantify benefits, apply lessons learned and identify impacts of each SCS, which enabled the development of TOM in each portfolio segment. They monitor progress twice a year through key performance indicators (KPIs) and have the support and commitment of a unique risk team.

ATOMiC has progressively embedded credit strategy in management and enabled us to bolster the control environment through greater preparation for unforeseen events like the Covid-19 crisis. It has also given us the ability to meet the EBA's Guidelines on loan origination and monitoring. In ATOMiC's first cycle, we accelerated and reinforced these priority initiatives:

- C&R efficiency and digital connectivity;
- foresight and preventive monitoring that use new data sources (transactional and CRM) and advanced analytics (early warning system) to determine what action to take towards customers;
- industry sensitivity and forward-looking analysis through pre-determined risk playbooks to make better decisions when anticipating unexpected changes;
- risk-based pricing tools to ensure sustainable portfolio growth; and;
- significant developments in customer pre-assessments and pre-approvals through greater automation and digitalization.

2021 was crucial in setting management metrics to demonstrate how ATOMiC enhances lending and customer onboarding across our footprint. We came up with several tangible and homogeneous metrics to report to the Group's senior management, uncover trends, make comparisons and agree on medium-term improvements. The main aim was to create a common language to show the fruits of credit risk transformation. ATOMiC laid down solid foundations for us to continue building up our credit risk strategy over a long period. Continuous challenging of our ambition was key, not to mention the commitment and collaborative culture among our subsidiaries. That, together with an agile working methodology and robust organizational structure, enabled us to address the next challenge of defining the strategic credit lines that will shape our strategy for 2022-2025 and that align with our risk strategy and priorities:

1. "Customer first" for an enhanced customer experience through digital processes and tailored solutions that help drive loyalty and grow the customer base;
2. Efficiency to increase volumes and expected profitability (risk-adjusted return);
3. "Responsible banking", with the inclusion of environmental, social and climate related risk in the lending process;
4. "Forward thinking", including climate related scenarios in stress test; and
5. Exploring opportunities for shared services and fintechs.

3.3 Key metrics

2021 general performance

2021 saw gradual economic recovery in our core markets, as well as progress with covid vaccination campaigns to ease the health crisis. That, along with effective credit risk management, helped boost Santander's performance.

Q1'21 was marked by new, targeted lockdown measures, inconsistent vaccination programmes and the extension and revision of economic policies. Growth in corporate and large corporate portfolios offset the decline in consumer portfolios, while credit quality indicators began to stabilize. Loan-loss provisions fell sharply in all regions and in most subsidiaries.

The second quarter brought economic recovery on the back of vaccination progress in all regions. Credit volumes grew despite the ongoing impact of the pandemic and heightened liquidity in our markets; a stronger Brazilian real also reinforced this trend. By segment, lending to corporates and large corporates remained high. Key credit indicators reflected our strong credit quality, supported by mitigation measures and portfolio growth. Loan-loss provisions continued to fall. Most notably in the UK and the US, a greater economic outlook led to lower provisions.

The third quarter saw further recovery (in all regions), higher vaccination rates and the gradual lifting of restrictions relating to the health crisis. Currency depreciation slowed credit volume growth in South America. Nonetheless, the wholesale and retail banking portfolios continued to flourish, and the corporate banking portfolio began to tail off. Loan-loss provisions returned to Q1 levels following unusual market behaviour in the UK and US in Q2.

In the last quarter of the year, revenues continued to grow steadily as business recovered across all regions. In contrast to previous quarters, loan-loss provisions plunged owing mainly to the provisions recognized to cope with the pandemic in 2020, brighter macroeconomic outlooks and overall positive NPL and loan loss trends, especially among customers who benefited from relief measures (e.g. payment holidays) and the general positive portfolio performance.

As of December 2021, credit risk with customers rose 6.2% from 2020 within the same perimeter. This was mainly due to currency appreciation in our core markets. All our subsidiaries saw growth in local currency with the exception of Santander Spain and Santander Chile. Our credit risk remained diversified, with a strong balance between mature and emerging markets: Europe[34] (61%), South America (13%), North America (14%) and Digital Consumer Bank (11%).

Loan book growth offset the rise in credit impaired loans to EUR 33,234 million (+4.6% vs 2020 year end) and reduced our NPL ratio to 3.16% (-5 bps vs 2020).

In accordance with IFRS 9, Santander recorded loan-loss provisions of EUR 7,436 million (-39% vs December 2020) driven by economic recovery, federal economic stimulus in the US, effective portfolio management and the use of additional provisions raised in 2020 to mitigate potential impact that could arise as a result of the covid-19 pandemic. Santander's total loan-loss allowances amounted to EUR 23,698 million. This brought our NPL coverage ratio to 71.3%, down from 76.4% in December 2020.

Regarding the support measures put in place in 2020 to tackle the covid-19 pandemic, at the end of December 2021, 99.8% of the payment holidays granted as part of Santander's response to the Covid-19 pandemic had ended and only 7% were classified as stage 3. The positive performance owed to better macroeconomic conditions in our main markets.

Government liquidity programmes remained in force in 2021. By geography, Spain makes up 68% of total exposure to those programmes with an average ICO guarantee coverage of 77%. The UK makes up 13% of total exposure, with an average coverage of 98%.

In light of those measures, Grupo Santander made additional credit loss allowances throughout 2020 upon analysing vulnerable sectors and struggling segments and estimating further impairment of loans and advances amid the economic crisis caused by the pandemic; those provisions are an indication of the economy's actual structural deterioration. Our estimation, which was based on available information and affected by the high uncertainty at the time, is consistent with ECB forecasts. The macroeconomic scenario was not "through the cycle" but included a balance sheet with short- and long-term provisions. We expected most macroeconomic indicators in those scenarios to reach pre-crisis levels in the first quarter of 2022 (with the exception of housing prices, which should reach them in the first quarter of 2023).

In 2020 and 2021, the Group closely and frequently monitored: (1) pandemic developments and macroeconomic outlooks; (2) institutions and central banks' forecasts; and (3) Santander's portfolios in each country.

In accordance with established governance, we monitored or updated macroeconomic scenarios according to new, realistic and substantiated information. When calculating IFRS 9 provisions at the end of 2021, we updated our most recent scenarios by eliminating the overlay (which accounts for structural economic deterioration), the effect of which had been assimilated by the model upon recalibrating its parameters according to current macroeconomic conditions and outlooks in order to re-estimate losses.

Also, we gradually used the additional credit loss allowances for the groups most affected by the pandemic in line with the portfolio's performance on the back of extraordinary support measures. The outstanding moratoria at the end of December 2021 amounted to EUR 166 million.

[34] "Others" not included make up the remaining 1% (Corporate Centre)

The tables below show the results of the key metrics of customer credit risk:

MAIN CREDIT RISK METRICS[A]

Data as of 31 December

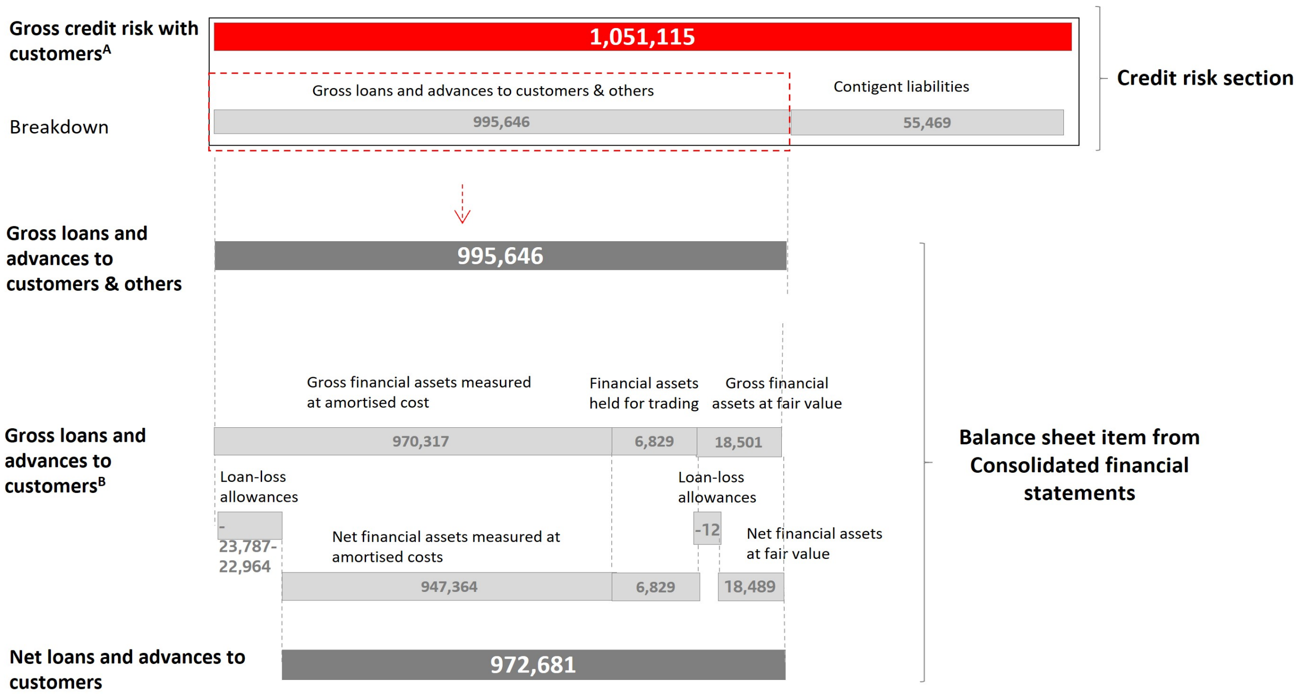
	Credit risk with customers[B] (EUR million)			Credit impaired loans (EUR million)			NPL ratio (%)		
	2021	2020	2019	2021	2020	2019	2021	2020	2019
Europe	**636,123**	**606,997**	**605,969**	**19,822**	**20,272**	**21,054**	**3.12**	**0.03**	**0.03**
Spain	221,100	221,341	213,668	12,758	13,796	14,824	5.77	6.23	6.94
UK	262,869	252,255	264,297	3,766	3,138	2,736	1.43	1.24	1.04
Portugal	41,941	40,693	37,978	1,442	1,584	1,834	3.44	3.89	4.83
Poland	33,497	31,578	33,566	1,210	1,496	1,447	3.61	4.74	4.31
North America	**149,792**	**131,626**	**143,839**	**3,632**	**2,938**	**3,165**	**2.42**	**2.23**	**2.20**
US	112,808	99,135	105,792	2,624	2,025	2,331	2.33	2.04	2.20
Mexico	36,984	32,476	38,047	1,009	913	834	2.73	2.81	2.19
South America	**141,874**	**129,590**	**143,428**	**6,387**	**5,688**	**6,972**	**4.50**	**4.39**	**4.86**
Brazil	85,702	74,712	88,893	4,182	3,429	4,727	4.88	4.59	5.32
Chile	41,479	42,826	42,000	1,838	2,051	1,947	4.43	4.79	4.64
Argentina	5,481	4,418	5,044	198	93	171	3.61	2.11	3.39
Digital Consumer Bank	**117,049**	**116,381**	**117,399**	**2,490**	**2,525**	**2,470**	**2.13**	**2.17**	**2.10**
Corporate Centre	**6,277**	**4,862**	**5,872**	**903**	**344**	**138**	**14.38**	**7.08**	**2.34**
Total Group	1,051,115	989,456	1,016,507	33,234	31,767	33,799	3.16	3.21	3.32

	NPL coverage ratio (%)			Net ASR[C] provisions (EUR million)			Cost of credit (%/risk)[D]		
	2021	2020	2019	2021	2020	2019	2021	2020	2019
Europe	**49.4**	**50.3**	**43.0**	**2,293**	**3,344**	**1,332**	**0.39**	**0.58**	**0.24**
Spain	52.2	47.1	41.1	1,833	2,001	856	0.92	1.01	0.43
UK	25.8	44.7	33.4	(245)	677	223	(0.09)	0.27	0.09
Portugal	71.7	66.5	52.8	38	193	(8)	0.09	0.51	(0.02)
Poland	73.9	70.7	66.8	200	330	217	0.67	1.10	0.72
North America	**134.9**	**182.5**	**153.0**	**1,210**	**3,917**	**3,656**	**0.93**	**2.92**	**2.76**
US	150.3	210.4	161.8	419	2,937	2,792	0.43	2.86	2.85
Mexico	95.0	120.8	128.3	791	979	863	2.44	3.03	2.49
South America	**98.3**	**97.4**	**88.4**	**3,251**	**3,923**	**3,789**	**2.60**	**3.32**	**2.92**
Brazil	111.2	113.2	99.8	2,715	3,018	3,036	3.73	4.35	3.93
Chile	63.3	61.4	56.0	341	594	443	0.85	1.50	1.08
Argentina	153.8	275.1	124.0	140	226	235	3.01	5.93	5.09
Digital Consumer Bank	**107.8**	**113.3**	**108.1**	**527**	**957**	**508**	**0.46**	**0.83**	**0.45**
Corporate Centre	**3.6**	**89.0**	**174.5**	**155**	**31**	**36**	**2.45**	**0.54**	**0.57**
Total Group	71.3	76.4	67.9	7,436	12,173	9,321	0.77	1.28	1.00

A. Management perimeter according to the reported segments.
B. Includes gross loans and advances to customers, guarantees and documentary credits.
C. Post write-off recoveries (EUR 1,383 million).
D. Cost of credit is the ratio of 12-month loan-loss provisions to average lending of the same period.

Reconciliation of key figures

Santander's 2021 consolidated financial statements disclose loans and advances to customers before and after provision allowances. Credit risk also includes off-balance sheet risk. The following table shows the relationship between those concepts:



A. Includes gross loans and advances to customers, guarantees and documentary credits.
B. Before loan-loss allowances.

Geographical distribution and segmentation

Santander organizes its credit risk function around three customer groups:

- **Individuals**: All salaried individuals, subdivided by income level to manage risk by customer type.

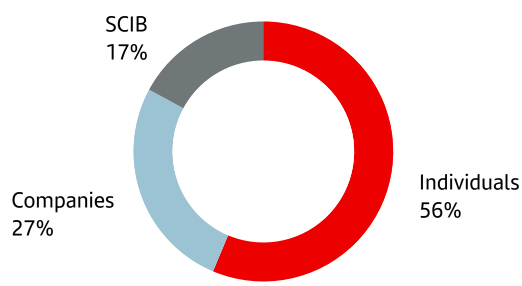
  Mortgages to individuals made up approximately 37% of net customers loans at the end of 2021. They are mainly in Spain and the UK, and primarily consist of residential mortgages with low risk profiles and NPL ratios as well as robust coverage levels. Low risk profiles produce low losses.

- **SME, commercial banking and institutions**: Companies and self-employed individuals, public entities and private not-for-profit entities.

- **Santander Corporate and Investment Banking (SCIB)**: Corporate customers, financial institutions and sovereigns in a closed list that is revised annually through comprehensive customer analysis (business type, geographic diversification, product types, revenue volume for Santander, etc.).

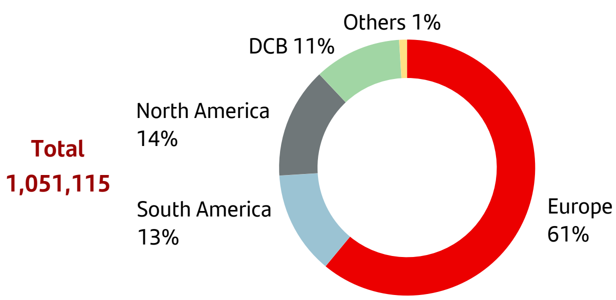
The graph below shows the breakdown of our credit risk (including gross loans and advances to customers, guarantees and documentary credits):

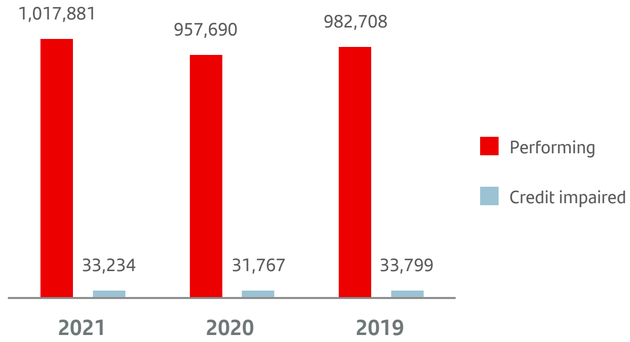
CREDIT RISK DISTRIBUTION



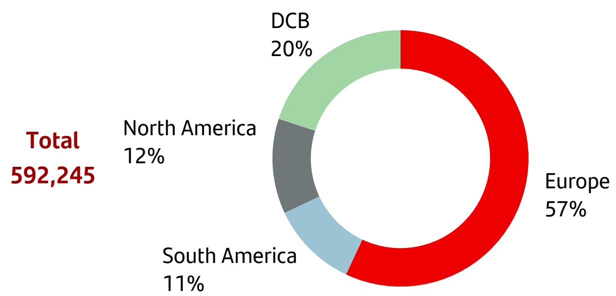
Below is a breakdown of the geographical distribution and amounts of performing and credit impaired loans:

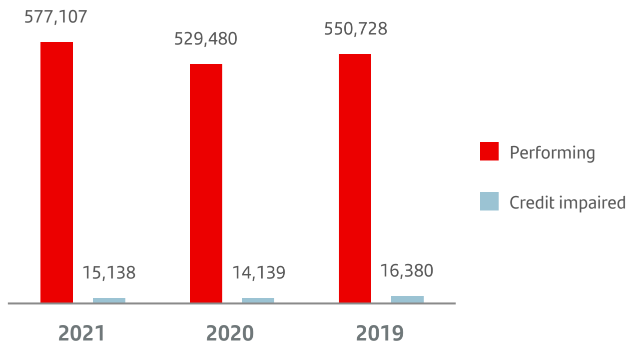
TOTAL



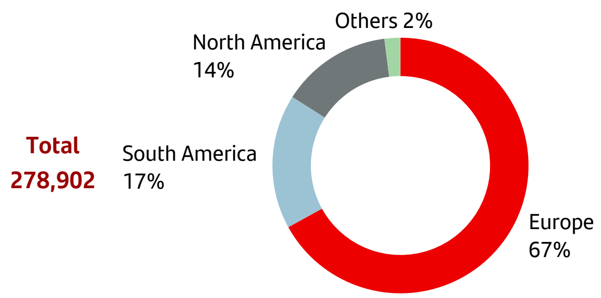


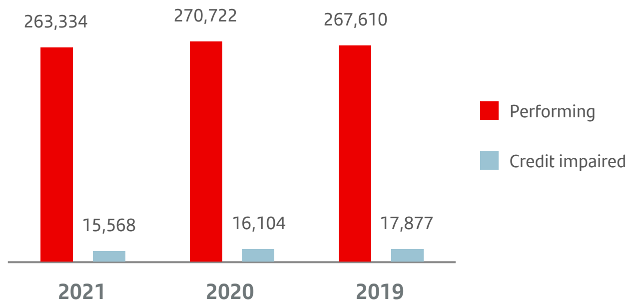
INDIVIDUALS



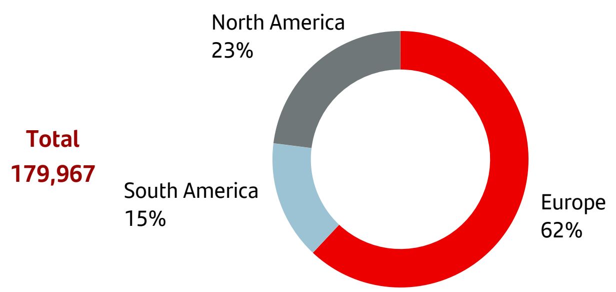


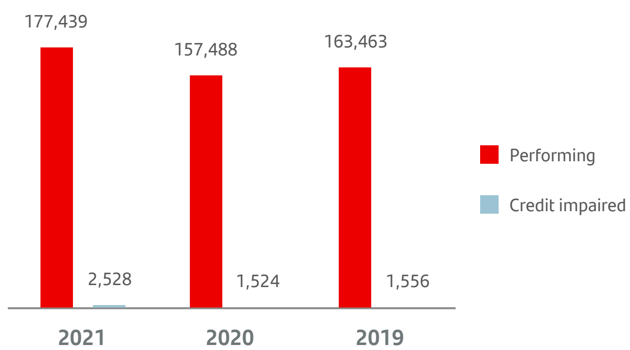
SME, COMMERCIAL BANKING AND INSTITUTIONS





SCIB





Others' include Corporate Centre.
Performing and non-performing exposure for 2020 and 2019 has been redistributed across segments.

- **Europe**: the NPL ratio fell 22 bps to 3.12% from 2020 due to a significant reduction in credit impaired loans in Spain and Poland, offsetting the increase in the UK.
- **North America**: The NPL ratio increased 19 bps to 2.42% from 2020, mainly due to increases at SC USA. credit impaired stock rose 24% year-on-year.
- **South America**: The NPL ratio rose 11 bps to 4.50%. comparing to 2020, due to the increase observed in Argentina (+150 bps) and Brazil (+29 bps), offsetting the decrease in Chile (-36 bps)
- **Digital Consumer Bank:** The NPL ratio decreased 4 bp to 2.13%, despite the decrease in automobile financing.

For more details, see section 3.4. 'Details of main geographies'.

Financial asset impairment

The IFRS 9 impairment model applies to financial assets valued at amortized cost; debt instruments valued at fair value with changes in other comprehensive income; leasing receivables; and commitments and guarantees not valued at fair value. The portfolio of financial instruments subject to IFRS 9 has three credit risk categories (or stages):

- **Stage 1**: Financial instruments with no significant increase in risk since initial recognition – the impairment provision reflects expected credit losses from defaults over the twelve months from the reporting date.
- **Stage 2**: Financial instruments with a significant credit risk increase since initial recognition but no materialized impairment event – the impairment provision reflects expected losses from defaults over the financial instrument's residual life.
- **Stage 3**: Financial instruments with true signs of impairment as a result of one or more events resulting in a loss – the impairment provision reflects expected losses for credit risk over the instrument's expected residual life.

The following table shows Grupo Santander's credit risk exposure by stages and geography:

EXPOSURE BY STAGE AND GEOGRAPHY[A]

EUR million

	Stage 1	Stage 2	Stage 3	Total
Europe	**544,590**	**41,953**	**19,822**	**606,365**
Spain	187,577	15,906	12,759	216,242
UK	225,846	18,079	3,767	247,692
Portugal	34,051	6,448	1,442	41,941
Poland	30,642	1,517	1,210	33,369
North America	**124,066**	**13,811**	**3,632**	**141,509**
US	90,179	12,155	2,623	104,957
Mexico	33,887	1,657	1,008	36,552
South America	**126,144**	**8,269**	**6,387**	**140,800**
Brazil	75,242	5,259	4,182	84,683
Chile	37,148	2,450	1,838	41,436
Argentina	5,039	244	198	5,481
Digital Consumer Bank	**110,605**	**3,932**	**2,490**	**117,027**
Corporate Centre	**193**	**2,873**	**903**	**3,969**
Total Group	**905,598**	**70,838**	**33,234**	**1,009,670**

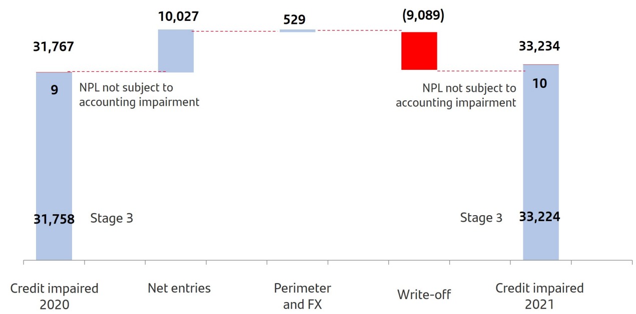
A. Excluding EUR 23,799 million from reverse repos. In addition excluding from the total, EUR 17,646 million from balances not subject to impairment accounting.

Impairment provisions include expected credit risk losses over the expected residual life of purchased or originated impaired (POCI) financial instruments.

Financial instruments with effective signs of impairment (stage 3) performed as follows:

NPL PERFORMANCE BY CONSTITUENT ITEM

EUR million



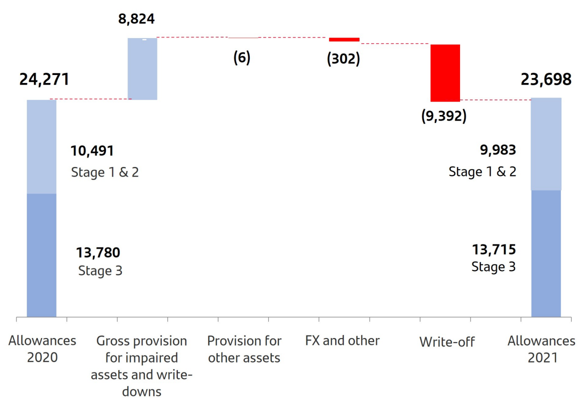
2019 - 2021 CREDIT IMPAIRED EVOLUTION

EUR million

	2019	2020	2021
Credit impaired (start of period)	**35,692**	**33,799**	**31,767**
Stage 3	35,670	33,783	31,758
NPL not subject to impairment accounting	22	16	9
Net entries	10,544	10,277	10,027
Perimeter	—	(44)	—
FX and others	156	(3,335)	529
Write-off	(12,593)	(8,930)	(9,089)
Credit impaired (end of period)	**33,799**	**31,767**	**33,234**
Stage 3	33,783	31,758	33,224
NPL not subject to impairment accounting	16	9	10

ALLOWANCES EVOLUTION ACCORDING TO CONSTITUENT ITEM

EUR million



2019 - 2021 ALLOWANCES

EUR million

	2019	2020	2021
Allowances (start of period)	**24,061**	**22,965**	**24,271**
Stage 1 and 2	8,913	8,872	10,491
Stage 3	15,148	14,093	13,780
Gross provision for impaired assets and write-downs	10,905	13,263	8,824
Provision for other assets	6	139	(6)
FX and other	586	(3,166)	(302)
Write-off	(12,593)	(8,930)	(9,089)
Allowances (end of period)	**22,965**	**24,271**	**23,698**
Stage 1 and 2	8,872	10,491	9,983
Stage 3	14,093	13,780	13,715

We quantify expected losses from credit events using an unbiased, weighted consideration of up to five future scenarios that could affect our ability to collect contractual cash flows. They consider the time-value of money, information from past events, and current conditions and projections of GDP, house pricing, unemployment and other important macroeconomic factors.

We calculated impairment losses using parameters (mainly EAD, PD, LGD and discount rate) based on internal models, and regulatory and management expertise. Far from being a simple adaptation, we defined and validated them according to specific requirements of IFRS 9 and other guidelines by regulators, supervisors and other international organizations (EBA, NCAs, BIS, GPPC, etc.), such as forward-looking information, point-in-time (PiT) vision, multiple scenarios, calculation of losses for the entire life of the transaction through lifetime PD, etc.

- **Identifying a significant increase in credit risk**: when classifying financial instruments under stage 2, we consider:
  - Quantitative criteria: We review and quantify changes in the risk of default during their expected life based on their credit risk level on initial recognition.

    To recognize significant changes so instruments can be classified in stage 2, each subsidiary set quantitative thresholds for its portfolios based on Santander's guidelines for consistent interpretation across all our footprint.

    Of those quantitative thresholds, we consider two: the relative threshold, which shows the difference in credit quality since the transaction was approved as a percentage of change; and the absolute threshold, which calculates the total difference in credit quality. All subsidiaries apply them (with different values) in the same manner. The use of one or both depends on portfolio type and other aspects, such as the starting point for average credit quality.
  - Qualitative criteria: Several indicators aligned with ordinary credit risk management indicators (e.g. past due for over 30 days, forbearance, etc.). Each subsidiary defined these criteria for its portfolios.

    We supplement these qualitative criteria with expert opinions.
- **Definition of default:** For provisions, we use the definition of default dictated by Article 178 of the CRR. We are gradually applying the new definition to provisions calculation according to

the EBA's guidelines; we are also considering applying it to prudential framework once the competent authorities approve it for calculating regulatory capital.

- **Past, present and future information:** To estimate expected losses, we require a great deal of expert analysis as well as past, present and future data. We base expected loss estimates on multiple macroeconomic scenarios, measure the probability of loss considering past events, current conditions, and future trends of GDP, unemployment and other macroeconomic indicators. We use forward-looking information in internal management and regulatory processes under several scenarios, which helps us make sure our processes are consistent.
- **Expected life of financial instruments:** We estimate the expected life of financial instruments according to their contractual terms (e.g. prepayments, duration, purchase options, etc.). The contractual period (including extension options) is the maximum time frame for measuring the expected credit loss. If financial instruments have an undefined maturity period and available balance (e.g. credit cards), we estimate its expected life based on the total exposure period and effective management practices to mitigate exposure.

3.4 Details of main geographies

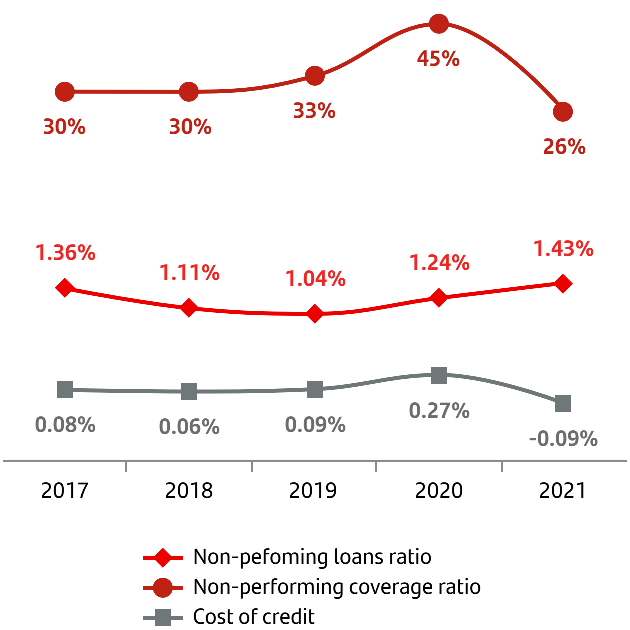
United Kingdom

General overview

Credit risk with customers in the UK (excluding Santander Consumer UK and Santander London Branch) grew 4.2% (-2.5% in local currency) year-on-year to EUR 262,869 million. The UK accounts for 25% of Santander's loan portfolio.

Since the pandemic began, we've granted 368,000 payment holidays and EUR 5,280 million in government-backed loans to help our customers.

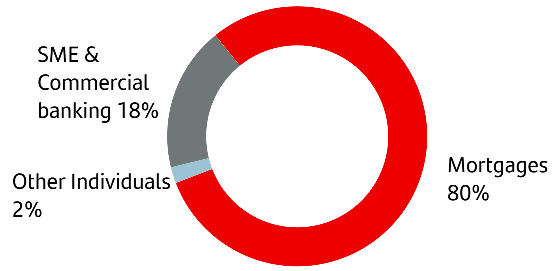
The NPL ratio, 1.43%, increased compared to 2020 (+19 bps), due to the increase in the SME portfolio offset by the decrease observed in the wholesale portfolio. The profile of the different segments remains stable.



The Santander UK portfolio is divided into these segments:

PORTFOLIO SEGMENTATION[A]

Dec. 21 data



A. Excluding SCF UK and London Branch

Mortgage portfolio performance

Because of its size, we closely monitor Santander UK's mortgage portfolio for both the entity itself and the group. As of December 2021, the portfolio amounted to EUR 209,949 million, growing by 4.3% in local currency. It comprises residential mortgages granted to new and existing customers which are first lien mortgages. There are no second or more liens on mortgaged properties.

2021 was a year of strong mortgage activity, mainly due to the higher demand after the covid-19 restrictions were lifted and the reduction of the stamp duty rates up until September. As a consequence, Santander UK achieved all-time high mortgage lending origination levels in June.

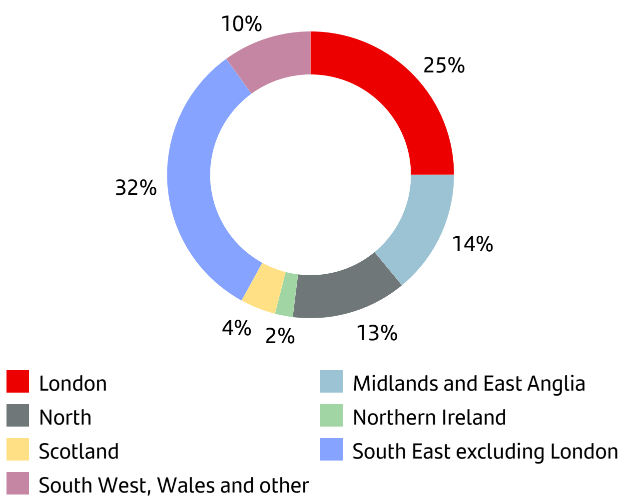
In accordance with Santander's risk management principles, properties are appraised independently before we approve a new mortgage. In line with market practice and legislation, property values used as collateral for granted mortgages are updated quarterly by an independent agency's automatic appraisal system.

Credit exposures are predominantly in Southeast UK and the London metropolitan area.

Geographically, credit exposures are predominantly in the South East of the UK and the London metropolitan area.

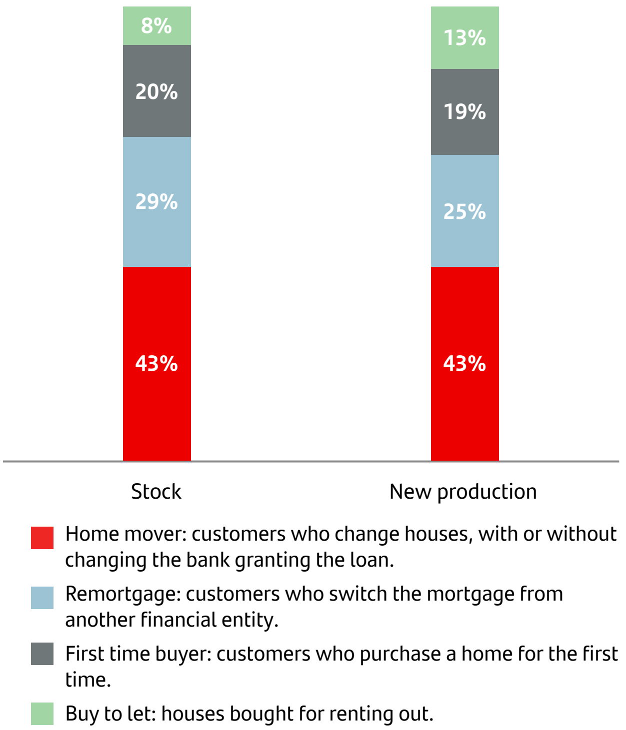
GEOGRAPHICAL DISTRIBUTION

Dec. 21 data



The chart below breaks down the portfolio by borrower type:

MORTGAGE PORTFOLIO LOAN TYPE



Santander UK's wide range of mortgage products include:

- **Interest-only loans** (23%): Customers pay interest every month and repay the principal at maturity. Loans require an appropriate repayment vehicle, such as a pension plan or an investment fund. This product is common in the UK. Santander UK applies restrictive policies to mitigate inherent risks. For instance, a maximum loan-to-value (LTV) ratio of 50% entails more stringent approval criteria and assessment of ability to pay, simulating the repayment of both interest and capital.

- **Flexible loans** (5%): Loan agreements allow borrowers to modify monthly payments or draw down additional funds up to a set limit under various conditions.

- **Buy-to-let** (8%): Buy-to-let mortgages account for a small portion of the total portfolio and are subject to strict risk approval policies.

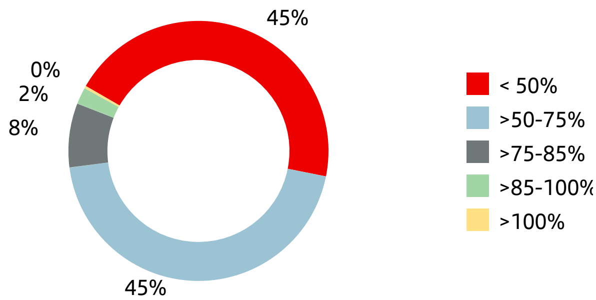
The NPL ratio reflects the mortgage portfolio's strength, which was stable at 1.01% at the end of December 2021 (-5 bp YoY). The portfolio's credit quality owed to high repayment rates as payment holidays expired (of which, 100% expired), and to low levels of default.

Prudent approval policies put the portfolio's simple average LTV at 41%. 2% of the portfolio has a LTV of between 85% and 100%. These policies resulted in no sign of risk quality deterioration in new business.

The chart below shows the LTV structure of residential mortgages as of December 2021:

LOAN TO VALUE

Dec. 21 data



Loan to value: relation between the amount of the loan and the appraised value of the property. Based on indices.

Our credit risk policies forbid loans considered "high risk" (e.g. subprime mortgages) and set out strict credit quality requirements for transactions and customers.

Spain

General overview

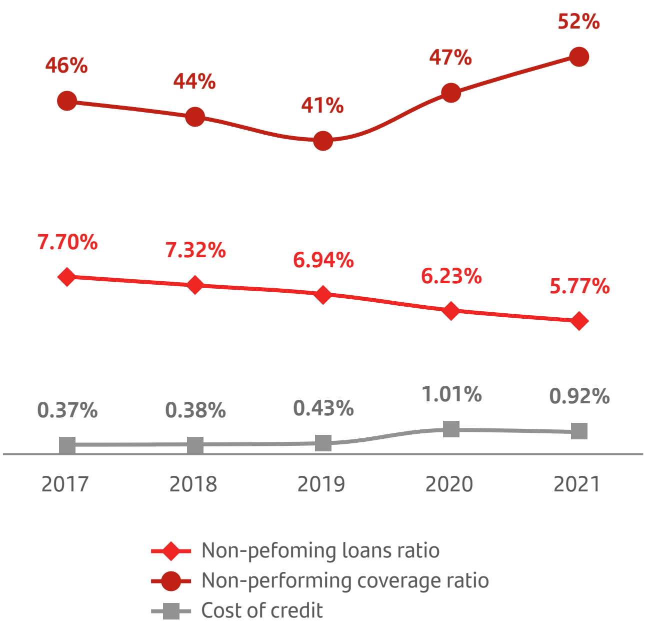
Santander España's credit risk totalled EUR 221,100 million (21% of the Group's total). It is appropriately diversified among products and customer segments.

Amid economic and credit recovery, as macroeconomic figures improved following covid-19 lockdowns in 2020, consumer loans (especially mortgages) grew significantly; but the corporate and SME lending remained below 2020 numbers, while we maintained positions with customers in liquidity support programmes (i.e. ICO lines of credit) without having to seek new financing. Total credit risk decreased -0.1% from December 2020. The ICO loans in corporate and SME lending amounted to a significant EUR 27,294 million; around half of them were extended.

The credit portfolio's NPL ratio was 5.77%, 46 bps lower than in December 2020. This better overall portfolio performance was driven by customer support programmes; the regularization of several restructured positions; and portfolio sales.

The additional provisions raised to mitigate the potential impacts from the exceptional circumstances of the covid-19 pandemic, increased the NPL coverage ratio to 52% (+5 pp vs December 2020). The credit impaired portfolio declined mainly from loans with the highest expected losses.

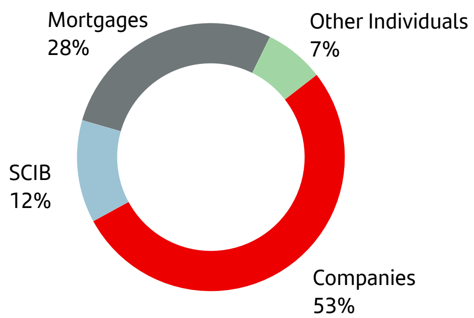
The cost of credit reflects the rise in covid provisions, with slight improvement at the end of 2021 compared to December 2020.



Santander España's portfolio is divided into these segments:

PORTFOLIO SEGMENTATION

Dec. 21 data



Residential mortgages performance

Santander España's residential mortgages portfolio amounted to EUR 60,948 million, 28% of its total credit risk. 99.3% have a mortgage guarantee.

RESIDENTIAL MORTGAGES[A]

EUR million

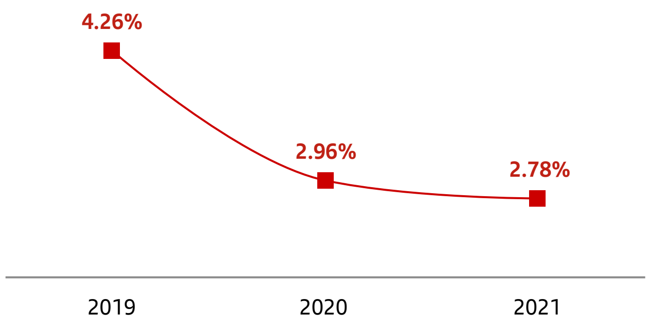
	2021	2020	2019
Gross Amount	60,948	58,079	60,557
Without mortgage guarantee	419	387	306
With mortgage guarantee	60,529	57,692	60,251
of which credit impaired loans	1,798	1,784	2,581
Without mortgage guarantee	115	75	14
With mortgage guarantee	1,683	1,709	2,567

A. Excluding SC España mortgage portfolio (EUR 1,376 million in December 2021 with doubtful loans for EUR 62 million, and EUR 1,526 million with doubtful loans for EUR 66 million in 2020).

The NPL ratio for residential mortgages granted to households fell 18 bps to 2.78%, mainly owing to non-performing portfolio sales.

NPL RATIO, RESIDENTIAL MORTAGES

%

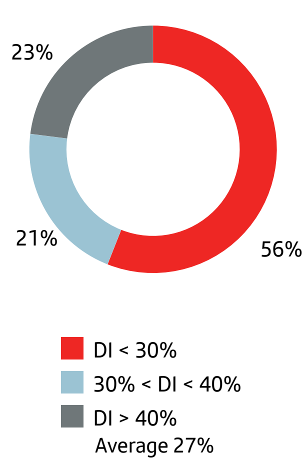


In 2021, mortgage origination soared 94% year-on-year on the back of higher customer demand caused by the pandemic. The residential mortgage portfolio in Spain maintained a medium-low risk profile with low expectations of additional impairment:

- Principal repayment starts on the first day of all mortgage transactions.
- Because early repayment is common, so the average transaction life is shorter than the agreement term.
- High-quality collateral, concentrated almost exclusively in financing for first-time buyers.
- The average affordability rate stood at 26%.
- 90% of the portfolio has an LTV below 80%, calculated as the ratio of total risk to the latest available appraisal.
- All customers applying for a residential mortgage are subject to a rigorous credit risk and solvency assessment by credit analysts to determine if their income will be sufficient to pay loan instalments and stable until the end of the mortgage term.

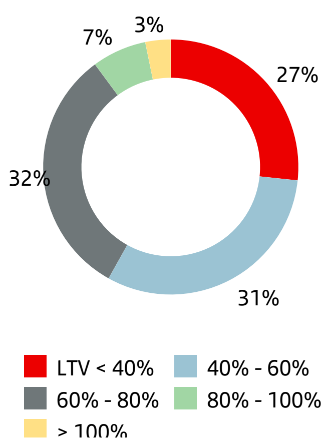
DEBT TO INCOME*

Dec. 21 data



LOAN TO VALUE**

Dec. 21 data



(*) Debt to income: relation between the annual instalments and the customer's net income.
(**) Loan to value: percentage indicating the total risk/latest available home appraisal.

Corporate and SME financing

Credit risk with SME and corporates in commercial banking, which is Santander España's core lending segment (at 53% of total credit risk) declined 3.1% from December 2020 to EUR 117,544 million, mainly due to a drop in the SME portfolio. Most of the portfolio is customers with an assigned credit analyst to monitor their loans throughout the risk cycle.

The portfolio is highly diversified and not concentrated in any industry. Its NPL ratio stood at 7.50% in December 2021, up 8 bps from December 2020 due to lower volume; meanwhile, credit impaired stock remained flat. 2021 brought stable portfolio figures after significant growth in 2020 due to liquidity support programmes (ICO), which after the initial grace period are now being repaid.

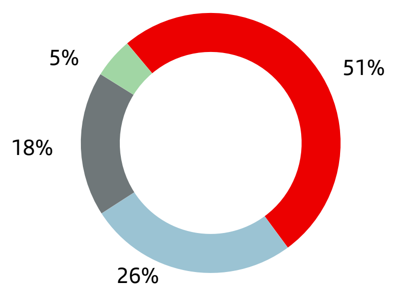
United States

General overview

Santander US's credit risk stood at EUR 112,808 million at the end of December. It makes up 11% of the Group's total credit risk and includes these business units:

BUSINESS UNITS SEGMENTATION

Dec. 21 data



Fiscal stimulus together with the reopening of the economy favoured a strong recovery that was moderated as of the summer due to problems on the supply side. The supply chain and labour constraints pushed inflation up to 7.0%, while the unemployment rate fell to 3.9% in November, leading to the start of the Fed's withdrawal of monetary stimulus.

As of December, Santander US's lending had grown 13.8% from 2020, particularly in SCIB portfolios in Santander Bank N.A., the New York branch, and the Miami branch. Excluding foreign exchange (FX) effect, growth was 8%.

Santander US remains focused on supporting its customers and making inroads with its strategic initiatives to enhance customer experience and allocate capital to its businesses.

Its NPL ratio rose to 2.33% (+29 bps in the year), while the cost of credit fell to 0.43% (-243 bps YoY). Loan-loss provisions dropped 82% due to lower net charges, and the improved macroeconomic outlook, customer loan relief measures and steadfast used car prices prompted lending growth.

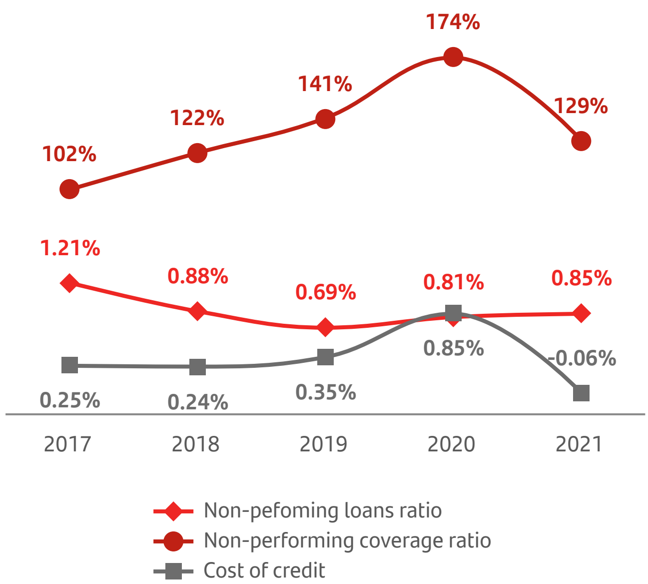
The performance of Santander US's core units is described below.

Business units performance

Santander Bank N.A.

At 78% of total credit risk, retail and commercial banking is Santander Bank N.A.'s main business. 24% of the portfolio is with individuals, and approximately 76% with corporates. The bank's primary goals include increasing the SCIB business — 22% of total credit risk — by enhancing customer experience and growing core customers and deposits through digital, branch and commercial transformation initiatives; leveraging its deposit base to support its commercial real estate business; and strengthening its auto finance partnerships. Its 15.1% hike in lending spanned all segments. Minus the FX effect, the increase was lower, standing at 9.2%.

Its NPL ratio increased to 0.85% (+4 bps in the year) as of December 2021, and the cost of credit fell to -0.06% due to the release of provisions based on better-than-expected market performance, customer behaviour (support programmes and fiscal stimulus) and greater recovery.



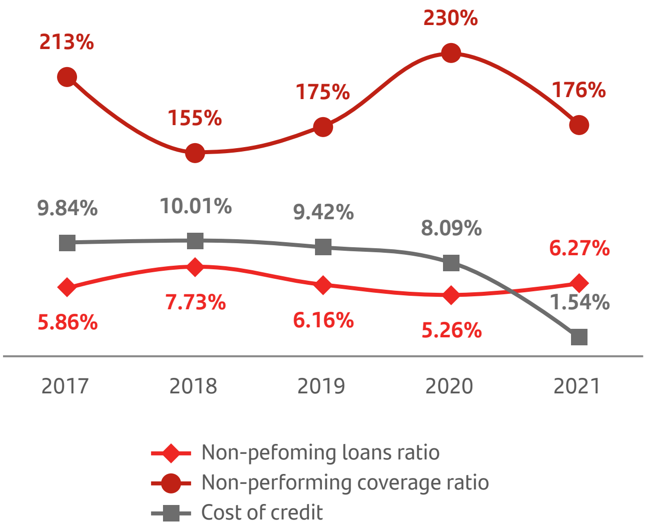
Santander Consumer USA

Santander Consumer USA (SC USA) presents higher risk indicators than other Santander US units due to the nature of its business (auto loans and leasing). Its focus remains on managing the profitability-to-risk balance through pricing aligned with the credit quality of the customer/transaction, while improving the dealer experience.

In 2021, loan originations grew more than 4% year-on-year, returning to the pre-pandemic prime and non-prime mix on the back of the commercial relationship we have with Stellantis Group.

Auto originations continued to increase, driven mainly by hikes in used car prices and demand. As of December, the NPL ratio rose to 6.27% (+101 bps in the year) and the cost of credit stood at 1.54% (-654 bps YoY). Annual net credit losses fell year on year due to customer support programmes (triggered by the health crisis), federal fiscal stimulus packages and greater recovery driven by a surge in used car prices. Due to the increase in defaults, the non-performing coverage ratio fell to 176% (-54 pp in the year).

Furthermore, leases carried out exclusively under the Stellantis Group agreement (primarily with highly creditworthy customers) dropped 5% to EUR 13,600 million, providing stable and recurring earnings. Risk management and residual value mitigation measures remain a priority.



Brazil

General overview

Despite the economic recovery due to the reopening of the service sector, in line with the advances in the vaccination campaigns and the lift of restrictions, international supply problems have continued to hamper industry growth.

Santander Brasil's credit risk amounted to EUR 85,702 million. It increased by 15% from 2020. Excluding the exchange rate effect, it grew by 13%. As of December 2021, Santander Brasil accounts for 8% of Grupo Santander's loan book.

In line with the commercial strategy, we continued to build an auto platform focused on end-to-end customer experience, thanks to which we achieved a 20% market share in vehicles (including individuals and companies). Santander Auto began selling insurance to corporates and had 19% penetration in insurance.

Credit cards broke customer capture records and remained third in the market. We also hit records figures in billing. The surge in mortgage origination continued, where Santander Brasil leads the home equity segment with a market share of 25%.

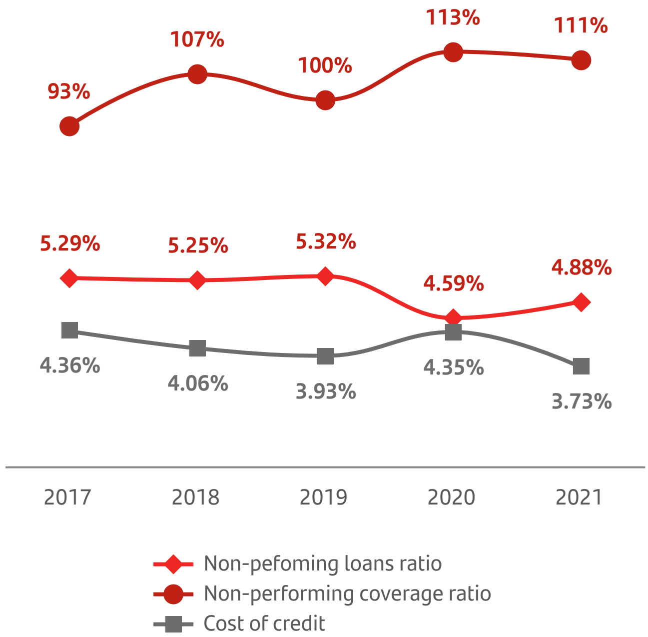
The SME portfolio (*Varejo PJ*) grew significantly due to the contribution of the different billing clusters that make the portfolio and its different products. State-backed guarantees to combat the effects of the pandemic ended in December 2020, although a new window opened in July 2021.

Our digital business continued to grow. 90% of transactions were digital. Furthermore, *Gente*, our virtual assistance channel based on artificial intelligence, has over 18 million hits per month.

Our leadership of the wholesale sector makes us one of the top corporate banks, thanks to our experience as a global bank — the biggest in FX transactions for the last eight years — in infrastructure, agribusiness — Brazil's largest agricultural commodities desk — and equities.

In ESG, Santander is a leader in sustainable solutions. It channelled EUR 5,000 million in social and environmental business. Progress continues on *Plano Amazônia*, our joint project with Brazil's other two largest private banks. We created a new business unit in the region that has already channelled EUR 43 million.

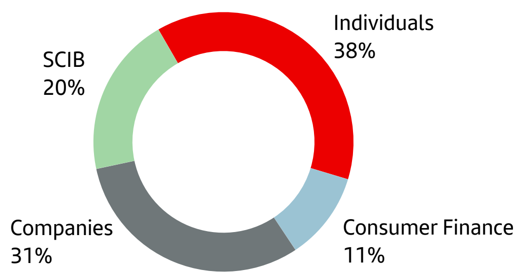
Net loan-loss provisions stood at EUR 2,715 million (-10% compared to 2020), a decrease driven by additional provision made in 2020 related to covid-19. In local currency, provisions declined by 11%. Cost of credit decreased to 3.73% from 4.35% at the end of 2020, driven by the provisions evolution aforementioned.



Santander Brasil's loan book is distributed as follows:

Portfolio segmentation

Dec.21 data



It is diversified and has an increasing retail profile, with 80% of loans extended to individuals, consumer financing and companies.

Portfolio performance

In 2020 moratorium campaigns had a strong influence on the portfolio. The NPL ratio rose from 4.59% to 4.88% at December 2021, and the coverage ratio decreased slightly to 111% from 113%.

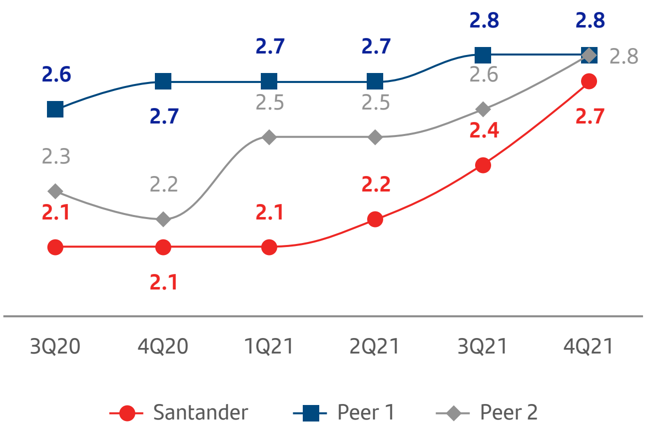
In the individuals segment, growth in local currency was strong. Market share of payroll loans, mortgages and other low-risk products increased.

SME lending performed beyond expectations and started to show signs of recovery. All ratios returned to pre-crisis levels. The portfolio was also well provisioned and saw continuous improvement in its risk profile. We must pay close attention to the maturities of government programmes and other payment deferrals to confirm the recovery of the SME market.

To monitor the credit quality of our loan book and prevent deterioration, one of the main credit risk performance indicators we track is the 'Over 90' impairment ratio. It continues to indicate that Grupo Santander is outperforming its local peers, having stood at 2.7% at December 2021 (+60 bps vs 2020 year-end), below the average of its competitors.

Over 90 total (%) - PDTE

Dec. 21 data



3.5 Other credit risk details

Credit risk from financial markets activities

This section covers credit risk from treasury management through money market financing and counterparty risk products to satisfy customers' (especially credit institutions) needs.

According to the CRR, counterparty credit risk results from the likelihood that a customer in a derivatives contract on financial securities or commodities, repurchase agreement, securities lending, long settlement transactions, margin lending and other transactions could default before the final settlement of the transaction's cash flows.

To measure exposure, we use two methods: "Mark-to-market" (MtM) (replacement cost of derivatives) plus potential future exposure ("add-on"); and the Montecarlo simulation to calculate exposure for certain countries and products. We also calculate capital at risk and unexpected loss (economic capital, net of collateral and recoveries, after deducting expected loss). At market close, we recalculate exposures by adjusting all transactions to their new time horizon, adapting potential future exposure and applying netting, collateral and other mitigants. Thus, we can check exposures daily against the limits approved by senior management. For risk control, we use a real-time integrated system that shows the exposure limit with any counterparty, for any product and term, and in all subsidiaries.

Counterparty risk exposures: over-the-counter (OTC) transactions and organised markets (OM)

By December 2021, after applying netting and collateral agreements for counterparty risk, the positive market value of total exposure (under management criteria) was EUR 5,491 million (net exposure of EUR 31,444 million).

COUNTERPARTY RISK: MARKET VALUE EXPOSURE AND CREDIT RISK EQUIVALENT, INCLUDING MITIGATION EFFECT[A]

EUR million

	2021	2020	2019
Market value, netting effect[B]	31,390	37,204	37,365
Collateral received[C]	25,899	31,970	30,100
Market value with netting effect and collateral[D]	5,491	5,235	7,265
Net CRE[E]	31,444	30,139	32,552

A. Figures under internal risk management criteria. Listed derivatives have a market value of zero. No collateral is received for these types of transactions.
B. Market value used to include the effects of mitigation agreements to calculate exposure for counterparty risk.
C. Included variation margin, initial margin and secured finance transactions collateral.
D. Including the mitigation of netting agreements and deducting the collateral received.
E. CRE (credit risk equivalent): net value of replacement plus the maximum potential value, less collateral received.

The chart below shows products that generate counterparty risk (especially interest rate and FX hedging instruments) by their nominal risk and market value:

COUNTERPARTY RISK BY NOMINAL RISK AND GROSS MARKET VALUE[A]

EUR million

	2021			2020			2019		
		Market value			Market value			Market value	
	Nominal	Positive	Negative	Nominal	Positive	Negative	Nominal	Positive	Negative
Credit derivatives[B]	17,164	228	(346)	14,530	145	(215)	29,805	312	(1,357)
Equity derivatives	79,062	3,244	(2,553)	53,821	2,973	(1,848)	71,401	2,481	(1,836)
Fixed income derivatives	4,409	275	(123)	11,370	47	(386)	23,136	119	(177)
Exchange rate derivatives	947,061	22,329	(26,965)	863,001	25,341	(27,071)	897,886	21,053	(23,260)
Interest rate derivatives	4,915,150	106,341	(103,074)	4,917,944	143,679	(139,261)	5,089,817	112,128	(108,651)
Commodity derivatives	12,022	722	(32)	3,732	83	(15)	735	56	(27)
Total OTC derivatives	**5,786,114**	**131,243**	**(131,316)**	**5,695,339**	**170,911**	**(167,650)**	**5,944,977**	**135,194**	**(134,392)**
Derivatives organised markets[C]	**188,755**	**1,896**	**(1,777)**	**169,059**	**1,357**	**(1,147)**	**167,803**	**955**	**(917)**
Repos	**129,085**	**4,404**	**(5,997)**	**146,984**	**3,978**	**(7,311)**	**143,163**	**4,334**	**(2,722)**
Securities lending	**48,346**	**12,802**	**(29,919)**	**46,418**	**12,500**	**(26,072)**	**48,786**	**17,490**	**(23,652)**
Total counterparty risk[D]	**6,152,300**	**150,345**	**(169,009)**	**6,057,800**	**188,746**	**(202,180)**	**6,304,729**	**157,973**	**(161,682)**

A. Figures under internal risk management criteria.
B. Credit derivatives acquired including hedging of loans.
C. Refers to transactions involving listed derivatives (proprietary portfolio). Listed derivatives have a market value of zero. No collateral is received for these types of transactions.
D. Spot transaction not included.

As the following table shows, most of Santander's derivatives reach maturity in up to five years, while its repurchase agreements and securities lending reach maturity in up to one year.

COUNTERPARTY RISK BY NOMINAL RISK AND MATURITY[A]

EUR million. Dec.21 data

	Up to 1 year	Up to 5 years	Up to 10 years	More than 10 years	TOTAL
Credit derivatives[B]	23%	68%	2%	6%	17,164
Equity derivatives	50%	48%	2%	—%	79,062
Fixed income derivatives	86%	8%	6%	—%	4,409
Exchange rate derivatives	51%	30%	13%	6%	947,061
Interest rate derivatives	34%	39%	17%	10%	4,915,150
Commodity derivatives	85%	14%	1%	—%	12,022
Total OTC derivatives	**37%**	**37%**	**16%**	**10%**	**5,786,114**
Derivatives organised markets[C]	**59%**	**39%**	**1%**	**—%**	**188,755**
Repos	**93%**	**7%**	**—%**	**—%**	**129,085**
Securities lending	**100%**	**—%**	**—%**	**—%**	**48,346**
Total counterparty risk	**39%**	**37%**	**15%**	**9%**	**6,152,300**

A. Figures under internal risk management criteria.
B. Credit derivatives acquired including hedging of loans.
C. Refers to transactions involving listed derivatives (proprietary portfolio). Listed derivatives have a market value of zero. No collateral is received for these types of transactions.

Even if the credit quality of some counterparties declines, we focus counterparty credit risk on customers with high credit quality (85% of counterparties have a rating of A or higher), especially financial institutions (23%) and clearing houses (71%).

NOMINAL COUNTERPARTY RISK BY CUSTOMER RATING[A]

Dec.21 data

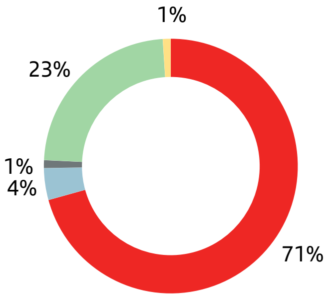
Rating	%
AAA	0.98%
AA	0.34%
A	83.83%
BBB	13.34%
BB	1.43%
B	0.05%
Other	0.02%

A. Ratings based on internally defined equivalences between internal ratings and credit agency ratings.

Transactions with clearing houses and financial institutions are subject to netting and collateral agreements. We constantly aim to have all other transactions covered by such agreements as well. In general, the collateral agreements Santander signs are bilateral; still, there are a few exceptions of unilateral agreements in the customer's favour, mainly with multilateral organizations and securitization funds.

COUNTERPARTY RISK BY CUSTOMER SEGMENT

Dec.21 data

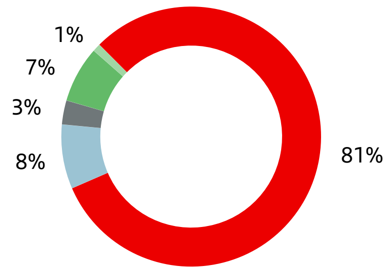


Collateral helps reduce counterparty risk. It consists of highly liquid instruments with economic value that are deposited or transferred from one counterparty to another to guarantee or reduce counterparty credit risk from portfolios of cross-risk derivatives. We usually measure transactions subject to collateral agreements daily, applying contractual parameters to quantify the collateral (in cash or securities) to pay or receive from the counterparty. Amid the pandemic, the processes we have in place to manage collateral in the Group properly and more often have proved effective. The collateral received under CSA, OSLA, ISMA, GMRA and other collateral agreements signed by the Group amounted to EUR 25,899 million (including EUR 15,089 million in received collateral for derivatives), with 41% in cash. The remaining collateral is subject to strict quality policies in regard to the issuer and their rating, debt seniority and haircuts.

Received collateral is distributed among the following geographies:

COLLATERAL RECEIVED. GEOGRAPHIC DISTRIBUTION

Dec.21 data



Due to counterparty credit risk, we calculate the results of trading portfolios by applying credit valuation adjustments (CVA) to over-the-counter (OTC) derivatives. We also make debt valuation adjustments (DVA) in view of the risk of Santander that our counterparties assume.

At the end of December 2021, CVA adjustments amounted to EUR 236.5 million (a decrease of 31% compared to the end of 2020) and DVA adjustments were EUR 161.8 million (a decrease of 17,5% compared to the end of 2020). These impacts are mainly due to the continuous credit market improvement , the creation of specific credit curves for certain counterparties and the introduction of methodological improvements in the exposure calculation.

The definition and methodology for calculating the CVA and DVA are set out in the section 4.2 'Market risk management'.

Counterparty risk, organized markets and clearing houses

Santander's policies aim to promote early action according to regulation for OTC derivatives, repurchase agreements and securities lending (whether settled through clearing houses or bilaterally). In recent years, we have gradually standardized OTC transactions to settle and clear new contracts through clearing houses according to current regulation, in addition to increasing internal use of electronic execution systems. We also manage transactions not settled by clearing houses actively to optimize their volume according to regulation on margins and capital. While our counterparty risk management does not contemplate the credit risk in such transactions, we have been calculating regulatory credit exposure for organized market exchanges since the Capital Requirements Directive (CRD) IV and the Capital Requirements Regulation (CRR) took effect in 2014, transposing the Basel III principles on capital calculation.

The tables below show the weight of transactions settled by clearing houses versus total counterparty as of December 2021:

COUNTERPARTY RISK BY SETTLEMENT CHANNEL AND PRODUCT TYPE[A]

Nominal in EUR million

	Bilateral		CCP[B]		Organised markets[C]		Total
	Nominal	%	Nominal	%	Nominal	%	
Credit derivatives	10,450	60.9%	6,714	39.1%	—	—%	17,164
Equity derivatives	18,173	23.0%	—	—%	60,889	77.0%	79,062
Fixed income derivatives	4,409	100.0%	—	—%	—	—%	4,409
Exchange rate derivatives	900,845	95.1%	38,755	4.1%	7,462	0.8%	947,061
Interest rate derivatives	740,599	15.1%	4,054,711	82.5%	119,841	2.4%	4,915,150
Commodity derivatives	11,459	95.3%	—	—%	563	4.7%	12,022
Repos	93,800	72.7%	35,284	27.3%	—	—%	129,085
Securities lending	48,346	100.0%	—	—%	—	—%	48,346
Total	**1,828,081**		**4,135,464**		**188,754**		**6,152,300**

A. Figures under internal risk management criteria.
B. Central counterparties (CCP).
C. Refers to transactions involving listed derivatives (proprietary portfolio). Listed derivatives have a market value of zero. No collateral is received for these types of transactions.

RISK SETTLED BY CCP AND ORGANIZED MARKETS BY PRODUCT[A]

Nominal in EUR million

	2021	2020	2019
Credit derivatives	6,714	6,245	11,556
Equity derivatives	—	62	370
Fixed income derivatives	—	—	—
Exchange rate derivatives	38,755	31,043	43,358
Interest rate derivatives	4,054,711	4,020,927	4,087,255
Commodity derivatives	—	—	—
Repos	35,284	39,397	23,933
Securities lending	—	—	—
Total	**4,135,464**	**4,097,674**	**4,166,472**

A. Figures under internal risk management criteria.

Credit derivatives

We use credit derivatives to hedge transactions, customer business in financial markets and trading. The notional value of the credit derivatives Santander has negotiated is low (0.3% of the notional value of counterparty risk). Furthermore, we subject credit derivatives to internal robust controls and procedures to minimize operational risk.

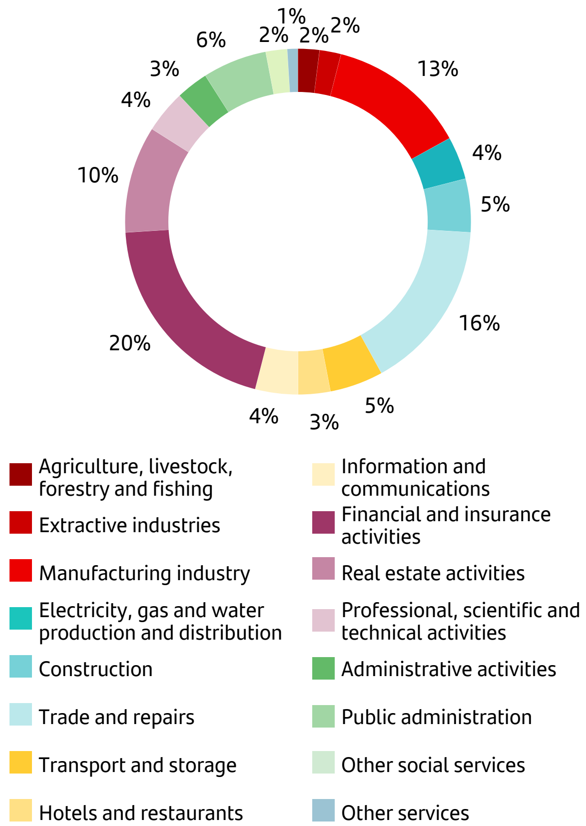
Concentration risk

Concentration risk control is key for our management. We continuously monitor credit risk concentration by region and country, economic sector, customer type and other criteria.

The board sets concentration limits according to risk appetite (See 'Risk appetite framework and structure of limits' in 2.4 'Management processes and tools'). Accordingly, the executive risk committee develops risk policies and reviews the appropriate exposure levels so we can effectively manage credit risk concentration.

As indicated in the key metrics section of this chapter, our credit risk is diversified among our core markets (UK 25%, Spain 21%, United States 11%, Brazil 8%, etc.). In terms of sector diversification, 56% of our credit risk is with individuals, who are inherently highly diverse. Our lending portfolio is also well distributed, with no significant concentrations in any specific industry. The chart below shows the distribution as of December 2021:

DIVERSIFICATION BY ECONOMIC SECTOR[A]



A. Excluding individuals and reverse repos.

Because Santander is subject to the CRR stipulations on large risks, exposure with a customer or group of associated customers will be considered "large exposure" if its value is equal to, or greater than, 10% of eligible capital. To limit large exposures, no entity may assume any exposure with a single customer or group of associated customers if it exceeds 25% of their eligible capital, having factored in the credit risk reduction effect set out in the regulation.

The use of risk mitigation techniques resulted in no groups triggering those thresholds as of the end of December. Regulatory credit exposure with the 20 biggest groups within the scope of large risks made up 5% of credit risk (lending to customers and off-balance sheet risks) as of December 2021.

Our Risk division works closely with the Finance division to manage credit portfolios, aimed at reducing the concentration of exposures through credit derivatives, securitizations and other techniques to optimize the risk-reward of the entire portfolio.

Country risk

Country risk is a component of credit risk arising in transactions with clients resident in a particular country due to circumstances other than usual business risks. It consists of sovereign risk, transfer risk and others that might affect international financing transactions (wars, natural disasters, current account balance crises, among others). It is embedded in our provisioning models and processes, in compliance with the applicable regulation.

Our country risk management continued to follow a standard of maximum prudence. We assume country risk very selectively in transactions that enhance the global relationship with our customers.

Sovereign risk and risk with government agencies

Sovereign risk arises from central bank transactions (including regulatory cash reserves), government bonds (public debt) and transactions with non-commercial government institutions funded exclusively by a state's budget revenue. In some respects, Banco Santander's standard for sovereign risk differs from the European Banking Authority's (EBA) standard for regular stress testing. In particular, the EBA does not consider deposits with central banks, exposures with insurance companies or indirect exposures to guarantees and other financial instruments; however, its standard does generally include central, regional and local government agencies.

Our local sovereign exposure, in currencies other than the official currency of the country of issuance, is not significant (EUR 10,013 million, 2.6% of total sovereign risk) according to our management criteria. Furthermore, exposure to non-local sovereign issuers involving cross-border risk is even less significant (EUR 7,011 million, 1.8% of total sovereign risk).The sovereign debt we hold in Latin America is almost entirely in local currency, recorded in local ledgers and predominantly short-term.

In recent years, our total sovereign risk exposure has been consistent with both regulation and our strategy. Because it spans countries with diverse macroeconomic conditions, growth scenarios, interest rates and exchange rates, it varies on account of our strategy to manage liquidity and hedge both interest rate and foreign exchange risk. Furthermore, our sovereign debt strategy also sets exposure limits based on each country's credit rating. The table below shows exposure ratios by level[20]:

	2021	2020	2019
AAA	15%	18%	20%
AA	32%	25%	24%
A	26%	25%	18%
BBB	11%	14%	15%
Lower than BBB	16%	18%	23%

19. Countries that are not considered low risk by Banco de España
20. Internal rating are applied'.

Sovereign exposure at the end of December 2021 is shown in the table below (data in million euros):

	2021					2020
	Portfolio					
	Financial assets held for trading and Financial assets designated as FV with changes in results	Financial assets at fair value through other comprehensive income	Financial assets at amortised cost	Non-trading financial assets mandatory at fair value through profit or loss	Total net direct exposure	Total net direct exposure
Spain	2,574	2,805	14,178	—	19,557	24,245
Portugal	(20)	2,287	4,277	—	6,544	8,730
Italy	(73)	634	323	—	884	4,015
Greece	—	—	—	—	—	—
Ireland	—	—	9	—	9	—
Rest Eurozone	(233)	1,231	2,631	—	3,629	4,054
UK	(538)	676	228	—	366	(97)
Poland	(15)	10,819	489	—	11,293	10,947
Rest of Europe	—	77	1,291	—	1,368	1,070
US	1,050	13,803	7,616	—	22,469	15,548
Brazil	8,733	16,432	3,394	—	28,559	27,717
Mexico	2,150	10,253	1,106	—	13,509	21,029
Chile	56	1,134	4,881	—	6,071	6,955
Rest of America	94	651	680	—	1,425	958
Rest of the World	2	1,524	1,811	—	3,337	4,752
Total	**13,780**	**62,326**	**42,914**	**—**	**119,020**	**129,923**

4. Market, structural and liquidity risk

4.1 Introduction

This section describes our market risk management and control in 2021, covering trading risk as well as liquidity and structural risks. It also contains a brief description of our methodologies and metrics.

Activities exposed to market risk encompass transactions where risk is assumed as a consequence of potential changes in interest rates, inflation rates, exchange rates, stock prices, credit spreads, commodity prices, volatility and other market factors; the liquidity risk from our products and markets, and the balance-sheet liquidity risk. Therefore, they include trading risks and structural risks.

- **Interest rate risk** arises from movements in interest rates that reduce the value of a financial instrument, a portfolio or the Group. It can affect loans, deposits, debt securities, most assets and liabilities held for trading, and derivatives.
- **Inflation rate risk** arises from movements in inflation that can reduce the value of a financial instrument, a portfolio or the Group. It can affect loans, debt securities and derivatives (e.g. inflation swaps and futures) whose profitability is linked to inflation.
- **Exchange rate risk** is the possibility of loss because the currency of a long or open position will depreciate against the base currency. It can affect debt in subsidiaries whose local currency is not the euro, as well as loans denominated in a foreign currency.
- **Equity risk** is the possibility of loss from open positions in securities if their market price or expected future dividends fall. It affects shares, stock market indices, convertible bonds and derivatives with shares as the underlying asset (put, call, equity swaps, etc.).
- **Credit spread risk** is the possibility of loss from open positions in fixed-income securities or credit derivatives if their yield curve, or the recovery rate of their issuer or type change. A spread is the yield difference between financial instruments against a benchmark (e.g. the internal rate of return (IRR) of government bonds and interbank interest rates).
- **Commodity price risk** is the possibility of loss from movements in commodity prices. Our commodity exposure is minor and stems mainly from commodity derivatives.
- **Volatility risk** is the possibility of loss caused by movements in interest rates, exchange rates, the stock market, credit spreads and other risk factors affecting portfolio value. It is inherent to all financial instruments whose value considers volatility (especially options contracts).

Derivative contracts (such as options, futures, forwards and swaps) can mitigate market risks partially or fully.

Some market risks that require more complex hedging are:

- **Correlation risk** is the possibility of loss due to an adverse correlation between risk variables that affect portfolio value. Risk variables could be the same (e.g. two FX rates) or different (e.g. an interest rate and a commodity price).
- **Market liquidity risk** is the possibility that fewer market makers or institutional investors, a large number of transactions, market instability and other factors will cause the Group or a subsidiary to exit a position at a worse market price or trade cost. Exposure to different products and currencies can also increase this risk.
- **Pre-payment or cancellation risk** originates when mortgages, deposits and other on-balance-sheet instruments give holders the option to buy or sell them, thus altering future cash flows. Potential mismatches on the balance sheet pose a risk since cash flows may have to be reinvested at an interest rate that is potentially lower (assets) or higher (liabilities).
- **Underwriting risk** is the possibility that the bank will have to hold part of a debt issue it has underwritten or agreed to place if it cannot all be placed among potential buyers.

In addition, during 2021, there was an increased focus on **climate and environmental risk**, which arise from the possibility that changes in climate may adversely affect the value of a financial instrument, a portfolio or the Group as a whole. Changes in climate include both extreme weather scenarios as well as gradual climate change and other situations where there is environmental degradation. This risk may have an impact both on financial instruments value or portfolios and on Santander's liquidity. The Group measures this risk through stress scenarios for both market and liquidity risk.

Balance sheet liquidity risk (unlike market liquidity risk) is the possibility of loss caused by forced disposal of assets or cash flow imbalance if the bank meets its payment obligations late or at excessive cost. It can cause losses by forced asset sales or impacts on margins due to the mismatch between expected cash inflows and outflows.

Pension and actuarial risks (explained at the end of this section) also depend on market variables.

We aim to comply with the *Basel Committee's Fundamental Review of the Trading Book* (FRTB) and the EBA's Guidelines on the management of interest rate risk arising from non-trading book activities. The purpose of several projects we run is to provide risk control managers and teams with the best market risk management tools under the right governance framework for the models we use for metric reporting; and to comply with regulation on the risks mentioned above.

IBOR Reform

Since 2015, central banks and regulators have organized working groups to propose alternative risk-free-rates to the Euro Overnight Index Average (EONIA), the London Interbank Offered Rate (LIBOR).

For the purpose of risk control during the transition, we launched the Santander's global IBOR Transition Programme in 2019, making sure concerned business units and subsidiaries understand risks regarding the transition and can take the right mitigating measures.

It takes recommendations, guidance and targets from regulators and working groups into account. The areas it is structured on are Technology and operations; the Legal department; Customer relations; Risk and model management; Conduct and communications; and Accounting and Finance.

In 2021, the programme focused on handling the transition to LIBOR and EONIA rates in December 2021. In 2022, the program will continue to address next steps in the transition related to the contract history management and the LIBOR dollar termination milestone in June 2023.

Santander also keeps taking part in public and private initiatives on benchmark interest rate indices reform.

For more details on IBOR reform, see Notes to the consolidated annual accounts nº 53 section 'c) Trading market risk management'.

4.2 Market risk management

Limits management and control system

The Market Risk function's daily control keeps market risk positions within approved limits, and evaluates performance and significant fluctuations in metrics. This assessments inform regular reports for senior management and both internal and external stakeholders to ensure proper oversight of market risk management.

We set market risk limits in a dynamic process according to the risk appetite in the annual limits plan prepared by senior management and extended to all subsidiaries (See "Risk appetite and structure of limits" under Section 2.4 'Management processes and tools').

To ensure limits cover operations exposed to market risk from various perspectives, we take a prudent approach involving these metrics:

- Value at Risk (VaR) and Stressed VaR limits.
- Limits of equivalent and/or nominal positions.
- Interest rate sensitivity limits.
- Vega limits.
- Delivery risk limits for short positions in securities (fixed-income and securities)
- Limits on the volume of effective losses to protect earnings from the period.:
  - Loss trigger.
  - Stop loss.
- Credit limits:
  - Total exposure limit.
  - Jump-to-default limit by issuer .
  - Others.
- Limits for origination transactions.

Those general limits include sub-limits that make the structure granular enough to control market risks from Santander's trading operations. We monitor subsidiaries' positions daily, checking changes in portfolios and at trading desks in order to detect events that may necessitate immediate mitigation.

The Group establishes global approval and control limits; global approval limits with local control; and local approval and control limits. They are requested by each subsidiary's business manager in consideration of business particulars, budgetary targets and the risk/ reward ratio. They are then approved by risk bodies according to internal governance processes. Subsidiaries must adhere to approved limits. On the day a limit breach occurs, subsidiary business managers must provide a written explanation with an action plan and corrective measures, such as reducing a position within the limits or formulating a strategy that justifies raising limits.

Methodologies and key aspects

a) Value at Risk

Value at risk (VaR), our standard methodology for managing and controlling market risk, measures maximum expected loss with a certain confidence level over a given time. For standard historical simulation, the confidence level is 99% and the time horizon is one day. We also make statistical adjustments (i.e. a two-year horizon or daily figures from the 520 days since the reference date for calculating VaR) to account for recent events that influence our risk levels in a quick and efficient manner.

We report the highest of two VaR figures, which we calculate every day. To one of them, we apply an exponential decay factor, which assigns a low weighting to the oldest observations; the other assigns the same weighting to all observations. At the same time, we use the same methodology for VaR to calculate "value at earnings" (VaE), which gives maximum potential earnings with a certain confidence level over a given time.

As a risk metric, historical VaR simulation has many advantages. It states a portfolio's market risk in a single figure according to market movements, without assumptions about functions, forms or correlations between market variables.

Still, it also has limitations. Some are inherent to the VaR metric, no matter the methodology used to calculate it. In particular:

- Because VaR is calibrated at a certain confidence level, it does not reveal potential losses beyond the VaR level.
- The liquidity horizon of certain products in a portfolio is longer than the VaR model's.

- VaR is a static measurement of portfolios' risk and subject every day to significant (albeit unlikely) changes.

Historical simulation also has limitations, such as:

- high sensitivity to time frame used
- inability to show plausible high-impact events outside the time frame used;
- no market inputs (e.g. correlations, dividends or recovery rates) for measurement parameters; and
- slow adaptation to new volatility and correlations, as the weighting of the newest and the oldest data is the same.

To circumvent some limitations, we use stressed VaR (sVaR) and expected shortfall (ES); calculate VaR with exponential decay; make conservative measurement adjustments; and run analyses and backtesting to assess the accuracy of the VaR calculation model.

b) Stressed VaR (sVaR) and Expected Shortfall (ES)

Every day, we calculate sVaR for our main portfolios using the same VaR calculation method but with these exceptions:

- A window of 260 observations (as opposed to 520 for VaR) over a continuous stress period. For each portfolio, we review the history of a subset of market risk factors (selected with expert criteria) and the most significant positions per books.
- Unlike with VaR, the percentile we take to get sVaR has uniform weighting and is not the highest one based on exponential and uniform weightings.

To calculate ES, we estimate expected potential loss above the level obtained from VaR and assign uniform weightings to all observations. Unlike VaR, ES has the advantage of showing tail risk (i.e. the risk of loss due to a rare event) while being a subadditive metric. According to the Basel Committee, ES with 97.5% confidence interval is at a similar risk level than VaR with 99% confidence interval.

c) Scenario analysis

Santander's risk measures are based on normal market conditions, price stability, sufficient liquidity and other assumptions used in daily risk management and decision-making. However, it is possible that extreme movements and strong unforeseen changes will not be properly anticipated. Therefore, we run scenario analyses, which prove important to predict the outcome of a wide range of risks and estimate the capital needed to absorb any losses in case such unexpected events occur.

The scenarios we use to predict future risks are important to overcome the limitations of models and historic data; support liquidity and capital plans; report on risk tolerance levels in place; and help us execute risk reduction and contingency plans under stress. All units engaged in trading regularly calculate and review historical, hypothetical and reverse stress-test scenarios.

d) Gauging and backtesting measures

According to regulation, the VaR model must accurately show material risks. Because VaR uses statistical techniques under normal conditions for a certain confidence level over a set time horizon, the estimate of maximum potential loss may differ from actual losses.

Santander reviews and contrasts the VaR calculation model on a regular basis to verify its accuracy.

Our Market risk functions run internal backtesting, contrast VaR and review hypothesis about portfolios for subsidiaries that apply the internal market risk model. For subsidiaries with an approved internal model, we run regulatory backtesting to find exceptions (where daily profit or loss is higher than VaR or VaE) that will influence the calculation of regulatory capital requirements for market risk.

Through backtesting, we assess the quality and general effectiveness of our risk measurement model, comparing daily VaR or VaE from *D-1* with these P&L figures on *D*:

- Economic P&L: P&L at end-of-day mark-to-market or mark-to-model value. Backtesting indicates if VaR/VaE methodology to measure and aggregate risk is appropriate.
- Current P&L: The difference between a portfolio's end-of-day value and real value by the end of the next day, in light of intraday trading but not fees or interest margin. Backtesting results enable us to determine the number of regulatory exceptions.
- Hypothetical P&L: The difference between a portfolio's end-of-day value and real value by the end of the next day, based on the assumption that positions will not vary. This backtesting does not consider the time effect, intraday trading, nor changes in portfolio positions in order to maintain consistency with VaR. We use it to determine if portfolios can withstand an intraday risk not reflected in closing positions (nor in VaR) over time. We also use it to count the number of regulatory surpluses.
- Theoretical P&L: Calculated with the market risk calculation engine, without intraday trading, changes in portfolio positions or time ("*Theta*"). We use this backtesting to check the quality of the internal VaR model.

Every day, we run backtesting for our subsidiaries. We also do internal (non-regulatory) backtesting every day, week or month depending on portfolio granularity.

The number (or proportion) of exceptions we record is one of the most intuitive indicators of a model's soundness. As our regulatory backtesting covers a historical period of one year (250 days) and a 99% VaR, we expect two to three exceptions per year. To calculate regulatory capital for market risk, we take the regulatory K[35] from the number of exceptions we find in actual and hypothetical backtesting.

e) Analysis of positions, sensitivities and results

Santander uses positions to quantify the market value of derivative transactions by main risk factor and with the *Delta* value of futures and options. We can express risk positions in subsidiaries' base currency and in the currency used to standardize information. We monitor positions every day to correct any incidents we uncover immediately.

Sensitivity to market risk is the estimated impact of change in a risk factor on the market value of an instrument or portfolio. To measure it, we take analytical approximations from partial derivatives or a full portfolio revaluation.

The Risk function's daily P&L statement is an excellent indicator of the impact of changes of financial variables on portfolios.

[35] K: Parameter used for calculating the consumption of regulatory capital due to market risk.

f) Derivatives activities and credit management

Because of their atypical characteristics, we have special measures to monitor derivatives and credit management daily. We monitor the sensitivity of underlying assets to price movements (*Delta* and *Gamma*), to volatility (*Vega*[36]) and over time (*Theta*). We also systematically check measurements of their sensitivity to spread, jump-to-default risk and position concentrations by rating.

According to regulation and the Basel Committee's recommendations, we also calculate the incremental risk charge (IRC), an additional metric for credit risk in the trading book. The IRC covers default risk and rating migration risk (which VaR does not show adequately) by taking credit spread changes into account. In general, we apply it to government and corporate bonds; to forwards, options and other bond derivatives; and to credit default swaps, asset-backed securities and other credit derivatives. To calculate it, we take direct measurements of loss distribution tails at the right percentile (99.9%) over a one-year horizon and follow the Montecarlo method with one million simulations.

g) Credit valuation adjustment and debit valuation adjustment

Santander makes credit and debit valuation adjustments to calculate trading book value.

A credit valuation adjustment (CVA) is a change in the value of OTC derivatives to take into account counterparty credit risk. For a given counterparty, it adds up to the CVAs for all its maturity dates. We calculate it based on exposure at default, loss given default, probability of default, the discount curve and other inputs.

A debit valuation adjustment (DVA) is similar to a CVA but results from the risk our counterparties assume with OTC derivatives traded with Banco Santander.

4.3 Market risk key metrics

In 2021, risk levels from trading generally remained low amid less volatility than in 2020, as well as economic recovery spurred by vaccination progress. However, uncertainty persisted in light of the possibility of new covid variants. Risks mainly originated from trading non-complex instruments with customers. Most were to hedge interest rate and FX risks. Like last year, our own trading portfolio positions' contribution to overall risk stayed lower than in previous years.

2021 saw generally low consumption of trading limits, which correspond to the Group's market risk appetite.

Our stressed scenarios also revealed low risk levels based on observed losses in stress testing. We run the scenarios time and again to measure any risk not covered by the usual metrics for monitoring and controlling market risks.

Market risk capital requirements

We use internal and standard models to determine market risk-related capital requirements.

In 2019, the ECB authorized Santander to use internal market risk models to calculate regulatory capital for the trading portfolios of our subsidiaries in Spain, Chile and Mexico; and to extend our Spain subsidiary's internal model to our London branch. As we aim to get the rest of our subsidiaries gradually approved, we have been working closely with the ECB and reviewing the new requirements recently published by the Basel Committee to strengthen financial institutions' capital.

Santander launched the Market risk advanced platform (MRAP), a global initiative to strengthen market risk infrastructure according to the new Fundamental Review of the Trading Book (FRTB); and to adapt internal market risk models to the latest Targeted Review of Internal Models (TRIM) and to supervisory demands. MRAP takes a multi-disciplinary and multi-regional approach. It includes all subsidiaries that generate market risk, as well as the Market risk function, IT, Front office, the Finance function, the Regulatory affairs function and other relevant stakeholders. In 2021, it continued to improve our functional and IT architecture and our operational models significantly, while generating synergies between initiatives and resources.

According to Santander's internal market risk model, we calculate consolidated regulatory capital as the total regulatory capital of the subsidiaries that the ECB has approved. This standard for consolidating capital does not consider capital savings owing to geographical diversification and is, therefore, conservative.

In light of the ECB's approval, we use advanced methods with VaR, sVaR and IRC as fundamental metrics to calculate market risk-related regulatory capital consistently with the Basel requirements and, in particular, with the EU Capital Requirements Regulation (CRR).

[36] Vega, a Greek term, is the sensitivity of the value of a portfolio to changes in the price of market volatility

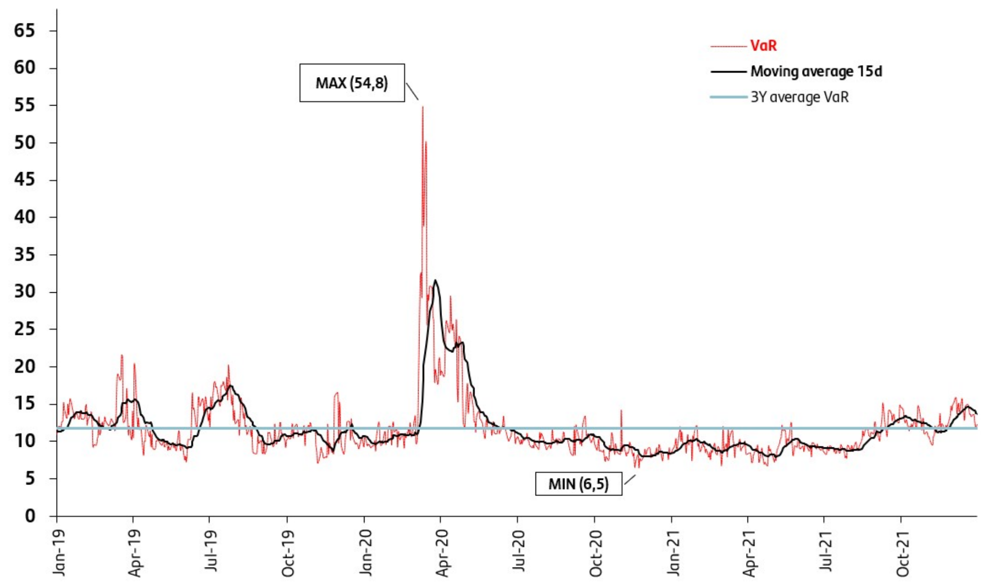
VaR analysis

As demonstrated by the VaR of SCIB's trading portfolio, Santander's market risk strategy focuses on trading with customers to minimize net directional exposure and keep risk diversified by geography and risk factor.

Despite constant market volatility (especially in regard to interest and FX rates), VaR stayed mostly below the average of the last three years, with the exception of a spike in the last quarter of the year . In this period, there was an increase in market volatility due to the uncertainty caused by the potential impact of the new covid variant (Omicron). This could lead to a possible economic growth slowdown, mainly due to new disruptions in supply chains together with increases in energy prices, closing December VaR at EUR 12.3 million.

VaR 2019-2021

EUR million. VaR at 99% over a one day horizon



In 2021, VaR fluctuated between EUR 15.9 million and EUR 6.8 million. The average VaR in 2021 was EUR 10.5 million, lower than in 2020 and 2019 (EUR 12.5 million and EUR 12.1 million, respectively).

Risk per factor

This table shows the latest and average VaR at a 99% confidence level by risk factor in the last three years. It also shows the minimum and maximum VaR values in 2021 and 97.5% ES at the end of December 2021:

VaR STATISTICS AND EXPECTED SHORTFALL BY RISK FACTOR[A]

EUR million. VaR at 99% and ES at 97.5% with one day time horizon

	2021					2020		2019	
	VaR (99%)				ES (97.5%)	VaR		VaR	
	Min	Average	Max	Latest	Latest	Average	Latest	Average	Latest
Total Trading	**6.8**	**10.5**	**15.9**	**12.3**	**11.9**	**12.5**	**8.3**	**12.1**	**10.3**
Diversification effect	(6.3)	(12.9)	(26.6)	(13.4)	(15.0)	(13.0)	(11.8)	(8.1)	(9.8)
Interest rate	6.0	9.6	15.3	9.1	9.4	9.2	5.4	10.0	9.2
Equities	2.2	3.5	7.7	5.1	5.1	4.4	3.1	2.9	4.8
Exchange rate	1.9	4.2	8.0	5.7	5.6	5.9	6.0	3.9	2.6
Credit spread	2.6	4.8	8.0	5.1	6.0	5.5	4.5	3.4	3.5
Commodities	0.4	1.3	3.5	0.7	0.8	0.5	1.1	—	—
Total Europe	**6.1**	**9.3**	**16.1**	**9.9**	**9.7**	**10.5**	**8.0**	**6.3**	**10.1**
Diversification effect	(5.2)	(9.3)	(16.9)	(12.6)	(13.1)	(10.7)	(8.9)	(6.9)	(8.4)
Interest rate	5.3	7.7	11.7	7.1	6.7	7.9	6.5	6.0	8.2
Equities	1.8	3.3	8.3	5.8	5.2	4.3	3.0	1.9	4.9
Exchange rate	1.6	2.8	5.0	4.5	4.9	3.5	2.9	1.9	1.9
Credit spread	2.6	4.8	8.0	5.1	6.0	5.5	4.5	3.4	3.5
Commodities	—	—	—	—	—	—	—	—	—
Total North America	**1.6**	**2.5**	**7.4**	**2.7**	**2.8**	**6.6**	**2.9**	**3.5**	**3.8**
Diversification effect	0.2	(0.7)	(2.9)	(0.6)	(0.5)	(2.2)	(1.0)	(1.3)	(2.1)
Interest rate	1.3	2.5	7.0	2.7	2.7	3.4	3.3	2.6	3.4
Equities	—	0.1	1.5	—	—	0.3	0.1	0.2	0.1
Exchange rate	0.1	0.6	1.8	0.6	0.6	5.1	0.5	2.0	2.4
Total South America	**3.3**	**5.9**	**10.5**	**6.3**	**6.4**	**5.6**	**4.5**	**9.5**	**6.0**
Diversification effect	(1.2)	(4.9)	(16.0)	(5.1)	(3.8)	(3.8)	(5.4)	(2.9)	(3.7)
Interest rate	3.0	5.5	12.2	5.8	6.3	5.2	4.1	7.8	5.9
Equities	0.4	1.2	3.2	1.1	1.0	1.0	0.5	2.0	1.7
Exchange rate	0.7	2.8	7.6	3.8	2.1	2.7	4.2	2.6	2.1
Commodities	0.4	1.3	3.5	0.7	0.8	0.5	1.1	—	—

A. In North America and South America, VaR levels of credit spreads, and in North America for VaR of commodities, are not shown separately due to their low or null materiality.

At the end of December, VaR was EUR 4.0 million higher than at the end of 2020; however, average VaR fell by EUR 2.0 million. Average VaR fell for most risk factors owing to low market volatility throughout the year. By region, average VaR decreased in Europe and especially in North America with lower exchange rate volatility.

By risk factor, VaR has followed a generally stable trend in recent years. For many factors, temporary VaR increases generally owe more to short-term price volatility than to significant changes in positions.

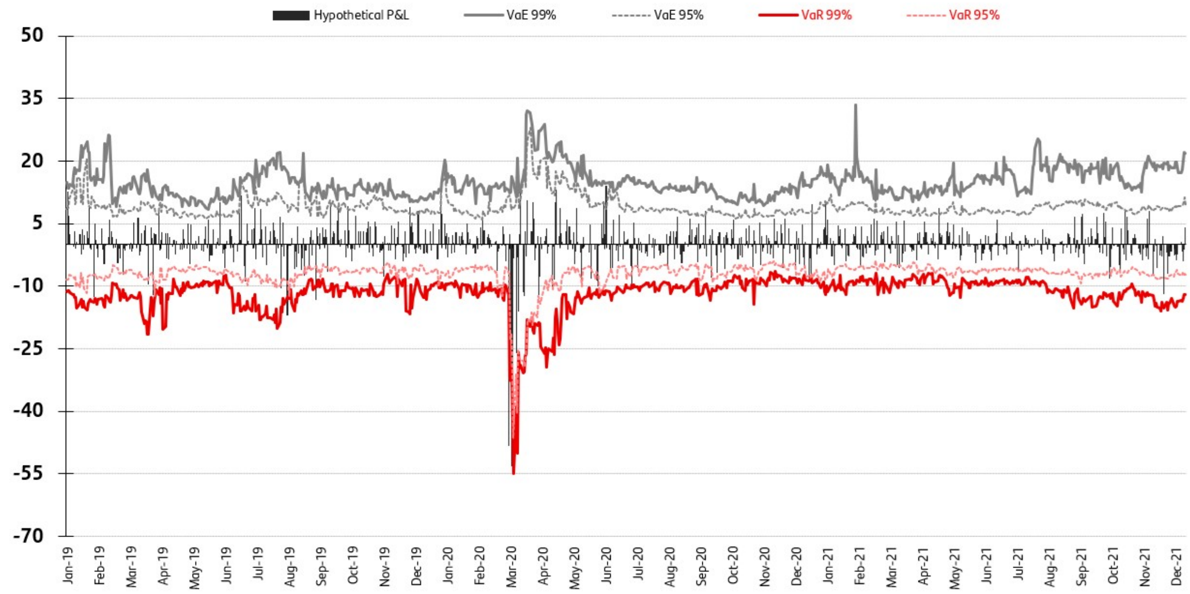
Backtesting

Actual losses can differ from predicted losses because of the mentioned VaR's limitations. Santander measures the accuracy of our VaR calculation model to make sure it is reliable (see "Methodologies and other key details" under section 4.2 'Market risk management'). The most important tests we run involve backtesting:

- Backtesting of hypothetical P&L and of the entire trading book showed no exceptions to 99% VaR and VaE in 2021.
- The results for the past year are consistent with the assumptions of the VaR calculation model.

BACKTESTING OF TRADING PORTFOLIOS: DAILY RESULTS VS. VaR FOR PREVIOUS DAY

EUR million



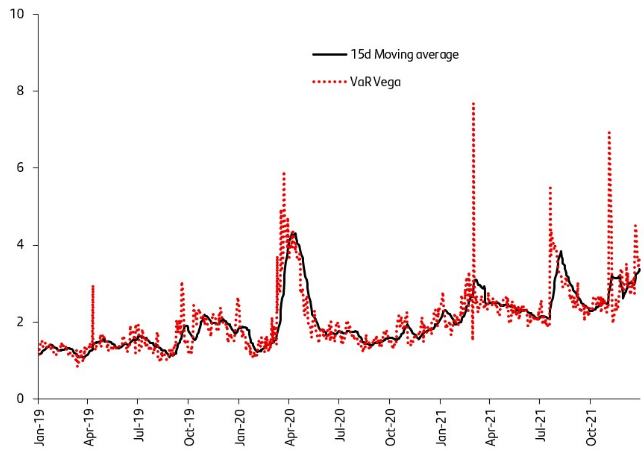
Derivatives risk management

Our operations with derivatives consist mainly in selling investment products and hedging risks for customers. We aim to keep open net risk as low as possible. Trading includes equity, fixed-income and FX options, chiefly in Spain, Brazil, the UK and Mexico.

The graph below shows the *Vega VaR* of structural derivatives over the last three years. It has fluctuated around an average of EUR 2.0 million. In general, high VaR values stem from significantly high market volatility, such as at the start of the health crisis, amid changes to monetary policy, or at times of political uncertainty in our geographies.

CHANGE IN RISK OVER TIME (VaR) OF STRUCTURE DERIVATIVES

EUR million. VaR Vega at a 99% over a one day horizon



Average VaR was based on interest rates, equities and FX rates. In 2021, average risk (EUR 2.6 million) was slightly higher than in 2019 and 2020 (see table below):

FINANCIAL DERIVATIVES. RISK (VaR) BY RISK FACTOR

EUR million. VaR at a 99% over a one day horizon

	2021				2020		2019	
	Minimum	Average	Maximum	Latest	Average	Latest	Average	Latest
Total VaR Vega	**1.5**	**2.6**	**7.7**	**3.7**	**1.9**	**2.3**	**1.5**	**2.6**
Diversification effect	(0.6)	(0.9)	(2.3)	(0.1)	(1.3)	(1.7)	(1.1)	(1.3)
VaR interest rate	0.7	1.4	6.7	1.2	1.0	1.8	1.1	2.7
VaR equities	0.9	1.2	1.8	1.6	1.3	1.4	0.8	0.8
VaR exchange rate	0.5	0.9	1.5	1.0	0.9	0.8	0.6	0.4
VaR commodities	—	—	—	—	—	—	—	—

Thanks to our risk culture and prudent risk management, exposure to complex structured instruments and vehicles is minor. At the end of December 2021, we had exposure to:

- hedge funds (as the counterparty in derivative contracts): EUR 109 million (indirect). We review this type of counterparty risk on a case by case basis, setting collateralization ratios based on each fund's characteristics and assets.
- monolines: no exposure at the end of December 2021.

Santander's policy on approving new derivatives transactions has always been extremely prudent and conservative. It is closely monitored by senior management.

Scenario analysis

We regularly calculate and review stress test scenarios for all the trading portfolios of the group and its subsidiaries, such as:

Historical scenarios

Historical scenarios consider trading portfolio performance during a crisis or significant past market events to estimate maximum losses if such events reoccur.

- "Subprime crisis": Historical scenario based on 2007-2008 events arising from the US subprime mortgage crisis. The financial crisis caused high volatility and drastically low liquidity in markets across the globe. For each market risk factor, we determine the worst market shocks over one-day and ten-day horizons.
- "Covid crisis": Historical scenario added to our stress testing programme in 2020 and based on abrupt movements in financial markets owing to the health crisis. After calculating a ten-day horizon of peak trading losses in the first half of 2020, all risk factors were affected. Stock indices plummeted, volatility increased for all risk factors, emerging market currencies depreciated, government bond yields hit record lows and credit spreads widened significantly.

Hypothetical scenarios

We use extreme scenarios based on market risk shocks that do not necessarily relate to past events. Unlike generally *ex post* historical scenarios, hypothetical scenarios are *ex ante.*

- "Abrupt crisis": A scenario of strong, sudden movements in all risk factors, including higher yield curves, stock market crashes, a stronger US dollar against other currencies, higher volatility, wider credit spreads, declines in commodity prices, reduction in dividends and default from main fixed-income and equity positions.
- "Worst case": A hypothetical scenario that combines movements of each risk factor with its volatility. We base these scenarios on historical volatility with between ± 3 and ±6 standard deviations per day (irrespective of any historical correlation between them) in order to review trading books' risk profile and potential maximum losses under the worst possible scenario.
- EBA's adverse scenario: A hypothetical scenario based on the EBA's proposed adverse macroeconomic scenario for all market risk factors in biennial EU-wide stress testing.
- Forward-looking scenario: A plausible hypothetical scenario defined and calculated on the basis of portfolio positions and expert opinions about expected short-term market risk movements that could have a negative effect on trading positions.

Reverse stress test scenarios

Reverse stress test scenarios identify market variable shifts that can lead to a loss that will endanger our survival. They complement traditional stress scenarios and help signal business vulnerabilities, hidden risks and interactions between risk factors. They begin with a known stress result (such as failure to achieve determined capital, liquidity or solvency ratios) and identify extreme scenarios.

Other stress test scenarios

We also run different quarterly stress tests based on extreme market movements to determine potential losses or major impacts on capital:

- IRC scenarios: Designed to stress market risk capital consumption by incremental risk charge (IRC), associated with default risk and credit rating change risk of issuers of debt instruments present in trading portfolios.
- Stress proxy scenario: Specially constructed to measure how selecting the wrong proxies would affect VaR.
- Illiquidity and concentration scenarios: To show the impact of scarce liquidity in markets under stress, price gaps and concentration risk.

The table below shows the worst scenario outcomes at the end of December 2021:

STRESS SCENARIO: MAXIMUM VOLATILITY (WORST CASE)

EUR million. Dec. 2021 data

	Interest rate	Equities	Exchange rate	Credit spread	Commodities	Total
Total trading	**(22.6)**	**(17.5)**	**(13.2)**	**(21.1)**	**—**	**(74.4)**
Europe	(15.1)	(14.8)	(4.9)	(21.1)	—	(55.9)
North America	(4.4)	—	(2.1)	—	—	(6.5)
South America	(3.1)	(2.7)	(6.2)	—	—	(12.0)

Our analysis concludes that Santander's trading portfolios would lose EUR 74 million in market value in the worst-case scenario of market stress. The loss would mainly affect Europe (in this order: credit spread, interest rates, equities, and FX rates).

Connection with balance sheet items

Below are items on Santander's consolidated balance sheet that generate market risk. The table distinguishes positions whose main risk metric is VaR from other positions that are monitored with other risk metrics.

RISK METRIC VALUES ON THE CONSOLIDATED BALANCE SHEET

EUR Million. As of Dec. 2021

		Main market risk metrics		
Assets subject to market risk	**Balance sheet amount**	**VaR**	**Other**	**Main risk factors for 'Other' balance**
Cash, cash balances at central banks and other deposits on demand	210,689		210,689	Interest rate
Financial assets held for trading	116,953	116,953		
Non-trading financial assets mandatorily at fair value through profit or loss	5,536	4,042	1,494	Interest rate, spread
Financial assets designated at fair value through profit or loss	15,957	5,489	10,468	Interest rate, spread
Financial assets at fair value through other comprehensive income	108,038	2,453	105,585	Interest rate, spread
Financial assets measured at amortised cost	1,037,898		1,037,898	Interest rate, spread
Hedging derivatives	4,761		4,761	Interest rate, exchange rate
Changes in the fair value of hedged items in portfolio hedges of interest risk	410		410	Interest rate
Other assets	95,593			
Total assets	**1,595,835**			
Liabilities subject to market risk				
Financial liabilities held for trading	79,469	79,469		
Financial liabilities designated at fair value through profit or loss	32,733	390	32,343	Interest rate, spread
Financial liabilities at amortised cost	1,349,169		1,349,169	Interest rate, spread
Hedging derivatives	5,463		5,463	Interest rate, exchange rate
Changes in the fair value hedged items in portfolio hedges of interest rate risk	248		248	Interest rate
Other liabilities	31,700			
Total liabilities	**1,498,782**			
Total equity	**97,053**			

4.4 Structural balance sheet risk management

Limits management and control systems

The policies of senior management dictate mechanisms to monitor and control structural risk according to regulatory requirements and our risk appetite. The mechanisms consider sub-types of structural risk and their implications, contingencies and interrelations.

The Structural risk function's role in the second line of defence is to ensure structural risks are understood, controlled and reported to senior management according to established governance:

- It sets interest rate risk metrics and reviews and challenges structural risk appetite and limits proposed by the first line of defence.
- It oversees the first line of defence's structural risk management and checks compliance with set limits.
- It regularly reports on risk profile to senior management and issues guidelines to business lines about measures it deems necessary.
- It evaluates and challenges commercial proposals and gives senior management and business units information to understand the interest rate risk of Santander's businesses and operations.
- It confirms proper structural risk procedure, in addition to formulating and overseeing models and policies.

Like market risk, structural risk also has an annual plan framework to set structural balance sheet risk limits according to risk appetite.

- Balance-sheet structural interest-rate risk:
  - Limit on net interest income (NII) sensitivity over a 1 year horizon.
  - Limit on the sensitivity of economic value of equity (EVE).
  - Limit on the market value of ALCO portfolios under stress scenarios and that given their accounting classification (fair value with changes in equity) could have an impact on shareholders' equity.
- Structural exchange rate risk:
  - Limit on the net permanent position of the core capital ratio.
  - Limit on individual hedge required for each currency.

Business lines' risk managers must prove explanations for potential limit and sub-limit breaches as well as an action plan to correct them.

Methodologies and other key details

a) Structural interest-rate risk

As part of structural risk, interest rate risk in the banking book (IRRBB) is the main source of balance sheet risk.

Santander measures the potential impact of interest rate movements on EVE and NII. Because changing rates may generate impacts, we must manage and control many subtypes of interest rate risk, such as repricing risk, curve risk, basis risk and option risk (e.g. behavioural or automatic). Interest rate risk in the balance sheet and market conditions and outlooks could necessitate certain financial measures to achieve Santander's desired risk profile (such as selling positions or setting interest rates on products we market). The metrics we use to monitor IRRBB include NII and EVE sensitivity to interest rate movements.

- Net interest income sensitivity

Net interest income (NII) is the difference between interest income from assets and the interest cost of liabilities in the banking book over a typical one- to three-year horizon (one year being standard in Santander). Because NII sensitivity is the difference in income between a selected scenario and the base scenario, its values can be as many as considered scenarios. It enables us to see short-term risks and supplement economic value of equity (EVE) sensitivity.

- Economic value of equity sensitivity

Economic value of equity (EVE) is the difference between the net current value of all assets minus the net current value of all liabilities in the banking book. It does not include shareholders' equity and non-interest-bearing instruments. Because EVE sensitivity is the difference in EVE between a selected scenario and the base scenario, it can have as many values as considered scenarios. It enables us to see long-term risks and supplement NII sensitivity.

b) Interest rate models

Interest rate risk metrics consider the behaviour of financial products under stress scenarios in which uncertainty is common and the failure to meet contractual terms is possible. We have methodologies that help explain how such products will behave. These are our key interest rate risk models:

- Treatment of liabilities without stated maturity

  Santander's model uses such variables as stable and unstable volumes, the rate of settlement over time and the difference between customer rates and market rates to model non-maturity account balances.

- Prepayment treatment for certain assets

  Prepayment risk mainly affects fixed-rate mortgages at subsidiaries where their contractual rates are low compared to market levels and there is an incentive for customers to amortize in advance (in whole or in part). In variable rate products, the prepayment is due to other factors such as economic cycle, tax factors, cultural factors, etc. The impact in terms of IRRBB risk is more limited by having a variable repricing. In the Group, this risk is modelled and included in the risk appetite metrics.

c) Structural foreign exchange rate risk/hedging of results

Every day, we measure FX positions, VaR and P&L.

d) Structural equity risk

We measure equity positions, VaR and P&L.

4.5 Structural balance sheet risk key metrics

Consistent with previous years, the market risk profile of Santander's balance sheet remained moderate in 2021 in terms of asset, shareholders' equity and NII volumes. Each subsidiary's Finance division manages interest rate risk from commercial banking and is responsible for handling structural risk from interest rate fluctuations.

To measure interest rate risk, Santander uses statistical models based on strategies to mitigate structural risk with interest-rate instruments (such as bonds and derivatives) to keep risk profile within risk appetite.

The NII and EVE sensitivities below are based on scenarios of parallel interest rate movements from -100 to +100 basis points.

Structural interest rate risk

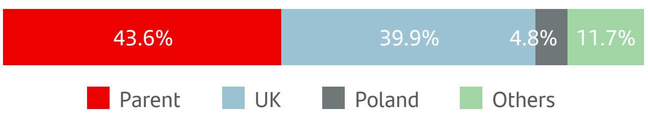
Europe

In general, the NII and EVE of our main balance sheets (i.e. Santander España and Santander UK) show positive sensitivity to rising interest rates. Across our footprint, exposure was moderate in relation to annual budget and capital levels in 2021.

At the end of December 2021, under the scenarios previously described, the most significant NII sensitivity risk concentration in euros amounted to EUR 703 million; in pounds sterling, EUR 541 million; in Polish złoty, EUR 65 million; and in US dollars, EUR 54 million, all relating to interest rate cut risks.

NET INTEREST INCOME (NII) SENSITIVITY

% of total



* Other: Portugal and SCF.

The most significant EVE risk concentration amounted to EUR 3,684 million in the yield curve of the euro ; of the pound sterling, EUR 1,056 million; of the US dollar, EUR 221 million; and of the Polish złoty, EUR 56 million, all relating to interest rate cut risks.

ECONOMIC VALUE OF EQUITY (EVE) SENSITIVITY

% of total

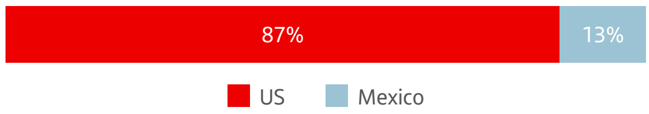
* Other: Poland, Portugal and SCF.

North America

In general, the NII and EVE of our North American balance sheets tend to show positive sensitivity to rising interest rates. Exposure was moderate in relation to annual budget and capital levels in 2021. At the end of December, the most significant risk to NII was mainly in the US and amounted to EUR 152 million.

NET INTEREST INCOME (NII) SENSITIVITY

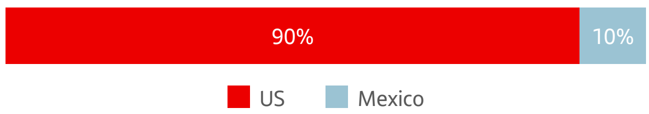
% of total



The most significant risk to EVE was in the US and amounted to EUR 590 million.

ECONOMIC VALUE OF EQUITY (EVE) SENSITIVITY

% of total



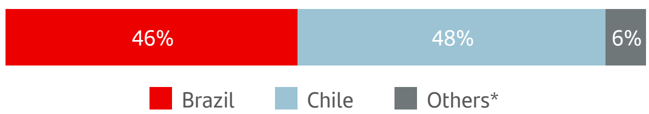
South America

The EVE and NII of our main South American balance sheets are positioned for interest rate cuts.

In 2021, exposure was moderate in relation to annual budget and capital levels. At the end of December, the most significant risks to NII were mainly in Chile (EUR 86 million) and Brazil (EUR 83 million).

NET INTEREST INCOME (NII) SENSITIVITY

% of total

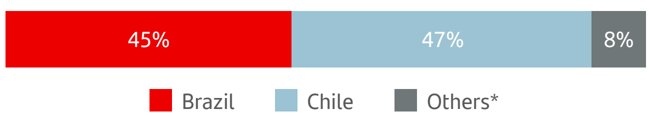


* Other: Argentina, Peru and Uruguay.

The most significant risks to EVE were recorded in Brazil (EUR 271 million) and Chile (EUR 258 million).

ECONOMIC VALUE OF EQUITY SENSITIVITY

% of total



* Other: Argentina, Peru and Uruguay.

Structural foreign exchange rate risk/results hedging

Our structural FX risk stems mainly from the income and hedging of foreign currency transactions for permanent financial investments. In our dynamic management of this risk, we aim to limit the impact of FX rate movements on the core capital ratio. In 2021, we hedged nearly all currencies that have an impact on our core capital ratio.

In December 2021, our permanent exposures (with potential impact on shareholders' equity) were, from largest to smallest, in US dollars, British pounds sterling, Brazilian *reais*, Mexican pesos, Chilean *pesos* and Polish złoty.

We use FX derivatives to hedge part of those permanent positions. The Finance division manages FX risk and hedging for the expected profits and dividends of subsidiaries whose base currency is not the euro.

Structural equity risk

Santander holds equity positions in its banking and trading books. They are either equity instruments or stock, depending on the share of ownership or control. By the end of December 2021, the equities and shareholdings in the banking book were diversified among Spain, China, Morocco, Poland and other countries. Most of them invest in the financial and insurance sectors. We have minor equity exposure to property and other sectors.

Structural equity positions are exposed to market risk. We calculate their VaR with a set of market prices or proxies. At the end of December 2021, VaR at a 99% confidence level over a one-day horizon was EUR 309 million (EUR 319 million in 2020 and EUR 170 million in 2019).

Structural VaR

With such a homogeneous metric as VaR, we can fully monitor market risk in the banking book (not including SCIB's trading operations, as explained in Section 4.3 'Market risk key metrics').We differentiate fixed income based on interest rates and credit spreads in ALCO portfolios, FX rates and shares.

In general, the structural VaR of our total assets and equity is minor.

STRUCTURAL VaR

EUR million. VaR at a 99% over a one day horizon

	2021				2020		2019	
	Minimum	Average	Maximum	Latest	Average	Latest	Average	Latest
Structural VaR	**895.8**	**993.7**	**1,090.7**	**1,011.9**	**911.0**	**903.1**	**511.4**	**729.1**
Diversification effect	(158.8)	(327.3)	(431.4)	(240.2)	(349.8)	(263.4)	(304.2)	(402.0)
VaR Interest Rate[A]	224.2	400.7	540.5	287.8	465.1	345.5	345.6	629.7
VaR Exchange Rate	521.3	600.6	655.2	655.2	499.9	502.6	308.1	331.7
VaR Equities	309.1	319.7	326.4	309.1	295.9	318.5	161.9	169.8

A. Includes credit spread VaR on ALCO portfolios.

4.6 Liquidity risk management

The Liquidity risk function's role in the second line of defence is to ensure liquidity risks are understood, controlled and reported to senior management and across the Group according to established governance:

- It determines liquidity risk and provides detailed measurements of current and emerging risks.
- It sets liquidity risk metrics, and reviews and challenges liquidity risk appetite and limits proposed by the first line of defence.
- It oversees the first line of defence's liquidity risk management; measures how long business will remain within risk appetite limits; and checks compliance with liquidity risk limits.
- It reports to governing bodies on risk, risk appetite and exceptions.
- It evaluates and challenges commercial and business proposals, and gives senior management and business units the information they need to understand Santander's liquidity risk.
- It provides a comprehensive overview of our liquidity risk exposure and profile.
- It makes sure the liquidity risk procedures in place are appropriate to manage business within risk appetite limits.

Methodologies and key other key details

Grupo Santander measures liquidity risk with tools and metrics that account for the appropriate risk factors.

a) Liquidity buffer

The liquidity buffer is the total liquid assets a bank has to cope with cash outflows during periods of stress. The assets are free of encumbrances and can be used immediately to generate liquidity without losses or excessive discounts. The liquidity buffer is a tool for calculating most liquidity metrics. It is also a metric with defined limits for each subsidiary.

b) Liquidity coverage ratio (LCR)

The liquidity coverage ratio (LCR) is a regulatory metric. Its purpose is to promote the short-term resilience of a bank's liquidity profile and make sure it has enough high-quality liquid assets to withstand a considerable idiosyncratic or market stress scenario over 30 calendar days, in addition to a currency distribution according to its needs.

c) Wholesale gap metric

The wholesale liquidity metric measures the number of days the Group would survive if it used liquid assets to cover lost liquidity from a wholesale deposit run-off (without possible renewal) over a set time horizon. We also use it as an internal short-term liquidity metric to reduce risk from dependence on wholesale funding

d) Net stable funding ratio

The net stable funding ratio (NSFR) is a regulatory metric we use to measure long-term liquidity risk. It is the ratio of available stable funding to required stable funding. It requires banks to keep a robust balance sheet, with off-balance-sheet assets and operations financed by stable liabilities.

e) Asset encumbrance metrics

We calculate two metrics to measure asset encumbrance risk. On the one hand, the asset encumbrance ratio gives the proportion of encumbered assets to total assets; on the other, the structural asset encumbrance ratio gives the proportion of encumbered assets by structural funding transaction (namely long-term collateralized issues and credit transactions with central banks).

f) Other liquidity indicators

In addition to traditional tools to measure short and long-term liquidity and funding risk, Santander has a set of additional liquidity indicators to complement those and to measure other non-covered liquidity risk factors. These include concentration metrics, such as the main and the five largest funding counterparties, or the distribution of funding by maturity. Additionally, we calculate a number of metrics on the institution's ability to generate liquidity through collateralized financing, such as overcollateralization, eligibility ratios assets without charges and deadlines for their placement.

g) Liquidity scenario analysis

Our four standard liquidity stress test scenarios are:

i. an idiosyncratic scenario of events detrimental only to Santander;

ii. a local market scenario of events highly detrimental to a base country's financial system or real economy;

iii. a global market scenario of events highly detrimental to the global financial system; and

iv. a combined scenario of the most severe idiosyncratic and local and global market events, occurring simultaneously in an interconnected manner.

We use these stress test outcomes as tools to determine risk appetite and support business decision-making.

h) Liquidity early warning indicators (EWI)

The system of early warning indicators (EWI) consists of quantitative and qualitative liquidity indicators that help predict stress situations and weaknesses in the funding and liquidity structure of Santander entities. External indicators relate to market-based financial variables; internal indicators relate to our own performance.

i) Intraday liquidity metrics

Santander follows Basel regulation and calculates several metrics and stress scenarios for intraday liquidity risk to maintain a high level of control.

4.7 Liquidity risk key metrics

Santander's sound liquidity and funding situation stands on a decentralized liquidity model. Each subsidiary manages its own liquidity independently, keeping a large stock of highly liquid assets.

In general, our LCR remained stable and well above the regulatory threshold. In 2021, our minimum required LCR was 100% and our risk appetite limit was 110%. We calculate and monitor this metric every day.

We manage liquidity buffers effectively to maintain a sound risk profile within regulatory limits and a profitable balance sheet. They mostly consist of level 1 assets: cash and sovereign debt, adequately diversified by currency according to the Group's balance sheet needs.

Our subsidiaries have a sound balance sheet and stable funding structure, supported by a large base of customer deposits, low dependence on short-term funding and liquidity metrics well above local and corporate regulatory requirements and within risk appetite limits.

The regulatory NSFR of our core subsidiaries and the Group remained above the regulatory requirement and internal risk appetite. In June 2021, we adapted our metric calculation to the new implementing technical standards (ITS) in the EBA's Reporting framework 3.0.

Our main sources of structural asset encumbrance are collateralized issues (e.g. securitizations and covered bonds) and credit transactions with central banks with collateral. The higher asset encumbrance from 2020 carried over into 2021 on the back of more appeals to central banks by using the management drivers provided for the covid scenario. Santander's asset encumbrance is consistent with the other European banks'.

As demonstrated by stress scenarios run under uniform corporate standards, the balance sheets of Santander's units are robust. Under the worst scenario, every unit would survive and handle liquidity needs with nothing more than its liquidity buffer for at least 45 days.

Santander has worked to introduce intraday liquidity risk management into its main metrics by setting daily limits and warning indicators to help anticipate contingencies.

For more details on liquidity metrics, see section 3.4 'Liquidity and funding management' of the chapter on Economic and financial review.

4.8 Pension and actuarial risk management

Pension risk

Santander covers financial, market, credit and liquidity risks from the assets and investments of employees' defined benefit pension funds, as well as actuarial risks from pension obligations. We aim to recognize, measure, control, mitigate and report on pension risk and all its sources. We estimate combined losses each year on assets and liabilities under a stress scenario that accounts for shifting interest rates, exchange rates, inflation, stock markets, property values and credit spreads.

In 2021, the markets' effect on our pension risk was positive mainly because of higher discount rates in our main geographies. Also, Santander took measures in core units to reduce exposure to actuarial and pension risk.

Actuarial risk

Actuarial risk stems from biometric changes in defined benefit recipients and life insurance policyholders' life expectancy; from suddenly higher non-life insurance payments; and from policyholders' unexpected behaviour to file claims covered by insurance policies.

These are the actuarial risks we distinguish:

- Life liability risk: risk of loss on liabilities due to changing risk factors that affect pension obligations. We split it into:
  - mortality/longevity risk: risk of loss on liabilities due to death or survival rates that exceed expectations.
  - morbidity risk: risk of loss on liabilities due to changes in estimated policyholder disability or incapacitation rates.
  - surrender/lapse risk: risk of loss on liabilities due to early policy surrender or changes in policyholders' exercise of withdrawal rights, extraordinary premium payments or suspension of premium payments.
  - expense risk: risk of loss on liabilities from negative shifts in expected costs.
  - catastrophe risk: losses caused by catastrophic events that increase the bank's life insurance obligations.
- Non-life liability risk: risk of loss on liabilities from risk variations that increase Santander's non-life payment obligations towards employees. We split it into:
  - premium risk: loss from insufficient premiums to cover future claims.
  - reserve risk: loss from insufficient reserves for unpaid claims (including management costs).
  - catastrophe risk: losses caused by catastrophic events that increase the bank's non-life insurance obligations.

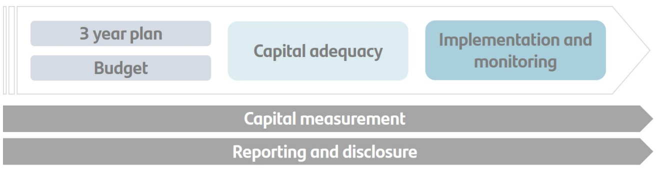
5. Capital risk

5.1 Introduction

Our structural risk includes the risk of insufficient quality or quantity of capital to meet internal business objectives, regulatory requirements and market expectations.

Our Capital Risk function, which is part of our second line of defence, controls and oversees first-line capital management. It checks that our capital adequacy and coverage match our risk profile. It also approves and monitors transactions that could be significant risk transfers (SRT).

It brings together capital planning, budget execution and tracking, and the ongoing measurement, reporting and disclosure of capital data (described below).



The Capital Risk function controls and oversees the capital activities carried out by the first line of defence. These activities split into four workflows to ensure monitoring is adequate to Santander's risk profile:

- **Capital planning:** internal process to determine capital levels and returns according to our strategy. Because we must ensure solvency and efficiency of capital, we identify the necessary measures to achieve our capital ratios and return on capital targets.
- **Capital adequacy:** assessment of capital levels against the type and amount of risk assumed based on the risk profile assessment (RPA), our strategy and risk appetite. For more details, see section 2.4 'Management processes and tools' - Risk profile assessment and Risk appetite and structure of limits.
- **Capital risk measurement:** process to cover required actions to measure capital metrics, based on a set methodology for obtain final figures required. It also supports the stages of capital management, monitoring, oversight and control.
- **Origination:** assessment of our portfolios' capital efficiency for identifying securitization, risk mitigation techniques, asset sales and other capital optimization initiatives.

In 2021, the function continued to work on implementing capital risk operating model improvements across the Group. A key objective was to reduce the capital risk profile through more robust control and oversight environment, which we achieved by:

- revising and updating corporate and local capital risk procedures;
- improved traceability on capital planning;
- standardization of capital reporting under our common guidelines while adapting to local market and regulations; and
- following up regularly on local progress made on the TOM rollout.

Key initiatives 2021

The year 2021 saw economic recovery on the back of progress in the vaccination process and the gradual lifting of restrictions. Capital risk management focused on protecting solvency and making sure internal objectives were met. We identified and assessed the risks that could affect solvency and continuously monitored key metrics.

We closely track the evolution of our organic capital generation and securitizations plan and the impact of regulators' market risk and credit risk model reviews, such as the targeted review of internal models (TRIM) on low default portfolios; the new definition of default (NDD); and the amendments to counterparty credit risk (SA-CCR) and NPL provision regulations. We also checked the impact of market variables on capital levels. We continued to implement hedging policies to mitigate exchange rate volatility on our CET1 ratio.

The Capital Risk function periodically establishes uncertainty levels on budget execution, evaluating forecast possible deviations.

At year-end, our fully-loaded CET1 was 12.12%, above our 11-12% target. When including the minority interest acquisition of SC USA, which closed on 31 January 2022, and the announced acquisition of Amherst Pierpont Securities (APS) by Santander Holding USA - still subject to complete regulatory approval - , the fully-loaded CET1 ratio would be 11.96%, at the top of our 11-12% target.

The increase in fully-loaded CET1 ratio for the year is 23 bps, which reflects the strong organic generation of 118 bps based mainly on the year's profit and the growth in risk-weighted assets (RWA). This is supported by an adequate management, as well as by the recovery of the securitization activity.

In addition, we registered -49 bps from regulatory and model impacts and -46 bps from other items on the back of market developments.

Under IFRS 9 transitional arrangements, the phased-in CET1 ratio was 12.51% and the total phased-in capital ratio was 16.81%, comfortably meeting the ECB's 8.85% and 13.01% minimum levels, respectively. The fully-loaded leverage ratio was 5.21% and the phased-in ratio was 5.37%.

We kept all ratios above solvency appetite limits throughout the whole year.

For more details, see the section 3.5 'Capital management and adequacy. Solvency ratios' in the Economic and financial review.

5.2 Capital risk management

In the second line of defence, capital risk management can independently challenge business and first-line activities by:

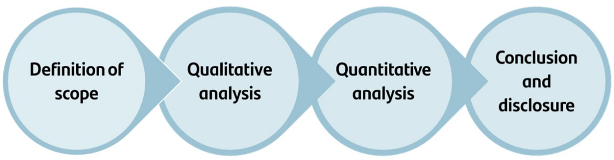
- reviewing key items affecting capital ratios to supervise capital planning and adequacy exercises.
- identifying key metrics to calculate regulatory capital; setting tolerance levels; and analysing significant variations and single transactions that impact on capital; and
- reviewing and challenging proposed capital actions according to capital planning and risk appetite.

Supervision of capital planning and adequacy exercises

The Capital Risk function reviews capital planning and adequacy exercises to make sure capital is consistent with risk appetite and the risk profile. Its core objectives are:

- ensuring the monitoring of Grupo Santander's significant risks in the course of its operations;
- checking that planning methodologies and assumptions are appropriate,
- confirming that results are reasonable and consistent with business strategy, the macroeconomic environment and system variables;
- assessing the consistency of exercises, especially ones that use baseline and stressed scenarios.

Capital planning and adequacy supervision follows these phases:



Definition of scope

Supervising capital planning and adequacy begins with proposed materiality based on the level of importance of subsidiaries' risk-weighted assets to the Group. It may include other units, businesses and portfolios (even if they are not significantly material) whose impact on strategy, compliance with the global plan or timely relevance might require analysis.

Qualitative analysis

We run a qualitative review of forecasting to ensure proper governance.

Quantitative analysis

We quantitatively assess metrics and components affecting RWA, available capital forecasts and pre-provisions net revenues (PPNRs). This phase requires proper coordination with subsidiaries to analyse local projections, which underpin group-wide projections and ensure traceability.

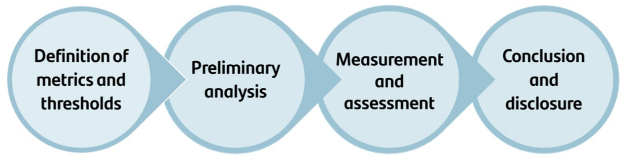
Conclusions and disclosure

Based on the outcomes of the capital planning and adequacy phases, Grupo Santander conducts a final assessment that covers the scope of analysis, detected weaknesses and areas for improvement. We report to senior management according to governance procedures, ensuring effective and constructive challenge of proposed capital plans from the second line of defence.

Ongoing oversight of capital measurement

Continuous monitoring of our regulatory capital measurement is an additional capital risk control function to ensure the right capital risk profile. We conduct a qualitative analysis of the regulatory and supervisory framework and a review of capital metrics and specific thresholds. We also monitor compliance with capital risk appetite to maintain capital levels above regulatory requirements and market expectations.

This function follows these phases and procedures:



Definition of metrics and thresholds

The function sets metrics and thresholds used in supervision every year to monitor and control capital risk. They consist of:

- Primary metrics, which cover capital ratios and numerator and denominator components at the highest level.
- Secondary metrics, which include a more extensive breakdown (for instance, credit RWA or the basis for measuring market RWA).
- Supplementary metrics for more detailed analyses.

Thresholds for certain metrics trigger a more detailed analysis and explanation.

The internal 'Capital measurement control metrics guidelines' outline these metrics, thresholds and sources of information.

Preliminary analysis

At this stage of the control process, we analyse qualitative issues, such as process governance and the regulatory framework. We review our capital management measures to fulfil supervisory authorities' recommendations and instructions.

Assessment and measurement

The Capital Risk function uses received information to review primary and secondary metrics, detect variations that might exceed defined thresholds and run a detailed analysis of the causes based on the supplementary metrics. If a subsidiary or global area is the cause of a threshold breach, it must provide the Capital Risk function with additional information on volume variations, one-off events, capital actions and other items.

We also monitor capital appetite metrics every month to check for excesses in the Group and our subsidiaries, which we report to the corresponding governing bodies every quarter.

Conclusions and disclosure

The body responsible for capital risk control analyses the report and conclusions. If needed, it will submit them to the second-line (capital committee) or first-line (risk control committee) committees for deliberation.

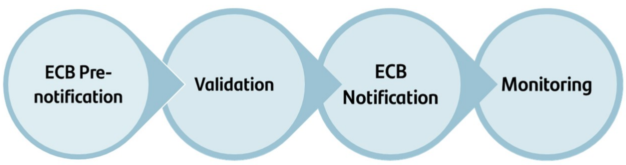
Securitizations oversight

The Capital Risk function oversees securitizations that might be significant risk transfers (SRT) originated by Santander, in accordance with articles 243 and 245 of Regulations (EU) 2017/2401 and 2017/2402.

Oversight is an essential prerequisite for synthetic and traditional securitization, especially if they can reduce RWA under regulatory standards. It aims to make sure that the Capital risk function analyses the conditions that could alter a securitization's SRT classification, namely:

- if it can effectively transfer risk;
- if it complies with all prudential regulation requirements;
- if its risk parameters follow our methodology; and
- if its economic rationale that meets group-wide standards.

SRT supervision is split into these stages:



- ECB pre-notification: The Capital Risk function issues an assessment before notifying the ECB of an intended securitization that may be an SRT.
- Validation: Capital and risk committees review the securitization based on the capital risk function's assessment to validate it.
- ECB notification: Submission of final securitization documents to the ECB take place no later than 15 days after the securitization's closing date.
- Monitoring: The Capital Risk function regularly monitors executed securitizations and reports its findings to the corresponding bodies.

5.3 Key metrics

Grupo Santander’s strong capital position is consistent with our business model, balance sheet structure, risk profile and regulatory requirements. Our strong balance sheet and profitability enables us to finance growth and continue to accumulate capital.

Our model of subsidiaries with autonomy over liquidity and capital allows us to mitigate the risk that one subsidiary experiencing difficulties could affect others. Our capital metrics are stable, as ratios remain comfortably above the regulatory requirements and are consistent with senior management-approved risk appetite.

For more details, see the section 3.5 ‘Capital management and adequacy. Solvency ratios’ in the Economic and financial review.

6. Operational risk

6.1 Introduction

In accordance with the Basel framework, Santander defines "operational risk" as the risk of loss due to inadequate or failed internal processes, people and systems or to external events. It covers fraud, technological risk, cyber risk, legal[37] and conduct risk.

Operational risk is inherent in all products, activities, processes and systems. It is generated in all business and support areas. All employees are responsible for managing and controlling the operational risks generated by their activities.

Our operational risk (OR) management and control model is based on a continual process of identifying, evaluating and mitigating sources of risk (regardless of whether they have materialized), ensuring that risk management priorities are established appropriately.

6.2 Operational risk management

Grupo Santander's operational risk management is based on the following elements:

Management and control model

Santander's operational risk model establishes the elements needed to manage and control operational risk properly according to advanced regulatory standards and best management practice. Its phases are:

- strategy and planning;
- identification, measurement and monitoring of risks and internal controls;
- implementation and monitoring of mitigation measures; and
- disclosure, proper reporting and escalation of relevant matters.

Operational risk management in Grupo Santander is underpinned by the following items:

- **Internal events database:** registry of operational risk events whose impact could be financial (e.g. losses, regardless of their amount) or non-financial (i.e. relating to regulation, customers or services). This information:
  - enables the analysis of root causes;
  - increases the awareness of risks for better operational risk management;
  - enables the escalation of relevant operational risk events to senior risk executives in the shortest time possible;
  - facilitates regulatory reporting; and
  - facilitates the economic capital model within the internal capital adequacy assessment process (ICAAP).
- **Operational risk and control self-assessment (RCSA):** a qualitative process that evaluates each area´s operational risks and assesses the control environment based on the opinion of experts from each function. Its purpose is to identify, assess and measure material operational risks that could prevent the business or support units from achieving their objectives. After assessing risks and internal controls, mitigating measures for risk levels above tolerance are identified.

  Our RCSA integrates specific reviews that allow to identify cyber, technology, fraud, third party supplier and other risk drivers that could lead to operational risk as well as the failure to meet regulations. In addition, the RCSA incorporates reviews related to conduct and financial crime risk (for more details, see section 7.2 'Compliance and conduct risk management').
- **External event database:** quantitative and qualitative information about external operational risk events. The database facilitates detailed and structured analysis of relevant events in the industry; the comparison of the Group and subsidiaries' loss profile; as well as the preparation for RCSA exercises, insurance and scenario analysis.
- **Operational risk scenario analyses:** identifies highly unlikely events that could result in significant losses for Santander, and establishes appropriate mitigating measures based on the assessment and opinion of experts from business lines and risk managers.
- **Key risk indicators**: indicators that provide quantitative information about Santander's risk exposure and control environment. The most significant indicators related to main risk exposure are part of operational risk appetite.
- **Risk appetite,** which has the following structure:
  - a global non-financial risk appetite statement, which asserts Santander's commitment to controlling and limiting: non-financial risk events that can or will result in financial losses; fraud events; operational and technological incidents; legal and regulatory infractions; issues associated with conduct; or reputational damage. While some losses are expected, high severity unexpected losses resulting from failed controls are not acceptable. This statement is associated with our loss and control environment metrics.
  - statements regarding technological risk, cyber risk, cloud, fraud, money laundering, product sales, regulatory compliance, model risk and supplier risk management, each with their own forward-looking monitoring metrics.

[37] Legal processes with an operational risk root cause.

- **Recommendations from internal audit, external audit and regulators**: provide independent information about inherent and residual risk, identifying controls and processes improvements.
- **Economic capital model:** a loss distribution approach (LDA) model that captures Grupo Santander's operational risk profile, with information collected from the internal loss database, external data and scenarios. It is mainly used to determine operational risk economic capital and estimate expected and stressed losses for operational risk appetite.
- **Other specific instruments** are used to analyse and manage operational risk; assess new products and services; manage business continuity plans (BCP); review and revise perimeters; and run quality assurance reviews.

Our management and reporting system for operational risk, Heracles, supports the operational risk programme and tools with a Governance, Risk and Compliance (GRC) approach. It provides information for management and reporting at subsidiaries and throughout the group. Heracles facilitates better operational risk management decisions by consolidating information, preventing duplication and simplifying reporting. To achieve this, we ensure that employees can have a timely, full and precise view of their risks by using a common set of taxonomies and methodological standards.

Implementing the model and initiatives

In 2021, we enhanced our operational risk model by:

- enhancing the risk appetite framework: establishing new metrics (inclusion of new internal control metrics and of a qualitative statement regarding cloud risk in risk appetite for 2022); and improving defined thresholds and measurements;
- developing models used to conduct an independent assessment of our risk profile and control environment to assist subsidiaries in their oversight and help to challenge the accuracy of local assessments;
- improving and progressing with our holistic risk assessment programme, in which each specialist second line monitors and contrasts the principal risks that are integrated within non-financial risks;
- improvements in the process to determine, identify and assess reference risks and standard controls with the objective of strengthening and ensuring consistency of our risk and control environment;
- establishing initiatives to assess climate risk as related to operational risk within our management model;
- improving the assessment methodology of the global cyber security transformation plan to identify and measure the reduction in risk due to the implementation of new information security developments;
- improvements to contingency, business continuity and crisis management plans, in coordination with the recovery and resolution plans, while also hedging emerging risks; and
- developing the methodology to analyse and assess transformation risk, with an approved operating model.

Operational resilience and business continuity plan (BCP)

Digital transformation is revolutionizing how banks operate, presenting new business opportunities. At the same time this structural change is also giving rise to new emerging risks such as technology risk, cyber risk and an increased dependency on third party suppliers, which increase the potential exposure to events that could affect the provision of services to our clients.

We are also witnessing changes in regulation that are increasingly focused on the importance of Operational Resilience, such as in the recently published Basel Principles for Operational Resilience; in the policy statement and final rules, Building the UK Financial Sector's Operational Resilience, by Bank of England (BoE), the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA); and in the EU's Digital Operational Resilience Act (DORA). In particular, these regulations require banks to strengthen their ability to recover from disruptive events that could have an impact on their core business operations.

Grupo Santander is firmly committed to maintaining a robust control environment according to the best standards in the banking industry. This allows us to reinforce our operational resilience against potential disruptive events thus ensuring the provision of services to our customers as well as ensuring systemic stability.

A major pillar of our operational resilience is our business continuity management system (BCMS), which ensures the continuity of our business processes in all our subsidiaries in the event of a severe incident or disaster. It is a holistic management process that identifies potential threats and their impact to our operations and resources as well as defines the proper protocols and governance in order to provide an effective response. Its main objectives are:

- safeguarding people's safety in a contingency situation;
- guaranteeing that core functions are performed, and service is delivered to our customers;
- fulfilling our obligations towards employees, customers, shareholders, and other stakeholders;
- to comply with regulatory requirements;
- to minimize potential losses to Grupo Santander as well as the impact on business activities;
- to safeguard the bank's reputation and credibility, as well as our client's confidence in the bank;
- to reduce the effects of an incident by ensuring efficient procedures, priorities, and strategy for the recovery and restoration of business operations in a contingency situation; and
- contribute to a stable financial system.

The pandemic challenged the business continuity plan frameworks and strategies of our subsidiaries. While we did have to adapt some protocols, the crisis has demonstrated that Santander has a robust BCMS. In 2021, we continued to enhance and revise our BCMS incorporating conclusions and lessons learned from the management of the pandemic. In particular:

- revision of the scope and extent of the critical processes that should be considered in the definition and determination of business continuity strategy and plans (especially for prolonged contingencies);

- reinforcement of infrastructure and protocols to establish the possibility of remote working as a valid and effective strategic alternative within continuity plans;
- mandatory risk assessments and cost-benefit analyses in order to select the necessary continuity strategies for each contingency scenario identified;
- implementation of flexible solutions (such as robotics and the digitization of documents) in order to be able to respond quickly to the needs of our customers and business units during a contingency;
- development of a methodology and tool to manage and monitor the maturity level of subsidiary business continuity programmes.

In addition, we have formed a multidisciplinary working group led by the non-financial risk function in order to review the risk identification and management frameworks that are currently in place. The objective of the working group is to ensure proper coverage of the new Operational Resilience regulatory requirements.

Relevant mitigation actions

Grupo Santander continuously implements and monitors mitigation actions for major sources of risk identified by internal management tools and other external sources of information.

Fraud

The transformation and digitalization of the business has given rise to new risks and threats, such as more payment scams and credit fraud (fraud in origination). To mitigate these risks, we enhanced control mechanisms and designed new products. Strong customer authentication processes, in line with the EU's Payment Service Directive (PSD2), such as biometric validation (e.g., facial recognition) in customer onboarding and enhancing anti-fraud alerts in origination are becoming increasingly widespread to mitigate fraud risk.

To reduce fraud, Grupo Santander applies special measures in some geographies, such as:

- Card fraud:
  - Generalized use of chip and PIN (transactions with chip cards that require a numeric verification code) for all transactions in ATMs and stores, with advanced authentication mechanisms between ATMs, points of sale and Grupo Santander's systems.
  - Continuously improved card protection against e-commerce fraud, with a secure standard (3D Secure) via two-step authentication based on one-time passwords, mobile applications that enable card deactivation for e-commerce transactions, or virtual cards issuance with dynamic authentication passwords.
  - Use of a new biometric authentication system in ATMs and branches in Santander Brazil. Customers could use their fingerprint to withdraw cash from ATMs.
  - Continuous integration of monitoring and fraud detection tools with internal and external systems for better detection of suspicious activity.
  - Reinforced ATM security with new physical protection and anti-skimming elements, as well as improved logical security of devices.
- Online/mobile banking fraud:
  - Online banking transaction verification with a second security factor of one-time passwords. The evolution of technologies differ across geographies, e.g., the use of QR codes generated from transactional data.
  - Continuous improvements to online banking security with a transaction scoring system that assigns transactions a risk level, which trigger additional authentication when a given security threshold is breached.
  - Implementation of specific mobile banking protections, such as identification and registration of customer devices.
  - Monitoring of the e-banking platform security to avoid systems attacks.
- Forgery and identity theft fraud:
  - Enhanced fraud controls that verify the applicant's identity and the device used to submit the request.
  - Implementation of biometrics for customers and employees.
  - Transfer of the credit fraud prevention function to the Credit Risk area for enhanced mitigation of fraud in origination as well as strengthening of alerts.
  - New management and authentication platforms.

Cyber risk

In 2021, cyberthreats were more frequent and stronger, as hackers continued to enhance their capabilities. This is a trend that is expected to continue in coming years and the financial sector will remain a primary target. This trend as well as Santander's increasing reliance on digital systems, make cyber risk one of the top non-financial risks for the business.

Therefore, our objective is to make Santander a cyber resilient organization that can withstand, detect and rapidly react to cyber-attacks, while constantly evolving and improving our defences. We continue to enhance our cyber security controls, policies, and procedures according to our global cyber security framework and international best practices.

During 2021, several key strategic cyber security pillars and initiatives, described on section 5. Research, development & innovation (R&D&I) of Economic & Financial Review chapter, have been established to help Santander evolve its cyber defences in line with emerging threats and technologies.

In the second line of defence, the cybersecurity risk team developed and implemented a cyber risk management and control framework that assesses and evaluates the cyber risk profile and control environment of the bank. The main focal points have been:

- approval and implementation of an operating model that drives and steers the second line of defence cyber-risk function. The model provides a structured approach and enables effective and proactive risk management. It establishes the mission, principles, procedures, tools and required skills for cyber risk management;
- implementation of a holistic procedure across all second line functions to regularly measure and assess the cyber security control environment and risk profile. The assessment has been

integrated with the different Non-Financial Risk instruments and tools, which enables the second line of defence to provide an independent opinion and challenge of control effectiveness and risk reduction;

- simplification and automation of existing processes to improve operating performance. Creation of an automated tool enabling cyber risk data correlation, analysis and reporting, significantly reducing information gathering and consolidation to enable prioritization of risk management activities;
- establishment of group-wide governance to verify that subsidiaries have properly implemented the operating model and to ensure consistency of the risk control tools and procedures implemented across our footprint.

For more details on cyber security, see section 5 'Research, development and innovation (R&D&I)'.

IT risk

The process of digital transformation as well as Santander's mission to become the best open financial services platform requires that we constantly review, assess and improve our controls to mitigate and manage IT risk. Along these lines, the risk analyses that we perform on key transformation initiatives help us understand and escalate, as necessary, to senior management the risk profile of these initiatives in terms of inherent and residual risks.

Despite a demanding environment that is constantly changing, we have quickly adapted our technology to meet the new needs of our customers as well as meet new regulatory requirements. It is important to note that, even with the current digital transformation, total IT incidents at Group level have continued their downward trend in comparison with figures from previous years. For 2021 key aspects of our IT Risk Management programme are summarized below:

- The adoption of a risk-based approach to ensure we prioritize the necessary resources and corrective actions taking into consideration the criticality of our IT assets. These critical assets have corresponding risk appetite metrics that are used to monitor the level of IT risk in areas such as availability, obsolescence, and the application of security patches. We have made significant progress on reducing the level of obsolescence in key IT assets in all subsidiaries.
- As with cyber risk, we have developed and implemented an automated tool that enables IT risk data correlation, analysis, and reporting. This tool has facilitated information gathering and consolidation to enable the prioritization of risk management activities, allowing for more efficient supervision and oversight of IT risk.
- Detailed analyses of the most relevant IT risks as identified in our RCSA to gain an in-depth understanding of these risks, and ensure appropriate mitigation plans.
- The issuance of a new IT risk supervision and oversight policy that establishes common protocols and standards for the monitoring and controlling of IT risks, in conjunction with functional and governance aspects.

Supplier management

Our digitalization strategy sets out to offer our customers the best solutions and products in the market. This can entail an increase in third-party services and the use of new technologies such as cloud. In light of the increase in cyber risks and regulatory requirements, we continue to update and strengthen our supplier risk management model, internal control framework, and risk culture to properly assess and manage the risks in outsourcing and third-party agreements

In 2021, we adopted a risk-based approach that focused on those suppliers, in the different entities of the Group, that could increase the potential risk level in our operations and client services. We have implemented enhanced monitoring of those suppliers to ensure:

- they present an appropriate control environment in accordance with established Group policies and with the risk level of the service provided;
- business continuity plans are in place to guarantee the delivery of the service even in the event of a disruption;
- the proper controls are in place to guarantee the protection of information processed during the provision of service;
- contracts and third party agreements include the required clauses to protect the interests of the Group and our customers, while providing coverage of the legal obligations in force;
- regular monitoring of these providers is carried out, with particular attention to the monitoring of service level agreements and to the regular testing of the provider's business continuity plans; and
- exit strategies are defined, including reversion or migration plans, particularly for those services with a high impact on business continuity and complex substitution.

We began the implementation of a new certification process to ensure our suppliers follow the same ESG sustainability standards and criteria. Santander has defined ESG sustainability as integral to our way of operating and doing business.

Lastly, we revised our supervision methodologies and tools to enhance the monitoring of third-party risk in our subsidiaries.

Other key mitigating actions

We are constantly improving our risk mitigation measures related to customer, products, and business practices. Santander has specific frameworks and policies on the marketing and selling of products and services; customer complaint handling and analysis; financial crime prevention; and compliance with new regulations.

For more details on compliance risk mitigation, see section 7.2 'Compliance and conduct risk management'.

Insurance in operational risk management

Santander considers insurance to be a key component in the management of operational risk. The Own Insurance function is responsible for the use of risk transfer formulas to optimize and safeguard the bank´s financial results. The Own Insurance function, in collaboration with non- financial Risk (NFR), performs the continuous oversight and supervision of entities across the Group to ensure the proper application of policies and procedures to manage risk that is insurable. This collaboration is governed by:

- NFR participation as a permanent member in the quarterly Own Insurance forum.
- NFR attendance of the quarterly Claims forum, which monitors and enhances processes for loss recovery via insurance.
- Procedures outlining the interaction model between NFR and Own insurance, as well as other functions that correspond to the various insurance typologies (e.g. Facilities, Legal, etc.). These procedures ensure the proper management of insurance throughout the entire process of identification, assessment, transfer, and retention of risk.
- the coordination on an annual basis of the mapping of risks to insurance across the Group, with the objective of monitoring the effectiveness of insurance coverage, and identifying and correcting any potential gaps in coverage.

We continue to adapt the use of insurance to align our management with changes in the risk environment. As a result, we have expanded our analysis and implemented coverage related to climate-related risk, the digital environment, and other elements. To respond to these and other transversal risks, Santander has global insurance programmes for property damage, general civil liability, fraud, expenses arising from cyber security breaches, and third-party claims against directors and officers of the Group (D&O insurance). These global policies are complemented by local insurance policies that adapt to the characteristics of each subsidiary and are purchased according to the Own Insurance risk management model implemented in each geography.

Analysis and monitoring of controls in Santander Corporate & Investment Banking

In 2021, SCIB maintained normal activity and its robust internal control environment without major incidents. Preventative measures related to the pandemic continued to be applied and were consistent with recommendations by local authorities.

Given the nature, specificity and complexity of financial markets, SCIB improves operational risk management and control on a continuous basis. The following enhancements were implemented in 2021:

- Continued to monitor the risk of unauthorized trading via a specific risk appetite metric that measures the periodic assessment of key risk mitigation controls. Global guidelines were updated with new requirements. We continued to strengthen the control framework by performing the regular review of controls, as well as incorporating reports to facilitate the holistic supervision and monitoring of markets' activity.
- Increased incident and risk surveillance to make resolution quicker and operational risk mitigation measures more effective.
- Continued to enhance processes and drive the operational excellence of services provided to our customers by reinforcing a culture of quality and promoting the best standards in all SCIB geographies.
- Strengthened the governance and oversight of third-party risk management through the creation of a specialized function within the division to mitigate the risks inherent in our business.
- Advanced the maturity of the control framework that covers cyber security risks with special focus on the risks related to data leaks, vulnerability management (ransomware), identity management and access control.
- Continuous improvement of the control model related to regulatory requirements such as MiFID II, the Dodd-Frank Act, EMIR, IFRS 9, GDPR and other regulations.

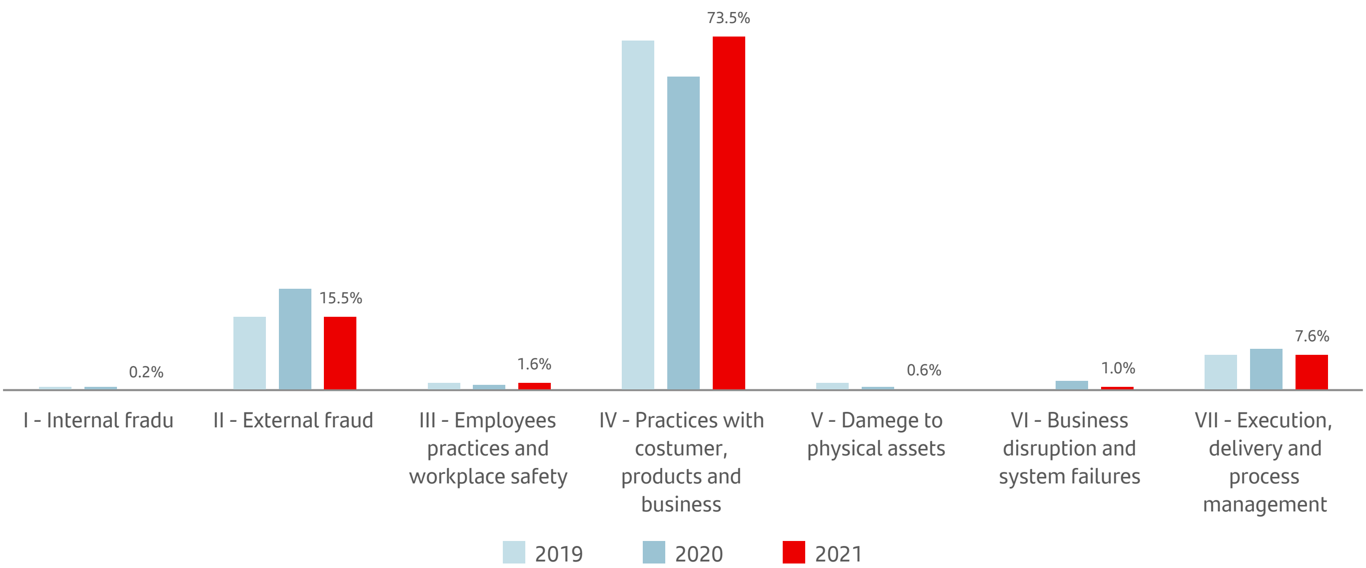
For more details on regulatory compliance in markets, see section 7.2 'Compliance and conduct risk management'

6.3 Key metrics

Net losses (including incurred losses and net provisions) as per Basel[38] risk categories for the last three years were:

NET LOSSES BY OPERATIONAL RISK CATEGORY[A]

(% o/total)



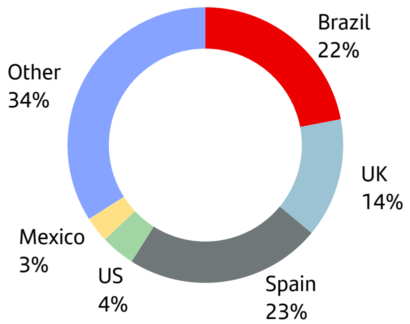
A. Excluding employee litigation from Santander Brazil

Losses due to Fraud, as well as those due to Processing errors were lower than in the previous year. However, Customers, products and business practices losses increased.

The chart below shows net losses by country:

NET LOSSES BY COUNTRY[A]

(% o/total)



A. Excluding *Trabalhistas* events from Brazil

Santander considers employee litigation in Santander Brasil to be a staff expense. Our governing bodies continuously monitor expense levels with specific risk appetite metrics and take special actions to reduce them. These expenses are reported under the categories defined by the Basel Operational Risk framework.

In 2021, the most significant losses by geography are related to litigation in Santander Brazil (with ongoing root cause analyses of the main products), Poland and Spain (due to legacy cases). Additionally, the amount of losses in the US continues to decrease due to a reduction in legal cases provisions.

[38] The Basel categories incorporate risks which are detailed in section 7 'Compliance and conduct risk'.

7. Compliance and conduct risk

7.1 Introduction

According to our three lines of defence model, the Compliance and Conduct risk function is an independent control function within the second line of defence. It reports directly and periodically to the Board of Directors and its committees through the Group Chief Compliance Officer (GCCO).

The Compliance and Conduct function, as the second line of defence, will facilitate critical and independent debate. It will also exercise oversight and control of the first line of defence's management of regulatory compliance, product governance and consumer protection, financial crime compliance, and reputational risk. Additionally, it will ensure that risks are managed in accordance with the risk appetite formulated by senior management while assessing the impact on our risk appetite and risk profile.

The responsibility of the second line of defence includes the obligation to inform the relevant governance bodies when necessary, of risks, risk appetite and risk excesses. It should adopt and promote a common risk culture and provide guidance, advice and expert judgment on all relevant matters relating to compliance and conduct business.

The compliance program is one of the key processes of the compliance and conduct risk function and details the main activities to be developed throughout the year. The parent company and each of the subsidiaries execute a compliance program appropriate to their size and complexity which is structured around the four management areas mentioned above, being a key tool that enables the supervision of our subsidiaries and the control environment.

7.2 Compliance and conduct risk management

The compliance and conduct risk ensures compliance with the General code of conduct ("GCC") under the supervision of the compliance and the risk supervision, regulation and compliance committees. The GCC dictates the ethical principles and conduct rules that must govern our employees' work. It is to be understood and applied along with all other internal regulation. It sets out:

- compliance functions and duties;
- the Group's general ethical principles;
- the general rules of conduct;
- the consequences for failure to comply;
- an ethical channel (*Canal Abierto*) to report possible misconduct in a confidential and anonymous manner.

Regulatory Compliance

The Regulatory compliance function monitors and controls regulatory risk from employees, data processing and market regulations (together with SCIB's compliance team). Its core areas are:

A. Employees

The Regulatory compliance function promotes a culture of ethics and compliance among our employees. It sets internal standards to prevent criminal risks, conflicts of interest and anti-competitive practices according to the GCC. It also manages *Canal Abierto*.

To enhance the Group's compliance system, in 2021 the function launched in our core units a competition law programme based on international standards and best practices from competition authorities. Its main elements are "Tone from the top", policies, training, awareness, identification of risk areas, risk domains, controls, *Canal Abierto* and disciplinary proceedings. It helped us reduce risk from failure to comply with competition regulation while tightening our monitoring and awareness so employees could recognize and report breaches.

This year:

- we updated mandatory employee training, with a message from senior management (Expanding "Tone from the top" is key to the cultural transformation needed for the programme to be successful).
- We enhanced our methodology for measuring competition risk.
- We drafted conduct guidelines so employees can recognize and report risk situations and seek advice from our Legal and Compliance areas.

Real ethics: Employees' compliance functions

Canal Abierto

- Provide a channel for employees to report unethical conduct and breaches of internal regulation.
- Manage and investigate reported cases.
- Promote a culture of speaking up and truly listening.

Training and awareness

- Develop and implement training programmes and awareness campaigns among employees on Corporate Defense and Employees compliance.
- Issue messages about ethics to the entire Group and promote relationships built on trust.

Disciplinary proceedings

- Investigate conduct that is misaligned with our ethics and compliance principles.
- Assess disciplinary measures.

Policies and procedures

- Ensure compliance with the GCC and design special policies and procedures to enforce it.
- Report to governing bodies regularly.

Appointments

- Assess the suitability of the Group's board and senior management appointments.*

Queries about ethics

- Manage queries from employees and members of governing bodies about ethics and internal regulation.
- Provide ethical advice in controversial situations.

Competition Programme

- Manage the Competition compliance programme.

* Carried out by the Corporate compliance function

For more details on Canal Abierto and its management during covid-19, see section 'A strong and inclusive culture' of the Responsible Banking chapter.

B. Market abuse

The Market abuse function's Control room team applies the *Code of conduct in securities markets* (CCSM) to prevent risk from trading with or making unlawful disclosures of inside information and from market manipulation.

In 2021 the Surveillance team has worked together with the SCIB compliance area performing the monitoring of the traders and overseeing their trades and communications.

Control Room

Control of the personal operations of persons subject to CCMV and the flow of sensitive information.

Main achievements

- Global Control Room: Initiated a strategic and multi-year project to remodel the Group's Control Room, aiming at creating a single team with members in different locations who assists to manage potential conflicts of interests arising from deals originated from the Group units.
- Treasury Shares Activity: improvements have been made in the controls in place to ensure compliance with the Treasury Shares Policy approved by the Board.
- Euribor: adaptation of internal procedures in accordance with the new requirements of the benchmark administrator, as part of the contribution process oversight.
- Training: course update on the CCSM, which has been carried out by the 97% of the covered persons.
- Countries Oversight: update of the countries supervision manual adapted to the new structure of the Control Room function.

C. Regulatory compliance is responsible for:

- Announcing the Group's relevant information to markets. This year, Banco Santander made public several inside information and other relevant information, which are available on the Group's website and on the *Comisión Nacional del Mercado de Valores's* (Spanish securities market commission or "CNMV") website.
- Disclosing transactions relating to own shares (CNMV) and major shareholding notifications of Banco Santander; and major shareholding notification and remuneration schemes of the Group's board members and senior managers (CNMV and other regulatory bodies of those markets where Santander share is listed).

D. Data processing

In 2021, Data processing focused on:

Data protection

- Adopting measures to comply with new regulation on international data transfers: identification of data flows and affected suppliers; impact analyses and additional guarantee proposals; and negotiation and signing of new agreements.
- Monitoring closely the Group's adaptation of digital assets to regulation on transparency obligations and consent management.

We have made significant progress on our control framework by updating our unit-monitoring programme, improving management metric traceability, enhancing reporting and monitoring tools, and expanding our perimeter to countries outside the European Economic Area (EEA). We also revised and approved a new corporate policy on data protection.

Foreign Account Tax Compliance Act (FATCA) and Common Reporting Standards (CRS)

Corporate oversight for automatic exchange of information for tax purposes between countries (pursuant to FATCA and CRS) focused on monitoring subsidiaries' regular reporting obligations and three-year FATCA certification under the 2 IGA model or by direct agreement with the US Internal Revenue Service (IRS).

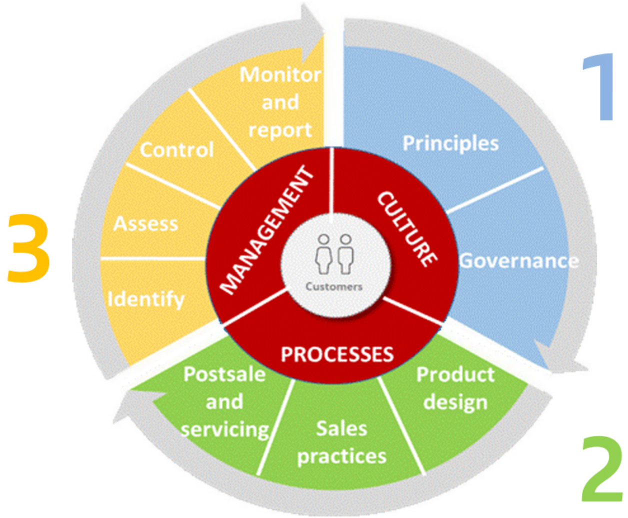
E. SCIB markets regulation

SCIB's compliance team manages risks from core international market regulation that affects Banco Santander.

EU regulation	US regulation
It continued to reinforce its control environment to monitor compliance with EU regulation (market regulations, mainly MiFID and EMIR). It paid close attention to reporting and monitoring the quality of transactions. It also enhanced its system for monitoring the bank's high-frequency trading in real time.	It reviewed and adapted its swap dealer compliance programme to new cross-border regulation. It also reinforced its control environment to monitor compliance with US regulation. It implemented the security-based swap dealer compliance programme to meet imminent US Securities and Exchange Commission (SEC) requirements.

Product governance and consumer protection

Our product governance and customer protection function promotes that our actions are based on our customers' interests, regulation, our values and our principles by:



1 Promoting a culture with a Simple, Personal and Fair approach towards our customers:

- Establishing the consumer protection and conduct principles for marketing, customer engagement and the promotion of a solid culture, which are found in the Corporate framework of commercialization of products and services and consumer protection (and the internal regulation that builds on it).
- Running corporate and local product governance forums and escalating customer conduct risk monitoring and related issues to the compliance, risk and responsible banking committees.

2 Overseeing key procedures to make sure:

- our products will meet customer needs under the right balance of risks, costs and profitability;
- we are selling to the right target markets; providing transparent information; training our sales force appropriately; and implementing remuneration schemes centred on meeting customers' expectations; and
- our customer service, post-sale systems and processes are Simple, Personal and Fair, and we check for deterioration in products and services and process shortcomings to manage them promptly.

3 Managing risk by:

- making correct decisions; drawing up and tracking action plans; and keeping senior managers and statutory bodies properly informed;
- overseeing the design and execution of controls for marketing and customer relations; and assessing the second line of defence management and control model;
- identifying new risks in regulatory guidelines, industry practices, supervisor and auditor opinions and learning from internal and external events; and
- applying group risk assessment methodologies, such as customer survey analysis, management indicator tracking, thematic assessments and first-line self-assessments.

Our product approval governance operates on two levels. All subsidiaries have their own approval bodies to ensure new products and services will meet the needs of their target market, are being sold through the appropriate channels and processes, and have fair and transparent terms and conditions. Products and services classified as new are then escalated to the corporate product governance forum (CPGF) to be approved before launch. This two-tier approval system helps us share best practices and manage product and service risk in line with risk appetite.

In addition, the Fiduciary Risk function meetings follow-up that the investment products have a proper definition of their policies and that their management is carried out in a robust risk control environment, aligned with the Group's policy on approval, monitoring and control of fiduciary risks.

In 2021, the Product governance and consumer protection function introduced these new features in the design of products and services:

Adapting our products to the landscape:

- → Analysis and transparency of our growing ESG product development.
- → Replacement of IBOR indices with new risk-free rates.
- → Management of Santander Corporate Investment Banking – ALCO proposals.
- → Enhanced alternative investment propositions for professional and private banking clients that offer greater potential returns amid low interest rates.

Supporting our digital strategy

- → Governance of PagoNxt proposals that are to be distributed across our footprint.
- → Focus on elevating customer experience on digital channels, especially by removing difficulties in acquiring and cancelling products and services. Implementation of good practice in accordance with the Product governance and consumer protection function's Digital product and service design guide.

Key conducts risk lines of action in 2021

	Objectives	Lines of action
Vulnerable customers and special cases	Effective protection of vulnerable customers and special cases (including, but not limited to, people affected by Covid).	→ Global vulnerable customer strategy and support to units for its roll-out. → Monthly monitoring of collection and recovery indicators.
Customer focus	Research into big data and artificial intelligence analysis on customer survey findings and business indicators.	→ Development of a root-cause analysis methodology for customer complaints. → Creation of consumer protection indicators.
Sustainable products and services	Support in collaboration with the Risk and Responsible banking functions on projects relating to the Group's transition towards a more sustainable economy.	→ Transparent information on the investment products and services we offer to retail customers. → ESG risks embedded in our management through measurement tools and methodologies. → Meeting our customers' sustainability preferences.
Awareness and accountability of the first line of defence	Ongoing raising of awareness by the business and support functions of conduct risk prevention and management.	→ Mandatory conduct training; risk and control self-assessment exercises; and the creation of working groups led by the first line. → First line teams' remuneration linked to conduct and quality. → Medium-term project to come up with a rating scheme (conduct branch rating) to promote conduct risk management in our employees' work.
Control	Further strengthening of retail conduct risk management with a focus on continuous improvement.	→ List of standard controls that all geographies must perform when marketing products and services, and awareness of local controls. → Spotting areas for improvement and including them in other risk assessment exercises for more robust monitoring in risk-based testing.

Financial Crime Compliance (FCC)

Financial crimes are universal, globalised phenomena that take advantage of the international economy, and thus their detection, deterrence and disruption call for a coordinated global response by the international community and the financial sector. Santander Group is wholly committed to the fight against financial crime and does not tolerate compliance failures with financial crime regulations both internationally and in the countries in which it operates.

The business functions within the Group maintain the primary responsibility for managing financial crime risk and to support and promote the organization's risk culture. The FCC Function in turn is responsible for monitoring and overseeing financial crime risks and for ensuring adequate policies and procedures have been implemented to manage the business within the Group's established risk appetite.

In 2021, the Board of Directors approved an expanded FCC Corporate Framework, which establishes:

- The principles that must be adhered to by entities of the Group in relation to the prevention of financial crime;
- The roles and responsibilities for effective financial crime risk management;
- The key FCC processes to be developed and embedded within the entities of the Group in compliance with the Group policies and procedures that must be adopted locally; and
- The essential features of FCC governance at a Corporation and local level.

Under this expanded FCC Corporate Framework, the scope of financial crime related risk includes not only money laundering, terrorist financing, and the violation of international sanctions programmes, but also bribery, corruption, tax evasion and external fraud, as well as any other priority criminal activity reportable under AML/CFT regulation.

The Group has significantly advanced the FCC strategic transformation plan over 2021, initially defined in 2020, designing a bank-wide FCC target operating model that reaffirms the role of the business functions in assuming responsibility and accountability for managing financial crime risk. The strategic transformation plan continues to work toward the centralization of key FCC controls along with their maintenance and calibration. The transformation plan embraces the responsible use of automation, artificial intelligence and machine learning, and the use of reliable third-party data sources, all to improve financial crime risk management, enhance the customer experience, and give the business the necessary risk management tools to continue to pursue financial inclusion initiatives.

The on-going implementation of the FCC strategic transformation has relied on a series of successes over 2021, including:

- The transposition of enhanced policies and procedures, tracking control implementation on a country-by-country, control-by-control basis;
- The establishment of a legal framework that will facilitate over the long-term inter-group information sharing;
- Continued intensive subsidiary oversight to ensure country-by-country advancements on key FCC pillars;
- The addition of new members to the FCC Corporate Forum, increasing the representation of accountable stakeholders from the business functions;
- And regular key risk indicator reporting and an annual FCC risk and controls self-assessment exercise, paired with a risk-pro culture that encourages self-identified issues and the identification of risk events.

Highlights over 2021 in key activities include:

221 subsidiary reviews (+3% vs. 2020)	150,343 disclosures to authorities (+64% vs. 2020)
315,512 investigations conducted	164,547 employees trained

In addition, the FCC Function implemented over 2021 a significant FCC upskilling training initiative in line with the expanded FCC corporate framework. Further, following a series of successful group-wide awareness sessions in 2020, over 2021 the FCC introductory training module was fully redesigned to highlight, for example, risks associated with crypto-assets, compliance challenges faced in designing innovative digital products, trends in responding to complex international sanctions regimes, and awareness on drug trafficking, human trafficking and online child sexual exploitation risks, and environmental crime.

The Group continues to play a leading role in key industry groups and public-private initiatives, including as a founding member of the Wolfsberg Group, a representative on the Europol Financial Intelligence Public Private Partnership (EFIPPP) Steering Group, a member of the United for Wildlife Financial Taskforce, a member of the European Banking Federation, and a frequent contributor to private sector consultations from the Financial Action Task Force (FATF). Notably in 2021 the Santander FCC Function was asked by the FATF to represent the private sector in an awareness-raising webcast on environmental crime, and the United Nations Office on Drugs and Crime (UNODC) named the Santander FCC function as the chair of the UNODC's quarterly Private Sector Dialogue on Disruption of Financial Crimes Related to Forestry Crimes.

Reputational risk

Santander classifies reputational risk as the risk of loss due to damage to the bank's reputation among employees, customers, shareholders, investors and broader society. It may come from various sources or even other risks relating to business and support operations; the economic, social and political climate; and events involving our competitors.

Our reputational risk model is based on a preventive risk management and control approach, with effective handling of early warnings and monitoring of events and detected risks. This requires regular update and review of the Group's risk appetite and preventative risk management and control.

Key actions in 2021:

We continued to enhance our risk management and control, as well as reviewing and updating our action guidelines for certain areas. These were the most significant actions we took:

- Revision of the Group's policies on the defence industry and other sensitive industries, including new standards for banking in the cannabis, tobacco, defence and other sensitive industries as well as for social contributions.
- New operating procedure approved by the Group and subsidiaries to analyse reputational risk in a broader scope of activities.
- New guidelines for supplier reputation assessments.
- Reputational impact analysis, prevention and mitigation measures and best practices on branch and workforce restructuring in Europe.
- E-learning modules for all corporation employees. Thematic reputational risk training sessions with the business, risks and support functions on sensitive transactions and customers, and general awareness for employees across our footprint.
- Global reputational risk assessment that involved all corporate risk management and control areas as well as all key group units to draw up a more comprehensive risk road map.
- A new reputational risk tool that assesses stakeholder perception of the bank and finance industry.
- Earlier and more coordinated risk management as part of forward-looking reputational risk analysis.
- More advanced reputational risk approach for measuring global risk profile.
- Better governance and challenge in oversight of subsidiaries.

8. Model risk

8.1 Introduction

A model is a system, approach or method that makes quantitative estimations based on statistical, economic, financial or mathematical theories, techniques or assumption about data. Its simplified representations that contrast real and observed trends help Grupo Santander focus on specific aspects. In particular, we use models for approval (scoring/rating), capital calculation, behaviour, provisions, market risk, operational risk, compliance and liquidity.

Models risk is the risk of loss from inappropriate, inaccurate or misused models in decision-making. Sources of model risk can be:

- incorrect or incomplete data in the model itself or the modelling method used in systems;
- incorrect use or implementation of the model.

Model risk can prompt financial loss, poor commercial and strategic decision-making or damage to Grupo Santander's transactions.

We have been defining, managing and controlling model risk for several years. The Model Risk function has been enhanced and consolidated across corporate and our core subsidiaries.

To ensure adequate model risk management, we have a set of policies and procedures that establish the principles, obligations and procedures for organizing, governing, managing and approving models throughout their life cycle.

We monitor model risk according to each model's level of importance. Through tiering, we synthesize the level of importance of non-regulatory models and determine how intense risk management should be. As regulatory models are particularly important to Grupo Santander, we subject them to more intense monitoring and management.

We implemented our multi-year Model risk management (MRM) 2.0 strategy to manage model risk better according to regulatory standards (e.g. ECB guide to internal models, 2018). Upon concluding in 2021, MRM 2.0 included several initiatives that strengthened our Model risk function, such as:

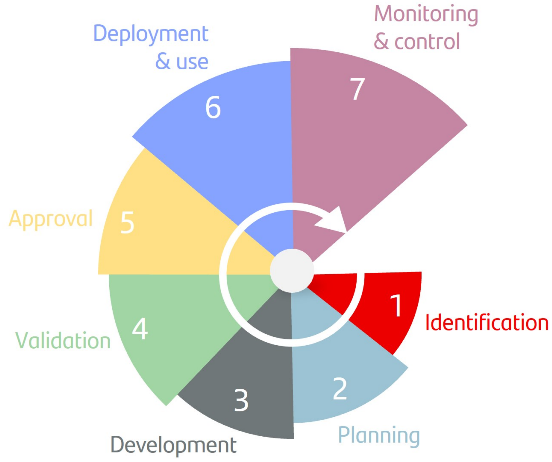
- Streamlining: It helped us take risk-driven measures to simplify processes involving regulatory model management and other important operations for the Group.
- Regulatory models (IRB and IMA): To fulfil regulatory requirements and the EBA's new guidelines, we scaled back our mapping of regulatory credit risk model portfolios.
- Validation: We continued to reinforce the Single Validation Office, which guarantees consistent and well-coordinated validation of the Group's models.
- Model risk facilitators: We made additional improvements to our infrastructure and tools and helped spread the model culture across the Group. Real-time information from advanced digitalization enhanced decision-making.

In addition to MRM 2.0, we have made further progress on the two regulatory credit risk and market risk model projects under way that focus on the targeted review of internal models (TRIM), internal model inspections (IMIs) and compliance with new regulation.

Our main aim will be to keep building up our IRB and IMA management in line with ECB requirements for 2022, especially the new EBA Repair Programme due to take effect in January. In 2021, we submitted several model changes to the ECB for authorization, which entails a lengthy review that will carry on into 2022 and require the Model risk function's full cooperation. We anticipate sending additional model changes to the ECB in the coming years.

8.2 Model risk management

Model risk management and control are structured processes known as the model life cycle and consist of the following phases in Santander:



Identification

Model risk control must include identified models. For sound management, a complete inventory of models in use is key.

Our centralized inventory system, which has uniform taxonomy and detailed information for all the models that business units use, enables us to monitor them closely according to their level of importance and tiering.

Planning

This is an internal annual exercise, approved by our subsidiaries' governance bodies and validated by the global team. It formulates strategic measures for models managed by the Model risk function and pinpoints needs for any models to be created, revised or used during the year.

Development

Development is the model-building phase. It is based on econometrics and run by methodology experts. Model development considers each unit's needs in line with the annual model plan.

To guarantee model quality and consistency, it must apply the common group-wide methodology formulated by the global team. Models & Data unit aims to make model development a more efficient and more centralized process that builds on shared synergies.

More detail see section 2.5 'Models & Data Unit' of this chapter.

Internal validation

Independent model validation is a regulatory requirement and key feature of our model risk management. A specialist unit that is totally independent from developers and users issues technical assessments of internal model suitability. The validation opinion for each model is expressed through a rating that summarizes the model risk associated to it. Validation intensity and frequency are well-defined and risk-driven.

Validation covers theory, methodology, technological systems and data quality to ensure effectiveness. It also involves a detailed analysis of model performance and other risk management elements (e.g. controls, reporting, uses and senior manager involvement).

One internal validation task is the consistency analysis conducted by validators to review the severity and ratings. It acts as an important point of control to ensure the homogeneity and comparability of validation tasks.

Validation tasks only conclude after the consistency analysis phase. The Single Validation Office also plays an important role to ensure consistent validation of the Group's models.

Approval

Before we can use a model, internal governing bodies must approve it through a governance circuit in place for our model inventory, based on their level of importance.

Deployment and use

In this phase, newly developed models are added to computer systems. Because this creates another source of model risk, technical teams and model owners must run tests that verify proper model integration based on methodology and intended function.

Monitoring and control

We must regularly review models to ensure that they function correctly or, otherwise, adapt and redesign them. Model risk monitoring teams must make sure models are managed according to the general model risk framework and internal rules and principles.

9. Strategic risk

9.1 Introduction

Strategic risk is the threat of loss due to poor strategic decisions or their deficient implementation that affect our core stakeholders' medium-to-long-term interests or to an inability to adapt to a changing environment.

Because Grupo Santander's business model is pivotal to strategic risk, it has to be viable and sustainable and should produce results in accordance with the Group's annual targets (particularly the next three years) and long-term outlook.

Strategic risk has three components:

1 **Business model risk,** which includes the risk that the Group's model will become obsolete or irrelevant; or that it will lose value and not produce desired results.

2 **Strategy design risk,** which relates to the strategy and assumptions set out in Grupo Santander's long-term plan (including the risk that the plan will not be up to par), which could result in a failure to deliver expected results.

3 **Strategy execution risk,** which involves the three-year financial plan; internal and external impacts; the inability to react to changes in the business environment; and risks associated with corporate development transactions.

9.2 Strategic risk management

Grupo Santander views strategic risk as a cross-sectional risk and has a target operating model that our subsidiaries use as a reference. The model covers the governance, procedures and necessary tools for robust monitoring and control according to the board-approved risk appetite statement.

We constantly monitor changes in competition, regulation and market conditions as well as within the bank to determine whether we need to revise our strategy and verify any mitigating factors and resolution plans in place. The strategic risk function engages key first- and second-line teams to make sure measures are primed for immediate implementation in case they are needed.

In 2021, the main strategic focus was to see how economic recovery fared against the uncertainty fuelled by new covid-19 variants and progress of global vaccination campaigns and especially in our markets. We also continued to monitor the progress of our transformation projects, which are key to meeting our objectives. Our proactive and effective response to business challenges meant our strategic risk profile was once again medium-low.

While our long-term strategy remains valid, our success is increasingly dependent on our customer focus (i.e. "think customer"). Boosting our revenue, profitability and value hinge on increasing customer numbers, loyalty and satisfaction.

Our strategic risk model is based on:

- **Challenging strategic plans:** With the support of specialized functions within the Risk division, the Strategic Risk function challenged the three-year financial plan, including a specific chapter in the final plan that identifies potential threats and changes in the environment that could jeopardize strategic objectives. In 2021, we closely monitored the key digital transformation projects that underpin our plan: One Santander (common operating model), PagoNxt and Digital Consumer Bank.

- **Top risks:** Under stressed scenarios, Grupo Santander identifies, measures, monitors and manages risks that could have a significant impact on results, liquidity or capital.

  The first and second line of defence work with our subsidiaries to identify top risks, which are also added to idiosyncratic scenarios in exercises like ICAAP, ILAAP and the Group's viability and recovery plans.

  For more details on top risks, see section 1.3 'Santander Top and emerging risks' of this chapter.

- **Analysing business model performance:** To measure and identify the main threats to the bank's business plan and strategic objectives, based on four pillars that bring together retrospective and prospective analyses.
  - Strategy execution (retrospective): Measurement of the risk of deviation from the plans and targets set in the board-approved strategy and strategic and transformation initiatives, which are deemed crucial to addressing strategic priorities.
  - Viability and sustainability (prospective): Measurement of the risk that the business model will fail to create shareholder value or will perform poorly. We also assess the bank's position in relation to competitors.
  - Business plan volatility (retrospective): Measurement of the risk that our income statement planning is unstable and that profits will not be recurrent in the long term.
  - Likelihood of meeting strategic objectives (prospective): Risk of failing to achieve the strategic objectives set in the financial plan, based on the threats uncovered in the top risks exercise.

- The strategic risk and corporate development and strategy functions prepare the strategic risk report to measure and monitor the strategy and its risks. It is presented to senior management and includes an update on strategy execution, strategic projects, corporate development transactions, business model performance, top risks and the risk profile.

- **Commercialization of new products:** The strategic risk function helps assess and validate new product and service proposals before Grupo Santander launches them, ensuring alignment with the approved strategy.

- **Corporate development transactions:** With the support of other functions within the Risk division, the strategic risk function makes sure risk assessments are carried out on the impact of these transactions on our risk profile and risk appetite.

10. Climate and environmental risk

10.1 Introduction

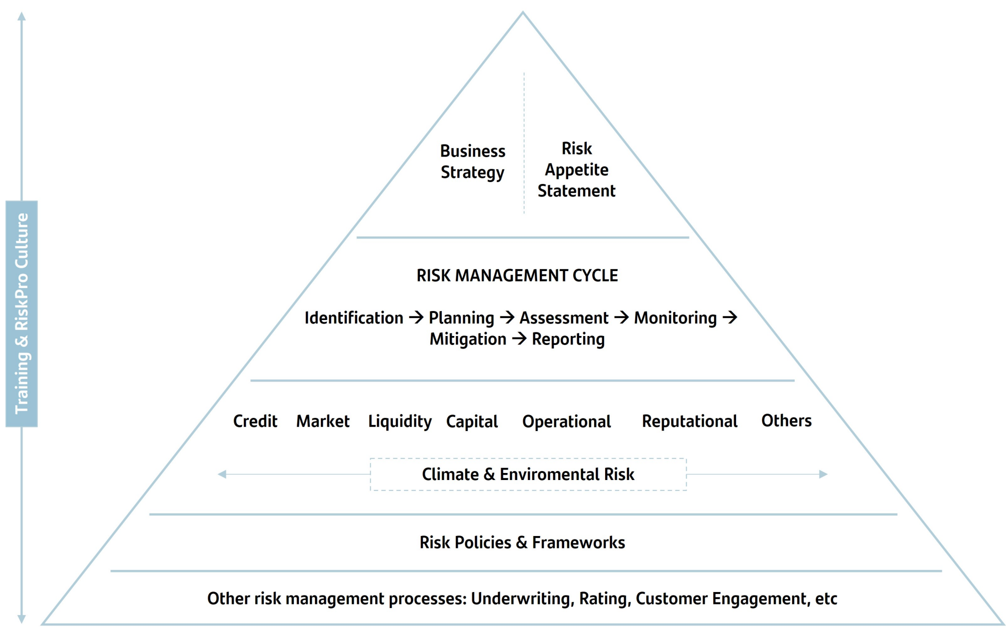
Climate-related and environmental risk management is key to fulfilling our objectives and the commitments in our climate strategy sustainably. Santander takes aiding customers' and households' transition to a low-carbon economy seriously, offering financial products and services to environmentally and socially responsible businesses in keeping with our sustainability commitments and the objectives of the Paris Agreement. For more details, see the Responsible banking chapter.

Santander has an environmental, social and climate change risk policy (available on its corporate website). It dictates the standards for measuring, monitoring and managing risks from oil and gas, power generation, mining and metals, soft commodities and other sectors that require in-depth analysis because of their potential impact on the environment and society. It is consistent, and must be applied, with the Group's policies on sustainability and human rights.

The Risk and Responsible banking functions oversee the annual revision of the policy alongside other business areas to make sure it will conform to international practices and standards and to the Group's sustainability strategy.

10.2 Climate-related and environmental risk management

Climate-related and environmental risk management is a priority of the Risk function. The graph below sums up how we've been integrating it within core processes and risk cycle phases (more details in the sections below).



Identification

Two core processes help Santander spot climate-related risks: top and emerging risk identification (see section 1.3 'Santander Top and emerging risks') and regular risk profile assessment — RPA — (see section 2.4 'Management processes and tools'). Here is how they form part of climate-related risk management.

In identifying emerging and top risks, we pinpoint and measure our most significant internal and external threats to profitability, capital adequacy and strategy. Since 2018, our four top risk event categories have included a climate and environment subcategory. Our analysis covers qualitative as well as quantitative factors (which we've been developing further as more data and new methodologies become available).

As the Group makes progress on its climate-related commitment, it shows us how the importance of climate-related and environmental risks and the mounting pressures from regulators, supervisors and broader society have grown in recent years. The table below shows certain climate matters that could influence the types of risks within our framework over various time horizons. Santander deems climate-related and environmental risk a cross risk, as climate drivers could influence other risks.

Climate Risk Type	Climate Drivers		Main affected Time Horizon
Transition Risk	**Market & Customers**	→ Change in consumer behaviours including deliberate move to more sustainable products → Potential loss of competitive advantage with our green product proposition or pricing risks → Increased market volatility and cost, sourcing restrictions for carbon heavy raw materials	Short - Medium Term
	Policy-Making	→ More demanding policy environment affecting our customer's business operations → Increased green house gas (GHG) emissions pricing to foster movement to renewable sources	Short - Medium - Long Term
	Technology & Data	→ Investment in technology to reduce emissions or improve energy efficiency ratings → Lack of procedures and systems to obtain and store reliable data for risk assessments and disclosure	Medium Term
	Regulatory Pressure	→ New public disclosure products which increase the risk of misrepresentation, increased regulatory requirements which increases the potential of non-compliance, increased use of external analytics providers which increases the potential for data privacy breaches, all of which could result in fines, payment of damages and the voiding of contracts → Increasingly demanding banking regulation (disclosure, stress testing, taxonomies, etc) → Inefficiencies as consequence of different climate regulations, with special attention in those financial entities with international scope	Short - Medium Term
	Reputational	→ Risk of slow, lack or not sufficient reaction from financial entities impacting its reputation; extreme events that would cause damages to financial entities and employees own sites could challenge, if readiness response plans fail, the ability of the banks to prompt react to restoration of service and customers attention in vulnerable situations due to the damages → Increased scrutiny from different stakeholders (e.g. supervisors, regulators, media, NGO's, shareholders, investors, etc) → Perceived not to be meeting, sufficiently progressing, or providing transparency on climate-related commitments and transitioning → Liability implications as an intermediary in several value chain (e.g. data, products, financial services) → Reputational impact from potential misalignment of emissions reduction commitments with performance in specific portfolios	Short - Medium - Long Term
Physical Risk	**Acute**	→ More frequent and severe climate events such as flooding, drought, etc, that could affect financed assets and the value of the collaterals	Short - Medium - Long Term
	Chronic	→ Alterations in weather patterns and stability of local ecosystems affecting food production and living environment. → Rising temperatures affecting working conditions, living conditions and local infrastructure. → Rising sea levels affecting local ecosystems, increasing subsidence and flood risks	Long Term

Findings from emerging and top risk identification fuel our internal capital and liquidity adequacy assessment processes (ICAAP and ILAAP). For instance, our 2021 ICAAP included an idiosyncratic event to show climate change's potential impact on measurement.

The risk profile assessment (RPA) is the second topic of this section. Santander regularly conducts an RPA that covers all risk types and reveals any threat to its business plan. In 2021, we added a special module on climate-related risk control to measure the Corporate Centre and the other subsidiaries'' progress. The questionnaire covers strategic planning, implementation, control and monitoring, and governance. Its findings enable us to find gaps and areas for improvement. The questionnaire will continue to change throughout 2022.

Planning

Strategic planning includes annual budgeting, the three-year financial plan (including risk in executing the Group's strategy, internal and external influence, inability to respond to a changing business environment) and the Group's long-term strategic plan (including risk from its own design).

Those core strategic processes enable the Group to plan for risks from the transition to a low-carbon economy and the physical impact of climate change, and introduce them into short-, medium- and long-term strategy, making it easier to spot threats and changing conditions that could influence our ability to deliver objectives. In qualitative and group-wide terms, plans cover priorities and projects for the coming years; in quantitative terms, they include a financial plan for the period that is consistent with the Group's risk appetite.

Assessment

To determine the most significant climate-related and environmentally material loan portfolios, Santander runs a quarterly materiality assessment. It proves fundamental to making decisions about selected industries, customers and regions and to establishing our strategic priorities. It covers climate-related and environmental risks over many time horizons so our management processes (e.g. risk appetite, top risk identification, credit limits and stress testing) can address them.

Our risk taxonomy and heatmaps are the basis for categorizing portfolios by industry and region according to their potential exposure to physical or transition-based climate-related and environmental risk. Santander's materiality assessment follows the guidelines of the Task Force on Climate-related Financial Disclosures (TCFD) and the United Nations Environmental Programme Finance Initiative (UNEP-FI).Because the taxonomy of industries and sub-industries is based on the EU's NACE codes, it enables us to consistently compile exposure data that serve as a starting point (along with the heatmap for physical and transition-based risks) for quantitative and qualitative measurements of the most material climate change-related risks.

It covers practically our entire balance sheet. It also analyses residual value, strategic risk, market risk and liquidity risk in depth. In 2021, we continued making progress with our climate-related risk materiality assessment by raising the level of granularity and including other businesses (namely Santander Consumer Finance and Private Banking). The graph below shows the Group's last materiality assessment at the end of Q3'21.

MATERIALITY ASSESSMENT - CLIMATE RISK ANALYSIS AND HEAT MAPPING OF PORTFOLIOS

September 2021- Billions euros

	TR	PR	SCIB	Other segments
Power (conventional)			25	2
of which, electricity generation customers with more than 10% of incomes from coal			4	
Power (Renewables)			12	
Oil & Gas			19	0.3
Mining y metals			9	2
of which coal mining			4	
Transport			27	94
Real Estate			6	361
Agriculture			3	4
Construction			20	7
Manufacturing			33	14
Water supply			3	1
Climate sectors			**157**	**485**
Other sectors			59	161
Total portfolio			**216**	**646**

Low | Moderately low | Medium | High | Very High

TR: transitional risk; PR: physical risk
Credit risk for SCIB is credit equivalent risk (CER: loans on and off the balance sheet + guarantees + structured financial product (SFP) derivatives. For other segments, it is the drawn-down amount.
Other industries: SCIB, Corporates and NACE businesses outside the risk taxonomy perimeter + Individuals and DCB (cards and other consumer credit).
Other segments include Retail and commercial banking (Corporates), Individuals, SCF and WM&I.

For more details about our materiality assessment, see our 2021 Climate Finance Report on our corporate website.

Monitoring

Santander uses risk appetite, scenario analyses and other tools to monitor climate-related and environmental risk. Here we delve deeper into each one.

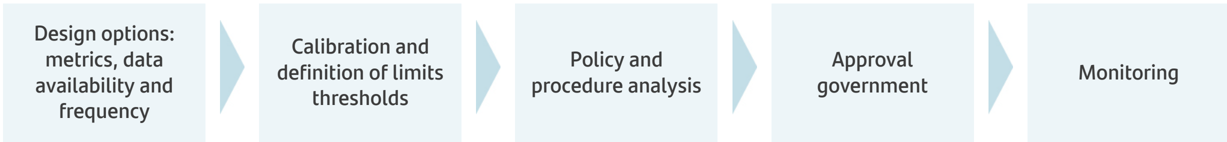
Risk appetite sets the volume and type of risks we deem prudent for our business strategy. Along with implementing policies, it is a key tool to monitor climate-related risk, our objectives and our commitments, and to mitigate the risk of failing to meet them.

Climate-related matters have been expressly part of our risk appetite since 2019. The board of directors approved a qualitative risk appetite statement on climate. It linked climate change management to our industry-related policies, which prohibit or place restrictions on financing operations with an environmental or social impact in the energy, mining and metals, and soft commodities industries. We review those policies every year to make sure our standards remain consistent with our strategy and best practice.

In line with our ambition and commitment to financing the transition to a low-carbon economy, in November 2020 the Group updated our risk appetite consistently with our support for the Paris Agreement while our industry-based policies were combined into our environmental, social and climate change policy.

In February 2021, the Group made its first decarbonization commitments as part of its goal to reach net zero emissions by 2050. They included commitments on the thermal carbon industry. Accordingly, by 2030 we will end financial services to electricity generating customers if 10% of their revenues rely on thermal coal; and eliminate our exposure to coal mining worldwide.

We continue to enhance our risk appetite statement to complement the Group's strategy with available methodologies and data. To start setting climate-related risk appetite metrics, we determine industry targets according to our strategy and follow this conceptual process:



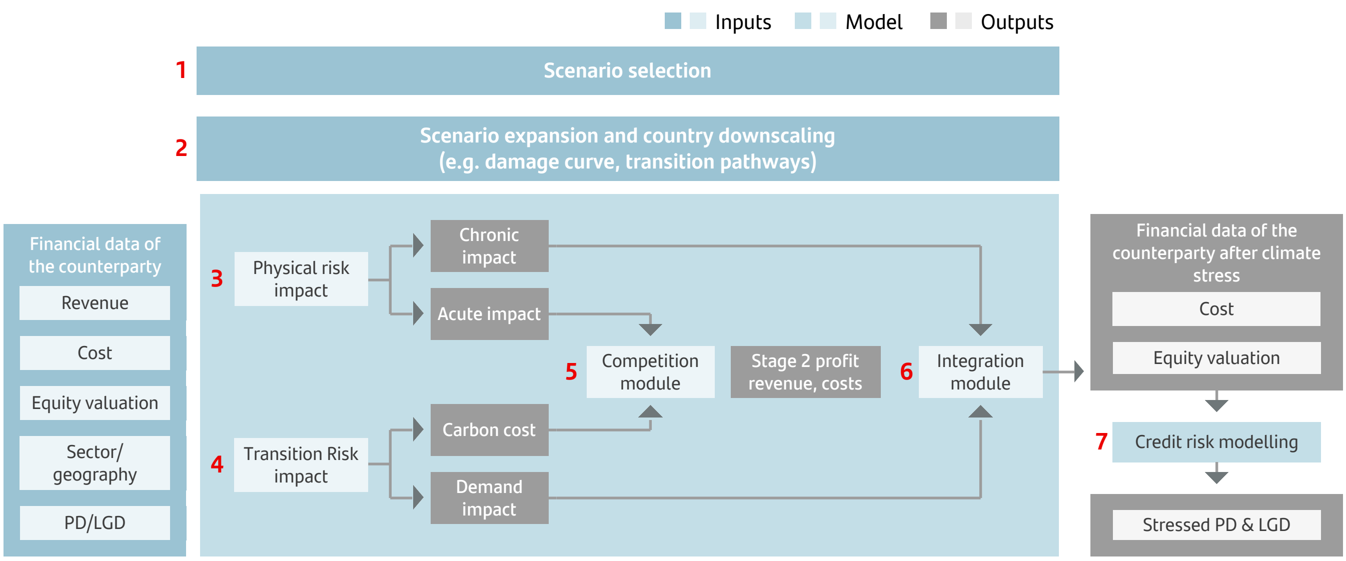
According to our first decarbonization commitments, our current qualitative risk appetite statement added a specific quantitative metric the board had approved in November 2021 in accordance with established governance procedures.

The metric puts limits and thresholds on counterparties from the thermal carbon industry that our commitments concern. It also gives a path to those limits that is conducive to fulfilling the target by 2030. The process involves permanent contact with affected customers to share Santander's strategy and to understand and assess their transition planning.

Santander will also continue to set alignment targets for industries with a material impact on climate as part of the Net Zero Banking Alliance initiative. The Group's risk appetite will gradually introduce metrics and limits for each one of those industries (subject to established governance procedures).

As mentioned earlier, scenario analyses are a management tool to monitor climate-related and environmental risk. Analysis techniques are useful for the Group's internal management and for handling regulatory and supervisory stress testing. We use scenarios determined by the network for greening the financial system (NGFS) and others designed by our Research department to analyse the impact on climate under various circumstances.

In 2022, Santander will undergo the Single Supervisory Mechanism's (SSM) climate and environmental risk stress test. It will have three modules: a qualitative questionnaire; climate risk metrics; and bottom-up stress test projections. Although it may be qualitatively introduced into the Supervisory review and evaluation process (SREP), it is an overall learning exercise without direct quantitative implications about capital. To carry it out, the Group will use a combination of internally developed items and an external provider's platform and databases to quantify the financial impact of each counterparty's physical and transition-based risks. According to the graph below, the platform has seven modules and is based on the United Nations Environmental Programme Finance Initiative's (UNEP FI) methodology and other external information. The exercises we conduct entail both a bottom-up analysis of the customer and a top-down analysis of portfolios by industry and geography.



PD: Probability of default. LGD: Loss given default. SSM: Single supervisory mechanism - European Central Bank Banking supervision

Furthermore, Santander UK took part in the Bank of England's Climate Biennial Exploratory Scenario (CBES) in 2021. The CBES marks the first time Santander UK conducted an analysis of climate scenarios in what became a learning exercise. That enables us to measure the dimension of our portfolios' climate change-related risks and understand the challenges involved.

The CBES required three scenario models exploring many combinations of physical and transition-based risks over 30 years. It also required closer contact with customers to better understand their plans to adapt to climate change and reflect them in final risk models. Focus was on credit risk and, in particular, on detailed analyses of risks to large corporates.

In response to the CBES, Santander UK set out its target operating model, created internal climate-related risk models, engaged with providers specializing in climate modelling, obtained internal and market data to include them within models, and involved hundreds of employees and customers. Its CBES exercise followed a sound governance and control framework. We expect the Bank of England will publish its findings in May 2022.

Mitigation

In mitigation, we updated our environmental, social and climate change policy, which sets out our public commitments and aims to support our strategy for sensitive, special-attention and prohibited industries. Our loan approval policies follow the EBA's guidelines on loan origination and monitoring.

Our internal taxonomy is also considered a mitigating instrument since it helps us inform our customers of the need to have credible plans in place to cease carbon-based activities in the coming years and ensure an orderly transition. The sustainable finance classification system (SFCS) is our internal guide to identify sustainable activities and ensures a blanket approach to monitoring operations, supporting the development of solutions for customers and mitigating the risk of greenwashing. It is also key to designing our sustainable financing proposition and supplements our Global sustainable bond framework and Green finance commitment.

Furthermore, for credit approvals, the first line of defence runs due diligence with several special questionnaires. If the process reveals a reputational issue, it will be escalated to the Reputational risk team as a preventative measure. All project finance transactions with SCIB must be analysed according to the Equator Principles (for more details about Santander's commitment to the Equator Principles, see section 'Environmental and social risk analysis' in the Responsible banking chapter).

For 2022, we have planned several measures to continue including climate and environmental variables in credit approvals:

- **Credit committees:** Subsidiary committees will inquire about environmental, social and climate change factors.
- **Customer ratings**: They aim to ensure all SCIB corporate ratings include environmental, social and climate change factors. We will broaden the scope to retail banking (corporates). Environmental, social and climate change analysis is gradually being introduced into pricing based on companies' ratings. However, pricing for green mortgages and other special products already provides discounts under certain conditions.
- **Collateral**: Collateral valuation includes energy certificates.

A corporate multidisciplinary working group is analysing and monitoring the most significant claims and disputes, including those related to climate change management that could have an impact on Santander's reputation. Its work includes mitigation plans and escalations according to the established governance.

Santander takes part in international regulatory and supervisory forums and working groups to assess climate risks and opportunities, while anticipating and mitigating potential risks to the Group.

Lastly, the Risk function increased the number and capabilities of its resources to manage and monitor climate and environmental risk, for which specialist training proved fundamental. Furthermore, we will gradually give most employees general training in 2022 to raise their awareness. Our Risk pro culture will be essential. In 2022, we also hope to progress our policy on incentives/remuneration tied to climate-related risk management and control.

Reporting

Santander continues to make progress on internal and external disclosures to ensure communications to stakeholders on climate and environmental risk progress are transparent and accurate according to the law and supervisors' expectations.

Our external reports such as the 2021 Climate finance report (that explains Santander's position and strategy on climate change) and this Annual report highlight the progress we made climate and environmental risk. We are also working on areas that are closely related to external disclosures such as the green asset ratio (GAR), transparency requirements of the sustainable finance disclosure regulation (SFRD) and climate disclosure requirements under Pillar III. Because of the increasing interest in, and scrutiny of, climate and environmental risk, information on climate-related and environmental risk is becoming more important to the Group's senior managers.

Glossary

1LoD	First Line of Defence
2019 AGM	Annual general meeting held on 12 April 2019
2020 AGMs	April 2020 AGM and October 2020 AGM
2021 AGM	Annual general meeting held on March 26 2021
2022 AGM	Annual general meeting called for 31 March on first call or on 1April on second call
2Dii	2 Degree Investing Initiative
2LoD	Second Line of Defence
Act 5/2021	Law (Act) 5/2021 of 12 April, amending the revised Spanish Companies Act and other financial regulation in regard to the fostering of long-term shareholder engagement by listed companies
Active customer	Those customers who comply with balance, income and/or transactionality demanded minimums defined according to the business area
ADS	American Depositary Shares
AEAT	Agencia Estatal de Administración Tributaria
AI	Artificial Intelligence
ALCO	Asset-Liability Committee
ALM	Asset and Liability Management
AML	Anti-money laundering
API	Application Programming Interface
APM	Alternative Performance Measure
April 2020 AGM	Annual general meeting held on 3 April 2020
APS	Amherst Pierpont Securities
ASF	Available Stable Funding
ASR	Recovered write-off assets (Activos en suspenso recuperados)
AT1	Additional Tier 1
ATM	Automated teller machine
ATOMIC	Advanced Target Operating Models in Collaboration
Available capital	The volume of own funds Grupo Santander deems eligible under management criteria to meet its capital needs
B2B2C	Business to business to customer
B2C	Business to customer
Banco Popular/Popular	Banco Popular Español, S.A., a bank whose share capital was acquired by Banco Santander, S.A. on 7 June 2017 and was merged into Santander in September 2018
Basel or Basel Committee	The Basel Committee on Banking Supervision
BAU	Business as usual
BBLS	Bounce Back Loans
BCBS	Basel III leverage ratio framework
BCMS	Business Continuity Management System
BCP	Business continuity plans
BIS	Bank for International Settlements
BMR	EU Benchmark Regulation
Bn	Billion (1,000,000,000)
BNDES	*Banco Nacional de Desenvolvimiento Económico y Social*
BOE	Official State Bulletin
BoE	Bank of England
bps	basis points
BRRD	Directive 2014/59/EU establishing a framework for the recovery and resolution of credit institutions and investment firms, as amended from time to time

BSI	Banco Santander Internacional
CAE	Chief audit executive
CAF	Development Bank of Latin America
CAO	Chief accounting officer
CaR	Capital at Risk
Capital requirements	The minimum volume of own funds required by the regulator to ensure solvency based on credit, market and operational risks
CARF	Conselho Administrativo de Recursos Fiscais
CBES	Climate Biennial Exploratory Scenario
CCCA	Collective Commitment to Climate Action
CCM	Capability Maturity Model
CCMV	Code of conduct in the stock markets
CCO	Chief compliance officer
CCP	Central Counterparties
CCPS	Contingent convertible preferred securities
CCR	Counterparty credit risk
CCSM	Code of conduct in security markets
CDI	Crest Depositary Interests
CDS	Credit Default Swaps
CEB	Council of Europe Development Bank
CEO	Chief executive officer
CER	Credit equivalent risk
CET1	Common equity tier 1
CFO	Chief financial officer
CHF	Swiss currency
CIB	Corporate & Investment Banking
CIO	Chief information officer
CNMV	Spanish stock market authority (Comisión Nacional del Mercado de Valores)
COFINS	Contribuiçao para Financiamento da Seguridade Social
COMEX	Commodity Exchange
COP26	UN Climate change conference
Corporate Centre	Our headquarters in Boadilla and business segment as described in section 4.1 'Description of segments' in the Economic and financial review chapter.
Corporation	All the governing bodies, organizational structures and employees entrusted by Banco Santander, S.A. to exercise oversight and control across the entire Group, including those functions typically associated with the relationship between a parent company and its subsidiaries.
COSO	Committee of Sponsoring Organizations of the Tradeway Commission
Cost of capital	The minimum return investors (shareholders) require as compensation for the opportunity cost and risk of investing in Santander. It represents a 'cut-off rate' or 'minimum return', which allows analysts to compare business units' performance and analyse efficiency
CPGF	Corporate Products Governance Forum
CRD IV	The prudential framework established by the CRD and CRR currently in force
CRD V	Amendment to the CRD IV package
CRE	Credit Risk Equivalent
CRM	Customer Relationship Management
CRO	Chief risk officer
CRR	Regulation (EU) 575/2013 on prudential requirements for credit institutions and investment firms, as amended from time to time
CRS	The Common Reporting Standard approved by the OECD Council on 15 July 2014
CSA	Credit Support Annex
CSLL	Social Contribution on Net Income
CTO	Chief technology officer
CVA	Credit Valuation Adjustment

DCB	Digital Consumer Bank
D&I	Diversity & inclusion
DI	Debt to Income
Digital customers	Every consumer of a commercial bank's services who has logged on to their personal online banking and/or mobile banking in the last 30 days.
DLP	Data Leakage Protection
Dodd-Frank Act	The US Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010
DTA	Deferred Tax Asset
DVA	Debt Valuation Adjustment
E&S	Environmental and social
EAD	Exposure at Default
EBA	European Banking Authority
EBRD	European Bank for Reconstruction and Development
ECB	European Central Bank
ECB Recommendation III	Recommendation that the ECB issued on 15 December 2020 to repeal ECB Recommendations I and II and ask the European credit institutions it supervises to exercise extreme prudence when deciding on, or paying out, dividends; or performing share buybacks to remunerate shareholders
ECL	Expected credit loss
EIB	European Investment Bank
EISM	Global Systematic Important Bank
Eligible capital	The amount of own funds considered eligible by the regulator to meet capital requirements, principally accounting capital and reserves
EMIR	Regulation (EU) 648/2012 on OTC derivatives, central counterparties and trade repositories, as amended from time to time
EONIA	Euro Overnight Index Average
EPS	Earnings Per Share
ERC	Executive risk committee
ES	Expected Shortfall
ESG	Environmental, Social and Governance
ESMA	European Securities and Markets Authority
ESRM	Environmental and social risk management
ETF	Exchange Traded Funds
EU	European Union
EVA	Economic value added. It is measured by profit generated in excess of the cost of economic capital. Grupo Santander adds economic value when the RoRAC exceeds its cost of capital; otherwise, value is destroyed. EVA measures absolute risk-adjusted returns (in monetary units), which complements the RoRAC approach
EVE	Economic Value of Equity
EWIs	Early Warning Indicators
Expected loss	Loss due to insolvency that an entity may suffer on average over an economic cycle. It considers insolvency a cost that can be reduced by proper loan approval
FATCA	Foreign Account Tax Compliance Act
FATF	Financial Action Task Force
FCA	Financial Conduct Authority
FCA Group	Fiat Chrysler Automobiles
FCC	Financial Crime Compliance
FEBEF	Fundación Española de Banca para Estudios Financieros
FED	Federal Reserve
Final Cash Dividend	The final cash dividend of 0.10 euros per share put to a vote by the board in February 2020 at the April 2020 AGM
First Buyback Programme	On September 2021 the board resolved to execute a shares buyback programme worth up to 841 million euros as part of shareholder remuneration charged against 2021
FROB	*Fondo de Reestructuración Ordenada Bancaria*
FRTB	Fundamental Review of the Trading Book

FSB	Financial Stability Board
FV	Fair value
FX	Foreign Exchange
GAR	Green Asset Ratio
G-SIB	Global Systematic Important Bank
GBP	Pound sterling
GCC	General Code of Conduct
GCCO	Group chief compliance officer
GCRO	Group chief risk officer
GDP	Gross Domestic Product
GDPR	General Data Protection Regulation
GloBe	Global Anti-Base Erosion
GMRA	Global master repurchase agreement
GMS	Global Merchant Services
GPPC	Global Public Policy Committee
GPTW	Great Place to Work
GRC	Governance, risk and compliance
GRI	Global Reporting Initiative
GSGM	Group-Subsidiary Governance Model
GTS	Global Trade Services
HQLA	High Quality Liquid Assets
HR	Human Resources
IAS	International Accounting Standards
IASB	International Accounting Standards Board
IBORs	Interbank offered rates
ICAAP	Internal Capital Adequacy Assessment Process
ICAC	Accounting and Audit Institute (Instituto de Contabilidad y Auditoría de Cuentas)
ICFR	Internal control over financial reporting
ICO	Instituto de Crédito Oficial
ICT	Information and Communication Technology
ID	Identification
Identified Staff	Other executives whose activities may have a significant impact on the Group's risk profile
IFC	International Finance Corporation
IFI	Instituciones financieras internacionales
IFRS	International Financial Reporting Standards (IFRS) as adopted in the EU pursuant to Regulation (EC) 1606/2002 on the application of international accounting standards, as amended from time to time
ILAAP	Internal Liquidity Adequacy Assessment Process
IMA	Internal Model Approach
IMF	International Monetary Fund
IMIs	Internal Model Inspections
IOSCO	Principles for financial benchmarks
IPCC	Intergovernmental Panel on Climate Change
IPO	Initial Public Offering
IRB	Internal Rating Based
IRC	Incremental Risk Charge
IRCS	Internal Risk Control System
IRPJ	Imposto de Renda Pessoa Jurídica
IRR	Internal rate of return
IRRBB	Interest rate risk of the banking book
IRS	Internal Revenue Service
ISDA	International Swaps and Derivatives Association
ISMA	International Securities Market Association

IT	Information technology
ITS	Internal technical standards
JPY	Japanese currency
KPI	Key performance indicator
KRI	Key Risk Indicators
LCR	Liquidity Coverage Ratio
LDA	Loss Distribution Approach
Leverage ratio	This regulatory metric compares a bank's size to its capital to measure how sound and robust it is, dividing Tier1 capital by the leverage exposure. This takes into account balance sheet size with some adjustments for derivatives, funding of securities operations and off-balance sheet items
LGD	Loss Given Default
LIBOR	London Interbank Offer Rate
Loyal customers	Active customers who receive most of their financial services from the Group according to the commercial segment to which they belong. Various engaged customer levels have been defined taking profitability into account.
LTD	Loan to Deposit ratio
LTV	Loan to Value
M/LT	Medium and long-term
MiFID II	Markets in Financial Instruments Directive.
Mn	Million
MRAP	Market Risk Advanced Platform
MREL	Minimum requirement for own funds and eligible liabilities which is required to be met under the BRRD
MRM	Model Risk Management
MtM	Mark-to-Market
MXN	Mexican peso
NACE	Statistical classification of economic activities in the European Community
NCAs	National competent authority
NDoD	New definition of default
NFRD	Non-financial reporting directive
NGFS	Network for Greening the Financial System
NGO	Non-governmental organization
NII	Net Interest Income
Nominal cap	Maximum nominal amount of a risk operation, excluding market transactions
NPLs	Non-performing loans
NPS	Net promoter score
NSFR	Net stable funding ratio
NYSE	New York Stock Exchange
o/w	Of which
OCI	Originated Credit Impairment
October 2020 AGM	Annual meeting held on 27 October 2020
OECD	Organization for Economic Co-operation and Development
OM	Organised Markets
ONP	Ordinary net profit
OP	Operational risk
OR	Operational risk
OSLA	Overseas Securities Lender's Agreement
OSSG	Official Sector Steering Group
OTC	Over the counter
PB	Private Banking
P&L	Profit and Loss
PACTA	Paris Agreement Capital Transition Assessment
PCAOB	Public Company Accounting Oversight Board

PD	Probability of Default
People supported in our communities	The Bank has devised a corporate methodology tailored to Santander's requirements and specific model for contributing to society. This methodology identifies a series of principles, definitions and criteria to allow the Bank to consistently keep track of those people who have benefited from the programmes, services and products with a social and/or environmental component promoted by the Bank. This methodology has been reviewed by an external auditor.
PFE	Potential Future Exposure (posible exposición futura)
PIS	Programa de Integraçao Social
PIT	Point in time
PIT	Point-in-time
PLN	Polish Zloty
POCI	Purchased or Originated Credit Impaired
POS	Point of sale
pp	percentage point
PPI	Payment protection insurance
PPNR	Pre-provision net revenues
PPP	Paycheck Protection Program
PRA	UK Prudential Regulatory Authority
PRI	Principles for responsible Investment
PSD2	Payment Services Directive II
PwC	PricewaterhouseCoopers Auditores, S.L.
R&D&i	Research, development and innovation
RAF	Risk appetite framework
RAS	Risk appetite statement
RCC	Risk control committee
RCSA	Risk control self-assessment
RDA	Risk Data Aggregation
REC	Equivalent risk of credit
RIA	Risk Identification and Assessment
RoA	Return on assets. Ratio between net income and total average assets, or the amount of financial and operational income a company receives in a financial year as compared to the average of the company's total assets. The ratio is considered to be an indicator of how effectively a company is using its assets to generate earnings
RoE	Return on equity
RoRAC	Return (net of tax) on economic capital required internally
RoRWA	Return (net of tax) on risk weighted assets for a particular business. Grupo Santander uses RoRWA to establish strategies to allocate regulatory capital for maximums returns
RoTE	Return on tangible equity
RPA	Risk profile assessment
RRS	Risk Reporting Structure
RSF	Required Stable Funding
Rules and regulations of the board	Rules and regulations of the board of directors of Banco Santander, S.A.
Rules and regulations of the general meeting	Rules and regulations of the general meeting of Banco Santander, S.A.
RWAs	Risk weighted assets
S&P 500	The S&P 500 index maintained by S&P Dow Jones Indices LLC
SAM	Santander Asset Management
Santander Consumer US	Santander Consumer USA Holdings Inc.
SBNA	Santander Bank N.A.
SC USA	Santander Consumer US
SCAN	Santander Customer Assessment Note
SCF	Santander Consumer Finance
SCIB	Santander Corporate & Investment Banking

SCPs	Strategic commercial plans
SCS	Success case studies
SDE	Santander Dividendo Elección
SDG	Sustainable Development Goals
SEA	Securities Exchange Act
SEC	Securities and Exchange Commission
Second Buyback Programme	On 24 February 2022 the board resolved to execute a shares repurchase programme for an amount of 865 million euros as part of shareholder remuneration charged against 2021
Self-imposed capital requirement	The minimum volume of own funds Grupo Santander requires, for a given level of probability, to absorb unexpected losses resulting from its current exposure to risks, including risks not considered in regulatory capital
SELIC	*Sistema Especial de Liquidaçâo e Custodia (Brasil)*
SHUSA	Santander Holdings USA, Inc.
SICR	Significant increase of credit risk
SIS	Santander Investment Securities
SLA	Service Level Agreement
SMEs	Small and medium enterprises
SOX	Sarbanes-Oxley Act of 2002
Spanish Companies Act	Consolidated text of the Spanish Companies Act approved by Royal Legislative Decree 1/2010, of 2 July
Spanish Corporate Governance Code	CNMV's Good Governance Code for Listed Companies
Spanish Securities Markets Act	Consolidated text of the Spanish Securities Markets Act approved by Royal Legislative Decree 4/2015, of 23 October
SPF	Simple, Personal and Fair
SRB	European Single Resolution Board
SREP	Supervisory Review and Evaluation Process
SRF	Single Resolution Fund
SRI	Socially Responsible Investment
SRT	Significant Risk Transfer
SSM	Single Supervisory Mechanism, the system of banking supervision in Europe. It comprises the ECB and the national supervisory authorities of the participating countries.
ST	Short-term
STEM	Science, Technology, Engineering and Mathematics
STF	Supreme Federal Court of Brazil
STR	Short-term interest rate
SVaR	Stressed value at risk
T&O	Technology and operations
T2	Tier 2
TCFD	Task Force on Climate-related Financial Disclosures
TLAC	The total loss-absorbing capacity requirement which is required to be met under the CRD V package
TLTRO	Targeted longer-term refinancing operations
TOM	Target Operational Model
TRIM	Targeted Review of Internal Models
TSR	Total Shareholder Return
UAI	Real Estate Unit in Spain
UK	United Kingdom
UN SDG	United Nations Sustainable Development Goals
UNEP FI	United Nations Environmental Program Financial Initiative
US	United States of America
USD	United States dollar
VaE	Value at Earnings
VaR	Value at Risk

VAT	Value Added Tax
Volcker Rule	Section 619 of the Dodd-Frank Act
VPN	Virtual Private Network
WBCSD	World Business Council for Sustainable Development
WFH	Working From Home
WM&I	Wealth Management and Insurance
Wolfsberg group	Association of thirteen global banks which aims to develop frameworks and guidance for the management of financial crime risks
YoY	Year over year

Auditor's report and consolidated financial statements

Auditor's report

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This version of our report is a free translation of the original, which was prepared in Spanish. All possible care has been taken to ensure that the translation is an accurate representation of the original. However, in all matters of interpretation of information, views or opinions, the original language version of our report takes precedence over this translation.

Independent auditor's report on the consolidated annual accounts

To the shareholders of Banco Santander, S.A.:

Report on the consolidated annual accounts

Opinion

We have audited the consolidated annual accounts of Banco Santander, S.A. (the Parent company) and its subsidiaries (the Group or Santander Group), which comprise the balance sheet as at December 31, 2021, and the income statement, statement of recognised income and expense, statement of changes in total equity, statement of cash flows and related notes, all consolidated, for the year then ended.

In our opinion, the accompanying consolidated annual accounts present fairly, in all material respects, the equity and financial position of the Group as at December 31, 2021, as well as its financial performance and cash flows, all consolidated, for the year then ended, in accordance with International Financial Reporting Standards as adopted by the European Union (IFRS-EU) and other provisions of the financial reporting framework applicable in Spain.

Basis for opinion

We conducted our audit in accordance with legislation governing the audit practice in Spain. Our responsibilities under those standards are further described in the *Auditor's responsibilities for the audit of the consolidated annual accounts* section of our report.

We are independent of the Group in accordance with the ethical requirements, including those relating to independence, that are relevant to our audit of the consolidated annual accounts in Spain, in accordance with legislation governing the audit practice. In this regard, we have not rendered services other than those relating to the audit of the accounts, and situations or circumstances have not arisen that, in accordance with the provisions of the aforementioned legislation, have affected our necessary independence such that it has been compromised.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key audit matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated annual accounts of the current period. These matters were addressed in the context of our audit of the consolidated annual accounts as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

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Banco Santander, S.A. and its subsidiaries

Key audit matters	How our audit addressed the key audit matters
Estimation of impairment of financial assets at amortised cost - loans and advances to customers – for credit risk	
The models used to estimate the expected credit losses along with the adaptations made in the context of the current environment, imply a high complexity by incorporating new estimates and judgments, especially those related to the updates and adjustments made to the models to determine the expected credit loss. These estimates require an elevated component of judgment by management and are one of the most significant and complex estimates in the preparation of the consolidated annual accounts as at December 31, 2021 included herein, therefore they have been considered one of the key audit matters. The main judgements and assumptions used by management are the following: • The estimation of the Probability of Default (PD) and Loss Given Default (LGD) parameters. • Identification and classification of the staging criteria of loans and advances to customers. • The definition and evaluation of updates and adjustments to adapt the parameters estimated by the models to the conditions and current environment. • The main assumptions used in the determination of provisions for risks estimated individually. The Group's business is focused primarily on commercial banking products and is concentrated in nine key markets (Brazil, Chile, Spain, United States, Mexico, Poland, Portugal, United Kingdom and the consumer finance business in Europe). As a result, during fiscal year 2021 the Group has recognised an amount of EUR 7,388 million of impairment of financial assets at amortised cost. Please refer to Notes 2, 10 and 53 of the consolidated annual accounts as at December 31, 2021.	We have obtained, in collaboration with our credit risk experts, an understanding of management's process to estimate the impairment of financial assets at amortised cost - loans and advances to customers - over the estimation of impairment of financial assets assessed collectively and individually. In addition, and as a part of our audit procedures, we have made inquiries to management to understand the extent of the potential impact of climate change on credit risk. In regards with the internal control, we have focused on testing the design and operating effectiveness of key controls over the following processes: • Calculation methodologies, calibrations, monitoring and back-testing performed by management. • Compliance with internal policies and functionality of the internal models approved by management. • Reliability of the data sources used in the calculations and the suitability of the models taking into account the circumstances. • Periodic review process of borrower to determine proper staging criteria. • Review process over the calculation of the principal models and portfolios. • Review process of the updates and adjustments to the expected credit loss models made by management due to the conditions and current environment. • Loan collateral assignment and valuation process associated with mortgage collateral operations, including collateral recovery process. In addition, we performed the following tests of details:

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Banco Santander, S.A. and its subsidiaries

Key audit matters	How our audit addressed the key audit matters
	• Tests of principal models with respect to: i) calculation and segmentation methods; ii) methodology used for the estimation of the expected loss parameters; iii) data and main assumptions used, iv) staging criteria and v) scenario information and assumptions. • For a sample of loans, covered by government guarantees, evaluation of both documentation and payment behaviour presented since the moment of their concession. • Reperformance of collective impairment losses based on the expected credit loss models parameters. • Evaluation of the updates and adjustments to the expected credit loss models made by management due to the conditions and current environment, if applicable. • Verification of the correct assignment of the loan collaterals, especially those that are classified as doubtful. • On a sample basis, evaluating individual credit files to determine the adequacy of their accounting and classification, discounted cash flows and, where appropriate, corresponding impairment. We have not identified exceptions outside of a reasonable range in the procedures outlined above.
Goodwill impairment assessment	
Goodwill impairment assessment is an exercise that requires a high degree of judgment and estimation especially in the current context of the covid-19, therefore it has been considered one of the key audit matters. Due to their relevance to Santander Group, management monitors goodwill, with special focus on the following Cash Generating Units (CGUs): Santander Bank Polska and Santander UK, and assesses goodwill for impairment at the end of each annual reporting period or whenever there is any indication of impairment.	We have obtained, in collaboration with our valuation experts, an understanding of the process performed by management to assess the recoverable amount. In regards with the internal control, we have focused on testing the design and operating effectiveness of key controls over the following processes: • Definition of the Group's CGUs.

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Banco Santander, S.A. and its subsidiaries

Key audit matters	How our audit addressed the key audit matters
The assumptions used by management to estimate the value in use of the Cash-Generating Units (CGUs) includes financial projections, discount rates and perpetual growth rates. Such valuations, and some of these assumptions, are performed by management's experts. The amount of the Group's consolidated goodwill balance as at December 31, 2021 is EUR 12,713 million. Please refer to Notes 2 and 17 of the consolidated annual accounts as at December 31, 2021.	• Methodology used by management for the goodwill impairment assessment, including the controls in place to supervise the process and the related approvals. • Budgeting process on which the projections used in the discounted cash flow projections are based on. • Management's capability of reliable prediction through the comparison of previous years' estimations and impairment assessments with the actual results. • Review of the reasonableness of the discount rates and perpetual growth rates used by management's experts. • Review of the mathematical accuracy of the valuation models used by management experts. We also conducted tests of details to evaluate the discounted cash flow projections used by management in their estimation, considering market practices and specific sector expectations, including the verification of the assumptions, such as discount rates and perpetual growth rates. In addition, we have performed, among other, the following tests of details: • Verifying the mathematical accuracy of the goodwill impairment test, including the discounted cash flow projections. • Comparing the fair value of the listed CGUs to their recoverable amount. • Inspecting the valuation reports regarding the goodwill impairment test performed by management's internal and external experts. • Verifying the adequacy of the information disclosed in the consolidated annual accounts in accordance with applicable regulations. We have not identified exceptions outside of a reasonable range in the procedures outlined above.

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Banco Santander, S.A. and its subsidiaries

Key audit matters	How our audit addressed the key audit matters
Litigation provisions and contingencies	
The Group is party to a range of tax, labour and legal proceedings - administrative and judicial - which primarily arose in the ordinary course of its operations. Also, there are other situations not yet subject to any judicial process that, however, have required the recognition of provisions, such as aspects of conduct with clients and the possible compensations that could be derived. These procedures generally take a long period of time to run their course, giving rise to complex processes in accordance with the applicable legislation, therefore it has been considered one of the key audit matters. Management decides when to recognize a provision for these contingent liabilities, based on an amount estimated using certain procedures consistent with the nature of the uncertainty of the obligations. Among these provisions, the most significant are those that cover the tax and labour proceedings in Brazil and those that cover the legal proceedings in Brazil, Spain and Poland. The amount of the litigation provisions and contingencies as at December 31, 2021 is EUR 3,674 million. Please refer to Notes 2 and 25 of the consolidated annual accounts as at December 31, 2021.	We have obtained, in collaboration with our experts, an understanding of the estimation process performed by management for litigation provisions and contingencies. In regards with the internal control, we have focused on testing the design and operating effectiveness of key controls over the following processes: • Additions, logs and updates over the completeness of the legal matters in the systems. • Accuracy of the key data, maintained in the systems, used in the calculation of the litigations provisions and contingencies. • Assessment of the criteria used to estimate the expected losses from litigation provisions and contingencies and evaluation of the adequacy over the calculation of the provisions for regulatory, legal or tax procedures and their recognition. • Reconciliation between the minutes of the inspections and the amounts accounted for. In addition, we have performed the following tests of details: • Analysis for reasonableness of the expected outcomes of the most significant tax and legal proceedings. • Assessment of possible contingencies relating to compliance with the tax obligations for all the years open to inspection, of the communications with the regulatory bodies and analysis of the ongoing regulatory inspections. • Obtaining confirmation letters from external and internal lawyers and external tax advisors who work with the Group and performing alternative procedures. • Analysis of the recognition and reasonableness of the provisions recorded.

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Banco Santander, S.A. and its subsidiaries

Key audit matters	How our audit addressed the key audit matters
	In the procedures described above, no exceptions were identified outside of a reasonable range.
Information systems	
The Group's financial information is highly dependent on information technology (IT) systems and the geographies where it operates, therefore an adequate control of these systems is crucial to ensuring correct data processing. In this context, it is vital to evaluate aspects such as the organization of the Group's Technology and Operations department, controls over software maintenance and development, physical and logical security controls, and controls over computer operations, therefore it has been considered one of the key audit matters. In this respect, management continues monitoring the internal controls over IT systems, including the access controls that support the Group's technology processes.	We have evaluated, in collaboration with our IT system specialists, the internal controls over the IT systems, databases and applications that support the Group's financial reporting. For this purpose, we have performed procedures over internal control and test of details related to: • The function of the IT governance framework. • Access and logical security controls over the applications, operating systems and databases that support the relevant financial information. • Application development and change management. • Maintenance of computer operations. In addition, considering the monitoring carried out by management over its internal controls over IT systems, our approach and audit plan focused on the following aspects: • Evaluation of the monitoring made by management as part of its internal control environment of the Group. • Testing of the design and operating effectiveness of the controls implemented by management, including access controls. In the procedures described above, no relevant exceptions were identified related to this matter.

Other information: Consolidated Directors' report

Other information comprises only the consolidated Directors' report for the 2021 financial year, the formulation of which is the responsibility of the Parent company's directors and does not form an integral part of the consolidated annual accounts.

Our audit opinion on the consolidated annual accounts does not cover the consolidated Directors' report. Our responsibility regarding the consolidated Directors' report, in accordance with legislation governing the audit practice, is to:

a) Verify only that the consolidated statement of non-financial information, certain information included in the Annual Corporate Governance Report and the Annual Report on Directors' Remuneration, as referred to in the Auditing Act, has been provided in the manner required by applicable legislation and, if not, we are obliged to disclose that fact.

b) Evaluate and report on the consistency between the rest of the information included in the consolidated Directors' report and the consolidated annual accounts as a result of our knowledge of the Group obtained during the audit of the aforementioned financial statements, as well as to evaluate and report on whether the content and presentation of this part of the consolidated Directors' report is in accordance with applicable regulations. If, based on the work we have performed, we conclude that material misstatements exist, we are required to report that fact.

On the basis of the work performed, as described above, we have verified that the information mentioned in section a) above has been provided in the manner required by applicable legislation and that the rest of the information contained in the consolidated Directors' report is consistent with that contained in the consolidated annual accounts for the 2021 financial year, and its content and presentation are in accordance with applicable regulations.

Responsibility of the directors and the audit committee for the consolidated annual accounts

The Parent company's directors are responsible for the preparation of the accompanying consolidated annual accounts, such that they fairly present the consolidated equity, financial position and financial performance of the Group, in accordance with IFRS-EU and other provisions of the financial reporting framework applicable to the Group in Spain, and for such internal control as the aforementioned directors determine is necessary to enable the preparation of consolidated annual accounts that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated annual accounts, the Parent company's directors are responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the aforementioned directors either intend to liquidate the Group or to cease operations, or have no realistic alternative but to do so.

The Parent company's audit committee is responsible for overseeing the process of preparation and presentation of the consolidated annual accounts.

Auditor's responsibilities for the audit of the consolidated annual accounts

Our objectives are to obtain reasonable assurance about whether the consolidated annual accounts as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion.

Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with legislation governing the audit practice in Spain will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated annual accounts.

As part of an audit in accordance with legislation governing the audit practice in Spain, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated annual accounts, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Parent company's directors.

- Conclude on the appropriateness of the Parent company's directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated annual accounts or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the consolidated annual accounts, including the disclosures, and whether the consolidated annual accounts represent the underlying transactions and events in a manner that achieves fair presentation.

- Obtain sufficient and appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated annual accounts. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with the Parent company's audit committee regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide the Parent company's audit committee with a statement that we have complied with relevant ethical requirements, including those relating to independence, and we communicate with the aforementioned those matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with the Parent company's audit committee, we determine those matters that were of most significance in the audit of the consolidated annual accounts of the current period and are therefore the key audit matters.

We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter.

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Banco Santander, S.A. and its subsidiaries

Report on other legal and regulatory requirements

European single electronic format

We have examined the digital files of the European single electronic format (ESEF) of Banco Santander, S.A. and its subsidiaries for the 2021 financial year that comprise an XHTML file which includes the consolidated annual accounts for the financial year and XBRL files with tagging performed by the entity, which will form part of the annual financial report.

The directors of Banco Santander, S.A. are responsible for presenting the annual financial report for 2021 financial year in accordance with the formatting and markup requirements established in the Delegated Regulation (EU) 2019/815 of December 17, 2018 of the European Commission (hereinafter the ESEF Regulation).

Our responsibility is to examine the digital files prepared by the Parent company's directors, in accordance with legislation governing the audit practice in Spain. This legislation requires that we plan and execute our audit procedures in order to verify whether the content of the consolidated annual accounts included in the aforementioned digital files completely agrees with that of the consolidated annual accounts that we have audited, and whether the format and markup of these accounts and of the aforementioned files has been affected, in all material respects, in accordance with the requirements established in the ESEF Regulation.

In our opinion, the digital files examined completely agree with the audited consolidated annual accounts, and these are presented and have been marked up, in all material respects, in accordance with the requirements established in the ESEF Regulation.

Report to the audit committee of the Parent company

The opinion expressed in this report is consistent with the content of our additional report to the audit committee of the Parent company dated February 25, 2022.

Appointment period

The General Ordinary Shareholders' Meeting held on March 26, 2021 appointed us as auditors of the Group for a period of one year, for the year ended December 31, 2021.

Previously, we were appointed by resolution of the General Ordinary Shareholders' Meeting for a period of three years and we have audited the accounts continuously since the year ended December 31, 2016.

Services provided

Services, different to the audit, provided to the Group are detailed in Note 47 of the consolidated annual accounts.

PricewaterhouseCoopers Auditores, S.L. (S0242)

Julián González Gómez (20179)

February 25, 2022

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Consolidated financial statements

Translation of the consolidated annual accounts originally issued in Spanish and prepared in accordance with the regulatory financial reporting framework applicable to the Group in Spain (see Notes 1 and 54). In the event of a discrepancy, the Spanish- version prevails.

Grupo Santander

CONSOLIDATED BALANCE SHEETS AS OF 31 DECEMBER 2021, 2020 AND 2019

EUR million

ASSETS	Note	2021	2020*	2019*
CASH, CASH BALANCES AT CENTRAL BANKS AND OTHER DEPOSITS ON DEMAND	**20**	**210,689**	**153,839**	**101,067**
FINANCIAL ASSETS HELD FOR TRADING		**116,953**	**114,945**	**108,230**
Derivatives	9 and 11	54,292	67,137	63,397
Equity instruments	8	15,077	9,615	12,437
Debt instruments	7	26,750	37,894	32,041
Loans and advances		20,834	299	355
Central banks	6	3,608	—	—
Credit institutions	6	10,397	3	—
Customers	10	6,829	296	355
NON-TRADING FINANCIAL ASSETS MANDATORILY AT FAIR VALUE THROUGH PROFIT OR LOSS		**5,536**	**4,486**	**4,911**
Equity instruments	8	4,042	3,234	3,350
Debt instruments	7	957	700	1,175
Loans and advances		537	552	386
Central banks	6	—	—	—
Credit institutions	6	—	—	—
Customers	10	537	552	386
FINANCIAL ASSETS DESIGNATED AT FAIR VALUE THROUGH PROFIT OR LOSS		**15,957**	**48,717**	**62,069**
Debt instruments	7	2,516	2,979	3,186
Loans and advances		13,441	45,738	58,883
Central banks	6	—	9,481	6,473
Credit institutions	6	3,152	12,136	21,649
Customers	10	10,289	24,121	30,761
FINANCIAL ASSETS AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME		**108,038**	**120,953**	**125,708**
Equity instruments	8	2,453	2,783	2,863
Debt instruments	7	97,922	108,903	118,405
Loans and advances		7,663	9,267	4,440
Central banks	6	—	—	—
Credit institutions	6	—	—	—
Customers	10	7,663	9,267	4,440
FINANCIAL ASSETS AT AMORTIZED COST		**1,037,898**	**958,378**	**995,482**
Debt instruments	7	35,708	26,078	29,789
Loans and advances		1,002,190	932,300	965,693
Central banks	6	15,657	12,499	18,474
Credit institutions	6	39,169	37,838	40,943
Customers	10	947,364	881,963	906,276
HEDGING DERIVATIVES	**36**	**4,761**	**8,325**	**7,216**
CHANGES IN THE FAIR VALUE OF HEDGED ITEMS IN PORTFOLIO HEDGES OF INTEREST RATE RISK	**36**	**410**	**1,980**	**1,702**

CONSOLIDATED BALANCE SHEETS AS OF 31 DECEMBER 2021, 2020 AND 2019

EUR million

ASSETS	Note	2021	2020	2019
INVESTMENTS	**13**	**7,525**	**7,622**	**8,772**
Joint venture entities		1,692	1,492	1,325
Associated entities		5,833	6,130	7,447
ASSETS UNDER INSURANCE OR REINSURANCE CONTRACTS	**15**	**283**	**261**	**292**
TANGIBLE ASSETS		**33,321**	**32,735**	**35,235**
Property, plant and equipment	16	32,342	31,772	34,262
For own-use		13,259	13,213	15,041
Leased out under an operating lease		19,083	18,559	19,221
Investment properties	16	979	963	973
Of which leased out under an operating lease		*839*	*793*	*823*
INTANGIBLE ASSETS		**16,584**	**15,908**	**27,687**
Goodwill	17	12,713	12,471	24,246
Other intangible assets	18	3,871	3,437	3,441
TAX ASSETS		**25,196**	**24,586**	**29,585**
Current tax assets		5,756	5,340	6,827
Deferred tax assets	27	19,440	19,246	22,758
OTHER ASSETS		**8,595**	**11,070**	**10,138**
Insurance contracts linked to pensions	14	149	174	192
Inventories		6	5	5
Other	19	8,440	10,891	9,941
NON-CURRENT ASSETS HELD FOR SALE	**12**	**4,089**	**4,445**	**4,601**
TOTAL ASSETS		**1,595,835**	**1,508,250**	**1,522,695**

* Presented for comparison purposes only (note 1.d).

The accompanying notes 1 to 54 and appendices are an integral part of the consolidated balance sheet as of 31 December 2021.

CONSOLIDATED BALANCE SHEETS AS OF 31 DECEMBER 2021, 2020 AND 2019

EUR million

LIABILITIES	Note	2021	2020*	2019*
FINANCIAL LIABILITIES HELD FOR TRADING		**79,469**	**81,167**	**77,139**
Derivatives	9 and 11	53,566	64,469	63,016
Short positions	9	12,236	16,698	14,123
Deposits		13,667	—	—
Central banks	20	1,038	—	—
Credit institutions	20	6,488	—	—
Customers	21	6,141	—	—
Marketable debt securities	22	—	—	—
Other financial liabilities	24	—	—	—
FINANCIAL LIABILITIES DESIGNATED AT FAIR VALUE THROUGH PROFIT OR LOSS		**32,733**	**48,038**	**60,995**
Deposits		27,279	43,598	57,111
Central banks	20	607	2,490	12,854
Credit institutions	20	1,064	6,765	9,340
Customers	21	25,608	34,343	34,917
Marketable debt securities	22	5,454	4,440	3,758
Other financial liabilities	24	—	—	126
Memorandum items: subordinated liabilities	*23*	—	—	—
FINANCIAL LIABILITIES AT AMORTIZED COST		**1,349,169**	**1,248,188**	**1,230,745**
Deposits		1,078,587	990,391	942,417
Central banks	20	139,757	112,804	62,468
Credit institutions	20	52,235	62,620	90,501
Customers	21	886,595	814,967	789,448
Marketable debt securities	22	240,709	230,829	258,219
Other financial liabilities	24	29,873	26,968	30,109
Memorandum items: subordinated liabilities	*23*	*26,196*	*21,880*	*21,062*
HEDGING DERIVATIVES	**36**	**5,463**	**6,869**	**6,048**
CHANGES IN THE FAIR VALUE OF HEDGED ITEMS IN PORTFOLIO HEDGES OF INTEREST RATE RISK	**36**	**248**	**286**	**269**
LIABILITIES UNDER INSURANCE OR REINSURANCE CONTRACTS	**15**	**770**	**910**	**739**
PROVISIONS	**25**	**9,583**	**10,852**	**13,987**
Pensions and other post-retirement obligations		3,185	3,976	6,358
Other long term employee benefits		1,242	1,751	1,382
Taxes and other legal contingencies		1,996	2,200	3,057
Contingent liabilities and commitments		733	700	739
Other provisions		2,427	2,225	2,451
TAX LIABILITIES		**8,649**	**8,282**	**9,322**
Current tax liabilities		2,187	2,349	2,800
Deferred tax liabilities	27	6,462	5,933	6,522
OTHER LIABILITIES	**26**	**12,698**	**12,336**	**12,792**
LIABILITIES ASSOCIATED WITH NON-CURRENT ASSETS HELD FOR SALE		**—**	**—**	**—**
TOTAL LIABILITIES		**1,498,782**	**1,416,928**	**1,412,036**

CONSOLIDATED BALANCE SHEETS AS OF 31 DECEMBER 2021, 2020 AND 2019

EUR million

EQUITY	Note	2021	2020*	2019*
SHAREHOLDERS´ EQUITY	**30**	**119,649**	**114,620**	**124,239**
CAPITAL	**31**	**8,670**	**8,670**	**8,309**
Called up paid capital		8,670	8,670	8,309
Unpaid capital which has been called up		—	—	—
SHARE PREMIUM	**32**	**47,979**	**52,013**	**52,446**
EQUITY INSTRUMENTS ISSUED OTHER THAN CAPITAL	**34**	**658**	**627**	**598**
Equity component of the compound financial instrument		—	—	—
Other equity instruments issued		658	627	598
OTHER EQUITY	**34**	**152**	**163**	**146**
ACCUMULATED RETAINED EARNINGS	**33**	**60,273**	**65,583**	**61,028**
REVALUATION RESERVES	**33**	**—**	**—**	**—**
OTHER RESERVES	**33**	**(4,477)**	**(3,596)**	**(3,110)**
Reserves or accumulated losses in joint venture investments		1,572	1,504	1,210
Others		(6,049)	(5,100)	(4,320)
(-) OWN SHARES	**34**	**(894)**	**(69)**	**(31)**
PROFIT OR LOSS ATTRIBUTABLE TO SHAREHOLDERS OF THE PARENT		**8,124**	**(8,771)**	**6,515**
(-) INTERIM DIVIDENDS	**4**	**(836)**	**—**	**(1,662)**
OTHER COMPREHENSIVE INCOME OR LOSS	**29**	**(32,719)**	**(33,144)**	**(24,168)**
Items that will not be reclassified to profit or loss		(4,241)	(5,328)	(4,288)
Items that may be reclassified to profit or loss		(28,478)	(27,816)	(19,880)
NON-CONTROLLING INTEREST	**28**	**10,123**	**9,846**	**10,588**
Other comprehensive income or loss		(2,104)	(1,800)	(982)
Other items		12,227	11,646	11,570
TOTAL EQUITY		**97,053**	**91,322**	**110,659**
TOTAL LIABILITIES AND EQUITY		**1,595,835**	**1,508,250**	**1,522,695**
MEMORANDUM ITEMS: OFF BALANCE SHEET AMOUNTS	**35**			
Loan commitments granted		262,737	241,230	241,179
Financial guarantees granted		10,758	12,377	13,650
Other commitments granted		75,733	64,538	68,895

* Presented for comparison purposes only (note 1.d).
The accompanying notes 1 to 54 and appendices are an integral part of the consolidated balance sheet as of 31 December 2021.

CONSOLIDATED INCOME STATEMENTS FOR THE YEARS ENDED 31 DECEMBER 2021, 2020 AND 2019

EUR million

		(Debit) Credit		
	Note	2021	2020*	2019*
Interest income	38	46,463	45,741	56,785
Financial assets at fair value through other comprehensive income		*2,582*	*2,840*	*3,571*
Financial assets at amortized cost		*40,471*	*40,365*	*48,552*
Other interest income		*3,410*	*2,536*	*4,662*
Interest expense	39	(13,093)	(13,747)	(21,502)
Interest income/(charges)		**33,370**	**31,994**	**35,283**
Dividend income	40	513	391	533
Income from companies accounted for using the equity method	13	432	(96)	324
Commission income	41	13,812	13,024	15,349
Commission expense	42	(3,310)	(3,009)	(3,570)
Gain or losses on financial assets and liabilities not measured at fair value through profit or loss, net	43	628	1,107	1,136
Financial assets at amortized cost		*89*	*(31)*	*308*
Other financial assets and liabilities		*539*	*1,138*	*828*
Gain or losses on financial assets and liabilities held for trading, net	43	1,141	3,211	1,349
Reclassification of financial assets at fair value through other comprehensive income		—	—	—
Reclassification of financial assets at amortized cost		—	—	—
Other gains (losses)		*1,141*	*3,211*	*1,349*
Gains or losses on non-trading financial assets and liabilities mandatorily at fair value through profit or loss	43	132	82	292
Reclassification of financial assets at fair value through other comprehensive income		—	—	—
Reclassification of financial assets at amortized cost		—	—	—
Other gains (losses)		*132*	*82*	*292*
Gain or losses on financial assets and liabilities measured at fair value through profit or loss, net	43	270	(171)	(286)
Gain or losses from hedge accounting, net	43	(46)	51	(28)
Exchange differences, net	44	(562)	(2,093)	(932)
Other operating income	45	2,255	1,920	1,797
Other operating expenses	45	(2,442)	(2,342)	(2,138)
Income from assets under insurance and reinsurance contracts	45	1,516	1,452	2,534
Expenses from liabilities under insurance and reinsurance contracts	45	(1,305)	(1,242)	(2,414)
Total income		**46,404**	**44,279**	**49,229**
Administrative expenses		(18,659)	(18,320)	(20,279)
Staff costs	*46*	*(11,216)*	*(10,783)*	*(12,141)*
Other general administrative expenses	*47*	*(7,443)*	*(7,537)*	*(8,138)*
Depreciation and amortisation cost	16 and 18	(2,756)	(2,810)	(3,001)
Provisions or reversal of provisions, net	25	(2,814)	(2,378)	(3,490)

CONSOLIDATED INCOME STATEMENTS FOR THE YEARS ENDED 31 DECEMBER 2021, 2020 AND 2019

EUR million

		(Debit) Credit		
	Note	2021	2020*	2019*
Impairment or reversal of impairment at financial assets not measured at fair value through profit or loss and net gains and losses from changes		(7,407)	(12,382)	(9,352)
Financial assets at fair value through other comprehensive income		*(19)*	*(19)*	*(12)*
Financial assets at amortized cost	*10*	*(7,388)*	*(12,363)*	*(9,340)*
Impairment or reversal of impairment of investments in subsidiaries, joint ventures and associates, net	17 and 18	—	—	—
Impairment or reversal of impairment on non-financial assets, net		(231)	(10,416)	(1,623)
Tangible assets	*16*	*(150)*	*(174)*	*(45)*
Intangible assets	*17 and 18*	*(71)*	*(10,242)*	*(1,564)*
Others		*(10)*	—	*(14)*
Gain or losses on non-financial assets and investments, net	48	53	114	1,291
Negative goodwill recognized in results		—	8	—
Gains or losses on non-current assets held for sale not classified as discontinued operations	49	(43)	(171)	(232)
Operating profit/(loss) before tax		**14,547**	**(2,076)**	**12,543**
Tax expense or income from continuing operations	27	(4,894)	(5,632)	(4,427)
Profit/(loss) from continuing operations		**9,653**	**(7,708)**	**8,116**
Profit/(loss) after tax from discontinued operations	37	—	—	—
Profit/(loss) for the year		**9,653**	**(7,708)**	**8,116**
Profit/(loss) attributable to non-controlling interests	28	1,529	1,063	1,601
Profit/(loss) attributable to the parent		8,124	(8,771)	6,515
Earnings/(losses) per share				
Basic	4	0.438	(0.538)	0.347
Diluted	4	0.436	(0.538)	0.346

* Presented for comparison purposes only (note 1.d).
The accompanying notes 1 to 54 and appendices are an integral part of the consolidated income statement for the year ended 31 December 2021.

CONSOLIDATED STATEMENTS OF RECOGNISED INCOME AND EXPENSE FOR THE YEARS ENDED 31 DECEMBER 2021, 2020 AND 2019

EUR million

	Note	2021	2020*	2019*
CONSOLIDATED PROFIT/(LOSS) FOR THE YEAR		**9,653**	**(7,708)**	**8,116**
OTHER RECOGNISED INCOME AND EXPENSE		**(220)**	**(9,794)**	**267**
Items that will not be reclassified to profit or loss	**29**	**754**	**(1,018)**	**(1,351)**
Actuarial gains and losses on defined benefit pension plans		1,567	(25)	(1,677)
Non-current assets held for sale		—	—	—
Other recognised income and expense of investments in subsidiaries, joint ventures and associates		(1)	(4)	1
Changes in the fair value of equity instruments measured at fair value through other comprehensive income		(171)	(917)	(29)
Gains or losses resulting from the accounting for hedges of equity instruments measured at fair value through other comprehensive income, net	36	—	—	—
Changes in the fair value of equity instruments measured at fair value through other comprehensive income (hedged item)		*117*	*4*	*44*
Changes in the fair value of equity instruments measured at fair value through other comprehensive income (hedging instrument)		*(117)*	*(4)*	*(44)*
Changes in the fair value of financial liabilities at fair value through profit or loss attributable to changes in credit risk		(99)	31	(156)
Income tax relating to items that will not be reclassified		(542)	(103)	510
Items that may be reclassified to profit or loss	**29**	**(974)**	**(8,776)**	**1,618**
Hedges of net investments in foreign operations (effective portion)	36	(1,159)	2,340	(1,151)
Revaluation gains (losses)		*(1,159)*	*2,340*	*(1,151)*
Amounts transferred to income statement		—	—	—
Other reclassifications		—	—	—
Exchanges differences		3,082	(11,040)	1,232
Revaluation gains (losses)		*3,082*	*(11,040)*	*1,232*
Amounts transferred to income statement		—	—	—
Other reclassifications		—	—	—
Cash flow hedges (effective portion)	36	(938)	(53)	8
Revaluation gains (losses)		*(1,739)*	*799*	*(1,104)*
Amounts transferred to income statement		*801*	*(852)*	*1,112*
Transferred to initial carrying amount of hedged items		—	—	—
Other reclassifications		—	—	—
Hedging instruments (items not designated)	36	—	—	—
Revaluation gains (losses)		—	—	—
Amounts transferred to income statement		—	—	—
Other reclassifications		—	—	—
Debt instruments at fair value with changes in other comprehensive income		(3,250)	(100)	2,414
Revaluation gains (losses)	*29*	*(3,063)*	*692*	*2,588*
Amounts transferred to income statement		*(545)*	*(1,165)*	*(792)*
Other reclassifications		*358*	*373*	*618*
Non-current assets held for sale		—	—	—
Revaluation gains (losses)		—	—	—
Amounts transferred to income statement		—	—	—
Other reclassifications		—	—	—
Share of other recognised income and expense of investments		19	(151)	(15)
Income tax relating to items that may be reclassified to profit or loss		1,272	228	(870)
Total recognised income and expenses for the year		**9,433**	**(17,502)**	**8,383**
Attributable to non-controlling interests		1,255	245	1,911
Attributable to the parent		8,178	(17,747)	6,472

* Presented for comparison purposes only (note 1.d).

The accompanying notes 1 to 54 and appendices are an integral part of the consolidated statement of recognised income and expense for the year ended 31 December 2021.

CONSOLIDATED STATEMENTS OF CHANGES IN TOTAL EQUITY FOR THE YEARS ENDED 31 DECEMBER 2021, 2020 AND 2019

EUR million

	Capital	Share premium	Equity instruments issued (not capital)	Other equity instruments	Accumulated retained earnings
Balance at 31 December 2020*	**8,670**	**52,013**	**627**	**163**	**65,583**
Adjustments due to errors	—	—	—	—	—
Adjustments due to changes in accounting policies	—	—	—	—	—
Opening balance at 1 January 2021*	**8,670**	**52,013**	**627**	**163**	**65,583**
Total recognised income and expense	**—**	**—**	**—**	**—**	**—**
Other changes in equity	**—**	**(4,034)**	**31**	**(11)**	**(5,310)**
Issuance of ordinary shares	—	—	—	—	—
Issuance of preferred shares	—	—	—	—	—
Issuance of other financial instruments	—	—	—	—	—
Maturity of other financial instruments	—	—	—	—	—
Conversion of financial liabilities into equity	—	—	—	—	—
Capital reduction	—	—	—	—	—
Dividends	—	(477)	—	—	—
Purchase of equity instruments	—	—	—	—	—
Disposal of equity instruments	—	—	—	—	—
Transfer from equity to liabilities	—	—	—	—	—
Transfer from liabilities to equity	—	—	—	—	—
Transfers between equity items	—	(3,557)	—	—	(5,310)
Increases (decreases) due to business combinations	—	—	—	—	—
Share-based payment	—	—	—	(62)	—
Others increases or (-) decreases in equity	—	—	31	51	—
Balance at 31 December 2021	**8,670**	**47,979**	**658**	**152**	**60,273**

* Presented for comparison purposes only (note 1.d).
The accompanying notes 1 to 54 and appendices are an integral part of the consolidated statement of changes in total equity for the year ended 31 December 2021.

						Non-controlling interest		
Revaluation reserves	Other reserves	(-) Own shares	Profit attributable to shareholders of the parent	(-) Interim dividends	Other comprehensive income	Other comprehensive income	Other items	Total
—	**(3,596)**	**(69)**	**(8,771)**	**—**	**(33,144)**	**(1,800)**	**11,646**	**91,322**
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	**(3,596)**	**(69)**	**(8,771)**	**—**	**(33,144)**	**(1,800)**	**11,646**	**91,322**
—	**—**	**—**	**8,124**	**—**	**54**	**(274)**	**1,529**	**9,433**
—	**(881)**	**(825)**	**8,771**	**(836)**	**371**	**(30)**	**(948)**	**(3,702)**
—	—	—	—	—	—	—	17	17
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	(836)	—	—	(648)	(1,961)
—	—	(1,645)	—	—	—	—	—	(1,645)
—	23	820	—	—	—	—	—	843
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	(275)	—	8,771	—	371	(30)	30	—
—	—	—	—	—	—	—	(5)	(5)
—	—	—	—	—	—	—	—	(62)
—	(629)	—	—	—	—	—	(342)	(889)
—	**(4,477)**	**(894)**	**8,124**	**(836)**	**(32,719)**	**(2,104)**	**12,227**	**97,053**

CONSOLIDATED STATEMENTS OF CHANGES IN TOTAL EQUITY FOR THE YEARS ENDED 31 DECEMBER 2021, 2020 AND 2019

EUR million

	Capital	Share premium	Equity instruments issued (not capital)	Other equity instruments	Accumulated retained earnings
Balance at 31 December 2019*	**8,309**	**52,446**	**598**	**146**	**61,028**
Adjustments due to errors	—	—	—	—	—
Adjustments due to changes in accounting policies	—	—	—	—	—
Opening balance at 1 January 2020*	**8,309**	**52,446**	**598**	**146**	**61,028**
Total recognised income and expense	**—**	**—**	**—**	**—**	**—**
Other changes in equity	**361**	**(433)**	**29**	**17**	**4,555**
Issuance of ordinary shares	361	(72)	—	—	—
Issuance of preferred shares	—	—	—	—	—
Issuance of other financial instruments	—	—	—	—	—
Maturity of other financial instruments	—	—	—	—	—
Conversion of financial liabilities into equity	—	—	—	—	—
Capital reduction	—	—	—	—	—
Dividends	—	(361)	—	—	—
Purchase of equity instruments	—	—	—	—	—
Disposal of equity instruments	—	—	—	—	—
Transfer from equity to liabilities	—	—	—	—	—
Transfer from liabilities to equity	—	—	—	—	—
Transfers between equity items	—	—	—	—	4,555
Increases (decreases) due to business combinations	—	—	—	—	—
Share-based payment	—	—	—	(53)	—
Others increases or (-) decreases in equity	—	—	29	70	—
Balance at 31 December 2020*	**8,670**	**52,013**	**627**	**163**	**65,583**

* Presented for comparison purposes only (note 1.d).
The accompanying notes 1 to 54 and appendices are an integral part of the consolidated statement of changes in total equity for the year ended 31 December 2021.

						Non-controlling interest		
Revaluation reserves	Other reserves	(-) Own shares	Profit attributable to shareholders of the parent	(-) Interim dividends	Other comprehensive income	Other comprehensive income	Other items	Total
—	**(3,110)**	**(31)**	**6,515**	**(1,662)**	**(24,168)**	**(982)**	**11,570**	**110,659**
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	**(3,110)**	**(31)**	**6,515**	**(1,662)**	**(24,168)**	**(982)**	**11,570**	**110,659**
—	**—**	**—**	**(8,771)**	**—**	**(8,976)**	**(818)**	**1,063**	**(17,502)**
—	**(486)**	**(38)**	**(6,515)**	**1,662**	**—**	**—**	**(987)**	**(1,835)**
—	70	—	—	—	—	—	5	364
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	(465)	(826)
—	—	(758)	—	—	—	—	—	(758)
—	1	720	—	—	—	—	—	721
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	298	—	(6,515)	1,662	—	—	—	—
—	—	—	—	—	—	—	(54)	(54)
—	—	—	—	—	—	—	—	(53)
—	(855)	—	—	—	—	—	(473)	(1,229)
—	**(3,596)**	**(69)**	**(8,771)**	**—**	**(33,144)**	**(1,800)**	**11,646**	**91,322**

CONSOLIDATED STATEMENTS OF CHANGES IN TOTAL EQUITY FOR THE YEARS ENDED 31 DECEMBER 2021, 2020 AND 2019

EUR million

	Capital	Share premium	Equity instruments issued (not capital)	Other equity instruments	Accumulated retained earnings
Balance at 31 December 2018*	**8,118**	**50,993**	**565**	**234**	**56,756**
Adjustments due to errors	—	—	—	—	—
Adjustments due to changes in accounting policies	—	—	—	—	—
Opening balance at 1 January 2019*	**8,118**	**50,993**	**565**	**234**	**56,756**
Total recognised income and expense	**—**	**—**	**—**	**—**	**—**
Other changes in equity	**191**	**1,453**	**33**	**(88)**	**4,272**
Issuance of ordinary shares	191	1,453	—	—	—
Issuance of preferred shares	—	—	—	—	—
Issuance of other financial instruments	—	—	—	—	—
Maturity of other financial instruments	—	—	—	—	—
Conversion of financial liabilities into equity	—	—	—	—	—
Capital reduction	—	—	—	—	—
Dividends	—	—	—	—	(1,055)
Purchase of equity instruments	—	—	—	—	—
Disposal of equity instruments	—	—	—	—	—
Transfer from equity to liabilities	—	—	—	—	—
Transfer from liabilities to equity	—	—	—	—	—
Transfers between equity items	—	—	—	—	5,327
Increases (decreases) due to business combinations	—	—	—	—	—
Share-based payment	—	—	—	(88)	—
Others increases or (-) decreases in equity	—	—	33	—	—
Balance at 31 December 2019*	**8,309**	**52,446**	**598**	**146**	**61,028**

* Presented for comparison purposes only (note 1.d).

The accompanying notes 1 to 54 and appendices are an integral part of the consolidated statement of changes in total equity for the year ended 31 December 2021.

						Non-controlling interest		
Revaluation reserves	Other reserves	(-) Own shares	Profit attributable to shareholders of the parent	(-) Interim dividends	Other comprehensive income	Other comprehensive income	Other items	Total
—	**(1,583)**	**(59)**	**7,810**	**(2,237)**	**(24,125)**	**(1,292)**	**12,181**	**107,361**
—	—	—	—	—	—	—	—	—
—	(391)	—	—	—	—	—	—	(391)
—	**(1,974)**	**(59)**	**7,810**	**(2,237)**	**(24,125)**	**(1,292)**	**12,181**	**106,970**
—	**—**	**—**	**6,515**	**—**	**(43)**	**310**	**1,601**	**8,383**
—	**(1,136)**	**28**	**(7,810)**	**575**	**—**	**—**	**(2,212)**	**(4,694)**
—	28	—	—	—	—	—	1	1,673
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	(2)	(2)
—	—	—	—	(1,662)	—	—	(895)	(3,612)
—	—	(928)	—	—	—	—	—	(928)
—	(6)	956	—	—	—	—	—	950
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	246	—	(7,810)	2,237	—	—	—	—
—	—	—	—	—	—	—	110	110
—	—	—	—	—	—	—	—	(88)
—	(1,404)	—	—	—	—	—	(1,426)	(2,797)
—	**(3,110)**	**(31)**	**6,515**	**(1,662)**	**(24,168)**	**(982)**	**11,570**	**110,659**

CONSOLIDATED STATEMENTS OF CASH FLOWS FOR THE YEARS ENDED 2021, 2020 Y 2019

EUR million

	Note	2021	2020*	2019*
A. CASH FLOWS FROM OPERATING ACTIVITIES		**56,691**	**66,153**	**3,389**
Profit or loss for the year		**9,653**	**(7,708)**	**8,116**
Adjustments made to obtain the cash flows from operating activities		**21,363**	**37,836**	**23,990**
Depreciation and amortisation cost		2,756	2,810	3,001
Other adjustments		18,607	35,026	20,989
Net increase/(decrease) in operating assets		**27,258**	**51,385**	**64,593**
Financial assets held-for-trading		2,064	12,390	15,450
Non-trading financial assets mandatorily at fair value through profit or loss		969	(275)	(6,098)
Financial assets at fair value through profit or loss		(32,746)	(10,314)	4,464
Financial assets at fair value through other comprehensive income		(9,152)	6,549	1,693
Financial assets at amortized cost		73,181	43,541	49,541
Other operating assets		(7,058)	(506)	(457)
Net increase/(decrease) in operating liabilities		**56,945**	**90,356**	**38,469**
Financial liabilities held-for-trading		(1,386)	7,880	6,968
Financial liabilities designated at fair value through profit or loss		(14,316)	(10,907)	(8,858)
Financial liabilities at amortized cost		79,114	96,561	47,622
Other operating liabilities		(6,467)	(3,178)	(7,263)
Income tax recovered/(paid)		**(4,012)**	**(2,946)**	**(2,593)**
B. CASH FLOWS FROM INVESTING ACTIVITIES		**(3,715)**	**(7,220)**	**(7,229)**
Payments		**11,669**	**11,976**	**14,289**
Tangible assets	16	10,015	7,386	12,766
Intangible assets	18	1,388	1,134	1,377
Investments	13	126	525	63
Subsidiaries and other business units		140	2,931	83
Non-current assets held for sale and associated liabilities		—	—	—
Other payments related to investing activities		—	—	—
Proceeds		**7,954**	**4,756**	**7,060**
Tangible assets	16	6,382	2,014	4,091
Intangible assets	18	—	—	—
Investments	13	672	182	686
Subsidiaries and other business units		6	1,775	218
Non-current assets held for sale and associated liabilities	12	894	785	2,065
Other proceeds related to investing activities		—	—	—
C. CASH FLOW FROM FINANCING ACTIVITIES		**(1,322)**	**(1,909)**	**(10,122)**
Payments		**7,741**	**6,978**	**12,159**
Dividends	4	1,313	—	3,773
Subordinated liabilities	23	2,684	3,780	5,123
Redemption of own equity instruments		—	—	—
Acquisition of own equity instruments		1,645	758	928
Other payments related to financing activities		2,099	2,440	2,335
Proceeds		**6,419**	**5,069**	**2,037**
Subordinated liabilities	23	5,340	4,095	1,090
Issuance of own equity instruments		—	—	—
Disposal of own equity instruments		854	721	947
Other proceeds related to financing activities		225	253	—

CONSOLIDATED STATEMENTS OF CASH FLOWS FOR THE YEARS ENDED 2021, 2020 Y 2019

EUR million

	Note	2021	2020*	2019*
D. EFFECT OF FOREIGN EXCHANGE RATE DIFFERENCES		**5,196**	**(4,252)**	**1,366**
E. NET INCREASE/(DECREASE) IN CASH AND CASH EQUIVALENTS		**56,850**	**52,772**	**(12,596)**
F. CASH AND CASH EQUIVALENTS AT BEGINNING OF THE YEAR		**153,839**	**101,067**	**113,663**
G. CASH AND CASH EQUIVALENTS AT END OF THE YEAR		**210,689**	**153,839**	**101,067**
COMPONENTS OF CASH AND CASH EQUIVALENTS AT END OF THE YEAR				
Cash		*8,142*	*7,817*	*8,764*
Cash equivalents at central banks		*193,102*	*137,047*	*75,353*
Other financial assets		*9,445*	*8,975*	*16,950*
Less, bank overdrafts refundable on demand		—	—	—
TOTAL CASH AND CASH EQUIVALENTS AT END OF THE YEAR		**210,689**	**153,839**	**101,067**
In which, restricted cash		—	—	—

* Presented for comparison purposes only (note 1.d).
The accompanying notes 1 to 54 and appendices are an integral part of the consolidated statement of cash flows for the year ended 31 December 2021.

Notes to the consolidated financial statements

Banco Santander, S.A., and Companies composing Grupo Santander

Notes to the consolidated financial statements (consolidated annual accounts) for the year ended 31 December 2021

1. Introduction, basis of presentation of the consolidated financial statements (consolidated annual accounts) and other information

a) Introduction

Banco Santander, S.A. ('the parent' or 'Banco Santander'), is a private-law entity subject to the rules and regulations applicable to banks operating in Spain, where it was constituted and currently maintains its legal domicile, which is paseo de Pereda, numbers 9 to 12 (39004, Santander, Spain).

The principal headquarters of Banco Santander are located in Ciudad Grupo Santander, Avenida Cantabria s/n (28660, Boadilla del Monte, Madrid, Spain).

The corporate purpose of Banco Santander, S.A., mainly entails carrying out all kinds of activities, operations and services inherent to the banking business in general and permitted by current legislation, and the acquisition, holding, enjoyment and disposal of all kinds of securities.

In addition to the operations carried on directly by it, Banco Santander is the head of a group of subsidiaries that engage in various business activities and which compose, together with it, Grupo Santander ('Santander' or 'the Group'). Therefore, Banco Santander is obliged to prepare, in addition to its own separate financial statements, the Group's consolidated financial statements, which also include the interests in joint ventures and investments in associates.

At 31 December 2021, Grupo Santander consisted of 721 subsidiaries of Banco Santander, S.A. In addition, other 172 companies are associates of the Group, joint ventures or companies of which the Group holds more than 5% (excluding the Group companies of negligible interest with respect to the fair presentation that the annual accounts must express).

Grupo Santander consolidated financial statements for 2019 were approved by the shareholders at the group´s annual general meeting on 3 April 2020. Grupo Santander consolidated financial statements for 2020 were approved by the shareholders at the group´s annual general meeting on 26 March 2021. The Group's 2021 consolidated financial statements, the financial statements of the parent and of substantially all the Group companies have not been approved yet by their shareholders at the respective annual general meetings. However, Banco Santander board of directors considers that the aforementioned financial statements will be approved without any significant changes.

b) Basis of presentation of the consolidated financial statements

Under Regulation (EC) n.º 1606/2002 of the European Parliament and of the Council of 19 July 2002 all companies governed by the law of an EU Member State and whose securities are admitted to trading on a regulated market of any Member State must prepare their consolidated financial statements for the years beginning on or after 1 January, 2005 in conformity with the International Financial Reporting Standards ('IFRS') previously adopted by the European Union ('EU-IFRS').

In order to adapt the accounting system of Spanish credit institutions with the principles and criteria established by the IFRS adopted by the European Union ('EU-IFRS'), the Bank of Spain published circular 4/2017, dated 27 November 2017, on Public and Confidential Financial Reporting Standards and Financial Statement Formats.

During 2021 and 2020, the Bank of Spain published Circulars 6/2021 of 22 December, 2/2020 and 3/2020 of 11 June, amending Circular 4/2017 of 27 November to credit institutions on Public and Confidential Financial Reporting Standards and Financial Statement Formats.

Grupo Santander consolidated financial statements for 2021 were authorised by the Bank's directors (at the board meeting on 24 February 2022) in accordance with International Financial Reporting Standards as adopted by the European Union and with Bank of Spain circular 4/2017 and subsequent modifications, and Spanish corporate and commercial law applicable to the Group, using the basis of consolidation, accounting policies and measurement bases set forth in note 2, accordingly, they present fairly the Group's equity and financial position at 31 December 2021, 2020 and 2019 and the consolidated results of its operations and the consolidated cash flows in 2021, 2020 and 2019. These consolidated financial statements were prepared from the accounting records kept by the Bank and by the other Group entities, and include the adjustments and reclassifications required to unify the accounting policies and measurement bases applied by the Group. These consolidated annual accounts have been prepared on the basis of the accounting records held by the Bank and by each of the other companies of the Group, and include the adjustments and reclassifications required to standardise the accounting policies and valuation criteria applied by Grupo Santander.

The notes to the consolidated financial statements contain additional information to that presented in the consolidated balance sheet, consolidated income statement, consolidated statement of recognised income and expense, consolidated statement of changes in total equity and consolidated statement of cash flows. The notes provide, in a clear, relevant, reliable and comparable manner, narrative descriptions and breakdowns of these statements.

Adoption of new standards and interpretations issued

The following modifications came into force and were adopted by the European Union in 2021:

- Amendments to IFRS 9 Financial Instruments, IAS 39 Financial Instruments: Recognition and Measurement, IFRS 7 Financial Instruments: Disclosures, IFRS 4 Insurance Contracts and IFRS 16 Leases, on Reference Interest Rates - Phase 2: The amendments allow for the temporary application of certain exceptions to the requirements of (i) assessment of derecognition of financial assets, financial liabilities and lease liabilities in the event of changes in the financial assets, financial liabilities and lease liabilities, and (ii) exemptions from hedge accounting requirements directly affected by the IBOR reform, requiring additional disclosures, (iii) exemptions for lease modifications that allow the liability to be measured using the reformed interest rate curves against the right-of-use. These new exemptions require additional disclosures. The amendments became effective as of 1 January 2021, with the possibility of early application and will cease to be applicable when the uncertainties about the hedged risks, cash flows of the financial instruments affected or the hedging relationship is terminated. In this regard, the Group chose to apply the amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16 in the preparation of the financial statements for the year ending 31 December 2020.

  The additional breakdowns required by the amendments to IFRS 7 relating to hedging relationships are included in note 36. A description of the Grupo Santander's management of the transition to alternative reference rates, as well as the changes in risk management strategy is included in note 53.

  Following is a detail of the carrying amount at 31 December 2021 of financial assets, financial liabilities, derivatives and loan commitments that continue to be referenced to the indices subject to the IBOR Reform:

EUR million

Gross Carrying amount	Loans and advances	Debt securities acquired (Assets)	Deposits	Debt securities issued (Liabilities)	Derivatives (Assets)	Derivatives (Liabilities)	Loan Commitments
Referenced to EONIA	**15**	**68**	**949**	**284**	**101**	**242**	**—**
Referenced to LIBOR	**45,713**	**4,325**	**9,358**	**8,408**	**11,806**	**17,551**	**24,533**
of which USD	*39,806*	*2,749*	*8,634*	*6,667*	*8,387*	*11,163*	*24,034*
of which GBP	*2,957*	*1,570*	*253*	*1,700*	*3,386*	*4,899*	*418*
TOTAL	**45,728**	**4,393**	**10,307**	**8,692**	**11,907**	**17,793**	**24,533**

- Covid-19-Related Rent Concessions - Amendments to IFRS 16 Leases: As a result of the covid-19 pandemic, IFRS 16 is amended to allow the lessee to apply a practical alternative and not to consider rental concessions as a modification of the lease agreement when the following requirements are met: the revised consideration is the same or less than the consideration before the change, the affected payments are prior to 30 June 2021, and there are no substantial changes to the remaining lease terms. On 31 March 2021, the IASB published an additional amendment to extend the scope of the practical expedient to 30 June 2022. It is applicable from 1 April 2021.

- Amendment to IFRS 4 Insurance Contracts, which is aimed at extending the expiry date of the temporary exemption from applying IFRS 9 by two years (from 1 January 2021 to 1 January 2023) for entities whose activities are predominantly insurance-related. This achieves alignment with the effective date of IFRS 17 Insurance Contracts (1 January 2023). It is applicable from 1 January 2021.

  The application of the aforementioned amendments to accounting standards and interpretations did not have any material effects on Grupo Santander consolidated financial statements.

Likewise, at the date of approval of these consolidated annual accounts, the following standards which effectively came into force have effective dates after 31 December 2021:

- Amendment to IFRS 3 Business Combinations: to update the references to the Conceptual Framework for Financial Reporting and add an exception for the recognition of liabilities and contingent liabilities within the scope of IAS 37 Provisions, Contingent Liabilities and Contingent Assets and IFRIC 21 Levies. The amendments also confirm that an acquirer should not recognize contingent assets acquired in a business combination. It will apply from 1 January 2022.
- Amendment to IAS 16 Property, Plant and Equipment: prevents an entity from deducting from the cost of an item of property, plant and equipment any revenue from the sale of finished goods while the entity is preparing the item for its intended use. It is also clear that an entity is "testing whether the asset is functioning properly" when evaluating the technical and physical performance of the asset. The financial performance of the asset should not be taken into account for this evaluation.

  Additionally, entities should disclose separately the amounts of income and expenses related to finished goods that are not the product of the entity's ordinary activities. It will apply from 1 January 2022.
- Amendment to IAS 37 Provisions, Contingent Liabilities and Contingent Assets: clarifies that the direct costs of fulfilling a contract include both the incremental costs of fulfilling the contract and an allocation of other costs directly related to fulfilling contracts. Before recognising a separate provision for an onerous contract, the entity recognises any impairment loss that has occurred on assets used in fulfilling the contract. It will apply from 1 January 2022.
- Amendment to IFRS Cycle (2018-2020): introduces minor amendments, to be applied from 1 January 2022, with early application permitted, to the following standards:
  - IFRS 9 Financial Instruments: clarifies which rates must be included in the 10% test for derecognition of financial liabilities.
  - IFRS 16 Leases: amendment to remove possible confusion regarding the treatment of leasing incentives in the application of IFRS 16 Leases.
  - IFRS 1, in relation to the first-time adoption of International Financial Reporting Standards, allows entities that have measured their assets and liabilities at the carrying amounts recorded in their parent's books to also measure any cumulative translation differences using the amounts reported by the parent. This amendment also applies to associates and joint ventures that have adopted the same exemption from IFRS 1.
- IFRS 17 Insurance Contracts: new general accounting standard for insurance contracts, which includes the recognition, measurement, presentation and disclosure of information. Insurance contracts combine financial and service provision features that, in many cases, generate variable long-term cash flows. To properly reflect these characteristics, IFRS 17 combines the measurement of future cash flows with the recording of the result of the contract during the period in which the service is provided, presents separately the financial results from the results for the provision of the service and allows entities, through the choice of an accounting policy option, to recognize the financial results in the income statement or in other comprehensive income. It will apply from 1 January 2023.

  In addition, during 2021, although it is still pending adoption by the European Union a transitional option relating to comparative information presented on financial assets in the initial application of IFRS 17, which is intended to help entities avoid temporary accounting mismatches between the financial assets and liabilities of insurance contracts, has been included during 2021 but is still pending adoption by the European Union. It will apply from 1 January 2023.

  Grupo Santander is still analysing the possible effects of this new standard, however, it should be noted that no material impacts on the consolidated financial statements of Grupo Santander have been identified as a result of its application, except for certain balance sheet reclassifications arising from the different treatment that this new standard establishes for the components of an insurance contract.

Finally, at the date of approval of these consolidated annual accounts, the following standards which effectively come into force after 31 December 2021 had not yet been adopted by the European Union:

- Classification of Liabilities, amendments to IAS 1 Presentation of Financial Statements, considering non-current liabilities those in which the entity has the possibility of deferring payment for more than 12 months from the closing date of the reporting period.

  They must be applied retrospectively in accordance with the normal requirements in IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors. It will apply from 1 January 2023.
- The amendments to IAS 1 Presentation of Financial Statements require companies to disclose material information about their accounting policies rather than their significant accounting policies. It will be applicable from 1 January 2023.
- The amendments to IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors clarifies how to distinguish changes in accounting policies, which are generally applied retrospectively, from changes in accounting estimates, which are generally applied prospectively. It will be applicable from 1 January 2023.

- The amendments to IAS 12 Income Taxes require companies to recognise deferred tax on transactions that, on initial recognition, give rise to equal amounts of taxable and deductible temporary differences. In addition, entities should recognise deferred tax assets (to the extent that it is probable that they can be utilised) and deferred tax liabilities at the beginning of the earliest comparative period for all deductible and taxable temporary differences associated with:

- Right-of-use assets and lease liabilities, and

- Decommissioning, restoration and similar liabilities, and the corresponding amounts recognised as part of the cost of the related assets.

  The cumulative effect of recognising these adjustments is recognised in retained earnings, or another component of equity, as appropriate. It will be applicable from 1 January 2023.

Grupo Santander is currently analysing the possible effects of these new standards and interpretations.

All accounting policies and measurement bases with a material effect on the consolidated financial statements for 2021 were applied in the preparation of these consolidated annual accounts.

c) Use of critical estimates

The consolidated results and the determination of consolidated equity are sensitive to the accounting policies, measurement bases and estimates used by the directors of the Bank in preparing the consolidated financial statements.

The main accounting policies and measurement bases are set forth in note 2.

In the consolidated financial statements estimates were occasionally made by the senior management of Grupo Santander in order to quantify certain of the assets, liabilities, income, expenses and obligations reported herein. These estimates, which were made on the basis of the best information available, relate basically to the following:

- The impairment losses on certain assets: it applies to financial assets at fair value through other comprehensive income, financial assets at amortised cost, non-current assets held for sale, investments, tangible assets and intangible assets (see notes 6, 7, 10, 12, 13, 16, 17, 18 and 53).

- The assumptions used in the actuarial calculation of the post-employment benefit liabilities and commitments and other obligations (see note 25).

- The useful life of the tangible and intangible assets (see notes 16 and 18).

- The measurement of goodwill arising on consolidation (see note 17).

- The calculation of provisions and the consideration of contingent liabilities (see note 25).

- The fair value of certain unquoted assets and liabilities (see notes 6, 7, 8, 9, 10, 11, 20, 21 and 22).

- The recoverability of deferred tax assets and the income tax expense (see note 27).

- The fair value of the identifiable assets acquired and the liabilities assumed in business combinations (see note 3).

To update the estimates described above, the Group's Management has taken into account the current situation as a result of covid-19, classified as a pandemic by the World Health Organization, which significantly is affecting the economic activity worldwide and, as a result, the Group's operations and financial results, and which generates uncertainty in the Group's estimates. Therefore, the Group's Management has made an assessment of the current situation according to the best information available to date, disclosing in the notes the main estimates made and the potential impacts of covid-19 on them for the period ended 31 December 2021 (see notes 17, 27 and 53).

Although these estimates have been made on the basis of the best information available at the end of the year 2021, and considering information updated at the date of preparation of these consolidated annual accounts, it is possible that events that may take place in the future may make it necessary to modify them (upwards or downwards) in the coming years, which would be done, if appropriate, in a prospective manner, recognising the effects of the change in estimate in the corresponding consolidated income statement.

d) Information relating to 2020 and 2019

In July 2016, the IASB published IFRS 16, Leases, which was adopted by the Group in accordance with the standard on 1 January 2019. IFRS 16 establishes the principles for the recognition, measurement, presentation and breakdown of lease contracts, with the objective of ensuring reporting information that faithfully represents the lease transactions.

The adoption of IFRS 16 led to changes in the Group's accounting policies for the recognition, measurement, presentation and breakdown of lease contracts. As a result of its adoption , the impact of the first application recorded by Grupo Santander corresponds, mainly, to the recognition of right-of-use for an amount of EUR 6,693 million, financial liabilities for an amount of EUR 7,084 million and a negative impact on the Group's equity of EUR 391 million. The impact of the first application of IFRS 16 on the ordinary capital ratio (Common Equity Tier 1 - CET 1) was -20 bp.

Secondly, Grupo Santander chose to apply in advance for the financial statements for the year ended 31 December 2019 the amendment to IFRS 9, IAS 39 and IFRS 7 on Reference Interest Rates (IBOR Reform - Phase 1). Grupo Santander applies IAS 39 for hedge accounting, detailed below are the main assumptions or judgments made by Grupo Santander when applying the amendments to that standard.

– For cash flow hedges, the Group has assumed that the cash flows covered (which are based on the benchmark index) are not modified as a result of the aforementioned reform, and therefore continue to comply with the highly probable future transaction requirement.

– To determine the prospective effectiveness of hedges, the Group has assessed that the economic relationship between the hedged item and the hedging instrument continues to exist since the interest rate benchmark on which the hedged item and the hedging instrument are based is not changed as a result of the IBOR reform.

See information regarding Phase 2 of that Reform in section b of this note and in note 53.

Additionally, the segment information corresponding to the year ended 31 December 2020 and 2019 were restated for comparative purposes in accordance with the Group's new organizational structure, as required by IFRS 8 (see note 51).

In addition to the above, the information in note 4.b relating to the shares outstanding in 2019 has been restated due to the capital increase done in 2020 described in note 31.a in accordance with IAS 33 Earnings per Share.

Finally, based on the meeting held on 3 March 2020 by the International Financial Reporting Standards Committee (IFRIC), the Group has changed its accounting policy in relation to the presentation of exchange differences and the effects of hyperinflation of the operations generated in Argentina with retroactive effect (see note 2.a.iv).

Therefore, the information contained in these consolidated financial statements for the financial years 2020 and 2019 is presented solely and exclusively for comparative purposes with the information relating to the year ended 31 December 2021 (see note 2.a.iv).

In order to interpret the changes in the balances with respect to 31 December 2021, it is necessary to take into consideration the exchange rate effect arising from the volume of foreign currency balances held by Grupo Santander in view of its geographic diversity (see note 51.b) and the impact of the appreciation/depreciation of the various currencies against the euro in 2021, based on the exchange rates at the end of 2021: Mexican peso (5.55%), US dollar (8.34%) , Brazilian real (0.85%) , Argentine peso (-11.30%), Sterling pound (6.91%), Chilean peso (-9.61%), and Polish zloty (-0.82%); as well as the evolution of the comparable average rates: Mexican peso (1.60%), US dollar (-3.52%), Brazilian real (-8.75%), Argentine peso (-8.21%), Sterling pound (3.43%), Chilean peso (0.55%) and Polish zloty (-2.70%).

e) Capital management

i. Regulatory and economic capital

Credit institutions must meet a number of minimum capital and liquidity requirements. These minimum requirements are governed by the European Capital Requirements Regulation, better known as CRR, and the Capital Requirements Directive, CRD. In June 2019, these regulations were significantly amended. The applicable regulations are now CRR II and CRD V.

As the Directives need to be transposed into the legal systems of the different Member States in order to be applicable, in the case of Spain, Royal Legislative Decree 7/2021 and Royal Decree 970/2021 were published for this purpose in 2021.

In June 2019, CRR II introduced the minimum TLAC (Total Loss Absorbing Capacity) requirement, which only applies to global systemically important banks (G-SIBs). This requirement introduces two metrics: i) a minimum requirement for own funds and eligible liabilities as a percentage of the Total Risk Exposure Amount (TREA) set at 16% during the transition period and 18% from 1 January 2022 after the end of the transition period; and ii) a metric to set a minimum requirement for own funds and eligible liabilities as a percentage of the Total Risk Exposure Amount of 6% during the transition period and 6.75% from 1 January 2022 after the end of the transition period.

This year saw the implementation of the EBA Guidelines on the Definition of New Default, which were prepared in accordance with CRR II, on 1 January 2021. The changes to CRR II that are applicable from June 2021 include the introduction of a minimum leverage ratio of 3%, the new standardised EAD calculation for counterparty risk, known as SA-CCR, the long-term liquidity ratio (NSFR), the new limits for large exposures and the requirement to report under the standardised approach for market risk.

The CRD V introduces important modifications such as the regulation of Pillar 2G ('guidance', orientation of requirements by Pillar 2).

On 27 October 2021, the European Commission published the draft review of European banking legislation: CRR III and CRD VI.

The banking package consists of the following elements: 1) Implementation of the final Basel III reforms, 2) Contribution to sustainability and green transition and 3) Stronger supervision: ensuring sound management of EU banks and better protection of financial stability.

In general, the Commission proposes to start applying the new rules from 1.1.2025, but the amendments to the regulation that concern resolution issues could come into force in the first months of 2022.

With regard to the resolution rules, institutions must have an adequate funding structure to ensure that, in the event of financial distress, the institution has sufficient liabilities to absorb losses in order to recover its position or be resolved, while ensuring the protection of depositors and financial stability.

The directive that governs the resolution framework mentioned above is the Bank Recovery and Resolution Directive (BRRD). Like the CRR and the CRD, the BRRD was amended in June 2019, so BRRD II refers to all of these amendments. The transposition of this directive into the Spanish legal system took place in 2021 through a Royal Decree.

BRRDII has introduced important changes to the Minimum Requirement for Own Funds and Eligible Liabilities (MREL). For example, the TLAC requirement is now considered a Pillar 1 resolution requirement for G-SIBs. For large banks (defined as banks with total assets of more than EUR 100 billion) or banks deemed systemically important by the resolution authority, BRRDII sets a minimum subordination requirement of 13.5% of risk-weighted assets or 5% of the leverage ratio, whichever is higher. For all other institutions, the subordination requirement is set by the resolution authority on a case-by-case basis.

Finally, Deposit Guarantee Schemes (DGS) are regulated by Directive 2014/49 or DSGD, which has not undergone any significant changes since its publication in 2014. It aims to harmonise the deposit guarantee schemes of the Member States, thus ensuring stability and balance in the different countries. It creates an appropriate framework for depositors to have better access to DGSs than was the case before the publication of this Directive through clear coverage, shorter repayment periods, better information and robust funding requirements. This Directive is transposed into Spanish law by Law 11/2015, Royal Decree 1012/2015 and Royal Decree 1041/2021.

In 2020, the national governments took measures to address the economic and social impact of the vine population, in particular legislative moratoria that were aimed at containing NPLs and helping the population to meet liquidity needs. Throughout 2020, the EBA adopted a series of guidelines, including the Guidelines on legislative and non-legislative moratoria applied in the context of the Cov19 crisis on 2 April 2020 (EBA/GL/2020/08). These guidelines clarified the requirements for public and private moratoria to avoid classification of exposures affected by moratoria as forborne exposures.

Although these guidelines were initially going to apply to moratoria granted before 30 June 2020, the EBA decided on 2 December 2020 to reactivate the application of these guidelines (EBA/GL/2020/02) for moratoria requested before 31 March 2021 and for a period not exceeding 9 months.

Another measure adopted in 2020 to provide flexibility in meeting the requirements was the approval and entry into force of the CRR "Quick Fix" amending CRR II (urgent and extraordinary amendments to bring about a more flexible regulatory framework in response to COVID-19). The Quick Fix introduces a number of new features, including the extension of the transitional period granted before the pandemic for the entry into force of IFRS 9, due to the sudden and significant increase in expected credit loss provisions to be recognised. The implementation of certain provisions of CRR II has also been delayed, such as those relating to the leverage ratio buffer (postponed until 1 January 2023); the possibility of excluding exposures to central banks from the calculation of the leverage ratio, which should have been applied from June 2021 on, has been brought forward. Other provisions beneficial to institutions have also been brought forward. These include the support factors for SMEs and infrastructure, and the new treatment for software (applicable from the day following the publication date of the Delegated Regulation that implements it).

At 31 December 2021 Grupo Santander met the minimum capital requirements established by current legislation (see note 53d).

ii. Plan for the roll-out of advanced approaches and authorisation from the supervisory authorities

Grupo Santander continues adopting, over the next few years, the advanced internal ratings-based (AIRB) approach under Basel II for substantially all its banks. The commitment assumed before the supervisor still implies the adoption of advanced models within the ten key markets where Santander Group operates.

This objective of covering IRB models in the group should be seen in the context of the current supervisory focus on the robustness and adequacy of existing models, as well as the simplification strategy recently agreed with the ECB.

Grupo Santander has obtained authorisation from the supervisory authorities to use the AIRB approach for the calculation of regulatory capital requirements for credit risk for the Parent and the main subsidiaries in Spain, the United Kingdom and Portugal, as well as for certain portfolios in Germany, Mexico, Brazil, Chile, the Nordic countries (Norway, Sweden and Finland), France and the United States.

As regards the other risks explicitly addressed under Basel Pillar I, the Group is authorised to use its internal model for market risk for its treasury trading activities in Spain, Chile and Mexico.

For the purpose of calculating regulatory capital for operational risk, the Group uses the standardised approach provided for the CRR. In 2017 the European Central Bank authorised the use of the Alternative Standardised Approach to calculate the capital requirements at consolidated level in Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México, in addition to the approval obtained in 2016 in Brazil.

f) Environmental impact

In view of the business activities carried on by the Group entities, the Group does not have any environmental liability, expenses, assets, provisions or contingencies that might be material with respect to its consolidated equity, financial position or results.

Grupo Santander considers the aspects related to climate change in the preparation of the ratings of its wholesale clients if they are relevant. These ratings influence the subsequent assignment of credit parameters for the calculation of the expected loss' estimate.

With the reasonable and supportable information available at the date of approval of these consolidated annual accounts, the potential additional impacts of expected losses on the time horizons of the Group's portfolios, taking into account as well the mitigation measures, are not considered material.

Grupo Santander, together with the rest of the financial industry, is working on developing the appropriate methodologies to improve the measurement of these losses, when the necessary regulatory developments are more advanced and information is available to carry out a more precise measurement.

See additional information in note 53.a.

g) Events after the reporting period

No significant events occurred from 1 January 2022 to the date on which these consolidated financial statements were authorised for issue, other than those described in these consolidated annual accounts.

2. Accounting policies

The accounting policies applied in preparing the consolidated financial statements were as follows:

a) Foreign currency transactions

i. Presentation currency

Banco Santander's functional and presentation currency is the euro. Also, the presentation currency of the Group is the euro.

ii. Translation of foreign currency balances

Foreign currency balances are translated to euros in two consecutive stages:

- Translation of foreign currency to the functional currency (currency of the main economic environment in which the entity operates).
- Translation to euros of the balances held in the functional currencies of entities whose functional currency is not the euro.

Translation of foreign currency to the functional currency

Foreign currency transactions performed by consolidated entities (or entities accounted for using the equity method) not located in European Monetary Union ("EMU") countries are initially recognised in their respective currencies. Monetary items in foreign currency are subsequently translated to their functional currencies using the closing rate.

Furthermore:

- Non-monetary items measured at historical cost are translated to the functional currency at the exchange rate at the date of acquisition.
- Non-monetary items measured at fair value are translated at the exchange rate at the date when the fair value was determined.
- Income and expenses are translated at the average exchange rates for the year for all the transactions performed during the year. When applying this criterion, the Group considers whether there have been significant changes in the exchange rates in the year which, in view of their materiality with respect to the consolidated financial statements taken as a whole, would make it necessary to use the exchange rates at the transaction date rather than the aforementioned average exchange rates.
- The balances arising from non-hedging forward foreign currency/ foreign currency and foreign currency/euro purchase and sale transactions are translated at the closing rates prevailing in the forward foreign currency market for the related maturity.

Translation of functional currencies to euros

The balances in the financial statements of consolidated entities (or entities accounted for using the equity method) whose functional currency is not the euro are translated to euros as follows:

- Assets and liabilities, at the closing rates.
- Income and expenses, at the average exchange rates for the year.
- Equity items, at the historical exchange rates.

iii. Recognition of exchange differences

The exchange differences arising on the translation of foreign currency balances to the functional currency are generally recognised at their net amount under 'Exchange differences, net' in the consolidated income statement, except for exchange differences arising on financial instruments at fair value through profit or loss, which are recognised in the consolidated income statement without distinguishing them from other changes in fair value, and for exchange differences arising on non-monetary items measured at fair value through equity, which are recognised under 'Other comprehensive income–Items that may be reclassified to profit or loss–Exchange differences' (except for exchange differences on equity instruments, where the option to irrevocably elect to be measured at fair value through changes in accumulated other comprehensive income, which are recognised in accumulated 'Other Comprehensive Income - Items not to be reclassified to profit or loss - Changes in fair value of equity instruments measured at fair value' through other comprehensive income (see note 29).

The exchange differences arising on the translation to euros of the financial statements denominated in functional currencies other than the euro are recognised in 'Other comprehensive income–Items that may be reclassified to profit or loss–Exchange differences' in the consolidated balance sheet, whereas those arising on the translation to euros of the financial statements of entities accounted for using the equity method are recognised in equity under 'Other comprehensive income–Items that may be reclassified to profit or loss and Items not reclassified to profit or loss–Other recognised income and expense' of investments in subsidiaries, joint ventures and associates (see note 29), until the related item is derecognised, at which time they are recognised in profit or loss.

Exchange differences arising on actuarial gains or losses when converting to euros the financial statements denominated in the functional currencies of entities whose functional currency is different from the euro are recognised under equity 'Other comprehensive income–Items not reclassified to profit or loss–Actuarial gains or (-) losses' on defined benefit pension plans (see note 29).

iv. Entities located in hyperinflationary economies

When a subsidiary operates in a country with hyperinflationary economy, IAS 29 Financial Information in Hyperinflationary Economies is applied, which means that:

- Historical cost of non-monetary assets and liabilities and of the various items of equity have to be adjusted to reflect the changes in the purchasing power of the currency due to inflation from their date of acquisition or incorporation into the consolidated balance sheet.
- The different items of the income statement are adjusted by the inflationary index since their generation, with a balancing entry in 'Other comprehensive income'.
- The loss on the net monetary position is recorded in the income for the year against 'Accumulated Other comprehensive income'.
- All components of the financial statements of the subsidiary are translated at the closing exchange rate.

The deterioration of the economic situation in Argentina over the last years caused, among other impacts, a significant increase in inflation, which by the end of 2018 had reached 48% per year (147% accumulated in three years). This led the Group to conclude that it was necessary to apply IAS 29 Financial Information in Hyperinflationary Economies to its activities in the country in question in its consolidated financial statements from that year on.

At that moment, according with Group's accounting policies, exchange differences arising on the translation to the Group´s presentation currency of financial statements denominated in functional currencies other than euro for subsidiaries located in countries with high inflation rates were recorded in the consolidated statement of changes in total 'Equity-Other reserves'.

However, on the basis of the meeting held on 3 March 2020 by the International Financial Reporting Standards Committee (IFRIC), in 2020 Grupo Santander changed its accounting policy with regard to the presentation of exchange differences and the effects of hyperinflation in the operations generated in Argentina, which resulted in a reclassification of EUR -2,136 million at 31 December 2019 for comparability purposes, from the heading "Other reserves" to "Accumulated other comprehensive income", from "Other reserves" to "Accumulated other comprehensive income", corresponding to the accumulated amount of exchange differences related to foreign operations in a hyperinflationary economy and the amount corresponding to the adjustment of the historical cost of the Argentine companies reflecting the changes in the purchasing power of the currency derived from inflation. This change in accounting policy and its consequent restatement between different equity items has no impact on the total equity of Grupo Santander.

In accordance with the provisions of the Argentine Federation of Professional Councils in Economic Sciences (Fcpce), which is the organization that issues the professional accounting standards in said country, the inflation indexes applied are the wholesale internal price index (WPI) until 30 November 2016 and the National Consumer Price Index published by the National Institute of Statistics and Censuses (Indec) from 1 December 2016 on. Inflation during 2021 was 50.9%% for the year (36.1% at 31 December 2020). The exchange rate at 31 December 2021 has been of Argentine pesos 116.30 per euro (Argentine pesos 103.16 Argentine pesos per euro at 31 December 2020).

The net impact on Other Comprehensive Income in 2021 of the effects derived from the exchange differences arising on the translation to the Group´s presentation currency of financial statements of the subsidiaries located in Argentina and the application of IAS 29 was a profit of EUR 177 million (loss of EUR 202 million in 2020).

At 31 December 2020, no other country in which the consolidated and associated entities of Grupo Santander are located is considered to have a hyperinflationary economy in accordance with the criteria established in this regard by the International Financial Reporting Standards adopted by the European Union.

v. Exposure to foreign currency risk

Grupo Santander hedges a portion of its long-term foreign currency positions using foreign exchange derivative financial instruments (see note 36). Also, the Group manages foreign exchange risk dynamically by hedging its short-term position (with a potential impact on profit or loss) in order to limit the impact of currency depreciations while optimising the cost of financing the hedges.

The following tables show the sensitivity of the consolidated income statement and consolidated equity to percentage changes of ± 1% in the foreign exchange rate positions arising from investments in Grupo Santander companies with currencies other than the euro (with its hedges) and in their results (with its hedges), in which the Group maintains significant balances.

The estimated effect on the consolidated equity attributable to Grupo Santander and on consolidated profit of a 1% appreciation of the euro against the corresponding currency is as follows:

EUR million

	Effect on consolidated equity			Effect on consolidated profit		
Currency	2021	2020	2019	2021	2020	2019
US dollar	(133.3)	(123.6)	(161.3)	(8.6)	(4.1)	(3.5)
Chilean peso	(11.4)	(20.4)	(21.8)	(2.4)	(4.4)	(2.3)
Pound sterling	(105.9)	(107.9)	(189.2)	(2.3)	(1.2)	(3.9)
Mexican peso	(23.1)	(21.7)	(22.6)	(0.9)	(2.0)	(3.3)
Brazilian real	(80.8)	(75.0)	(71.6)	(15.4)	(12.6)	(10.4)
Polish zloty	(27.5)	(26.7)	(38.3)	(1.1)	(2.2)	(1.2)
Argentine peso	(10.7)	(7.9)	(6.9)	(2.5)	(1.8)	(1.2)

Similarly, the estimated effect on the Group's consolidated equity and on consolidated profit of a 1% depreciation of the euro against the corresponding currency is as follows:

EUR million

	Effect on consolidated equity			Effect on consolidated profit		
Currency	2021	2020	2019	2021	2020	2019
US dollar	136.0	126.1	164.6	8.8	4.2	3.5
Chilean peso	11.6	20.8	22.2	2.4	4.5	2.4
Pound sterling	108.0	110.1	193.0	2.3	1.2	4.0
Mexican peso	23.6	22.1	23.1	0.9	2.0	3.4
Brazilian real	82.4	76.5	73.1	15.7	12.8	10.6
Polish *zloty*	28.0	27.2	39.0	1.1	2.2	1.2
Argentine peso	11.0	8.0	7.0	2.6	1.8	1.3

The above data were obtained as follows:

a) Effect on consolidated equity: in accordance with the accounting policy detailed in note 2.a.iii, foreign exchange rate impact arising on the translation to euros of the financial statements in the functional currencies of the Group entities whose functional currency is not the euro are recognised in consolidated equity. The potential effect that a change in the exchange rates of the related currency would have on the Group's consolidated equity was therefore determined by applying the aforementioned change to the net value of each unit's assets and liabilities -including, where appropriate, the related goodwill- and by taking into consideration the offsetting effect of the hedges of net investments in foreign operations.

b) Effect on consolidated profit: the effect was determined by applying the up and down movements in the average exchange rates of the year, as indicated in note 2.a.ii (except in the case of Argentina, which is a hyperinflationary economy and has applied the closing exchange rate), to translate to euros the income and expenses of the consolidated entities whose functional currency is not the euro, taking into consideration, where appropriate, the offsetting effect of the various hedging transactions in place.

The estimates used to obtain the foregoing data were performed considering the effects of the changes in the exchange rate in standalone basis not considering the effect of the performance of other variables whose changes would affect equity and profit or loss, such as variations in the interest rates of the reference currencies or other market factors. Accordingly, all variables other than the exchange rate variations were kept constant with respect to their positions at 31 December 2021, 2020 and 2019.

b) Basis of consolidation

i. Subsidiaries

Subsidiaries are defined as entities over which the Bank has the capacity to exercise control. The Bank controls an entity when it is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee.

The financial statements of the subsidiaries are fully consolidated with those of the Bank. Accordingly, all balances and effects of the transactions between consolidated companies are eliminated on consolidation.

On acquisition of control of a subsidiary, its assets, liabilities and contingent liabilities are recognised at their acquisition-date fair values. Any positive differences between the acquisition cost and the fair values of the identifiable net assets acquired are recognised as goodwill (see note 17). Negative differences are recognised in profit or loss on the date of acquisition.

Additionally, the share of third parties of Grupo Santander equity is presented under 'Non-controlling interests' in the consolidated balance sheet (see note 28). Their share of the profit for the year is presented under 'Profit attributable to non-controlling interests' in the consolidated income statement.

The results of subsidiaries acquired during the year are included in the consolidated income statement from the date of acquisition to year-end. Similarly, the results of subsidiaries for which control is lost during the year are included in the consolidated income statement from the beginning of the year to the date of disposal.

At 31 December 2021 Grupo Santander controls a company in which it holds an ownership interest of less than 50% of the share capital, Luri 1, S.A., in liquidation, apart from the structured consolidated entities. The percentage ownership interest in the aforementioned company is 46% (see appendix I). Although Grupo Santander holds less than half the voting power, it manages and, as a result, exercises control over this entity. The company's corporate purpose for the entity is the acquisition of real estate and other general operations relating thereto, including rental, and the purchase and sale of properties; the company object of the latter entity is the provision of payment services. The impact of the consolidation of this company on the Group's consolidated financial statements is immaterial.

The appendices contain significant information on the subsidiaries.

ii. Interests in joint ventures

Joint ventures are deemed to be entities that are not subsidiaries but which are jointly controlled by two or more unrelated entities. This is evidenced by contractual arrangements whereby two or more parties have interests in entities so that decisions about the relevant activities require the unanimous consent of all the parties sharing control.

In the consolidated financial statements, investments in joint ventures are accounted for using the equity method, i.e. at the Group's share of net assets of the investee, after taking into account the dividends received therefrom and other equity eliminations. The profits and losses resulting from transactions with a joint venture are eliminated to the extent of the Group's interest therein.

The appendices contain relevant information on the joint ventures.

iii. Associates

Associates are entities over which Banco Santander is in a position to exercise significant influence, but not control or joint control. It is presumed that Banco Santander exercises significant influence if it holds 20% or more of the voting power of the investee.

In the consolidated financial statements, investments in associates are accounted for using the equity method, i.e. at the Group's share of net assets of the investee, after taking into account the dividends received therefrom and other equity eliminations. The profits and losses resulting from transactions with an associate are eliminated to the extent of the Group's interest in the associate.

There are certain investments in entities which, although Grupo Santander owns 20% or more of their voting power, are not considered to be associates because the Group is not in a position to exercise significant influence over them. At 31 December 2021 and 2020, this was the situation of the investment in Project Quasar Investments 2017, S.L., despite maintaining a 49% interest in its share capital (see appendix II). The remaining investments are not significant for the Group.

There are also certain investments in associates where the Group owns less than 20% of the voting rights, as it is determined that it has the capacity to exercise significant influence over them. The impact of these companies is immaterial in the Group's consolidated financial statements.

The appendices contain significant information on the associates.

iv. Structured entities

When Grupo Santander incorporates entities, or holds ownership interests therein, to enable its customers to access certain investments, or for the transfer of risks or other purposes (also called structured entities since the voting or similar power is not a key factor in deciding who controls the entity), the Group determines, using internal criteria and procedures and taking into consideration the applicable legislation, when control (as defined above) exists and, therefore, whether these entities should be consolidated. Specifically, for those entities to which this policy applies (mainly investment funds and pension funds), the Group analyses the following factors:

- Percentage of ownership held by Grupo Santander; 20% is established as the general threshold.

- Identification of the fund manager, and verification as to whether it is a company controlled by the Group since this could affect Grupo Santander ability to direct the relevant activities.

- Existence of agreements between investors that might require decisions to be taken jointly by the investors, rather than by the fund manager.

- Existence of currently exercisable removal rights (possibility of removing the manager from his position), since the existence of such rights might limit the manager's power over the fund, and it may be concluded that the manager is acting as an agent of the investors.

- Analysis of the fund manager's remuneration regime, taking into consideration that a remuneration regime that is proportionate to the service rendered does not, generally, create exposure of such importance as to indicate that the manager is acting as the principal. Conversely, if the remuneration regime is not proportionate to the service rendered, this might give rise to an exposure that would lead the Group to a different conclusion.

These structured entities also include the securitisation special purpose vehicles, which are consolidated in the case of the Special Purpose Vehicles (SPVs) over which, being exposed to variable yield, it is considered that the Group continues to exercise control.

The exposure associated with unconsolidated structured entities are not material with respect to the Group's consolidated financial statements.

v. Business combinations

A business combination is the bringing together of two or more separate entities or economic units into one single entity or group of entities.

Business combinations whereby Grupo Santander obtains control over an entity or a business are recognised for accounting purposes as follows:

- Grupo Santander measures the cost of the business combination, which is normally the consideration transferred, defined as the acquisition-date fair values of the assets transferred, the liabilities incurred to the former owners of the acquiree and the equity instruments issued, if any, by the acquirer. In cases where the amount of the consideration to be transferred has not been definitively established at the acquisition date, but rather depends on future events, any contingent consideration is recognised as part of the consideration transferred and measured at its acquisition-date fair value. Moreover, acquisition-related costs do not for these purposes form part of the cost of the business combination.

- The fair values of the assets, liabilities and contingent liabilities of the acquired entity or business, including any intangible assets identified in the business combination which might not have been recognised by the acquiree, are estimated and recognised in the consolidated balance sheet; the Group also estimates the amount of any non-controlling interests and the fair value of the previously held equity interest in the acquiree.

- Any positive difference between the aforementioned items is recognised as discussed in note 2.m. Any negative difference is recognised under 'Negative Goodwill' recognised in the consolidated income statement.

Goodwill is only calculated and recognised once, when control of a business or an entity is obtained.

vi. Changes in the levels of ownership interests in subsidiaries

Acquisitions and disposals not giving rise to a change in control are recognised as equity transactions, and no gain or loss is recognised in the income statement and the initially recognised goodwill is not remeasured. The difference between the consideration transferred or received and the decrease or increase in non-controlling interests, respectively, is recognised in reserves.

Similarly, when control over a subsidiary is lost, the assets, liabilities and non-controlling interests and any other items recognised in 'Other Comprehensive income' of that company are derecognised from the consolidated balance sheet, and the fair value of the consideration received and of any remaining equity interest is recognised. The difference between these amounts is recognised in profit or loss.

vii. Acquisitions and sales

Note 3 provides information on the most significant acquisitions and sales in the last three years.

c) Definitions and classification of financial instruments

i. Definitions

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.

An equity instrument is a contract that evidences a residual interest in the assets of the issuing entity after deducting all of its liabilities.

A financial derivative is a financial instrument whose value changes in response to the change in an observable market variable (such as an interest rate, foreign exchange rate, financial instrument price, market index or credit rating), whose initial investment is very small compared with other financial instruments with a similar response to changes in market factors, and which is generally settled at a future date.

Hybrid financial instruments are contracts that simultaneously include a non-derivative host contract together with a derivative, known as an embedded derivative, that is not separately transferable and has the effect that some of the cash flows of the hybrid contract vary in a way similar to a stand-alone derivative.

Compound financial instruments are contracts that simultaneously create for their issuer a financial liability and an own equity instrument (such as convertible bonds, which entitle their holders to convert them into equity instruments of the issuer).

The preference shares contingently convertible into ordinary shares eligible as Additional Tier 1 capital (CCPSs) -perpetual shares, which may be repurchased by the issuer in certain circumstances, the interest on which is discretionary, and would convert into variable number of newly issued ordinary shares if the capital ratio of the Bank or its consolidated group falls below a given percentage (trigger event), as those two terms are defined in the related issue prospectuses- are recognised for accounting purposes by the Group as compound instruments. The liability component reflects the issuer's obligation to deliver a variable number of shares and the equity component reflects the issuer's discretion in relation to the payment of the related coupons. In order to effect the initial allocation, the Group estimates the fair value of the liability as the amount that would have to be delivered if the trigger event were to occur immediately and, accordingly, the equity component, calculated as the residual amount, is zero. In view of the aforementioned discretionary nature of the payment of the coupons, they are deducted directly from equity.

Capital perpetual preference shares (CPPS), with the possibility of purchase by the issuer in certain circumstances, whose remuneration is discretionary, and which will be amortised permanently, totally or partially, in the event that the bank or its consolidated group submits a capital ratio lesser than a certain percentage (trigger event), as defined in the corresponding prospectuses, are accounted for by the Group as equity instruments. The following transactions are not treated for accounting purposes as financial instruments:

- Investments in associates and joint ventures (see note 13).
- Rights and obligations under employee benefit plans (see note 25).
- Rights and obligations under insurance contracts (see note 15).
- Contracts and obligations relating to employee remuneration based on own equity instruments (see note 34).

ii. Classification of financial assets for measurement purposes

Financial assets are initially classified into the various categories used for management and measurement purposes, unless they have to be presented as 'Non-current assets held for sale' or they relate to 'Cash, cash balances at central banks and other deposits on demand', 'Changes in the fair value of hedged items in portfolio hedges of interest rate risk (asset side)', 'Hedging derivatives and Investments', which are reported separately.

Classification of financial instruments: the classification criteria for financial assets depends on the business model for their management and the characteristics of their contractual flows.

Grupo Santander business models refer to the way in which it manages its financial assets to generate cash flows. In defining these models, the Group takes into account the following factors:

- How key management staff are assessed and reported on the performance of the business model and the financial assets held in the business model.
- The risks that affect the performance of the business model (and the financial assets held in the business model) and, specifically, the way in which these risks are managed.
- How business managers are remunerated.
- The frequency and volume of sales in previous years, as well as expectations of future sales.

The analysis of the characteristics of the contractual flows of financial assets requires an assessment of the congruence of these flows with a basic loan agreement. The Group determines if the contractual cash flows of its financial assets that are only principal and interest payments on the outstanding principal amount at the beginning of the transaction. This analysis takes into consideration four factors (performance, clauses, contractually linked products and currencies). Furthermore, among the most significant judgements used by the Group in carrying out this analysis, the following ones are included:

- The return on the financial asset, in particular in cases of periodic interest rate adjustments where the term of the reference rate does not coincide with the frequency of the adjustment. In these cases, an assessment is made to determine whether or not the contractual cash flows differ significantly from the flows without this change in the time value of money, establishing a tolerance level of 2%.
- The contractual clauses that may modify the cash flows of the financial asset, for which the structure of the cash flows before and after the activation of such clauses is analysed.
- Financial assets whose cash flows have different priority for payment due to a contractual link to underlying assets (e.g. securitisations) require a look-through analysis by the Group so as to review that both the financial asset and the underlying assets are only principal and interest payments and that the exposure to credit risk of the set of underlying assets belonging to the tranche analysed is less than or equal to the exposure to credit risk of the set of underlying assets of the instrument.

Depending on these factors, the asset can be measured at amortised cost, at fair value with changes in other comprehensive income, or at fair value with changes through profit and loss. IFRS 9 also establishes an option to designate an instrument at fair value with changes in profit or loss, when doing so eliminates or significantly reduces a measurement or recognition inconsistency (sometimes referred to as 'accounting asymmetry') that would otherwise arise from measuring assets or liabilities or recognising gains and losses on different bases.

Grupo Santander uses the following criteria for the classification of financial debt instruments:

- Amortised cost: financial instruments under a business model whose objective is to collect principal and interest flows, over which there is no significant unjustified sales and fair value is not a key element in the management of these assets and contractual conditions they give rise to cash flows on specific dates, which are only payments of principal and interest on the outstanding principal amount. In this sense, unjustified sales are considered to be those other than those related to an increase in the credit risk of the asset, unanticipated funding needs (stress case scenarios). Additionally, the characteristics of its contractual flows represent substantially a "basic financing agreement".

- Fair value with changes in other comprehensive income: financial instruments held in a business model whose objective is to collect principal and interest cash flows and the sale of these assets, where fair value is a key factor in their management. Additionally, the contractual cash flow characteristics substantially represent a 'basic financing agreement'.

- Fair value with changes in profit or loss: financial instruments included in a business model whose objective is not obtained through the above mentioned models, where fair value is a key factor in managing of these assets, and financial instruments whose contractual cash flow characteristics do not substantially represent a 'basic financing agreement'. In this section it can be enclosed the portfolios classified under 'Financial assets held for trading', 'Non-trading financial assets mandatorily at fair value through profit or loss' and 'Financial assets at fair value through profit or loss'. In this regard, most of the financial assets presented in the category of 'Financial assets designated at value reasonable with change in results' are instruments financial services that, not being part of the portfolio of negotiation, are contracted jointly with other financial instruments that are recorded in the category of 'held for trading', and that by both are recorded at fair value with changes in results, so your record in any other category would produce accounting asymmetries.

Equity instruments will be classified at fair value under IFRS 9, with changes in profit or loss, unless the Group decides, for non-trading assets, to classify them at fair value with changes in other comprehensive income (irrevocably) at initial recognition.

iii. Classification of financial assets for presentation purposes

Financial assets are classified by nature into the following items in the consolidated balance sheet:

- Cash, cash balances at Central Banks and other deposits on demand: cash balances and balances receivable on demand relating to deposits with central banks and credit institutions.

- Loans and advances: includes the debit balances of all credit and loans granted by the Group, other than those represented by securities, as well as finance lease receivables and other debit balances of a financial nature in favour of the Group such as cheques drawn on credit institutions, balances receivable from clearing houses and settlement agencies for transactions on the stock exchange and organised markets, bonds given in cash, capital calls, fees and commissions receivable for financial guarantees and debit balances arising from transactions not originating in banking transactions and services, such as the collection of rentals and similar items. They are classified, on the basis of the institutional sector to which the debtor belongs, into:

  – Central banks: credit of any nature, including deposits and money market transactions received from the Bank of Spain or other central banks.

  – Credit institutions: credit of any nature, including deposits and money market transactions, in the name of credit institutions.

  – Customers: includes the remaining credit, including money market transactions through central counterparties.

- Debt instruments: bonds and other securities that represent a debt for their issuer, that generate an interest return, and that are in the form of certificates or book entries.

- Equity instruments: financial instruments issued by other entities, such as shares, which have the nature of equity instruments for the issuer, other than investments in subsidiaries, joint ventures or associates. Investment fund units are included in this item.

- Derivatives: includes the fair value in favour of the Group of derivatives which do not form part of hedge accounting, including embedded derivatives separated from hybrid financial instruments.

- Changes in the fair value of hedged items in portfolio hedges of interest rate risk: this item is the balancing entry for the amounts credited to the consolidated income statement in respect of the measurement of the portfolios of financial instruments which are effectively hedged against interest rate risk through fair value hedging derivatives.

- Hedging derivatives: Includes the fair value in favour of the Group of derivatives, including embedded derivatives separated from hybrid financial instruments, designated as hedging instruments in hedge accounting.

iv. Classification of financial liabilities for measurement purposes

Financial liabilities are initially classified into the various categories used for management and measurement purposes, unless they have to be presented as 'Liabilities associated with non-current assets held for sale' or they relate to 'Hedging derivatives' or changes in the fair value of hedged items in portfolio hedges of interest rate risk (liability side), which are reported separately.

In most cases, changes in the fair value of financial liabilities designated at fair value through profit or loss, caused by the entity's credit risk, are recognized in other comprehensive income.

Financial liabilities are included for measurement purposes in one of the following categories:

- Financial liabilities held for trading (at fair value through profit or loss): this category includes financial liabilities incurred for the purpose of generating a profit in the near term from fluctuations in their prices, financial derivatives not designated as hedging instruments, and financial liabilities arising from the outright sale of financial assets acquired under reverse repurchase agreements ("reverse repos") or borrowed (short positions).

- Financial liabilities designated at fair value through profit or loss: financial liabilities are included in this category when they provide more relevant information, either because this eliminates or significantly reduces recognition or measurement inconsistencies (accounting mismatches) that would otherwise arise from measuring assets or liabilities or recognising the gains or losses on them on different bases, or because a group of financial liabilities or financial assets and liabilities is managed and its performance is evaluated on a fair value basis, in accordance with a documented risk management or investment strategy, and information about the group is provided on that basis to the Group's key management personnel. Liabilities may only be included in this category on the date when they are incurred or originated.

  Liabilities may only be included in this portfolio at the date of issue or origination.

- Financial liabilities at amortised cost: financial liabilities, irrespective of their instrumentation and maturity, not included in any of the above-mentioned categories which arise from the ordinary borrowing activities carried on by financial institutions.

v. Classification of financial liabilities for presentation purposes

Financial liabilities are classified by nature into the following items in the consolidated balance sheet:

- Deposits: includes all repayable balances received in cash by Grupo Santander, other than those instrumented as marketable securities and those having the substance of subordinated liabilities (amount of the loans received, which for credit priority purposes are after common creditors), except for the debt instruments. This item also includes cash bonds and cash consignments received the amount of which may be invested without restriction. Deposits are classified on the basis of the creditor's institutional sector into:

  – Central banks: deposits of any nature, including credit received and money market transactions received from the Bank of Spain or other central banks.

  – Credit institutions: deposits of any nature, including credit received and money market transactions in the name of credit institutions.

  – Customer: includes the remaining deposits, including money market transactions through central counterparties.

  On 6 June 2019, the European Central Bank announced a new program of targeted longer-term refinancing operations (TLTRO III); additionally, the conditions of the initial program were successively modified in the months of March and April 2020, reducing the interest rate by 25 bps to -0.5% from June 2020 to June 2021 and providing that, for banks meeting a certain volume of eligible loans, the interest rate could be -1% for that period. These conditions were extended on December 10, 2020 for the period from June 2021 to June 2022, including the option to cancel or reduce the amount of financing before maturity in windows coinciding with the interest rate review and adjustment periods.

  The accounting standards indicate that for the recording of amortized cost the entity 'shall use a shorter period when the fees, basis points paid or received, transaction costs, premiums or discounts relate to it, this being the case when the variable to which the fees, basis points paid or received, transaction costs, and discounts or premiums relate is adjusted to market rates prior to the expected maturity of the financial instrument. In this case, the appropriate amortization period is the period until the next adjustment date'.

  In this case, the applicable interest rate of -1% from June 2020 to June 2021 and from June 2021 to June 2022 corresponds to a specific period after which the funding is adjusted to market rates (specifically, the average rate applied in the Eurosystem's main refinancing operations) and must therefore be accrued until the next adjustment date. The early repayment windows of this funding program are substantive terms, given that at that time of adjustment of the funding cost to market, the entity may opt for renewal or cancellation and obtain new funding at more favorable terms.

  Grupo Santander has opted to accrue interest in accordance with the specific periods of adjustment to market rates, so that the interest corresponding to that period (-1%) will be recorded in the income statement from June 2020 to June 2022, assuming compliance with the threshold of eligible loans that gives rise to the extra rate.

  Compliance with the qualifying loan thresholds is assessed at each reporting date and is based on the financial budgets approved by the Group's directors, as well as on the evolution of macroeconomic variables (GDP, unemployment rate, inflation, etc.). If, subsequent to the initial recording of the financial liability, there is a change in the expectations of meeting this threshold of eligible loans, the Group would adjust the carrying amount of the financial liability to the amount resulting from discounting the new estimated flows at the original Effective Interest Rate (EIR), recognizing this difference in profit or loss, without modifying the original EIR.

  At the end of both periods, the Group has met the financing objective established in the program, although the data relating to the second reference period (October 2020 to December 2021), will not be sent until next May, after validation by the external auditor, as established in the program conditions.

- Marketable debt securities: includes the amount of bonds and other debt represented by marketable securities, other than those having the substance of subordinated liabilities (amount of the loans received, which for credit priority purposes are after common creditors, and includes the amount of the financial instruments issued by the Group which, having the legal nature of capital, do not meet the requirements to qualify as equity, such as certain preferred shares issued). This item includes the component that has the consideration of financial liability of the securities issued that are compound financial instruments.

- Derivatives: includes the fair value, with a negative balance for the Group, of derivatives, including embedded derivatives separated from the host contract, which do not form part of hedge accounting.

- Short positions: includes the amount of financial liabilities arising from the outright sale of financial assets acquired under reverse repurchase agreements or borrowed.

- Other financial liabilities: includes the amount of payment obligations having the nature of financial liabilities not included in other items (includes, among others, the balance of lease liabilities that started to be recorded in 2019 as a result of the application of IFRS 16), and liabilities under financial guarantee contracts, unless they have been classified as non-performing.

- Changes in the fair value of hedged items in portfolio hedges of interest rate risk: this item is the balancing entry for the amounts charged to the consolidated income statement in respect of the measurement of the portfolios of financial instruments which are effectively hedged against interest rate risk through fair value hedging derivatives.

- Hedging derivatives: includes the fair value of the Group's liability in respect of derivatives, including embedded derivatives separated from hybrid financial instruments, designated as hedging instruments in hedge accounting.

d) Measurement of financial assets and liabilities and recognition of fair value changes

In general, financial assets and liabilities are initially recognised at fair value which, in the absence of evidence to the contrary, is deemed to be the transaction price.

In this regard, IFRS 9 states that regular way purchases or sales of financial assets shall be recognised and derecognised on the trade date or on the settlement date. Grupo Santander has opted to make such recognition on the trading date or settlement date, depending on the convention of each of the markets in which the transactions are carried out. For example, in relation to the purchase or sale of debt securities or equity instruments traded in the Spanish market, securities market regulations stipulate their effective transfer at the time of settlement and, therefore, the same time has been established for the accounting record to be made.

The fair value of instruments not measured at fair value through profit and loss is adjusted by transaction costs. Subsequently, and on the occasion of each accounting close, they are valued in accordance with the following criteria:

i. Measurement of financial assets

Financial assets are measured at fair value are valued mainly at their fair value without deducting any transaction cost for their sale.

The fair value of a financial instrument on a given date is taken to be the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. The most objective and common reference for the fair value of a financial instrument is the price that would be paid for it on an active, transparent and deep market (quoted price or market price). At 31 December 2021, there were no significant investments in quoted financial instruments that had ceased to be recognised at their quoted price because their market could not be deemed to be active.

If there is no market price for a given financial instrument, its fair value is estimated on the basis of the price established in recent transactions involving similar instruments and, in the absence thereof, of valuation techniques commonly used by the international financial community, taking into account the specific features of the instrument to be measured and, particularly, the various types of risk associated with it.

All derivatives are recognised in the balance sheet at fair value from the trade date. If the fair value is positive, they are recognised as an asset and if the fair value is negative, they are recognised as a liability. The fair value on the trade date is deemed, in the absence of evidence to the contrary, to be the transaction price. The changes in the fair value of derivatives from the trade date are recognised in 'Gains/losses on financial assets and liabilities held for trading (net)' in the consolidated income statement. Specifically, the fair value of financial derivatives traded in organised markets included in the portfolios of financial assets or liabilities held for trading is deemed to be their daily quoted price and if, for exceptional reasons, the quoted price cannot be determined on a given date, these financial derivatives are measured using methods similar to those used to measure derivatives.

The fair value of derivatives is taken to be the sum of the future cash flows arising from the instrument, discounted to present value at the date of measurement (present value or theoretical close) using valuation techniques commonly used by the financial markets: net present value, option pricing models and other methods.

The amount of debt securities and loans and advances under a business model whose objective is to collect the principal and interest flows are valued at their amortised cost, as long as they comply with the 'SPPI' (Solely Payments of Principal and Interest) test, using the effective interest rate method in their determination. Amortised cost refers to the acquisition cost of a corrected financial asset or liability (more or less, as the case may be) for repayments of principal and the part systematically charged to the consolidated income statement of the difference between the initial cost and the corresponding reimbursement value at expiration. In the case of financial assets, the amortised cost includes, in addition, the corrections to their value due to the impairment. In the loans and advances covered in fair value hedging transactions, the changes that occur in their fair value related to the risk or the risks covered in these hedging transactions are recorded.

The effective interest rate is the discount rate that exactly matches the carrying amount of a financial instrument to all its estimated cash flows of all kinds over its remaining life. For fixed rate financial instruments, the effective interest rate coincides with the contractual interest rate established on the acquisition date plus, where applicable, the fees and transaction costs that, because of their nature, form part of their financial return. In the case of floating rate financial instruments, the effective interest rate coincides with the rate of return prevailing in all connections until the next benchmark interest reset date.

Equity instruments and contracts related with these instruments are measured at fair value. However, in certain circumstances the Group estimates cost value as a suitable estimate of the fair value. This can happen if the recent event available information is not enough to measure the fair value or if there is a broad range of possible measures and the cost value represents the best estimates of fair value within this range.

The amounts at which the financial assets are recognised represent, in all material respects, the Group's maximum exposure to credit risk at each reporting date. Also, Grupo Santander has received collateral and other credit enhancements to mitigate its exposure to credit risk, which consist mainly of mortgage guarantees, cash collateral, equity instruments and personal security, assets leased out under finance lease and full-service lease agreements, assets acquired under repurchase agreements, securities loans and credit derivatives.

ii. Measurement of financial liabilities

In general, financial liabilities are measured at amortised cost, as defined above, except for those included under 'Financial liabilities held for trading' and 'Financial liabilities designated at fair value through profit or loss' and financial liabilities designated as hedged items (or hedging instruments) in fair value hedges, which are measured at fair value. The changes in credit risk arising from financial liabilities designated at fair value through profit or loss are recognised in accumulated other comprehensive income, unless they generate or increase an accounting mismatch, in which case changes in the fair value of the financial liability in all respects are recognised in the income statement.

iii. Valuation techniques

The following table summarises the fair values, at the end of each of the years indicated, of the financial assets and liabilities listed below, classified according to the different valuation methodologies used by the Group to determine their fair value:

EUR million

	2021			2020			2019		
	Published price quotations in active markets (level 1)	Internal Models (level 2 and 3)	Total	Published price quotations in active markets (level 1)	Internal Models (level 2 and 3)	Total	Published price quotations in active markets (level 1)	Internal Models (level 2 and 3)	Total
Financial assets held for trading	39,678	77,275	116,953	46,379	68,566	114,945	44,581	63,649	108,230
Non-trading financial assets mandatorily at fair value through profit or loss	2,398	3,138	5,536	1,756	2,730	4,486	1,530	3,381	4,911
Financial assets designated at fair value through profit or loss	2,113	13,844	15,957	2,509	46,208	48,717	2,572	59,497	62,069
Financial assets at fair value through other comprehensive income	77,749	30,289	108,038	91,771	29,182	120,953	103,089	22,619	125,708
Hedging derivatives (assets)	—	4,761	4,761	—	8,325	8,325	—	7,216	7,216
Financial liabilities held for trading	10,379	69,090	79,469	9,863	71,304	81,167	9,781	67,358	77,139
Financial liabilities designated at fair value through profit or loss	3,620	29,113	32,733	2,118	45,920	48,038	1,484	59,511	60,995
Hedging derivatives (liabilities)	—	5,463	5,463	—	6,869	6,869	—	6,048	6,048
Liabilities under insurance or reinsurance contracts	—	770	770	—	910	910	—	739	739

The financial instruments at fair value determined on the basis of published price quotations in active markets (level 1) include government debt securities, private-sector debt securities, derivatives traded in organised markets, securitised assets, shares, short positions and fixed-income securities issued.

In cases where price quotations cannot be observed, management makes its best estimate of the price that the market would set, using its own internal models. In most cases, these internal models use data based on observable market parameters as significant inputs (level 2) and, in cases, they use significant inputs not observable in market data (level 3). In order to make these estimates, various techniques are employed, including the extrapolation of observable market data. The best evidence of the fair value of a financial instrument on initial recognition is the transaction price, unless the fair value of the instrument can be obtained from other market transactions performed with the same or similar instruments or can be measured by using a valuation technique in which the variables used include only observable market data, mainly interest rates.

Grupo Santander has developed a formal process for the systematic valuation and management of financial instruments, which has been implemented worldwide across all the Group's units. The governance scheme for this process distributes responsibilities between two independent divisions: Treasury (development, marketing and daily management of financial products and market data) and Risk (on a periodic basis, validation of pricing models and market data, computation of risk metrics, new transaction approval policies, management of market risk and implementation of fair value adjustment policies).

The approval of new products follows a sequence of steps (request, development, validation, integration in corporate systems and quality assurance) before the product is brought into production. This process ensures that pricing systems have been properly reviewed and are stable before they are used.

The following subsections set forth the most important products and families of derivatives, and the related valuation techniques and inputs, by asset class:

Fixed income and inflation

The fixed income asset class includes basic instruments such as interest rate forwards, interest rate swaps and cross currency swaps, which are valued using the net present value of the estimated future cash flows discounted taking into account basis swap and cross currency spreads determined on the basis of the payment frequency and currency of each leg of the derivative. Vanilla options, including caps, floors and swaptions, are priced using the Black-Scholes model, which is one of the benchmark industry models. More exotic derivatives are priced using more complex models which are generally accepted as standard across institutions.

These pricing models are fed with observable market data such as deposit interest rates, futures rates, cross currency swap and constant maturity swap rates, and basis spreads, on the basis of which different yield curves, depending on the payment frequency, and discounting curves are calculated for each currency. In the case of options, implied volatilities are also used as model inputs. These volatilities are observable in the market for cap and floor options and swaptions, and interpolation and extrapolation of volatilities from the quoted ranges are carried out using generally accepted industry models. The pricing of more exotic derivatives may require the use of non-observable data or parameters, such as correlation (among interest rates and cross-asset), mean reversion rates and prepayment rates, which are usually defined from historical data or through calibration.

Inflation-related assets include zero-coupon or year-on-year inflation-linked bonds and swaps, valued with the present value method using forward estimation and discounting. Derivatives on inflation indices are priced using standard or more complex bespoke models, as appropriate. Valuation inputs of these models consider inflation-linked swap spreads observable in the market and estimations of inflation seasonality, on the basis of which a forward inflation curve is calculated. Also, implied volatilities taken from zero-coupon and year-on-year inflation options are also inputs for the pricing of more complex derivatives.

Equity and foreign exchange

The most important products in these asset classes are forward and futures contracts; they also include vanilla, listed and OTC (Over-The-Counter) derivatives on single underlying assets and baskets of assets. Vanilla options are priced using the standard Black-Scholes model and more exotic derivatives involving forward returns, average performance, or digital, barrier or callable features are priced using generally accepted industry models or bespoke models, as appropriate. For derivatives on illiquid stocks, hedging takes into account the liquidity constraints in models.

The inputs of equity models consider yield curves, spot prices, dividends, asset funding costs (repo margin spreads), implied volatilities, correlation among equity stocks and indices, and cross-asset correlation. Implied volatilities are obtained from market quotes of European and American-style vanilla call and put options. Various interpolation and extrapolation techniques are used to obtain continuous volatility for illiquid stocks. Dividends are usually estimated for the mid and long term. Correlations are implied, when possible, from market quotes of correlation-dependent products. In all other cases, proxies are used for correlations between benchmark underlyings or correlations are obtained from historical data.

The inputs of foreign exchange models include the yield curve for each currency, the spot foreign exchange rate, the implied volatilities and the correlation among assets of this class. Volatilities are obtained from European call and put options which are quoted in markets as of-the-money, risk reversal or butterfly options. Illiquid currency pairs are usually handled by using the data of the liquid pairs from which the illiquid currency can be derived. For more exotic products, unobservable model parameters may be estimated by fitting to reference prices provided by other non-quoted market sources.

Credit

The most common instrument in this asset class is the credit default swap (CDS), which is used to hedge credit exposure to third parties. In addition, models for first-to-default (FTD), n-to-default (NTD) and single-tranche collateralised debt obligation (CDO) products are also available. These products are valued with standard industry models, which estimate the probability of default of a single issuer (for CDS) or the joint probability of default of more than one issuer for FTD, NTD and CDO.

Valuation inputs are the yield curve, the CDS spread curve and the recovery rate. For indices and important individual issuers, the CDS spread curve is obtained in the market. For less liquid issuers, this spread curve is estimated using proxies or other credit-dependent instruments. Recovery rates are usually set to standard values. For listed single-tranche CDO, the correlation of joint default of several issuers is implied from the market. For FTD, NTD and bespoke CDO, the correlation is estimated from proxies or historical data when no other option is available.

Valuation adjustment for counterparty risk or default risk

The Credit valuation adjustment (CVA) is a valuation adjustment to over the counter (OTC) derivatives as a result of the risk associated with the credit exposure assumed to each counterparty.

The CVA is calculated taking into account potential exposure to each counterparty in each future period. The CVA for a specific counterparty is equal to the sum of the CVA for all the periods. The following inputs are used to calculate the CVA:

- Expected exposure: including for each transaction the mark-to-market (MtM) value plus an add-on for the potential future exposure for each period. Mitigating factors such as collateral and netting agreements are taken into account, as well as a temporary impairment factor for derivatives with interim payments.
- Severity: percentage of final loss assumed in a counterparty credit event/default.
- Probability of default: for cases where there is no market information (the CDS quoted spread curve, etc.), proxies based on companies holding exchange-listed CDS, in the same industry and with the same external rating as the counterparty, are used.
- Discount factor curve.

The Debit Valuation Adjustment (DVA) is a valuation adjustment similar to the CVA but, in this case, it arises as a result of the Group's own risk assumed by its counterparties in OTC derivatives.

The CVA at 31 December 2021 amounted to EUR 237 million (resulting in a decrease of 41.9% compared to 31 December 2020) and DVA amounted to EUR 162 million (resulting in a decrease of 30.4% compared to 31 December 2020). These impacts are mainly due to the continuous improvement in credit markets, the creation of particular credit curves for certain counterparties and the introduction of methodological improvements in the calculation of exposures.

The CVA at 31 December 2020 amounted to EUR 408 million (resulting in an increase of 49.8% compared to 31 December 2019) and DVA amounted to EUR 233 million (resulting in an increase of 36.0% compared to 31 December 2019). These impacts were due to the fact that credit spread levels were at levels above 25% compared to 2019 due to the covid-19 pandemic.

The CVA at 31 December 2019 amounted to EUR 272 million (decrease of 22.5% compared to 31 December 2018) and DVA amounted EUR 171 million (decrease of 34.6% compared to 31 December 2018). The decrease was mainly due to improvements in the credit quality of counterparties, which led to reductions in credit spreads in percentages of around 40% in the most liquid maturities.

In addition, the Group amounts the funding fair value adjustment (FFVA) is calculated by applying future market funding spreads to the expected future funding exposure of any uncollateralised component of the OTC derivative portfolio. This includes the uncollateralised component of collateralised derivatives in addition to derivatives that are fully uncollateralised. The expected future funding exposure is calculated by a simulation methodology, where available. The FFVA impact is not material for the consolidated financial statements as of 31 December 2021, 2020 and 2019.

Grupo Santander has not carried out significant reclassifications of financial instruments between levels other than those disclosed in level 3 movement table during 2021 continuing the trend observed in 2020. The main variations over the last few years in the Level 3 volume have been due to purchases/sales of these instruments. There have been no significant variations in the market observability conditions, nor relevant changes in the criteria used for the classification of instruments within the fair value hierarchy.

In 2019, the Group reclassified between levels 2 and 3 financial instruments for a net amount of EUR 708 million (mainly due to reclassifications to level 2 of positions, both derivatives as debt instruments, with maturities for that there were already observable assessment inputs or on which new sources of information have been recurring prices, and at level 3 certain bonds in Brazil that, based on the criteria of observability of the Group, did not meet the requirements to be considered as observable inputs).

Valuation adjustments due to model risk

The valuation models described above do not involve a significant level of subjectivity, since they can be adjusted and recalibrated, where appropriate, through internal calculation of the fair value and subsequent comparison with the related actively traded price. However, valuation adjustments may be necessary when market quoted prices are not available for comparison purposes.

The sources of risk are associated with uncertain model parameters, illiquid underlying issuers, and poor quality market data or missing risk factors (sometimes the best available option is to use limited models with controllable risk). In these situations, the Group calculates and applies valuation adjustments in accordance with common industry practice. The main sources of model risk are described below:

- In the fixed income markets, the sources of model risk include bond index correlations, basis spread modelling, the risk of calibrating model parameters and the treatment of near-zero or negative interest rates. Other sources of risk arise from the estimation of market data, such as volatilities or yield curves, whether used for estimation or cash flow discounting purposes.

- In the stock markets, the sources of model risk include forward skew modelling, the impact of stochastic interest rates, correlation and multi-curve modelling. Other sources of risk arise from managing hedges of digital callable and barrier option payments. Also worthy of consideration as sources of risk are the estimation of market data such as dividends and correlation for quanto and composite basket options.

- For specific financial instruments relating to home mortgage loans secured by financial institutions in the UK (which are regulated and partially financed by the Government) and property asset derivatives, the main input is the Halifax House Price Index (HPI). In these cases, risk assumptions include estimations of the future growth and the volatility of the HPI, the mortality rate and the implied credit spreads.

- Inflation markets are exposed to model risk resulting from uncertainty around modelling the correlation structure among various Consumer Price Index (CPI) rates. Another source of risk may arise from the bid-offer spread of inflation-linked swaps.

- The currency markets are exposed to model risk resulting from forward skew modelling and the impact of stochastic interest rate and correlation modelling for multi-asset instruments. Risk may also arise from market data, due to the existence of specific illiquid foreign exchange pairs.

- The most important source of model risk for credit derivatives relates to the estimation of the correlation between the probabilities of default of different underlying issuers. For illiquid underlying issuers, the CDS spread may not be well defined.

Set forth below are the financial instruments at fair value whose measurement was based on internal models (levels 2 and 3) at 31 December 2021, 2020 and 2019:

EUR million

	Fair values calculated using internal models at 2021*			
	Level 2	**Level 3**	**Valuation techniques**	**Main assumptions**
ASSETS	**121,640**	**7,667**		
Financial assets held for trading	**76,738**	**537**		
Central banks**	3,608	—	Present value method	Yield curves, FX market prices
Credit institutions**	10,397	—	Present value method	Yield curves, FX market prices
Customers**	6,829	—	Present value method	Yield curves, FX market prices
Debt and equity instruments	2,312	24	Present value method	Yield curves, FX market prices
Derivatives	53,592	513		
Swaps	*43,700*	*224*	Present value method, Gaussian Copula	Yield curves, FX market prices, HPI, Basis, Liquidity
Exchange rate options	*539*	*12*	Black-Scholes Model	Yield curves, Volatility surfaces, FX market prices, Liquidity
Interest rate options	*2,112*	*182*	Black's Model, multifactorial advanced models interest rate	Yield curves, Volatility surfaces, FX market prices, Liquidity
Interest rate futures	*409*	—	Present value method	Yield curves, FX market prices
Index and securities options	*439*	*41*	Black's Model, multifactorial advanced models interest rate	Yield curves, Volatility surfaces, FX & EQ market prices, Dividends, Liquidity
Other	*6,393*	*54*	Present value method, Advanced stochastic volatility models and other	Yield curves, Volatility surfaces, FX and EQ market prices, Dividends, Correlation, HPI, Credit, Others
Hedging derivatives	**4,761**	**—**		
Swaps	*4,204*	—	Present value method	Yield curves, FX market prices, Basis
Interest rate options	*9*	—	Black's Model	Yield curves, FX market prices, Volatility surfaces
Other	*548*	—	Present value method, Advanced stochastic volatility models and other	Yield curves, Volatility surfaces, FX market prices, Credit, Liquidity, Others
Non-trading financial assets mandatorily at fair value through profit or loss	**1,273**	**1,865**		
Equity instruments	415	1,231	Present value method	Market price, Interest rates curves, Dividends and Others
Debt instruments	589	366	Present value method	Yield curves
Loans and receivables	269	268	Present value method, swap asset model & CDS	Yield curves and Credit curves
Financial assets designated at fair value through profit or loss	**13,426**	**418**		
Credit institutions	3,152	—	Present value method	Yield curves, FX market prices
Customers***	10,270	18	Present value method	Yield curves, FX market prices, HPI
Debt instruments	4	400	Present value method	Yield curves, FX market prices
Financial assets at fair value through other comprehensive income	**25,442**	**4,847**		
Equity instruments	74	821	Present value method	Market price, Yield curves, Dividends and Others
Debt instruments	21,585	146	Present value method	Yield curves, FX market prices
Loans and receivables	3,783	3,880	Present value method	Yield curves, FX market prices and Credit curves

EUR million

	Fair values calculated using internal models at 2021*			
	Level 2	Level 3	Valuation techniques	Main assumptions
LIABILITIES	**103,807**	**629**		
Financial liabilities held for trading	**68,930**	**160**		
Central banks**	1,038	—	Present value method	Market price, Yield curves, Dividends and Others
Credit institutions**	6,488	—	Present value method	Yield curves, FX market prices
Customers	6,141	—	Present value method	Yield curves, FX market prices and Credit curves
Derivatives	53,234	160		
Swaps	*42,438*	*44*	Present value method, Gaussian Copula	Yield curves, FX market prices, Basis, Liquidity, HPI
Exchange rate options	*658*	*7*	Black-Scholes Model	Yield curves, Volatility surfaces, FX market prices, Liquidity
Index and securities options	*446*	*67*	Black-Scholes Model	Yield curves, FX market prices
Interest rate options	*2,720*	*26*	Black's Model, multifactorial advanced models interest rate	Yield curves, Volatility surfaces, FX market prices, Liquidity
Futures on interest rate and variable income	*184*	—	Present value method	Yield curves, Volatility surfaces, FX & EQ market prices, Dividends, Correlation, Liquidity, HPI
Other	*6,788*	*16*	Present value method, Advanced stochastic volatility models	Yield curves, Volatility surfaces, FX & EQ market prices, Dividends, Correlation, Liquidity, HPI, Credit, Others
Short positions	*2,029*	—	Present value method	Yield curves ,FX & EQ market prices, Equity
Hedging derivatives	**5,463**	**—**		
Swaps	*4,149*	—	Present value method	Yield curves ,FX & EQ market prices, Basis
Other	*1,314*	—	Present value method, Advanced stochastic volatility models and other	Yield curves , Volatility surfaces, FX market prices, Credit, Liquidity, Other
Financial liabilities designated at fair value through profit or loss	**28,644**	**469**	Present value method	Yield curves, FX market prices
Liabilities under insurance contracts	**770**	**—**	Present Value Method with actuarial techniques	Mortality tables and interest rate curves

* Level 2 internal models use data based on observable market parameters, while level 3 internal models use significant non-observable inputs in market data.
** Includes mainly short-term loans and reverse repurchase agreements with corporate customers (mainly brokerage and investment companies).
*** Includes, mainly, structured loans to corporate clients.

EUR million

	Fair values calculated using internal models at 2020*		Fair values calculated using internal models at 2019*		
	Level 2	Level 3	Level 2	Level 3	Valuation techniques
ASSETS	**146,468**	**8,543**	**149,711**	**6,651**	
Financial assets held for trading	**67,826**	**740**	**63,051**	**598**	
Credit institutions	3	—	—	—	Present Value method
Customers**	296	—	355	—	Present Value method
Debt and equity instruments	1,453	10	760	65	Present Value method
Derivatives	66,074	730	61,936	533	
Swaps	*54,488*	*272*	*51,594*	*182*	Present Value method, Gaussian Copula
Exchange rate options	*696*	*22*	*469*	*8*	Black-Scholes Model
Interest rate options	*3,129*	*241*	*3,073*	*177*	Black's Model, advanced multifactor interest rate models
Interest rate futures	*1,069*	—	*190*	—	Present Value method
Index and securities options	*554*	*94*	*1,164*	*95*	Black's Model, advanced multifactor interest rate models
Other	*6,138*	*101*	*5,446*	*71*	Present Value method, Advanced stochastic volatility models and other
Hedging derivatives	**8,325**	**—**	**7,216**	**—**	
Swaps	*6,998*	—	*6,485*	—	Present Value method
Interest rate options	*25*	—	*25*	—	Black's Model
Other	*1,302*	—	*706*	—	Present Value method, Advanced stochastic volatility models and other
Non-trading financial assets mandatorily at fair value through profit or loss	**1,796**	**934**	**1,780**	**1,601**	
Equity instruments	*984*	*505*	*1,272*	*550*	Present Value method
Debt securities issued	*555*	*134*	*498*	*675*	Present Value method
Loans and receivables	*257*	*295*	*10*	*376*	Present Value method, swap asset model & CDS
Financial assets designated at fair value through profit or loss	**45,559**	**649**	**58,833**	**664**	
Central banks	9,481	—	6,474	—	Present Value method
Credit institutions	11,973	163	21,598	50	Present Value method
Customers	24,102	19	30,729	32	Present Value method
Debt instruments	3	467	32	582	Present Value method
Equity instruments	—	—	—	—	Present Value method
Financial assets at fair value through other comprehensive income	**22,962**	**6,220**	**18,831**	**3,788**	
Equity instruments	75	1,223	98	407	Present Value method
Debt instruments	18,410	206	17,486	188	Present Value method
Loans and receivables	4,477	4,791	1,247	3,193	Present Value method

EUR million

	Fair values calculated using internal models at 2020*		Fair values calculated using internal models at 2019*		
	Level 2	Level 3	Level 2	Level 3	Valuation techniques
LIABILITIES	**124,098**	**905**	**132,582**	**1,074**	
Financial liabilities held for trading	**71,009**	**295**	**67,068**	**290**	
Derivatives	63,920	295	61,789	290	
Swaps	*51,584*	*81*	*49,927*	*115*	Present Value method, Gaussian Copula***
Interest rate options	*4,226*	*49*	*4,291*	*34*	Black's Model, advanced multifactor interest rate models
Exchange rate options	*724*	*1*	*658*	*1*	Black-Scholes Model
Index and securities options	*456*	*97*	*1,309*	*88*	Black-Scholes Model
Interest rate and equity futures	*1,054*	*2*	*20*	*2*	Present Value method
Other	*5,876*	*65*	*5,584*	*50*	Present Value method, Advanced stochastic volatility models and other
Short positions	7,089	—	5,279	—	Present Value method
Hedging derivatives	**6,869**	**—**	**6,048**	**—**	
Swaps	*5,821*	—	*4,737*	*0*	Present Value method
Interest rate options	*13*	—	*10*	—	Black's Model
Other	*1,035*	—	*1,301*	—	Present Value method, Advanced stochastic volatility models and other
Financial liabilities designated at fair value through profit or loss	**45,310**	**610**	**58,727**	**784**	Present Value method
Liabilities under insurance contracts	**910**	**—**	**739**	**—**	Present Value method with actuarial techniques

* Level 2 internal models use data based on observable market parameters, while level 3 internal models use significant non-observable inputs in market data.

** Includes mainly short-term loans and reverse repurchase agreements with corporate customers (mainly brokerage and investment companies).

Financial Instruments (level 3)

Set forth below are the Group's main financial instruments measured using unobservable market data as significant inputs of the internal models (level 3):

- HTC&S (Hold to collect and sale) syndicated loans classified in the fair value category with changes in other comprehensive income, where the cost of liquidity is not directly observable in the market, as well as the prepayment option in favour of the borrower.
- Illiquid equity in non-trading portfolios, classified at fair value through profit or loss and at fair value through equity.
- Instruments in Santander UK's portfolio (loans, debt instruments and derivatives) linked to the House Price Index (HPI). Even if the valuation techniques used for these instruments may be the same as those used to value similar products (present value in the case of loans and debt instruments, and the Black-Scholes model for derivatives), the main factors used in the valuation of these instruments are the HPI spot rate, the growth and volatility thereof, and the mortality rates, which are not always observable in the market and, accordingly, these instruments are considered illiquid.
- Callable interest rate derivatives (Bermudan-style options) where the main unobservable input is mean reversion of interest rates.
- Trading derivatives on interest rates, taking as an underlying asset titling and with the amortization rate (CPR, Conditional prepayment rate) as unobservable main entry.
- Derivatives from trading on inflation in Spain, where volatility is not observable in the market.
- Equity volatility derivatives, specifically indices and equities, where volatility is not observable in the long term.
- Derivatives on long-term interest rate and FX in some units (mainly South America)where for certain underlyings it is not possible to demonstrate observability to these terms.
- Debt instruments referenced to certain illiquid interest rates, for which there is no reasonable market observability.

The measurements obtained using the internal models might have been different if other methods or assumptions had been used with respect to interest rate risk, to credit risk, market risk and foreign currency risk spreads, or to their related correlations and volatilities. Nevertheless, the Bank's directors consider that the fair value of the financial assets and liabilities recognised in the consolidated balance sheet and the gains and losses arising from these financial instruments are reasonable.

The net amount recognised in profit and loss in 2021 arising from models whose significant inputs are unobservable market data (level 3) amounted to EUR 73 million profit (EUR 193 million profit in 2020 and EUR 85 million profit in 2019).

The table below shows the effect, at 31 December 2021 and 2020 on the fair value of the main financial instruments classified as level 3 of a reasonable change in the assumptions used in the valuation. This effect was determined by applying the probable valuation ranges of the main unobservable inputs detailed in the following table:

2021

Portfolio/Instrument (Level 3)	Valuation technique	Main unobservable inputs	Range	Weighted average	Impacts (EUR million) Unfavourable scenario	Favourable scenario
Financial assets held for trading						
Derivatives						
Cap&Floor	Volatility option model	Volatility	10% - 90%	36.30 %	(0.50)	0.43
CCS	Discounted Cash Flows	Interest rate	(0.7)% - 0.7%	0.73 %	(0.11)	0.11
CCS	Forward estimation	Interest rate	4bps - (4)bps	(0.09)%	(0.03)	0.03
Convertibility curve - inputs: NDFs Offshore	Forward estimation	Price	0% - 2%	0.61 %	(0.65)	0.28
EQ Options	EQ option pricing model	Volatility	0% - 90%	61.20 %	(0.24)	0.52
EQ Options	Local volatility	Volatility	10% - 90%	40.00 %	(6.82)	6.82
FRAs	Asset Swap model	Interest rate	0% - 4%	1.78 %	(0.91)	0.73
FX Options	FX option pricing model	Volatility	0% - 50%	32.14 %	(0.28)	0.50
Inflation Derivatives	Asset Swap model	Inflation Swap Rate	(50)% - 50%	50.00 %	(0.56)	0.28
Inflation Derivatives	Volatility option model	Volatility	0% - 40%	13.29 %	(0.47)	0.24
IR Futures	Asset Swap model	Interest rate	0% - 15%	5.91 %	(1.09)	0.71
IR Options	IR option pricing model	Volatility	0% - 60%	36.28 %	(0.20)	0.31
IRS	Asset Swap model	Interest rate	(6)% - 12.80%	10.36 %	(0.07)	0.13
IRS	Discounted Cash Flows	Credit spread	103.10bps - 375.6bps	71.91 %	(7.21)	4.16
IRS	Discounted Cash Flows	Inflation Swap Rate	(0.8)% - 6.5%	1.81 %	(0.04)	0.01
IRS	Discounted Cash Flows	Swap Rate	7.7% - 8.2%	(2.87)%	(0.23)	0.10
IRS	Forward estimation	Interest rate	TIIE91 (8.98)bps - TIIE91 +11.12bps	n.a.	(0.27)	0.17
IRS	Forward estimation	Prepayment rate	6% - 12%	n.a.	—	—
IRS	Others	Others	0.05%	n.a.	(1.49)	—
IRS	Prepayment modelling	Prepayment rate	2.5% - 6.2%	0.44 %	(0.09)	0.05
Property derivatives	Option pricing model	Growth rate	0% - 5%	2.50 %	(2.62)	2.62
Swaptions	IR option pricing model	Volatility	0% - 40%	26.67 %	(0.13)	0.27
Debt securities						
Corporate debt	Price based	Market price	85% - 115%	15.00 %	—	—
Financial assets designated at fair value through profit or loss						
Loans and advances to customers						
Loans	Discounted Cash Flows	Credit spreads	0.1% - 1.4%	0.66 %	(0.26)	0.26
Mortgage portfolio	Black Scholes model	Growth rate	0%- 5%	2.50 %	(1.9)	1.90
Debt securities						
Corporate debt	Discounted Cash Flows	Credit spread	0% - 20%	9.88 %	(1.23)	1.20
Government debt	Discounted Cash Flows	Discount curve	0% - 10%	8.33 %	(4.14)	20.69
Other debt securities	Others	Inflation Swap Rate	0% - 10%	4.74 %	(5.47)	4.92

2021

Portfolio/Instrument (Level 3)	Valuation technique	Main unobservable inputs	Range	Weighted average	Impacts (EUR million) Unfavourable scenario	Favourable scenario
Non-trading financial assets mandatorily at fair value through profit or loss						
Debt securities						
Corporate debt	Discounted Cash Flows	Margin of a reference portfolio	(1)bp - 1bp	0.01	(0.56)	0.60
Property securities	Probability weighting	Growth rate	0% - 5%	2.50 %	(1.19)	1.19
Equity instruments						
Equities	Price Based	Price	90% - 110%	10.00 %	(123.1)	123.10
Financial assets at fair value through other comprehensive income						
Loans and advances to customers						
Loans	Discounted Cash Flows	Credit spread	n.a.	n.a.	(19.84)	—
Loans	Discounted Cash Flows	Interest rate curve	(0.1)% - 0.1%	0.12 %	(0.07)	0.07
Loans	Discounted Cash Flows	Margin of a reference portfolio	(1)bp - 1bp	1.00 %	(13.12)	13.04
Loans	Forward estimation	Credit spread	77bps - 242bps	n.a.	—	—
Debt securities						
Government debt	Discounted Cash Flows	Interest rate	0.6% - 0.8%	0.09 %	(0.01)	0.01
Equity instruments						
Equities	Price Based	Price	90% - 110%	10.00 %	(82.13)	82.13
Financial liabilities held for trading						
Derivatives						
Cap&Floor	Volatility option model	Volatility	10% - 90%	36.30 %	(0.5)	0.43
Financial liabilities designated at fair value through profit or loss						
Loans and advances to customers						
Repos/Reverse repos	Asset Swap Repo Model	Long-term repo spread	n.a	n.a.	(0.36)	—

2020

Portfolio/ Instrument (Level 3)	Valuation technique	Main unobservable inputs	Range	Weighted average	Impacts (EUR million) Unfavourable scenario	Favourable scenario
Financial assets held for trading						
Derivatives						
Cap&Floor	Volatility option model	Volatility	10% - 90%	31.55 %	(0.07)	0.05
CCS	Discounted Cash Flows	Interest rate	(0.30)% - 0.66%	0.66 %	—	0.20
Convertibility curve - NDFs Offshore	Forward estimation	Price	0% - 2%	0.61 %	(0.72)	0.31
EQ Options	EQ option pricing model	Volatility	7.86% - 93.67%	48.37 %	(1.46)	1.81
FRAs	Asset Swap model	Interest rate	0% - 5%	2.22 %	(0.78)	0.63
FX Forward	Discounted Cash Flows	Swap Rate	(0.02)% - (0.30)%	0.11 %	—	—
FX Options	FX option pricing model	Volatility	0% - 50%	32.14 %	(0.39)	0.70
Inflation Derivatives	Asset Swap model	Inflation Swap Rate	(100)% - 50%	83.33 %	(0.63)	0.31
Inflation Derivatives	Volatility option model	Volatility	0% - 50%	16.67 %	(0.47)	0.23
IR Futures	Asset Swap model	Interest rate	0% - 15%	0.94 %	(0.94)	0.06
IR Options	IR option pricing model	Volatility	0% - 100%	19.05 %	(0.27)	0.06
IRS	Asset Swap model	Interest rate	(6)% - 12.50%	10 %	(0.08)	0.13
IRS	Discounted Cash Flows	Swap Rate	5.90% - 6.31%	2.26 %	(0.01)	0.02
IRS	Discounted Cash Flows	Credit spread	78.97 bps - 202.37 bps	9.82 bps	(2.81)	1.29
IRS	Prepayment modelling	Prepayment rate	2.47% - 6.22%	0.06 %	(0.12)	0.05
Property derivatives	Option pricing model	HPI Forward growth rate and HPI Spot rate	0% - 5%	2.50 %	(17.82)	17.82
Swaptions	IR option pricing model	Volatility	0% - 50%	33.33 %	(0.16)	0.31
Financial assets designated at fair value through profit or loss						
Loans and advances to customers						
Repos / Reverse repos	Asset Swap Repo Model	Long-term repo spread	n/a	n/a	(0.18)	0.23
Mortgage portfolio	Black Scholes model	HPI Forward growth rate	0% - 5%	2.50 %	(2.23)	2.23
Other loans	Present value method	Credit spreads	0.07% - 1.55%	0.74 %	(0.35)	0.35
Debt securities						
Government debt	Discounted Cash Flows	Interest rate	0% - 10%	8.33 %	(0.78)	3.91
Other debt securities	Price based	Market Price	90% - 110%	10 %	(0.15)	0.15
Property securities	Probability weighting	HPI Forward growth rate and HPI Spot rate	0% - 5%	2.50 %	(7.24)	7.24
Non-trading financial assets mandatorily at fair value through profit or loss						
Equity instruments						
Equities	Price Based	Price	90% - 110%	10 %	(50.47)	50.47
Financial assets at fair value through other comprehensive income						
Loans and advances to customers						
Loans	Discounted Cash Flows	Credit spread	n/a	n/a	(6.72)	—
Loans	Discounted Cash Flows	Interest rate curve	(0.15)% - 0.15%	0.15 %	(0.09)	0.09
Other loans	Present value method	Credit spreads	0.15% - 0.53%	0.19 %	(0.04)	0.04
Debt securities						
Government debt	Discounted Cash Flows	Interest rate	1.1% - 1.3%	0.10 %	—	—
Equity instruments						
Equities	Price Based	Price	90% - 110%	10 %	(122.14)	122.14
Financial liabilities held for trading						
Derivatives						
Cap&Floor	Volatility option model	Volatility	10% - 90%	34.61 %	(0.02)	0.01
EQ Options	Option pricing model	HPI Forward growth rate and HPI Spot rate	0% - 5%	2.50 %	(6.35)	6.35

Lastly, the changes in the financial instruments classified as Level 3 in 2021, 2020 and 2019 were as follows:

EUR million	01/01/2021 Fair value calculated using internal models (Level 3)	Changes Purchases/ Issuances	Sales/ Settlements	Changes in fair value recognised in profit or loss	Changes in fair value recognised in equity	Level reclassifications	Other	31/12/2021 Fair value calculated using internal models (level 3)
Financial assets held for trading	**740**	**136**	**(124)**	**(181)**	**—**	**(15)**	**(19)**	**537**
Debt instruments	7	20	(2)	(2)	—	—	(1)	22
Equity instruments	3	—	(1)	—	—	—	—	2
Trading derivatives	730	116	(121)	(179)	—	(15)	(18)	513
Swaps	272	5	(33)	(35)	—	33	(18)	224
Exchange rate options	*22*	*14*	*(27)*	*3*	—	—	—	*12*
Interest rate options	*241*	*7*	*(39)*	*(27)*	—	—	—	*182*
Index and securities options	*94*	*18*	*(12)*	*(51)*	—	*(8)*	—	*41*
Other	*101*	*72*	*(10)*	*(69)*	—	*(40)*	—	*54*
Financial assets at fair value through profit or loss	**649**	**59**	**(120)**	**(11)**	**—**	**(163)**	**4**	**418**
Credit entities	163	—	—	—	—	(163)	—	—
Loans and advances to customers	19	—	(2)	—	—	—	1	18
Debt instruments	467	59	(118)	(11)	—	—	3	400
Non-trading financial assets mandatorily at fair value through profit or loss	**934**	**534**	**(251)**	**127**	**—**	**485**	**36**	**1,865**
Customers	295	122	(149)	—	—	(3)	3	268
Debt instruments	134	206	(28)	28	—	17	9	366
Equity instruments	505	206	(74)	99	—	471	24	1,231
Financial assets at fair value through other comprehensive income	**6,220**	**5,681**	**(6,588)**	**—**	**(228)**	**(241)**	**3**	**4,847**
Loans and advances	4,791	5,597	(6,298)	—	(37)	(173)	—	3,880
Debt instruments	206	75	(25)	—	(43)	(68)	1	146
Equity instruments	1,223	9	(265)	—	(148)	—	2	821
TOTAL ASSETS	**8,543**	**6,410**	**(7,083)**	**(65)**	**(228)**	**66**	**24**	**7,667**
Financial liabilities held for trading	**295**	**85**	**(42)**	**(138)**	**—**	**(21)**	**(19)**	**160**
Trading derivatives	295	85	(42)	(138)	—	(21)	(19)	160
Swaps	*81*	*4*	*(10)*	*(36)*	—	*3*	*2*	*44*
Exchange rate options	*1*	*2*	—	*4*	—	—	—	*7*
Interest rate options	*49*	*26*	*(19)*	*(8)*	—	—	*(22)*	*26*
Index and securities options	*97*	*23*	*(5)*	*(27)*	—	*(22)*	*1*	*67*
Securities and interest rate futures	*2*	—	*(2)*	—	—	—	—	—
Others	*65*	*30*	*(6)*	*(71)*	—	*(2)*	—	*16*
Financial liabilities designated at fair value through profit or loss	**610**	**143**	**—**	**—**	**—**	**(289)**	**5**	**469**
TOTAL LIABILITIES	**905**	**228**	**(42)**	**(138)**	**—**	**(310)**	**(14)**	**629**

EUR million	01/01/2020 Fair value calculated using internal models (level 3)	Changes Purchases /Issuances	Sales/ Settlements	Changes in fair value recognized in profit or loss	Changes in fair value recognized in equity	Level reclassifications	Other	31/12/2020 Fair value calculated using internal models (level 3)
Financial assets held for trading	**598**	**52**	**(98)**	**330**	**—**	**(45)**	**(97)**	**740**
Debt instruments	65	7	(27)	1	—	—	(39)	7
Equity instruments	—	3	—	—	—	—	—	3
Trading derivatives	*533*	*42*	*(71)*	*329*	—	*(45)*	*(58)*	*730*
Swaps	*182*	—	*(8)*	*116*	—	*(8)*	*(10)*	*272*
Exchange rate options	*8*	—	—	*15*	—	—	*(1)*	*22*
Interest rate options	*177*	*15*	*(12)*	*61*	—	—	—	*241*
Index and securities options	*95*	*25*	*(43)*	*85*	—	*(38)*	*(30)*	*94*
Other	*71*	*2*	*(8)*	*52*	—	*1*	*(17)*	*101*
Financial assets at fair value through profit or loss	**664**	**280**	**(45)**	**17**	**—**	**(91)**	**(176)**	**649**
Credit entities	50	164	—	(1)	—	(50)	—	163
Loans and advances to customers	32	—	(15)	3	—	—	(1)	19
Debt instruments	582	116	(30)	15	—	(41)	(175)	467
Non-trading financial assets mandatorily at fair value through profit or loss	**1,601**	**120**	**(292)**	**(36)**	**—**	**(119)**	**(340)**	**934**
Loans and advances to customers	376	104	(136)	12	—	(30)	(31)	295
Debt instruments	675	—	(144)	(63)	—	2	(336)	134
Equity instruments	550	16	(12)	15	—	(91)	27	505
Financial assets at fair value through other comprehensive income	**3,788**	**8,795**	**(7,616)**	**—**	**(390)**	**571**	**1,072**	**6,220**
TOTAL ASSETS	**6,651**	**9,247**	**(8,051)**	**311**	**(390)**	**316**	**459**	**8,543**
Financial liabilities held for trading	**290**	**40**	**(14)**	**130**	**—**	**(96)**	**(55)**	**295**
Trading derivatives	290	40	(14)	130	—	(96)	(55)	295
Swaps	*115*	*8*	—	*(7)*	—	*(26)*	*(9)*	*81*
Exchange rate options	*1*	—	—	*2*	—	—	*(2)*	*1*
Interest rate options	*34*	*11*	*(2)*	*6*	—	—	—	*49*
Index and securities options	*88*	*21*	*(8)*	*95*	—	*(70)*	*(29)*	*97*
Securities and interest rate futures	*2*	—	—	—	—	—	—	*2*
Others	*50*	—	*(4)*	*34*	—	—	*(15)*	*65*
Financial liabilities designated at fair value through profit or loss	**784**	**4**	**(3)**	**(12)**	**—**	**(32)**	**(131)**	**610**
TOTAL LIABILITIES	**1,074**	**44**	**(17)**	**118**	**—**	**(128)**	**(186)**	**905**

	01/01/2019	Changes						31/12/2019
EUR million	Fair value calculated using internal models (level 3)	Purchases/ Issuances	Sales/ Settlements	Changes in fair value recognised in profit or loss	Changes in fair value recognised in equity	Level reclassifications	Other	Fair value calculated using internal models (level 3)
Financial assets held for trading	**738**	**142**	**(80)**	**115**	**—**	**(317)**	**—**	**598**
Debt instruments and equity instruments	153	34	(38)	4	—	(88)	—	65
Trading derivatives	585	108	(42)	111	—	(229)	—	533
Swaps	*185*	*10*	*(14)*	*22*	—	*(20)*	*(1)*	*182*
Exchange rate options	*2*	—	—	*6*	—	—	—	*8*
Interest rate options	*149*	—	*(5)*	*33*	—	—	—	*177*
Index and securities options	*198*	*48*	*(18)*	*50*	—	*(182)*	*(1)*	*95*
Other	*51*	*50*	*(5)*	—	—	*(27)*	*2*	*71*
Hedging derivatives (Assets)	**21**	**—**	**—**	**—**	**—**	**(21)**	**—**	**—**
Swaps	21	—	—	—	—	(21)	—	—
Financial assets designated at fair value through profit or loss	876	55	(16)	65	—	(261)	(55)	664
Credit entities	201	—	—	—	—	(151)	—	50
Loans and advances to customers	560	20	(9)	(1)	—	(496)	(42)	32
Debt instruments	115	35	(7)	66	—	386	(13)	582
Non-trading financial assets mandatorily at fair value through profit or loss	1,403	426	(325)	81	—	—	16	1,601
Loans and advances to customers	460	126	(252)	21	—	—	21	376
Debt instruments	481	199	(7)	(10)	—	—	12	675
Equity instruments	462	101	(66)	70	—	—	(17)	550
Financial assets at fair value through other comprehensive income	**1,435**	**4,424**	**(1,698)**	**—**	**(190)**	**(252)**	**69**	**3,788**
TOTAL ASSETS	**4,473**	**5,047**	**(2,119)**	**261**	**(190)**	**(851)**	**30**	**6,651**
Financial liabilities held for trading	**289**	**136**	**(12)**	**45**	**—**	**(164)**	**(4)**	**290**
Trading derivatives	289	136	(12)	45	—	(164)	(4)	290
Swaps	*111*	*6*	*(5)*	*(17)*	—	*20*	—	*115*
Exchange rate options	*7*	*1*	—	—	—	*(7)*	—	*1*
Interest rate options	*26*	—	—	*8*	—	—	—	*34*
Index and securities options	*143*	*79*	*(7)*	*51*	—	*(177)*	*(1)*	*88*
Securities and interest rate futures	—	*3*	—	—	—	—	*(1)*	*2*
Other	*2*	*47*	—	*3*	—	—	*(2)*	*50*
Hedging derivatives (Liabilities)	**6**	**—**	**—**	**—**	**—**	**(6)**	**—**	**—**
Swaps	*6*	—	—	—	—	*(6)*	—	—
Financial liabilities designated at fair value through profit or loss	**147**	**298**	**(5)**	**31**	**—**	**313**	**—**	**784**
TOTAL LIABILITIES	**442**	**434**	**(17)**	**76**	**—**	**143**	**(4)**	**1,074**

iv. Recognition of fair value changes

As a general rule, changes in the carrying amount of financial assets and liabilities are recognised in the consolidated income statement. A distinction is made between the changes resulting from the accrual of interest and similar items, (which are recognised under Interest income or Interest expense, as appropriate), and those arising for other reasons, which are recognised at their net amount under 'Gains/losses on financial assets and liabilities'.

Adjustments due to changes in fair value arising from:

- 'Financial assets at fair value with changes in other comprehensive income' are recorded temporarily, in the case of debt instruments in 'Other comprehensive income - Elements that can be reclassified to profit or loss - Financial assets at fair value with changes in other comprehensive income', while in the case of equity instruments are recorded in 'other comprehensive income - Elements that will not be reclassified to line item - Changes in the fair value of equity instruments valued at fair value with changes in other comprehensive income'.

Exchange differences on debt instruments measured at fair value with changes in other comprehensive income are recognised under 'Exchange Differences, net' of the consolidated income statement. Exchange differences on equity instruments, in which the irrevocable option of being measured at fair value with changes in other comprehensive income has been chosen, are recognised in 'Other comprehensive income - Items that will not be reclassified to profit or loss - Changes in the fair value of equity instruments measured at fair value with changes in other comprehensive income'.

- Items charged or credited to 'Items that may be reclassified to profit or loss – Financial assets at fair value through other comprehensive income' and 'Other comprehensive income – Items that may be reclassified to profit or loss – Exchange differences in equity' remain in the Group's consolidated equity until the asset giving rise to them is impaired or derecognised, at which time they are recognised in the consolidated income statement.
- Unrealised gains on Financial assets classified as Non-current assets held for sale because they form part of a disposal group or a discontinued operation are recognised in 'Other comprehensive income under Items that may be reclassified to profit or loss – Non-current assets held for sale'.

v. Hedging transactions

The consolidated entities use financial derivatives for the following purposes: i) to facilitate these instruments to customers who request them in the management of their market and credit risks; ii) to use these derivatives in the management of the risks of the Group entities' own positions and assets and liabilities (hedging derivatives); and iii) to obtain gains from changes in the prices of these derivatives (derivatives).

Financial derivatives that do not qualify for hedge accounting are treated for accounting purposes as trading derivatives.

A derivative qualifies for hedge accounting if all the following conditions are met:

1. The derivative hedges one of the following three types of exposure:
   a. Changes in the fair value of assets and liabilities due to fluctuations, among others, in the interest rate and/or exchange rate to which the position or balance to be hedged is subject (fair value hedge).
   b. Changes in the estimated cash flows arising from financial assets and liabilities, commitments and highly probable forecast transactions (cash flow hedge).
   c. The net investment in a foreign operation (hedge of a net investment in a foreign operation).
2. It is effective in offsetting exposure inherent in the hedged item or position throughout the expected term of the hedge, which means that:
   a. At the date of arrangement the hedge is expected, under normal conditions, to be highly effective (prospective effectiveness).
   b. There is sufficient evidence that the hedge was actually effective during the whole life of the hedged item or position (retrospective effectiveness). To this end, the Group checks that the results of the hedge were within a range of 80% to 125% of the results of the hedged item.
3. There must be adequate documentation evidencing the specific designation of the financial derivative to hedge certain balances or transactions and how this hedge was expected to be achieved and measured, provided that this is consistent with the Group's management of own risks.

The changes in value of financial instruments qualifying for hedge accounting are recognised as follows:

a. In fair value hedges, the gains or losses arising on both the hedging instruments and the hedged items attributable to the type of risk being hedged are recognised directly in the consolidated income statement.

   In fair value hedges of interest rate risk on a portfolio of financial instruments, the gains or losses that arise on measuring the hedging instruments are recognised directly in the consolidated income statement, whereas the gains or losses due to changes in the fair value of the hedged amount (attributable to the hedged risk) are recognised in the consolidated income statement with a balancing entry under Changes in the fair value of hedged items in portfolio hedges of interest rate risk on the asset or liability side of the balance sheet, as appropriate.

b. In cash flow hedges, the effective portion of the change in value of the hedging instrument is recognised temporarily in Other comprehensive income – under Items that may be reclassified to profit or loss – Hedging derivatives – Cash flow hedges (effective portion) until the forecast transactions occur, when it is recognised in the consolidated income statement, unless, if the forecast transactions result in the recognition of non-financial assets or liabilities, it is included in the cost of the non-financial asset or liability.

c. In hedges of a net investment in a foreign operation, the gains or losses attributable to the portion of the hedging instruments qualifying as an effective hedge are recognised temporarily in Other comprehensive income under Items that may be reclassified to profit or loss – Hedges of net investments in foreign operations until the gains or losses – on the hedged item are recognised in profit or loss.

d. The ineffective portion of the gains or losses on the hedging instruments of cash flow hedges and hedges of a net investment in a foreign operation is recognised directly under 'Gains/losses on financial assets and liabilities (net)' in the consolidated income statement, in Gains or losses from hedge accounting, net.

If a derivative designated as a hedge no longer meets the requirements described above due to expiration, ineffectiveness or for any other reason, the derivative is classified for accounting purposes as a trading derivative.

When fair value hedge accounting is discontinued, the adjustments previously recognised on the hedged item are amortised to profit or loss at the effective interest rate recalculated at the date of hedge discontinuation. The adjustments must be fully amortised at maturity.

When cash flow hedge accounting is discontinued, any cumulative gain or loss on the hedging instrument recognised in equity under other comprehensive income 'Items that may be reclassified to profit or loss' (from the period when the hedge was effective) remains in this equity item until the forecast transaction occurs, at which time it is recognised in profit or loss, unless the transaction is no longer expected to occur, in which case the cumulative gain or loss is recognised immediately in profit or loss.

vi. Derivatives embedded in hybrid financial instruments

Derivatives embedded in other financial instruments or in other host contracts are accounted for separately as derivatives if their risks and characteristics are not closely related to those of the host contracts, provided that the host contracts are not classified as financial assets/ liabilities designated at fair value through profit or loss or as 'Financial assets/liabilities held for trading'.

e) Derecognition of financial assets and liabilities

The accounting treatment of transfers of financial assets depends on the extent to which the risks and rewards associated with the transferred assets are transferred to third parties:

1. If the Group transfers substantially all the risks and rewards to third parties unconditional -sale of financial assets, sale of financial assets under an agreement to repurchase them at their fair value at the date of repurchase, sale of financial assets with a purchased call option or written put option that is deeply out of the money, securitisation of assets in which the transferor does not retain a subordinated debt or grant any credit enhancement to the new holders, and other similar cases-, the transferred financial asset is derecognised and any rights or obligations retained or created in the transfer are recognised simultaneously.

2. If the Group retains substantially all the risks and rewards associated with the transferred financial asset -sale of financial assets under an agreement to repurchase them at a fixed price or at the sale price plus interest, a securities lending agreement in which the borrower undertakes to return the same or similar assets, and other similar cases-, the transferred financial asset is not derecognised and continues to be measured by the same criteria as those used before the transfer. However, the following items are recognised:

   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 under 'Financial liabilities designated at fair value through profit or loss'.

   b. The income from the transferred financial asset not derecognised and any expense incurred on the new financial liability, without offsetting.

3. If the Group neither transfers nor retains substantially all the risks and rewards associated with the transferred financial asset -sale of financial assets with a purchased call option or written put option that is not deeply in or out of the money, securitisation of assets in which the transferor retains a subordinated debt or other type of credit enhancement for a portion of the transferred asset, and other similar cases- the following distinction is made:

   a. If the transferor does not retain control of the transferred financial asset, the asset is derecognised and any rights or obligations retained or created in the transfer are recognised.

   b. If the transferor retains control of the transferred financial asset, it continues to recognise it for an amount equal to its exposure to changes in value and recognises a financial liability associated with the transferred financial asset. The net carrying 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 the rights to the cash flows they generate have expired or when substantially all the inherent risks and rewards have been transferred to third parties. Similarly, financial liabilities are only derecognised when the obligations they generate have been extinguished or when they are acquired with the intention either to cancel them or to resell them.

Regarding contractual modifications of financial assets, Grupo Santander has differentiated them into two main categories in relation to the conditions under which a modification leads to a derecognition or disposal of the financial asset (and the recognition of a new financial asset) and those under which the accounting of the original financial instrument with the modified terms is maintained:

- Contractual modifications for commercial or market reasons, which are generally carried out at the request of the debtor to apply current market conditions to the debt. The new contract is considered a new transaction and, consequently, it is necessary to derecognize the original financial asset and recognize a new financial asset subject to the classification and measurement requirements established by IFRS 9. Also, the new financial asset will be recorded at fair value and, if applicable, the difference between the carrying amount of the asset derecognized and the fair value of the new asset will be recognized in profit or loss.

- Modifications due to refinancing or restructuring, in which the payment conditions are modified to allow a customer that is experiencing financial difficulties (current or foreseeable) to meet its payment obligations and that, if such modification had not been made, it would be reasonably certain that it would not be able to meet such payment obligations. In this case, the modification does not result in the derecognition of the financial asset, but rather the original financial asset is maintained and does not require a new assessment of its classification and measurement. When assessing credit impairment, the current credit risk (considering the modified cash flows) should be compared with the credit risk at initial recognition. Finally, the gross carrying amount of the financial asset (the present value of the renegotiated or modified contractual cash flows that are discounted at the original effective interest rate of the financial asset) should be recalculated, with a gain or loss recognized in profit or loss for the difference.

f) Offsetting of financial instruments

Financial asset and liability balances are offset, i.e. reported in the consolidated balance sheet at their net amount, only if the Group entities currently have a legally enforceable right to set off the recognised amounts and intend either to settle on a net basis, or to realise the asset and settle the liability simultaneously.

Following is the detail of financial assets and liabilities that were offset in the consolidated balance sheets as of 31 December 2021, 2020 and 2019:

	31 December 2021 EUR million		
Assets	Gross amount of financial assets	Gross amount of financial assets offset in the balance sheet	Net amount of financial assets presented in the balance sheet
Derivatives	101,485	(42,432)	59,053
Reverse repurchase agreements	72,023	(13,917)	58,106
Total	**173,508**	**(56,349)**	**117,159**

	31 December 2021 EUR million		
Liabilities	Gross amount of financial liabilities	Gross amount of financial liabilities offset in the balance sheet	Net amount of financial liabilities presented in the balance sheet
Derivatives	101,461	(42,432)	59,029
Reverse repurchase agreements	73,424	(13,916)	59,508
Total	**174,885**	**(56,348)**	**118,537**

	31 December 2020 EUR million		
Assets	Gross amount of financial assets	Gross amount of financial assets offset in the balance sheet	Net amount of financial assets presented in the balance sheet
Derivatives	136,437	(60,975)	75,462
Reverse repurchase agreements	82,865	(16,078)	66,787
Total	**219,302**	**(77,053)**	**142,249**

	31 December 2020 EUR million		
Liabilities	Gross amount of financial liabilities	Gross amount of financial liabilities offset in the balance sheet	Net amount of financial liabilities presented in the balance sheet
Derivatives	132,313	(60,975)	71,338
Reverse repurchase agreements	77,925	(16,078)	61,847
Total	**210,238**	**(77,053)**	**133,185**

	31 December 2019 EUR million		
Assets	Gross amount of financial assets	Gross amount of financial assets offset in the balance sheet	Net amount of financial assets presented in the balance sheet
Derivatives	126,389	(55,776)	70,613
Reverse repurchase agreements	89,465	(5,168)	84,297
Total	**215,854**	**(60,944)**	**154,910**

	31 December 2019 EUR million		
Liabilities	Gross amount of financial liabilities	Gross amount of financial liabilities offset in the balance sheet	Net amount of financial liabilities presented in the balance sheet
Derivatives	124,840	(55,776)	69,064
Reverse repurchase agreements	81,087	(5,168)	75,919
Total	**205,927**	**(60,944)**	**144,983**

At 31 December 2021, Grupo Santander has offset other items amounting to EUR 1,188 million (EUR 1,194 million and EUR 1,366 million at 31 December 2020 and 2019, respectively).

At 31 December 2021 the balance sheet shows the amounts EUR 106,430 million (EUR 130,653 million and EUR 141,201 million at 31 December 2020 and 2019) on derivatives and repos as assets and EUR 104,130 million (EUR 122,416 million and EUR 134,694 million at 31 December 2020 and 2019) on derivatives and repos as liabilities that are subject to netting and collateral arrangements.

g) Impairment of financial assets

i. Definition

Grupo Santander associates an impairment in the value to financial assets measured at amortised cost, debt instruments measured at fair value with changes in other comprehensive income, lease receivables and commitments and guarantees granted that are not measured at fair value.

The impairment for expected credit losses is recorded with a charge to the consolidated income statement for the period in which the impairment arises. In the event of occurrence, the recoveries of previously recognised impairment losses are recorded in the consolidated income statement for the period in which the impairment no longer exists or is reduced.

In the case of purchased or originated credit-impaired assets, the Group only recognizes at the reporting date the changes in the expected credit losses during the life of the asset since the initial recognition as a credit loss. In the case of assets measured at fair value with changes in other comprehensive income, the changes in the fair value due to expected credit losses are charged in the consolidated income statement of the year where the change happened, reflecting the rest of the valuation in other comprehensive income.

As a rule, the expected credit loss is estimated as the difference between the contractual cash flows to be recovered and the expected cash flows discounted using the original effective interest rate. In the case of purchased or originated credit-impaired assets, this difference is discounted using the effective interest rate adjusted by credit rating.

Depending on the classification of financial instruments, which is mentioned in the following sections, the expected credit losses may be along 12 months or during the life of the financial instrument:

- 12-month expected credit losses: arising from the potential default events, as defined in the following sections that are estimated to be likely to occur within the 12 months following the reporting date. These losses will be associated with financial assets classified as 'normal risk' as defined in the following sections.
- Expected credit losses over the life of the financial instrument: arising from the potential default events that are estimated to be likely to occur throughout the life of the financial instruments. These losses are associated with financial assets classified as 'normal risk under watchlist' or 'doubtful risk'.

With the purpose of estimating the expected life of the financial instrument all the contractual terms have been taken into account (e.g. prepayments, duration, purchase options, etc.), being the contractual period (including extension options) the maximum period considered to measure the expected credit losses. In the case of financial instruments with an uncertain maturity period and a component of undrawn commitment (e.g.: credit cards), the expected life is estimated through quantitative analyses to determine the period during which the entity is exposed to credit risk, also considering the effectiveness of management procedures that mitigate such exposure (e.g. the ability to unilaterally cancel such financial instruments, etc.).

The following constitute effective guarantees:

a) Mortgage guarantees on housing as long as they are first duly constituted and registered in favour of the entity. The properties include:

   i. Buildings and building elements, distinguishing among:

      - Houses.
      - Offices, stores and multi-purpose premises.
      - Rest of buildings such as non-multi-purpose premises and hotels.

   ii. Urban and developable ordered land.

   iii. Rest of properties that classify as: buildings and building elements under construction, such as property development in progress and halted development, and the rest of land types, such as rustic lands.

b) Collateral guarantees on financial instruments in the form of cash deposits and debt securities issued by creditworthy issuers.

c) Other types of real guarantees, including properties received in guarantee and second and subsequent mortgages on properties, as long as the entity demonstrates its effectiveness. When assessing the effectiveness of the second and subsequent mortgages on properties the entity will implement particularly restrictive criteria. It will take into account, among others, whether the previous charges are in favour of the entity itself or not and the relationship between the risk guaranteed by them and the property value.

d) Personal guarantees, as well as the incorporation of new owners, covering the entire amount of the financial instruments and implying direct and joint liability to the entity of persons or other entities whose solvency is sufficiently proven to ensure the repayment of the loan on the agreed terms.

The different aspects that the Group considers for the evaluation of effective guarantees are set out below in relation to the individual analysis.

ii. Financial instruments presentation

For the purposes of estimating the impairment amount, and in accordance with its internal policies, the Group classifies its financial instruments (financial assets, commitments and guarantees) measured at amortised cost or fair value through other comprehensive income in one of the following categories:

- Normal Risk ('stage 1'): includes all instruments that do not meet the requirements to be classified in the rest of the categories.

- Normal risk under watchlist ('stage 2'): includes all instruments that, without meeting the criteria for classification as doubtful or default risk, have experienced significant increases in credit risk since initial recognition.

In order to determine whether a financial instrument has increased its credit risk since initial recognition and is to be classified in stage 2, the Group considers the following criteria:

Quantitative criteria	Changes in the risk of a default occurring through the expected life of the financial instrument are analysed and quantified with respect to its credit level in its initial recognition. With the purpose of determining if such changes are considered as significant, with the consequent classification into stage 2, each Group unit has defined the quantitative thresholds to consider in each of its portfolios taking into account corporate guidelines ensuring a consistent interpretation in all units. Within the quantitative thresholds, two types are considered: A relative threshold is those that compare current credit quality with credit quality at the time of origination in percentage terms of change. In addition, an absolute threshold compares both references in total terms, calculating the difference between the two. These absolute/relative concepts are used homogeneously (with different values) in all geographies. The use of one type of threshold or another (or both) is determined in accordance with the process described in note 53, below, and is marked by the type of portfolio and characteristics such as the starting point of the average credit quality of the portfolio.
Qualitative criteria	In addition to the quantitative criteria indicated, various indicators are used that are aligned with those used by the Group in the normal management of credit risk. Irregular positions of more than 30 days and renewals are common criteria in all Group units. In addition, each unit can define other qualitative indicators, for each of its portfolios, according to the particularities and normal management practices in line with the policies currently in force (i.e. use of management alerts, etc.). The use of these qualitative criteria is complemented with the use of an expert judgement, under the corresponding governance.

In the case of forbearances, instruments classified as 'normal risk under watchlist' may be generally reclassified to 'normal risk' in the following circumstances: at least two years have elapsed from the date of reclassification to that category or from its forbearance date, the client has paid the accrued principal and interest balance, and the client has no other instruments with more than 30 days past due balances.

- Doubtful Risk ('stage 3'): includes financial instruments, overdue or not, in which, without meeting the circumstances to classify them in the category of default risk, there are reasonable doubts about their total repayment (principal and interests) by the client in the terms contractually agreed. Likewise, off-balance-sheet exposures whose payment is probable and their recovery doubtful are considered in stage 3. Within this category, two situations are differentiated:

  – Doubtful risk for non-performing loans: financial instruments, irrespective of the client and guarantee, with balances more than 90 days past due for principal, interest or expenses contractually agreed.

    This category also includes all loan balances for a client which overdue amount more than 90 days past due is greater than 20% of the loan receivable balance.

These instruments may be reclassified to other categories if, as a result of the collection of part of the past due balances, the reasons for their classification in this category do not remain and the client does not have balances more than 90 days past due in other loans.

  – Doubtful risk for reasons other than non-performing loans: this category includes doubtful recovery financial instruments that are not more than 90 days past due.

Grupo Santander considers that a financial instrument to be doubtful for reasons other than delinquency when one or more combined events have occurred with a negative impact on the estimated future cash flows of the financial instrument. To this end, the following indicators, among others, are considered:

a) Negative net equity or decrease because of losses of the client's net equity by at least 50% during the last financial year.

b) Continued losses or significant decrease in revenue or, in general, in the client's recurring cash flows.

c) Generalised delay in payments or insufficient cash flows to service debts.

d) Significantly inadequate economic or financial structure or inability to obtain additional financing by the client.

e) Existence of an internal or external credit rating showing that the client is in default.

f) Existence of overdue customer commitments with a significant amount to public institutions or employees.

These financial instruments may be reclassified to other categories if, as a result of an individualised study, reasonable doubts do not remain about the total repayment under the contractually agreed terms and the client does not have balances with more than 90 days past due.

In the case of forbearances, instruments classified as doubtful risk may be reclassified to the category of 'normal risk under watchlist' when the following circumstances are present: a minimum period of one year has elapsed from the forbearance date, the client has paid the accrued principal and interest amounts, and the client has no other loan balance with more than 90 days past due.

- Default Risk: includes all financial assets, or part of them, for which, after an individualised analysis, their recovery is considered remote due to a notorious and irrecoverable deterioration of their solvency.

  In any event, except in the case of financial instruments with effective collateral covering a substantial portion of the transaction amount, the Group generally consider as remote the following:

- Those operations that, after an individualized analysis, are categorized as unsustainable debt, assuming an irrecoverability of such debt.

- Transactions classified as doubtful due to non-performing loans with recovery costs that exceed the amounts receivable.

- The operations on which the award is executed. The queue of these operations shall be included under default risk, as the recovery of the flows, provided that no further guarantees associated with the operation remain after the award of the property.

- Those operations on which a deduction is made, the portion of the operation corresponding to that deduction, will be given as a balance at the time of signature.

A financial asset amount is maintained in the balance sheet until they are considered as a "default risk", either all or a part of it, and the write-off is registered against the balance sheet.

In the case of operations that have only been partially derecognised, for forgiveness reasons or because part of the total balance is considered unrecoverable, the remaining amount shall be fully classified in the category of 'doubtful risk', except where duly justified.

The classification of a financial asset, or part of it, as a 'default risk' does not involve the disruption of negotiations and legal proceedings to recover the amount.

iii. Impairment valuation assessment

Grupo Santander has policies, methods and procedures in place to hedge its credit risk, both due to the insolvency attributable to counterparties and its residence in a specific country.

These policies, methods and procedures are applied in the concession, study and documentation of financial assets, commitments and guarantees, as well as in the identification of their impairment and in the calculation of the amounts needed to cover their credit risk.

The asset impairment model in IFRS 9 applies to financial assets measured at amortised cost, debt instruments at fair value with changes in other comprehensive income, lease receivables and commitments and guarantees granted that are not measured at fair value.

The impairment represents the best estimation of the financial assets expected credit losses at the balance sheet date, assessed both individually and collectively.

- Individually: for the purposes of estimating the provisions for credit risk arising from the insolvency of a financial instrument, the Group individually assesses impairment by estimating the expected credit losses on those financial instruments that are considered to be significant and with sufficient information to make such an estimate.

Therefore, this classification mostly includes wholesale banking customers —Corporations, specialised financing— as well as some of the largest companies —Chartered and real estate developers— from retail banking. The determination of the perimeter in which the individualised estimate is applied is detailed in a later section.

The individually assessed impairment estimate is equal to the difference between the gross carrying amount of the financial instrument and the estimated value of the expected cash flows receivable discounted using the original effective interest rate of the transaction. The estimate of these cash flows takes into account all available information on the financial asset and the effective guarantees associated with that asset. This estimation process is detailed below.

- Collectively: the Group also assesses impairment by estimating the expected credit losses collectively in cases where they are not assessed on an individual basis. This includes, for example, loans with individuals, sole proprietors or businesses in retail banking subject to a standardised risk management.

For the purposes of the collective assessment of expected credit losses, the Group has consistent and reliable internal models. For the development of these models, instruments with similar credit risk characteristics that are indicative of the debtors' capacity to pay are considered.

The credit risk characteristics used to group the instruments are, among others: type of instrument, debtor's sector of activity, geographical area of activity, type of guarantee, aging of past due balances and any other factor relevant to estimating the future cash flows.

Grupo Santander performs retrospective and monitoring tests to evaluate the reasonableness of the collective estimate.

On the other hand, the methodology required to estimate the expected credit loss due to credit events is based on an unbiased and weighted consideration by the probability of occurrence of a series of scenarios, considering a range of three to five possible future scenarios, depending on the characteristics of each unit, which could have an impact on the collection of contractual cash flows, always taking into account the time value of money, as well as all available and relevant information on past events, current conditions and forecasts of the evolution of macroeconomic scenarios that are shown to be relevant for the estimation of this amount (for example: GDP (Gross Domestic Product), housing price, unemployment rate, etc.).

The estimation of expected losses requires expert judgment and the support of historical, current and future information. The probability of loss is measured considering past events, the present situation and future trends of macroeconomic scenarios.

Grupo Santander uses forward-looking information in both internal risk management and prudential regulation processes, so that for the calculation of the impairment loss allowance, various scenarios are incorporated that take advantage of the experience with such information, thus ensuring consistency in obtaining the expected loss.

The challenge of the exercise has focused on the uncertainty of the economic outlook caused by the covid-19 crisis, coupled with a complex environment for value creation.

Grupo Santander has internally ensured the criteria to be followed for guarantees received from government bodies, both through credit lines and other public guarantees, so that when they are adequately reflected in each of the contracts, they are recognised as mitigating factors of the potential expected losses, and therefore of the provisions to be recognised, based on the provisions of the applicable standard (IFRS 9 Par. B5.5.55). Furthermore, where applicable, these guarantees are appropriately reflected in the mitigation of the significant increase in risk, considering their nature as personal guarantees.

For the estimation of the parameters used in the estimation of impairment provisions -EAD (exposure at default), PD (probability of default), LGD (loss given default)-, the Group based its experience in developing internal models for the estimation of parameters both in the regulatory area and for management purposes, adapting the development of the impairment provision models under IFRS 9.

- Exposure at default: is the amount of estimated risk incurred at the time of the counterparty's analysis.
- Probability of default: is the estimated probability that the counterparty will default on its principal and/or interest payment obligations.
- Loss given default: is the estimate of the severity of the loss incurred in the event of non-compliance. It depends mainly on the updating of the guarantees associated with the operation and the future cash flows that are expected to be recovered.

In any case, when estimating the flows expected to be recovered, portfolio sales are included. It should be noted that due to the Group's recovery policy and the experience observed in relation to the prices of past sales of assets classified as stage 3 and/or default risk, there is no substantial divergence between the flows obtained from recoveries after performing recovery management of the assets with those obtained from the sale of portfolios of assets discounting structural expenses and other costs incurred.

The definition of default implemented by the Group for the purpose of calculating the impairment provision models is based on the definition in Article 178 of Regulation 575/2013 of the European Union (CRR), which is fully aligned with the requirements of IFRS 9, which considers that a 'default' exists in relation to a specific customer/contract when at least one of the following circumstances exists: the entity considers that there are reasonable doubts about the payment of all its credit obligations or that the customer/contract is in an irregular situation for more than 90 days with respect to any significant credit obligation.

Grupo Santander will partially and voluntarily align during 2022 the accounting definition of Stage 3, as well as for the calculation of impairment provision models, to the New Definition of Default, incorporating the criteria defined by the EBA in its implementation guide of the definition of default, capturing the economic deterioration of the operations (days in default - on a daily basis - and materiality thresholds - minimum amount in arrears). The alignment of criteria will be done taking into account the criteria of IFRS 9 as well as the accounting principles of unbiased presentation of financial information. The expected increase in the default rate is estimated at around 24 basis points, with no material impact on the provision figures for credit risk.

In addition, the Group considers the risk generated in all cross-border transactions due to circumstances other than the usual commercial risk of insolvency (sovereign risk, transfer risk or risks arising from international financial activity, such as wars, natural catastrophes, balance of payments crisis, etc.).

IFRS 9 includes a series of practical solutions that can be implemented by entities, with the aim of facilitating its implementation. However, in order to achieve a complete and high-level implementation of the standard, and following the best practices of the industry, the Group does not apply these practical solutions in a generalised manner:

– Rebuttable presumption that the credit risk has increased significantly, when payments are more than 30 days past due: this threshold is used as an additional, but not primary, indicator of significant risk increase. Additionally, there may be cases in the Group where its use has been rebutted as a result of studies that show a low correlation of the significant risk increase with this past due threshold. The volume rebutted does not exceed 0.1% of the Group's total exposure.

– Assets with low credit risk at the reporting date: the Group assesses the existence of significant risk increase in all its financial instruments.

This information is provided in more detail in note 53 b.

iv. Detail of individual estimate of impairment

For the individual estimate of the assessment for impairment of the financial asset, the Group has a specific methodology to estimate the value of the cash flows expected to be collected:

- Recovery through the debtor's ordinary activities (going approach).
- Recovery through the execution and sale of the collateral guaranteeing the operations (gone approach).

Gone approach:

a. Evaluation of the effectiveness of guarantees

Grupo Santander assesses the effectiveness of all the guarantees associated considering the following:

- The time required to execute these guarantees.
- Grupo Santander's ability to enforce or assert these guarantees in its favour.
- The existence of limitations imposed by each local unit's regulation on the foreclosure of collateral.

Under no circumstances the Group considers that a guarantee is effective if its effectiveness depends substantially on the solvency of the debtor, as could be the case:

- Promises of shares or other securities of the debtor himself when their valuation may be significantly affected by a debtor's default.
- Personal cross-collateralisation: when the guarantor of a transaction is, at the same time, guaranteed by the holder of that transaction.

On the basis of the foregoing, the following types of guarantees are considered to be effective:

- Mortgage guarantees on properties, which are first charge, duly constituted and registered. Real estate includes:
  - Buildings and finished building elements.
  - Urban and developable land in order.
  - Other real estate, including buildings under construction, developments in progress or at a standstill, and other land, such as rural properties.
- Pledges on financial instruments such as cash deposits, debt securities of reputable issuers or equity instruments.
- Other types of security interests, including movable property received as security and second and subsequent mortgages on real state , provided that they are proven to be effective under particularly restrictive criteria.
- Personal guarantees, including new holders, covering the entire amount and involving direct and joint liability to the entity, from persons or entities whose equity solvency ensures repayment of the transaction under the agreed terms.

b. Valuation of guarantees

Grupo Santander assesses the guarantees on the basis of their nature in accordance with the following:

- Mortgage guarantees on properties associated with financial instruments, using a complete individual valuations carried out by independent valuation experts and under generally accepted valuation standards. If this is not possible, alternative valuations are used with duly documented and approved internal valuation models.
- Personal guarantees are valued individually on the basis of the guarantor´s updated information.
- The rest of the guarantees are valued based on current market values.

c. Adjustments to the value of guarantees and estimation of future cash flow inflows and outflows

Grupo Santander applies a series of adjustments to the value of the guarantees in order to improve the reference values:

- Adjustments based on the historical sales experience of local units for certain types of assets.
- Individual expert adjustments based on additional management information.

Likewise, to adjust the value of the guarantees, the time value of money is taken into account based on the historical experience of each of the units, estimating:

- Period of adjudication.
- Estimated time of sale of the asset.

In addition, the Group takes into account all those cash inflows and outflows linked to that guarantee until it is sold:

- Possible future income commitments in favour of the borrower which will available after the asset is awarded.
- Estimated foreclosure costs.
- Asset maintenance costs, taxes and community costs.
- Estimated marketing or sales costs.

Finally, since it is considered that the guarantee will be sold in the future, the Group applies an additional adjustment ('index forward') in order to adjust the value of the guarantees to future valuation expectations.

v. Impairment individual assessment scope

Grupo Santander determines the perimeter over which it makes an estimate of the assessment for impairment on an individual basis based on a relevance threshold set by each of the geographical areas and the stage in which the operations are located. In general, the Group applies the individualised calculation of expected losses to the significant exposures classified in stage 3, although Banco Santander, S.A. has also extended its analyses to some of the exposures classified in stage 2.

It should be noted that, in any case and irrespective of the stage in which their transactions are carried out, for customers who do not receive standardised treatment, a relational risk management model is applied, with individualised treatment and monitoring by the assigned risk analyst. In addition to wholesale customers (Santander Corporate & Investment Banking or SCIB) and large companies, this relational management model also includes other segments of smaller companies for which there is information and capacity for more personalised and expert analysis and monitoring. As indicated in the Group's wholesale credit model, the individual treatment of the client facilitates the continuous updating of information. The risk assumed must be followed and monitored throughout its life cycle, enabling anticipation and action to be taken in the event of possible impairments. In this way, the customer's credit quality is analysed individually, taking into account specific aspects such as his competitive position, financial performance, management, etc. In the wholesale risk management model, every customer with a credit risk position is assigned a rating, which has an associated probability of customer default. Thus, individual analysis of the debtor triggers a specific rating for each customer, which determines the appropriate parameters for calculating the expected loss, so that it is the rating itself that initially modulates the necessary coverage, adjusting the severity of the possible loss to the guarantees and other mitigating factors that the customer may have available. In addition, if as a result of this individualised monitoring of the customer, the analyst finally considers that his coverage is not sufficient, he has the necessary mechanisms to adjust it under his expert judgement, always under the appropriate governance.

h) Repurchase agreements and reverse repurchase agreements

Purchases (sales) of financial instruments under a non-optional resale (repurchase) agreement at a fixed price (repos) are recognised in the consolidated balance sheet as financing granted (received), based on the nature of the debtor (creditor), under 'Loans and advances with central banks', 'Loans and advances to credit institutions' or 'Loans and advances to customers' (Deposits from central banks, Deposits from credit institutions or Customer deposits).

Differences between the purchase and sale prices are recognised as interest over the contract term.

i) 'Non-current assets' and 'liabilities associated with non-current assets held for sale'

'Non-current assets held for sale' includes the carrying amount of individual items, disposal groups or items forming part of a business unit earmarked for disposal (discontinued operations), whose sale in their present condition is highly likely to be completed within one year from the reporting date. Therefore, the recovery of the carrying amount of these items -which can be of a financial nature or otherwise- will foreseeably be effected through the proceeds from their disposal.

Specifically, property or other non-current assets received by the consolidated entities as total or partial settlement of their debtors' payment obligations to them are deemed to be 'Non-current assets held for sale', unless the consolidated entities have decided to make continuing use of these assets. In this connection, for the purpose of its consideration in the initial recognition of these assets, the Group obtains, at the foreclosure date, the fair value of the related asset through a request for appraisal by external appraisal agencies.

Grupo Santander has in place a corporate policy that ensures the professional competence and the independence and objectivity of the external appraisal agencies, in accordance with the regulations, which require appraisal agencies to meet independence, neutrality and credibility requirements, so that the use of their estimates does not reduce the reliability of its valuations. This policy establishes that all the appraisal companies and agencies with which the Group works in Spain should be registered in the Official Register of the Bank of Spain and that the appraisals performed by them should follow the methodology established in Ministry of Economy Order ECO/805/2003, of 27 March. The main appraisal companies and agencies with which the Group worked in Spain in 2021 are as follows: Gloval Valuation, S.A.U., Tinsa Tasaciones Inmobiliarias, S.A.U., Gesvalt Sociedad de Tasacion, S.A. and Sociedad de tasacion, S.A.

Also, this policy establishes that the various subsidiaries abroad work with appraisal companies that have recent experience in the area and the type of asset under appraisal and meet the independence requirements established in the corporate policy. They should verify, inter alia, that the appraisal company is not a party related to the Group and that its billings to the Group in the last twelve months do not exceed 15% of the appraisal company's total billings.

'Liabilities associated with non-current assets held for sale' includes the balances payable arising from the assets held for sale or disposal groups and from discontinued operations.

'Non-current assets and disposal groups of items that have been classified as held for sale' are generally recognised at the date of their allocation to this category and are subsequently valued at the lower of their fair value less costs to sell or its book value. 'Non-current assets and disposal groups of items that are classified as held for sale' are not amortised as long as they remain in this category.

At 31 December 2021 the fair value less costs to sell of non-current assets held for sale exceeded their carrying amount by EUR 567 million (EUR 560 million at 31 December 2020); however, in accordance with the accounting standards, this unrealised gain could not be recognised.

The valuation of the portfolio of non-current assets held for sale has been made in compliance with the requirements of International Financial Reporting Standards in relation to the estimate of the fair value of tangible assets and the value-in-use of financial assets.

The value of the portfolio is determined as the sum of the values of the individual elements that compose the portfolio, without considering any total or batch grouping in order to correct the individual values.

Banco Santander, in compliance with Bank of Spain Circular 4/2017, and subsequent amendments, on public and private financial reporting standards and financial statement models, has developed a methodology that enables it to estimate the fair value and costs of sale of assets foreclosed or received in payment of debts. This methodology is based on the classification of the portfolio of foreclosed assets into different segments. Segmentation enables the intrinsic characteristics of Banco Santander's portfolio of foreclosed assets to be differentiated, so that assets with homogeneous characteristics are grouped by segment.

Thus, the portfolio is segmented into (i) finished assets of a residential and tertiary nature, (ii) developments in progress and (iii) land[1].

In determining the critical segments in the overall portfolio, assets are classified on the basis of the nature of the asset and its stage of development. This segmentation is made in order to seek the liquidation of the asset (which should be carried out in the shortest possible time).

When making decisions, the situation and/or characteristics of the asset are fundamentally taken into account, as well as the evaluation of all the determining factors that favour the recovery of the debt. For them, the following aspects are analyzed, among others:

- The time that has elapsed since the adjudication.
- The transferability and contingencies of the foreclosed asset.
- The economic viability from the real estate point of view with the necessary investment estimate.
- The expenses that may arise from the marketing process.
- The offers received, as well as the difficulties in finding buyers.

1.The assets in a situation of 'stopped development' are included under 'land'

In the case of real estate assets foreclosed in Spain, which represent 91% of the Group's total non-current assets held for sale, the valuation of the portfolio is carried out by applying the following models:

- Market Value Model used in the valuation of finished properties of a residential nature (mainly homes and car parks) and properties of a tertiary nature (offices, commercial premises and multipurpose buildings). For the valuation of finished assets whose availability for sale is immediate, a market sale value provided by a third party external to Banco Santander is considered, calculated under the AVM methodology by the comparable properties method adjusted by our experience in selling similar assets, given the term, price, volume, trend in the value of these assets and the time elapsing until their sale and discounting the estimated costs of sale.

The market value is determined on the basis of the definition established by the International Valuation Standards drawn up by the IVSC (International Valuation Standards Council), understood as the estimated amount for which an asset or a liability should be exchanged on the measurement date between a willing buyer and a willing seller, in an arm's length transaction, after appropriate marketing, and in which the parties have acted with sufficient information, prudently and without coercion.

The current market value of the properties is estimated on the basis of automated valuations obtained by taking comparable properties as a reference; simulating the procedure carried out by an appraiser in a physical valuation according to Order ECO 805/2003: selection of properties and obtaining the unit value by applying homogenisation adjustments. The selection of the properties is carried out by location within the same real estate cluster and according to the characteristics of the properties, filtering by type[2], surface area range and age. The model enables a distinction to be made within the municipality under study as to which areas are similar and comparable and therefore have a similar value in the property market, discriminating between which properties are good comparators and which are not.

Adjustments to homogenize the properties are made according to: (i) the age of the property according to the age of the property to be valued, (ii) the deviation of the built area from the common area with respect to the property to be valued and (iii) by age of the date of capture of the property according to the price evolution index of the real estate market.

In addition, for individually significant assets, complete individual valuations are carried out, including a visit to the asset, market analysis (data relating to supply, demand, current sale or rental price ranges and supply-demand and revaluation expectations) and an estimate of expected income and costs.

2. Assets qualified as protected housing are taken into account. The maximum legal value of these assets is determined by the VPO module, obtained from the result of multiplying the State Basic Module (MBE) by a zone coefficient determined by each autonomous community. To carry out the valuation of a protected property, the useful surface area is used in accordance with current regulations.

For this segmentation of assets, when they are completed, the real costs are known and the actual expenses for the marketing and sale of the asset must be taken into account. Therefore, Banco Santander uses the actual costs in its calculation engine or, failing that, those estimated on the basis of its observed experience.

- Market Value Model according to Evolution of Market Values used to update the valuation of developments in progress. The valuation model estimates the current market value of the properties based on complete individual valuations by third parties, calculated from the values of the feasibility studies and development costs of the promotion, as well as the selling costs, distinguishing by location, size and type of property. The inputs used in the valuation model for residential assets under construction are actual revenues and costs.

For this purpose, in order to calculate the investment flows, Banco Santander considers, on the basis of the feasibility studies, the expenditure required for construction, the professional fees relating to the project and to project management, the premiums for mandatory building insurance, the developer's administrative expenses, licenses, taxes on new construction and fees, and urban development charges.

With respect to the calculation of income flows, Banco Santander takes into account the square metres built, the number of homes under construction and the estimated selling price over 1.5 years.

The market value will be the result of the difference between the income flows and the investment flows estimated at each moment.

- Land Valuation model. The methodology followed by the Group regarding land valuation consists of updating the individual reference valuation of each of the land on an annual basis, through updated valuation valuations carried out by independent professionals and following the methodology established in the OM (Ministerial Order) ECO/805/2003, of 27 March, whose main verifications in the case of land valuation, regardless of the degree of urbanisation of the land, correspond to:
  - Visual verification of the assessed property.
  - Registry description.
  - Urban planning.
  - Visible easements.
  - Visible state of occupation, possession, use and exploitation.
  - Protection regime.
  - Apparent state of preservation.
  - Correspondence with cadastral property.
  - Existence of expropriation procedure, expropriation plan or project, administrative resolution or file that may lead to expropriation.
  - Expiry of the urbanization or building deadlines.
  - Existence of a procedure for failure to comply with obligations.
  - Verification of surfaces.

For the purposes of valuation, the land will be classified in the following levels:

- Level I: It will include all the lands that do not belong to level II.
- Level II: It shall include land classified as undeveloped where building is not allowed for uses other than agriculture, forestry, livestock or linked to an economic exploitation permitted by the regulations in force. Also included are lands classified as developable that are not included in a development area of urban planning or that, in such an area, the conditions for its development have not been defined.

In those cases where the Group does not have an updated reference value through an ECO valuation for the current year, we use as a reference value the latest available ECO valuation reduced or corrected by the average annual coverage ratio of the land on which we have obtained an updated reference value, through an ECO valuation.

Grupo Santander applies a discount to the aforementioned reference values that takes into account both the discount on the reference value in the sales process and the estimated costs of marketing or selling the land:

Discount on reference value = % discount on sales + % marketing costs being:

- % discount on Sales: = 100 - (sales price / updated appraisal value).
- marketing costs: calculated on the basis of our historical experience in sales and in accordance with the marketing management fees negotiated with our suppliers of this type of service.

In this way the Group obtains the corrected market value, an amount that we compare with the net cost of each piece of land to determine its correct valuation and conclude with our valuation process.

In addition, in relation to the previously mentioned valuations, less costs to sell, are contrasted with the sales experience of each type of asset in order to confirm that there is no significant difference between the sale price and the valuation.

Impairment losses on an asset or disposal group arising from a reduction in its carrying amount to its fair value (less costs to sell) are recognised under 'Gains or (losses) on non-current assets held for sale not classified as discontinued operations' in the consolidated income statement.

The gains on a non-current asset held for sale resulting from subsequent increases in fair value (less costs to sell) increase its carrying amount and are recognised in the consolidated income statement up to an amount equal to the impairment losses previously recognised.

j) Assets under insurance or reinsurance contracts and Liabilities under insurance or reinsurance contracts

Insurance contracts involve the transfer of a certain quantifiable risk in exchange for a periodic or one-off premium. The effects on the Group's cash flows will arise from a deviation in the payments forecast and/or an insufficiency in the premium set.

The Group controls its insurance risk as follows:

- By applying a strict methodology in the launch of products and in the assignment of value thereto.
- By using deterministic and stochastic actuarial models for measuring commitments.
- By using reinsurance as a risk mitigation technique as part of the credit quality guidelines in line with the Group's general risk policy.
- By establishing an operating framework for credit risks.
- By actively managing asset and liability matching.
- By applying security measures in processes.

Reinsurance assets includes the amounts that the consolidated entities are entitled to receive for reinsurance contracts with third parties and, specifically, the reinsurer's share of the technical provisions recorded by the consolidated insurance entities.

At least once a year these assets are reviewed to ascertain whether they are impaired (i.e. there is objective evidence, as a result of an event that occurred after initial recognition of the reinsurance asset, that Grupo Santander may not receive all amounts due to it under the terms of the contract and the amount that will not be received can be reliably measured), and any impairment loss is recognised in the consolidated income statement and the assets are written down.

'Liabilities under insurance contracts' includes the technical provisions recorded by the consolidated entities to cover claims arising from insurance contracts in force at year-end.

Insurers' results relating to their insurance business are recognised, according to their nature, under the related consolidated income statement items.

In accordance with standard accounting practice in the insurance industry, the consolidated insurance entities credit to the income statement the amounts of the premiums written and charge to income the cost of the claims incurred on final settlement thereof. Insurance entities are therefore required to accrue at period-end the unearned revenues credited to their income statements and the accrued costs not charged to income.

At least at each reporting date the Group assesses whether the insurance contract liabilities recognised in the consolidated balance sheet are adequate. For this purpose, it calculates the difference between the following amounts:

- Current estimates of future cash flows under the insurance contracts of the consolidated entities. These estimates include all contractual cash flows and any related cash flows, such as claims handling costs.
- The carrying amount recognised in the consolidated balance sheet of its insurance contract liabilities (see note 15), less any related deferred acquisition costs or related intangible assets, such as the amount paid to acquire, in the event of purchase by the entity, the economic rights held by a broker deriving from policies in the entity's portfolio.

If the calculation results in a positive amount, this deficiency is charged to the consolidated income statement. When unrealised gains or losses on assets of the Group's insurance companies affect the measurement of liabilities under insurance contracts and/or the related deferred acquisition costs and/or the related intangible assets, these gains or losses are recognised directly in equity. The corresponding adjustment in the liabilities under insurance contracts (or in the deferred acquisition costs or in intangible assets) is also recognised in equity.

The most significant items forming part of the technical provisions (see note 15) are detailed below:

- Non-life insurance provisions:

  i) Provision for unearned premiums: relates to the portion of the premiums received at year-end that is allocable to the period from the reporting date to the end of the policy cover period.

  ii) Provisions for unexpired risks: this supplements the provision for unearned premiums to the extent that the amount of the latter is not sufficient to reflect all the assessed risks and expenses to be covered by the insurance companies in the policy period not elapsed at the reporting date.

- Life insurance provisions: represent the value of the net obligations acquired vis-à-vis life insurance policyholders. These provisions include:

  i) Provision for unearned premiums and unexpired risks: this relates to the portion of the premiums received at year-end that is allocable to the period from the reporting date to the end of the policy cover period.

  ii) Mathematical provisions: these relate to the value of the insurance companies' obligations, net of the policyholders' obligations. These provisions are calculated on a policy-by-policy basis using an individual capitalisation system, taking as a basis for the calculation the premium accrued in the year, and in accordance with the technical bases of each type of insurance updated, where appropriate, by the local mortality tables.

- Provision for claims outstanding: this reflects the total obligations outstanding arising from claims incurred prior to the reporting date. This provision is calculated as the difference between the total estimated or certain cost of the claims not yet reported, settled or paid and all the amounts already paid in relation to such claims.
- Provision for bonuses and rebates: this provision includes the amount of the bonuses accruing to policyholders, insureds or beneficiaries and that of any premiums to be returned to policyholders or insureds, to the extent that such amounts have not been assigned at the reporting date. These amounts are calculated on the basis of the conditions of the related individual policies.
- Technical provisions for life insurance policies where the investment risk is borne by the policyholders: these provisions are calculated on the basis of the indices established as a reference to determine the economic value of the policyholders' rights.

k) Tangible assets

Tangible assets includes the amount of buildings, land, furniture, vehicles, computer hardware and other fixtures owned by the consolidated entities or acquired under finance leases. Tangible assets are classified by use as follows:

i. Property, plant and equipment for own use

Property, plant and equipment for own use – including tangible assets received by the consolidated entities in full or partial satisfaction of financial assets representing receivables from third parties which are intended to be held for continuing use and tangible assets acquired under finance leases– are presented at acquisition cost, less the related accumulated depreciation and any estimated impairment losses (carrying amount higher than recoverable amount).

Depreciation is calculated, using the straight-line method, on the basis of the acquisition cost of the assets less their residual value. The land on which the buildings and other structures stand has an indefinite life and, therefore, is not depreciated.

The period tangible asset depreciation charge is recognised in the consolidated income statement and is calculated using the following depreciation rates (based on the average years of estimated useful life of the various assets):

	Average annual rate
Buildings for own use	2.7%
Furniture	8.5%
Fixtures	8.5%
Office and IT equipment	23.8%
Lease use rights	Less than the lease term or the useful life of the underlying asset

At the end of each reporting period, consolidated entities assess whether there is any indication that the carrying amount of an asset exceeds its recoverable amount, in which case they write down the carrying amount of the asset to its recoverable amount and adjust future depreciation charges in proportion to its adjusted carrying amount and to its new remaining useful life, if the useful life needs to be re-estimated.

Similarly, if there is an indication of a recovery in the value of a tangible asset, the consolidated entities recognise the reversal of the impairment loss recognised in prior periods and adjust the future depreciation charges accordingly. In no circumstances may the reversal of an impairment loss on an asset raise its carrying amount above that which it would have if no impairment losses had been recognised in prior years.

The estimated useful lives of the items of property, plant and equipment for own use are reviewed at least at the end of the reporting period with a view to detecting significant changes therein. If changes are detected, the useful lives of the assets are adjusted by correcting the depreciation charge to be recognised in the consolidated income statement in future years on the basis of the new useful lives.

Upkeep and maintenance expenses relating to property, plant and equipment for own use are recognised as an expense in the period in which they are incurred, since they do not increase the useful lives of the assets.

ii. Investment property

'Investment property' reflects the net values of the land, buildings and other structures held either to earn rentals or for obtaining profits by sales due to future increase in market prices.

The criteria used to recognise the acquisition cost of investment property, to calculate its depreciation and its estimated useful life and to recognise any impairment losses thereon are consistent with those described in relation to property, plant and equipment for own use.

In order to evaluate the possible impairment Grupo Santander determines periodically the fair value of its investment property so that, at the end of the reporting period, the fair value reflects the market conditions of the investment property at that date. This fair value is determined annually, taking as benchmarks the valuations performed by independent experts. The methodology used to determine the fair value of investment property is selected based on the status of the asset in question; thus, for properties earmarked for lease, the valuations are performed using the sales comparison approach, whereas for leased properties the valuations are made primarily using the income capitalisation approach and, exceptionally, the sales comparison approach.

In the sales comparison approach, the property market segment for comparable properties is analysed, inter alia, and, based on specific information on actual transactions and firm offers, current prices are obtained for cash sales of those properties. The valuations performed using this approach are considered as level 2 valuations.

In the income capitalisation approach, the cash flows estimated to be obtained over the useful life of the property are discounted taking into account factors that may influence the amount and actual obtainment thereof, such as: (i) the payments that are normally received on comparable properties; (ii) current and probable future occupancy; (iii) the current or foreseeable default rate on payments. The valuations performed using this approach are considered as Level 3 valuations, since significant unobservable inputs are used, such as current and probable future occupancy and/or the current or foreseeable default rate on payments.

iii. Assets leased out under an operating lease

'Property, plant and equipment' - Leased out under an operating lease reflects the amount of the tangible assets, other than land and buildings, leased out by the Group under an operating lease.

The criteria used to recognise the acquisition cost of assets leased out under operating leases, to calculate their depreciation and their respective estimated useful lives and to recognise the impairment losses thereon are consistent with those described in relation to property, plant and equipment for own use.

l) Accounting for leases

On 1 January 2019, Grupo Santander changed the accounting policy for leases when acting as a lessee (see note 1.d).

The main aspects contained in the regulation (IFRS 16) adopted by the Group are included below:

When the Group acts as lessee, it recognises a right-of-use asset representing its right to use the underlying leased asset with a corresponding lease liability on the date on which the leased asset is available for use by the Group. Each lease payment is allocated between the liability and the finance charge. The finance charge is allocated to the income statement during the term of the lease in such a way as to produce a constant periodic interest rate on the remaining balance of the liability for each year. The right-of-use asset is depreciated over the useful life of the asset or the lease term, whichever is shorter, on a straight-line basis. If the Group is reasonably certain to exercise a purchase option, the right-of-use asset is amortized over the useful life of the underlying asset.

Assets and liabilities arising from a lease are initially measured at present value. Lease liabilities include the net present value of the following lease payments:

- Fixed payments (including inflation-linked payments), less any lease incentive receivable
- Variable lease payments that depend on an index or rate.
- The amounts expected to be paid by the lessee under residual value guarantees.
- The exercise price of a purchase option if the lessee is reasonably certain that it will exercise that option.
- Lease termination penalty payments, if the term of the lease reflects the lessee's exercise of that option.

Lease payments are discounted using the interest rate implicit in the lease. Given in certain situations this interest rate cannot be obtained, the discount rate used in this cases, is the lessee's incremental borrowing rate at the related date. For this purpose, the entity has calculated this incremental borrowing rate taking as reference the listed debt instruments issued by the Group; in this regard, the Group has estimated different interest rate curves depending on the currency and economic environment in which the contracts are located.

In order to construct the incremental borrowing rate, a methodology has been developed at the corporate level. This methodology is based on the need for each entity to consider its economic and financial situation, for which the following factors must be considered:

- Economic and political situation (country risk).
- Credit risk of the company.
- Monetary policy.
- Volume and seniority of the company's debt instrument issues.

The incremental borrowing rate is defined as the interest rate that a lessee would have to pay for borrowing, given a similar period to the duration of the lease and with similar security, the funds necessary to obtain an asset of similar value to the right-of-use asset in a similar economic environment. The Group entities have a wide stock and variety of financing instruments issued in different currencies to that of the euro (pound, dollar, etc.) that provide sufficient information to be able to determine an "all in rate" (reference rate plus adjustment for credit spread at different terms and in different currencies). In circumstances, where the leasing company has its own financing, this has been used as the starting point for determining the incremental borrowing rate. On the other hand, for those Grupo Santander entities that do not have their own financing, the information from the financing of the consolidated subgroup to which they belong was used as the starting point for estimating the entity's curve, analysing other factors to assess whether it is necessary to make any type of negative or positive adjustment to the initially estimated credit spread.

Right-of-use assets are valued at cost which includes the following:

- The amount of the initial measurement of the lease liability.
- Any lease payment made at or before the commencement date less any lease incentive received.
- Any initial direct costs.
- Restoration costs.

The Group recognises the payments associated with short-term leases and leases of low-value assets on a straight-line basis as an expense in the income statement. Short-term leases are leases with a lease term less than or equal to 12 months (a lease that contains a purchase option is not a short term lease).

m) Intangible assets

Intangible assets are identifiable non-monetary assets (separable from other assets) without physical substance which arise as a result of a legal transaction or which are developed internally by the consolidated entities.

Only assets whose cost can be estimated reliably and from which the consolidated entities consider it probable that future economic benefits will be generated are recognised.

Intangible assets are recognised initially at acquisition or production cost and are subsequently measured at cost less any accumulated amortisation and any accumulated impairment losses.

i. Goodwill

Any excess of the cost of the investments in the consolidated entities and entities accounted for using the equity method over the corresponding underlying carrying amounts acquired, adjusted at the date of first-time consolidation, is allocated as follows:

- If it is attributable to specific assets and liabilities of the companies acquired, by increasing the value of the assets (or reducing the value of the liabilities) whose fair values were higher (lower) than the carrying amounts at which they had been recognised in the acquired entities' balance sheets.
- If it is attributable to specific intangible assets, by recognising it explicitly in the consolidated balance sheet provided that the fair value of these assets within twelve months following the date of acquisition can be measured reliably.
- The remaining amount is recognised as goodwill, which is allocated to one or more cash-generating units (CGUs) (a cash-generating unit is the smallest identifiable group of assets that, as a result of continuing operation, generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets). The cash-generating units represent the Group's geographical and/or business segments.

Goodwill (only recognised when it has been acquired by consideration) represents, therefore, a payment made by the acquirer in anticipation of future economic benefits from assets of the acquired entity that are not capable of being individually identified and separately recognised.

At the end of each annual reporting period or whenever there is any indication of impairment goodwill is reviewed for impairment (i.e. a reduction in its recoverable amount to below its carrying amount) and, if there is any impairment, the goodwill is written down with a charge to 'Impairment or reversal of impairment on non-financial assets, net - Intangible assets' in the consolidated income statement.

An impairment loss recognised for goodwill is not reversed in a subsequent period.

In the event of sale or departure of an activity that is part of a CGU, the part of the goodwill that can be assigned to said activity would be written-off, taking as a reference the relative value of the same over the total of the CGU at the time of sale or abandonment. If applicable, the distribution by currency of the remaining goodwill will be performed based on the relative values of the remaining activities.

ii. Other intangible assets

Other intangible assets includes the amount of identifiable intangible assets, such as purchased customer lists and computer software.

Other intangible assets can have an indefinite useful life -when, based on an analysis of all the relevant factors, it is concluded that there is no foreseeable limit to the period over which the asset is expected to generate net cash inflows for the consolidated entities- or a finite useful life, in all other cases.

Intangible assets with indefinite useful lives are not amortised, but rather at the end of each reporting period or whenever there is any indication of impairment the consolidated entities review the remaining useful lives of the assets in order to determine whether they continue to be indefinite and, if this is not the case, to take the appropriate steps.

Intangible assets with finite useful lives are amortised over those useful lives using methods similar to those used to depreciate tangible assets.

The intangible asset amortisation charge is recognised under 'Depreciation and amortisation' in the consolidated income statement.

In both cases the consolidated entities recognise any impairment loss on the carrying amount of these assets with a charge to 'Impairment or reversal of impairment on non-financial assets, net - Intangible assets in the consolidated' income statement.

The criteria used to recognise the impairment losses on these assets and, where applicable, the reversal of impairment losses recognised in prior years are similar to those used for tangible assets (see note 2.k).

Internally developed computer software

Internally developed computer software is recognised as an intangible asset if, among other requisites (basically the Group's ability to use or sell it), it can be identified and its ability to generate future economic benefits can be demonstrated.

Expenditure on research activities is recognised as an expense in the year in which it is incurred and cannot be subsequently capitalised into the carrying amount of the intangible asset.

n) Other assets

'Other assets' in the consolidated balance sheet includes the amount of assets not recorded in other items, the breakdown being as follows:

- Inventories: this item includes the amount of assets, other than financial instruments, that are held for sale in the ordinary course of business, that are in the process of production, construction or development for such purpose, or that are to be consumed in the production process or in the provision of services. Inventories include land and other property held for sale in the property development business.

Inventories are measured at the lower of cost and net realisable value, which is the estimated selling price of the inventories in the ordinary course of business, less the estimated costs of completion and the estimated costs required to make the sale.

Any write-downs of inventories -such as those due to damage, obsolescence or reduction of selling price- to net realisable value and other impairment losses are recognised as expenses for the year in which the impairment or loss occurs. Subsequent reversals are recognised in the consolidated income statement for the year in which they occur.

The carrying amount of inventories is derecognised and recognised as an expense in the period in which the revenue from their sale is recognised.

- Other: this item includes the balance of all prepayments and accrued income (excluding accrued interest, fees and commissions), the net amount of the difference between pension plan obligations and the value of the plan assets with a balance in the entity's favour, when this net amount is to be reported in the consolidated balance sheet, and the amount of any other assets not included in other items.

o) Other liabilities

'Other liabilities' includes the balance of all accrued expenses and deferred income, excluding accrued interest, and the amount of any other liabilities not included in other categories.

p) Provisions and contingent assets and liabilities

When preparing the financial statements of the consolidated entities, Banco Santander's directors made a distinction between:

- Provisions: credit balances covering present obligations at the reporting date arising from past events which could give rise to a loss for the consolidated entities, which is considered to be likely to occur and certain as to its nature but uncertain as to its amount and/or timing.

- Contingent liabilities: possible obligations that arise from past events and whose existence will be confirmed only by the occurrence or non-occurrence of one or more future events not wholly within the control of the consolidated entities. They include the present obligations of the consolidated entities when it is not probable that an outflow of resources embodying economic benefits will be required to settle them. The Group does not recognise the contingent liability. The Group will disclose a contingent liability, unless the possibility of an outflow of resources embodying economic benefits is remote.

Santander UK plc is cooperating with an FCA civil regulatory investigation which commenced in July 2017 into its compliance with the Money Laundering Regulations 2007 and potential breaches of FCA principles and rules relating to anti-money laundering and financial crime systems and controls. The FCA's investigation focuses primarily on the period 2012 to 2017 and includes consideration of high risk customers including Money Service Businesses. It is not currently possible to make a reliable assessment of any liability resulting from the investigation including any financial penalty.

- Contingent assets: possible assets that arise from past events and whose existence is conditional on, and will be confirmed only by, the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the Group. Contingent assets are not recognised in the consolidated balance sheet or in the consolidated income statement, but rather are disclosed in the notes, provided that it is probable that these assets will give rise to an increase in resources embodying economic benefits.

Grupo Santander's consolidated financial statements include all the material provisions with respect to which it is considered that it is more likely than not the obligation will have to be settled. In accordance with accounting standards, contingent liabilities must not be recognised in the consolidated financial statements, but must rather be disclosed in the Notes.

Provisions (which are quantified on the basis of the best information available on the consequences of the event giving rise to them and are reviewed and adjusted at the end of each year) are used to cater for the specific obligations for which they were originally recognised. Provisions are fully or partially reversed when such obligations cease to exist or are reduced.

Provisions are classified according to the obligations covered as follows (see note 25):

- Provision for pensions and similar obligations: includes the amount of all the provisions made to cover post-employment benefits, including obligations to pre-retirees and similar obligations.

- Provisions for contingent liabilities and commitments: include the amount of the provisions made to cover contingent liabilities - defined as those transactions in which the Group guarantees the obligations of a third party, arising as a result of financial guarantees granted or contracts of another kind- and contingent commitments -defined as irrevocable commitments that may give rise to the recognition of financial assets.

- Provisions for taxes and other legal contingencies and Other provisions: include the amount of the provisions recognised to cover tax and legal contingencies and litigation and the other provisions recognised by the consolidated entities. Other provisions includes, inter alia, any provisions for restructuring costs and environmental measures.

q) Court proceedings and/or claims in process

At the end of 2021 certain court proceedings and claims were in process against the consolidated entities arising from the ordinary course of their operations (see note 25).

r) Own equity instruments

Own equity instruments are those meeting both of the following conditions:

- The instruments do not include any contractual obligation for the issuer (i) to deliver cash or another financial asset to a third party; or (ii) to exchange financial assets or financial liabilities with a third party under conditions that are potentially unfavourable to the issuer.

- The instruments will or may be settled in the issuer's own equity instruments and are: (i) a non-derivative that includes no contractual obligation for the issuer to deliver a variable number of its own equity instruments; or (ii) a derivative that will be settled by the issuer through the exchange of a fixed amount of cash or another financial asset for a fixed number of its own equity instruments.

Transactions involving own equity instruments, including their issuance and cancellation, are charged directly to equity.

Changes in the value of instruments classified as own equity instruments are not recognised in the consolidated financial statements. Consideration received or paid in exchange for such instruments, including the coupons on preference shares contingently convertible into ordinary shares and the coupons associated with CCPP, is directly added to or deducted from equity.

s) Equity-instrument-based employee remuneration

Own equity instruments delivered to employees in consideration for their services, if the instruments are delivered once the specific period of service has ended, are recognised as an expense for services (with the corresponding increase in equity) as the services are rendered by employees during the service period. At the grant date the services received (and the related increase in equity) are measured at the fair value of the equity instruments granted. If the equity instruments granted are vested immediately, Grupo Santander recognises in full, at the grant date, the expense for the services received.

When the requirements stipulated in the remuneration agreement include external market conditions (such as equity instruments reaching a certain quoted price), the amount ultimately to be recognised in equity will depend on the other conditions being met by the employees (normally length of service requirements), irrespective of whether the market conditions are satisfied. If the conditions of the agreement are met but the external market conditions are not satisfied, the amounts previously recognised in equity are not reversed, even if the employees do not exercise their right to receive the equity instruments.

t) Recognition of income and expenses

The most significant criteria used by Grupo Santander to recognise its income and expenses are summarised as follows:

i. Interest income, interest expenses and similar items

Interest income, interest expenses and similar items are generally recognised on an accrual basis using the effective interest method. Dividends received from other companies are recognised as income when the consolidated entities' right to receive them arises.

ii. Commissions, fees and similar items

Fee and commission income and expenses are recognised in the consolidated income statement using criteria that vary according to their nature. The main criteria are as follows:

- Fee and commission income and expenses relating to financial assets and financial liabilities measured at fair value through profit or loss are recognised when paid.

- Those arising from transactions or services that are performed over a period of time are recognised over the life of these transactions or services.

- Those relating to services provided in a single act are recognised when the single act is carried out.

iii. Non-finance income and expenses

They are recognised for accounting purposes when the good is delivered or the non-financial service is rendered. To determine the amount and timing of recognition, a five-step model is followed: identification of the contract with the customer, identification of the separate obligations of the contract, determination of the transaction price, distribution of the transaction price among the identified obligations and finally recording of income as the obligations are satisfied.

iv. Deferred collections and payments

These are recognised for accounting purposes at the amount resulting from discounting the expected cash flows at market rates.

v. Loan arrangement fees

Loan arrangement fees, mainly loan origination, application and information fees, are accrued and recognised in income over the term of the loan.

u) Financial guarantees

Financial guarantees are defined as contracts whereby an entity undertakes to make specific payments on behalf of a third party if the latter fails to do so, irrespective of the various legal forms they may have, such as guarantees, insurance policies or credit derivatives.

Grupo Santander initially recognises the financial guarantees provided on the liability side of the consolidated balance sheet at fair value, which is generally the present value of the fees, commissions and interest receivable from these contracts over the term thereof, and simultaneously the Group recognises the amount of the fees, commissions and similar interest received at the inception of the transactions and a credit on the asset side of the consolidated balance sheet for the present value of the fees, commissions and interest outstanding.

Financial guarantees, regardless of the guarantor, instrumentation or other circumstances, are reviewed periodically so as to determine the credit risk to which they are exposed and, if appropriate, to consider whether a provision is required. The credit risk is determined by application of criteria similar to those established for quantifying impairment losses on debt instruments carried at amortised cost (described in note 2.g above).

The provisions made for these transactions are recognised under 'Provisions - Provisions for commitments and guarantees given in the consolidated balance sheet' (see note 25). These provisions are recognised and reversed with a charge or credit, respectively, to 'Provisions or reversal of provisions', net, in the consolidated income statement.

If a specific provision is required for financial guarantees, the related unearned commissions recognised under 'Financial liabilities at amortised cost - Other financial liabilities in the consolidated balance sheet', are reclassified to the appropriate provision.

v) Assets under management and investment and pension funds managed by the Group

Assets owned by third parties and managed by the consolidated entities are not presented on the face of the consolidated balance sheet. Management fees are included in 'Fee and commission income' in the consolidated income statement.

The investment funds and pension funds managed by the consolidated entities are not presented on the face of the Group's consolidated balance sheet since the related assets are owned by third parties. The fees and commissions earned in the year for the services rendered by the Group entities to these funds (asset management and custody services) are recognised under Fee and 'Commission income' in the consolidated income statement.

Note 2.b.iv describes the internal criteria and procedures used to determine whether control exists over the structured entities, which include, inter alia, investment funds and pension funds.

w) Post-employment benefits

Under the collective agreements currently in force and other arrangements, the Spanish banks included in the Group and certain other Spanish and foreign consolidated entities have undertaken to supplement the public social security system benefits accruing to certain employees, and to their beneficiary right holders, for retirement, permanent disability or death, and the post-employment welfare benefits.

Grupo Santander's post-employment obligations to its employees are deemed to be defined contribution plans when the Group makes pre-determined contributions (recognised under Personnel expenses in the consolidated income statement) to a separate entity and will have no legal or effective obligation to make further contributions if the separate entity cannot pay the employee benefits relating to the service rendered in the current and prior periods. Post-employment obligations that do not meet the aforementioned conditions are classified as defined benefit plans (see note 25).

Defined contribution plans

The contributions made in this connection in each year are recognised under 'Personnel expenses' in the consolidated income statement.

The amounts not yet contributed at each year-end are recognised, at their present value, under 'Provisions - Provision for pensions' and similar obligations on the liability side of the consolidated balance sheet.

Defined benefit plans

Grupo Santander recognises under 'Provisions - Provision for pensions and similar obligations on the liability side of the consolidated balance sheet' (or under 'Other assets' on the asset side, as appropriate) the present value of its defined benefit post-employment obligations, net of the fair value of the plan assets.

Plan assets are defined as those that will be directly used to settle obligations and that meet the following conditions:

- They are not owned by the consolidated entities, but by a legally separate third party that is not a party related to the Group.

- They are only available to pay or fund post-employment benefits and they cannot be returned to the consolidated entities unless the assets remaining in the plan are sufficient to meet all the benefit obligations of the plan and of the entity to current and former

- employees, or they are returned to reimburse employee benefits already paid by Grupo Santander.

If Grupo Santander can look to an insurer to pay part or all of the expenditure required to settle a defined benefit obligation, and it is practically certain that said insurer will reimburse some or all of the expenditure required to settle that obligation, but the insurance policy does not qualify as a plan asset, the Group recognises its right to reimbursement -which, in all other respects, is treated as a plan asset- under 'Insurance contracts linked to pensions' on the asset side of the consolidated balance sheet.

Grupo Santander will recognise the following items in the income statement:

- Current service cost, (the increase in the present value of the obligations resulting from employee service in the current period), is recognised under 'Staff costs'.

- The past service cost, which arises from changes to existing post-employment benefits or from the introduction of new benefits and includes the cost of reductions, is recognised under 'Provisions or reversal of provisions'.

- Any gain or loss arising from a liquidation of the plan is included in the Provisions or reversion of provisions.

- Net interest on the net defined benefit liability (asset), i.e. the change during the period in the net defined benefit liability (asset) that arises from the passage of time, is recognised under 'Interest expense' and similar charges ('Interest and similar income' if it constitutes income) in the consolidated income statement.

  The remeasurement of the net defined benefit liability (asset) is recognised in 'Other comprehensive income' under Items not reclassified to profit or loss and includes:

- Actuarial gains and losses generated in the year, arising from the differences between the previous actuarial assumptions and what has actually occurred and from the effects of changes in actuarial assumptions.

- The return on plan assets, excluding amounts included in net interest on the net defined benefit liability (asset).

- Any change in the effect of the asset ceiling, excluding amounts included in net interest on the net defined benefit liability (asset).

x) Other long-term employee benefits

Other long-term employee benefits, defined as obligations to pre-retirees -taken to be those who have ceased to render services at the entity but who, without being legally retired, continue to have economic rights vis-à-vis the entity until they acquire the legal status of retiree-, long-service bonuses, obligations for death of spouse or disability before retirement that depend on the employee's length of service at the entity and other similar items, are treated for accounting purposes, where applicable, as established above for defined benefit post-employment plans, except that actuarial gains and losses are recognised under 'Provisions or reversal of provisions', net, in the consolidated income statement (see note 25).

y) Termination benefits

Termination benefits are recognised when there is a detailed formal plan identifying the basic changes to be made, provided that implementation of the plan has begun, its main features have been publicly announced or objective facts concerning its implementation have been disclosed.

z) Income tax

The expense for Spanish income tax and other similar taxes applicable to the foreign consolidated entities is recognised in the consolidated income statement, except when they arise from a transaction whose results are recognised directly in equity, in which case the related tax effect is recognised in equity.

The current income tax expense is calculated as the sum of the current tax resulting from application of the appropriate tax rate to the taxable profit for the year (net of any deductions allowable for tax purposes), and of the changes in deferred tax assets and liabilities recognised in the consolidated income statement.

'Deferred tax assets' and liabilities include temporary differences, which are identified as the amounts expected to be payable or recoverable on differences between the carrying amounts of assets and liabilities and their related tax bases, and tax loss and tax credit carryforwards. These amounts are measured at the tax rates that are expected to apply in the period when the asset is realised or the liability is settled.

'Tax assets' include the amount of all tax assets, which are broken down into current -amounts of tax to be recovered within the next twelve months- and deferred -amounts of tax to be recovered in future years, including those arising from tax loss or tax credit carryforwards.

'Tax liabilities' includes the amount of all tax liabilities (except provisions for taxes), which are broken down into current -the amount payable in respect of the income tax on the taxable profit for the year and other taxes in the next twelve months- and deferred - the amount of income tax payable in future years.

Deferred tax liabilities are recognised in respect of taxable temporary differences associated with investments in subsidiaries, associates or joint ventures, except when the Group is able to control the timing of the reversal of the temporary difference and, in addition, it is probable that the temporary difference will not reverse in the foreseeable future. In this regard, no deferred tax liabilities of EUR 317.4 million were recognised in relation to the taxation that would arise from the undistributed earnings of certain Group holding companies, in accordance with the legislation applicable in those jurisdictions.

Deferred tax assets are only recognised for temporary differences to the extent that it is considered probable that the consolidated entities will have sufficient future taxable profits against which the deferred tax assets can be utilised, and the deferred tax assets do not arise from the initial recognition (except in a business combination) of other assets and liabilities in a transaction that affects neither taxable profit nor accounting profit. Other deferred tax assets (tax loss and tax credit carryforwards) are only recognised if it is considered probable that the consolidated entities will have sufficient future taxable profits against which they can be utilised.

Differences generated by the different accounting and tax treatment of any of the income and expenses recorded directly in equity to be paid or recovered in the future are accounted for as temporary differences.

The deferred tax assets and liabilities are reassessed at the reporting date in order to ascertain whether any adjustments need to be made on the basis of the findings of the analyses performed.

aa) Residual maturity periods

The analysis of the maturities of the balances of certain items in the consolidated balance sheet.

ab) Consolidated statement of recognised income and expense

This statement presents the income and expenses generated by the Group as a result of its business activity in the year, and a distinction is made between the income and expenses recognised in the consolidated income statement for the year and the other income and expenses recognised directly in consolidated equity.

Accordingly, this statement presents:

a. Consolidated profit for the year.

b. The net amount of the income and expenses recognised in 'Other comprehensive income' under items that will not be reclassified to profit or loss.

c. The net amount of the income and expenses recognised in Other comprehensive income under items that may be reclassified subsequently to profit or loss.

d. The income tax incurred in respect of the items indicated in b and c above, except for the valuation adjustments arising from investments in associates or joint ventures accounted for using the equity method, which are presented net.

e. Total consolidated recognised income and expense, calculated as the sum of a) to d) above, presenting separately the amount attributable to the parent company and the amount relating to non-controlling interests.

The statement presents the items separately by nature, grouping together items that, in accordance with the applicable accounting standards, will not be reclassified subsequently to profit and loss since the requirements established by the corresponding accounting standards are met.

ac) Statement of changes in total equity

This statement presents all the changes in equity, including those arising from changes in accounting policies and from the correction of errors. Accordingly, this statement presents a reconciliation of the carrying amount at the beginning and end of the year of all the consolidated equity items, and the changes are grouped together on the basis of their nature into the following items:

a. Adjustments due to changes in accounting policies and to errors: include the changes in consolidated equity arising as a result of the retrospective restatement of the balances in the consolidated financial statements, distinguishing between those resulting from changes in accounting policies and those relating to the correction of errors.

b. Income and expense recognised in the year: includes, in aggregate form, the total of the aforementioned items recognised in the consolidated statement of recognised 'Income and expense'.

c. Other changes in equity: includes the remaining items recognised in equity, including, inter alia, increases and decreases in capital, distribution of profit, transactions involving own equity instruments, equity-instrument-based payments, transfers between equity items and any other increases or decreases in consolidated equity.

ad) Consolidated statement of cash flows

The following terms are used in the consolidated statements of cash flows with the meanings specified:

- Cash flows: inflows and outflows of cash and cash equivalents, which are short-term, highly liquid investments that are subject to an insignificant risk of changes in value, irrespective of the portfolio in which they are classified.

Grupo Santander classifies as cash and cash equivalents the balances recognised under 'Cash, cash balances at central banks' and 'Other deposits on demand' in the consolidated balance sheet.

- Operating activities: the principal revenue-producing activities of credit institutions and other activities that are not investing or financing activities.

- Investing activities: the acquisition and disposal of long-term assets and other investments not included in cash and cash equivalents.

- Financing activities: activities that result in changes in the size and composition of the equity and liabilities that are not operating activities.

During 2021 Grupo Santander received interest amounting to EUR 48,081 million (EUR 43,953 million and EUR 55,269 million in 2020 and 2019, respectively) and paid interest amounting to EUR 12,738 million (EUR 13,690 million and EUR 20,671 million in 2020 and 2019, respectively).

Also, dividends received and paid by the Group are detailed in notes 4, 28 and 40, including dividends paid to minority interests (non-controlling interests).

3. Grupo Santander

a) Banco Santander, S.A., and international Group structure

The growth of Grupo Santander in the last decades has led Banco Santander to also act, in practice, as a holding entity of the shares of the various companies in its Group, and its results are becoming progressively less representative of the performance and earnings of the Group. Therefore, each year the bank determines the amount of the dividends to be distributed to its shareholders on the basis of the consolidated net profit, while maintaining the Group's objectives of capitalisation and taking into account that the transactions of the Bank and of the rest of the Group are managed on a consolidated basis (notwithstanding the allocation to each company of the related net worth effect).

At the international level, the various banks and other subsidiaries, joint ventures and associates of the Group are integrated in a corporate structure comprising various holding companies which are the ultimate shareholders of the banks and subsidiaries abroad.

The purpose of this structure, all of which is controlled Banco Santander, is to optimise the international organisation from the strategic, economic, financial and tax standpoints, since it makes it possible to define the most appropriate units to be entrusted with acquiring, selling or holding stakes in other international entities, the most appropriate financing method for these transactions and the most appropriate means of remitting the profits obtained by the group's various operating units to Spain.

The Appendices provide relevant data on the consolidated group companies and on the companies accounted for using the equity method.

b) Acquisitions and disposals

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

i. Purchase by SHUSA for shares of Santander Consumer USA

In August 2021 Santander Holdings USA, Inc. ('SHUSA') and Santander Consumer USA Holdings Inc. ('SC') entered into a definitive agreement pursuant to which SHUSA acquired all outstanding shares of common stock of SC not already owned by SHUSA via an all-cash tender offer (the 'Tender Offer') for USD 41.50 per SC common share (the 'Offer Price'), followed by a second-step consisting of a merge (together with the Offer, the 'Transaction') in which a wholly owned subsidiary of SHUSA was merged with and into SC, with SC surviving as a wholly owned subsidiary of SHUSA, and all outstanding shares of common stock of SC not tendered in the Tender Offer were converted into the right to receive the Offer Price in cash. The Offer Price represented a 14% premium to the closing price of SC common stock of USD 36.43 as of 1 July 2021, the last day prior to the announcement of SHUSA's initial offer to acquire the remaining outstanding shares of SC's common stock.

On 31 January 2022, after completion of the customary closing conditions, the Transaction was performed and SHUSA increased its share up to the 100% of SC's common stock. The transaction has meant a disbursement of USD 2,510 million (around EUR 2,239 million) for the Group.

ii. Acquisition of Amherst Pierpont, a U.S. fixed-income broker dealer

On 15 July 2021, Santander Holdings USA, Inc. reached an agreement to acquire Amherst Pierpont Securities, a market-leading independent fixed-income and structured products broker dealer, through the acquisition of its parent holding company, Pierpont Capital Holdings LLC, for a total consideration of approximately USD 600 million (around EUR 530 million). Amherst Pierpont will become part of Santander Corporate & Investment Banking (Santander CIB) Global business line.

The transaction is expected to close upon receipt of relevant regulatory approvals.

iii Tender offer for shares of Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México

On 26 March 2021, Banco Santander, S.A. announced its intention to make a tender offer for all shares of Banco Santander Mexico, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México ('Santander México') that were not owned by Grupo Santander, representing (after the execution of the operation referred to in point vii. below) approximately 8.3% of the share capital of Santander México. The announcement was subsequently supplemented by other publications on 24 May, 8 June and 28 October 2021, in which amendments to some of the terms of the offer were announced.

The offer was finally launched on 3 November 2021 and was settled on 10 December. Banco Santander accepted all of the Santander Mexico Shares and Santander Mexico American Depositary Share (ADS) (securities listed on the New York Stock Exchange, each representing 5 shares of Santander Mexico) tendered and not withdrawn representing approximately 4.5% of the share capital of Santander México. After the transaction, Santander Group holds approximately 96.2% of Santander México share capital.

The shareholders who have tendered their shares in the offer have received MXN 26.5 (approximately EUR 1) per share of Santander México and USD 6.2486 in cash per each ADS (the USD equivalent of MXN 132.50 per ADS based on the USD/MXN exchange rate on the expiration date of 7 December 2021) which has meant a disbursement of approximately EUR 335 million.

This transaction has entailed a decrease of reserves of EUR 41 million and a decrease of EUR 294 million of minority interests.

iv. Agreement for the acquisition of a significant stake in Ebury

On 28 April 2020, the investment in Ebury, a payments and currencies platform for SMEs, announced on 4 November 2019, was completed. The transaction involved a total outlay of GBP 357 million (EUR 409 million) of which GBP 70 million (approximately EUR 80 million) was for new shares. At 2019 year-end the Group had already acquired 6.4% of the company for GBP 40 million (approximately EUR 45 million). Following the disbursement made in April 2020, the Group is entitled to receive 50.38% of the dividends distributed by the company. This interest is recognized under 'Investments in Joint Ventures and Associates - Associates' in the consolidated balance sheet.

v. Reorganization of the banking insurance business, asset management and pension plans in Spain

On 24 June 2019, Banco Santander, S.A., reached an agreement with the Allianz Group to terminate the agreement that Banco Popular Español, S.A.U. ('Banco Popular') held in Spain with the Allianz Group for the exclusive distribution of certain life insurance products, non-life insurance products, collective investment institutions (IIC), and pension plans through the Banco Popular network (the 'Agreement'). Under this Agreement, the Group held a 40% stake in the capital of Popular Spain Holding de Inversiones, S.L.U., classified as investments in joint ventures and associated entities for an overall amount of EUR 409 million on 31 December 2019.

The Agreement was executed on 15 January 2020 for the non-life business and on 31 January 2020 for the remaining businesses, once the regulatory authorisations were obtained in the first half of 2020. The execution of the Termination Agreement entailed the payment by Banco Santander of a total consideration of EUR 859 million (after deducting the dividends paid until the end of the operation) and the acquisition of the remaining 60% of the capital of Popular Spain Holding de Inversiones, S.L.U.

On 10 July, 51% of the life-risk insurance business held by Banco Santander and the 51% of the new General Insurance business from Banco Popular's network not transferred to Mapfre (in accordance with the agreement indicated below) was acquired by Aegon, valuing these businesses at a total of approximately EUR 557 million.

The total amount of the life-savings business, collective investment institutions and pension plans is EUR 711 million and has resulted in the recognition of EUR 271 million of goodwill.

In addition, under the agreement reached between Banco Santander and Mapfre on 21 January 2019, 50.01% of the car, commercial multi-risk, SME multi-risk and corporate liability insurance business in the whole network of Banco Santander in Spain was acquired by Mapfre on 25 June 2019 amounting to EUR 82 million.

vi. Agreement with Crédit Agricole S.A. on the depositary and custody business

On 17 April 2019, Banco Santander, S.A., announced that it had signed a memorandum of understanding with Crédit Agricole S.A. with the purpose of combining CACEIS and its subsidiaries (the 'CACEIS Group'), which is wholly-owned by Crédit Agricole S.A., with Santander Securities Services, S.A.U. and its subsidiaries (the 'S3 Group'), which is wholly-owned by Banco Santander, S.A.

The operation consisted of the contribution by the Santander Group to the CACEIS Group of 100% of the S3 Group in Spain and 50% of the S3 Group's business in Latin America in exchange for a 30.5% stake in the CACEIS Group Capital and voting rights. The remaining 69.5% remained the property of Crédit Agricole, SA. The S3 Group's Latin American business is under the joint control of the CACEIS Group and the Santander Group.

On 27 June 2019, the signing of the final contracts took place after having carried out the precise prior consultations with the representative bodies of Crédit Agricole, SA employees and the CACEIS Group. The closing of the operation took place on 20 December 2019 once the relevant regulatory authorizations were obtained.

The operation generated a net capital gain of EUR 693 million recorded for its gross amount under the heading of 'Non-classified assets as non-current assets for sale' of the consolidated profit and loss account, of which EUR 219 million correspond to the recognition at fair value of the investment of 49.99% retained by the Group in S3 Latin America. The 30.5% interest in the CACEIS Group was recorded under the heading of 'Investments - Associates' of the consolidated balance sheet for an amount of EUR 1,010 million.

vii . Offer to acquire shares of Banco Santander Mexico, S.A., Institución de Banca Multiple, Grupo Financiero Santander México.

On 12 April 2019, Banco Santander, S.A., announced its intention to make an offer to acquire all the shares of Banco Santander Mexico, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México ('Santander México') which are not owned by Grupo Santander, representing approximately 25% of the share capital of Santander México.

The shareholders who have accepted the offer have received 0.337 newly issued shares of Banco Santander, S.A., per share of Santander México and 1.685 American Depositary Shares (ADSs) of Banco Santander, S.A., per ADS of Santander México.

The offer was accepted by holders of shares representing 16.69% of the capital stock of Santander Mexico, so the Group's participation in Santander Mexico became 91.65% of its share capital. To meet the exchange, the Bank proceeded to issue, in execution of the agreement adopted by the extraordinary general meeting held on 23 July 2019, 381,540,640 shares, which represented approximately 2.35% of the Bank's share capital in the date of issue. This operation meant an increase of EUR 191 million in Capital, EUR 1,491 million in issue premium and a decrease of EUR 670 million in Reserves and EUR 1,012 million in minority interests.

c) Offshore entities

According to current Spanish regulation (Law 11/2021, of 9 July and Royal Decree 1080/1991, of 5 July), Santander has one subsidiary and three branches in the non-cooperative jurisdictions of Jersey, the Isle of Man and the Cayman Islands (offshore entities). Santander also has three other subsidiaries incorporated in non-cooperative jurisdictions that are tax resident in the UK and subject to British tax law.

i. Offshore subsidiaries

A subsidiary resident in the Isle of Man was liquidated in 2021 so, at the reporting date, Grupo Santander has only one subsidiary resident in Jersey: Abbey National International Limited. In 2021, this subsidiary's contribution to Santander's consolidated profit was insubstantial.

ii. Offshore branches

Grupo Santander also has three offshore branches. One is found in the Cayman Islands, one is on the Isle of Man and another is in Jersey. They report to, and consolidate balance sheets and income statements with, their foreign headquarters. They are taxed either with their headquarters (the Cayman Islands branch in Brazil) or in the territories they are located in (Jersey and Isle of Man, pertain to the UK).

The entities mentioned in Sections I and II had 147 employees as of December 2021.

iii. Subsidiaries in non-cooperative jurisdictions that are tax resident in the United Kingdom

Grupo Santander also has three subsidiaries (one in liquidation) that were incorporated in offshore jurisdictions but are not deemed offshore entities. They only operate from, and are tax resident in, the UK and, thus, are subject to British tax law.

iv. Other offshore holdings

From Brazil, Grupo Santander manages Santander Brazil Global Investment Fund SPC, a segregated portfolio company located in the Cayman Islands. It also has two small financial investments in entities located in the Cayman Islands. In 2021, Guaranteed Investment Products 1 PCC Limited, a protected cell company found in Guernsey managed from the UK, was liquidated.

Organization for Economic Cooperation and Development (OECD)

Grupo Santander is not in any of the non-cooperative jurisdictions the OECD released in November 2021. Furthermore, Jersey, the Isle of Man and the Cayman Islands satisfy OECD standards on transparency and exchange of information for tax purposes.

The European Union (EU)

As of October 2021, the EU's blacklist comprises 9 jurisdictions where Santander is not present. Additionally, the EU's grey list comprises 15 jurisdictions which have sufficiently committed to adapt legislation to international standards, subject to monitoring by the EU. Within these jurisdictions, Santander is only present in Uruguay and Hong Kong mainly through Banco Santander S.A. in Uruguay and a branch in Hong Kong.

The Group's presence in offshore territories at the end of 2021 is as follows:

Presence of the Group in non-cooperative jurisdictions	Spanish legislation		OECD		European Commission Blacklist	
	Sub.	Branch	Sub.	Branch	Sub.	Branch
Jersey	1	1				
Isle of Man		1				
Guernsey*						
Bermuda*						
Cayman Islands		1				
2021	**1**	**3**	—	—	—	—
2020	**2**	**3**	—	—	—	—

* Additionally, there are 2 entities constituted in Guernsey (1 in liquidation) and 1 in Bermuda, but resident for tax purposes in the United Kingdom.

Changes to Spain's tax law

On 10 July 2021, Law 11/2021 on measures to prevent and fight against tax fraud was published in the Official Estate Gazette. The law expands the meaning of tax havens, which it renames "non-cooperative jurisdictions". It also allows government to update the non-cooperative jurisdictions list. Nonetheless, until that list conforms to the new criteria, the former list set out in Royal Decree 1080/1991 of 5 July will remain in effect.

Grupo Santander has the right mechanisms (risk management, supervision, verification and review plans, and regular reporting) to prevent reputational, tax and legal risk in entities resident in non-cooperative jurisdictions. Grupo Santander also maintains its policy of reducing the number of these entities.

PwC (PricewaterhouseCoopers) member firms audited the financial statements of Grupo Santander's offshore entities in 2021, 2020 and 2019.

4. Distribution of Banco Santander's profit, shareholder remuneration scheme and earnings per share

a) Distribution of Banco Santander's profit and shareholder remuneration scheme

The distribution of the Bank's net profit against the results for 2021, that the board of directors will propose for approval by the shareholders at the annual general meeting is as follows:

EUR million	
To dividends	1,701
*Dividend paid prior to the meeting date**	836
*Complementary dividend***	865
To voluntary reserves***	2,231
Net profit for the year	**3,932**

* Total amount paid as interim dividend, at the rate of EUR 4.85 fixed cents per eligible share (recorded in 'Shareholders' equity - Interim dividends').

** Fixed dividend of EUR 5.15 gross cents per eligible share, payable in cash as from 2 May 2022. The total amount has been estimated on the assumption that, after the implementation of the second buy-back programme announced on 24 February 2022, the number of the Bank's outstanding shares eligible for the dividend will be 16,804,353,202.

*** Estimated amount corresponding to a final dividend of EUR 865 million. To be increased or reduced by the same amount by which the final dividend is lower or higher, respectively, than that amount.

The transcribed proposal comprises the part of the 2021 shareholder remuneration policy that is implemented through cash dividends (the interim dividend paid in November 2021 of EUR 4.85 cents per share with dividend entitlement and the final dividend expected to be paid as of 2 May 2022, subject to approval by the general meeting of shareholders, of EUR 5.15 cents per share with dividend entitlement).

In addition, the 2021 remuneration policy also provided for shareholder remuneration through the implementation of share buyback programs, which are not reflected in the above-transcribed proposal for the appropriation of earnings. The first of these programs, amounting to approximately EUR 841 million, was completed between October and November 2021. Subject to obtaining the appropriate regulatory approvals, a second repurchase program for approximately EUR 865 million is planned to be launched. Capital reduction resolutions are also submitted to the general shareholders' meeting to redeem the treasury shares acquired in each of the two repurchase programs, also subject to the relevant regulatory authorizations.

Finally, and although it is not part of the remuneration charged to the 2021 financial year, it should be noted that in May 2021 Banco Santander paid a dividend of EUR 2.75 cents in cash per share corresponding to the 2020 financial year against share premium, for an amount of EUR 477 million, this being the maximum amount allowed in accordance with the limit established by the recommendation of the European Central Bank of 15 December 2020. This payment was made in execution of the premium distribution resolution approved at the General Shareholders' Meeting of Banco Santander held on 27 October 2020.

b) Earnings/loss per share from continuing and discontinued operations

i. Basic earnings / loss per share

Basic earnings/loss per share are calculated by dividing the net profit attributable to the Group, adjusted by the after-tax amount of the remuneration of contingently convertible preference shares recognised in equity (see note 23) and the capital perpetual preference shares, if applicable, by the weighted average number of ordinary shares outstanding during that period, excluding the average number of own shares held through that period.

Accordingly:

	2021	2020	2019
Profit (Loss) attributable to the Parent (EUR million)	8,124	(8,771)	6,515
Remuneration of contingently convertible preference shares (CCP) (EUR million) (note 23)	(566)	(552)	(595)
	7,558	(9,323)	5,920
Of which:			
Profit (Loss) from discontinued operations (non controlling interest net) (EUR million)	—	—	—
Profit (Loss) from continuing operations (PPC net) (EUR million)	*7,558*	*(9,323)*	*5,920*
Weighted average number of shares outstanding	17,272,055,430	17,316,288,908	16,348,415,883
Impact factor correction*	Not applicable	Not applicable	710,800,691
Adjusted number of shares	17,272,055,430	17,316,288,908	17,059,216,574
Basic earnings (Loss) per share (euros)	**0.438**	**(0.538)**	**0.347**
Of which, from discounted operations (euros)	**—**	**—**	**—**
Basic earnings (Loss) per share from continuing operations (euros)	**0.438**	**(0.538)**	**0.347**

* Correction factor for the capital increase released on 3 December 2020 (see notes 1.d and 31.a).

ii. Diluted earnings / loss per share

Diluted earnings/loss per share are calculated by dividing the net profit attributable to the Group, adjusted by the after-tax amount of the remuneration of contingently convertible preference shares recognised in equity (see note 23) and the capital perpetual preference shares, if applicable, by the weighted average number of ordinary shares outstanding during the year, excluding the average number of treasury shares and adjusted for all the dilutive effects inherent to potential ordinary shares (share options, and convertible debt instruments).

Accordingly, diluted earnings/loss per share were determined as follows:

	2021	2020	2019
Profit (Loss) attributable to the Parent (EUR million)	8,124	(8,771)	6,515
Remuneration of contingently convertible preference shares (CCP) (EUR million) (Note 23)	(566)	(552)	(595)
Dilutive effect of changes in profit for the period arising from potential conversion of ordinary shares	—	—	—
	7,558	(9,323)	5,920
Of which:			
Profit (Loss) from discontinued operations (net of non-controlling interests) (EUR million)	—	—	—
Profit (Loss) from continuing operations (net of non-controlling interests and CCP) (EUR million)	*7,558*	*(9,323)*	*5,920*
Weighted average number of shares outstanding	17,272,055,430	17,316,288,908	16,348,415,883
Dilutive effect of options/ rights on shares	48,972,459	Not applicable	35,891,644
Impact factor correction*	Not applicable	Not applicable	712,361,197
Adjusted number of shares	17,321,027,889	17,316,288,908	17,096,668,724
Diluted earnings (Loss) per share (euros)	**0.436**	**(0.538)**	**0.346**
Of which, from discounted operations (euros)	**—**	**—**	**—**
Diluted earnings (Loss) per share from continuing operations (euros)	**0.436**	**(0.538)**	**0.346**

* Correction factor for the capital increase released on 3 December 2020 (see notes 1.d and 31.a).

5. Remuneration and other benefits paid to the Bank's directors and senior managers

The following section contains qualitative and quantitative disclosures on the remuneration paid to the members of the board of directors —both executive and non-executive directors— and senior managers for 2021 and 2020:

a) Remuneration of Directors

i. Bylaw-stipulated emoluments

The annual General Meeting held on 22 March 2013 approved an amendment to the Bylaws, whereby the remuneration of directors in their capacity as board members became an annual fixed amount determined by the annual General Meeting. This amount shall remain in effect unless the shareholders resolve to change it at a general meeting. However, the board of directors may elect to reduce the amount in any years in which it deems such action justified.

The remuneration established by the Annual General Meeting was EUR 6 million in 2021 (same amount as in 2020), with two components: (a) an annual emolument and (b) attendance fees.

In regard to 2020, as a gesture of responsibility in view of the situation created by the health emergency the board of directors agreed on 5 May 2020 to reduce their allotments by 20% for the balance of 2020, with effect from 1 April 2020, and propose that amounts saved thereby be used to finance the initiatives of the Bank to fight against the covid-19 pandemic.

The specific amount payable for the above-mentioned items to each of the directors is determined by the Board of Directors. For such purpose, it takes into consideration the positions held by each director on the Board, their membership of the Board and the board committees and their attendance to the meetings thereof, and any other objective circumstances considered by the Board.

The total bylaw-stipulated emoluments earned by the Directors in 2021 amounted to EUR 4.8 million (4.1 million in 2020).

Annual emolument

In 2021, the board voted not to change the fees amount set out in the 2020 policy ahead of the aforementioned exceptional decision and, per the remuneration policy approved at the 2021 AGM. Additionally, the innovation and technology committee also began to be remunerated, and its members received EUR 25,000 and its Chair, an additional EUR 70,000. The annual amounts received individually by the directors in 2021 and 2020 based on the positions held by them on the board and their membership of the board committees were as follows:

Amount per director in euros	2021	2020 1 Jan to 31 Mar	2020 1 Apr to 31 Dec
Members of the board of directors	90,000	22,500	49,500
Members of the executive committee	170,000	42,500	93,500
Members of the audit committee	40,000	10,000	22,000
Members of the appointments committee	25,000	6,250	13,750
Members of the remuneration committee	25,000	6,250	13,750
Members of the risk supervision, regulation and compliance committee	40,000	10,000	22,000
Members of the responsible banking, sustainability and culture committee	15,000	3,750	8,250
Members of the innovation and technology committee	25,000	—	—
Chairman of the audit committee	70,000	17,500	38,500
Chairman of the appointments committee	50,000	12,500	27,500
Chairman of the remuneration committee	50,000	12,500	27,500
Chairman of the risk supervision, regulation and compliance committee	70,000	17,500	38,500
Chairman of the responsible banking, sustainability and culture committee	50,000	12,500	27,500
Chairman of the innovation and technology committee	70,000	—	—
Lead director*	110,000	27,500	60,500
Non-executive vice chairmen	30,000	7,500	16,500

* Mr. Bruce Carnegie-Brown, in view of the positions held on the board and its committees, in particular as chairman of the appointments and remuneration committees and as coordinating director, and the time and dedication required to properly perform such positions, has been assigned a minimum total annual remuneration of EUR 700,000 since 2015, including the annual allowance for the items corresponding to him of those indicated above and attendance fees. However, in line with the decision taken by the board of directors to reduce his fees by 20% with effect from April 1, 2020 to 31 December, which is shared by Mr. Bruce Carnegie-Brown, the same reduction was applied to this amount. Accordingly, the amount assigned for 2020 was EUR 595,000.

Attendance fees

The directors receive fees for attending board and committee meetings, excluding executive committee meetings, since no attendance fees are received for this committee.

Like the annual allotment, the board voted not to change the fees amount set out in the 2020 policy ahead of the aforementioned exceptional decision and, per the remuneration policy approved at the 2021 AGM, added attendance fees for innovation and technology committee members (which they did not receive before).

The fees for 2021 and 2020 are as follows:

Attendance fees per director per meeting in euros	2021	2020 1 Jan to 31 Mar	2020 1 Apr to 31 Dec
Board of directors	2,600	2,600	2,080
Audit committee and risk supervision, regulation and compliance committee	1,700	1,700	1,360
Other committees (excluding executive committee)	1,500	1,500	1,200

ii. Salaries

The executive directors receive salaries. In accordance with the policy approved by the annual general meeting, salaries are composed of a fixed annual remuneration and a variable one, which consists in a unique incentive, which is a deferred variable remuneration plan linked to multi-year objectives, which establishes the following payment scheme:

- 40% of the variable remuneration amount, determined at year-end on the basis of the achievement of the established objectives, is paid immediately.
- The remaining 60% is deferred over five years, to be paid in five portions, provided that the conditions of permanence in the Group and non-concurrence of the malus clauses are met, and subject to long term metrics, taking into account the following accrual scheme:
  - The accrual of the first and second portion (payment in 2023 and 2024) will be conditional on none of the malus clauses being triggered.
  - The accrual of the third, fourth, and fifth portion (payment in 2025, 2026 and 2027), is linked to objectives related to the period 2021—2023 and the metrics and scales associated with these objectives. The fulfilment of the objectives determines the percentage to be paid of the deferred amount in these three annuities, which, accordingly, might not be paid, where the maximum amount is the amount determined at closing of 2021, when the total variable remuneration is approved.
- In accordance with current remuneration policies, the amounts already paid will be subject to a possible recovery (clawback) by the Bank during the period set out in the policy in force at each moment.

The immediate payment (or short-term), as well as each deferred payment (linked to long term metrics and not linked to long-term metrics) will be settled 50% in cash and the remaining 50% in Santander shares.

In the case of Sergio Rial, he has been considered as an executive director since his appointment as director became effective on 30 May 2020 by virtue of Article 529 *duodecies* of the Spanish Companies Act in light of his role as CEO and vice-chairman of Banco Santander Brasil, S.A. In 2021 he received as fixed pay for his role as Regional head for South America, the EUR 750,000 euros that had been approved at the 2021 AGM as part of the 2021 remuneration policy. He has not received any other remuneration for executive functions in Banco Santander, S.A.

The same policy and principles above apply to Sergio Rial's remuneration as CEO in Santander Brasil.

Comparative of Executive Remuneration (Chairman and CEO)

The board resolved to maintain the same gross annual salary for Ana Botín and José Antonio Álvarez for 2021 as in 2020. It also maintained the fixed pension contribution of 22% of gross annual salary it had declared in 2020 for 2021.

Comparing with the previous year, it should be mentioned that amid the covid-19 health crisis in 2020, Ana Botín and José Antonio Álvarez proposed to reduce their total 2020 compensation (salary and bonus) by 50%.

To achieve the 50% reduction compared to 2019, the board of directors decided to apply an additional adjustment to Ana Botín's and José Antonio Alvarez's variable compensation, reducing the variable compensation by 74% in the case of Ana Botín and 79% in the case of José Antonio Álvarez.

And in 2021, the good business performance (which enabled Banco Santander to reach a 12.73% underlying RoTE, above the end of 2019), the excellent execution of our strategy (with the highest underlying attributable profit of the last 12 years), and the efficient capital management, boosted the bonus pool and thus the variable remuneration of corporate centre employees, (including executive directors).

iii. Detail by director

The detail, by bank director, of the short-term (immediate) and deferred (not subject to long-term goals) remuneration for 2021 and 2020 is provided below:

EUR thousand

	2021								
	Bylaw-stipulated emoluments								
	Annual emolument								
	Board[M]	Executive committee	Audit committee	Appointments committee	Remuneration committee	Risk supervision, regulation and compliance oversight committee	Responsible banking, sustainability and culture committee	Innovation and technology committee	Attendance fees and commissions
Ana Botín	90	170	—	—	—	—	—	25	45
José Antonio Álvarez	90	170	—	—	—	—	—	25	45
Bruce Carnegie-Brown	276	170	—	75	75	—	—	25	80
Homaira Akbari	90	—	40	—	—	—	15	25	78
Javier Botín[A]	90	—	—	—	—	—	—	—	39
Álvaro Cardoso[B]	90	—	—	—	—	28	15	—	50
R.Martín Chávez[C]	90	—	—	25	25	40	—	95	99
Sol Daurella	90	—	—	25	25	—	15	—	84
Henrique de Castro[D]	90	—	40	—	25	—	—	25	87
Gina Díez[E]	90	—	—	1	—	—	—	—	39
Luis Isasi[F]	90	170	—	—	25	40	—	—	81
Ramiro Mato	90	170	40	—	—	40	65	—	94
Sergio Rial[G]	90	—	—	—	—	—	—	—	39
Belén Romana	90	170	40	—	—	93	15	25	100
Pamela Walkden[H]	90	—	110	—	—	27	—	—	76
Rodrigo Echenique[I]	—	—	—	—	—	—	—	—	—
Ignacio Benjumea[J]	—	—	—	—	—	—	—	—	—
Guillermo de la Dehesa[K]	—	—	—	—	—	—	—	—	—
Esther Giménez-Salinas[L]	—	—	—	—	—	—	—	—	—
Total 2021	**1,536**	**1,020**	**270**	**126**	**175**	**268**	**125**	**245**	**1,035**
Total 2020	**1,303**	**915**	**208**	**133**	**138**	**252**	**135**	**—**	**1,066**

A. All amounts received were reimbursed to Fundación Botín.
B. Director since 1 April 2018.
C. Director since 27 October 2020.
D. Director since 17 July 2019.
E. Director since 22 December 2020.
F. Director since 19 May 2020.
G. Executive director since 30 May 2020.
H. Director since 29 October 2019.
I. Stepped down as executive director on 30 April 2019. Non-executive director from 1 May 2019 to 22 December 2020.
J. Stepped down as director on 5 May 2020.
K. Stepped down as director on 3 April 2020.
L. Stepped down as director on 27 October 2020.
M Also includes emoluments for other roles in the board.

	2021									2020
	Short-term and deferred (not subject to long-term goals) salaries of executive directors									
		Variable - immediate payment		Deferred variable						
	Fixed	In cash	In shares	In cash	In shares	Total	Pension contribution	Other remuneration	Total	Total
Ana Botín	3,176	1,838	1,839	1,103	1,103	9,059	1,041	1,006	11,436	6,819
José Antonio Álvarez	2,541	1,241	1,240	744	745	6,511	783	1,536	9,160	6,019
Bruce Carnegie-Brown	—	—	—	—	—	—	—	—	700	595
Homaira Akbari	—	—	—	—	—	—	—	—	248	203
Javier Botín[A]	—	—	—	—	—	—	—	—	129	122
Álvaro Cardoso[B]	—	—	—	—	—	—	—	—	183	243
R.Martín Chávez[C]	—	—	—	—	—	—	—	—	374	37
Sol Daurella	—	—	—	—	—	—	—	—	239	214
Henrique de Castro[D]	—	—	—	—	—	—	—	—	267	217
Gina Díez[E]	—	—	—	—	—	—	—	—	130	4
Luis Isasi[F]	—	—	—	—	—	—	—	1,000	1,406	943
Ramiro Mato	—	—	—	—	—	—	—	—	499	431
Sergio Rial[G]	750	—	—	—	—	750	—	—	879	63
Belén Romana	—	—	—	—	—	—	—	—	533	418
Pamela Walkden[H]	—	—	—	—	—	—	—	—	303	214
Rodrigo Echenique[I]	—	—	—	—	—	—	—	—	—	1,956
Ignacio Benjumea[J]	—	—	—	—	—	—	—	—	—	276
Guillermo de la Dehesa[K]	—	—	—	—	—	—	—	—	—	107
Esther Giménez-Salinas[L]	—	—	—	—	—	—	—	—	—	192
Total 2021	**6,467**	**3,079**	**3,079**	**1,847**	**1,848**	**16,320**	**1,824**	**3,542**	**26,486**	**—**
Total 2020	**5,717**	**514**	**515**	**308**	**309**	**7,363**	**2,019**	**5,537**	**—**	**19,073**

Footnotes in previous table.

Following is the detail, by executive director, of the salaries linked to multi-year objectives at their fair value, which will only be received if the conditions of permanence in the group, non-applicability of malus clauses and achievement of the established objectives are met (or, as the case may be, of the minimum thresholds thereof, with the consequent reduction of amount agreed-upon at the end of the year) in the terms described in Note 46.

EUR thousand

	2021			2020
	Variable subject to Long-term objectives[1]			
	In cash	In shares	Total	Total
Ana Botín	1,158	1,158	2,316	420
José Antonio Álvarez	782	782	1,563	228
Total	**1,940**	**1,940**	**3,880**	**648**

1. Corresponds with the fair value of the maximum amount they are entitled to in a total of 3 years: 2025, 2026 and 2027, subject to conditions of continued service, with the exceptions provided, and to the non-applicability of malus clauses and achievement of the objectives established.

The fair value has been determined at the grant date based on the valuation report of an independent expert, Willis Towers Watson. Based on the design of the plan for 2021 and the levels of achievement of similar plans in comparable entities, the expert concludes that the reasonable range for estimating the initial achievement ratio is around 60% - 80%. Accordingly, it has been considered that the fair value is 70% of the maximum (see note 46).

Note 5.e below includes disclosures on the shares delivered from the deferred remuneration schemes in place in previous years and for which delivery conditions were met, as well as on the maximum number of shares that may be received in future years in connection with the aforementioned 2021 and 2020 variable remuneration plans.

In addition to the EUR 750,000 Sergio Rial received as Regional head for South America, he was paid the following amounts as CEO of Santander Brasil (additionally, in the following table, it is also disclosed the variable subject to long-term objectives at 70% of fair value):

2021	BRL thousand	EUR thousand
Base salary	12,645	1,985
Other fixed benefits	47	7
Pensions	7,350	1,153
Variable remuneration immediately payable and deferred (not linked to long-term objectives)	26,600	4,018
Total	**46,642**	**7,163**

EUR thousand

	2021			2020
	Variable subject to Long-term objectives			
	In cash	In shares	Total	Total
Sergio Rial	791	791	1,582	1,311

b) Remuneration of the Board members as representatives of the Bank

By resolution of the executive committee, all the remuneration received by the Bank's directors who represent the Bank on the Boards of Directors of listed companies in which the Bank has a stake, paid by those companies and relating to appointments made on or after 18 March, 2002, accrues to the Group. In 2021 and 2020 the Bank's directors did not receive any remuneration in respect of these representative duties.

On the other hand, in their personal capacity, in 2021 Álvaro Cardoso was paid BRL 2,130 thousand (EUR 334 thousand) as non-executive chairman of Banco Santander Brasil, S.A., Homaira Akbari was paid USD 190 thousand (EUR 161 thousand) as member of the board of Santander Consumer USA (SCUSA) and EUR 52 thousand as member of the Board of PagoNxt, and Henrique de Castro and R. Martín Chávez were each paid the same EUR 52 thousand as members of the board of PagoNxt. Likewise, Pamela Walkden was paid GBP 31 thousand (EUR 36 thousand) as member of Santander UK plc y Santander UK Group Holdings.

Likewise, Luis Isasi was paid EUR 1,000 thousand as non-executive chairman of the board of Santander Spain and for attending board and committee meetings (amounts paid by Banco Santander, S.A.).

c) Post-employment and other long-term benefits

In 2012, the contracts of Ms. Ana Botín and Mr. José Antonio Alvarez (and other members of the Bank's senior management) with defined benefit pension commitments were modified to transform these commitments into a defined contribution system, which covers the contingencies of retirement, disability and death. From that moment on, the Bank makes annual contributions to their pension system for their benefit.

This system gives them the right to receive benefits upon retirement, regardless of whether or not they are active at the Bank at such time, based on contributions to the system, and replaced their previous right to receive a pension supplement in the event of retirement.

Upon revision in 2021, José Antonio Álvarez's contract precluded the right to early retirement if terminated. Furthermore, Ana Botín is not entitled to early retirement if she freely resigns; however, she will still be entitled to it if Banco Santander terminates her contract before 31 August 2022, at which time early retirement will no longer be available. As long as she retains that right, she is entitled to an annual allotment equal to her total fixed remuneration, plus 30% of the average of up to her last three variable pays.

The initial balance for each of them in the new defined benefits system corresponded to the market value of the assets from which the provisions corresponding to the respective accrued obligations had materialised on the date on which the old pension commitments were transferred into the new benefits system.

Since 2013, the Bank has made annual contributions to the benefits system for executive directors and senior executives, in proportion to their respective pensionable bases, until they leave Grupo Santander or until their retirement within the Group, death, or disability.

The benefit plan system is outsourced to Santander Seguros y Reaseguros, Compañía Aseguradora, S.A., and the economic rights of the foregoing directors under this plan belong to them regardless of whether or not they are active at the Bank at the time of their retirement, death or disability.

In accordance with the provisions of the remuneration regulations, contributions made calculated on variable remuneration are subject to the discretionary pension benefits regime. Under this regime, contributions are subject to malus clauses and clawback according to the policy in force at any given time and during the same period in which the variable remuneration is deferred.

Furthermore, they must be invested in bank shares for a period of five years from the date when the executive director leaves the Group, regardless of whether or not they leave to retire. Once that period has elapsed, the amount invested in shares will be reinvested, along with the remainder of the cumulative balance corresponding to the executive director, or it will be paid to the executive director or to their beneficiaries in the event of a contingency covered by the benefits system.

As per the director´s remuneration policy approved at the 23 March 2018 general shareholder´s meeting, the system was changed with a focus on:

- Aligning the annual contributions with practices of comparable institutions.
- Reducing future liabilities by eliminating the supplementary benefits scheme in the event of death (death of spouse or parent) and permanent disability of serving directors.
- Not increasing total costs for the Bank.

The changes to the system were the following:

- Fixed and variable pension contributions were reduced to 22% of the respective pensionable bases. The gross annual salaries and the benchmark variable remuneration were increased in the corresponding amount with no increase in total costs for the Bank. The pensionable base for the purposes of the annual contributions for the executive directors is the sum of fixed remuneration plus 30% of the average of their last three variable remuneration amounts.
- The death and disability supplementary benefits were eliminated since 1 April 2018. A fixed remuneration supplement (included in other remuneration in section a.iii in this note) was implemented the same date.
- The total amount insured for life and accident insurance was increased.

The provisions recognised in 2021 and 2020 for retirement pensions and supplementary benefits (surviving spouse and child benefits, and permanent disability) were as follows:

EUR thousand

	2021	2020
Ana Botín	1,041	1,155
José Antonio Álvarez	783	864
Total	**1,825**	**2,019**

Following is a detail of the balances relating to each of the executive directors under the welfare system as of 31 December 2021 and 2020:

EUR thousand

	2021	2020
Ana Botín	48,075	49,444
José Antonio Álvarez	18,821	18,082
Total	**66,896**	**67,526**

d) Insurance

The Group pays for life insurance policies for the Bank's directors, who will be entitled to receive benefits if they are declared disabled; in the event of death, the benefits will be payable to their heirs. The premiums paid by the Group are included in the 'Other remuneration' column of the table shown in Note 5.a.iii above. Also, the following table provides information on the sums insured for the Bank's executive directors:

Insured capital

EUR thousand

	2021	2020
Ana Botín	21,489	21,984
José Antonio Álvarez	18,028	18,703
Total	**39,517**	**40,687**

The insured capital has been modified in 2018 for Ms Ana Botín and Mr José Antonio Alvarez as part of the pension systems transformation set out in note 5.c) above, which has encompassed the elimination of the supplementary benefits systems (death of spouse and death of parent) and the increase of the life insurance annuities.

During 2021 and 2020, the Group has disbursed a total amount of EUR 25.5 million and EUR 19.5 million , respectively, for the payment of civil-liability insurance premiums. These premiums correspond to several civil-liability insurance policies that hedge, among others, directors, senior executives and other managers and employees of the Group and the Bank itself, as well as its subsidiaries, in light of certain types of potential claims. For this reason, it is not possible to disaggregate or individualize the amount that correspond to the directors and executives.

As of 31 December 2021 and 2020, no life insurance commitments exist for the Group in respect of any other directors.

e) Deferred variable remuneration systems

The following information relates to the maximum number of shares to which the executive directors are entitled at the beginning and end of 2021 and 2020 due to their participation in the deferred variable remuneration systems, which instrumented a portion of their variable remuneration relating to 2021 and prior years, as well as on the deliveries, in shares or in cash, made to them in 2021 and 2020 once the conditions for the receipt thereof had been met (see Note 46):

i) Deferred conditional variable remuneration plan

From 2011 to 2015, the bonuses of executive directors and certain executives (including senior management) and employees who assume risk, who perform control functions or receive an overall remuneration that puts them on the same remuneration level as senior executives and employees who assume risk (all of whom are referred to as identified staff) have been approved by the Board of Directors and instrumented, respectively, through various cycles of the deferred conditional variable remuneration plan. Application of these cycles, insofar as they entail the delivery of shares to the plan beneficiaries, was authorized by the related Annual General Meetings.

The purpose of these plans was to defer a portion of the bonus of the plan beneficiaries (60% in the case of executive directors) over a period of five years (three years for the plans approved up to 2014) for it to be paid, where appropriate, in cash and in Santander shares. The remaining 40% portion of the bonus is paid in cash and Santander shares (in equal parts), upon commencement of this plan, in accordance with the rules set forth below.

In addition to the requirement that the beneficiary remains in Santander Group's employ, the accrual of the deferred remuneration was conditional upon none of the following circumstances existing in the opinion of the Board of Directors -following a proposal of the remuneration committee-, in relation to the corresponding year, in the period prior to each of the deliveries: (i) poor financial performance of the Group; (ii) breach by the beneficiary of internal regulations, including, in particular, those relating to risks; (iii) material restatement of the Group's consolidated financial statements, except when it is required pursuant to a change in accounting standards; or (iv) significant changes in the Group's economic capital or its risk profile. All the foregoing shall be subject in each case to the regulations of the relevant plan cycle.

Deferred amounts (whether or not contingent on multi-year targets) is earned if the beneficiary continues to work with the group14, and none of the circumstances triggering the malus clause arise before each payment, according to the section on malus and clawback clauses in the remuneration policy.

Similarly, Banco Santander can clawback any paid variable amounts in the scenarios and for the period dictated by the terms and conditions in the said policy.

On each delivery, the beneficiaries are paid an amount in cash equal to the dividends paid for the amount deferred in shares and the interest on the amount deferred in cash. If the Santander Dividendo Elección scrip dividend scheme is applied, payment will be based on the price offered by the Bank for the bonus share rights corresponding to those shares.

The maximum number of shares to be delivered is calculated taking into account the daily volume-weighted average prices for the 15 trading sessions prior to the date on which the board of directors approves the bonus for the Bank's Executive Directors for each year.

This plan and the Performance Shares (ILP) plan described below have been integrated for the executive directors and other senior managers in the deferred variable compensation plan linked to multiannual objectives, in the terms approved by the General Meeting of Shareholders held on March 18, 2016.

In the case of Sergio Rial, who does not receive any remuneration for executive duties in Banco Santander, S.A., the same policy principles, deferrals, multi year targets linked to the payment of deferred amounts and malus and clawback principles described herein apply to his variable remuneration in the subsidiary where he is the CEO.

ii) Deferred variable compensation plan linked to multiannual objectives

In the annual shareholders meeting of 18 March 2016, with the aim of simplifying the remuneration structure, improving the ex-ante risk adjustment and increasing the incidence of long-term objectives, the bonus plan (deferred and conditioned variable compensation plan) and ILP were replaced by one single plan, the deferred multiyear objectives variable remuneration plan.

The variable remuneration of executive directors and certain executives (including senior management) corresponding to 2021 has been approved by the Board of Directors and implemented through the sixth cycle of the deferred variable remuneration plan linked to multi-year objectives. The application of the plan was authorised by the annual general meeting of shareholders, as it entails the delivery of shares to the beneficiaries.

As indicated in section a.ii of this note, 60% of the variable remuneration amount is deferred over five years (three years for certain beneficiaries, not including executive directors), to be paid, where appropriate, in five portions, provided that the conditions of permanence in the group and non-concurrence of *malus* clauses are met, and subject to long term metrics, according to the following accrual scheme:

- The accrual of the first and second parts (instalments in 2023 and 2024) is conditional on none of the *malus* clauses being triggered.
- The accrual of the third, fourth and fifth parts (instalments in 2025, 2026 and 2027) is linked to the fulfilment of certain objectives related to the 2021-2023 period and the metrics and scales associated with those objectives, as well as to non-concurrence of *malus* clauses. These objectives are:
  - The growth of consolidated earnings per share in 2023 compared to 2020;
  - The relative performance of the Bank's total shareholder return (RTA) in the 2021-2023 period in relation to the weighted RTAs of a reference group of 9 credit institutions;
  - Compliance with the fully loaded ordinary level 1 capital objective for the year 2023.

The degree of compliance with the above objectives determines the percentage to be applied to the deferred amount in these three annuities, the maximum being the amount determined at the end of the year 2021 when the total variable remuneration is approved.

Both the immediate (short-term) and each of the deferred (long-term and conditioned) portions are paid 50% in cash and the remaining 50% in Santander shares.

The accrual of deferred amounts (whether or not subject to performance measures) is conditioned, in addition to the permanence of the beneficiary in the Group, to non-occurrence, during the period prior to each of the deliveries, of any the circumstances giving rise to the application of malus as set out in the Group's remuneration policy in its chapter related to malus and clawback. Likewise, the amounts already paid of the incentive will be subject to clawback by the Bank in the cases and during the term foreseen in said policy, and in accordance with the terms and conditions foreseen in it.

Malus and clawback clauses are triggered by poor financial performance of Banco Santander, a division or area, or exposures from staff as a result of an executive(s)'s management of, at least, one of these factors:

(i) Significant failures in risk management committed by the entity, or by a business unit or risk control.

(ii) The increase suffered by the entity or by a business unit of its capital needs, not foreseen at the time of generation of the exposures.

(iii) Regulatory sanctions or judicial sentences from events that could be attributable to the unit or the personnel responsible for those. Also, the breach of internal codes of conduct of the entity.

(iv) Irregular conduct, whether individual or collective. In this regard, the negative effects derived from the marketing of inappropriate products and the responsibilities of the people or bodies that made those decisions will be specially considered.

The maximum number of shares to be delivered is calculated by taking into account the average weighted daily volume of the average weighted listing prices corresponding to the fifteen trading sessions prior to the previous Friday (excluded) to the date on which the bonus is agreed by the board of executive directors of the Bank.

In the case of Mr. Sergio Rial, as explained above, he just received a fixed pay for executive duties in Banco Santander, S.A. (head for South America), and he is included as CEO of Santander Brasil in the deferred variable compensation plan linked to multiannual objectives and thus subject to the same conditions and principles of deferral, multiannual objectives, deferrals and malus and clawback herein in respect of the remuneration he receives in his role as CEO of this subsidiary.

iii) Shares assigned by deferred variable remuneration plans

The following table shows the number of Santander shares assigned to each executive director and pending delivery as of 1 January 2020, 31 December 2020 and 31 December 2021, as well as the gross shares that were delivered to them in 2020 and 2021, either in the form of an immediate payment or a deferred payment. In this case after having been appraised by the board, at the proposal of the remuneration committee, that the corresponding one-fifth of each plan had accrued. They come from each of the plans through which the variable remunerations of deferred conditional variable remuneration plans in 2015 and of the deferred conditional and linked to multi-year objectives in 2016, 2017, 2018, 2019, 2020 and 2021 were formalized.

Share-based variable remuneration

	Maximum number of shares to be delivered at January 1,2020	Shares delivered in 2020 (immediate payment 2019 variable remuneration)	Shares delivered in 2020 (deferred payment 2018 variable remuneration)	Shares delivered in 2020 (deferred payment 2017 variable remuneration)	Shares delivered in 2020 (deferred payment 2016 variable remuneration)	Variable remuneration 2020 (Maximum number of shares to be delivered)
2015 variable remuneration						
Ms Ana Botín-Sanz de Sautuola y O'Shea	128,809	—	—	—	—	—
Mr José Antonio Álvarez Álvarez	85,620	—	—	—	—	—
	214,429					
2016 variable remuneration						
Ms Ana Botín-Sanz de Sautuola y O'Shea	216,308	—	—	—	(72,102)	—
Mr José Antonio Álvarez Álvarez	145,998	—	—	—	(48,667)	—
	362,306				**(120,769)**	
2017 variable remuneration						
Ms Ana Botín-Sanz de Sautuola y O'Shea	275,700	—	—	(68,925)	—	—
Mr José Antonio Álvarez Álvarez	184,377	—	—	(46,094)	—	—
	460,077			**(115,019)**		
2018 variable remuneration						
Ms Ana Botín-Sanz de Sautuola y O'Shea	516,519	—	(103,304)	—	—	—
Mr José Antonio Álvarez Álvarez	345,161	—	(69,032)	—	—	—
	861,680		**(172,336)**			
2019 variable remuneration						
Ms Ana Botín-Sanz de Sautuola y O'Shea	887,193	(354,877)	—	—	—	—
Mr José Antonio Álvarez Álvarez	592,915	(237,166)	—	—	—	—
	1,480,108	**(592,043)**				
2020 variable remuneration						
Ms Ana Botín-Sanz de Sautuola y O'Shea	—	—	—	—	—	310,615
Mr José Antonio Álvarez Álvarez	—	—	—	—	—	168,715
Mr Sergio Rial[2]	—	—	—	—	—	355,263
						834,593
2021 variable remuneration[1]						
Ms Ana Botín-Sanz de Sautuola y O'Shea	—	—	—	—	—	—
Mr José Antonio Álvarez Álvarez	—	—	—	—	—	—
Mr Sergio Rial[2]	—	—	—	—	—	—

1. For each director, 40% of the shares indicated correspond to the short-term variable (or immediate payment). The remaining 60% is deferred for delivery, where appropriate, by fifths in the next five years, the last three being subject to the fulfilment of multiannual objectives.
2. Mr. Sergio Rial's share-based variable remuneration awarded in shares of Banco Santander (Brasil). He has the right to a maximum of 51,483 Santander shares and 269,148 options over Santander shares for his participation in the 2019 Digital Transformation Award.
   In addition, Mr. Rodrigo Echenique maintains the right to a maximum of 518,517 shares arising from his participation in the corresponding plans during his term as executive director.

Maximum number of shares to be delivered at December 31, 2020	Instruments matured but not consolidated at January 1, 2021	Shares delivered in 2021 (immediate payment 2020 variable remuneration)	Shares delivered in 2021 (deferred payment 2019 variable remuneration)	Shares delivered in 2021 (deferred payment 2018 variable remuneration)	Shares delivered in 2021 (deferred payment 2017 variable remuneration)	Shares delivered in 2021 (deferred payment 2016 variable remuneration)	Variable remuneration 2021 (Maximum number of shares to be delivered)	Maximum number of shares to be delivered at December 31, 2021
128,809	—	—	—	—	—	—	—	128,809
85,620	—	—	—	—	—	—	—	85,620
214,429								**214,429**
144,206	(34,177)	—	—	—	—	(72,102)	—	37,927
97,331	(23,067)	—	—	—	—	(48,667)	—	25,597
241,537	**(57,244)**					**(120,769)**		**63,524**
206,775	(112,692)	—	—	—	(68,925)	—	—	25,158
138,283	(75,364)	—	—	—	(46,094)	—	—	16,825
345,058	**(188,057)**				**(115,019)**			**41,983**
413,215		—	—	(103,304)	—	—	—	309,911
276,129		—	—	(69,032)	—	—	—	207,097
689,344				**(172,336)**				**517,008**
532,316	—	—	(106,463)	—	—	—	—	425,853
355,749	—	—	(71,150)	—	—	—	—	284,599
888,065			**(177,613)**					**710,452**
310,615	—	(124,246)	—	—	—	—	—	186,369
168,715	—	(67,486)	—	—	—	—	—	101,229
355,263	—	(142,105)	—	—	—	—	—	213,158
834,593		**(333,837)**						**500,756**
—	—	—	—	—	—	—	1,480,622	1,480,622
—	—	—	—	—	—	—	999,259	999,259
—	—	—	—	—	—	—	625,000	625,000
							3,104,881	**3,104,881**

In addition, the table below shows the cash delivered in 2021 and 2020, by way of either immediate payment or deferred payment, in the latter case once the Board had determined, at the proposal of the remuneration committee, that one-fifth relating to each plan had accrued:

EUR thousand

	2021		2020	
	Cash paid (immediate payment 2020 variable remuneration)	Cash paid (deferred payments from 2019, 2018, 2017 and 2016 variable remuneration)	Cash paid (immediate payment 2019 variable remuneration)	Cash paid (deferred payments from 2018, 2017, 2016 and 2015 variable remuneration)
Ms. Ana Botín-Sanz de Sautuola y O'Shea	334	1,550	1,302	1,383
Mr. José Antonio Álvarez Álvarez	181	1,037	870	925
Total	**515**	**2,586**	**2,172**	**2,308**

iv) Information on former members of the Board of Directors

The chart below includes information on the maximum number of shares to which former members of the Board of Directors who ceased in office prior to 1 January 2020 are entitled for their participation in the various deferred variable remuneration systems, which instrumented a portion of their variable remuneration relating to the years in which they were Executive Directors. Also set forth below is information on the deliveries, whether in shares or in cash, made in 2021 and 2020 to former board members, upon achievement of the conditions for the receipt thereof (see note 46):

MAXIMUM NUMBER OF SHARES TO BE DELIVERED

	2021	2020
Deferred conditional variable remuneration plan (2015)	—	60,847
Deferred conditional variable remuneration plan and linked to objectives (2016)	60,251	65,502
Deferred conditional variable remuneration plan and linked to objectives (2017)	64,659	47,956
Deferred conditional variable remuneration plan and linked to objectives (2018)	164,462	—
Deferred conditional variable remuneration plan and linked to objectives (2019)	130,790	—

NUMBER OF SHARES DELIVERED

	2021	2020
Deferred conditional variable remuneration plan (2015)	92,557	60,847
Performance shares plan ILP (2015)	—	—
Deferred conditional variable remuneration plan and linked to objectives (2016)	60,254	32,751
Deferred conditional variable remuneration plan and linked to objectives (2017)	32,330	35,132
Deferred conditional variable remuneration plan and linked to objectives (2018)	54,821	—
Deferred conditional variable remuneration plan and linked to objectives (2019)	32,698	—

In addition, EUR 1,213 thousand and EUR 612 thousand relating to the deferred portion payable in cash of the aforementioned plans were paid each in 2021 and 2020.

f) Loans

Grupo Santander's direct risk exposure to the bank's directors and the guarantees provided for them are detailed below. These transactions were made on terms equivalent to those that prevail in arm's-length transactions or the related compensation in kind was recognized:

EUR thousand

	2021			2020		
	Loans and credits	Guarantees	Total	Loans and credits	Guarantees	Total
Mrs Ana Botín-Sanz de Sautuola y O'Shea	25	—	25	14	—	14
Mr José Antonio Álvarez Álvarez	4	—	4	5	—	5
Mr Bruce Carnegie-Brown	—	—	—	—	—	—
Mr Javier Botín-Sanz de Sautuola y O'Shea	16	—	16	2	—	2
Mrs Sol Daurella Comadrán	69	—	69	22	—	22
Mrs Belén Romana García	—	—	—	—	—	—
Mr Ramiro Mato García-Ansorena	—	—	—	—	—	—
Mrs Homaira Akbari	—	—	—	—	—	—
Mr Álvaro Cardoso de Souza	—	—	—	—	—	—
Mr Henrique de Castro	—	—	—	—	—	—
Mrs Pamela Ann Walkden	—	—	—	—	—	—
Mr Luis Isasi Fernández de Bobadilla	—	—	—	—	—	—
Mr Sergio Agapito Lires Rial	1	—	1	—	—	—
Mr R. Martín Chávez Márquez	—	—	—	—	—	—
Mrs Gina Lorenza Díez Barroso	—	—	—	6	—	6
	115	**—**	**115**	**49**	**—**	**49**

g) Senior managers

The table below includes the amounts relating to the short-term remuneration of the members of senior management at 31 December 2021 and those at 31 December 2020, excluding the remuneration of the executive directors, which is detailed above:

EUR thousand

		Short-term salaries and deferred remuneration							
			Variable remuneration (bonus) - Immediate payment		Deferred variable remuneration				
Year	Number of persons	Fixed	In cash	In shares[2]	In cash	In shares[3]	Pensions	Other remuneration[1]	Total
2021	15	19,183	8,402	8,402	3,648	3,648	5,542	5,055	53,880
2020	18	21,642	5,739	5,740	2,470	2,471	6,039	6,312	50,413

1. Includes other remuneration items such as life and medical insurance premiums and localization aids.
2. The amount of immediate payment in shares for 2021 is 2,706,819 shares (2,135,700 Santander shares in 2020).
3. The deferred amount in shares not linked to long-term objectives for 2021 is 1,175,191 shares (919,308 Santander shares in 2020).

At the annual general meeting on 26 March 2021, shareholders approved the 2021 Digital Transformation Incentive, a variable remuneration scheme that delivers Santander shares and share options if the group hits major milestones on its digital roadmap.

In 2021, no senior executives are included in this programme. However, in 2020, three senior executives were included within this plan (aimed at a group of up to 250 employees whose functions are deemed essential to Santander Group's growth and digital transformation) and, thus, can receive a total of EUR 1,700 thousand to be paid in thirds on the third, fourth and fifth anniversary of the authorisation date (2024, 2025 and 2026). This amount was implemented in 316,574 Santander shares and 944,445 options over Santander shares, using for these purposes the fair value of the options at the moment of their grant (EUR 0.90).

See note 46 to the 2021 Group's consolidated financial statements for further information on the Digital Transformation Incentive.

In 2021, the ratio of variable to fixed pay components was 125% of the total for senior managers, well within the maximum limit of 200% set by 2021 AGM.

Also, the detail of the breakdown of the remuneration linked to long-term objectives of the members of senior management at 31 December 2021 and 31 December 2020 is provided below. These remuneration payments shall be received, as the case may be, in the corresponding deferral periods, upon achievement of the conditions stipulated for each payment (see note 46):

EUR thousand

		Variable remuneration subject to long-term objectives[1]		
Year	Number of people	Cash payment	Share payment	Total
2021	15	3,830	3,830	7,660
2020	18	2,594	2,594	5,188

1. Relates to the fair value of the maximum annual amounts for years 2025, 2026 and 2027 of the sixth cycle of the deferred conditional variable remuneration plan (2024, 2025 and 2026 for the fifth cycle of the deferred variable compensation plan linked to annual objectives for the year 2020).

Senior executive vice presidents who retired in 2021 and, therefore, were not members of senior management at year-end, received in 2021 salaries and other remuneration amounting to EUR 5,294 thousand (EUR 5,984 thousand in 2020). Likewise, these same individuals have generated as senior managers the right to obtain variable remuneration linked to long-term objectives for a total amount of EUR 55 thousand (this right has been generated in 2020 for a total amount of EUR 133 thousand).

The maximum number of Santander shares that the members of senior management at each plan grant date (excluding executive directors) were entitled to receive as of 31 December 2021 and 31 December 2020 relating to the deferred portion under the various plans then in force is the following (see note 46):

Maximum number of shares to be delivered

	2021	2020
Deferred conditional variable remuneration plan (2015)	—	179,617
Deferred conditional variable remuneration plan (2017)	—	2,786
Deferred conditional variable remuneration plan (2018)	3,475	6,949
Deferred conditional variable remuneration plan and linked to objectives (2016)	150,445	417,818
Deferred conditional variable remuneration plan and linked to objectives (2017)	164,428	791,360
Deferred conditional variable remuneration plan and linked to objectives (2018)	803,056	1,512,992
Deferred conditional variable remuneration plan and linked to objectives (2019)	1,274,450	2,154,312
Deferred conditional variable remuneration plan and linked to objectives (2020)	1,829,720	—

Since the conditions established in the corresponding deferred share-based remuneration schemes for prior years had been met, the following number of Santander shares was delivered in 2021 and 2020 to the senior management, in addition to the payment of the related cash amounts:

Number of shares delivered

	2021	2020
Deferred conditional variable remuneration plan (2015)	146,930	179,614
Deferred conditional variable remuneration plan (2017)	2,786	2,786
Deferred conditional variable remuneration plan (2018)	3,474	3,474
Deferred conditional variable remuneration plan and linked to objectives (2016)	131,938	170,185
Deferred conditional variable remuneration plan and linked to objectives (2017)	79,104	219,363
Deferred conditional variable remuneration plan and linked to objectives (2018)	267,686	342,884
Deferred conditional variable remuneration plan and linked to objectives (2019)	321,006	—
Deferred conditional variable remuneration plan and linked to objectives (2020)	1,742,419	—

As indicated in note 5.c above, senior management participate in the benefit system created in 2012, which covers the contingencies of retirement, disability and death. Banco Santander makes annual contributions to the benefit plans of its senior managers. In 2012, the contracts of the senior managers with benefit pension commitments were amended to transform them into a contribution system. The system, which is outsourced to Santander Seguros y Reaseguros, Compañía Aseguradora, S.A., gives senior managers the right to receive benefits upon retirement, regardless of whether or not they are active at Banco Santander at such time, based on contributions to the system. This new system replaced their previous right to receive a pension supplement in the event of retirement. In the event of pre-retirement, and up to the retirement date, senior managers appointed prior to September 2015 are entitled to receive an annual allowance.

In addition, further to applicable remuneration regulations, from 2016 (inclusive), a discretionary pension benefit component of at least 15% of total remuneration in contributions to the pension system has been included. Under the regime corresponding to these discretionary benefits, the contributions that are calculated on variable remunerations are subject to malus and clawback clauses, subject to policies applicable at each time, and during the same period in which the variable remuneration is deferred.

Likewise, the annual contributions calculated on variable remunerations must be invested in Bank shares for a period of five years from the date that the senior manager leaves the Group, regardless of whether or not they leave to retire. Once that period has elapsed, the amount invested in shares will be reinvested, along with the remainder of the cumulative balance corresponding to the senior manager, or it will be paid to the senior manager or to their beneficiaries in the event of a contingency covered by the benefits system.

The contracts of some senior executives were modified at the beginning of 2018 with the same objective and changes indicated in section c of this note for Ms Ana Botín and Mr José Antonio Álvarez. The modifications, which are aimed at aligning the annual contributions with the practices of comparable institutions and reducing the risk of future obligations by eliminating the supplementary scheme for death (widowhood and orphanhood) and permanent disability in service without increasing the costs to the bank, are as follows:

- Contributions to the pensionable bases were reduced. Gross annual salaries were increased in the corresponding amount.
- The death and disability supplementary benefits were eliminated since January 1, 2018. A fixed remuneration supplement reflected in other remuneration in the table above was implemented on the same date.
- The amounts insured for life and accident insurance were increased.

All of the above was done without an increase in total cost for the Bank.

The balance as of 31 December 2021 in the pension system for those who were part of senior management during the year amounted to EUR 64.3 million (EUR 59.4 million at 31 December 2020).

The net charge to income corresponding to pension and supplementary benefits for widows, orphans and permanent invalidity amounted to EUR 5.5 million in 2021 (EUR 6.4 million in 31 December 2020).

In 2021 and 2020 there have been no payments in the form of a single payment of the annual voluntary pre-retirement allowance.

Additionally, the capital insured by life and accident insurance at 31 December 2020 of this group amounts to EUR 100 million (EUR 135.1 million at 31 December 2020).

h) Post-employment benefits to former Directors and former senior executive vice presidents

The post-employment benefits and settlements paid in 2021 to former directors of the Bank, other than those detailed in note 5.c amounted to EUR 5.6 million and EUR 11.2 million in 2020, respectively. Also, the post-employment benefits and settlements paid in 2021 to former executive vice presidents amounted to EUR 51.6 million and EUR 10.26 million in 2020, respectively.

Contributions to insurance policies that hedge pensions and complementary widowhood, orphanhood and permanent disability benefits to previous members of the Bank's board of directors, amounted to EUR 0.17 million in 2021 (EUR 0.17 million in 2020). Likewise, contributions to insurance policies that hedge pensions and complementary widowhood, orphanhood and permanent disability benefits for previous senior managers amounted to EUR 4.4 million in 2021 (EUR 5.8 million in 2020).

During the 2021 financial year, no release or charge was recorded in the consolidated income statement for pension commitments and similar obligations held by the Group with previous former members of the bank's board of directors (in 2020, five million releases were recorded), and no provisions/releases has been recorded in respect of former senior managers in 2021 and 2020.

In addition, 'Provisions - Pension Fund and similar obligations' in the consolidated balance sheet as at 31 December 2021 included EUR 50 million in respect of the post-employment benefit obligations to former Directors of the Bank (EUR 52 million at 31 December 2020) and EUR 114 million corresponding to former senior managers (EUR 159 million at 31 December 2020).

i) Pre-retirement and retirement

The board of directors approved an amendment to the contracts of the executive directors whereby:

- Ms Ana Botín ceases to have the right to pre-retire if she leaves the Bank out of her own volition, keeping this right in case of termination by the Bank until 1 September 2022. After this date, she does not have the right to pre-retire. While she keeps this right she will be entitled to an annual allotment equal to the sum of her fixed remuneration and 30% of the average amount of her last variable remuneration, to a maximum of three. This allotment is subject to the *malus* and clawback provisions in place for a period of five years.
- Mr. José Antonio Álvarez ceases to have the right to pre-retire in case of termination of his contract.

j) Contract termination

The executive directors and senior managers have indefinite-term employment contracts. Executive directors or senior managers whose contracts are terminated voluntarily or due to breach of duties are not entitled to receive any economic compensation. If Banco Santander terminates the contract for any other reason, they will be entitled to the corresponding legally-stipulated termination benefit, without prejudice to any compensation that may for non-competition obligations, as detailed in the directors' remuneration policy.

If Banco Santander were to terminate her contract, Ms. Ana Botín-Sanz de Sautuola y O'Shea would have to remain at Banco Santander's disposal for a period of 4 months in order to ensure an adequate transition, and would receive her fixed salary during that period.

k) Information on investments held by the directors in other companies and conflicts of interest

None of the members of the board of directors have declared that they or persons related to them may have a direct or indirect conflict of interest with the interests of Banco Santander, S.A., as set forth in Article 229 of the Corporate Enterprises Act.

6. Loans and advances to central banks and credit institutions

The detail, by classification, type and currency, of Loans and advances to central banks and credit institutions in the consolidated balance sheets is as follows:

EUR million	2021	2020	2019
CENTRAL BANKS			
Classification			
Financial assets held for trading	3,608	—	—
Non-trading financial assets mandatorily at fair value through profit or loss	—	—	—
Financial assets designated at fair value through profit or loss	—	9,481	6,473
Financial assets designated at fair value through other comprehensive income	—	—	—
Financial assets at amortised cost	15,657	12,499	18,474
	19,265	**21,980**	**24,947**
Type			
Time deposits	13,275	11,757	17,533
Reverse repurchase agreements	5,990	10,223	7,414
Impaired assets	—	—	—
Valuation adjustments for impairment	—	—	—
	19,265	**21,980**	**24,947**
CREDIT INSTITUTIONS			
Classification			
Financial assets held for trading	10,397	3	—
Non-trading financial assets mandatorily at fair value through profit or loss	—	—	—
Financial assets designated at fair value through profit or loss	3,152	12,136	21,649
Financial assets designated at fair value through other comprehensive income	—	—	—
Financial assets at amortised cost	39,169	37,838	40,943
	52,718	**49,977**	**62,592**
Type			
Time deposits	10,684	7,338	9,699
Reverse repurchase agreements	18,853	20,862	31,180
Non- loans advances	23,188	21,784	21,726
Impaired assets	1	1	1
Valuation adjustments for impairment	(8)	(8)	(14)
	52,718	**49,977**	**62,592**
CURRENCY			
Euro	24,286	22,260	32,248
Pound sterling	3,228	4,127	3,659
US dollar	12,639	13,209	14,442
Brazilian real	24,011	26,437	30,919
Other currencies	7,819	5,924	6,271
TOTAL	**71,983**	**71,957**	**87,539**

The loans and advances to credit institutions classified under 'Financial assets at amortised' cost are mainly time accounts and deposits.

Note 50 contains a detail of the residual maturity periods of 'Financial assets at amortised cost'.

At 31 December 2021 the exposure by impairment stage of the assets accounted for amounts to EUR 54,833, EUR 0 and EUR 1 million (EUR 50,344, EUR 0 and EUR 1 million in 2020 and EUR 59,430, EUR 0 and EUR 1 million in 2019), and the loan loss provision by impairment stage amounts to EUR 8, EUR 0 and EUR 0 million (EUR 8, EUR 0 and EUR 0 million in 2020 and EUR 14, EUR 0 and EUR 0 million in 2019) in stage 1, stage 2 and stage 3, respectively.

7. Debt instruments

a) Detail

The detail, by classification, type and currency, of Debt instruments in the consolidated balance sheets is as follows:

EUR million

	2021	2020	2019
Classification			
Financial assets held for trading	26,750	37,894	32,041
Non-trading financial assets mandatorily at fair value through profit or loss	957	700	1,175
Financial assets designated at fair value through profit or loss	2,516	2,979	3,186
Financial assets designated at fair value through other comprehensive income	97,922	108,903	118,405
Financial assets at amortised cost	35,708	26,078	29,789
	163,853	**176,554**	**184,596**
Type			
Spanish government debt securities	20,638	30,397	42,054
Foreign government debt securities	102,976	110,570	107,434
Issued by financial institutions	12,324	10,133	9,670
Other fixed-income securities	27,850	25,337	25,265
Impaired financial assets	280	401	647
Impairment losses	(215)	(284)	(474)
	163,853	**176,554**	**184,596**
Currency			
Euro	45,197	58,850	70,357
Pound sterling	6,304	7,372	15,713
US dollar	34,229	29,009	29,846
Brazilian real	35,907	35,139	38,316
Other currencies	42,431	46,468	30,838
Debt securities excluding impairment adjustments	**164,068**	**176,838**	**185,070**
Impairment losses	(215)	(284)	(474)
	163,853	**176,554**	**184,596**

In the last quarter of 2019, debt securities were transferred from the 'Financial asset at amortised cost' to the 'Financial asset at fair value through other comprehensive income'. The fair value of these assets at the date of the transfer being EUR 6,359 million.

As established in IFRS 9, the aforementioned transfer was made prospectively, recognising the difference between the previous amortised cost of the transferred financial assets and their fair value in 'Other comprehensive income'. In application of this standard, the effective interest rate and the measurement of expected credit losses were not adjusted as a result of the reclassification.

The context of adapting the Group´s commercial strategy to the changes in business models, in order to favour a greater alignment of the sensitivity of the Bank's balance sheet masses to interest rates, has led to a change in the assets related to these liabilities from a business model whose objective is to collect the principal and interest flows to a business model whose objective is achieved through the collection of the principal and interest flows and the sale of these assets.

At 31 December 2021, 2020 and 2019 the exposure by impairment stage of the book assets under IFRS 9 amounted to EUR 133,437 million, EUR 134,792 million and EUR 147,575 million in stage 1; EUR 128 million, EUR 72 million and EUR 446 million in stage 2, and EUR 280 million, EUR 401 million and EUR 647 million in stage 3, respectively.

b) Breakdown

The breakdown, by origin of the issuer, of debt instruments at 31 December 2021, 2020 and 2019, net of impairment losses, is as follows:

EUR million

	2021				2020				2019			
	Private fixed-income	Public fixed-income	Total	%	Private fixed-income	Public fixed-income	Total	%	Private fixed-income	Public fixed-income	Total	%
Spain	3,773	20,638	24,411	14.90%	1,588	30,397	31,985	18.12%	3,634	42,054	45,688	24.75%
United Kingdom	3,334	2,097	5,431	3.31%	3,099	2,795	5,894	3.34%	3,806	11,479	15,285	8.28%
Portugal	3,008	3,845	6,853	4.18%	3,095	6,462	9,557	5.41%	2,979	7,563	10,542	5.71%
Italy	1,215	1,531	2,746	1.68%	1,047	4,688	5,735	3.25%	1,384	3,620	5,004	2.71%
Ireland	4,759	52	4,811	2.94%	2,924	2	2,926	1.66%	2,387	2	2,389	1.29%
Poland	2,848	12,727	15,575	9.51%	3,126	11,400	14,526	8.23%	460	9,361	9,821	5.32%
Other European countries	8,922	3,422	12,344	7.53%	8,211	2,891	11,102	6.29%	7,186	1,784	8,970	4.86%
United States	5,634	21,465	27,099	16.54%	6,386	14,645	21,031	11.91%	5,915	15,609	21,524	11.66%
Brazil	5,446	29,251	34,697	21.18%	5,179	33,316	38,495	21.80%	5,808	35,036	40,844	22.13%
Mexico	517	14,572	15,089	9.21%	435	19,053	19,488	11.04%	708	13,234	13,942	7.55%
Chile	51	9,467	9,518	5.81%	41	8,082	8,123	4.60%	50	4,819	4,869	2.64%
Other American countries	655	2,128	2,783	1.70%	274	3,098	3,372	1.91%	605	1,095	1,700	0.92%
Rest of the world	77	2,419	2,496	1.52%	182	4,138	4,320	2.44%	186	3,832	4,018	2.18%
	40,239	**123,614**	**163,853**	**100%**	**35,587**	**140,967**	**176,554**	**100%**	**35,108**	**149,488**	**184,596**	**100%**

The detail, by issuer rating, of Debt instruments at 31 December 2021, 2020 and 2019 is as follows:

EUR million

	2021				2020				2019			
	Private fixed-income	Public fixed-income	Total	%	Private fixed-income	Public fixed-income	Total	%	Private fixed-income	Public fixed-income	Total	%
AAA	15,956	1,773	17,729	10.82%	14,088	2,099	16,187	9.17%	14,737	1,085	15,822	8.57%
AA	2,005	26,355	28,360	17.31%	1,714	18,784	20,498	11.61%	5,133	28,325	33,458	18.13%
A	8,594	44,359	52,953	32.32%	6,228	53,655	59,883	33.92%	3,238	59,744	62,982	34.12%
BBB	5,234	20,304	25,538	15.59%	6,515	31,204	37,719	21.36%	4,889	24,766	29,655	16.06%
Below BBB	3,584	30,823	34,407	21.00%	3,431	35,164	38,595	21.86%	1,244	35,466	36,710	19.89%
Unrated	4,866	—	4,866	2.97%	3,611	61	3,672	2.08%	5,867	102	5,969	3.23%
	40,239	**123,614**	**163,853**	**100%**	**35,587**	**140,967**	**176,554**	**100%**	**35,108**	**149,488**	**184,596**	**100%**

During 2021, 2020 and 2019, the distribution of the exposure by rating level of the previous table has not been affected by ratings reviews of the sovereign issuers.

The detail, by type of financial instrument, of private fixed-income securities at 31 December 2021, 2020 and 2019, net of impairment losses, is as follows:

EUR million	2021	2020	2019
Securitised mortgage bonds	5,806	5,926	5,494
Other asset-backed bonds	6,304	5,479	6,388
Floating rate debt	8,081	7,829	10,348
Fixed rate debt	20,048	16,353	12,878
Total	**40,239**	**35,587**	**35,108**

c) Impairment losses

The changes in the impairment losses on debt instruments are summarised below:

EUR million	2021	2020	2019
Balance at beginning of year	284	474	635
Net impairment losses for the year*	*28*	79	(170)
Of which:			
Impairment losses charged to income	*49*	*91*	*77*
Impairment losses reversed with a credit to income	*(21)*	*(12)*	*(247)*
Exchange differences and other items	(97)	(269)	9
Balance at end of year	**215**	**284**	**474**
Of which:			
By geographical location of risk:			
European Union	*25*	*21*	*14*
Latin America	*190*	*263*	*460*

* Of the EUR 28 million corresponding to net provisions for the year ended 31 December 2021 (EUR 79 million and EUR -170 million at 31 December 2020 and 2019, respectively), EUR 31 million relates to financial assets at amortized cost (EUR 77 million and EUR -176 million at 31 December 2020 and 2019, respectively) and EUR -3 million relates to financial assets designated at fair value through other comprehensive income (EUR 2 million and EUR 6 million at 31 December 2020 and 2019, respectively).

At 31 December 2021, 2020 and 2019 the loan loss provision by impairment stage of the assets accounted for under IFRS9 amounted to EUR 26 million, EUR 25 million and EUR 22 million in stage 1, EUR 8 million, EUR 2 million and EUR 6 million in stage 2, and EUR 181 million, EUR 257 million and EUR 446 million in stage 3, respectively.

8. Equity instruments

a) Breakdown

The detail, by classification and type, of Equity instruments in the consolidated balance sheets is as follows:

EUR million	2021	2020	2019
Classification			
Financial assets held for trading	15,077	9,615	12,437
Non-trading financial assets mandatorily at fair value through profit or loss	4,042	3,234	3,350
Financial assets designated at fair value through other comprehensive income	2,453	2,783	2,863
	21,572	**15,632**	**18,650**
Type			
Shares of Spanish companies	3,896	3,364	3,711
Shares of foreign companies	15,184	10,437	12,682
Shares of investment funds	2,492	1,831	2,257
	21,572	**15,632**	**18,650**

Note 29 contains a detail of the 'Other comprehensive income', recognised in equity, on 'Financial assets designated at fair value through other comprehensive income'.

b) Changes

The changes in 'Financial assets at fair value through other comprehensive income' were as follows:

EUR million	2021	2020	2019
Balance at beginning of the year	2,783	2,863	2,671
Net additions (disposals)	(276)	833	177
Changes in the fair value of equity instruments measured at fair value through other comprehensive income (EIGR)*	(171)	(917)	(29)
Changes in the RV hedged with micro-hedging transactions	117	4	44
Balance at end of year	**2,453**	**2,783**	**2,863**

* They do not include fair value movements for currency risk hedged with hedging instruments.

c) Notifications of acquisitions of investments

The notifications of the acquisitions and disposals of holdings in investees made by the Bank in 2021, in compliance with Article 155 of the Spanish Limited Liability Companies Law and Article 125 of Spanish Securities Market Law 24/1998, are listed in appendix IV.

9. Trading Derivatives (assets and liabilities) and short positions

a) Trading Derivatives

The detail, by type of inherent risk, of the fair value of the trading derivatives arranged by the Group is as follows (see note 11):

EUR million

	2021		2020		2019	
	Debit balance	Credit balance	Debit balance	Credit balance	Debit balance	Credit balance
Interest rate risk	31,884	30,192	43,832	41,085	42,614	40,956
Currency risk	19,823	21,894	21,162	22,028	18,085	19,870
Price risk	1,498	891	1,931	944	2,329	1,772
Other risks	1,087	589	212	412	369	418
	54,292	**53,566**	**67,137**	**64,469**	**63,397**	**63,016**

b) Short positions

Following is a breakdown of the short positions (liabilities):

EUR million

	2021	2020	2019
Borrowed securities			
Debt instruments	825	625	390
Of which:			
Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México	*825*	*625*	*390*
Equity instruments	389	289	393
Of which:			
Banco Santander, S.A.	*318*	*289*	*308*
Short sales			
Debt instruments	11,022	15,784	13,340
Of which:			
Banco Santander, S.A.	*8,926*	*8,645*	*7,980*
Banco Santander (Brasil) S.A.	*1,952*	*7,085*	*5,194*
	12,236	**16,698**	**14,123**

10. Loans and advances to customers

a) Detail

The detail, by classification, of Loans and advances to customers in the consolidated balance sheets is as follows:

EUR million

	2021	2020	2019
Financial assets held for trading	6,829	296	355
Non-trading financial assets mandatorily at fair value through profit or loss	537	552	386
Financial assets designated at fair value through profit or loss	10,289	24,121	30,761
Financial assets at fair value through other comprehensive income	7,663	9,267	4,440
Financial assets at amortized cost	947,364	881,963	906,276
Of which:			
Impairment losses	*(22,964)*	*(23,595)*	*(22,242)*
	972,682	916,199	942,218
Loans and advances to customers disregarding impairment losses	**995,646**	**939,794**	**964,460**

Note 50 contains a detail of the residual maturity periods of 'Financial assets.

Note 53 shows the Group's total exposure, by geographical origin of the issuer.

There are no loans and advances to customers for material amounts without fixed maturity dates.

b) Breakdown

Following is a breakdown of the loans and advances granted to the Group's customers, which reflect the Group's exposure to credit risk in its main activity, without considering the balance of value adjustments for impairment, taking into account the type and situation of the transactions, the geographical area of their residence and the type of interest rate on the transactions:

EUR million

	2021	2020	2019
Loan type and status			
Commercial credit	49,603	37,459	37,753
Secured loans	542,404	503,014	513,929
Reverse repurchase agreements	33,264	35,702	45,703
Other term loans	269,526	269,143	267,154
Finance leases	38,503	36,251	35,788
Receivable on demand	10,304	7,903	7,714
Credit cards receivables	20,397	19,507	23,876
Impaired assets	31,645	30,815	32,543
	995,646	**939,794**	**964,460**
Geographical area			
Spain	216,741	215,330	204,810
European Union (excluding Spain)*	190,032	192,988	460,338
United States and Puerto Rico	102,491	93,405	100,152
Other OECD countries*	374,729	338,362	86,327
South America (non - OECD)	94,010	79,629	92,145
Rest of the world	17,643	20,080	20,688
	995,646	**939,794**	**964,460**
Interest rate formula			
Fixed rate	593,645	550,883	546,619
Floating rate	402,001	388,911	417,841
	995,646	**939,794**	**964,460**

* The amounts referring to the years 2021 and 2020 for the United Kingdom have been considered in the line Other OECD countries, instead of in the line European Union (excluding Spain) due to the leaving of the United Kingdom from the European Union.

At 31 December 2021, 2020 and 2019 the Group had granted loans amounting to EUR 14,131, 12,104 and 9,993 million to Spanish public sector agencies which had a rating at 31 December 2021 of A (ratings of A at 31 December 2020 and 31 December 2019), and EUR 10,263, 10,779, and 12,218 million to the public sector in other countries (at 31 December 2021, the breakdown of this amount by issuer rating was as follows: 1.2% AAA, 13.4% AA, 5.2% A, 69.9% BBB, 9.7% below BBB and 0.5% without rating).

Without considering the public administrations, the amount of the loans and advances at 31 December 2021, 2020 and 2019 amounts to EUR 971,252 million, EUR 916,911 million and EUR 942,249 million, of which, EUR 939,645 million, EUR 886,118 million and EUR 909,741 million are classified as performing, respectively.

Following is a detail, by activity, of the loans to customers at 31 December 2021, net of impairment losses:

EUR million

			Secured loans						
			Net exposure		Loan-to-value ratio***				
	Total	Without collateral	Of which property collateral	Of which other collateral	Less than or equal to 40%	More than 40% and less than or equal to 60%	More than 60% and less than or equal to 80%	More than 80% and less than or equal to 100%	More than 100%
Public sector	22,152	21,359	180	613	68	81	26	608	10
Other financial institutions (financial business activity)	70,348	27,770	2,612	39,966	2,532	1,868	1,585	35,871	722
Non-financial corporations and individual entrepreneurs (non-financial business activity) (broken down by purpose)	323,475	182,711	60,112	80,652	24,034	21,064	18,461	57,321	19,884
Of which:									
Construction and property development	*18,936*	*2,349*	*9,778*	*6,809*	*5,357*	*4,821*	*1,695*	*3,555*	*1,159*
Civil engineering construction	*3,061*	*1,818*	*219*	*1,024*	*108*	*149*	*167*	*688*	*131*
Large companies	*174,191*	*116,018*	*19,655*	*38,518*	*7,789*	*5,111*	*5,365*	*31,122*	*8,786*
SMEs and individual entrepreneurs	*127,287*	*62,526*	*30,460*	*34,301*	*10,780*	*10,983*	*11,234*	*21,956*	*9,808*
Households – other (broken down by purpose)	540,339	96,351	360,447	83,541	98,463	117,198	138,456	55,419	34,452
Of which:									
Residential	*353,623*	*2,257*	*350,651*	*715*	*91,428*	*110,574*	*121,400*	*24,007*	*3,957*
Consumer loans	*167,760*	*91,829*	*1,403*	*74,528*	*2,927*	*3,938*	*13,083*	*26,721*	*29,262*
Other purposes	*18,956*	*2,265*	*8,393*	*8,298*	*4,108*	*2,686*	*3,973*	*4,691*	*1,233*
Total*	**956,314**	**328,191**	**423,351**	**204,772**	**125,097**	**140,211**	**158,528**	**149,219**	**55,068**
Memorandum item									
*Refinanced and restructured transactions***	27,781	11,975	11,222	4,584	3,856	2,237	4,678	2,442	2,593

* In addition, the Group has granted advances to customers amounting to EUR 16,368 million, bringing the total of loans and advances to EUR 972,682 million.
** Includes the net balance of the impairment of the accumulated value or accumulated losses in the fair value due to credit risk.
*** The ratio is the carrying amount of the transactions at 31 December 2021 provided by the latest available appraisal value of the collateral.

Note 53 contains information relating to the forborne loan portfolio.

Following is the movement of the gross exposure broken down by impairment stage of loans and advances to customers recognised under "Financial assets at amortised cost" and "Financial assets at fair value through other comprehensive income" during 2021, 2020 and 2019:

2021

EUR million	Stage 1	Stage 2	Stage 3	Total
Balance at the beginning of year	817,906	66,104	30,318	914,328
Movements				
Transfers				
To stage 2 from stage 1	(33,051)	33,051		—
To stage 3 from stage 1	(6,617)		6,617	—
To stage 3 from stage 2		(5,836)	5,836	—
To stage 1 from stage 2	17,796	(17,796)		—
To stage 2 from stage 3		1,865	(1,865)	—
To stage 1 from stage 3	271		(271)	—
Net changes on financial assets	62,629	(11,629)	(719)	50,281
Write-offs	—	—	(9,089)	(9,089)
Exchange differences and others	19,766	1,825	460	22,051
Balance at the end of the year	**878,700**	**67,584**	**31,287**	**977,571**

2020

EUR million	Stage 1	Stage 2	Stage 3	Total
Balance at the beginning of year	849,939	50,476	31,837	932,252
Movements				
Transfers				
To stage 2 from stage 1	(43,170)	43,170		—
To stage 3 from stage 1	(5,120)		5,120	—
To stage 3 from stage 2		(8,734)	8,734	—
To stage 1 from stage 2	13,459	(13,459)		—
To stage 2 from stage 3		1,831	(1,831)	—
To stage 1 from stage 3	578		(578)	—
Net changes on financial assets	53,555	(2,951)	(659)	49,945
Write-offs	—	—	(8,930)	(8,930)
Exchange differences and others	(51,335)	(4,229)	(3,375)	(58,939)
Balance at the end of the year	**817,906**	**66,104**	**30,318**	**914,328**

2019

EUR million	Stage 1	Stage 2	Stage 3	Total
Balance at the beginning of year	795,829	52,183	33,461	881,473
Movements				
Transfers				
To stage 2 from stage 1	(28,369)	28,369		—
To stage 3 from stage 1	(4,101)		4,101	—
To stage 3 from stage 2		(13,240)	13,240	—
To stage 1 from stage 2	12,436	(12,436)		—
To stage 2 from stage 3		2,439	(2,439)	—
To stage 1 from stage 3	488		(488)	—
Net changes on financial assets	61,581	(8,092)	(3,608)	49,881
Write-offs	—	—	(12,593)	(12,593)
Exchange differences and others	12,075	1,253	163	13,491
Balance at the end of the year	**849,939**	**50,476**	**31,837**	**932,252**

In addition, at 31 December 2021, the Group had EUR 420 million (EUR 497 million at 31 December 2020 and EUR 706 million at 31 December 2019) of exposure in assets purchased with impairment of which EUR 358 million still show signs of impairment, which correspond mainly to the business combinations carried out by the Group.

c) Impairment losses on loans and advances to customers at amortised cost and at fair value through other comprehensive income

The changes in the impairment losses on the assets making up the balances of financial assets at amortised cost and at fair value through other comprehensive income - Loans and advances - Customers:

EUR million

	2021	2020	2019
Amount at beginning of the year	23,595	22,242	23,307
Impairment losses charged to income for the year	8,762	13,385	11,108
Of which:			
Impairment losses charged to profit or loss	*18,240*	*20,909*	*19,192*
Impairment losses reversed with a credit to profit or loss	*(9,478)*	*(7,524)*	*(8,084)*
Change of perimeter	—	(82)	—
Write-off of impaired balances against recorded impairment allowance	(9,089)	(8,930)	(12,593)
Exchange differences and other changes	(304)	(3,020)	420
Amount at end of the year	**22,964**	**23,595**	**22,242**
Which correspond to:			
Impaired assets	*13,550*	*13,658*	*13,933*
Other assets	*9,414*	*9,937*	*8,309*
Of which:			
Individually calculated	*2,496*	*2,679*	*3,555*
Collective calculated	*20,468*	*20,916*	*18,687*

In addition, provisions for debt securities amounting to EUR 28 million were recorded at 31 December 2021 (provisions amounting to EUR 79 million and releases amounting EUR 170 million as of 31 December 2020 and 2019, respectively), written-off assets recoveries have been recorded in the year amounting to EUR 1,383 million at 31 December 2021 (EUR 1,221 million and EUR 1,586 million at 31 December 2020 and 2019, respectively) and EUR 0 million were recorded in the account for losses on renegotiation or contractual modification at 31 December 2021 (EUR 139 million and EUR 0 million at 31 December 2020 and 2019, respectively). With this, the impairment recorded in Impairment or reversal of impairment at financial assets not measured at fair value through profit or loss and net gains and losses from changes: 'Financial assets at fair value through other comprehensive income' and 'Financial assets at amortised cost'; amounts EUR 7,407 million at 31 December 2021 (EUR 12,382 million and EUR 9,352 million at 31 December 2020 and 2019, respectively).

Following is the movement of the loan loss provision broken down by impairment stage of loans and advances to customers during 2021, 2020 and 2019:

2021

EUR million

	Stage 1	Stage 2	Stage 3	Total
Loss allowance at the beginning of the year	4,265	5,672	13,658	23,595
Transfers				
To stage 2 from stage 1	(578)	2,968		2,390
To stage 3 from stage 1	(237)		2,209	1,972
To stage 3 from stage 2		(1,086)	2,474	1,388
To stage 1 from stage 2	254	(1,025)		(771)
To stage 2 from stage 3		216	(760)	(544)
To stage 1 from stage 3	8		(67)	(59)
Net changes of the exposure and modifications in the credit risk	617	(1,557)	5,326	4,386
Write-offs	—	—	(9,089)	(9,089)
FX and other movements	(141)	38	(201)	(304)
Loss allowance at the end of the year	**4,188**	**5,226**	**13,550**	**22,964**

2020

EUR million

	Stage 1	Stage 2	Stage 3	Total
Loss allowance at the beginning of the year	3,835	4,474	13,933	22,242
Transfers				
To stage 2 from stage 1	(1,040)	2,880		1,840
To stage 3 from stage 1	(255)		2,386	2,131
To stage 3 from stage 2		(971)	2,066	1,095
To stage 1 from stage 2	294	(976)		(682)
To stage 2 from stage 3		303	(727)	(424)
To stage 1 from stage 3	53		(138)	(85)
Net changes of the exposure and modifications in the credit risk	1,966	535	7,009	9,510
Write-offs	—	—	(8,930)	(8,930)
FX and other movements	(588)	(573)	(1,941)	(3,102)
Loss allowance at the end of the year	**4,265**	**5,672**	**13,658**	**23,595**

2019

EUR million

	Stage 1	Stage 2	Stage 3	Total
Loss allowance at the beginning of the year	3,658	4,743	14,906	23,307
Transfers				
To stage 2 from stage 1	(964)	3,235		2,271
To stage 3 from stage 1	(214)		1,296	1,082
To stage 3 from stage 2		(3,065)	5,612	2,547
To stage 1 from stage 2	301	(1,048)		(747)
To stage 2 from stage 3		381	(817)	(436)
To stage 1 from stage 3	29		(123)	(94)
Net changes of the exposure and modifications in the credit risk	1,119	(182)	5,548	6,485
Write-offs	—	—	(12,593)	(12,593)
FX and other movements	(94)	410	104	420
Loss allowance at the end of the year	**3,835**	**4,474**	**13,933**	**22,242**

d) Impaired assets and assets with unpaid past-due amounts

The detail of the changes in the balance of the financial assets classified as 'Financial assets Loans to customers' considered to be impaired due to credit risk is as follows:

EUR million

	2021	2020	2019
Balance at beginning of year	30,815	32,543	34,218
Net additions	9,390	10,577	10,755
Written-off assets	(9,089)	(8,930)	(12,593)
Changes in the scope of consolidation	—	(39)	—
Exchange differences and other	529	(3,336)	163
Balance at end of year	**31,645**	**30,815**	**32,543**

This amount, after deducting the related allowances, represents the Group's best estimate of the discounted value of the flows that are expected to be recovered from the impaired assets.

At 31 December 2021, the Group's written-off assets totalled EUR 40,585 million (EUR 39,087 million and EUR 46,209 million at 31 December 2020 and 2019, respectively).

Set forth below for each class of impaired asset are the gross amount, associated allowances and information relating to the collateral and/or other credit enhancements obtained at 31 December 2021:

EUR million

	Gross amount	Allowance recognised	Estimated collateral value*
Without associated real collateral	13,327	7,416	—
With real estate collateral	12,907	3,540	9,054
With other collateral	5,411	2,594	2,317
Total	**31,645**	**13,550**	**11,371**

* Including the estimated value of the collateral associated with each loan. Accordingly, any other cash flows that may be obtained, such as those arising from borrowers' personal guarantees, are not included.

When classifying assets in the previous table, the main factors considered by the Group to determine whether an asset has become impaired are the existence of amounts past due —assets impaired due to arrears— or other circumstances may be arise which will not result in all contractual cash flow being recovered, such as a deterioration of the borrower's financial situation, the worsening of its capacity to generate funds or difficulties experienced by it in accessing credit.

e) Transferred credits

'Loans and advances to customers' includes, inter alia, the securitised loans transferred to third parties on which the Group has retained the risks and rewards, albeit partially, and which therefore, in accordance with the applicable accounting standards, cannot be derecognised. This is mainly due to mortgage loans, loans to companies and consumer loans in which the group retains subordinate financing and/or grants some kind of credit enhancement to new holders.

Securitisation is used as a tool for the management of regulatory capital and as a means of diversifying the Group's liquidity sources.

The breakdown of securitized loans held on the balance sheet, according to the nature of the financial instrument in which they are originated, is shown below:

EUR million

	2021	2020	2019
Retained on the balance sheet	80,600	88,662	93,553
Of which			
Securitised mortgage assets	*19,523*	*30,145*	*31,868*
Of which: UK assets	*5,295*	*9,034*	*13,002*
Other securitised assets	*61,077*	*58,517*	*61,685*
Total*	**80,600**	**88,662**	**93,553**

* Note 22 details the liabilities associated with these securitisation transactions.

At 31 December 2021, Grupo Santander had loans that had been fully derecognised and for which it retained servicing amounting to EUR 14,141 million (EUR 13,999 million and EUR 16,786 million at 31 December 2020 and 2019, respectively).

11. Trading derivatives

The detail of the notional amounts and the market values of the trading derivatives held by the Group in 2021, 2020 and 2019 is as follows:

EUR million

	2021		2020		2019	
	Notional amount	Market value	Notional amount	Market value	Notional amount	Market value
Trading derivatives						
Interest rate risk						
Forward rate agreements	147,603	(11)	515,889	—	218,252	(8)
Interest rate swaps	3,920,945	1,931	3,789,169	3,638	4,322,199	2,573
Options, futures and other derivatives	508,723	(228)	698,500	(891)	794,140	(907)
Credit risk						
Credit default swaps	13,571	436	12,378	(133)	23,701	(71)
Foreign currency risk						
Foreign currency purchases and sales	329,781	(664)	304,280	(45)	325,720	(441)
Foreign currency options	49,680	(114)	45,074	(7)	44,763	(182)
Currency swaps	430,644	(1,293)	394,178	(814)	379,176	(1,162)
Securities and commodities derivatives and other	69,850	669	70,861	920	61,966	579
Total	**5,470,797**	**726**	**5,830,329**	**2,668**	**6,169,917**	**381**

12. Non-current assets

The detail of Non-current assets held for sale in the consolidated balance sheets is as follows:

EUR million

	2021	2020	2019
Tangible assets	4,089	4,445	4,588
Of which:			
Foreclosed assets	*3,651*	*4,081*	*4,485*
*Of which property assets in Spain**	*3,120*	*3,485*	*3,667*
Other tangible assets held for sale	*438*	*364*	*103*
Other assets	—	—	13
Total	**4,089**	**4,445**	**4,601**

* During 2019, the sale of real estate assets to Cerberus from foreclosures materialized, generating losses of EUR 180 million.

At 31 December 2021, the allowances recognised for the total non-current assets held for sale represented 48% (48% at 31 December 2020 and 2019). The charges recorded in those years amounted to EUR 239 million, EUR 250 million and EUR 279 million, respectively, and the recoveries during these exercises are amounted to EUR 98 million, EUR 35 million and EUR 133 million, respectively.

13. Investments

a) Breakdown

The detail, by company, of Investments is as follows:

EUR million

	2021	2020	2019
Associated entities	**5,833**	**6,130**	**7,447**
Merlin Properties, SOCIMI, S.A.	1,640	1,581	1,511
Metrovacesa, S.A.	1,087	1,157	1,226
Caceis (note 3)	975	1,077	1,010
Zurich Santander Insurance America, S.L. - Consolidated	826	955	1,009
CNP Santander	418	439	402
Ebury Partners Limited (note 3)	394	388	—
Popular Spain Holding de Inversiones, S.L.U. (former Allianz Popular, S.L.) (note 3)	—	—	409
Project Quasar Investment 2017 S.L.*	—	—	1,351
Other companies	493	533	529
Joint Ventures entities	**1,692**	**1,492**	**1,325**
Santander Vida Seguros y Reaseguros, S.A. (note 3)	378	381	170
Santander Caceis Latam Holding 1, S.L. - Consolidated (previously Santander Securites Services Latam Holding, S.L)	334	326	349
U.C.I., S.A. - Consolidated	228	168	206
Fortune Auto Finance Co., ltd	222	172	155
Hyundai Capital UK Limited	201	151	135
Banco RCI Brasil S.A.	92	88	116
Other companies	237	206	194
Total Associated entities and Joint ventures	**7,525**	**7,622**	**8,772**

* At 31 December 2021 and 2020, the Group did not hold significant influence over this company, despite holding a 49% interest in it, since it did not meet any of the requirements established in the Standard by which an entity is considered to exercise significant influence over another.

Of the entities included above, at 31 December 2021, the entities Merlin Properties, SOCIMI, S.A, Metrovacesa S.A. and Compañía Española de Viviendas en Alquiler, S.A. are the only listed companies.

Below is a breakdown of the Goodwill of the main investments in joint ventures and associates included in the balance of this heading:

EUR million

	2021	2020	2019
Goodwill	**1,723**	**1,862**	**2,043**
Of which:			
Zurich Santander Insurance America, S.L. - Consolidated	*526*	*526*	*526*
Caceis	*337*	*337*	*466*

b) Changes

The changes in the investments were as follows:

EUR million

	2021	2020	2019
Balance at beginning of year	7,622	8,772	7,588
Acquisitions (disposals) of companies and capital increases (reductions)	94	676	(123)
Of which:			
Ebury Partners Limited (note 3)	—	*409*	—
Santander Vida Seguros y Reaseguros, S.A. (note 3)	—	*219*	—
Changes in the consolidation method (note 3)	—	*(1,359)*	*1,368*
Of which:			
Project Quasar Investments 2017, S.L.	—	*(956)*	—
Popular Spain Holding de Inversiones, S.L.U. (former Allianz Popular, S.L.) (note 3)	—	*(409)*	—
Caceis	—	—	*1,010*
Santander CACEIS Latam Holding 1, S.L. - Consolidado (former Santander Securities Services Latam Holding, S.L.)	—	—	*349*
Effect of equity accounting	*432*	*(96)*	*324*
Dividends distributed and reimbursements of share premium	*(662)*	*(186)*	*(407)*
Of which:			
Zurich Santander Insurance America S.L. - Consolidated	*(230)*	*(80)*	*(158)*
Caceis	*(144)*	—	—
CNP Santander	*(60)*	—	*(37)*
Metrovacesa, S.A.	*(60)*	—	*(25)*
Santander Vida Seguros y Reaseguros, S.A.- Consolidado	*(31)*	*(37)*	*(29)*
Merlin Properties, SOCIMI, S.A.	*(52)*	*(17)*	*(53)*
Popular Spain Holding de Inversiones, S.L.U. (former Allianz Popular, S.L.) (note 3)	—	—	*(52)*
Other global result	(13)	(1)	5
Exchange differences and other changes	52	(184)	17
Balance at end of year	**7,525**	**7,622**	**8,772**

c) Impairment adjustments

During the years 2021, 2020 and 2019 there was no evidence of significant impairment in the Group's associated interests.

d) Other information

A summary of the financial information at the end of December 2021 of the main associates and joint ventures (obtained from the information available at the date of preparation of the consolidated financial statements) is shown below:

EUR million

	Associates						Joint ventures					
	Merlin Properties, SOCIMI, S.A.*	Metrovacesa, S.A.*	Caceis (note 3)	Zurich Santander Insurance América, S.L. - Consolidated	CNP Santander	Ebury Partners Limited (note 3)**	Santander Caceis Latam Holding, S.L. - Consolidated	U.C.I., S.A. - Consolidated	Hyundai Capital UK Limited	Fortune Auto Finance Co., LTD	Santander Vida Seguros y Reaseguros, S.A.- Consolidated (note 3)	Banco RCI Brasil S.A.
Current assets	416	2,452	51,995	704	155	688	151	368	1,837	670	112	5
Non current assets	13,062	475	70,137	12,785	2,174	93	385	10,963	2,501	2,511	1,666	1,694
Total assets	**13,478**	**2,927**	**122,132**	**13,489**	**2,329**	**781**	**536**	**11,331**	**4,338**	**3,181**	**1,778**	**1,699**
Current liabilities	180	485	7,708	259	19	768	124	55	1,619	34	193	50
Non current liabilities	6,602	262	110,259	12,441	1,878	28	9	10,856	2,317	2,702	932	1,408
Total liabilities	**6,782**	**747**	**117,967**	**12,700**	**1,897**	**796**	**133**	**10,911**	**3,936**	**2,736**	**1,125**	**1,458**
Attributable profit for the period	56	(164)	187	291	86	(69)	39	6	79	61	76	25
Other accumulated comprehensive income	(16)	—	24	(675)	2	1	(288)	(11)	5	25	1	(228)
Rest of equity	6,656	2,344	3,954	1,173	344	53	652	425	318	359	576	444
Total Equity	**6,696**	**2,180**	**4,165**	**789**	**432**	**(15)**	**403**	**420**	**402**	**445**	**653**	**241**
Total liabilities and equity	**13,478**	**2,927**	**122,132**	**13,489**	**2,329**	**781**	**536**	**11,331**	**4,338**	**3,181**	**1,778**	**1,699**
Ordinary activities income	417	150	2,196	3,841	785	124	115	239	845	278	763	165
Profit (loss) from continuing operations	56	(164)	187	291	86	(69)	39	6	79	61	76	25
Profit (loss) for the year from discontinuing operations	—	—	—	—	—	—	—	—	—	—	—	—

* Data as of 31 December 2020, latest accounts available.
** Data as of 30 April 2021, latest accounts available.

14. Insurance contracts linked to pensions

The detail of Insurance contracts linked to pensions in the consolidated balance sheets is as follows:

EUR million

	2021	2020	2019
Assets relating to insurance contracts covering post-employment benefit plan obligations:			
Banco Santander, S.A.	149	174	192
	149	**174**	**192**

15. Liabilities and assets under insurance contracts and reinsurance assets

The detail of Liabilities under insurance contracts and reinsurance assets in the consolidated balance sheets (see note 2.j) is as follows:

EUR million

	2021			2020			2019		
Technical provisions for:	Direct insurance and reinsurance assumed	Reinsurance ceded	Total (balance payable)	Direct insurance and reinsurance assumed	Reinsurance ceded	Total (balance payable)	Direct insurance and reinsurance assumed	Reinsurance ceded	Total (balance payable)
Unearned premiums and unexpired risks	56	(50)	6	51	(45)	6	59	(52)	7
Life insurance	209	(150)	59	189	(137)	52	206	(151)	55
Unearned premiums and risks	*146*	*(130)*	*16*	*126*	*(122)*	*4*	*139*	*(132)*	*7*
Mathematical provisions	*63*	*(20)*	*43*	*63*	*(15)*	*48*	*67*	*(19)*	*48*
Claims outstanding	451	(55)	396	561	(59)	502	399	(55)	344
Bonuses and rebates	20	(11)	9	23	(11)	12	22	(10)	12
Other technical provisions	34	(17)	17	86	(9)	77	53	(24)	29
	770	**(283)**	**487**	**910**	**(261)**	**649**	**739**	**(292)**	**447**

16. Tangible assets

a) Changes

The changes in Tangible assets in the consolidated balance sheets were as follows:

EUR million

	Tangible assets				Of which: For leasing			
	For own use	Leased out under an operating lease	Investment property	Total	For own use	Leased out under an operating lease	Investment property	Total
Cost								
Balances at 1 January 2019	25,428	25,087	2,378	52,893	6,693	—	—	6,693
Additions / disposals (net) due to change in the scope of consolidation	(5)	—	(15)	(20)	—	—	—	—
Additions / disposals (net)	1,863	3,148	(310)	4,701	(997)	—	—	(997)
Transfers, exchange differences and other items	(178)	(3,781)	(603)	(4,562)	(10)	—	—	(10)
Balance at 31 December 2019	**27,108**	**24,454**	**1,450**	**53,012**	**5,686**	**—**	**—**	**5,686**
Additions / disposals (net) due to change in the scope of consolidation	(16)	1,082	7	1,073	(37)	—	—	(37)
Additions / disposals (net)	827	512	(29)	1,310	(1,339)*	—	—	(1,339)
Transfers, exchange differences and other items	(3,023)	(1,844)	32	(4,835)	(362)	—	—	(362)
Balance at 31 December 2020	**24,896**	**24,204**	**1,460**	**50,560**	**3,948**	**—**	**—**	**3,948**
Additions / disposals (net) due to change in the scope of consolidation	66	(257)	—	(191)	1	—	—	1
Additions / disposals (net)	781	(1,076)	(64)	(359)	96 *	—	—	96
Transfers, exchange differences and other items	(214)	1,552	141	1,479	384	—	—	384
Balance at 31 December 2021	**25,529**	**24,423**	**1,537**	**51,489**	**4,429**	**—**	**—**	**4,429**
Accumulated depreciation								
Balances at 1 January 2019	(10,524)	(8,404)	(199)	(19,127)	—	—	—	—
Disposals due to change in the scope of consolidation	3	—	6	9	—	—	—	—
Disposals	356	2,149	32	2,537	37	—	—	37
Charge for the year	(2,021)	—	(14)	(2,035)	(807)	—	—	(807)
Transfers, exchange differences and other items	212	1,045	31	1,288	5	—	—	5
Balance at 31 December 2019	**(11,974)**	**(5,210)**	**(144)**	**(17,328)**	(765)	—	—	(765)
Disposals due to change in the scope of consolidation	(40)	—	—	(40)	(3)	—	—	(3)
Disposals	527	2,387	11	2,925	167	—	—	167
Charge for the year	(1,906)	—	(8)	(1,914)	(706)	—	—	(706)
Transfers, exchange differences and other items	1,850	(2,762)	8	(904)	90	—	—	90
Balance at 31 December 2020	**(11,543)**	**(5,585)**	**(133)**	**(17,261)**	**(1,217)**	**—**	**—**	**(1,217)**
Disposals due to change in the scope of consolidation	(1)	40	—	39	—	—	—	—
Disposals	733	3,390	3	4,126	44	—	—	44
Charge for the year	(1,733)	—	(10)	(1,743)	(612)	—	—	(612)
Transfers, exchange differences and other items	529	(3,083)	(9)	(2,563)	(4)	—	—	(4)
Balance at 31 December 2021	**(12,015)**	**(5,238)**	**(149)**	**(17,402)**	**(1,789)**	**—**	**—**	**(1,789)**

* Includes contract extensions on operating leases and repurchases.

EUR million

	Tangible assets				Of which: For leasing			
	For own use	Leased out under an operating lease	Investment property	Total	For own use	Leased out under an operating lease	Investment property	Total
Impairment losses								
Balances at 1 January 2019	(61)	(239)	(616)	(916)	—	—	—	—
Impairment charge for the year	(14)	(12)	(36)	(62)	—	—	—	—
Releases	8	6	3	17	—	—	—	—
Disposals due to change in the scope of consolidation	—	—	—	—	—	—	—	—
Exchange differences and other	(26)	222	316	512	—	—	—	—
Balances at 31 December 2019	**(93)**	**(23)**	**(333)**	**(449)**	**—**	**—**	**—**	**—**
Impairment charge for the year	(104)	(70)	(11)	(185)	(4)	—	—	(4)
Releases	4	2	5	11	1	—	—	1
Disposals due to change in the scope of consolidation	—	—	—	—	—	—	—	—
Disposals	20	—	3	23	—	—	—	—
Exchange differences and other	33	31	(28)	36	(6)	—	—	(6)
Balances at 31 December 2020	**(140)**	**(60)**	**(364)**	**(564)**	**(9)**	**—**	**—**	**(9)**
Impairment charge for the year	(144)	(17)	(8)	(169)	(13)	—	—	(13)
Releases	10	4	5	19	1	—	—	1
Disposals due to change in the scope of consolidation	—	—	—	—	—	—	—	—
Disposals	61	—	3	64	7	—	—	7
Exchange differences and other	(42)	(29)	(44)	(115)	(1)	—	—	(1)
Balances at 31 December 2021	**(255)**	**(102)**	**(408)**	**(765)**	**(15)**	**—**	**—**	**(15)**
Tangible assets, net								
Balances at 31 December 2019	15,041	19,221	973	35,235	4,921	—	—	4,921
Balances at 31 December 2020	13,213	18,559	963	32,735	2,722	—	—	2,722
Balances at 31 December 2021	**13,259**	**19,083**	**979**	**33,321**	**2,625**	**—**	**—**	**2,625**

b) Tangible assets - For own use

The detail, by class of asset, of 'Property, plant and equipment' which is owned by the Group in the consolidated balance sheets is as follows:

EUR million

	Tangible assets for own use				
	Cost	Accumulated depreciation	Impairment losses	Carrying amount	Of which: for leasing
Land and buildings	13,972	(2,889)	(93)	10,990	4,908
IT equipment and fixtures	5,995	(4,808)	—	1,187	2
Furniture and vehicles	6,952	(4,216)	—	2,736	11
Construction in progress and other items	189	(61)	—	128	—
Balances at 31 December 2019	**27,108**	**(11,974)**	**(93)**	**15,041**	**4,921**
Land and buildings	13,081	(3,215)	(133)	9,733	2,716
IT equipment and fixtures	5,562	(4,416)	—	1,146	1
Furniture and vehicles	6,085	(3,854)	—	2,231	5
Construction in progress and other items	168	(58)	(7)	103	—
Balances at 31 December 2020	**24,896**	**(11,543)**	**(140)**	**13,213**	**2,722**
Land and buildings	13,855	(3,675)	(240)	9,940	2,570
IT equipment and fixtures	5,543	(4,335)	—	1,208	42
Furniture and vehicles	5,982	(3,954)	—	2,028	12
Construction in progress and other items	149	(51)	(15)	83	—
Balances at 31 December 2021	**25,529**	**(12,015)**	**(255)**	**13,259**	**2,625**

The carrying amount at 31 December 2021 in the foregoing table includes the following approximate amounts EUR 6,753 million (EUR 6,299 million at 31 December 2020 and EUR 7,737 million at 31 December 2019) relating to property, plant and equipment owned by group entities and branches located abroad.

c) Tangible assets - Leased out under an operating lease

Grupo Santander has assets leased out under operating leases where the company is the lessor and do not meet the accounting requirements to be classified as finance leases. The net cost of these leases is recorded as an asset and depreciated on a straight-line basis over the contractual term of the lease to the expected residual value.

The expected residual value and, consequently, the monthly depreciation expense may change during the term of the lease. The Group estimates expected residual values using independent data sources and internal statistical models. It also assesses the estimate of the residual value of these leases and adjusts the depreciation rate in line with the change in the expected value of the asset at the end of the lease.

Grupo Santander periodically assesses its investment in operating leases for impairment in certain circumstances, such as a systemic and material decrease in the values of used vehicles. If assets leased out under operating leases are deemed to be impaired, impairment is measured as the amount by which the carrying amount of the assets exceeds the fair value as estimated by discounted cash flows.

Of the EUR 19,083 million that the Group had assigned to operating leases at 31 December 2021 (EUR 18,559 million and EUR 19,221 million at 31 December 2020 and 2019, respectively), EUR 12,977 million (EUR 13,455 million and EUR 14,799 million at 31 December 2020 and 2019, respectively) relate to vehicles of Santander Consumer USA Holdings Inc. The variable lease payments of various items of this entity are not representative.

In addition, the maturity analysis of the payments for assets leased out under operating leases from Santander Consumer USA Holdings Inc. is as follows:

EUR million

	2021
Maturity Analysis	
2022	3,030
2023	3,814
2024	5,644
2025	872

d) Tangible assets - Investment property

The fair value of investment property at 31 December 2021, 2020, 2019 amounted to EUR 1,088, 1,055 and 1,076 million, respectively. A comparison of the fair value of investment property at 31 December 2021, 2020 and 2019 with the net book value shows gross unrealised gains of EUR 109, 92 and 103 million, respectively, attributed completely to the group.

The rental income earned from investment property and the direct costs related both to investment properties that generated rental income in 2021, 2020 and 2019 and to investment properties that did not generate rental income in those years are not material in the context of the consolidated financial statements.

17. Intangible assets – Goodwill

The detail of goodwill, based on the cash-generating units giving rise thereto, is as follows:

EUR million

	2021	2020	2019
Banco Santander (Brasil)	3,219	3,109	4,388
SAM Investment Holdings Limited	1,444	1,444	1,173
Santander Consumer Germany	1,304	1,314	1,236
Santander Bank Polska	1,095	1,104	2,427
Santander Portugal	1,040	1,040	1,040
Santander España	1,027	1,027	1,027
Santander Consumer USA	979	904	2,143
Santander Bank, National Association	643	594	1,828
Santander UK	633	592	7,147
Banco Santander - Chile	516	571	589
Grupo Financiero Santander (México)	435	399	460
Santander Consumer Nordics	224	216	496
Other companies	154	157	292
Total Goodwill	**12,713**	**12,471**	**24,246**

The changes in goodwill were as follows:

EUR million

	2021	2020	2019
Balance at beginning of year	12,471	24,246	25,466
Additions (note 3)	81	429	41
Of which:			
SAM Investment Holdings Limited	—	*271*	—
Santander España	—	—	*4*
Impairment losses	(6)	(10,100)	(1,491)
Of which:			
Santander UK	—	*(6,101)*	*(1,491)*
Santander Bank Polska	—	*(1,192)*	—
Santander Bank, National Association	—	*(1,177)*	—
Santander Consumer USA	—	*(1,153)*	—
Santander Consumer Nordics	—	*(277)*	—
Disposals or changes in scope of consolidation	—	—	—
Exchange differences and other items	167	(2,104)	230
Balance at end of year	**12,713**	**12,471**	**24,246**

Grupo Santander has goodwill generated by cash-generating units located in non-euro currency countries (mainly Brazil, Poland, the United States, the United Kingdom, Chile, Mexico, Norway and Sweden) and, therefore, this gives rise to exchange differences on the translation to euros, at closing rates, of the amounts of goodwill denominated in foreign currencies. Accordingly, in 2021 there was an increase of EUR 167 million (a decrease of EUR 2,104 million in 2020 and an increase of EUR 230 million in 2019), due to exchange differences and other items which, pursuant to current standards, were recognised with a change to 'Other comprehensive income - Items that may be reclassified to profit or loss - Exchange differences in other comprehensive income in the consolidated statement of recognised income and expense' (see note 29.d).

At least once per year (or whenever there is any indication of impairment), Grupo Santander performs an analysis of the potential impairment of its recorded goodwill with respect to its recoverable amount. The first step that must be taken in order to perform this analysis is the identification of the cash-generating units, which are the Group's smallest identifiable groups of assets that generate cash inflows that are largely independent of the cash flows of other assets or groups of assets.

The amount to be recovered of each cash-generating unit is determined taking into consideration the carrying amount (including any fair value adjustment arising on the business combination) of all the assets and liabilities of all the independent legal entities composing the cash-generating unit, together with the related goodwill.

The amount to be recovered of the cash-generating unit is compared with its recoverable amount in order to determine whether there is any impairment.

Grupo Santander's directors assess the existence of any indication that might be considered to be evidence of impairment of the cash-generating unit by reviewing information including the following (i) certain macroeconomic variables that might affect its investments (population data, political situation, economic situation —including banking concentration level—, among others) and (ii) various microeconomic variables comparing the investments of the Group with the financial services industry of the country in which the cash-generating unit carries on most of its business activities (balance sheet composition, total funds under management, results, efficiency ratio, capital adequacy ratio, return on equity, among others).

Regardless of whether there is any indication of impairment, every year the Group calculates the recoverable amount of each cash-generating unit to which goodwill, has been allocated and, to this end, it uses price quotations, market references (multiples), internal estimates and valuations performed by internal and external experts.

Firstly, the Group determines the recoverable amount by calculating the fair value of each cash-generating unit on the basis of the quoted price of the cash-generating units, if available.

In addition, the Group performs estimates of the recoverable amounts of certain cash-generating units by calculating their value in use using discounted cash flow projections. The main assumptions used in this calculation are (i) earnings projections based on the financial budgets approved by the Group's directors which cover between three and five year periods (unless a longer time horizon can be justified), (ii) discount rates determined as the cost of capital taking into account the risk-free rate of return plus a risk premium in line with the market and the business in which the units operate and (iii) constant growth rates used in order to extrapolate earnings in perpetuity which do not exceed the long-term average growth rate for the market in which the cash-generating unit in question operates.

The cash flow projections used by Group management to obtain the values in use are based on the financial budgets approved by both local management of the related local units and the Group's directors. The Group's budgetary estimation process is common for all the cash-generating units. The local management teams prepare their budgets using the following key assumptions:

a) Microeconomic variables of the cash-generating unit: management takes into consideration the current balance sheet structure, the product mix and the business decisions taken by local management in this regard.

b) Macroeconomic variables: growth is estimated on the basis of the changing environment, taking into consideration expected GDP growth in the unit's geographical location and forecast trends in interest and exchange rates. These data, which are based on external information sources, are provided by the Group's economic research service.

c) Past performance variables: in addition, management takes into consideration in the projection the difference (both positive and negative) between the cash-generating unit's past performance and budgets.

During 2021, the Group recognised impairment losses of EUR 6 million of immaterial goodwill which were recognised under 'Impairment or reversal of impairment of non-financial assets, net - Intangible assets'. Goodwill is deducted from CET1 for regulatory purposes and therefore an impairment of goodwill has no impact on the Group's capital ratios.

In 2020, considering the economic and business environment resulting from covid-19, market conditions and the existing economic uncertainty, an impairment test was performed for certain CGUs during the second quarter. As a result, the Group recognised goodwill impairment of EUR 10,100 million, mainly associated with Santander UK, Santander Bank Polska, Santander Bank, National Association, Santander Consumer USA and Santander Consumer Nordics.

In 2019, the Group recorded an impairment of goodwill associated with Santander UK amounting to EUR 1,491 million considering the following reasons: decrease in the profit generation capacity of the cash generating unit in contrast to the forecast made in previous years, the general competitive environment in the UK, the impact of the banking reform on retail businesses and the impact of the uncertainty generated by Brexit on the country's economic growth.

Following is a detail of the main assumptions taken into account in determining the recoverable amount, at 2021 year-end, of the most significant cash-generating units which were valued using the discounted cash flow method:

	2021		
	Projected period	Discount rate*	Nominal perpetual growth rate
Santander UK	5 years	9.2%	2.3%
Santander Bank Polska	5 years	10.3%	3.5%
Santander Consumer USA	3 years	10.6%	1.5%
Santander Bank, National Association**	5 years	11.6%	3.0%
Santander Consumer Germany	5 years	8.3%	1.8%
SAM Investment Holdings, Limited	5 years	10.4%	2.5%
Santander Portugal	5 years	9.7%	1.8%
Santander Consumer Nordics	5 years	9.9%	2.0%

* Post-tax discount rate.
** Weighted information of the main assumptions of the segments to which goodwill has been allocated.

The discount and nominal perpetual growth rates taken into account in 2020 and 2019 are presented below for comparison purposes:

	Discount rate*		Nominal perpetual growth rate	
	2020	2019	2020	2019
Santander UK	9.5%	8.5%	2.3%	2.5%
Santander Bank Polska	10.0%	9.2%	3.5%	3.5%
Santander Consumer USA	10.7%	9.5%	1.5%	1.5%
Santander Bank, National Association**	11.6%	9.6%	2.5%	3.6%
Santander Consumer Germany	9.0%	8.2%	1.8%	2.5%
SAM Investment Holdings, Limited	10.1%	10.0%	2.5%	2.5%
Santander Portugal	9.8%	8.9%	1.8%	2.0%
Santander Consumer Nordics	10.1%	8.6%	2.0%	2.5%

* Post-tax discount rate.
** Weighted information of the main assumptions of the segments to which goodwill has been allocated.

Given the degree of uncertainty of the above key assumptions on which the recoverable amount of the cash-generating units is based, the Group performs a sensitivity analysis which consisted of adjusting +/- 50 basis points the discount rate, adjusting +/- 50 basis points the growth rate in perpetuity and reducing the cash flow projections by 5%. These changes in the key assumptions in isolation mean that the recoverable amount of all the cash-generating units continues to exceed their amount to be recovered and have been considered by the Group to be reasonably possible in a stable economic environment and in which non-recurring events unrelated to the business operations of the cash-generating units are not contemplated.

The recoverable amount of Banco Santander - Chile, Grupo Financiero Santander (México) and Banco Santander (Brasil) was calculated as the fair values of the aforementioned cash-generating units obtained from the quoted market prices of their shares at year-end. This value exceeded the amount to be recovered. A significant reduction in the quoted market prices of these cash generating unit could result in an indication of impairment which in turn may lead to a goodwill impairment charge in the future.

18. Intangible assets - Other intangible assets

The detail of Intangible assets - Other intangible assets in the consolidated balance sheets and of the changes therein in 2021, 2020, and 2019 is as follows:

EUR million

	Estimated useful life	31 December 2020	Net additions and disposals	Change in scope of consolidation	Amortization and impairment	Application of amortization and impairment	Exchange differences and other	31 December 2021
Cost		**9,376**	**1,409**	**5**	**—**	**(293)**	**215**	**10,712**
Brand names		37	—	—	—	(34)	1	4
IT developments	3 -7 years	7,900	1,325	4	—	(212)	172	9,189
Other		1,439	84	1	—	(47)	42	1,519
Accumulated amortisation		(5,809)	—	(2)	(1,013)	232	(115)	(6,707)
Development		*(5,307)*	—	*(1)*	*(922)*	*178*	*(97)*	*(6,149)*
Other		*(502)*	—	*(1)*	*(91)*	*54*	*(18)*	*(558)*
Impairment losses		(130)	—	—	(65)	61	—	(134)
Of which addition		—	—	—	*(65)*	—	—	—
Liberation		—	—	—	—	—	—	—
		3,437	**1,409**	**3**	**(1,078)**	**—**	**100**	**3,871**

EUR million

	Estimated useful life	31 December 2019	Net additions and disposals	Change in scope of consolidation	Amortization and impairment	Application of amortization and impairment	Exchange differences and other	31 December 2020
Cost		**9,263**	**1,451**	**(33)**	**—**	**(241)**	**(1,064)**	**9,376**
Brand names		42	—	—		—	(5)	37
IT developments	3-7 years	7,945	1,123	(34)		(224)	(910)	7,900
Other		1,276	328	1		(17)	(149)	1,439
Accumulated amortisation		(5,686)	35	49	(896)	105	584	(5,809)
Development		*(5,139)*	—	*49*	*(792)*	*88*	*487*	*(5,307)*
Other		*(547)*	*35*	—	*(104)*	*17*	*97*	*(502)*
Impairment losses		(136)	—	—	(142)	136	12	(130)
Of which addition		—	—	—	*(142)*	—	—	—
Liberation		—	—	—	—	—	—	—
		3,441	**1,486**	**16**	**(1,038)**	**—**	**(468)**	**3,437**

EUR million

	Estimated useful life	31 December 2018	Net additions and disposals	Change in scope of consolidation	Amortization and impairment	Application of amortization and impairment	Exchange differences and other	31 December 2019
Cost		**8,680**	**1,377**	**(41)**	**—**	**(887)**	**134**	**9,263**
Brand names		36	2	2		—	2	42
IT developments	3-7 years	7,134	1,374	(19)		(639)	95	7,945
Other		1,510	1	(24)		(248)	37	1,276
Accumulated amortisation		(5,432)	—	8	(966)	806	(102)	(5,686)
Development		*(4,743)*	—	*4*	*(874)*	*570*	*(96)*	*(5,139)*
Other		*(689)*	—	*4*	*(92)*	*236*	*(6)*	*(547)*
Impairment losses		(154)	—	—	(73)	81	10	(136)
Of which addition		—	—	—	*(75)*	—	—	—
Liberation		—	—	—	*2*	—	—	—
		3,094	**1,377**	**(33)**	**(1,039)**	**—**	**42**	**3,441**

In 2021, 2020 and 2019, impairment losses of EUR 65 million, EUR 142 million and EUR 73 million, respectively, were recognised under Impairment or reversal of impairment on non-financial assets, net – intangible assets. This impairment losses are related mainly to the decline in or loss of the recoverable value of certain computer systems and applications as a result of the processes initiated by the Group to adapt to the various regulatory changes and to transform or integrate businesses.

19. Other assets

The detail of 'Other assets' is as follows:

EUR million

	2021	2020	2019
Transactions in transit	157	88	157
Net pension plan assets (note 25)	1,990	635	903
Prepayments and accrued income	2,610	2,806	3,129
Other (note 2.n)	3,683	7,362	5,752
	8,440	**10,891**	**9,941**

20. Deposits from central banks and credit institutions

The detail, by classification, counterparty, type and currency, of Deposits from central banks and 'Deposits from credit institutions' in the consolidated balance sheets is as follows:

EUR million

	2021	2020	2019
CENTRAL BANKS			
Classification			
Financial liabilities held for trading	1,038	—	—
Financial liabilities designated at fair value through profit or loss	607	2,490	12,854
Financial liabilities at amortized cost	139,757	112,804	62,468
	141,402	**115,294**	**75,322**
Type			
Deposits on demand	10	10	5
Time deposits	134,439	108,090	67,424
Reverse repurchase agreements	6,953	7,194	7,893
	141,402	**115,294**	**75,322**
CREDIT INSTITUTIONS			
Classification			
Financial liabilities held for trading	6,488	—	—
Financial liabilities designated at fair value through profit or loss	1,064	6,765	9,340
Financial liabilities at amortized cost	52,235	62,620	90,501
	59,787	**69,385**	**99,841**
Type			
Deposits on demand	6,139	5,727	9,136
Time deposits	37,332	43,308	61,406
Reverse repurchase agreements	16,198	20,179	29,115
Subordinated deposits	118	171	184
	59,787	**69,385**	**99,841**
Currency			
Euro	107,908	104,499	79,008
Pound sterling	42,451	23,339	18,129
US dollar	24,012	26,581	53,403
Brazilian real	11,297	12,356	13,022
Other currencies	15,521	17,904	11,601
TOTAL	**201,189**	**184,679**	**175,163**

In 31 December 2021, the balance of the conditional long-term financing of the European Central Bank (TLTRO- Targeted Long-Term Refinancing Operation-) amounted to EUR 88,894 million, all corresponding to TLRTO III (EUR 77,732 million and EUR 46,201 million at 31 December 2020 and 2019, respectively).

In December 2021, the income recognized in the consolidated income statement corresponding to TLTRO III amounts to EUR 868 million (EUR 391 million at 31 December 2020).

Grupo Santander´s deposits with central banks in 2021 amounted to EUR 193,102 million (EUR 137,047 million and EUR 75,353 million in 2020 and 2019), of which EUR 99,530 million with the European Central Bank (EUR 71,324 million and EUR 28,182 million in 2020 and 2019, respectively), at an average effective cost of -0.40%.

Note 50 contains a detail of the residual maturity periods of financial liabilities at amortised cost.

21. Customer deposits

The detail, by classification, geographical area and type, of Customer deposits is as follows:

EUR million

	2021	2020	2019
Classification			
Financial liabilities held for trading	6,141	—	—
Financial liabilities designated at fair value through profit or loss	25,608	34,343	34,917
Financial liabilities at amortized cost	886,595	814,967	789,448
	918,344	**849,310**	**824,365**
Geographical area			
Spain	319,565	294,516	271,103
European Union (excluding Spain)*	112,361	106,013	334,542
United States and Puerto Rico	73,814	59,057	60,011
Other OECD countries*	321,607	306,243	71,235
South America	90,997	83,481	87,474
	918,344	**849,310**	**824,365**
Type			
Demand deposits-	717,728	642,897	588,533
Current accounts	*482,649*	*418,752*	*373,146*
Savings accounts	*227,318*	*216,500*	*208,701*
Other demand deposits	*7,761*	*7,645*	*6,686*
Time deposits-	164,259	171,939	196,921
Fixed-term deposits and other term deposits	*162,172*	*170,127*	*194,163*
Home-purchase savings accounts	*38*	*43*	*44*
Discount deposits	*3*	*3*	*3*
Hybrid financial liabilities	*1,906*	*1,743*	*2,711*
Subordinated liabilities	*140*	*23*	—
Repurchase agreements	36,357	34,474	38,911
	918,344	**849,310**	**824,365**

* The amounts referring to 2021 and 2020 exercises for the United Kingdom geographical area have been considered in the line Other OECD countries, instead of in the line European Union (excluding Spain) due to the leaving of the United Kingdom from the European Union.

Note 50 contains a detail of the residual maturity periods of financial liabilities at amortised cost.

22. Marketable debt securities

a) Breakdown

The detail, by classification and type, of Marketable debt securities is as follows:

EUR million

	2021	2020	2019
Classification			
Financial liabilities held for trading	—	—	—
Financial liabilities designated at fair value through profit or loss	5,454	4,440	3,758
Financial liabilities at amortized cost	240,709	230,829	258,219
	246,163	**235,269**	**261,977**
Type			
Bonds and debentures outstanding	194,362	191,577	208,455
Subordinated	25,938	21,686	20,878
Notes and other securities	25,863	22,006	32,644
	246,163	**235,269**	**261,977**

The distribution of the book value of debt securities issued by contractual maturity at 31 December 2021 is shown below:

EUR million

	On demand	Within 1 month	1 to 3 months	3 to 12 months	1 to 3 years	3 to 5 years	More than 5 years	Total
Subordinated debt	—	—	49	130	656	6,167	18,936	25,938
Senior unsecured debt	—	3,033	3,734	10,621	38,731	26,715	28,600	111,434
Senior secured debt	—	1,673	5,271	12,364	33,562	13,340	16,718	82,928
Promissory notes and other securities	—	9,201	9,304	7,358	—	—	—	25,863
Debt securities issued	**—**	**13,907**	**18,358**	**30,473**	**72,949**	**46,222**	**64,254**	**246,163**

The distribution by contractual maturity of the notional amounts of these debt securities issued at 31 December 2021 is as follows:

EUR million

	On demand	Within 1 month	1 to 3 months	3 to 12 months	1 to 3 years	3 to 5 years	More than 5 years	Total
Subordinated debt	—	—	49	129	652	6,128	18,816	25,774
Senior unsecured debt	—	3,063	3,771	10,725	39,110	26,976	28,880	112,525
Senior secured debt	—	1,663	5,241	12,293	33,369	13,263	16,622	82,451
Promissory notes and other securities	—	9,341	9,447	7,471	—	—	—	26,259
Debt securities issued	**—**	**14,067**	**18,508**	**30,618**	**73,131**	**46,367**	**64,318**	**247,009**

b) Bonds and debentures outstanding

The detail, by currency of issue, of 'Bonds and debentures outstanding' is as follows:

	EUR million			2021	
Currency of issue	2021	2020	2019	Outstanding issue amount in foreign currency (Million)	Annual interest rate (%)
Euro	90,348	89,031	89,008	90,348	1.06%
US dollar	66,581	61,174	64,952	75,406	2.39%
Pound sterling	13,340	16,569	20,178	11,206	2.13%
Brazilian real	9,131	8,398	15,292	57,702	1.99%
Chilean peso	3,757	5,624	6,848	3,623,635	5.03%
Other currencies	11,205	10,781	12,177		
Balance at end of year	**194,362**	**191,577**	**208,455**		

The changes in 'Bonds and debentures outstanding' were as follows:

EUR million

	2021	2020	2019
Balance at beginning of year	**191,577**	**208,455**	**195,498**
Net inclusion of entities in the Group	—	785	—
Issues	**59,937**	**54,905**	**64,184**
Of which:			
Santander Consumer USA Holdings Inc.	*15,771*	*12,246*	*15,631*
Banco Santander (Brasil) S.A.	*14,996*	*11,036*	*13,227*
Banco Santander, S.A.	*11,766*	*10,220*	*12,066*
Santander UK Group Holdings plc	*3,372*	*6,320*	*4,547*
Santander Consumo 4, F.T.	*1,531*	—	—
SC Germany S.A. (New Compartment: Consumer 2021-1)	*1,496*	—	—
Santander Consumer Finance, S.A.	*1,169*	*2,394*	*5,150*
Banco Santander - Chile	*1,158*	*766*	*1,644*
Santander International Products, Plc.	*914*	*1,588*	*848*
Auto ABS French Lease Master Compartiment 2016	*900*	*300*	*300*
Santander Factoring Sp. z o.o.	*819*	*391*	*375*
PSA Banque France	*815*	*385*	*1,132*
Santander Consumer Bank AS	*779*	*773*	*1,572*
PSA Bank Deutschland GmbH	*600*	—	*1,104*
Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México	*541*	*1,770*	*577*
PSA Financial Services, Spain, E.F.C, S.A.	—	*605*	—
Santander Holdings USA, Inc.	—	*1,269*	*2,778*
SC Germany S.A., Compartment Consumer 2020-1	—	*1,800*	—
SCF Rahoituspalvelut IX DAC	—	*650*	—
Santander Consumer Bank AG	—	*500*	*750*
SCF Rahoituspalvelut VIII DAC	—	—	*799*
Redemptions and repurchases	**(61,846)**	**(62,699)**	**(52,462)**
Of which:			
Banco Santander (Brasil) S.A.	*(15,182)*	*(14,211)*	*(12,817)*
Santander Consumer USA Holdings Inc.	*(15,151)*	*(13,959)*	*(14,517)*
Santander UK Group Holdings plc	*(14,695)*	*(14,102)*	*(9,115)*
Santander Consumer Finance, S.A.	*(3,779)*	*(4,371)*	*(2,550)*
Banco Santander, S.A.	*(3,185)*	*(5,991)*	*(3,303)*
Banco Santander - Chile	*(1,030)*	*(1,974)*	*(848)*
Santander Factoring Sp. z o.o.	*(920)*	*(299)*	*(407)*
Auto ABS French Lease Master Compartiment 2016	*(900)*	—	—
Santander Holdings USA, Inc.	*(778)*	*(1,201)*	*(1,990)*
PSA Bank Deutschland GmbH	*(580)*	—	*(902)*
Santander Consumer Bank AS	*(348)*	*(936)*	*(1,551)*
Santander International Products, Plc.	*(345)*	*(324)*	*(722)*
PSA Banque France	*(335)*	*(684)*	—
Banco Santander Totta, S.A.	*(9)*	*(784)*	*(739)*
Exchange differences and other movements	4,694	(9,869)	1,235
Balance at year-end	**194,362**	**191,577**	**208,455**

c) Notes and other securities

These notes were issued basically by Santander Consumer Finance, S.A., Santander UK plc, Banco Santander (México), S.A. Institución de Banca Múltiple, Grupo Financiero Santander México, Banco Santander, S.A., Santander Consumer Bank AG, PSA Banque France, Banco Santander - Chile, Santander Bank Polska S.A. and Banco Santander S.A. - Uruguay.

d) Guarantees

Set forth below is information on the liabilities secured by assets:

EUR million

	2021	2020	2019
Asset-backed securities	40,519	35,753	38,616
Of which, mortgage-backed securities	*1,487*	*2,274*	*3,819*
Other mortgage securities	41,779	49,425	50,269
Of which: mortgage-backed bonds	*23,197*	*24,736*	*24,736*
Territorial covered bond	630	869	1,270
	82,928	**86,047**	**90,155**

The main characteristics of the assets securing the aforementioned financial liabilities are as follows:

1. Asset-backed securities

    a. Mortgage-backed securities- these securities are secured by mortgage assets (see Note 10.e) with average maturities of more than ten years that must: be a first mortgage for acquisition of principal or second residence, be current in payments, have a loan-to-value ratio below 80% and have a liability insurance policy in force covering at least the appraisal value. The value of the financial liabilities broken down in the foregoing table is lower than the balance of the assets securing them —securitised assets retained on the balance sheet— mainly because the Group repurchases a portion of the bonds issued, and in such cases they are not recognised on the liability side of the consolidated balance sheet.

    b. Other asset - backed securities: includes asset-backed securities, notes issued by securitization funds collateralized mainly by mortgage loans that do not meet the above requirements and other loans (mainly personal loans with an average maturity of five years and loans to SMEs with average maturities of seven years) and private issues of Santander Consumer USA Holdings Inc collateralized by vehicles assigned under operating leases.

2. Other mortgage securities include mainly: (i) mortgage-backed bonds with average maturities of more than ten years that are secured by a portfolio of mortgage loans and credits (included in secured loans —see note 10.b—) which must: not be classified as of procedural stage; have available appraisals performed by specialised entities; have a loan-to-value (LTV) ratio below 80% in the case of home loans and below 60% for loans for other assets and have sufficient liability insurance, (ii) other debt securities issued as part of the Group's liquidity strategy in the UK, mainly covered bonds in the UK secured by mortgage loans and other assets.

The fair value of the guarantees received by the Group (financial and non-financial assets) which the Group is authorised to sell or pledge even if the owner of the guarantee has not defaulted is scantly material taking into account the Consolidated financial statements as a whole.

e) Spanish mortgage-market issues

The members of the board of directors hereby state that the Group entities operating in the Spanish mortgage-market issues area have established and implemented specific policies and procedures to cover all activities carried on and guarantee strict compliance with mortgage-market regulations applicable to these activities as provided for in Royal Decree 716/2009, of 24 April implementing certain provisions of Mortgage Market Law 2/1981, of 25 March, and, by application thereof, in Bank of Spain Circulars 7/2010 and 5/2011, and other financial and mortgage system regulations. Also, financial management defines the Grupo Santander's funding strategy.

The risk policies applicable to mortgage market transactions envisage maximum loan-to-value (LTV) ratios, and specific policies are also in place adapted to each mortgage product, which occasionally require the application of stricter limits.

Grupo Santander's general policies in this respect require the repayment capacity of each potential customer (the effort ratio in loan approval) to be analysed using specific indicators that must be met. This analysis must determine whether each customer's income is sufficient to meet the repayments of the loan requested. In addition, the analysis of each customer must include a conclusion on the stability over time of the customer's income considered with respect to the life of the loan. The aforementioned indicator used to measure the repayment capacity (effort ratio) of each potential customer takes into account mainly the relationship between the potential debt and the income generated, considering on the one hand the monthly repayments of the loan requested and other transactions and, on the other, the monthly salary income and duly supported income.

Grupo Santander entities have specialised document comparison procedures and tools for verifying customer information and solvency (see note 53).

Grupo Santander entities' procedures envisage that each mortgage originated in the mortgage market must be individually valued by an appraisal company not related to the Group.

In accordance with Article 3 of Mortgage Market Law 41/2007, any appraisal company approved by the Bank of Spain may issue valid appraisal reports. However, as permitted by this same article, the Group entities perform several checks and select, from among these companies, a small group with which they enter into cooperation agreements with special conditions and automated control mechanisms. The Group's internal regulations specify, in detail, each of the internally approved companies, as well as the approval requirements and procedures and the controls established to uphold them. In this connection, the regulations establish the functions of an appraisal company committee on which the various areas of the Group related to these companies are represented. The aim of the committee is to regulate and adapt the internal regulations and the activities of the appraisal companies to the current market and business situation (see note 2.i).

Basically, the companies wishing to cooperate with the Group must have a significant level of activity in the mortgage market in the area in which they operate, they must pass a preliminary screening process based on criteria of independence, technical capacity and solvency -in order to ascertain the continuity of their business- and, lastly, they must pass a series of tests prior to obtaining definitive approval.

In order to comply in full with the legislation, any appraisal provided by the customer is reviewed, irrespective of which appraisal company issues it, to check that the requirements, procedures and methods used to prepare it are formally adapted to the valued asset pursuant to current legislation and that the values reported are customary in the market.

The information required by Bank of Spain circulars 7/2010 and 5/2011, by application of Royal Decree 716/2009, of 24 April is as follows:

EUR million

	2021	2020	2019
Face value of the outstanding mortgage loans and credits that support the issuance of mortgage-backed and mortgage bonds pursuant to Royal Decree 716/2009 (excluding securitised bonds)	83,088	76,554	84,720
Of which:			
Loans eligible to cover issues of mortgage-backed securities	*64,896*	*57,382*	*59,517*
Transfers of assets retained on balance sheet: mortgage-backed certificates and other securitised mortgage assets	*11,133*	*17,610*	*14,569*

Mortgage-backed bonds

The mortgage-backed bonds ('*cédulas hipotecarias*') issued by the Group entities are securities the principal and interest of which are specifically secured by mortgages, there being no need for registration in the property register, by mortgage on all those that at any time are recorded in favour of the issuer and are not affected by the issuance of mortgage bonds and / or are subject to mortgage participations, and / or mortgage transfer certificates, and, if they exist, by substitution assets eligible to be hedged and for the economic flows generated by derivative financial instruments linked to each issue, and without prejudice to the issuer's unlimited liability.

The mortgage bonds include the credit right of its holder against the issuing entity, guaranteeing in the manner provided for in the previous paragraph, and involve the execution to claim from the issuer the payment after due date. The holders of these securities are recognised as preferred creditors, singularly privileged, with the preference, included in number 3º of article 1,923 of the Spanish Civil Code against any other creditor, in relation with the entire group of loans and mortgage loans registered in favour of the issuer, except those that act as coverage for mortgage bonds and / or are subject to mortgage participations and / or mortgage transfer certificates.

In the event of insolvency, the holders of mortgage-backed bonds, as long as they are not considered 'person especially related' to the issuing entity in accordance with Royal Legislative Decree 1/2020, of 5 May, approving the revised text of the Bankruptcy Law , will enjoy the special privilege established in Article 270.1.1 of the aforementioned Bankruptcy Law. Without prejudice to the foregoing, in accordance with Article 242.10 of the Bankruptcy Law, during the insolvency proceedings, the payments relating to the repayment of the principal and interest of the bonds issued and outstanding at the date of the insolvency filing will be settled up to the amount of the income received by the insolvent party from the mortgage loans and credits and, where appropriate, from the replacement assets backing the bonds and from the cash flows generated by the financial instruments associated with the issues (Article 14 of Law 2/1981 of 25 March 1981 regulating the mortgage market).

If, due to a timing mismatch, the income received by the insolvent party is insufficient to meet the payments described in the preceding paragraph, the insolvency managers must settle them by realising the replacement assets set aside to cover the issue and, if this is not sufficient, they must obtain financing to meet the mandated payments to the holders of the mortgage-backed bonds, and the finance provider must be subrogated to the position of the bond-holders.

In the event that it would be necessary to proceed in accordance with the terms of Article 212.1 and, in accordance with the requirements of Article 413 of the Insolvency Law, the payments to all holders of the mortgage-backed bonds issued would be made on a pro-rata basis, irrespective of the issue dates of the bonds. If the same credit or loan is subject to the payment of bonds and a mortgage bond issue, it will be paid first to the holders of the bonds.

The outstanding mortgage-backed bonds issued by Grupo Santander totalled EUR 23,197 million at 31 December 2021 (all of which were denominated in euros), of which EUR 22,747 million were issued by Banco Santander, S.A (with an outstanding face value of EUR 22,266 million), and EUR 450 million were issued by Santander Consumer Finance, S.A. The issues outstanding at 31 December 2021 and 2020 are detailed in the separate financial statements of each of these companies.

Mortgage-backed bond issuers have an early redemption option for the purpose of complying with the limits on the volume of outstanding mortgage-backed bonds stipulated by mortgage market regulations. In addition, the issuing entity may advance the mortgage-backed bonds, if this has been expressly established in the final conditions of the issue in question and under the conditions set out therein.

None of the mortgage-backed bonds issued by the Group entities had replacement assets assigned to them.

23. Subordinated liabilities

a) Breakdown

The detail, by currency of issue, of Subordinated liabilities, deposits and marketable debt securities, in the consolidated balance sheets is as follows:

	EUR million			2021	
Currency of issue	2021	2020	2019	Outstanding issue amount in foreign currency (million)	Annual interest rate (%)
Euro	13,857	13,570	12,542	13,857	3.52%
US dollar	8,236	5,991	6,506	9,328	4.92%
Pound sterling	1,535	565	655	1,289	4.36%
Brazilian real	879	—	—	5,555	9.65%
Other currencies	1,689	1,754	1,359		
Balance at end of year	**26,196**	**21,880**	**21,062**		

Note 50 contains a detail of the residual maturity periods of subordinated liabilities at each year-end.

b) Changes

The movement in the balance of subordinated liabilities in the last three years were as follows:

EUR million	2021	2020	2019
Balance at beginning of year	21,880	21,062	23,820
Net inclusion of entities in the Group (note 3)	—	—	—
Placements	5,340	4,075	1,090
Of which:			
Banco Santander, S.A.	*4,469*	*3,722*	*1,056*
Banco Santander (Brasil) S.A.	*871*	—	—
Banco Santander - Chile	—	*353*	—
PSA Bank Deutschland GmbH	—	—	*23*
Banca PSA Italia S.p.a.	—	—	*11*
Net redemptions and repurchases*	(1,500)	(2,838)	(4,009)
Of which:			
Banco Santander, S.A.	*(1,500)*	*(1,671)*	*(3,782)*
Santander UK plc	—	*(740)*	*(16)*
Santander UK Group Holdings plc	—	*(316)*	—
Santander Bank, National Association	—	*(111)*	*(19)*
Banco Santander (Brasil) S.A.	—	—	*(124)*
Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México	—	—	*(69)*
Exchange differences and other movements	476	(419)	161
Balance at end of year	**26,196**	**21,880**	**21,062**

* The balance relating to issuances, redemptions and repurchases (EUR 3,840 million), together with the interest paid in remuneration of these issuances including PPCC (EUR 1,184 million), is included in the cash flow from financing activities.

c) Other disclosures

This caption includes contingent convertible or redeemable preferred participations, as well as other subordinated financial instruments issued by consolidated companies, which do not qualify as equity (preferred shares).

Preferred shares do not have voting rights and are non-cumulative. They have been subscribed by third parties outside the Group, and except for the issues of Santander UK plc, the rest are redeemable by decision of the issuer, according to the terms of each issue.

Banco Santander's contingently convertible preferred participations are subordinated debentures and rank after common creditors and any other subordinated credit that by law and/or by their terms, to the extent permitted by Spanish law, ranks higher than the contingently convertible preferred participations. Their remuneration is conditioned to the obtainment of sufficient distributable profits, and to the limitations imposed by the regulations on shareholders' equity, and they have no voting rights. The other issues of Banco Santander, S.A. mentioned in this caption are also subordinated debentures and, for credit ranking purposes, they rank behind all the common creditors of the issuing entities and ahead of any other subordinated credit that ranks pari passu with the Bank's contingently convertible preferred participations.

The main issues of subordinated debt securities issued, broken down by company, are detailed below:

Issues by Banco Santander, S.A.

At 22 November 2021, Banco Santander, S.A. issued subordinated debentures for a term of eleven years, with a redemption option on the tenth anniversary of the issue date, in the amount of USD 1,000 million (EUR 1,007 million at the exchange rate on the day of issue). The issue bears interest at an annual rate of 3.225%, payable semi-annually, for the first ten years (then repricing at a margin of 160 points over the one-year U.S. government bond).

At 4 October 2021, Banco Santander, S.A. issued subordinated debentures for a term of eleven years, with a redemption option on the sixth anniversary of the issue date, amounting to GBP 850 million (EUR 887 million at the exchange rate on the day of issue). The issue bears interest at an annual rate of 2.25%, payable annually for the first six years (then repricing at a margin of 165 points over the 5-year UK government bond).

At 21 September 2021, Banco Santander, S.A. carried out a placement of preferential shares contingently convertible into newly issued ordinary shares of the Bank ('PPCC') for a nominal amount of EUR 1,000 million (issue placed on the market EUR 997 million). The issuance has been carried out at par and the remuneration of the PPCC, whose payment is subject to certain conditions and is also discretionary, has been set at 3.625% per year for the first eight years, being reviewed every five years applying a margin of 376 basis points over the 5-year Mid-Swap Rate.

At 11 September 2021, Banco Santander, S.A. proceeded to redeem early and voluntarily the entire issue made on 11 September 2014 of tier 1 contingently convertible preference shares (PPCC) with ISIN code XS110729154 which are traded in the Irish Stock Exchange Market 'Global Exchange Market', for a total nominal amount of EUR 1,500 million .

At 12 May 2021, Banco Santander placed the issue of preference shares contingently convertible into newly issued ordinary shares of the Bank, previously announced, for a total nominal amount of EUR 1,578 million, issued in a Series in Dollars of USD 1,000 million (EUR 828 million at the exchange rate on the day of issue) and a Series in Euros for an amount of EUR 750 million. The issuance is carried out at par and the remuneration of the PPCC, whose payment is subject to certain conditions and is also discretionary, has been set (i) for the Series in Dollars at 4.750% per annum for the first six years, being revised every five years applying a margin of 375.3 basis points over the 5-year UST rate and (ii) for the Series in Euros by 4.125% per annum for the first seven years, being revised every five years applying a margin of 431.1 basis points over the applicable 5-year euro mid-swap.

At 3 December 2020, Banco Santander, S.A. issued subordinated debentures with a ten-year term of USD 1,500 million (EUR 1,222 million at the date of issue). The issue bears interest at an annual rate of 2.749%, payable semiannually.

At 22 October 2020, it carried out a ten-year subordinated debenture issue for an amount of EUR 1,000 million. The issue bears interest at an annual rate of 1.625%, payable annually.

At 12 March 2020, it proceeded to redeem early and voluntarily the entire outstanding issue of Tier 1 Contingently Convertible Preferred Participations Series I/2014, for a total nominal amount of EUR 1,500 million.

At 14 January 2020, it carried out a placement of contingently convertible preferred participations into newly issued ordinary shares of the Bank (the 'PPCCs'), excluding the pre-emptive subscription rights of its shareholders and for a nominal amount of EUR 1,500 million (the 'Issue' and the 'PPCCs'). The Issue was made at par and the remuneration of the PPCCs, the payment of which is subject to certain conditions and is also discretionary, was set at 4.375% per annum for the first six years, revised every five years thereafter by applying a margin of 453.4 basis points over the 5-year Mid-Swap Rate (5-year Mid-Swap Rate).

At 19 May 2019, the voluntary early redemption of the preferred shares relating to the second issue made on 9 May 2014 (code ISIN XS1066553329) was communicated for an amount of USD 1,500 million (EUR 1,345 million) at the redemption date.

At 8 February 2019, Banco Santander, S.A, carried out an issue of PPCC for a nominal amount of USD 1,200 million (EUR 1,056 million). The remuneration of the issues whose payment is subject to certain conditions and is also discretionary was set at 7.50% per annum, for the first five years (revised thereafter by applying a margin of 498.9 points over the mid-swap rate).

At 19 March 2018, a 'PPCC' issue was carried out, for a nominal amount of EUR 1,500 million. The remuneration of the issue, the payment of which is subject to certain conditions and is also discretionary, was set at 4.75% per annum, payable quarterly, for the first seven years (revised thereafter by applying a margin of 410 basis points over the Mid-swap rate).

At 8 February 2018, a 10-year subordinated debenture issue of EUR 1,250 million was carried out. The issue accrues annual interest of 2.125% payable annually.

At 25 April and 29 September 2017, Banco Santander, S.A. carried out issues of 'PPCCs', for a nominal amount of EUR 750 million, and EUR 1,000 million respectively. The remuneration of the PPCCs, the payment of which is subject to certain conditions and is also discretionary, was set at 6.75% per annum for the first five years (revised thereafter by applying a margin of 680.3 basis points over the 5-year Mid-Swap Rate) for the issue disbursed in April, at 5.25% per annum for the first six years (revised thereafter by applying a margin of 499.9 basis points over the 5 years Mid-Swap Rate) for the issue disbursed in September.)

Issues by Banco Santander - Chile

In June 2020, Banco Santander - Chile issued subordinated debentures for a term of fifteen years, in the amount of UF 5 million (equivalent to USD 185 million). The issue bears annual interest at 3.5%.

In April 2020, Banco Santander - Chile issued two subordinated debentures, the first for a term of fourteen years, for an amount of UF 3 million (equivalent to USD 100 million), bearing annual interest at 3%, and the second for a term of nineteen years, for an amount of UF 3 million (equivalent to USD 100 million), bearing annual interest at 3.15%.

Issues Banco Santander (Brasil) S.A.

At the end of November 2021, Banco Santander (Brasil) S.A. carried out an issue of Subordinated Financial Bills (TIER II) in its local market for a 10-year term, with a repurchase option as of the fifth anniversary of the issue date, in the amount of BRL 5,500 million. The issue price was CDI +2% per annum, payable at maturity.

On 29 January 2014 Banco Santander (Brasil) S.A. issued Tier 1 perpetual subordinated notes for a nominal amount of USD 1,248 million and the Group acquired 89.6% of the issue. The notes are perpetual and would be converted into common shares of Banco Santander (Brasil) S.A. if the common equity Tier 1 ratio, calculated as established by the Central Bank of Brazil, were lower than 5.125%. This issue was fully redeemed in fiscal year 2019.

Issues by Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México

At 1 October 2018, a ten-year subordinated debenture issue was made by Banco Santander México, S.A. Institución de Banca Múltiple, Grupo Financiero Santander México for a nominal amount of USD 1,300 million and at an interest rate of 5.95%, with the group having acquired 75% of the issue.

Additionally, at 30 December 2016, a nominal amount of USD 500 million was made, with the Group having acquired 88.2% of the issue. The perpetual debentures are automatically converted into shares when the Regulatory Capital Ratio (CET1) is equal to or less than 5.125% at the conversion price.

Issues by Santander Bank Polska S.A.

At 20 April 2018, Santander Bank Polska S.A. carried out a ten-year subordinated debenture issue with a redemption option on the fifth anniversary of the issue date in the amount of PLN 1,000 million. The issue bears floating interest at Wibor (6M) + 160 basis points payable semi-annually.

The accrued interests from the subordinated liabilities during 2021 amounted to EUR 648 million (EUR 571 million and EUR 645 million during 2020 and 2019, respectively).

In addition, interests from the PPCC during 2021 amounted to EUR 566 million (EUR 552 million and EUR 595 million in 2020 and 2019, respectively).

24. Other financial liabilities

The detail of Other financial liabilities in the consolidated balance sheets is as follows:

EUR million

	2021	2020	2019
Trade payables	1,475	1,177	1,279
Clearing houses	650	599	165
Tax collection accounts:			
Public Institutions	5,315	4,122	4,122
Factoring accounts payable	275	222	409
Unsettled financial transactions	3,779	5,080	3,693
Lease liabilities (note 2.l)	2,856	3,049	5,108
Other financial liabilities	15,523	12,719	15,459
	29,873	**26,968**	**30,235**

Note 50 contains a detail of the residual maturity periods of other financial liabilities at each year-end.

Lease liabilities

The cash outflow of leases in 2021 was EUR 715 million (EUR 789 and EUR 946 million in 2020 and 2019, respectively).

The analysis of the maturities of lease liabilities at December 2021, 2020 and 2019 is shown below:

EUR million

	2021	2020	2019
Maturity Analysis - Discounted payments			
Within 1 year	690	594	766
Between 1 and 3 years	933	981	1,254
Between 3 and 5 years	534	637	875
Later than 5 years	699	837	2,213
Total discounted payments at the end of the year	**2,856**	**3,049**	**5,108**

During 2021, 2020 and 2019 there were no significant variable lease payments not included in the valuation of lease liabilities.

25. Provisions

a) Breakdown

The detail of Provisions in the consolidated balance sheets is as follows:

EUR million

	2021	2020	2019
Provision for pensions and other obligations post-employments	3,185	3,976	6,358
Other long term employee benefits	1,242	1,751	1,382
Provisions for taxes and other legal contingencies	1,996	2,200	3,057
Provisions for contingent liabilities and commitments (note 2)	733	700	739
Other provisions	2,427	2,225	2,451
Provisions	**9,583**	**10,852**	**13,987**

b) Changes

The changes in 'Provisions' in the last three years were as follows:

EUR million

	2021				
	Post employment plans	Long term employee benefits	Contingent liabilities and commitments	Other provisions	Total
Balances at beginning of year	**3,976**	**1,751**	**700**	**4,425**	**10,852**
Additions charged to income	100	101	29	2,748	2,978
Interest expense (note 39)	78	13	—	—	91
Staff costs (note 47)	67	6	—	—	73
Provisions or reversion of provisions	(45)	82	29	2,748	2,814
Addition	*21*	*154*	*473*	*3,065*	*3,713*
Release	*(66)*	*(72)*	*(444)*	*(317)*	*(899)*
Other additions arising from insurance contracts linked to pensions	(8)	—	—	—	(8)
Changes in value recognised in equity	(1,705)	—	—	—	(1,705)
Payments to pensioners and pre-retirees with a charge to internal provisions	(201)	(605)	—	—	(806)
Payments to external funds	(440)	—	—	—	(440)
Amounts used	—	—	—	(2,961)	(2,961)
Transfer, exchange differences and other changes	1,463	(5)	4	211	1,673
Balances at end of year	**3,185**	**1,242**	**733**	**4,423**	**9,583**

EUR million

	2020					2019				
	Post employment plans	Long term employee benefits	Contingent liabilities and commitments	Other provisions	Total	Post employment plans	Long term employee benefits	Contingent liabilities and commitments	Other provisions	Total
Balances at beginning of year	**6,358**	**1,382**	**739**	**5,508**	**13,987**	**5,558**	**1,239**	**779**	**5,649**	**13,225**
Incorporation of Group companies, net	(5)	—	(1)	(2)	(8)	—	(1)	—	—	(1)
Additions charged to income	(217)	782	50	1,934	2,549	173	729	(31)	2,836	3,707
Interest expense (note 39)	84	11	—	—	95	128	17	—	—	145
Staff costs (note 47)	69	7	—	—	76	65	7	—	—	72
Provisions or reversion of provisions	(370)	764	50	1,934	2,378	(20)	705	(31)	2,836	3,490
Addition	*6*	*787*	*490*	*2,258*	*3,541*	*10*	*713*	*422*	*4,276*	*5,421*
Release	*(376)*	*(23)*	*(440)*	*(324)*	*(1,163)*	*(30)*	*(8)*	*(453)*	*(1,440)*	*(1,931)*
Other additions arising from insurance contracts linked to pensions	2	—	—	—	2	4	—	—	—	4
Changes in value recognised in equity	547	—	—	—	547	1,520	—	—	—	1,520
Payments to pensioners and pre-retirees with a charge to internal provisions	(303)	(408)	—	—	(711)	(331)	(612)	—	—	(943)
Benefits paid due to settlements	(1,551)	—	—	—	(1,551)	—	—	—	—	—
Insurance premiums paid	(1)	—	—	—	(1)	(1)	—	—	—	(1)
Payments to external funds	(333)	—	—	—	(333)	(455)	—	—	—	(455)
Amounts used	—	—	—	(2,485)	(2,485)	—	—	—	(2,907)	(2,907)
Transfer, exchange differences and other changes	(521)	(5)	(88)	(530)	(1,144)	(110)	27	(9)	(70)	(162)
Balances at end of year	**3,976**	**1,751**	**700**	**4,425**	**10,852**	**6,358**	**1,382**	**739**	**5,508**	**13,987**

c) Provision for pensions and other obligations post – employments and Other long term employee benefits

The detail of Provisions for pensions and similar obligations is as follows:

EUR million

	2021	2020	2019
Provisions for post-employment plans - Spanish entities	1,709	1,881	3,951
Provisions for other similar obligations - Spanish entities	1,188	1,695	1,321
Of which pre-retirements	*1,176*	*1,676*	*1,303*
Provisions for post-employment plans - United Kingdom	44	449	329
Provisions for post-employment plans - Other subsidiaries	1,432	1,646	2,078
Provisions for other similar obligations - Other subsidiaries	54	56	61
Provision for pensions and other obligations post -employments and Other long term employee benefits	**4,427**	**5,727**	**7,740**
Of which defined benefits	*4,419*	*5,719*	*7,731*

i. Spanish entities - Post-employment plans and other similar obligations

At 31 December 2021, 2020 and 2019, the Spanish entities had post-employment benefit obligations under defined contribution and defined benefit plans. In addition, in various years some of the consolidated entities offered certain of their employees the possibility of taking pre-retirement and, therefore, provisions are recognised each year for the obligations to employees taking pre-retirement -in terms of salaries and other employee benefit costs- from the date of their pre-retirement to the agreed end date.

In 2019, the provisions accounted for benefit plans and contribution commitments were EUR 688 million.

In December 2020, Banco Santander reached an agreement with the workers' representatives to implement an early retirement and incentivized dismissals plan, which was expected to benefit 3,572 employees during 2021, constituting a provision to cover these commitments amounting to EUR 688 million. In addition to this plan, in 2020, 443 employees took advantage of the offer of early retirement and incentivized dismissals, increasing the provision made to cover these commitments to EUR 84 million. In 2021, due to the increase in the number of employees covered by the plan, a provision of EUR 139 million has been recognised.

In December 2019 Banco Santander reached an agreement with the workers' representatives to offer during 2020 to part of its passive personnel, the possibility of receiving the pensionable rights derived from the collective bargaining agreement in the form of a single consideration or divided into a maximum of 5 equal annuities. The proposal was also extended to personnel with pensionable rights recognized under individual contracts or agreements. The number of beneficiaries who exercised the voluntary option of accepting the substitution of the life annuity for the payment of a lump sum in the form of a capital sum or in instalments of a maximum of 5 annuities amounted to 15,613 people. The effect of the reduction of the aforementioned commitments is shown in the tables below under the headings 'Benefits paid in settlement' in the amount of EUR 1,551 million and 'Effect of reduction/settlement' in the amount of EUR 362 million.

On 8 July 2021, Banco Santander reached an agreement with the employee representatives for the transformation of defined benefit pension commitments into defined contributions for certain retired personnel from Banco Popular and Banco Pastor. Through the aforementioned Collective Agreement, it was agreed to carry out an offer to replace the life annuities that the passive personnel included in the scope of application of said Collective Agreement had been receiving, for a capitalization fund in the Santander Employees pension plan. The number of beneficiaries who exercised the voluntary option to accept the substitution of the life annuity for a capitalization fund in the Santander Employees pension plan amounted to 1,468 people.

The effect of the reduction of the aforementioned commitments is shown in the tables below under the headings 'Benefits paid by settlement' amounting to EUR 166 million and 'Effect reduction / settlement' amounting to EUR 36 million.

The expenses incurred by the Spanish companies in 2021, 2020 and 2019 in respect of contributions to defined contribution plans amounted to EUR 91 million, EUR 89 million and EUR 89 million, respectively.

The amount of the defined benefit obligations was determined on the basis of the work performed by independent actuaries using the following actuarial techniques.

1. Valuation method: projected unit credit method, which sees each period of service as giving rise to an additional unit of benefit entitlement and measures each unit separately.

2. Actuarial assumptions used: unbiased and mutually compatible. Specifically, the most significant actuarial assumptions used in the calculations were as follows:

	Post-employment plans			Other similar obligations		
	2021	2020	2019	2021	2020	2019
Annual discount rate	0.90%	0.60%	0.80%	0.90%	0.60%	0.80%
Mortality tables	PE2020 M/F Col. Orden 1	PE2020 M/F Col. Orden 1	PERM/F-2000	PE2020 M/F Col. Orden 1	PE2020 M/F Col. Orden 1	PERM/F-2000
Cumulative annual CPI growth	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Annual salary increase rate	1.25%*	1.25%*	1.25%*	N/A	N/A	N/A
Annual social security pension increase rate	1.00%	1.00%	1.00%	N/A	N/A	N/A
Annual benefit increase rate	N/A	N/A	N/A	0%	0%	0 %

* Corresponds to the group's defined-benefit obligations.

The discount rate used for the flows was determined by reference to high-quality corporate bonds (at least AA in euros) matching the durations of the commitments. From the bond portfolio considered, callable, putable and sinkable bonds, which could distort the rates, are excluded.

Any changes in the main assumptions could affect the calculation of the obligations. At 31 December 2021, if the discount rate used had been decreased or increased by 50 basis points (bp), there would have been an increase or decrease in the present value of the post-employment obligations of 5.00% (-50 bp) to -5.06% (+50 bp),respectively, and an increase or decrease in the present value of the long-term obligations of 1.18% (-50 bp) to -1.18% (+50 bp), respectively.

These changes would be offset in part by increases or decreases in the fair value of the assets and insurance contracts linked to pensions.

3. The estimated retirement age of each employee is the first at which the employee is entitled to retire or the agreed-upon age, as appropriate.

The fair value of insurance contracts was determined as the present value of the related payment obligations, taking into account the following assumptions:

	Post-employment plans			Other similar obligations		
	2021	2020	2019	2021	2020	2019
Expected rate of return on plan assets	0.90%	0.60%	0.80%	0.90%	0.60%	0.80%
Expected rate of return on reimbursement rights	0.90%	0.60%	0.80%	N/A	N/A	N/A

The funding status of the defined benefit obligations in 2021 and the two preceding years is as follows:

EUR million

	Post-employment plans			Other similar obligations		
	2021	2020	2019	2021	2020	2019
Present value of the obligations						
To current employees	29	60	59	—	—	—
Vested obligations to retired employees	2,797	3,318	5,393	—	—	—
To pre-retirees employees	—	—	—	1,186	1,688	1,317
Long-service bonuses and other benefits	—	—	—	12	18	18
Other	65	41	42	—	1	—
	2,891	**3,419**	**5,494**	**1,198**	**1,707**	**1,335**
Less - Fair value of plan assets	1,217	1,542	1,547	10	12	14
Provisions - Provisions for pensions	**1,674**	**1,877**	**3,947**	**1,188**	**1,695**	**1,321**
Of which:						
Internal provisions for pensions	*1,560*	*1,707*	*3,759*	*1,188*	*1,695*	*1,321*
Net pension assets	*(30)*	—	—	—	—	—
Insurance contracts linked to pensions (note 14)	*149*	*174*	*192*	—	—	—
Unrecognised net assets for pensions	*(5)*	*(4)*	*(4)*	—	—	—

The amounts recognised in the consolidated income statements in relation to the aforementioned defined benefit obligations are as follows:

EUR million

	Post-employment plans			Other similar obligations		
	2021	2020	2019	2021	2020	2019
Current service cost	5	10	12	1	1	1
Interest cost (net)	24	26	53	11	9	15
Expected return on insurance contracts linked to pensions	(1)	(1)	(2)	—	—	—
Provisions or reversion of provisions						
Actuarial (gains)/losses recognised in the year	—	—	—	*(15)*	*(3)*	*7*
Past service cost	*13*	*2*	*3*	—	—	*1*
Pre-retirement cost	—	—	*1*	*139*	*772*	*687*
*Other**	*(39)*	*(372)*	*(29)*	*(55)*	*(15)*	*(2)*
	2	**(335)**	**38**	**81**	**764**	**709**

*Including reduction/settlement effect

In addition, in 2021 'Other comprehensive income – Items not reclassified to profit or loss – Actuarial gains or (-) losses on defined benefit pension plans' has decreased by EUR 37 million with respect to defined benefit obligations (increase of EUR 84 and EUR 278 million in 2020 and 2019, respectively).

The changes in the present value of the accrued defined benefit obligations were as follows:

EUR million

	Post-employment plans			Other similar obligations		
	2021	2020	2019	2021	2020	2019
Present value of the obligations at beginning of year	3,419	5,494	5,427	1,707	1,335	1,204
Incorporation of Group companies, net	6	—	—	—	—	(1)
Current service cost	5	10	12	1	1	1
Interest cost	36	39	72	11	9	15
Pre-retirement cost	—	—	1	139	772	687
Effect of curtailment/settlement	(61)	(372)	(29)	(55)	(15)	(2)
Benefits paid	(248)	(359)	(400)	(589)	(392)	(599)
Benefits paid due to settlements	(166)	(1,551)	—	—	—	—
Past service cost	13	2	3	—	—	1
Actuarial (gains)/losses	(121)	163	407	(15)	(3)	7
Demographic actuarial (gains)/losses	*9*	*91*	*15*	*(8)*	*(8)*	*(9)*
Financial actuarial (gains)/losses	*(130)*	*72*	*392*	*(7)*	*5*	*16*
Exchange differences and other items	8	(7)	1	(1)	—	22
Present value of the obligations at end of year	**2,891**	**3,419**	**5,494**	**1,198**	**1,707**	**1,335**

The changes in the fair value of plan assets and of insurance contracts linked to pensions were as follows:

Plan Assets

EUR million

	Post-employment plans			Other similar obligations		
	2021	2020	2019	2021	2020	2019
Fair value of plan assets at beginning of year	1,542	1,547	1,500	12	14	15
Incorporation of Group companies, net	6	—	—	—	—	—
Expected return on plan assets	12	13	19	—	—	—
Gains/(losses) on settlements	(22)	—	—	—	—	—
Benefits paid	(263)	(94)	(108)	(2)	(2)	(2)
Contributions/(surrenders)	15	5	8	—	—	—
Actuarial gains/(losses)	(76)	76	128	—	—	—
Exchange differences and other items	3	(5)	—	—	—	1
Fair value of plan assets at end of year	**1,217**	**1,542**	**1,547**	**10**	**12**	**14**

Insurance Contracts linked to pensions

EUR million

	Post-employment plans			Other similar obligations		
	2021	2020	2019	2021	2020	2019
Fair value of insurance contracts linked to pensions at beginning of year	174	192	210	—	—	—
Incorporation of Group companies, net	—	—	—	—	—	—
Expected return on insurance contracts linked to pensions	1	1	2	—	—	—
Benefits paid	(19)	(21)	(24)	—	—	—
Paid premiums	1	—	—	—	—	—
Actuarial gains/(losses)	(8)	2	4	—	—	—
Fair value of insurance contracts linked to pensions at end of year	**149**	**174**	**192**	**—**	**—**	**—**

In view of the conversion of the defined-benefit obligations to defined-contribution obligations, the Group has not made material current contributions in Spain in 2021 to fund its defined-benefit pension obligations.

The plan assets and the insurance contracts linked to pensions are instrumented mainly through insurance policies.

The following table shows the estimated benefits payable at 31 December 2021 for the next ten years:

EUR million	
2022	606
2023	466
2024	402
2025	333
2026	284
2027 to 2031	904

ii. United Kingdom

At the end of each of the last three years, the businesses in the United Kingdom had post-employment benefit obligations under defined contribution and defined benefit plans. The expenses incurred in respect of contributions to defined contribution plans amounted to EUR 89 million in 2021 (EUR 91 million in 2020 and EUR 93 million in 2019).

The amount of the defined benefit obligations was determined on the basis of the work performed by independent actuaries using the following actuarial techniques:

1. Valuation method: projected unit credit method, which sees each period of service as giving rise to an additional unit of benefit entitlement and measures each unit separately.

2. Actuarial assumptions used: unbiased and mutually compatible. Specifically, the most significant actuarial assumptions used in the calculations were as follows:

	2021	2020	2019
Annual discount rate	1.90%	1.28%	2.11%
Mortality tables	The S3 Middle tables weighted at 84% of the CMI_2020 projection with an initial addition of 0.15%, smoothing parameter 7 and improving 1.25%.	The S3 Middle tables weighted at 84% of the CMI_2018 projection with an initial addition of 0.15%, smoothing parameter 7 and improving 1.25%.	The S3 Middle tables weighted at 84% of the CMI_2018 projection with an initial addition of 0.15%, smoothing parameter 7 and improving 1.25%.
Cumulative annual CPI growth	3.37%	2.95%	3.01%
Annual salary increase rate	1.00%	1.00%	1.00%
Annual pension increase rate	3.21%	2.85%	2.91%

The discount rate used for the flows was determined by reference to high-quality corporate bonds (at least AA in pounds sterling) that coincide with the terms of the obligations.

Any changes in the main assumptions could affect the calculation of the obligations. At 31 December 2021, if the discount rate used had been decreased or increased by 50 basis points, there would have been an increase or decrease in the present value of the obligations of 9.74% (-50 bp) and -8.67% (+50 bp), respectively. If the inflation assumption had been increased or decreased by 50 basis points, there would have been an increase or decrease in the present value of the obligations of 6.19% (+50 bp) and -6.00% (-50 bp), respectively. These changes would be offset in part by increases or decreases in the fair value of the assets.

The funding status of the defined benefit obligations in 2021 and the two preceding years is as follows:

EUR million	2021	2020	2019
Present value of the obligations	15,392	15,472	14,297
Less-			
Fair value of plan assets	17,244	15,575	14,755
Provisions - Provisions for pensions	**(1,852)**	**(103)**	**(458)**
Of which:			
Internal provisions for pensions	*44*	*449*	*329*
Net assets for pensions	*(1,896)*	*(552)*	*(787)*

The amounts recognised in the consolidated income statements in relation to the aforementioned defined benefit obligations are as follows:

EUR million	2021	2020	2019
Current service cost	33	30	27
Interest cost (net)	(6)	(12)	(24)
Provisions or reversal of provisions, net			
Cost of services provided	6	—	—
Others	—	(1)	—
	33	**17**	**3**

In addition, in 2021 'Other comprehensive income – Items not reclassified to profit or loss – Actuarial gains or (-) losses on defined benefit pension plans' decreased by EUR 1,475 million with respect to defined benefit obligations (increase of EUR 568 million and decrease of EUR 601 million at 31 December 2020 and 2019, respectively).

The changes in the present value of the accrued defined benefit obligations were as follows:

EUR million

	2021	2020	2019
Present value of the obligations at beginning of year	15,472	14,297	12,079
Current service cost	33	30	27
Interest cost	219	284	352
Benefits paid	(465)	(445)	(441)
Contributions made by employees	18	17	18
Past service cost	6	—	—
Actuarial (gains)/losses	(933)	2,060	1,594
Demographic actuarial (gains)/losses	*(17)*	*34*	*48*
Financial actuarial (gains)/losses	*(916)*	*2,026*	*1,546*
Exchange differences and other items	1,042	(771)	668
Present value of the obligations at end of year	**15,392**	**15,472**	**14,297**

The changes in the fair value of the plan assets were as follows:

EUR million

	2021	2020	2019
Fair value of plan assets at beginning of year	15,575	14,755	12,887
Expected return on plan assets	225	296	376
Benefits paid	(463)	(443)	(441)
Contributions	285	274	244
Actuarial gains/(losses)	541	1,492	993
Exchange differences and other items	1,081	(799)	696
Fair value of plan assets at end of year	**17,244**	**15,575**	**14,755**

In 2022 the Group expects to make current contributions to fund these obligations for amounts similar to those made in 2021.

The main categories of plan assets as a percentage of total plan assets are as follows:

	2021	2020	2019
Equity instruments	10%	9%	12%
Debt instruments	51%	55%	46%
Properties	10%	10%	11%
Other	29%	26%	31%

The following table shows the estimated benefits payable at 31 December 2021 for the next ten years:

EUR million	
2022	462
2023	367
2024	393
2025	408
2026	433
2027 to 2031	2,481

iii. Other foreign subsidiaries

Certain of the consolidated foreign entities have acquired commitments to their employees similar to post-employment benefits.

At 31 December 2021, 2020 and 2019, these entities had defined-contribution and defined-benefit post-employment benefit obligations. The expenses incurred in respect of contributions to defined contribution plans amounted to EUR 106 million in 2021 (EUR 103 million at 31 December 2020 and EUR 110 million at 31 December 2019).

The actuarial assumptions used by these entities (discount rates, mortality tables and cumulative annual CPI growth) are consistent with the economic and social conditions prevailing in the countries in which they are located.

Specifically, the discount rate used for the flows was determined by reference to high-quality corporate bonds, except in the case of Brazil where there is no extensive corporate bond market and, accordingly the discount rate was determined by reference to the series B bonds issued by the Brazilian National Treasury Secretariat for a term coinciding with that of the obligations. In Brazil the discount rate used was between 8.39% and 8.44%, the CPI 3.00% and the mortality table the AT - 2000 Basic.

Any changes in the main assumptions could affect the calculation of the obligations. At 31 December 2021, if the discount rate used had been decreased or increased by 50 basis points, there would have been an increase or decrease in the present value of the obligations of 4.78% and -4.40%, respectively. These changes would be offset in part by increases or decreases in the fair value of the assets.

The funding status of the obligations similar to post-employment benefits and other long-term benefits in 2021 and the two preceding years is as follows:

EUR million

	2021	Of which business in Brazil	2020	2019
Present value of the obligations	8,018	*5,111*	8,434	10,717
Less-				
Of which: with a charge to the participants	*106*	*106*	*112*	*176*
Fair value of plan assets	7,167	*5,288*	7,182	8,826
Provisions - Provisions for pensions	**745**	***(283)***	**1,140**	**1,715**
Of which:				
Internal provisions for pensions	*1,478*	*432*	*1,694*	*2,129*
Net assets for pensions	*(64)*	*(46)*	*(83)*	*(116)*
Unrecognised net assets for pensions	*(669)*	*(669)*	*(471)*	*(298)*

The amounts recognised in the consolidated income statements in relation to these obligations are as follows:

EUR million

	2021	2020	2019
Current service cost	34	35	32
Interest cost (net)	62	72	101
Provisions or reversion of provisions			
(Actuarial gains)/losses recognised in the year	11	11	12
Past service cost	3	5	6
Pre-retirement cost	(24)	—	—
Other	(3)	(5)	(1)
	83	**118**	**150**

In addition, in 2021 'Other comprehensive income – Items not reclassified to profit or loss – Actuarial gains or (-) losses on defined benefit pension plans' decreased by EUR 193 million with respect to defined benefit obligations (decreased EUR 105 million and increased EUR 641 million in 2020 and 2019, respectively).

The changes in the present value of the accrued obligations were as follows:

EUR million

	2021	2020	2019
Present value of the obligations at beginning of year	8,434	10,717	9,116
Incorporation of Group companies, net	(5)	(84)	—
Current service cost	34	35	32
Interest cost	429	465	651
Pre-retirement cost	(24)	—	—
Effect of curtailment/settlement	(3)	(5)	(1)
Benefits paid	(538)	(544)	(666)
Contributions made by employees	3	3	5
Past service cost	3	5	6
Actuarial (gains)/losses	(486)	176	1,652
Demographic actuarial (gains)/losses	*16*	*23*	*3*
Financial actuarial (gains)/losses	*(502)*	*153*	*1,649*
Exchange differences and other items	171	(2,334)	(78)
Present value of the obligations at end of year	**8,018**	**8,434**	**10,717**

The changes in the fair value of the plan assets were as follows:

EUR million

	2021	2020	2019
Fair value of plan assets at beginning of year	7,182	8,826	7,743
Incorporation of Group companies, net	(6)	(86)	—
Expected return on plan assets	411	410	573
Benefits paid	(478)	(488)	(613)
Contributions	152	63	214
Actuarial gains/(losses)	(155)	536	1,021
Exchange differences and other items	61	(2,079)	(112)
Fair value of plan assets at end of year	**7,167**	**7,182**	**8,826**

In 2022 the Group expects to make contributions to fund these obligations for amounts similar to those made in 2021.

The main categories of plan assets as a percentage of total plan assets are as follows:

	2021	2020	2019
Equity instruments	12%	11%	8%
Debt instruments	83%	84%	84%
Properties	1%	1%	1%
Other	4%	4%	7%

The following table shows the estimated benefits payable at 31 December 2021 for the next ten years:

EUR million	
2022	538
2023	544
2024	550
2025	555
2026	560
2027 to 2031	2,870

d) Provisions for taxes and other legal contingencies and Other provisions

'Provisions - Provisions for taxes and other legal contingencies' and 'Provisions - Other provisions', which include, inter alia, provisions for restructuring costs and tax-related and non-tax-related proceedings, were estimated using prudent calculation procedures in keeping with the uncertainty inherent to the obligations covered. The definitive date of the outflow of resources embodying economic benefits for the Group depends on each obligation. In certain cases, these obligations have no fixed settlement period and, in other cases, depend on the legal proceedings in progress.

The detail, by geographical area, of Provisions for taxes and other legal contingencies and Other provisions is as follows:

EUR million	2021	2020	2019
Recognised by Spanish companies	1,595	1,647	1,381
Recognised by other EU companies	779	539	1,100
Recognised by other companies	2,049	2,239	3,027
Of which:			
Brazil	*1,339*	*1,475*	*2,484*
	4,423	**4,425**	**5,508**

Set forth below is the detail, by type of provision, of the balance at 31 December 2021, 2020 and 2019 of Provisions for taxes and other legal contingencies and Other provisions.

The types of provision were determined by grouping together items of a similar nature:

EUR million	2021	2020	2019
Provisions for taxes	564	600	759
Provisions for employment-related proceedings (Brazil)	328	437	776
Provisions for other legal proceedings	1,104	1,163	1,522
Provision for customer remediation	745	395	725
Regulatory framework-related provisions	36	69	67
Provision for restructuring	749	810	641
Other	897	951	1,018
	4,423	**4,425**	**5,508**

Relevant information is set forth below in relation to each type of provision shown in the preceding table:

The provisions for taxes include provisions for tax-related proceedings.

The provisions for employment-related proceedings (Brazil) relate to claims filed by trade unions, associations, the prosecutor's office and ex-employees claiming employment rights to which, in their view, they are entitled, particularly the payment of overtime and other employment rights, including litigation concerning retirement benefits. The number and nature of these proceedings, which are common for banks in Brazil, justify the classification of these provisions in a separate category or as a separate type from the rest. The Group calculates the provisions associated with these claims in accordance with past experience of payments made in relation to claims for similar items. When claims do not fall within these categories, a case-by-case assessment is performed and the amount of the provision is calculated in accordance with the status of each proceeding and the risk assessment carried out by the legal advisers.

The provisions for other legal proceedings include provisions for court, arbitration or administrative proceedings (other than those included in other categories or types of provisions disclosed separately) brought against Santander Group companies.

The provisions for customer remediation include mainly the estimated cost of payments to remedy errors relating to the sale of certain products in the UK, as well as the impact of Swiss franc (CHF) mortgage portfolios in Poland and the estimated amount related to the floor clauses of Banco Popular Español, S.A.U. To calculate the provision for customer remediation, the best estimate of the provision made by management is used, which is based on the estimated number of claims to be received and, of these, the number that will be accepted, as well as the estimated average payment per case.

The regulatory framework-related provisions include mainly the provisions relating to the FSCS (Financial Services Compensation Scheme), the Bank Levy in the UK and in Poland the provision related to the Banking Tax.

The provisions for restructuring include only the costs arising from restructuring processes carried out by the various Group companies.

Lastly, the 'Other' heading contains very atomized and individually insignificant provisions, such as the provisions to cover the operational risk.

Qualitative information on the main litigation is provided in note 25.e to the consolidated financial statements.

The group's general policy is to record provisions for tax and legal proceedings in which we assess the chances of loss to be probable and we do not record provisions when the chances of loss are possible or remote. We determine the amounts to be provided for as our best estimate of the expenditure required to settle the corresponding claim based, among other factors, on a case-by-case analysis of the facts and the legal opinion of internal and external counsel or by considering the historical average amount of the loss incurred in claims of the same nature. The definitive date of the outflow of resources embodying economic benefits for the Group depends on each obligation. In certain cases, the obligations do not have a fixed settlement term and, in others, they depend on legal proceedings in progress.

The main movements during the 2021 of the breakdown provisions are shown below:

With respect to provisions for labor and other legal proceedings, in Brazil, provisions of EUR 155 million and EUR 168 million were recorded, making payments of EUR 289 million and EUR 205 million, respectively.

With respect to provisions for customer compensation an amount of EUR 319 million was provided in Poland to cover the CHF mortgage portfolio in the year.

On the regulatory framework side, EUR 69 million was provisioned in the United Kingdom and a utilization of EUR 104 million was made in the year (Bank Levy). In addition, in Poland, EUR 131 million were recorded under the regulatory framework and paid during the year.

In addition, the restructuring provision includes provisions of EUR 598 million mainly in the UK and Portugal, as well as the payments made by the Group during the year.

e) Litigation and other matters

i. Tax-related litigation

At 31 December 2021 the main tax-related proceedings concerning the Group were as follows:

- Legal actions filed by Banco Santander (Brasil) S.A. and other Group entities to avoid the application of Law 9.718/98, which modifies the basis to calculate PIS and COFINS social contribution, extending it to all the entities income, and not only to the income from the provision of services. In relation of Banco Santander (Brasil) S.A. process, in May 2015 the Federal Supreme Court (FSC) admitted the extraordinary appeal filed by the Federal Union regarding PIS, and dismissed the extraordinary appeal lodged by the Brazilian Public Prosecutor's Office regarding COFINS contribution, confirming the decision of Federal Regional Court favourable to Banco Santander (Brasil) S.A. of August 2007. The appeals filed by the other entities before the Federal Supreme Court, both for PIS and COFINS, are still pending. These claims are fully provisioned.
- Banco Santander (Brasil) S.A. and other Group companies in Brazil have appealed against the assessments issued by the Brazilian tax authorities questioning the deduction of loan losses in their income tax returns (IRPJ and CSLL) in relation to different administrative processes of various years on the ground that the requirements under the applicable legislation were not met. The appeals are pending decision in CARF. No provision was recognised in connection with the amount considered to be a contingent liability.
- Banco Santander (Brasil) S.A. and other Group companies in Brazil are involved in administrative and legal proceedings against several municipalities that demand payment of the Service Tax on certain items of income from transactions not classified as provisions of services. There are several cases in different judicial instances. A provision was recognised in connection with the amount of the estimated loss.
- Banco Santander (Brasil) S.A. and other Group companies in Brazil are involved in administrative and legal proceedings against the tax authorities in connection with the taxation for social security purposes of certain items which are not considered to be employee remuneration. There are several cases in different judicial instances. A provision was recognised in connection with the amount of the estimated loss.
- In May 2003 the Brazilian tax authorities issued separate infringement notices against Santander Distribuidora de Títulos e Valores Mobiliarios, Ltda. (DTVM, actually Santander Brasil Tecnología S.A.) and Banco Santander (Brasil) S.A. in relation to the Provisional Tax on Financial Movements (CPMF) of the years 2000 to 2002. The administrative discussion ended unfavourably for both companies, and on July 3, 2015, filed a lawsuit requesting the cancellation of both tax assessments. The lawsuit was judged unfavourably in first instance. Therefore, both plaintiffs appealed to the court of second instance. On December 2020, the appeal was decided unfavourably. Against the judgment, the bank filed a motion for clarification which has not been accepted. Currently it is appealed to higher courts. There is a provision recognized for the estimated loss.
- In December 2010 the Brazilian tax authorities issued an infringement notice against Santander Seguros S.A. (Brazil), currently Zurich Santander Brasil Seguros e Previdência S.A., as the successor by merger to ABN AMRO Brasil dois Participações S.A., in relation to income tax (IRPJ and CSLL) for 2005, questioning the tax treatment applied to a sale of shares of Real Seguros, S.A. The administrative discussion ended unfavourably, and the CARF decision has been appealed at the Federal Justice. As the former parent of Santander Seguros S.A. (Brasil), Banco Santander (Brasil) S.A. is liable in the event of any adverse outcome of this proceeding. No provision was recognised in connection with this proceeding as it is considered to be a contingent liability.
- In November 2014 the Brazilian tax authorities issued an infringement notice against Banco Santander (Brasil) S.A. in relation to corporate income tax (IRPJ and CSLL) for 2009 questioning the tax-deductibility of the amortisation of the goodwill of Banco ABN AMRO Real S.A. performed prior to the absorption of this bank by Banco Santander (Brasil) S.A., but accepting the amortisation performed after the merger. Actually it is appealed before the Higher Chamber of CARF. No provision was recognised in connection with this proceeding as it was considered to be a contingent liability.

- Banco Santander (Brasil) S.A. has also appealed against infringement notices issued by the tax authorities questioning the tax deductibility of the amortisation of the goodwill arising on the acquisition of Banco Comercial e de Investimento Sudameris S.A from years 2007 to 2012. No provision was recognised in connection with this matter as it was considered to be a contingent liability.

- Banco Santander (Brasil) S.A. and other companies of the Group in Brazil are undergoing administrative and judicial procedures against Brazilian tax authorities for not admitting tax compensation with credits derived from other tax concepts, not having registered a provision for the amount considered to be a contingent liability.

- Banco Santander (Brasil) S.A. is involved in appeals in relation to infringement notices initiated by tax authorities regarding the offsetting of tax losses in the CSLL ('Social Contribution on Net Income') of year 2009. The appeal is pending decision in CARF. No provision was recognised in connection with this matter as it is considered to be a contingent liability.

- Brazilian tax authorities have issued infringement notices against Getnet Adquirência e Serviços para Meios de Pagamento S.A and Banco Santander (Brasil) S.A. as jointly liable in relation to corporate income tax (IRPJ and CSLL) for 2014 to 2018 questioning the tax-deductibility of the amortization of the goodwill from the acquisition of Getnet Tecnologia Proces S.A., considering that the company would not have complied with the legal requirements for such amortization. A defense against the tax assessment notices were submitted, and the appeal is pending decision in CARF. No provision was recognized as it is considered to be a contingent liability.

  The total amount for the aforementioned Brazil lawsuits that are fully provisioned is EUR 848 million, and for lawsuits that qualify as contingent liabilities is EUR 3,690 million.

- Legal action brought by Sovereign Bancorp, Inc. (currently Santander Holdings USA, Inc.) claiming its right to take a foreign tax credit for taxes paid outside the United States in fiscal years 2003 to 2005 as well as the related issuance and financing costs. On 17 July 2018, the District Court finally ruled against Santander Holdings USA, Inc. On September 5, 2019 the Federal District Court in Massachusetts entered a judgement resolving the Company's tax liability for fiscal years 2003 to 2005, which had no effect on income. The Company has agreed to resolve the treatment of the same transactions for 2006 and 2007, consistent with the September 5, 2019 judgment. The Congressional Joint Committee on Taxation has completed its review of the proposed resolution of the 2006 and 2007 tax years, with no objection. The IRS finalized its administrative process to close-out the issue, which resulted in no impact on net income.

- Banco Santander appealed before European Courts the Decisions 2011/5/CE of 28 October 2009 (First Decision), and 2011/282/UE of 12 January 2011 (Second Decision) of the European Commission, ruling that the deduction of the financial goodwill regulated pursuant to Article 12.5 of the Corporate Income Tax Law constituted illegal State aid. On October 2021 the Court of Justice has definitively confirmed these Decisions. The dismissal of the appeal, that only affects these two decisions, has no effect on equity.

At the date of approval of these interim financial statements certain other less significant tax-related proceedings are also in progress.

ii. Non-tax-related proceedings

At 31 December 2021 the main non-tax-related proceedings concerning the Group were as follows:

- Payment Protection Insurance (PPI): In recent years Santander UK plc has processed customer claims associated with the sale of payment protection insurance (PPI), derived from the Financial Conduct Authority guidelines. As of 31 December 2021 there is no provision related to those claims as the deadline for presenting them has already expired. However, customers can still commence in-court litigation for the mis-sale of PPI and a provision for the best estimate of any obligation to pay compensation in respect of current and future claims is recognized for this purpose.

  In addition, there is a legal dispute regarding allocation of liability for pre-2005 PPI policies underwritten by two entities (Axa France) that Axa Group acquired from Genworth Financial International Holdings, Inc. in September 2015. The dispute involves Santander Cards UK Limited (formerly known as GE Capital Bank Limited which was acquired by Banco Santander, S.A. from GE Capital group in 2008) which was the distributor of the policies in dispute and Santander Insurance Services UK Limited (the Santander Entities).

  In July 2017, the Santander Entities notified Axa France that they did not accept liability for losses on PPI policies relating to the referred period. Santander UK plc entered in a Complaints Handling Agreement –that included a standstill agreement- agreeing to handle complaints on Axa France, whilst Axa France accepted paying redress assessed to be due to relevant policyholders on a without prejudice basis.

  After the termination of the Complaints Handling Agreement, on 30 December 2020 Axa France provided written notice to the Santander Entities to terminate the standstill agreement. On 5 March 2021, the Santander Entities were served with a Claim Form and Brief Details of Claim by Axa France, claiming that the Santander Entities are liable to reimburse Axa France for pre-2005 PPI mis-selling losses, currently estimated at GBP 636 million (EUR 739 million). On 22 March 2021, the Santander Entities acknowledged service of the claim and notified the court of their intention to defend the claim in full and issued an application for Axa Frances's claim to be struck out/summarily dismissed, which is being heard by the Commercial Court on 22 and 23 February 2022. Decision is not expected until second quarter 2022.

  In the event the claim is not dismissed, there are still ongoing factual issues to be resolved during the trial, which may have legal consequences including in relation to liability. These issues create uncertainties which mean that it is difficult to reliably predict the outcome or the timing of the resolution of the matter. The provision includes our best estimate of the Santander Entities' liability for this matter.

- Delforca: dispute arising from equity swaps entered into by Gaesco (now Delforca 2008, S.A.) on shares of Inmobiliaria Colonial, S.A. Banco Santander, S.A. is claiming to Delforca before the Court of Barcelona in charge of the bankruptcy proceedings, a total of EUR 66 million from the liquidation resulting from the early termination of financial transactions due to Delforca's non-payment of the equity swaps. In the same bankruptcy proceedings, Delforca and Mobiliaria Monesa have in turn claimed the Bank to repay EUR 57 million, which the Bank received for the enforcement of the agreed guarantee, as a result of the aforementioned liquidation. On 16 September 2021 the Commercial Court Number 10 of Barcelona has ordered Delforca to pay the Bank EUR 66 million plus EUR 11 million in interest and has dismissed the claims filed by Delforca. This decision has been appealed by Delforca, Mobiliaria Monesa and the bankruptcy administrator. The appeal which the Bank has already opposed to will be resolved by the Provincial Court of Barcelona.

  Separately, Mobiliaria Monesa, S.A. (parent of Delforca) filed in 2009 a civil procedure with the Courts of Santander against the Bank claiming damages that have not been specified to date. The procedure is suspended.

- Former employees of Banco do Estado de São Paulo S.A., Santander Banespa, Cia. de Arrendamiento Mercantil: claim initiated in 1998 by the association of retired Banespa employees (AFABESP) requesting the payment of a half-yearly bonus contemplated in the by-laws of Banespa in the event that Banespa obtained a profit and that the distribution of this profit were approved by the Board of Directors. The bonus was not paid in 1994 and 1995 since Banespa had not made a profit during those years. Partial payments were made from 1996 to 2000, as approved by the Board of Directors. The relevant clause was eliminated in 2001. The Tribunal Regional do Trabalho (Regional Labour Court) and the High Employment Court (TST) ordered Santander Brazil, as successor to Banespa, to pay this half-yearly bonus for the period from 1996 to the present. On 20 March 2019, the Supreme Federal Court (STF) rejected the extraordinary appeal filed by Santander Brazil.

  Santander Bank Brazil filed a rescissory action before the TST to nullify the decisions of the main proceedings and suspend the execution of the judgment, which was deemed inadmissible, therefore its execution was suspended. The rescissory action was dismissed and a motion for clarification was filed, due to the absence of an explicit argument to deny the rescissory action filed by Santander Brazil. After the decision of the motion for clarification, Santander Brazil filed an extraordinary appeal in the rescissory action in February 2021, which was denied in an interlocutory decision in June 2021 by the TST. As Santander Brazil understands there is a conflict between the TST decision and the doctrine set by the STF, Santander Brazil has appealed this decision. This appeal is pending.

  In August 2021, a first instance court has ruled that the enforcement of the TST decision shall be carried out individually, at the jurisdiction pertaining to each person. AFABESP appealed this decision. In December 2021, the Regional Labor Court denied the appeal filed by AFABESP. This decision has not been appealed by AFABESP, and therefore it has become firm.

  Santander Brazil external advisers have classified the risk as probable. The recorded provisions are considered sufficient to cover the risks associated with the legal claims that are being substantiated as of 31 December 2021.

- 'Planos Económicos': like the rest of the banking system in Brasil, Santander Brazil has been the target of customer complaints and collective civil suits stemming mainly from legislative changes and its application to bank deposits ('economic plans'). At the end of 2017, an agreement between regulatory entities and the Brazilian Federation of Banks (Febraban) with the purpose of closing the lawsuits was reached and was approved by the Supremo Tribunal Federal. Discussions focused on specifying the amount to be paid to each affected client according to the balance in their notebook at the time of the Plan. Finally, the total value of the payments will depend on the number of adhesions there may be and the number of savers who have demonstrated the existence of the account and its balance on the date the indexes were changed. In November 2018, the STF ordered the suspension of all economic plan proceedings for two years from May 2018. On 29 May 2020, the STF approved the extension of the agreement for 5 additional years starting from 3 June 2020. Condition for this extension was to include in the agreement actions related to the "Collor I Plan". On 31 December 2021, the provision recorded for the economic plan proceedings amounts to EUR 277 million.

- Floor clauses: as a consequence of the acquisition of Banco Popular Español, S.A.U. the Group has been exposed to a material number of transactions with floor clauses. The so-called "floor clauses" are those under which the borrower accepts a minimum interest rate to be paid to the lender, regardless of the applicable reference interest rate. Banco Popular Español, S.A.U. included "floor clauses" in certain asset-side transactions with customers. In relation to this type of clauses, and after several rulings made by the Court of Justice of the European Union and the Spanish Supreme Court, and the extrajudicial process established by the Spanish Royal Decree-Law 1/2017, of 20 January, Banco Popular Español, S.A.U. made provisions that were updated in order to cover the effect of the potential return of the excess interest charged for the application of the floor clauses between the contract date of the corresponding mortgage loans and May 2013. At 31 December 2021, after having processed most of the customer requests, the potential residual loss associated with ongoing court proceedings is estimated at EUR 46 million, amount which is fully covered by provisions.

- Banco Popular´s acquisition: considering the declaration setting out the resolution of Banco Popular Español, S.A.U., the redemption and conversion of its capital instruments and the subsequent transfer to Banco Santander, S.A. of the shares resulting from this conversion in exercise of the resolution instrument involving the sale of the institution's business, in application of the single resolution framework regulation, some investors have filed claims against the EU's Single Resolution Board decision, the FROB's resolution executed in accordance to the aforementioned decision, and claims have been filed and may be filed in the future against Banco Santander, S.A. or other Santander Group companies deriving from or related to the acquisition of Banco Popular Español, S.A.U..

At this stage, it is not possible to foresee the total number of claims that could be filed by the former holders of shares and capital instruments (arising from the acquisition by investors of such shares and capital instruments of Banco Popular prior to resolution, including in particular, without limitation, the shares acquired in the context of the capital increase with pre-emptive subscription rights carried out in 2016), and their economic implications (especially considering that the decision to resolve in application of the new regulation has no precedent, and that it may be possible that future claims do not specify a specific amount, put forward new legal interpretations or involve a large number of parties).

In this respect, on 2 September 2020, the Provincial Court of La Coruña has referred a preliminary ruling to the Court of Justice of the European Union ("CJEU") asking for the correct interpretation of Article 60(2) of Directive 2014/59/EU of the European Parliament and of the Council, dated 15 May 2014, which establishes a framework for the restructuring and resolution of credit institutions and investment firms. This article establishes that, in cases of redemption of capital instruments in a bank resolution, no liability shall remain in relation to the amount of the instrument that has been redeemed. On 2 December 2021, the CJEU Advocate General issued his opinion, considering that the Directive precludes former Banco Popular shareholders from bringing claims for compensation against Banco Santander. The judgement of the CJEU in this case is still pending and is likely to condition the outcome on the judicial proceedings that are currently ongoing.

Likewise, the Central Court of Instruction 4 is currently conducting preliminary proceedings 42/2017, in which, amongst other things, is being investigated the following: (i) the accuracy of the prospectus for the capital increase with subscription rights carried out by Banco Popular in 2016; and (ii) the alleged manipulation of the share price of Banco Popular until the resolution of the bank, in June 2017. During the course of the proceedings, on 30 April 2019, the Spanish National Court, ruled in favour of Banco Santander, S.A. declaring that Banco Santander, S.A. cannot inherit Banco Popular's potential criminal liability. This ruling was appealed before the Supreme Court, which rejected it. In this proceedings, Banco Santander, S.A. could potentially be subsidiarily liable for the civil consequences.

The estimated cost of any compensation to shareholders and bondholders of Banco Popular recognized in the 2017 accounts amounted to EUR 680 million, of which EUR 535 million were applied to the commercial loyalty program. At 31 December 2021, the provisions recorded are considered sufficient to cover the risks associated with the court claims that can be estimated to date. However, if additional amounts have to be paid for claims already raised with an undetermined economic interest or for new claims which cannot be reliably estimated because of their specific circumstances, this could have a significant adverse effect on the Santander Group's results and financial situation.

- German shares investigation: the Cologne Public Prosecution Office is conducting an investigation against the Bank, and other group entities based in UK - Santander UK plc, Santander Financial Services Plc and Cater Allen International Limited -, in relation to a particular type of tax dividend linked transactions known as cum-ex transactions.

  The Group is cooperating with the German authorities. According to the state of the investigations, the result and the effects for the Group, which may potentially include the imposition of material financial penalties, cannot be anticipated. For this reason, the Bank has not recognized any provisions in relation to the potential imposition of financial penalties.

- Banco Santander, S.A. has been sued in a legal proceeding in which the plaintiff alleges that a contract was concluded whereby he would be entrusted with the functions of CEO of the Bank. In the complaint, the claimant mainly requests a declaratory ruling that affirms the validity and conclusion of such contract and its enforcement together with the payment of certain amounts. If the main request is not granted, the claimant sought a compensation for a total amount of approximately EUR 112 million or, an alternative relief for other minor amounts. Banco Santander, S.A. answered to the complaint stating that the conditions to which the appointment was subject to were not met and that the contract required by law was not concluded. On 17 May 2021, the plaintiff reduced his claims for compensation to EUR 61.9 million.

  On 9 December 2021, the Court has rendered its decision ordering the Bank to compensate the plaintiff in the amount of EUR 67.8 million. On 13 January 2022, the Court has corrected and supplemented its judgment, reducing the total amount to EUR 51.4 million and establishing that part of this amount (EUR 18.6 million) would have to be paid in shares of Banco Santander and subject to the application of the same terms provided in the applicable Santander executives' remuneration program (on a deferred basis, and in accordance with the applicable plan in the offer). The Bank will file appeal against the judgment before the Provincial Court of Madrid. The provisions recorded are considered to be sufficient to cover the risks deriving from this claim.

- Universalpay Entidad de Pago, S.L. has filed a lawsuit against Banco Santander, S.A. for breach of the marketing alliance agreement (MAA) and claim payment (EUR 1,050 million). The claim is being processed in the Court of First Instance no. 81 of Madrid. The MAA was originally entered into by Banco Popular Español, S.A.U. and its purpose is the rendering of acquiring services (point of sale payment terminals) for businesses in the Spanish market. The lawsuit is mainly based on the potential breach of clause 6 of the MAA, which establishes certain obligations of exclusivity, non-competition and customer referral. The claim is at a very early stage, and there are factual issues pending resolution, which may have legal consequences and affect any potential liability. This uncertainty makes it impossible to reliably predict the resolution of the issue, the timing or the significance of the potential economic impact. The Bank has answered the complaint. The pretrial hearing could not take place on 16 December 2021 and has been rescheduled on 11 March 2022.

- CHF Polish Mortgage Loans: On 3 October 2019, the Court of Justice of the European Union (CJEU) rendered its decision in relation to a judicial proceeding against an unrelated bank in Poland considering that certain contractual clauses in CHF-indexed loan agreements were abusive. The CJEU has left to Polish courts the decision on whether the whole contract can be maintained once the abusive terms have been removed, which should in turn decide whether the effects of the annulment of the contract are prejudicial to the consumer. In case of maintenance of the contract, the court may only integrate the contract with subsidiary provisions of national law and decide, in accordance with those provisions, on the applicable rate.

On 2 September 2021, the Supreme Court was expected to take a position regarding the key issues in disputes concerning loans based on foreign currency, clarifying the discrepancies and unifying case law. The resolution was not adopted and instead, the Supreme Court referred questions to the CJEU on constitutional issues of the Polish judiciary system. No new date for consideration of the issue has been set and no comprehensive decision by the Supreme Court on CHF of the issue is expected in the near future. In the absence of a comprehensive position of the Supreme Court, it is difficult to expect a full unification of judicial decisions, and decisions of the Supreme Court and CJEU issued on particular issues may be important for shaping further case law on CHF matters.

As of 31 December 2021, Santander Bank Polska S.A. and Santander Consumer Bank S.A. maintain a portfolio of mortgages denominated in or indexed to CHF for an approximate amount of 9,265 million zlotys (EUR 2,083 million). During the year, provisions recorded amounted to 1,453 million zlotys (EUR 319 million), leaving the provision fund as of 31 December 2021 at 2,056 million zlotys (EUR 447 million). This provision represents the best estimate at 31 December 2021 given the difficulty to predict the financial impact, as it is for national courts to decide the relevant issues and the process of analyzing and deciding on the KNF proposal described below has not yet been completed. Santander Bank Polska and Santander Consumer Bank Poland will continue to monitor and assess appropriateness of those provisions.

In December 2020, the Chairman of the Polish Financial Supervision Authority (KNF) presented a proposal for voluntary settlements between banks and borrowers under which CHF loans would be retrospectively settled as PLN loans bearing an interest rate based on WIBOR plus margin. This proposal is currently under analysis within Santander Bank Polska S.A. and Santander Consumer Bank S.A., depending on the results of this analysis, Santander Bank Polska and Santander Consumer Bank Poland will decide whether to adhere to this proposal and will proceed to include additional scenarios in the models for calculating provisions and reflect the estimated impact on their level.

While the above referred events could lead to significant changes in the level of expected provisions, in the opinion of Santander Bank Polska S.A. and Santander Consumer Bank S.A., it is not possible to reliably estimate the value of their impact on their financial position at 31 December 2021.

- Banco Santander Mexico. Dispute regarding a testamentary trust constituted in 1994 by Mr. Roberto Garza Sada in Banca Serfin (currently Santander Mexico) in favor of his four sons in which he affected shares of Alfa, S.A.B. de C.V. (respectively, "Alfa" and the "Trust"). During 1999, Mr. Roberto Garza Sada instructed Santander México in its capacity as trustee to transfer 36,700,000 shares from the Trust's assets to his sons and daughters and himself. These instructions were ratified in 2004 by Mr. Roberto Garza Sada before a Notary Public.

Mr. Roberto Garza Sada, passed away on 14 August 2010 and subsequently, in 2012, his daughters filed a complaint against Santander Mexico alleging it had been negligent in its trustee role. The lawsuit was dismissed at first instance in April 2017 and on appeal in 2018. In May 2018, the plaintiffs filed an appeal (recurso de amparo) before the First Collegiate Court of the Fourth Circuit based in Nuevo León, which ruled in favor of the plaintiffs on 7 May 2021, annulling the 2018 appeal judgment and condemning Santander Mexico to the petitions claimed, consisting of the recovery of the amount of 36,700,000 Alfa shares, together with dividends, interest and damages.

On 7 June 2021, Santander México filed an appeal for constitutional review against the decision of the Collegiate Court before the Supreme Court of Justice of the Nation, considering that this court was not empowered to resolve substantive issues that had not been raised by the parties, lack of procedural standing, and the absence of a decision imposing the plaintiffs to pay costs. This appeal was rejected by the President of the Supreme Court of Justice of the Nation on 1 October 2021 on the grounds that the matter, although it refers to constitutional matters, is not of exceptional interest.

On 6 October 2021, Santander México filed an appeal against this decision before the Supreme Court itself, which was rejected *in limine* by the President of the Court by order dated 11 October 2021, considering that against the dismissal of the appeal for constitutional review, there is no possible appeal pursuant to the Constitutional Reform of March 2021. Against this decision, on 8 December 2021, a new appeal was filed for this matter to be reviewed by the First Chamber of the Supreme Court of Justice of the Nation, considering that the failure to accept the appeal constitutes a retroactive application of the law, and that this violates the transitory fifth article of the reform of the "Ley de Amparo" published on 7 June 2021.

In compliance with the aforementioned ruling of 7th May 2021, the Seventh Civil Chamber of the Superior Court of Justice of Nuevo León has issued a judgement imposing Santander Mexico to pay the benefits claimed by the plaintiffs. As a result of this judgement, Santander Mexico has filed a new appeal (recurso de amparo) and will request that it be resolved by the Supreme Court of Justice of the Nation.

Santander México estimates that the actions taken should prevail and reverse the decision against it. However, given the procedural stage of the case, Santander México has classified this risk as possible. The impact of a potential unfavorable resolution for Santander México will be determined in a subsequent proceeding and will also depend on the additional actions that Santander México may take in its defense, so it is not possible to determine it at this time.

- URO Property Holdings, SOCIMI SA: In December 2021, BNP Paribas Trust Corporation UK Limited ("BNP") informed Uro Property Holdings SOCIMI, SA ("Uro") – subsidiary from Banco Santander, S.A.-, that it is considering taking legal action against Uro. On 16 February 2022, BNP commenced legal proceedings against Uro in the Commercial Court in London. On 31 December 2021, Uro lost its status as a SOCIMI (Sociedad Anónima Cotizada de Inversión Inmobiliaria). The potential litigation concerns certain terms of a financing granted to Uro which was supported by a bond issue in 2015. BNP, acting as trustee on behalf of the bondholders, claims that based on those terms, and in relation to the loss of SOCIMI status, Uro would be obliged to pay an additional premium above the nominal value of the financing repayment. Uro denies being liable to pay that additional premium and intends to defend the claim. It is estimated that the maximum loss associated with this possible contingency, amounts to approximately EUR 250 million. There is no date for trial hearing yet.

Banco Santander and the other Group companies are subject to claims and, therefore, are party to certain legal proceedings incidental to the normal course of their business including those in connection with lending activities, relationships with employees and other commercial or tax matters additional to those referred to here.

With the information available to it, the Group considers that, at 31 December 2021, it had reliably estimated the obligations associated with each proceeding and had recognized, where necessary, sufficient provisions to cover reasonably any liabilities that may arise as a result of these tax and legal risks. Disputes in which provisions have been registered but are not disclosed is justified on the basis that it would be prejudicial to the proper defense of the Group. Subject to the qualifications made, it also believes that any liability arising from such claims and proceedings will not have, overall, a material adverse effect on the Group's business, financial position, or results of operations.

26. Other liabilities

The detail of Other liabilities in the consolidated balance sheets is as follows:

EUR million

	2021	2020	2019
Transactions in transit	545	498	663
Accrued expenses and deferred income	7,084	6,309	6,909
Other	5,069	5,529	5,220
	12,698	**12,336**	**12,792**

27. Tax matters

a) Consolidated Tax Group

Pursuant to current legislation, the Consolidated Tax Group includes Banco Santander, S.A. (as the parent) and the Spanish subsidiaries that meet the requirements provided for in Spanish legislation regulating the taxation of the consolidated profits of corporate groups (as the controlled entities).

The other Group companies file income tax return in accordance with the tax regulations applicable to them.

b) Years open for review by the tax authorities

In June and November 2021 acts with agreement, conformity and non-conformity relating to the corporate income tax financial years 2012 to 2015 were formalised. The adjustments signed in conformity and with agreement had not impact on results and, in relation to the concepts signed in disconformity both in this year and in previous years (corporate income tax 2003 to 2011), Banco Santander, S.A., as the Parent of the Consolidated Tax Group, considers, in accordance with the advice of its external lawyers, that the adjustments made should not have a significant impact on the consolidated financial statements, as there are sound arguments as proof in the appeals filed against them pending at the National Appellate Court (tax years 2003 to 2011) and at different administrative instances (tax years 2012-2015). Consequently, no provision has been recorded for this concept. It should also be noted that, in those cases where it has been considered appropriate, the mechanisms available to avoid international double taxation have been used. At the date of approval of these accounts, the Corporate Income Tax and other taxes audit for periods 2017 to 2019 are ongoing, and subsequent years up to and including 2021, are subject to review.

Likewise, relating the Consolidated Tax Group of which Banco Popular Español, S.A.U. was the parent, during 2019, a certificate of disconformity was drawn up for 2017 corporate income tax, with no impact on profit, and the final assessment was appealed. In relation to this Consolidated Tax Group, the years 2016 and 2017 inclusive are subject to review. On 1 January 2018 those entities that were part of the aforementioned Consolidated Tax Group were integrated in the Consolidate Tax Group which parent company is Banco Santander.

The other entities have the corresponding years open for review, pursuant to their respective tax regulations.

Because of the possible different interpretations which can be made of the tax regulations, the outcome of the tax audits of the rest of years subject to review might give rise to contingent tax liabilities which cannot be objectively quantified. However, the Group's tax advisers consider that it is unlikely that such tax liabilities will materialize, and that in any event the tax charge arising therefrom would not materially affect the Group's consolidated financial statements.

c) Reconciliation

The reconciliation of the income tax expense calculated at the tax rate applicable in Spain (30%) to the income tax expense recognised and the detail of the effective tax rate are as follows:

EUR million

	2021	2020	2019
Consolidated profit (loss) before tax:			
From continuing operations	14,547	(2,076)	12,543
From discontinued operations	—	—	—
	14,547	(2,076)	12,543
Income tax at tax rate applicable in Spain (30%)	4,364	(623)	3,763
By the effect of application of the various tax rates applicable in each country*	210	362	243
Of which:			
Brazil	*634*	*560*	*502*
United Kingdom	*(158)*	*(43)*	*(80)*
United States	*(179)*	*(71)*	*(71)*
Chile	*(34)*	*(24)*	*(35)*
Effect of profit or loss of associates and joint ventures	(130)	29	(97)
Effect of reassessment of deferred taxes	9	2,500	(612)
Permanent differences and other **	441	3,364	1,130
Current income tax	**4,894**	**5,632**	**4,427**
Effective tax rate	33.64%	—	35.29%
Of which:			
Continuing operations	*4,894*	*5,632*	*4,427*
Discontinued operations (note 37)	—	—	—
Of which:			
Current taxes	*3,799*	*4,214*	*3,962*
Deferred taxes	*1,095*	*1,418*	*465*
Income tax (receipts)/payments	4,012	2,946	2,593

* Calculated by applying the difference between the tax rate applicable in Spain and the tax rate applicable in each jurisdiction to the profit or loss contributed to the Group by the entities which operate in each jurisdiction.
** In 2020 and 2019 it includes mainly the impairment of goodwill.

d) Tax recognised in equity

In addition to the income tax recognised in the consolidated income statement, the Group recognised the following amounts in consolidated equity in 2021, 2020 and 2019:

EUR million

	2021	2020	2019
Other comprehensive income			
Items not reclassified to profit or loss	**(510)**	**(82)**	**500**
Actuarial gains or (-) losses on defined benefit pension plans	(530)	(165)	499
Changes in the fair value of equity instruments measured at fair value through other comprehensive income	(13)	92	(42)
Financial liabilities at fair value with changes in results attributable to changes in credit risk	33	(9)	43
Items that may be reclassified to profit or loss	**1,136**	**208**	**(832)**
Cash flow hedges	278	5	(17)
Changes in the fair value of debt instruments through other comprehensive income	857	195	(811)
Other recognised income and expense of investments in subsidiaries, joint ventures and associates	1	8	(4)
Total	**626**	**126**	**(332)**

e) Deferred taxes

'Tax assets' in the consolidated balance sheets includes debit balances with the Public Treasury relating to deferred tax assets. 'Tax liabilities' includes the liability for the Group's various deferred tax liabilities.

On 26 June 2013, the Basel III legal framework was included in European law through Directive 2013/36 (CRD IV) and Regulation 575/2013 on prudential requirements for credit institutions and investment firms (CRR), directly applicable in every member State as from 1 January 2014, albeit with a gradual timetable with respect to the application of, and compliance with, various requirements.

This legislation establishes that deferred tax assets, the use of which relies on future profits being obtained, must be deducted from regulatory capital.

In this regard, pursuant to Basel III, in recent years several countries have amended their tax regimes with respect to certain deferred tax assets so that they may continue to be considered regulatory capital since their use does not rely on the future profits of the entities that generate them (referred to hereinafter as 'monetizable tax assets'). Italy had a very similar regime to that described above, which was introduced by Decree-Law no. 225, of 29 December 2010, and amended by Law no. 10, of 26 February 2011. In addition, in 2013 in Brazil, by means of Provisional Measure no. 608, of 28 February 2013, that become Ordinary Law 12838/2013, and, in Spain, through Royal Decree Law 14/2013, of 29 November confirmed by Law 27/2014, of 27 November, tax regimes were established whereby certain deferred tax assets (arising from provisions to allowances for loan losses in Brazil and provisions to allowances for loan losses, provisions to allowances for foreclosed assets and provisions for pension and pre-retirement obligations in Spain) may be converted into tax receivables in specific circumstances. As a result, their use does not rely on the entities obtaining future profits and, accordingly, they are exempt from deduction from regulatory capital.

In 2015 Spain completed its regulations on monetizable tax assets with the introduction of a financial contribution which involves the payment of 1.5% per annum, in order to maintain the right to monetise which applies to the portion of the deferred tax assets that qualify under the legal requirements as monetizable assets generated prior to 2016.

In a similar manner, Italy, by decree of 3 May 2016 has introduced a fee of 1.5% annually to maintain the monetizable of part of the deferred tax assets.

The detail of deferred tax assets, by classification as monetizable or non-monetizable assets, and of deferred tax liabilities at 31 December 2021, 2020 and 2019 is as follows:

EUR million

	2021		2020		2019	
	Monetizable*	Other	Monetizable*	Other	Monetizable*	Other
Tax assets	**10,473**	**8,967**	**10,721**	**8,525**	**11,233**	**11,525**
Tax losses and tax credits	—	1,249	—	1,093	—	3,428
Temporary differences	10,473	7,718	10,721	7,432	11,233	8,097
Of which:						
Non-deductible provisions	—	*2,256*	—	*2,139*	—	*2,751*
Valuation of financial instruments	—	*600*	—	*483*	—	*400*
Loan losses	*6,888*	*988*	*7,134*	*1,007*	*7,645*	*1,086*
Pensions	*3,585*	*669*	*3,587*	*875*	*3,587*	*1,009*
Valuation of tangible and intangible assets	—	*1,509*	—	*1,373*	—	*1,317*
Tax liabilities	**—**	**6,462**	**—**	**5,933**	**—**	**6,522**
Temporary differences	—	6,462	—	5,933	—	6,522
Of which:						
Valuation of financial instruments	—	*1,419*	—	*1,791*	—	*2,073*
Valuation of tangible and intangible assets	—	*3,081*	—	*2,311*	—	*1,962*
Investments in Group companies	—	*337*	—	*440*	—	*831*

* Banco Popular Español, S.A.U. considered that part of its monetizable assets were converted into credit against the Tax Administration in 2017 Income Tax return, as the circumstances of the aforementioned regulations were met at the end of that year (EUR 995 million). The Spanish tax authorities have expressly confirmed the nature of these assets as monetizable, but they consider that conditions for conversion are not met at the end of 2017, without prejudice to the conversion in future years. Likewise, Grupo Santander, due to losses incurred in 2020, converted EUR 642 million of monetizable tax assets into credit against the Tax Administration in its Corporate Income Tax return. This tax return is subject to review by the Tax Authorities.

Grupo Santander only recognises deferred tax assets for temporary differences or tax loss and tax credit carryforwards where it is considered probable that the consolidated entities that generated them will have sufficient future taxable profits against which they can be utilised.

The deferred tax assets and liabilities are reassessed at the reporting date in order to ascertain whether any adjustments need to be made on the basis of the findings of the analyses performed.

These analyses take into consideration all evidence, both positive and negative, of the recoverability of such deferred tax assets, among which we can find, (i) the results generated by the different entities in previous years, (ii) the projections of results of each entity or fiscal group, (iii) the estimation of the reversal of the different temporary differences according to their nature and (iv) the period and limits established under the applicable legislation of each country for the recovery of the different deferred tax assets, thus concluding on the ability of each entity or fiscal group to recover the deferred tax assets registered.

The projections of results used in this analysis are based on the financial budgets approved by both the local directions of the corresponding units and by the Group's administrators. The Group's budget estimation process is common for all units. The Group's management prepares its financial budgets based on the following key assumptions:

a) Microeconomic variables of the entities that make up the fiscal group in each location: the existing balance structure, the mix of products offered and the commercial strategy at each moment defined by local directions are taken into account, based on the competition, regulatory and market environment.

b) Macroeconomic variables: estimated growths are based on the evolution of the economic environment considering the expected evolution in the gross domestic product of each location, and the forecasts of interest rates, inflation and exchange rates fluctuations. These data is provided by the Group's Studies Service, based on external sources of information.

Additionally, the Group performs retrospective contrasts (backtesting) on the variables projected in the past. The differential behaviour of these variables with respect to the real market data is considered in the projections estimated in each fiscal year. Thus, and in relation to Spain, the deviations identified by the Directors in recent past years are due to non-recurring events outside the operation of the business, such as the impacts due to the first application of new regulations, the costs assumed for the acceleration of the restructuring plans and the changing effect of the current macroeconomic environment.

During 2020, taking into account the uncertainties about the economic impacts derived from the covid-19 health crisis, the Group reassessed the ability to generate future taxable income in relation to the recoverability of deferred tax assets recorded in the main Group companies. Management considered that the recovery period of these assets would not be affected and that it was not necessary to make adjustments to the deferred tax assets recognised in the Group on the basis of the results of the analyses performed, except in Spain, where the changes in the key assumptions on which the projected results of its tax group are based, arising from the impact of covid-19, resulted in the recognition of an impairment of EUR 2,500 million of deferred tax assets under 'Income Tax' in the income statement.

Finally, and given the degree of uncertainty of these assumption on the referred variables, the Group conducts a sensitivity analysis of the most significant assumptions considered in the deferred tax assets' recoverability analysis, considering any reasonable change in the key assumptions on which the projections of results of each entity or fiscal group and the estimation of the reversal of the different temporary differences are based.

In relation to Spain, the sensitivity analysis has consisted of adjusting 50 basis points for growth (gross domestic product) and adjusting 50 basis points for inflation. Following the sensitivity analysis performed, the Group estimate that the maximum recovery period of the deferred tax assets recognized as of 31 December 2021 would be 15 years.

Relevant information is set forth below for the main countries which have recognised deferred tax assets:

Spain

The deferred tax assets recognised at the Consolidated Tax Group total EUR 9,954 million, of which EUR 7,420 million were for monetizable temporary differences with the right to conversion into a credit against the Public Finance, EUR 1,902 million for other temporary differences and EUR 632 million for tax losses and credits.

The Group estimates that the recognised deferred tax assets for temporary differences will be recovered in a maximum period of 15 years. This period would also apply to the recovery of the recognised tax loss and tax credit carryforwards.

Brazil

The deferred tax assets recognised in Brazil total EUR 5,204 million, of which EUR 2,909 million were for monetizable temporary differences, EUR 1,984 million for other temporary differences and EUR 311 million for tax losses and credits.

Grupo Santander estimates that the recognised deferred tax assets for temporary differences, tax losses and credits will be recovered in approximately 10 years.

United States

The deferred tax assets recognised in the United States total EUR 1,503 million, of which EUR 1,215 million were for temporary differences and EUR 288 million for tax losses and credits. The Group estimates that the recognised deferred tax assets for temporary differences, tax losses and credits will be recovered in a period of 15 years.

The changes in Tax assets - Deferred and Tax liabilities - Deferred in the last three years were as follows:

EUR million

	Balances at 31 December 2020	(Charge)/ Credit to income	Foreign currency balance translation differences and other items	(Charge)/Credit to asset and liability valuation adjustments	Acquisition for the year (net)	Balances at 31 December 2021
Deferred tax assets	**19,246**	**(209)**	**193**	**209**	**1**	**19,440**
Tax losses and tax credits	1,093	129	28	—	—	1,250
Temporary differences	18,153	(338)	165	209	1	18,190
Of which monetizable	*10,721*	*(273)*	*25*	—	—	*10,473*
Deferred tax liabilities	**(5,933)**	**(886)**	**(170)**	**528**	**(1)**	**(6,462)**
Temporary differences	(5,933)	(886)	(170)	528	(1)	(6,462)
	13,313	**(1,095)**	**23**	**737**	**0**	**12,978**

EUR million

	Balance at 31 December 2019	(Charge)/ Credit to income	Foreign currency balance translation differences and other items	(Charge)/Credit to asset and liability valuation adjustments	Acquisition for the year (net)	Balance at 31 December 2020
Deferred tax assets	**22,758**	**(1,016)**	**(2,465)**	**38**	**(69)**	**19,246**
Tax losses and tax credits	3,427	(2,065)	(266)	—	(3)	1,093
Temporary differences	19,331	1,049	(2,199)	38	(66)	18,153
Of which monetizable	*11,233*	*613*	*(1,125)*	—	—	*10,721*
Deferred tax liabilities	**(6,522)**	**(402)**	**851**	**156**	**(16)**	**(5,933)**
Temporary differences	(6,522)	(402)	851	156	(16)	(5,933)
	16,236	**(1,418)**	**(1,614)**	**194**	**(85)**	**13,313**

EUR million

	Balances at 31 December 2018	(Charge)/ Credit to income	Foreign currency balance translation differences and other items	(Charge)/Credit to asset and liability valuation adjustments	Acquisition for the year (net)	Balance at 31 December 2019
Deferred tax assets	**23,258**	**215**	**(610)**	**(92)**	**(13)**	**22,758**
Tax losses and tax credits	4,276	(301)	(548)	—	—	3,427
Temporary differences	18,982	516	(62)	(92)	(13)	19,331
Of which monetizable	*10,866*	*427*	*(60)*	—	—	*11,233*
Deferred tax liabilities	**(5,568)**	**(680)**	**92**	**(366)**	**0**	**(6,522)**
Temporary differences	(5,568)	(680)	92	(366)	—	(6,522)
	17,690	**(465)**	**(518)**	**(458)**	**(13)**	**16,236**

Also, the Group did not recognise deferred tax assets relating to tax losses and deductions and other incentives amounting to approximately EUR 9,800 million, the use of which EUR 375 million is subject, among other requirements, to time limits.

f) Tax reforms

The following significant tax reforms were approved in 2021 and previous years:

In Spain, Royal Decree-Law 3-2016 was approved in December 2016, which meant the reduction of the limits for the integration of deferred monetizable tax assets and for the set-off of negative tax bases and deductions in order to avoid double taxation as well as the compulsory impairment reversion for deductible participations in previous years in five years, and the non deductibility of the losses generated from the transmission of participations. In 2020 the General State Budget Law for 2021 established, among other tax measures, the non deductibility in Corporation Tax of management fees on participations whose dividends or capital gains are exempt, determining the amount of these expenses as a 5% of the dividends or capital gains. Likewise in 2021 the General State Budget Law for 2022 was approved. This law establishes a minimum effective tax rate of 15% (18% for financial entities) on Corporation Tax base.

In the United Kingdom, in March 2021 it was announced that the main Corporation Tax rate will increase from 1 April 2023 to 25% from 19%. This increase was enacted in Finance Act 2021.

In Brazil, the Constitutional Amendment 103/19 was adopted on 12 November 2019, modifying the social security system, including, among other measures, an increase in the CSLL tax rate for banks from 15% to 20%, effective 1 March 2020. This increase lifted the aggregate tax rate -sum of CSLL and the corporate income tax (Imposto de Renda Pessoa Jurídica; IRPJ)- for banks from 40% to 45%. In addition, in 2021, the provisional measure (Medida Provisoria) 1,034/2021, temporarily increases, from 1 July 2021 to 31 December 2021, the rate of a Social Contribution on the Net Income (CSLL) of the banks to 25% from 20%, and for other financial institutions to 20% from 15%, being the joint taxation for banks 50% (25% IR and 25% CSLL), and 45% for other financial institutions. In the IOF (Tax on financial operations) on credit operations, as of 1 January 2021 the rate of 0,38% (0% for part of 2020) is reinstated, and for settled transactions from 20 September to 31 December 2021, a temporary increase in the IOF rates applicable for credit transactions was approved (annual rate 1.5%% to 2.04%% for legal persons and 3% to 4.8% for natural persons).

In Argentina, Law n.º 27630 (BOE of 16 June 2021) amended, with retroactive effect to 1 January 2021, the rate applicable to the Corporate Income Tax, establishing a progressive rate scale which for Banco Santander Río S.A. represents an increase from 30% to 35%. In addition, the 7% withholding on dividend distribution is maintained (however, the distribution of pre-2018 reserves is not subject to withholding tax). In addition, during the first quarter of the year, there was an increase in the tax on gross income to financial institutions in both, the City of Buenos Aires (from 7% to 8%) and the Province of Buenos Aires (from 7% to 9%). Additionally, the adjustment for tax inflation that was to be applied on a transitional basis in 1/3 of 2019, has been lowered to 1/6 in 2019, with the rest being deferred over the next five years

On 27 November 2019 entered into force the Protocol amending the Convention between the United States of America and the kingdom of Spain for the Avoidance of Double Taxation (DTT). The revision of the Convention introduces substantial reductions in the withholding rates that apply to different types of income, highlighting the reduction of the withholding rate on dividends to 5% for shareholdings of more than 10%, the elimination of withholding for shareholdings greater than 80% and elimination of withholding at source on interests and royalties. Build Back Better Act, approved in the House of Representatives on November 19, 2021, includes significant tax increases and measures impacting large corporations and other high-income taxpayers, such as the introduction of a 15% Minimum Tax on Financial Statement Pre-Tax Book Income, changes to the Base Erosion Anti-Abuse Tax and a new excise tax on Share Buy-Backs. Build Back Better Act is pending to be passed by the Senate

In Chile, Law n.º 21,210 on modernization of Chilean tax law was enacted in 2020. It includes several modifications to different tax laws in force in Chile. Among the aspects included, it is worth highlighting the substitute tax that on a temporary basis until 30 April 2022 allows taxing at 30% (instead of the generally applicable 35%) with a credit of the first category tax paid, the tax profits generated up to the 31 December 2016, reducing the fiscal cost of its distribution and other measures about asset depreciation and indirect taxes.

On 22 December 2021, the European Commission has proposed a Directive ensuring a minimum effective tax rate for the global activities of large multinational groups. The proposal follows closely the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting and sets out how the principles of the 15% effective tax rate – agreed by 137 countries – will be applied in practice within the European Union (EU). It includes a common set of rules (GloBe Rules) on how to calculate this effective tax rate, so that it is properly and consistently applied across the EU.

g) Other information

In compliance with the disclosure requirement established in the listing rules instrument 2005 published by the UK Financial Conduct Authority, it is hereby stated that shareholders of the Bank resident in the United Kingdom will be entitled to a tax credit for taxes paid abroad in respect of withholdings that the Bank has to pay on the dividends to be paid to such shareholders if the total income of the dividend exceeds the amount of exempt dividends of GBP 2,000 for the year 2021/22. The shareholders of the Bank resident in the United Kingdom who hold their ownership interest in the Bank through Santander Nominee Service will be informed directly of the amount thus withheld and of any other data they may require to complete their tax returns in the United Kingdom. The other shareholders of the Bank resident in the United Kingdom should contact their bank or securities broker.

Banco Santander, S.A., is part of the Large Business Forum and has adhered since 2010 to the Code of Good Tax Practices in Spain. Also Santander UK is a member of the HMRC's Code of Practice on Taxation in the United Kingdom, actively participating in both cases in the cooperative compliance programs being developed by these Tax Administrations.

28. Non-controlling interests

Non-controlling interests include the net amount of the equity of subsidiaries attributable to equity instruments that do not belong, directly or indirectly, to the Bank, including the portion attributed to them of profit for the year.

a) Breakdown

The detail, by Group company, of 'Equity - Non-controlling interests' is as follows:

EUR million	2021	2020	2019
Santander Bank Polska S.A.	1,559	1,676	1,597
Grupo PSA	1,543	1,622	1,569
Santander Consumer USA Holdings Inc.	1,255	986	1,565
Banco Santander - Chile	1,042	1,218	1,101
Banco Santander (Brasil) S.A.	1,023	1,014	1,167
Banco Santander México, S.A. Institución de Banca Múltiple, Grupo Financiero Santander México	202	461	333
Other companies*	1,970	1,806	1,655
	8,594	**8,783**	**8,987**
Profit/(Loss) for the year attributable to non-controlling interests	1,529	1,063	1,601
Of which:			
Santander Consumer USA Holdings Inc.	*494*	*201*	*230*
Grupo PSA	*311*	*255*	*266*
Banco Santander - Chile	*292*	*198*	*283*
Banco Santander (Brasil) S.A.	*251*	*233*	*373*
Santander Bank Polska S.A.	*75*	*81*	*162*
Banco Santander México, S.A. Institución de Banca Múltiple, Grupo Financiero Santander México	*62*	*61*	*195*
Other companies	*44*	*34*	*92*
TOTAL	**10,123**	**9,846**	**10,588**

* Includes a Santander UK plc issuance of perpetual convertible equity instruments, at the option of Santander UK plc, into preference shares of Santander UK itself for a nominal amount of GBP 2,200 million (the Group having acquired GBP 1,050 million). Carrying amount of EUR 1,363 million in 2021 (EUR 1,275 million and EUR 1,346 million in 2020 and 2019, respectively).

b) Changes

The changes in Non-controlling interests are summarised as follows:

EUR million	2021	2020	2019
Balance at the end of the previous year	9,846	10,588	10,889
Balance at beginning of year	9,846	10,588	10,889
Other comprehensive income*	(304)	(818)	310
Other	581	76	(611)
Profit attributable to non-controlling interests	*1,529*	*1,063*	*1,601*
*Modification of participation rates***	*(390)*	*(632)*	*(1,623)*
Change of perimeter	*(5)*	*(54)*	*110*
Dividends paid to minority shareholders	*(648)*	*(465)*	*(895)*
*Changes in capital and other concepts**	*95*	*164*	*196*
Balance at end of year	**10,123**	**9,846**	**10,588**

* Mainly due to exchange differences.

** Includes the effect of the Public Offers for the acquisition of shares of Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México in 2021 and 2019 (see note 3.c).

The foregoing changes are shown in the consolidated statement of changes in total equity.

c) Other information

The financial information on the subsidiaries with significant non-controlling interests at 31 December 2021 is summarised below:

EUR million*

	Santander Bank Polska S.A.	Banco Santander (Brasil) S.A.	Banco Santander (Chile), S.A.	Grupo Financiero Santander México, S.A.B. de C.V.	Santander Consumer USA
Total assets	49,788	159,447	71,987	78,383	43,966
Total liabilities	45,071	146,662	67,282	71,162	35,064
Net assets	**4,717**	**12,785**	**4,705**	**7,221**	**8,902**
Total income	1,646	10,884	2,457	3,579	4,725
Total profit	**230**	**2,589**	**928**	**896**	**2,510**

* Information prepared in accordance with the segment reporting criteria described in note 51 and, therefore, it may not coincide with the information published separately by each entity.

29. Other comprehensive income

The balances of 'Other comprehensive income' include the amounts, net of the related tax effect, of the adjustments to assets and liabilities recognised in equity through the consolidated statement of recognised income and expense. The amounts arising from subsidiaries are presented, on a line by line basis, in the appropriate items according to their nature.

Respect to items that may be reclassified to profit or loss, the consolidated statement of recognised income and expense includes changes in other comprehensive income as follows:

- Revaluation gains (losses): includes the amount of the income, net of the expenses incurred in the year, recognised directly in equity. The amounts recognised in equity in the year remain under this item, even if in the same year they are transferred to the income statement or to the initial carrying amount of the assets or liabilities or are reclassified to another line item.

- Amounts transferred to income statement: includes the amount of the revaluation gains and losses previously recognised in equity, even in the same year, which are recognised in the income statement.

- Amounts transferred to initial carrying amount of hedged items: includes the amount of the revaluation gains and losses previously recognised in equity, even in the same year, which are recognised in the initial carrying amount of assets or liabilities as a result of cash flow hedges.

- Other reclassifications: includes the amount of the transfers made in the year between the various valuation adjustment items.

a) Breakdown of Other comprehensive income - Items that will not be reclassified in results and Items that can be classified in results

EUR million	2021	2020	2019
Other comprehensive income	**(32,719)**	**(33,144)**	**(24,168)**
Items that will not be reclassified to profit or loss	**(4,241)**	**(5,328)**	**(4,288)**
Actuarial gains and losses on defined benefit pension plans	(3,986)	(5,002)	(4,764)
Non-current assets held for sale	—	—	—
Share in other income and expenses recognised in investments, joint ventures and associates	(8)	(2)	1
Other valuation adjustments	—	—	—
Changes in the fair value of equity instruments measured at fair value with changes in other comprehensive income	(157)	(308)	514
Inefficiency of fair value hedges of equity instruments measured at fair value with changes in other comprehensive income	—	—	—
Changes in the fair value of equity instruments measured at fair value with changes in other comprehensive income (hedged item)	275	159	44
Changes in the fair value of equity instruments measured at fair value with changes in other comprehensive income (hedging instrument)	(275)	(159)	(44)
Changes in the fair value of financial liabilities measured at fair value through profit or loss attributable to changes in credit risk	(90)	(16)	(39)
Items that may be reclassified to profit or loss	**(28,478)**	**(27,816)**	**(19,880)**
Hedges of net investments in foreign operations (Effective portion)	(4,283)	(3,124)	(5,464)
Exchange differences	(23,887)	(26,911)	(16,701)
Hedging derivatives. Cash flow hedges (Effective portion)	(276)	295	300
Changes in the fair value of debt instruments measured at fair value with changes in other comprehensive income	436	2,411	2,321
Hedging instruments (items not designated)	—	—	—
Non-current assets classified as held for sale	—	—	—
Share in other income and expenses recognised in investments, joint ventures and associates	(468)	(487)	(336)

b) Other comprehensive income- Items not reclassified to profit or loss – Actuarial gains or (-) losses on defined benefit pension plans

'Other comprehensive income —Items not reclassified to profit or loss— Actuarial gains or (-) losses on defined benefit pension plans' include the actuarial gains and losses and the return on plan assets, less the administrative expenses and taxes inherent to the plan, and any change in the effect of the asset ceiling, excluding amounts included in net interest on the net defined benefit liability (asset).

Its variation (decrease of EUR 1,567 million in the year) is shown in the consolidated statement of recognised income.

The release against equity in 2021 amounts to EUR 1,705 million - see note 25.b -, with the following breakdown:

- Reduction of EUR 37 million in the accumulates actuarial losses relating to the Group´s entities in Spain, mainly due to the evolution experienced by the discount rate -increase from 0.60% to 0.90%.
- Reduction of EUR 1,475 million in the cumulative actuarial losses relating to the Group´s businesses in the UK, mainly due to the evolution experienced by the discount rate– increase from 1.28% to 1.90%.
- Reduction of EUR 91 million in accumulated actuarial losses corresponding to the Group's business in Brazil, mainly due to the increase in the discount rate -from 6.82% to 8.39% in pension benefits and 7.14% to 8.44% in medical benefits-.
- Reduction of EUR 102 million in the accumulated actuarial losses corresponding to the Group's businesses in other geographical areas.

The other modification in accumulated actuarial profit or losses is an increase of EUR 138 million as a result of the evolution of exchange rates, mainly in United Kingdom (appreciation of the pound sterling).

c) Other comprehensive income - Items that will not be reclassified in results - Changes in the fair value of equity instruments measured at fair value with changes in other comprehensive income

Since the entry into force of IFRS 9, no impairment analysis is performed of equity instruments recognised under 'Other comprehensive income'. IFRS 9 eliminates the need to carry out the impairment estimate on this class of equity instruments and the reclassification to profit and loss on the disposal of these assets, being recognised at fair value with changes in equity.

The following is a breakdown of the composition of the balance as of 31 December 2021, 2020 and 2019 under 'Other comprehensive income - Items that will not be reclassified to profit or loss - Changes in the fair value of equity instruments measured at fair value with changes in other global result' depending on the geographical origin of the issuer:

EUR million

	2021			
	Capital gains by valuation	Capital losses by valuation	Net gains/losses by valuation	Fair Value
Equity instruments				
Domestic				
Spain	*25*	*(663)*	*(638)*	*759*
International				
Rest of Europe	*39*	*(58)*	*(19)*	*170*
United States	*13*	*(4)*	*9*	*31*
Latin America and rest	*496*	*(5)*	*491*	*1,493*
	573	**(730)**	**(157)**	**2,453**
Of which:				
Publicly listed	*500*	*(44)*	*456*	*1,521*
Non publicly listed	*73*	*(686)*	*(613)*	*932*

EUR million

	2020			
	Capital gains by valuation	Capital losses by valuation	Net gains/losses by valuation	Fair Value
Equity instruments				
Domestic				
Spain	*28*	*(849)*	*(821)*	*1,032*
International				
Rest of Europe	*65*	*(76)*	*(11)*	*314*
United States	*7*	*(4)*	*3*	*25*
Latin America and rest	*525*	*(4)*	*521*	*1,412*
	625	**(933)**	**(308)**	**2,783**
Of which:				
Publicly listed	*525*	*(31)*	*494*	*1,424*
Non publicly listed	*100*	*(902)*	*(802)*	*1,359*

EUR million

	2019			
	Capital gains by valuation	Capital losses by valuation	Net gains/losses by valuation	Fair Value
Equity instruments				
Domestic				
Spain	*21*	*(445)*	*(424)*	*184*
International				
Rest of Europe	*68*	*(72)*	*(4)*	*379*
United States	*15*	*(3)*	*12*	*44*
Latin America and rest	*934*	*(4)*	*930*	*2,256*
	1,038	**(524)**	**514**	**2,863**
Of which:				
Publicly listed	*936*	*(14)*	*922*	*2,283*
Non publicly listed	*102*	*(510)*	*(408)*	*580*

d) Other comprehensive income - Items that may be reclassified to profit or loss - Hedge of net investments in foreign operations (effective portion) and exchange differences

The change in 2021 reflects the positive effect of the generalized appreciation of some currencies, especially the pound sterling and the US dollar, whereas the change in 2020 reflected the negative effect of the generalized depreciation of the main currencies, especially the Brazilian real, the pound sterling and the US dollar. The change in 2019 showed the positive effect of the appreciation of the pound sterling and the US dollar and the negative effect of the depreciation of the Brazilian real.

Of the change in the balance in these years, a profit of EUR 167 million, a loss of EUR 2,104 million and a profit of EUR 230 million in 2021, 2020 and 2019, respectively relate to the measurement of goodwill.

The detail, by country is as follows:

EUR million

	2021	2020	2019
Net balance at end of year*	(28,170)	(30,035)	(22,165)
Of which:			
Brazilian real	*(17,440)*	*(17,417)*	*(13,579)*
Pound sterling	*(3,415)*	*(4,205)*	*(3,135)*
Mexican peso	*(3,088)*	*(3,091)*	*(2,439)*
*Argentine peso**	*(2,109)*	*(2,288)*	*(2,094)*
Chilean peso	*(2,039)*	*(1,776)*	*(1,560)*
US dollar	*1,536*	*387*	*1,654*
Polish zloty	*(809)*	*(788)*	*(501)*
Other	*(806)*	*(857)*	*(511)*

* Grupo Santander changed its accounting policy in relation to the presentation of exchange differences and the effects of hyperinflation of the operations generated in Argentina, reclassifying at 1 January 2019 an amount of EUR -1,984 million from the heading 'Other reserves' to 'Accumulated other comprehensive income' (see note 2.a and 33.b).

The breakdown of translation differences by currency is as follows:

EUR million

2021				Of which:		
Currency	Balance at the beginning of the year	Balance at the end of the year	Movement	From goodwill	From results*	From net assets
Brazilian real	(16,032)	(15,913)	119	30	19	70
Pound sterling	(4,602)	(3,504)	1,098	41	38	1,019
Mexican peso	(2,393)	(2,012)	381	26	29	326
Argentine peso	(2,287)	(2,109)	178	—	—	178
Chilean peso	(1,450)	(1,852)	(402)	(55)	(43)	(304)
US dollar	1,253	2,775	1,522	125	102	1,295
Polish zloty	(638)	(678)	(40)	(9)	(1)	(30)
Other	(762)	(594)	168	9	11	148
Total Group	**(26,911)**	**(23,887)**	**3,024**	**167**	**155**	**2,702**

* Profit and loss items are translated into euros at the average exchange rate for the year as described in note 2 a) ii.

EUR million

2020				Of which:		
Currency	Balance at the beginning of the year	Balance at the end of the year	Movement	From goodwill	From results*	From net assets
Brazilian real	(10,704)	(16,032)	(5,328)	(1,280)	(190)	(3,858)
Pound sterling	(3,329)	(4,602)	(1,273)	(455)	(4)	(814)
Mexican peso	(1,547)	(2,393)	(846)	(59)	(2)	(785)
Argentine peso	(2,094)	(2,287)	(193)	—	—	(193)
Chilean peso	(1,181)	(1,450)	(269)	(18)	15	(266)
US dollar	2,833	1,253	(1,580)	(143)	(58)	(1,379)
Polish zloty	(249)	(638)	(389)	(133)	(5)	(251)
Other	(430)	(762)	(332)	(16)	(10)	(306)
Total Group	**(16,701)**	**(26,911)**	**(10,210)**	**(2,104)**	**(254)**	**(7,852)**

* Profit and loss items are translated into euros at the average exchange rate for the year as described in note 2 a) ii.

e) Other comprehensive income -Items that may be reclassified to profit or loss - Hedging derivatives – Cash flow hedges (Effective portion)

Other comprehensive income – Items that may be reclassified to profit or loss - Cash flow hedges includes the gains or losses attributable to hedging instruments that qualify as effective hedges. These amounts will remain under this heading until they are recognised in the consolidated income statement in the periods in which the hedged items affect it (see note 11).

f) Other comprehensive income - Items that may be reclassified to profit or loss – Changes in the fair value of debt instruments measured at fair value with changes in other comprehensive income

Includes the net amount of unrealised changes in the fair value of assets classified as Changes in the fair value of debt instruments measured at fair value with changes in other comprehensive income (see note 7).

The breakdown, by type of instrument and geographical origin of the issuer, of 'Other comprehensive income – Items that may be reclassified to profit or loss - Changes in the fair value of debt instruments measured at fair value with changes in other comprehensive income' at 31 December 2021, 2020 and 2019 is as follows:

EUR million

	31 December 2021			
	Revaluation gains	Revaluation losses	Net revaluation gains/ (losses)	Fair value
Debt instruments				
Government debt securities and debt Instruments issued by central banks				
Spain	*271*	*—*	*271*	*12,917*
Rest of Europe	*544*	*(118)*	*426*	*20,397*
Latin America and rest of the world	*334*	*(438)*	*(104)*	*49,847*
Private-sector debt securities	80	(237)	(157)	22,424
	1,229	**(793)**	**436**	**105,585**

EUR million

	31 December 2020			
	Revaluation gains	Revaluation losses	Net revaluation gains/ (losses)	Fair value
Debt instruments				
Government debt securities and debt Instruments issued by central banks				
Spain	*693*	*—*	*693*	*19,314*
Rest of Europe	*915*	*(69)*	*846*	*23,116*
Latin America and rest of the world	*785*	*(73)*	*712*	*51,026*
Private-sector debt securities	181	(21)	160	24,714
	2,574	**(163)**	**2,411**	**118,170**

EUR million

	31 December 2019			
	Revaluation gains	Revaluation losses	Net revaluation gains/ (losses)	Fair value
Debt instruments				
Government debt securities and debt Instruments issued by central banks				
Spain	*947*	*(2)*	*945*	*32,413*
Rest of Europe	*664*	*(38)*	*626*	*19,052*
Latin America and rest of the world	*839*	*(121)*	*718*	*51,284*
Private-sector debt securities	81	(49)	32	20,096
	2,531	(210)	2,321	122,845

Since the entry into force of IFRS 9, the Group estimates the expected losses on debt instruments measured at fair value with changes in other comprehensive income. These losses are recorded with a charge to the consolidated income statement for the period.

At the end of the years 2021, 2020 and 2019, the Group recorded under 'Impairment or reversal of impairment on financial assets not measured at fair value through profit or loss', net due to modification of the consolidated income statement, in the line of financial assets at fair value with changes in other comprehensive income a provision of EUR 19 million, EUR 19 million and EUR 12 million in 2021, 2020 and 2019, respectively.

g) Other comprehensive income - Items that may be reclassified to profit or loss and Items not reclassified to profit or loss - Other recognised income and expense of investments in subsidiaries, joint ventures and associates

The changes in other comprehensive income - Entities accounted for using the equity method were as follows:

EUR million

	2021	2020	2019
Balance at beginning of year	(489)	(335)	(320)
Revaluation gains/(losses)	7	(170)	(22)
Net amounts transferred to profit or loss	6	16	7
Balance at end of year	**(476)**	**(489)**	**(335)**
Of which:			
Zurich Santander Insurance América, S.L.	*(332)*	*(298)*	*(171)*

30. Shareholders' equity

The changes in Shareholders' equity are presented in the consolidated statement of changes in total equity. Significant information on certain items of Shareholders' equity and the changes during the year are set forth below.

31. Issued capital

a) Changes

At 31 December 2018, Banco Santander's share capital consisted of 16,236,573,942 shares with a total par value of EUR 8,118 million.

On 10 September 2019, a capital increase of EUR 191 million was carried out with the issuance of 381,540,640 shares (2.35% of the Bank's share capital), to meet the takeover bid for 16.69% of the share capital of Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México. (see Note 3.a).

Therefore, Banco Santander's new capital consisted of EUR 8,309 million at 31 December 2019, represented by 16,618,114,582 shares of EUR 0.50 of nominal value each one and all of them from a unique class and series.

On 3 December 2020, a capital increase of EUR 361 million was made, with a charge to the share premium, through the issue of 722,526,720 shares (4.35% of the share capital).

Therefore, Banco Santander's share capital at 31 December 2020 consisted of EUR 8,670 million, represented by 17,340,641,302 shares of EUR 0.50 of nominal value each and all of them of a unique class and series.

Equally, Banco Santander's share capital at 31 December 2021 consisted of EUR 8,670 million, represented by 17,340,641,302 shares of EUR 0.50 of nominal value each and all of them of a unique class and series. Includes 259,930,273 shares corresponding to the first share repurchase program for which it has been agreed (together with the shares that are finally to be acquired under the second share repurchase program) to submit their redemption to the general shareholders meeting subject to the pertinent regulatory authorizations (see notes 4 and 34).

Banco Santander's shares are listed on the Spanish Stock Market Interconnection System and on the New York, London, Mexico and Warsaw Stock Exchanges, and all of them have the same features and rights. Santander shares are listed on the London Stock Exchange under Crest Depository Interest (CDI), each CDI representing one Bank's share. They are also listed on the New York Stock Exchange under American Depositary Receipts (BDR), each BDR representing one share. During 2019 and 2018 the number of markets where the Bank is listed was reduced; the Bank's shares was delisted from Buenos Aires, Milan, Lisboa and São Paulo's markets.

At 31 December 2021, no shareholder held more than 3% of Banco Santander's total share capital (which is the threshold generally provided under Spanish regulations for a significant holding in a listed company to be disclosed). Even though at 31 December 2021, certain custodians appeared in our shareholder registry as holding more than 3% of our share capital, we understand that those shares were held in custody on behalf of other investors, none of whom exceeded that threshold individually. These custodians were State Street Bank (13.35%), Chase Nominees Limited (9.15%), The Bank of New York Mellon Corporation (5.21%), Citibank New York (3.74%) and EC Nominees Limited (3.34%).

On 24 October 2019, BlackRock Inc. reported to the CNMV its significant holding of voting rights in Banco Santander (5.426%). It also specified that it was holding shares on behalf of a number of funds or other investment entities, none of which exceeded 3% individually. No changes have been communicated since then. There may be some overlap in the holdings declared by the above mentioned custodians and asset manager.

At 31 December 2021, neither Banco Santander's shareholder registry nor the CNMV's registry showed any shareholder residing in a non-cooperative jurisdiction with a shareholding equal to, or greater than, 1% of our share capital (which is the other threshold applicable under Spanish regulations).

b) Other considerations

Under Spanish law, only shareholders at the general meeting have the authority to increase share capital. However, they may delegate the authority to approve or execute capital increases to the board of directors. Banco Santander´s Bylaws are fully aligned with Spanish law and do not establish any different conditions for share capital increases.

At 31 December 2021 the shares of the following companies were listed on official stock markets: Banco Santander Río S.A.; Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México; Banco Santander - Chile; Banco Santander (Brasil) S.A., Santander Bank Polska S.A. (former Bank Zachodni WBK S.A.) and Santander Consumer USA Holdings Inc. and Getnet Adquirência e Serviços para Meios de Pagamento S.A.

At 31 December 2021 the number of Banco Santander shares owned by third parties and managed by Group management companies (mainly portfolio, collective investment undertaking and pension fund managers) or jointly managed was 45 million shares, which represented 0.26% of Banco Santander's share capital (39 and 40 million shares, representing 0.22% and 0.24% of the share capital in 2020 and 2019, respectively). In addition, the number of Banco Santander shares owned by third parties and received as security was 231 million shares (equal to 1.33% of the Bank's share capital).

At 31 December 2021 the capital increases in progress at Group companies and the additional capital authorised by their shareholders at the respective general meetings were not material at Group level (see appendix V).

32. Share premium

Share premium includes the amount paid up by the Bank's shareholders in capital issues in excess of the par value.

The Corporate Enterprises Act expressly permits the use of the share premium account balance to increase capital at the entities at which it is recognised and does not establish any specific restrictions as to its use.

The change in the balance of share premium corresponds to the capital increases detailed in note 31.a).

The increased produced in 2019 was a consequence of the increase of EUR 1,491 million to cope with the capital increase for the acquisition of Banco Santander México, S.A, Institución de Banca Múltiple, Grupo Financiero Santander México shares on 10 September 2019.

The decrease in 2020 was due to the reduction of EUR 361 million to cover the capital increase on 3 December (see note 31).

The decreased produced in 2021 for an amount of EUR 4,034 million has been the consequence of applying the result obtained by Banco Santander during the financial year 2020, consisting of losses of EUR 3,557 million, as reflected in the consolidated statements of changes in total equity, and the charge of the dividend for the fiscal year 2020 for an amount of EUR 477 million (see note 4.a and consolidated statements of changes in total equity).

Also, in 2020 and 2019 an amount of EUR 72 million and EUR 38 million, respectively, were transferred from the Share premium account to the Legal reserve (see note 33.b.i).

33. Accumulated retained earnings

a) Definitions

The balance of 'Equity - Accumulated gains and Other reserves' includes the net amount of the accumulated results (profits or losses) recognised in previous years through the consolidated income statement which in the profit distribution were allocated in equity, the expenses of own equity instrument issues, the differences between the amount for which the treasury shares are sold and their acquisition price, as well as the net amount of the results accumulated in previous years, generated by the result of non-current assets held for sale, recognised through the consolidated income statement.

b) Breakdown

The detail of Accumulated retained earnings and Reserves of entities accounted for using the equity method is as follows:

EUR million	2021	2020	2019
Restricted reserves	**2,543**	**2,460**	**2,595**
Legal reserve	1,734	1,734	1,662
Own shares	755	672	879
Revaluation reserve Royal Decree-Law 7/1996	43	43	43
Reserve for retired capital	11	11	11
Unrestricted reserves	**4,243**	**10,422**	**10,664**
Voluntary reserves*	6,123	6,128	4,603
Consolidation reserves attributable to the Bank	(1,880)	4,294	6,061
Reserves of subsidiaries	**47,438**	**47,601**	**43,449**
Reserves of entities accounted for using the equity method	**1,572**	**1,504**	**1,210**
	55,796	**61,987**	**57,918**

* In accordance with the commercial regulations in force in Spain.

i. Legal reserve

Under the Consolidated Spanish Corporate Enterprises Act, 10% of net profit for each year must be transferred to the legal reserve. These transfers must be made until the balance of this reserve reaches 20% of the share capital. The legal reserve can be used to increase capital provided that the remaining reserve balance does not fall below 10% of the increased share capital amount.

In 2020 and 2019, Banco Santander transferred EUR 72 million and EUR 38 million, respectively, from the Share premium account to the Legal reserve.

Consequently, once again, after the capital increases described in note 31 had been carried out, the balance of the legal reserve reached 20% of the share capital, and at 31 December 2021 the Legal reserve was of the stipulated level.

ii. Reserve for treasury shares

According to the Consolidated Text of the Corporate Enterprises Act, an unavailable reserve equivalent to the amount for which Banco Santander's shares owned by subsidiaries are recorded. This reservation shall be freely available when the circumstances which have obliged its constitution disappear. In addition, this reserve covers the outstanding balance of loans granted by the Group with Banco Santander's share guarantee and the amount equivalent to the credits granted by the Group companies to third parties for the acquisition of own shares.

iii. Revaluation reserve Royal Decree Law 7/1996, of 7 June

The balance of Revaluation reserve Royal Decree-Law 7/1996 can be used, free of tax, to increase share capital. From 1 January 2007, the balance of this account can be taken to unrestricted reserves, provided that the monetary surplus has been realised. The surplus will be deemed to have been realised in respect of the portion on which depreciation has been taken for accounting purposes or when the revalued assets have been transferred or derecognised.

If the balance of this reserve were used in a manner other than that provided for in Royal Decree law 7/1996, of 7 June, it would be subject to taxation.

iv. Reserves of subsidiaries

The detail, by company, of Reserves of subsidiaries, based on the companies' contribution to the Group (considering the effect of consolidation adjustments) is as follows:

EUR million

	2021	2020	2019
Banco Santander (Brasil) S.A. (Consolidated Group)	14,325	14,067	12,400
Santander UK Group	8,558	8,447	8,079
Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México	4,913	4,230	3,810
Santander Consumer Finance Group	4,753	4,186	4,012
Banco Santander - Chile	3,502	3,404	3,116
Banco Santander Totta, S.A. (Consolidated Group)	3,194	2,960	2,823
Group Santander Holdings USA	2,940	4,793	4,528
Banco Santander Río S.A.	2,318	2,161	1,895
Santander Bank Polska S.A.	1,990	1,748	1,738
Santander Investment, S.A.	1,307	1,335	146
Santander Seguros y Reaseguros, Compañía Aseguradora, S.A.	869	695	823
Banco Santander International SA (former Banco Santander (Suisse) SA)	277	247	348
Other companies and consolidation adjustments	(1,508)	(672)	(269)
	47,438	**47,601**	**43,449**
Of which, restricted	*3,392*	*3,155*	*3,193*

34. Other equity instruments and own shares

a) Equity instruments issued not capital and other equity instruments

Other equity instruments includes the equity component of compound financial instruments, the increase in equity due to personnel remuneration, and other items not recognised in other "Shareholders' equity" items.

On 8 September 2017, Banco Santander, S.A. issued contingent redeemable perpetual bonds (the fidelity bonds) amounting to EUR 981 million nominal value -EUR 686 million fair value. On 31 December 2021 amounted to EUR 658 million.

Additionally, at 31 December 2021 the Group had other equity instruments amounting to EUR 152 million.

b) Own shares

'Shareholders' equity - Own shares' includes the amount of own equity instruments held by all the Group entities.

Transactions involving own equity instruments, including their issuance and cancellation, are recognised directly in equity, and no profit or loss may be recognised on these transactions. The costs of any transaction involving own equity instruments are deducted directly from equity, net of any related tax effect.

At December 31, 2020, the number of treasury shares held by the Group was 28,439,022 (0.164% of the issued share capital).

During 2021, 524,312,848 shares of the Bank were acquired at an average price of EUR 3.14 per share, of which 259,930,273 shares (1.499% of the issued share capital) relate to the First Share Buyback Program at a weighted average price of EUR 3.235 per share (note 4); and 275,159,930 shares were transferred at an average price of EUR 3.10 per share - of which 55,750,000 shares correspond to two extraordinary donations made by Banco Santander to the Banco Santander Foundation.

As of December 31, 2021, the Group holds 277,591,940 shares of the Bank's issued share capital (1.60%).

The effect on equity, net of tax, arising from the purchase and sale of Bank shares is of EUR 23 million profit in 2021 (EUR 1 million profit and EUR 6 million loss in 2020 and 2019, respectively).

35. Memorandum items

Memorandum items relates to balances representing rights, obligations and other legal situations that in the future may have an impact on net assets, as well as any other balances needed to reflect all transactions performed by the consolidated entities although they may not impinge on their net assets.

a) Guarantees and contingent commitments granted

Contingent liabilities includes all transactions under which an entity guarantees the obligations of a third party and which result from financial guarantees granted by the entity or from other types of contract. The detail is as follows:

	2021	2020	2019
Loans commitment granted	**262,737**	**241,230**	**241,179**
Of which doubtful	*615*	*274*	*352*
Financial guarantees granted	**10,758**	**12,377**	**13,650**
Of which doubtful	*188*	*124*	*154*
Financial guarantees	10,715	12,358	13,619
Credit derivatives sold	43	19	31
Other commitments granted	**75,733**	**64,538**	**68,895**
Of which doubtful	*781*	*548*	*747*
Technical guarantees	40,158	33,526	33,890
Other	35,575	31,012	35,005

The breakdown as at 31 December 2021 of the exposures and the provision fund (see note 25) out of balance sheet by impairment stage is EUR 337,113 million and EUR 372 million (EUR 310,435 million and EUR 377 million in 2020 and EUR 316,116 million and EUR 417 million in 2019) in stage 1, EUR 10,531 million and EUR 200 million (EUR 6,764 million and EUR 182 million in 2020 and EUR 6,355 million and EUR 145 million in 2019) in stage 2 and EUR 1,584 million and EUR 161 million (EUR 946 million and EUR 141 million in 2020 and EUR 1,253 million and EUR 177 million in 2019) in stage 3, respectively.

Income from guarantee instruments is recognised under 'Fee and commission income' in the consolidated income statements and is calculated by applying the rate established in the related contract to the nominal amount of the guarantee.

i. Loan commitments granted

Loan commitments granted: firm commitments of grating of credit under predefined terms and conditions, except for those that comply with the definition of derivatives as these can be settled in cash or through the delivery of issuance of another financial instrument. They include stand-by credit lines and long-term deposits.

ii. Financial guarantees granted

Financial guarantees includes, inter alia, financial guarantee contracts such as financial bank guarantees, credit derivatives sold, and risks arising from derivatives arranged for the account of third parties.

iii. Other commitments granted

Other contingent liabilities include all commitments that could give rise to the recognition of financial assets not included in the above items, such as technical guarantees and guarantees for the import and export of goods and services.

b) Memorandum items

i. Off-balance-sheet funds under management

The detail of off-balance-sheet funds managed by the Group and by joint ventures is as follows:

EUR million

	2021	2020	2019
Investment funds	145,987	131,965	142,988
Pension funds	16,078	15,577	11,843
Assets under management	24,862	20,712	22,079
	186,927	**168,254**	**176,910**

ii. Non-managed marketed funds

At 31 December 2021 there are non-managed marketed funds totalling EUR 48,385 million (EUR 38,563 million and EUR 49,490 million at 31 December 2020 and 2019, respectively).

c) Third-party securities held in custody

At 31 December 2021 the Group held in custody debt securities and equity instruments totalling EUR 236,153 million (EUR 209,269 million and EUR 229,381 million at 31 December 2020 and 2019, respectively) entrusted to it by third parties.

36. Hedging derivatives

Grupo Santander, within its financial risk management strategy, and in order to reduce asymmetries in the accounting treatment of its operations, enters into hedging derivatives on interest, exchange rate, credit risk or variation of stock prices, depending on the nature of the risk covered.

Based on its objective, Grupo Santander classifies its hedges in the following categories:

- Cash flow hedges: cover the exposure to the variation of the cash flows associated with an asset, liability or a highly probable forecast transaction. This cover the variable-rate issues in foreign currencies, fixed-rate issues in non-local currency, variable-rate interbank financing and variable-rate assets (bonds, commercial loans, mortgages, etc.).
- Fair value hedges: cover the exposure to the variation in the fair value of assets or liabilities, attributable to an identified and hedged risk. This covers the interest risk of assets or liabilities (bonds, loans, bills, issues, deposits, etc.) with coupons or fixed interest rates, interests in entities, issues in foreign currencies and deposits or other fixed rate liabilities.
- Hedging of net investments abroad: cover the exchange rate risk of the investments in subsidiaries domiciled in a country with a different currency from the functional one of the Group.

Due to the replacement of the current rates by the alternative rates defined in the note 1 of this report, in the section 'Amendments to IFRS 9, IAS 9 and IFRS 7 on reference interest rates (IBOR Reform Phase I and II)',the nominal amount of hedging instruments corresponding to the hedging relationships directly affected by the uncertainties related to the IBOR reforms is shown below. The percentage of the nominal amount of derivatives affected with a maturity date after the transition date of the reform represents 4.85% of the total hedging derivatives:

EUR million

	USD LIBOR
Total hedging instruments affected	
Fair value hedges	14,223
Interest rate risk	*14,223*
Cash flow hedges	12,034
Interest rate risk	*12,034*
	26,257
Post-transition date agreement	
Fair value hedges	11,241
Interest rate risk	*11,241*
Cash flow hedges	7,830
Interest rate risk	*7,830*
	19,071

As for the hedged items directly affected by the uncertainties related to the IBOR reforms, their nominal amount is shown below, which represents 2.02% of the total notional amount hedged:

EUR million

	USD LIBOR
Total hedge items directly affected	
Fair value hedges	190
Interest rate risk	*190*
Cash flow hedges	11926
Interest rate risk	*11,926*
	12,116
Post-transition date agreement	
Fair value hedges	190
Interest rate risk	*190*
Cash flow hedges	7732
Interest rate risk	*7,732*
	7,922

The following tables contains the detail of the hedging derivatives according to the type of hedging, the hedge risk and the main products used as of 31 December 2021, 2020 and 2019:

Million euros

	2021				
		Carrying amount			
	Nominal value	Assets	Liabilities	Changes in fair value used for calculating hedge ineffectiveness	Balance sheet line items
Fair value hedges	**206,957**	**2,528**	**2,656**	**1,079**	
Interest rate risk	**176,176**	**2,227**	**1,778**	**591**	**Hedging derivatives**
Of which:					
Interest rate swap	*66,904*	*1,668*	*920*	*(377)*	
Call money swap	*97,321*	*1*	*734*	*714*	
Exchange rate risk	**21,238**	**7**	**423**	**287**	**Hedging derivatives**
Fx forward	*13,909*	*7*	*423*	*22*	
Future interest rate	*7,329*	*—*	*—*	*265*	
Interest rate and exchange rate risk	**9,326**	**294**	**452**	**200**	**Hedging derivatives**
Of which:					
Interest rate swap	*1,650*	*12*	*9*	*(7)*	
Currency swap	*7,397*	*281*	*443*	*192*	
Inflation risk	**44**	**—**	**1**	**—**	**Hedging derivatives**
Credit risk	**173**	**—**	**2**	**1**	**Hedging derivatives**
Cash flow hedges	**160,397**	**2,034**	**2,157**	**(1,703)**	
Interest rate risk	**99,648**	**156**	**420**	**(526)**	**Hedging derivatives**
Of which:					
Future interest rate	*7,652*	*—*	*—*	*(155)*	
Interest rate swap	*69,471*	*70*	*155*	*(212)*	
Call money swap	*16,846*	*20*	*182*	*(409)*	
Exchange rate risk	**27,343**	**396**	**657**	**(112)**	**Hedging derivatives**
Of which:					
FX forward	*8,381*	*280*	*42*	*26*	
Currency swap	*15,004*	*100*	*606*	*(133)*	
Interest rate and exchange rate risk	**21,609**	**1,425**	**400**	**(815)**	**Hedging derivatives**
Of which:					
Interest rate swap	*3,604*	*95*	*2*	*(112)*	
Currency swap	*17,005*	*1,330*	*393*	*(702)*	
Inflation risk	**11,741**	**52**	**679**	**(247)**	**Hedging derivatives**
Of which:					
Currency swap	*10,503*	*51*	*678*	*(232)*	
Equity risk	**56**	**5**	**1**	**(3)**	**Hedging derivatives**
Hedges of net investments in foreign operations	**25,594**	**199**	**650**	**—**	
Exchange rate risk	**25,594**	**199**	**650**	**—**	**Hedging derivatives**
FX forward	*25,594*	*199*	*650*	*—*	
	392,948	**4,761**	**5,463**	**(624)**	

EUR million

	2020				
		Carrying amount			
	Nominal value	Assets	Liabilities	Changes in fair value used for calculating hedge ineffectiveness	Balance sheet line items
Fair value hedges	**199,260**	**4,199**	**4,671**	**(451)**	
Interest rate risk	**181,582**	**3,528**	**3,850**	**(456)**	**Hedging derivatives**
Of which:					
Interest rate swap	*94,713*	*2,985*	*2,747*	*(27)*	
Call money swap	*69,740*	*184*	*886*	*(486)*	
Exchange rate risk	**9,037**	**293**	**47**	**11**	**Hedging derivatives**
Of which:					
FX forward	*8,422*	*210*	*47*	*11*	
Interest rate and exchange rate risk	**8,434**	**378**	**771**	**(11)**	**Hedging derivatives**
Of which:					
Currency swap	*7,704*	*370*	*757*	*(4)*	
Credit risk	**207**	**—**	**3**	**5**	**Hedging derivatives**
Cash flow hedges	**139,156**	**3,436**	**1,739**	**232**	
Interest rate risk	**74,731**	**478**	**522**	**75**	**Hedging derivatives**
Of which:					
Future interest rate	*7,492*	*—*	*322*	*(208)*	
Interest rate swap	*46,547*	*237*	*108*	*135*	
Call money swap	*12,123*	*204*	*7*	*145*	
Exchange rate risk	**23,483**	**555**	**802**	**(401)**	**Hedging derivatives**
Of which:					
FX forward	*9,151*	*265*	*195*	*(155)*	
Currency swap	*13,425*	*283*	*600*	*(103)*	
Interest rate and exchange rate risk	**27,021**	**2,362**	**275**	**679**	**Hedging derivatives**
Of which:					
Currency swap	*19,682*	*2,100*	*264*	*550*	
Inflation risk	**13,907**	**36**	**140**	**(129)**	**Hedging derivatives**
Of which:					
Interest rate swap	*5,218*	*262*	*—*	*129*	
Currency swap	*10,206*	*26*	*136*	*(132)*	
Equity risk	**14**	**5**	**—**	**8**	**Hedging derivatives**
Hedges of net investments in foreign operations	**22,210**	**690**	**459**	**3**	
Exchange rate risk	**22,210**	**690**	**459**	**3**	**Hedging derivatives**
FX forward	*22,210*	*690*	*459*	*—*	
	360,626	**8,325**	**6,869**	**(216)**	

EUR million

	2019				
		Carrying amount			
	Nominal value	Assets	Liabilities	Changes in fair value used for calculating hedge ineffectiveness	Balance sheet line items
Fair value hedges	**202,548**	**3,570**	**3,649**	**(1,522)**	
Interest rate risk	**183,586**	**3,032**	**3,160**	**(1,346)**	**Hedging derivatives**
Of which:					
Future interest rate	*12,325*	*—*	*32*	*(476)*	
Interest rate swap	*117,439*	*2,651*	*2,297*	*(429)*	
Call money swap	*44,791*	*91*	*472*	*(295)*	
Exchange rate risk	**10,006**	**73**	**55**	**(60)**	**Hedging derivatives**
Of which:					
Fx forward	*9,722*	*49*	*54*	*(60)*	
Interest rate and exchange rate risk	**8,698**	**465**	**428**	**(116)**	**Hedging derivatives**
Of which:					
Currency swap	*7,552*	*449*	*423*	*(67)*	
Inflation risk	**0**	**—**	**0**	**5**	**Hedging derivatives**
Credit risk	**258**	**—**	**6**	**(5)**	**Hedging derivatives**
Cash flow hedges	**135,439**	**3,398**	**1,618**	**(1,540)**	
Interest rate risk	**55,810**	**277**	**261**	**(267)**	**Hedging derivatives**
Of which:					
Futures	*21,655*	*33*	*147*	*(93)*	
Interest rate swap	*21,492*	*99*	*97*	*(105)*	
Call money swap	*6,164*	*30*	*12*	*8*	
Exchange rate risk	**31,803**	**463**	**660**	**(405)**	**Hedging derivatives**
Of which:					
FX forward	*10,595*	*237*	*216*	*(145)*	
Currency swap	*11,030*	*214*	*433*	*(365)*	
Futures	*9,290*	*—*	*—*	*113*	
Interest rate and exchange rate risk	**38,938**	**2,625**	**640**	**(826)**	**Hedging derivatives**
Of which:					
Interest rate swap	*7,347*	*133*	*5*	*201*	
Currency swap	*27,044*	*2,492*	*622*	*(1,020)*	
Inflation risk	**8,830**	**33**	**53**	**(44)**	**Hedging derivatives**
Of which:					
FX forward	*2,230*	*5*	*4*	*4*	
Currency swap	*6,511*	*28*	*42*	*(44)*	
Equity risk	**58**	**—**	**4**	**2**	**Hedging derivatives**
Hedges of net investments in foreign operations	**24,477**	**248**	**781**	**0**	
Exchange rate risk	**24,477**	**248**	**781**	**0**	**Hedging derivatives**
FX forward	*24,477*	*248*	*781*	*—*	
	362,464	**7,216**	**6,048**	**(3,062)**	

Considering the main entities or groups within the Group by the weight of their hedging, the main types of hedging that are being carried out in Santander UK Group Holdings plc group and Banco Santander, S.A.

Santander UK Group Holdings plc group enters into fair value and cash flow hedging derivatives depending on the exposure of the underlying. Only designated risks are hedged and therefore other risks, such as credit risk, are managed but not hedged.

Within fair value hedges, Santander UK Group Holdings plc group has portfolios of assets and liabilities at fixed rate that are exposed to changes in fair value due to changes in market interest rates. These positions are managed by contracting mainly interest rate swaps. Effectiveness is assessed by comparing the changes in the fair value of these portfolios generated by the hedged risk with the changes in the fair value of the derivatives contracted.

Santander UK Group Holdings plc group also has access to international markets to obtain financing by issuing fixed-rate debt in its functional currency and other currencies. As such, they are exposed to changes in interest rates and exchange rates, mainly in EUR and USD. This risk is mitigated with cross currency swaps e interest rate swaps in which they pay a fixed rate and receive a variable rate. Effectiveness is evaluated using linear regression techniques to compare changes in the fair value of the debt at interest and exchange rates with changes in the fair value of interest rate swaps o loss cross currency swaps.

Within the cash flow hedges, Santander UK Group Holdings plc group has portfolios of assets and liabilities at variable rates, normally at SONIA or LIBOR. To mitigate this market rate variability risk, it contracts interest rate swaps.

As Santander UK Group Holdings plc group obtains financing in the international markets, it assumes a significant exposure to currency risk mainly USD and EUR. In addition, it also holds debt securities for liquidity purposes which assume exposure mainly in JPY. To manage this exchange rate risk, spot, forward y cross currency swap are contracted to match the cash flow profile and the maturity of the estimated interest and principal repayments of the hedged item.

Effectiveness is assessed by comparing changes in the fair value of the derivatives with changes in the fair value of the hedged item attributable to the hedged risk by applying a hypothetical derivative method using linear regression techniques.

In addition, within the hedges that cover equity risk, Santander UK Group Holdings plc group offers employees the opportunity to purchase shares of the Bank at a discount under the sharesave scheme, exposing the Bank to share price risk. As such, options are purchased allowing them to purchase shares at a pre-set price.

Banco Santander, S.A. covers the risks of its balance sheet in a variety of ways. On the one hand, documented as fair value hedges, it covers the interest rate, foreign currency and credit risk of fixed-income portfolios at a fixed rate (REPOs are included in this category). Resulting, in an exposure to changes in their fair value due to variations in market conditions based on the various risks hedged, which has an impact on Banco Santander's income statement. To mitigate these risks, Banco Santander contracts derivatives, mainly interest rate swaps, cross currency swaps, cap&floors, forex forward y credit default swaps.

On the other hand, the interest and exchange rate risk of loans granted to corporate clients at a fixed rate is generally covered. These hedges, are carried out through interest rate swaps, cross currency swaps and exchange rate derivatives (forex swaps and forex forward).

In addition, Banco Santander, S.A. manages the interest and exchange risk of debt issues in its various categories (issuing covered bonds, perpetual, subordinated and senior bond) and in different currencies, denominated at fixed rates, and therefore subject to changes in their fair value. These issues are covered through interest rate swaps, cross currency swaps or a mix of both by applying differentiated fair value hedging strategies for interest rate risk and cash flow hedging strategies to hedge foreign exchange risk.

The methodology used by Banco Santander, S.A. to measure the effectiveness of fair value hedges is based on comparing the market values of the hedged items (based on the objective risk of the hedge) and of the hedging instruments in order to analyse whether the changes in the market value of the hedged items are offset by the market value of the hedging instruments, thereby mitigating the hedged risk and minimizing volatility in the income statement. Prospectively, the same analysis is performed, measuring the theoretical market values in the event of parallel variations in the market curves of a positive basis point.

There is a macro hedge of structured loans in which the interest rate risk of fixed-rate loans (mortgage, personal or with other guarantees) granted to legal entities in commercial or corporate banking and wealth clients in the medium-long term is hedged. This hedge is instrumented as a macro hedge of fair value, the main hedging instruments being interest rate swap and cap&floors. In case of total or partial cancellation or early repayment, the customer is obliged to pay/receive the cost/income of the cancellation of the interest rate risk hedge managed by the Bank.

Regarding cash flow hedges, the objective is to hedge the cash flow exposure to changes in interest rates and exchange rates.

For retrospective purposes, the hypothetical derivative methodology is used to measure effectiveness. By means of this methodology, the hedged risk is modelled as a derivative instrument -not real-, created exclusively for the purpose of measuring the effectiveness of the hedge, and which must comply with the fact that its main characteristics coincide with the critical terms of the hedged item throughout the period for which the hedging relationship is designated. This hypothetical derivative does not incorporate characteristics that are exclusive to the hedging instrument. Additionally, it is worth mentioning that any risk component not associated with the hedged objective risk and effectively documented at the beginning of the hedge is excluded for the purpose of calculating the effectiveness. The market value of the hypothetical derivative that replicates the hedged item is compared with the market value of the hedging instrument, verifying that the hedged risk is effectively mitigated and that the impact on the income statement due to potential ineffectiveness is residual.

Prospectively, the variations in the market values of the hedging instrument and the hedged item (represented by the hypothetical derivative) are measured in the event of parallel shifts of a positive basis point in the affected market curves.

There is another macro-hedge, this time of cash flows, the purpose of which is to actively manage the risk-free interest rate risk (excluding credit risk) of a portion of the floating rate assets of Banco Santander, S.A., through the arrangement of interest rate derivatives whereby the bank exchanges floating rate interest flows for others at a fixed rate agreed at the time the transactions are arranged. The items affected by the Macro-hedging have been designated as those in which their cash flows are exposed to interest rate risk, specifically the floating rate mortgages of the Banco Santander, S.A. network referenced to Euribor 12 Months or Euribor Mortgage, with annual renewal of rates, classified as sound risk and which do not have a contractual floor (or, if not, this floor is not activated). The hedged position affecting the Macro Cash Flow Hedge at the present time is EUR 7,000 million.

Regarding net foreign investments hedges, basically, they are allocated in Banco Santander, S.A. and Santander Consumer Finance Group. Grupo Santander assumes as a priority risk management objective to minimize -to the limit determined by the Group's Financial Management- the impact on the calculation of the capital ratio of its permanent investments included within the Group's consolidation perimeter, and whose shares or equity interests are legally denominated in a currency other than that of the Group's parent company. For this purpose, financial instruments (generally derivatives) are contracted to hedge the impact on the capital ratio of changes in forward exchange rates. Grupo Santander mainly hedges the risk for the following currencies: BRL, CLP, MXN, CAD, COP, CNY, GBP, CHF, NOK, USD, and PLN. The instruments used to hedge the risk of these investments are forex swaps, forex forward and spot currency purchases/sales.

For this type of hedges, ineffectiveness scenarios are considered to be of low probability, given that the hedging instrument is designated considering the position determined and the spot rate at which the position is located.

The following table sets out the maturity profile of the hedging instruments used in Grupo Santander non-dynamic hedging strategies:

EUR million

	31 December 2021					
	Up to one month	One to three months	Three months to one year	One year to five years	More than five years	Total
Fair value hedges	**5,546**	**11,786**	**45,119**	**114,828**	**29,678**	**206,957**
Interest rate risk	**4,324**	**9,978**	**33,873**	**103,216**	**24,785**	**176,176**
Of which:						
Interest rate swap	*267*	*2,138*	*4,189*	*42,398*	*17,912*	*66,904*
Call money swap	*3,716*	*7,527*	*25,588*	*56,120*	*4,370*	*97,321*
Exchange rate risk	**598**	**1,712**	**11,013**	**5,550**	**2,365**	**21,238**
Fx forward	*598*	*1,712*	*11,013*	*586*	*—*	*13,909*
Future interest rate	*—*	*—*	*—*	*4,964*	*2,365*	*7,329*
Interest rate and exchange rate risk	**624**	**77**	**199**	**5,898**	**2,528**	**9,326**
Of which:						
Interest rate swap	*—*	*—*	*—*	*1,232*	*418*	*1,650*
Currency swap	*624*	*72*	*198*	*4,437*	*2,066*	*7,397*
Inflation risk	**—**	**—**	**—**	**44**	**—**	**44**
Credit risk	**—**	**19**	**34**	**120**	**—**	**173**
Cash flow hedges	**17,674**	**3,208**	**20,459**	**102,833**	**16,223**	**160,397**
Interest rate risk	**13,047**	**1,061**	**9,875**	**68,867**	**6,798**	**99,648**
Of which:						
Future interest rate	*7,097*	*—*	*244*	*311*	*—*	*7,652*
Interest rate swap	*2,336*	*310*	*7,759*	*58,930*	*136*	*69,471*
Call money swap	*1,202*	*751*	*858*	*7,920*	*6,115*	*16,846*
Exchange rate risk	**3,438**	**1,348**	**3,195**	**15,506**	**3,856**	**27,343**
Of which:						
FX forward	*2,406*	*1,309*	*1,947*	*2,719*	*—*	*8,381*
Currency swap	*1,032*	*39*	*1,248*	*9,885*	*2,800*	*15,004*
Interest rate and exchange rate risk	**860**	**336**	**5,924**	**11,165**	**3,324**	**21,609**
Of which:						
Interest rate swap	*—*	*—*	*—*	*2,505*	*1,099*	*3,604*
Currency swap	*860*	*336*	*5,924*	*7,660*	*2,225*	*17,005*
Inflation risk	**329**	**463**	**1,463**	**7,246**	**2,240**	**11,741**
Of which:						
Currency swap	*82*	*339*	*597*	*7,245*	*2,240*	*10,503*
Equity risk	**—**	**—**	**2**	**49**	**5**	**56**
Hedges of net investments in foreign operations:	**4,097**	**5,346**	**13,235**	**2,916**	**—**	**25,594**
Exchange rate risk	**4,097**	**5,346**	**13,235**	**2,916**	**—**	**25,594**
FX forward	*4,097*	*5,346*	*13,235*	*2,916*	*—*	*25,594*
	27,317	**20,340**	**78,813**	**220,577**	**45,901**	**392,948**

EUR million

	31 December 2020					
	Up to one month	One to three months	Three months t o one year	One year to five years	More than five years	Total
Fair value hedges	7,132	14,221	44,897	95,343	37,667	199,260
Interest rate risk	5,616	9,667	39,921	90,913	35,465	181,582
Of which:						
Interest rate swap	*3,943*	*4,804*	*24,807*	*33,333*	*27,826*	*94,713*
Call money swap	*1,021*	*4,662*	*11,241*	*49,624*	*3,192*	*69,740*
Exchange rate risk	1,516	4,264	3,257	—	—	9,037
Of which:						
Fx forward	*901*	*4,264*	*3,257*	—	—	*8,422*
Interest rate and exchange rate risk	—	282	1,711	4,239	2,202	8,434
Of which:						
Currency swap	—	*282*	*1,711*	*3,607*	*2,104*	*7,704*
Credit risk	—	8	8	191	—	207
Cash flow hedges	10,489	11,629	44,127	61,186	11,725	139,156
Interest rate risk	6,019	6,707	33,070	26,959	1,976	74,731
Of which:						
Future interest rate	*5,213*	—	—	*2,279*	—	*7,492*
Interest rate swap	*806*	*4,626*	*29,511*	*11,219*	*385*	*46,547*
Call money swap	—	*1,502*	*1,550*	*7,890*	*1,181*	*12,123*
Exchange rate risk	1,746	2,336	4,616	13,071	1,714	23,483
Of which:						
FX forward	*1,532*	*2,243*	*3,040*	*2,336*	—	*9,151*
Currency swap	*214*	*93*	*1,576*	*9,828*	*1,714*	*13,425*
Interest rate and exchange rate risk	1,691	972	5,634	15,687	3,037	27,021
Of which:						
Interest rate swap	*816*	—	*981*	*2,402*	*1,019*	*5,218*
Currency swap	*875*	*972*	*4,653*	*11,164*	*2,018*	*19,682*
Inflation risk	1,033	1,614	807	5,456	4,997	13,907
Of which:						
Currency swap	*33*	*181*	*229*	*4,766*	*4,997*	*10,206*
Equity risk	—	—	—	13	1	14
Hedges of net investments in foreign operations:	2,435	5,086	12,831	1,858	—	22,210
Exchange rate risk	2,435	5,086	12,831	1,858	—	22,210
FX forward	*2,435*	*5,086*	*12,831*	*1,858*	—	*22,210*
	20,056	30,936	101,855	158,387	49,392	360,626

EUR million

	31 December 2019					
	Up to one month	One to three months	Three months to one year	One year to five years	More than five years	Total
Fair value hedges	**5,816**	**14,591**	**43,236**	**90,707**	**48,198**	**202,548**
Interest rate risk	**5,468**	**9,055**	**37,627**	**86,119**	**45,317**	**183,586**
Of which:						
Future interest rate	*16*	*—*	*606*	*6,066*	*5,637*	*12,325*
Interest rate swap	*734*	*3,532*	*24,382*	*62,474*	*26,317*	*117,439*
Call money swap	*4,674*	*5,318*	*12,085*	*14,653*	*8,061*	*44,791*
Exchange rate risk	**333**	**4,090**	**5,172**	**411**	**—**	**10,006**
Of which:						
Fx forward	*329*	*4,090*	*5,082*	*221*	*—*	*9,722*
Interest rate and exchange rate risk	**15**	**1,432**	**437**	**3,933**	**2,881**	**8,698**
Credit risk	**—**	**14**	**—**	**244**	**0**	**258**
Cash flow hedges	**16,506**	**5,912**	**38,678**	**62,119**	**12,224**	**135,439**
Interest rate risk	**13,023**	**2,179**	**13,011**	**26,332**	**1,265**	**55,810**
Of which:						
Futures	*12,304*	*385*	*3,196*	*5,770*	*—*	*21,655*
Interest rate swap	*460*	*864*	*7,441*	*12,585*	*142*	*21,492*
Call money swap	*—*	*398*	*1,253*	*3,925*	*588*	*6,164*
Exchange rate risk	**2,300**	**2,572**	**14,324**	**11,753**	**854**	**31,803**
Of which:						
Future interest rate	*—*	*—*	*9,290*	*—*	*—*	*9,290*
FX forward	*2,173*	*1,746*	*3,404*	*3,272*	*—*	*10,595*
Currency swap	*127*	*826*	*1,630*	*7,593*	*854*	*11,030*
Interest rate and exchange rate risk	**1,086**	**308**	**9,221**	**20,782**	**7,541**	**38,938**
Of which:						
Interest rate swap	*—*	*—*	*1,917*	*2,880*	*2,550*	*7,347*
Currency swap	*1,086*	*308*	*5,553*	*15,106*	*4,991*	*27,044*
Inflation risk	**97**	**853**	**2,114**	**3,204**	**2,562**	**8,830**
Of which:						
FX forward	*—*	*117*	*1,205*	*908*	*—*	*2,230*
Currency swap	*97*	*736*	*909*	*2,207*	*2,562*	*6,511*
Equity risk	**—**	**—**	**8**	**48**	**2**	**58**
Hedges of net investments in foreign operations	**2,735**	**4,191**	**14,192**	**3,359**	**—**	**24,477**
Exchange rate risk	**2,735**	**4,191**	**14,192**	**3,359**	**—**	**24,477**
FX forward	*2,735*	*4,191*	*14,192*	*3,359*	*—*	*24,477*
	25,057	**24,694**	**96,106**	**156,185**	**60,422**	**362,464**

Additionally, for Santander UK Group Holdings plc and Banco Santander, S.A., both the maturity profile, the average interest and exchange rate of hedging instruments by maturity buckets are shown:

Santander UK Group Holdings plc group

	31 December 2021					
	EUR million					
	Up to one month	One to three months	Three months to one year	One year to five years	More than five years	Total
Fair value hedges						
Interest rate risk						
Interest rate instruments						
Nominal	3,716	7,408	25,525	53,427	5,942	96,018
Average fixed interest rate (%) GBP	0.590	0.420	0.090	0.910	3.130	
Average fixed interest rate (%) EUR	0.510	1.740	1.080	0.810	2.610	
Average fixed interest rate (%) USD	1.910	0.960	1.440	2.760	4.050	
Interest rate and foreign exchange rate risk						
Exchange and interest rate instruments						
Nominal	—	—	127	683	165	975
Average GBP/EUR exchange rate	—	—	1.205	1.159	1.171	
Average fixed interest rate (%) EUR	—	—	3.290	2.030	2.620	
Cash flow hedges						
Interest rate risk						
Interest rate instruments						
Nominal	1,203	572	1,036	8,967	6,115	17,893
Average fixed interest rate (%) GBP	1.970	0.440	0.080	1.290	0.970	
Foreign exchange risk						
Exchange and interest rate instruments						
Nominal	3,218	1,114	2,448	10,897	3,584	21,261
Average GBP/JPY exchange rate	—	142.905	148.856	—	—	
Average GBP/EUR exchange rate	1.165	—	1.185	1.159	1.174	
Average GBP/USD exchange rate	1.344	1.342	1.332	1.339	1.388	
Interest rate and foreign exchange rate risk						
Exchange and interest rate instruments						
Nominal	739	—	1,000	8,112	2,860	12,711
Average GBP/EUR exchange rate	1.277	—	1.386	1.202	1.200	
Average GBP/USD exchange rate	—	—	—	1.609	1.381	
Average fixed interest rate (%) GBP	2.260	—	1.170	2.720	3.410	

	31 December 2020					
	EUR million					
	Up to one month	One to three months	Three months to one year	One year to five years	More than five years	Total
Fair value hedges						
Interest rate risk						
Interest rate instruments						
Nominal	*2,704*	*8,481*	*30,946*	*53,170*	*9,050*	*104,351*
Average fixed interest rate (%) GBP	*0.690*	*0.650*	*0.820*	*0.730*	*3.720*	
Average fixed interest rate (%) EUR	*1.180*	*0.230*	*3.020*	*0.980*	*2.340*	
Average fixed interest rate (%) USD	*1.870*	*1.720*	*2.890*	*2.490*	*4.160*	
Interest rate and foreign exchange rate risk						
Exchange and interest rate instruments						
Nominal	—	—	*147*	*776*	*260*	*1,183*
Average GBP/EUR exchange rate	—	—	*1.141*	*1.170*	*1.167*	
Average fixed interest rate (%) EUR	—	—	*4.640*	*1.780*	*3.560*	
Cash flow hedges						
Interest rate risk						
Interest rate instruments						
Nominal	—	*999*	*2,815*	*8,869*	*1,180*	*13,863*
Average fixed interest rate (%) GBP	—	*0.460*	*0.570*	*1.450*	*1.330*	
Foreign exchange risk						
Exchange and interest rate instruments						
Nominal	*1,602*	*2,244*	*4,317*	*8,328*	*1,246*	*17,737*
Average GBP/JPY exchange rate	—	*137.977*	*135.607*	*132.271*	—	
Average GBP/EUR exchange rate	—	—	—	*1.163*	*1.179*	
Average GBP/USD exchange rate	*1.293*	*1.316*	*1.323*	*1.304*	—	
Interest rate and foreign exchange rate risk						
Exchange and interest rate instruments						
Nominal	*1,630*	—	*3,858*	*11,816*	*2,792*	*20,096*
Average GBP/EUR exchange rate	—	—	*1.354*	*1.253*	*1.197*	
Average GBP/USD exchange rate	*1.465*	—	—	*1.609*	*1.381*	
Average fixed interest rate (%) GBP	*2.010*	—	*3.180*	*2.480*	*3.390*	

	31 December 2019					
	EUR million					
	Up to one month	One to three months	Three months to one year	One year to five years	More than five years	Total
Fair value hedges						
Interest rate risk						
Interest rate instruments						
Nominal	*5,118*	*6,822*	*32,210*	*51,307*	*15,397*	*110,854*
Average fixed interest rate (%) GBP	*0.770*	*0.900*	*0.880*	*1.330*	*3.000*	
Average fixed interest rate (%) EUR	*(0.410)*	*0.290*	*2.210*	*1.360*	*2.360*	
Average fixed interest rate (%) USD	—	*1.540*	*1.990*	*2.690*	*4.560*	
Interest rate and foreign exchange rate risk						
Exchange and interest rate instruments						
Nominal	—	*887*	—	*394*	*738*	*2,019*
Average GBP/EUR exchange rate	—	—	—	*1.178*	*1.160*	
Average GBP/USD exchange rate	—	*1.511*	—	—	—	
Average fixed interest rate (%) EUR	—	—	—	*3.520*	*2.120*	
Average fixed interest rate (%) USD	—	*2.380*	—	—	—	
Cash flow hedges						
Interest rate risk						
Interest rate instruments						
Nominal	—	*398*	*1,253*	*5,490*	*588*	*7,729*
Average fixed interest rate (%) GBP	—	*0.760*	*0.820*	*1.460*	*0.400*	
Foreign exchange risk						
Exchange and interest rate instruments						
Nominal	*1,395*	*2,491*	*4,417*	*7,019*	—	*15,322*
Average GBP/JPY exchange rate	—	*145.928*	*143.086*	*140.815*	—	
Average GBP/EUR exchange rate	—	*1.144*	*1.117*	*1.153*	—	
Average GBP/USD exchange rate	*1.286*	*1.252*	*1.293*	*1.299*	—	
Interest rate and foreign exchange rate risk						
Exchange and interest rate instruments						
Nominal	*954*	—	*7,626*	*15,089*	*7,291*	*30,960*
Average GBP/EUR exchange rate	1.274	—	1.169	1.311	1.209	
Average GBP/USD exchange rate	—	—	*1.536*	*1.581*	*1.450*	
Average fixed interest rate (%) GBP	*2.490*	—	*2.160*	*2.870*	*2.960*	

Banco Santander, S.A.

	31 December 2021					
	EUR million					
	Up to one month	One to three months	Three months to one year	One year to five years	More than five years	Total
Fair value hedges						
Interest rate risk						
Interest rate instruments						
Nominal	14	1,822	3,038	21,507	10,031	36,412
Average fixed interest rate (%) GBP	—	—	—	2.139	1.750	
Average fixed interest rate (%) EUR	3.859	0.989	(0.031)	1.212	1.532	
Average fixed interest rate (%) CHF	—	—	—	0.828	0.403	
Average fixed interest rate (%) JPY	—	—	—	0.465	—	
Average fixed interest rate (%) USD	4.746	1.449	3.459	2.737	3.374	
Average fixed interest rate (%) RON	—	—	—	4.211	3.200	
Foreign exchange risk						
Exchange and interest rate instruments						
Nominal	503	1,634	10,350	586	—	13,073
Average GBP/EUR exchange rate	—	0.882	0.865	0.876	—	
Average USD/EUR exchange rate	1.187	1.172	1.180	—	—	
Average CNY/EUR exchange rate	7.859	7.717	7.412	—	—	
Average PEN/USD exchange rate	—	4.003	—	—	—	
Average JPY/EUR exchange rate	132.688	130.741	—	—	—	
Interest rate and foreign exchange rate risk						
Exchange and interest rate instruments						
Nominal	116	1,109	53	3,255	1,279	5,812
Average fixed interest rate (%) AUD/EUR	—	—	—	4.000	4.661	
Average fixed interest rate (%) CZK/EUR	—	—	—	0.860	—	
Average fixed interest rate (%) RON/EUR	—	—	—	4.849	—	
Average fixed interest rate (%) HKD/EUR	—	—	—	2.580	—	
Average fixed interest rate (%) JPY/EUR	—	—	—	0.730	1.144	
Average fixed interest rate (%) NOK/EUR	—	—	—	—	3.605	
Average fixed interest rate (%) CHF/EUR	—	—	—	0.760	1.243	
Average fixed interest rate (%) USD/COP	—	5.140	9.470	6.789	7.153	
Average fixed interest rate (%) COP/USD	—	—	—	(0.140)	—	
Average fixed interest rate (%) USD/CLP	—	—	—	3.450	—	
Average AUD/EUR exchange rate	—	—	—	1.499	1.529	
Average CZK/EUR exchange rate	—	—	—	25.506	—	
Average EUR/GBP exchange rate	—	1.176	—	—	—	
Average EUR/USD exchange rate	—	—	—	0.891	—	
Average HKD/EUR exchange rate	—	—	—	8.782	—	
Average JPY/EUR exchange rate	—	—	—	132.966	126.605	
Average MXN/EUR exchange rate	—	—	14.696	—	—	
Average NOK/EUR exchange rate	—	—	—	—	9.606	
Average RON/EUR exchange rate	—	—	—	4.815	4.927	
Average CHF/EUR exchange rate	—	—	—	1.092	1.105	
Average USD/CLP exchange rate	—	—	—	0.001	—	
Average NZD/EUR exchange rate	—	—	—	—	1.666	
Average USD/MXN exchange rate	—	—	—	0.050	—	
Credit risk						
Credit risk instruments						
Nominal	—	19	34	120	—	173

	31 December 2021					
	EUR million					
	Up to one month	One to three months	Three months to one year	One year to five years	More than five years	Total
Cash flow hedges						
Interest rate and foreign exchange rate risk						
Interest rate and foreign exchange rate instruments						
Nominal	—	9	1,169	1,848	408	3,434
Average fixed interest rate (%) EUR/PEN	—	—	3.441	—	—	
Average fixed interest rate (%) EUR/AUD	—	1.632	—	—	—	
Average fixed interest rate (%) AUD/EUR	—	—	—	0.305	—	
Average EUR/GBP exchange rate	—	—	1.102	1.113	—	
Average EUR/USD exchange rate	—	—	—	0.882	—	
Average AUD/EUR exchange rate	—	—	—	1.604	1.562	
Average RON/EUR exchange rate	—	—	—	4.885	—	
Average JPY/EUR exchange rate	—	—	—	120.568	—	
Average CHF/EUR exchange rate	—	—	—	—	1.102	
Average NOK/EUR exchange rate	—	—	—	—	10.242	
Average CZK/EUR exchange rate	—	—	—	26.131	—	
Average EUR/PEN exchange rate	—	—	0.208	—	—	
Average EUR/AUD exchange rate	—	0.624	—	—	—	
Interest rate risk						
Bond Forward instruments						
Nominal	4,279	—	5,191	38,314	—	47,784
Average fixed interest rate (%) EUR	—	—	(0.465)	(0.258)	—	
Average fixed interest rate (%) USD	—	—	1.765	—	—	
Average fixed interest rate (%) AUD	—	—	—	1.650	—	
Hedges of net investments in foreign operations						
Exchange rate risk						
Exchange and interest rate instruments						
Nominal	3,778	4,848	11,815	2,916	—	23,357
Average BRL/EUR exchange rate	6.663	6.758	6.841	—	—	
Average CLP/EUR exchange rate	943.354	929.690	949.615	—	—	
Average COP/EUR exchange rate	—	—	4,538.997	—	—	
Average GBP/EUR exchange rate	0.854	0.857	0.855	0.875	—	
Average MXN/EUR exchange rate	25.541	25.335	25.192	—	—	
Average PLN/EUR exchange rate	4.592	4.582	4.634	—	—	
Average USD/EUR exchange rate	—	—	1.167	1.233	—	

	31 December 2020					
	EUR million					
	Up to one month	One to three months	Three months to one year	One year to five years	More than five years	Total
Fair value hedges						
Interest rate risk						
Interest rate instruments						
Nominal	*2,073*	*409*	*2,165*	*17,430*	*14,294*	*36,371*
Average fixed interest rate (%) GBP	—	—	—	*1.375*	*4.072*	
Average fixed interest rate (%) EUR	*0.647*	*0.551*	*0.388*	*0.820*	*1.927*	
Average fixed interest rate (%) CHF	—	—	—	*0.800*	*0.403*	
Average fixed interest rate (%) JPY	—	—	—	*0.465*	—	
Average fixed interest rate (%) USD	*0.698*	*0.570*	*2.031*	*3.004*	*3.562*	
Average fixed interest rate (%) RON	—	—	—	*3.610*	—	
Foreign exchange risk						
Exchange and interest rate instruments						
Nominal	*833*	*4,149*	*3,008*	—	—	*7,990*
Average GBP/EUR exchange rate	—	*0.901*	*0.916*	—	—	
Average USD/EUR exchange rate	*1.165*	*1.171*	*1.178*	—	—	
Average COP/USD exchange rate	*3,628.140*	*3,603.595*	—	—	—	
Average CNY/EUR exchange rate	*8.108*	*8.102*	*7.997*	—	—	
Average SAR/EUR exchange rate	*4.484*	*4.514*	—	—	—	
Average PEN/USD exchange rate	—	3.609	—	—	—	
Average AUD/EUR exchange rate	—	1.609	—	—	—	
Average JPY/EUR exchange rate	—	124.612	—	—	—	
Interest rate and foreign exchange rate risk						
Exchange and interest rate instruments						
Nominal	—	*282*	*818*	*2,621*	*1,083*	*4,804*
Average fixed interest rate (%) AUD/EUR	—	—	—	*4.000*	*4.660*	
Average fixed interest rate (%) CZK/EUR	—	—	—	*0.860*	—	
Average fixed interest rate (%) EUR/COP	—	—	*4.380*	—	—	
Average fixed interest rate (%) RON/EUR	—	—	—	*4.849*	—	
Average fixed interest rate (%) HKD/EUR	—	—	—	*2.580*	—	
Average fixed interest rate (%) JPY/EUR	—	—	*2.195*	*0.568*	*1.281*	
Average fixed interest rate (%) NOK/EUR	—	—	—	—	*3.605*	
Average fixed interest rate (%) CHF/EUR	—	—	—	—	*1.243*	
Average fixed interest rate (%) USD/COP	—	—	*8.030*	*6.659*	*7.231*	
Average fixed interest rate (%) COP/USD	—	—	*6.000*	—	—	
Average fixed interest rate (%) USD/CLP	—	—	*0.930*	—	—	
Average AUD/EUR exchange rate	—	—	—	*1.499*	*1.508*	
Average COP/USD exchange rate	—	—	*3,437.200*	—	—	
Average CZK/EUR exchange rate	—	—	—	*25.539*	—	
Average EUR/GBP exchange rate	—	*1.113*	—	—	—	
Average EUR/USD exchange rate	—	—	—	*0.891*	—	
Average HKD/EUR exchange rate	—	—	—	*8.782*	—	
Average JPY/EUR exchange rate	—	—	*113.370*	*133.840*	*125.883*	
Average MXN/EUR exchange rate	—	—	—	*14.696*	—	
Average NOK/EUR exchange rate	—	—	—	—	*9.606*	
Average RON/EUR exchange rate	—	—	—	*4.727*	—	
Average CHF/EUR exchange rate	—	—	—	*1.092*	*1.105*	
Average USD/CLP exchange rate	—	—	*0.001*	—	—	
Average USD/MXN exchange rate	—	—	*0.050*	—	—	

	31 December 2020					
	EUR million					
	Up to one month	One to three months	Three months to one year	One year to five years	More than five years	Total
Credit risk						
Credit risk instruments						
Nominal	—	8	8	191	—	207
Cash flow hedges						
Interest rate and foreign exchange rate risk						
Interest rate and foreign exchange rate instruments						
Nominal	—	—	1,247	3,242	208	4,697
Average EUR/GBP exchange rate	—	—	1.080	1.102	—	
Average EUR/USD exchange rate	—	—	—	0.882	—	
Average AUD/EUR exchange rate	—	—	—	1.625	—	
Average RON/EUR exchange rate	—	—	—	4.810	—	
Average JPY/EUR exchange rate	—	—	—	120.568	—	
Average CHF/EUR exchange rate	—	—	—	—	1.102	
Interest rate risk						
Bond Forward instruments						
Nominal	3,164	5,000	23,000	4,279	—	35,443
Average fixed interest rate (%) EUR	—	(0.258)	(0.250)	(0.236)	—	
Hedges of net investments in foreign operations						
Exchange rate risk						
Exchange and interest rate instruments						
Nominal	2,229	4,554	11,570	1,858	—	20,211
Average BRL/EUR exchange rate	5.270	5.308	6.332	—	—	
Average CLP/EUR exchange rate	869.633	861.546	864.339	932.215	—	
Average COP/EUR exchange rate	—	—	4.471	—	—	
Average GBP/EUR exchange rate	0.909	0.916	0.907	—	—	
Average MXN/EUR exchange rate	23.121	25.456	26.788	—	—	
Average PLN/EUR exchange rate	4.427	4.420	4.516	—	—	

	31 December 2019					
	EUR million					
	Up to one month	One to three months	Three months to one year	One year to five years	More than five years	Total
Fair value hedges						
Interest rate risk						
Interest rate instruments						
Nominal	*8*	*106*	*1,406*	*16,707*	*10,219*	*28,446*
Average fixed interest rate (%) GBP	—	—	—	1.430	6.820	
Average fixed interest rate (%) EUR	5.300	2.410	3.200	0.790	2.580	
Average fixed interest rate (%) CHF	—	—	—	0.800	0.400	
Average fixed interest rate (%) JPY	—	—	—	0.460	—	
Average fixed interest rate (%) USD	—	—	2.050	3.120	3.930	
Foreign exchange risk						
Exchange and interest rate instruments						
Nominal	*211*	*3,903*	*4,777*	—	—	*8,891*
Average GBP/EUR exchange rate	—	0.860	0.870	—	—	
Average USD/EUR exchange rate	—	1.120	1.120	—	—	
Average USD/CLP exchange rate	747.720	747.900	746.700	—	—	
Average CNY/EUR exchange rate	—	7.910	8.010	—	—	
Average SAR/EUR exchange rate	4.160	0.042	—	—	—	
Interest rate and foreign exchange rate risk						
Exchange and interest rate instruments						
Nominal	*14*	*289*	*346*	*2,599*	*949*	*4,197*
Average fixed interest rate (%) AUD/EUR	—	—	—	4.000	4.660	
Average fixed interest rate (%) CZK/EUR	—	—	—	0.860	—	
Average fixed interest rate (%) EUR/COP	—	—	6.160	—	—	
Average fixed interest rate (%) RON/EUR	—	—	—	4.850	—	
Average fixed interest rate (%) HKD/EUR	—	—	2.520	2.580	—	
Average fixed interest rate (%) JPY/EUR	—	—	0.540	0.660	1.280	
Average fixed interest rate (%) NOK/EUR	—	—	—	—	3.610	
Average fixed interest rate (%) CHF/EUR	—	—	—	—	1.240	
Average fixed interest rate (%) USD/COP	7.540	—	5.670	7.620	7.220	
Average AUD/EUR exchange rate	—	—	—	1.499	1.508	
Average CZK/EUR exchange rate	—	—	—	25.407	26.030	
Average EUR/GBP exchange rate	—	1.171	—	—	—	
Average HKD/EUR exchange rate	—	—	8.719	8.782	—	
Average JPY/EUR exchange rate	—	—	130.470	132.461	125.883	
Average MXN/EUR exchange rate	—	—	—	14.696	—	
Average NOK/EUR exchange rate	—	—	—	—	9.606	
Average RON/EUR exchange rate	—	—	—	4.727	—	
Average CHF/EUR exchange rate	—	—	—	1.092	1.105	
Average USD/MXN exchange rate	—	—	—	0.052	—	

	31 December 2019					
	EUR million					
	Up to one month	One to three months	Three months to one year	One year to five years	More than five years	Total
Credit Risk						
Credit risk instruments						
Nominal	—	13	—	244	—	257
Cash flow hedges						
Interest rate and foreign exchange rate risk						
Interest rate and foreign exchange rate instruments						
Nominal	—	—	353	4,410	207	4,970
Interest rate risk						
Bond Forward instruments						
Nominal	11,626	—	1,792	5,443	—	18,861
Hedges of net investments in foreign operations						
Exchange rate risk						
Exchange and interest rate instruments						
Nominal	2,592	3,838	13,595	3,359	—	23,384
Average BRL/EUR exchange rate	4.590	4.740	4.740	4.880	—	
Average CLP/EUR exchange rate	822.130	822.320	811.640	824.360	—	
Average COP/EUR exchange rate	—	—	3,828.610	—	—	
Average GBP/EUR exchange rate	0.890	0.910	0.940	—	—	
Average MAD/EUR exchange rate	—	10.770	10.870	—	—	
Average MXN/EUR exchange rate	23.490	23.100	23.270	—	—	
Average PLN/EUR exchange rate	4.370	4.380	4.390	—	—	

Other geographies

Consumer Group entities mainly have loans portfolios at fixed interest rates and are therefore, exposed to changes in fair value due to movements in market interest rates. The entities manage this risk by contracting interest rate swaps in which they pay a fixed rate and receive a variable rate. Interest rate risk is the only one hedged and, therefore, other risks, such as credit risk, are managed but not hedged by the entities. The interest rate risk component is determined as the change in fair value of fixed rate loans arising solely from changes in a reference rate. This strategy is designated as a fair value hedge and its effectiveness is assessed by comparing changes in the fair value of loans attributable to changes in reference interest rates with changes in the fair value of interest rate swaps.

In addition, in order to access international markets with the aim of obtaining sources of financing, some Consumer Group´s entities issue fixed rate debt in their own currency and in other currencies that differ from their functional currency. Therefore, they are exposed to changes in both interest rates and exchange rates, which they mitigate with derivatives (interest rate swaps, fx forward and cross currency swaps) in which they receive a fixed interest rate and pay a variable interest rate, implemented with a fair value hedge.

The cash flow hedges of the Santander Group´s entities hedge the foreign currency risk of loans and financing.

Finally, it has hedges of net investments abroad to hedge the foreign exchange risk of the shareholding in NOK and CNY currencies.

Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México has mainly long-term loan portfolios at fixed interest rates, portfolios of short-term deposits in local currency, portfolios of Mexican Government bonds and corporate bonds in currencies other than the local currency and are therefore exposed to changes in fair value due to movements in market interest rates, as well as these latter portfolios also to variations in exchange rates. The entity manages this risk by contracting derivatives (interest rate swaps or cross currency swaps) in which they pay a fixed rate and receive a variable rate. Only the interest rate and exchange rate risk is hedged, if applicable, and therefore other risks, such as credit risk, are managed but not hedged by the entity.

The interest rate risk component is determined as the change in the fair value of fixed rate loans arising solely from changes in a reference rate. This strategy is designated as a fair value hedge and its effectiveness is assessed by comparing changes in the fair value of loans attributable to changes in benchmark interest rates with changes in the fair value of interest rate swaps.

Regarding cash flow hedges, Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México has a portfolio of unsecured bonds issued at a variable rate in its local currency, which it manages with an Interest Rate Swap in which it receives a variable rate and pays a fixed rate. On the other hand, it also has different items in currencies other than the local currency: unsecured fixed rate bonds, commercial bank loans at variable rates, fixed rate issues, Mexican and Brazilian government bonds at fixed rates. In all these portfolios, the Bank is exposed to exchange rate variations, which it mitigates by contracting cross currency swaps or fx forward.

Banco Santander (Brasil) S.A. has, on the one hand, fixed-rate government bond portfolios and, therefore, they are exposed to changes in fair value due to movements in market interest rates. The entity manages this risk by contracting derivatives (interest rate swaps or futures) in which they pay a fixed rate and receive a variable rate. The interest rate risk is the only one hedged and consequently other risks, such as credit risk, are managed but not hedged by the entity. This strategy is designated as a fair value hedge and its effectiveness is evaluated by comparing by linear regression the changes in the fair value of the bonds with the changes in the fair value of the derivatives.

On the other hand, as part of the fair value hedge strategy, it has corporate loans in different currencies than the local one and is therefore exposed to changes in fair value due to exchange rates. This risk is mitigated by contracting cross currency swaps. Its effectiveness is evaluated by comparing changes in the fair value of loans attributable to changes subject of hedge with changes in the fair value of derivatives.

Finally, it also holds a portfolio of long-term corporate bonds with inflation-indexed rates, thus exposed to changes in market value due to changes in market inflation rates. In order to achieve its mitigation, they contract futures in which they pay the indexed inflation and receive variable interest rates. Its effectiveness is assessed by comparing through lineal regression the changes in the fair value of the bonds to the changes in fair value of the derivatives.

In the hedge of cash flows, Banco Santander (Brasil) S.A. has portfolios of loans and government bonds in different currency than the entity's functional currency and, therefore, it is subject to the risk of changes in currency rates. This exposure will be mitigated by hiring cross currency swaps and futures. Its effectiveness is assessed by comparing changes in fair value of loans and bonds, caused by the hedge risk, to changes in fair value of such derivatives.

Finally, they have a portfolio of variable rate government bonds, so they are exposed to changes in the value due to changes in interest rates. In order to mitigate these changes, a future is hired in which a variable rate is paid and a fixed rate is received. Its effectiveness is assessed by comparing changes in the fair value loans and bonds to changes in the fair value of the futures.

Regarding the hedged items, the products that are being hedged are mainly: borrowed deposits, financial deposits, loans, government bonds as assets and financial bonds as liabilities. The following table shows the detail of the type of hedging, the risk that is hedged and which products are being hedged at 31 December 2021, 2020 and 2019:

	EUR million 31 December 2021							
	Carrying amount of hedged items		Accumulated amount of fair value adjustments on the hedged item				Cash flow reserves or conversion reserves	
	Assets	Liabilities	Assets	Liabilities	Balance sheet line item	Change in fair value of hedged item for ineffectiveness assessment	Continuing hedges	Discontinued hedges
Fair value hedges	**193,949**	**51,395**	**462**	**453**	**Loans and advances / Deposits and Debt securities / Debt securities issued**	**(1,061)**	**—**	**—**
Interest rate risk	125,479	47,347	727	366		(543)	—	—
Exchange rate risk	64,531	—	(282)	—		(343)	—	—
Interest and Exchange rate risk	3,714	4,048	15	87		(173)	—	—
Inflation risk	46	—	—	—		—	—	—
Credit risk	179	—	2	—		(2)	—	—
Cash flow hedges					**Deposits and loans and advances / Debt securities / Variable income portfolio / Rest of other assets and liabilities**	**1,538**	**(414)**	**(150)**
Interest rate risk						400	(540)	(54)
Exchange rate risk						440	81	8
Interest and Exchange rate risk						69	330	—
Inflation risk						628	(289)	(104)
Equity risk						1	4	0
Net foreign investments hedges	**3,282**	**—**	**—**	**—**	**Equity instruments**	**—**	**0**	**3**
Exchange rate risk	3,282	—	—	—		—	—	3
	197,231	**51,395**	**462**	**453**		**477**	**(414)**	**(147)**

	EUR million 31 December 2020							
	Carrying amount of hedged items		Accumulated amount of fair value adjustments on the hedged item				Cash flow reserves or conversion reserves	
	Assets	Liabilities	Assets	Liabilities	Balance sheet line item	Change in fair value of hedged item for ineffectiveness assessment	Continuing hedges	Discontinued hedges
Fair value hedges	**141,608**	**52,055**	**3,369**	**2,914**	**Loans and advances / Deposits and Debt securities / Debt securities issued**	**553**	**—**	**—**
Interest rate risk	128,279	48,137	3,183	2,727		469	—	—
Exchange rate risk	8,718	—	40	—		(13)	—	—
Interest and Exchange rate risk	4,391	3,918	143	187		100	—	—
Credit risk	220	—	3	—		(3)	—	—
Cash flow hedges					**Deposits and loans and advances / Debt securities / Variable income portfolio / Rest of other assets and liabilities**	**532**	**420**	**(43)**
Interest rate risk						314	(87)	(11)
Exchange rate risk						204	(68)	—
Interest and Exchange rate risk						(87)	680	—
Inflation risk						105	(111)	(32)
Equity risk						(4)	6	—
Net foreign investments hedges	**22,150**	**—**	**—**	**—**	**Equity instruments**	**—**	**(11)**	**14**
Exchange rate risk	22,150	—	—	—		—	(11)	14
	163,758	**52,055**	**3,369**	**2,914**		**1,085**	**409**	**(29)**

	EUR million							
	31 December 2019							
	Carrying amount of hedged items		Accumulated amount of fair value adjustments on the hedged item			Change in fair value of hedged item for ineffectiveness assessment	Cash flow reserves or conversion reserves	
	Assets	Liabilities	Assets	Liabilities	Balance sheet line item		Continuing hedges	Discontinued hedges
Fair value hedges	**134,958**	**60,487**	**2,768**	**2,298**	**Loans and advances / Deposits and Debt securities / Debt securities issued**	**1,583**	**—**	**—**
Interest rate risk	122,560	55,538	2,764	2,099		1,370	—	—
Exchange rate risk	8,613	—	19	—		58	—	—
Interest and Exchange rate risk	3,532	4,949	(21)	199		154	—	—
Inflation risk	—	—	—	—		(4)	—	—
Credit risk	253	—	6	—		5	—	—
Cash flow hedges					**Deposits and loans and advances / Debt securities / Variable income portfolio / Rest of other assets and liabilities**	**(204)**	**522**	**(79)**
Interest rate risk						(128)	4	(74)
Exchange rate risk						(32)	130	(4)
Interest and Exchange rate risk						(169)	510	—
Inflation risk						20	(22)	—
Equity risk						7	(2)	(1)
Other risks						98	(98)	—
Net foreign investments hedges	**1,070**	**—**	**—**	**—**	**Equity instruments**	**—**	**—**	**—**
Exchange rate risk	1,070	—	—	—		—	—	—
	136,028	**60,487**	**2,768**	**2,298**		**1,379**	**522**	**(79)**

The cumulative amount of adjustments of the fair value hedging instruments that remain in the balance for hedges items that are no longer adjusted by profit and loss of coverage as at 31 December 2021 is EUR 460 million (EUR 729 million in 2020 and EUR 340 million in 2019).

The net impact of the hedges are shown in the following table:

	EUR million				
	31 December 2021				
				Reclassified amount of reserves to the income statement due to:	
	Earnings/ (losses) recognised in another cumulative overall result	Ineffective recognised in the income statement	Line of the income statement that includes the ineffectiveness of cash flows	Cover transaction affecting the income statement	Line of the income statement that includes reclassified items
Fair value hedges		**18**	Gains or losses financial assests/liabilities		
Interest rate risk		46			
Exchange rate risk		(55)			
Interest rate and exchange rate risk		27			
Cash flow hedges	**(941)**	**(63)**	Gains or losses financial assests/liabilities	**(801)**	Interest margin/Gains or losses financial assests/liabilities
Interest rate risk	(494)	(33)		269	
Exchange rate risk	155	2		(262)	
Interest rate and exchange rate risk	(350)	(35)		(350)	
Inflation risk	(249)	3		(458)	
Equity risk	(3)	—		—	
	(941)	**(45)**		**(801)**	

	EUR million				
	31 December 2020				
				Reclassified amount of reserves to the income statement due to:	
	Earnings/ (losses) recognised in another cumulative overall result	Ineffective coverage recognised in the income statement	Line of the income statement that includes the ineffectiveness of cash flows	Cover transaction affecting the income statement	Line of the income statement that includes reclassified items
Fair value hedges		**104**	Gains or losses financial assests/liabilities		
Interest rate risk		9			
Exchange rate risk		1			
Interest rate and exchange rate risk		92			
Credit risk		2			
Cash flow hedges	**(67)**	**(53)**	Gains or losses financial assests/liabilities	**851**	Interest margin/Gains or losses financial assests/liabilities
Interest rate risk	69	7		118	
Exchange rate risk	(194)	9		(132)	
Interest rate and exchange rate risk	170	(62)		844	
Inflation risk	(121)	(7)		21	
Equity risk	9	—		—	
Net foreign investments hedges	**3**	**—**	Gains or losses financial assests/liabilities	**—**	
Exchange rate risk	3	—		—	
	(64)	**51**		**851**	

	EUR million				
	31 December 2019				
				Reclassified amount of reserves to the income statement due to:	
	Earnings/(losses) recognised in another cumulative overall result	Ineffective coverage recognised in the income statement	Line of the income statement that includes the ineffectiveness of cash flows	Cover transaction affecting the income statement	Line of the income statement that includes reclassified items
Fair value hedges		**58**	Gains or losses financial assests/liabilities		
Interest rate risk		5			
Risk of Exchange rate		(3)			
Risk of interest rate and exchange rate		56			
Inflation risks		—			
Cash flow hedges	**8**	**(86)**	Gains or losses financial assests/liabilities	**(1,112)**	Interest margin/Gains or losses financial assests/liabilities
Interest rate risk	(263)	1		8	
Exchange rate risk	145	(34)		(364)	
Interest rate and exchange rate risk	168	(53)		(769)	
Inflation risk	(44)	—		13	
Equity risk	2	—		—	
Net foreign investments hedges	**—**	**—**	Gains or losses financial assests/liabilities	**—**	
Exchange rate risk	—	—		—	
	8	**(28)**		**(1,112)**	

The following table shows the movement in the impact of equity for the year:

EUR million	2021	2020	2019
Balance at beginning of year	**295**	**300**	**277**
Cash flow hedges			
Interest rate risk	**(494)**	**67**	**(264)**
Amounts transferred to income statements	*(269)*	*(118)*	*(8)*
Gain or loss in value CFE - recognized in equity	*(225)*	*185*	*(256)*
Exchange rate risk	**155**	**(194)**	**146**
Amounts transferred to income statements	*262*	*132*	*364*
Gain or loss in value CFE - recognized in equity	*(107)*	*(326)*	*(218)*
Interest rate and exchange rate risk	**(350)**	**170**	**168**
Amounts transferred to income statements	*350*	*(844)*	*769*
Gain or loss in value CFE - recognized in equity	*(700)*	*1,014*	*(601)*
Inflation risk	**(249)**	**(121)**	**(44)**
Amounts transferred to income statements	*458*	*(21)*	*(13)*
Gain or loss in value CFE - recognized in equity	*(707)*	*(100)*	*(31)*
Equity risk	**(3)**	**9**	**2**
Amounts transferred to income statements	—	—	—
Gain or loss in value CFE - recognized in equity	*(3)*	*9*	*2*
Net foreign investments hedges			
Exchange rate risk	**—**	**3**	**—**
Amounts transferred to income statements	—	—	—
Gain or loss in value CFE - recognized in equity	—	*3*	—
Non-controlling interest	92	56	32
Taxes	278	5	(17)
Balance at end of year	**(276)**	**295**	**300**

37. Discontinued operations

No operations were discontinued in 2021, 2020 or 2019.

38. Interest income

Interest and similar income in the consolidated income statement comprises the interest accruing in the year on all financial assets with an implicit or explicit return, calculated by applying the effective interest method, irrespective of measurement at fair value; and the rectifications of income as a result of hedge accounting. Interest is recognised gross, without deducting any tax withheld at source.

The detail of the main interest and similar income items earned in 2021, 2020 and 2019 is as follows:

EUR million	2021	2020	2019
Loans and advances, central banks	476	431	1,314
Loans and advances, credit institutions	916	894	1,785
Debt instruments	5,724	5,022	6,378
Loans and advances, customers	38,649	38,788	46,180
Other interest	698	606	1,128
	46,463	**45,741**	**56,785**

Most of the interest and similar income was generated by the Group's financial assets that are measured either at amortised cost or at fair value through Other comprehensive income.

39. Interest expense

Interest expense and similar charges in the consolidated income statement includes the interest accruing in the year on all financial liabilities with an implicit or explicit return, including remuneration in kind, calculated by applying the effective interest method, irrespective of measurement at fair value; the rectifications of cost as a result of hedge accounting; and the interest cost attributable to provisions recorded for pensions.

The detail of the main items of interest expense and similar charges accrued in 2021, 2020 and 2019 is as follows:

EUR million	2021	2020	2019
Central banks deposits	338	366	468
Credit institution deposits	1,140	1,652	2,576
Customer deposits	5,452	5,599	10,137
Debt securities issued and subordinated liabilities	4,838	5,119	6,679
Marketable debt securities	*4,190*	*4,548*	*6,034*
Subordinated liabilities (note 23)	*648*	*571*	*645*
Provisions for pensions (note 25)	91	95	145
Lease Liabilities	125	186	273
Other interest expense	1,109	730	1,224
	13,093	**13,747**	**21,502**

Most of the interest expense and similar charges was generated by the Group's financial liabilities that are measured at amortised cost.

40. Dividend income

Dividend income includes the dividends and payments on equity instruments out of profits generated by investees after the acquisition of the equity interest.

The detail of Income from dividends as follows:

EUR million	2021	2020	2019
Dividend income classified as:			
Financial assets held for trading	369	272	388
Non-trading financial assets mandatorily at fair value through profit or loss	32	31	34
Financial assets at fair value through other comprehensive income	112	88	111
	513	**391**	**533**

41. Commission income

Commission income comprises the amount of all fees and commissions accruing in favour of the Group in the year, except those that form an integral part of the effective interest rate on financial instruments.

The detail of fee and commission income is as follows:

EUR million	2021	2020	2019
Coming from collection and payment services			
Bills	214	265	328
Demand accounts	1,408	1,284	1,382
Cards	3,138	2,986	3,858
Orders	503	484	478
Cheques and other	139	110	155
	5,402	**5,129**	**6,201**
Coming from non-banking financial products			
Investment funds	992	888	943
Pension funds	161	170	180
Insurance	2,467	2,289	2,631
	3,620	**3,347**	**3,754**
Coming from Securities services			
Securities underwriting and placement	431	394	364
Securities trading	319	316	281
Administration and custody	402	336	485
Asset management	369	316	293
	1,521	**1,362**	**1,423**
Other			
Foreign exchange	522	500	612
Financial guarantees	415	409	521
Commitment fees	442	366	293
Other fees and commissions	1,890	1,911	2,545
	3,269	**3,186**	**3,971**
	13,812	**13,024**	**15,349**

42. Commission expense

Commission expense shows the amount of all fees and commissions paid or payable by the Group in the year, except those that form an integral part of the effective interest rate on financial instruments.

The detail of commission expense is as follows:

EUR million	2021	2020	2019
Commissions assigned to third parties	**1,993**	**1,856**	**2,350**
Cards	1,355	1,249	1,616
By collection and return of effects	16	12	12
Other fees assigned	622	595	722
Other commissions paid	**1,317**	**1,153**	**1,220**
Brokerage fees on lending and deposit transactions	60	26	27
Sales of insurance and pension funds	341	248	232
Other fees and commissions	916	879	961
	3,310	**3,009**	**3,570**

43. Gains or losses on financial assets and liabilities

The following information is presented below regarding the gains or losses recorded for financial assets or liabilities:

a) Breakdown

The detail, by origin, of Gains/losses on financial assets and liabilities:

EUR million	2021	2020	2019
Gains or losses on financial assets and liabilities not measured at fair value through profit or loss, net	628	1,107	1,136
Financial assets at amortized cost	89	(31)	308
Other financial assets and liabilities	539	1,138	828
Of which debt instruments	*567*	*1,179*	*804*
Gains or losses on financial assets and liabilities held for trading, net*	1,141	3,211	1,349
Gains or losses on non-trading financial assets and liabilities mandatory at fair value through profit or loss	132	82	292
Gains or losses on financial assets and liabilities measured at fair value through profit or loss, net*	270	(171)	(286)
Gains or losses from hedge accounting, net	(46)	51	(28)
	2,125	**4,280**	**2,463**

* Includes the net result obtained by transactions with debt securities, equity instruments, derivatives and short positions included in this portfolio when the Group jointly manages its risk in these instruments.

As explained in note 44, the above breakdown should be analysed in conjunction with the 'Exchange differences, net':

EUR million

	2021	2020	2019
Exchange differences, net	(562)	(2,093)	(932)

b) Financial assets and liabilities at fair value through profit or loss

The detail of the amount of the asset balances is as follows:

EUR million

	2021	2020	2019
Loans and receivables:	34,812	46,589	59,624
Central banks	3,608	9,481	6,473
Credit institutions	13,549	12,139	21,649
Customers	17,655	24,969	31,502
Debt instruments	30,223	41,573	36,402
Equity instruments	19,119	12,849	15,787
Derivatives	54,292	67,137	63,397
	138,446	**168,148**	**175,210**

Grupo Santander mitigates and reduces this exposure as follows:

- With respect to derivatives, the Group has entered into framework agreements with a large number of credit institutions and customers for the netting-off of asset positions and the provision of collateral for non-payment.

  At 31 December 2021 the exposure to credit risk of the derivatives presented in the balance sheet is not significant because they are subject to netting and collateral agreements (see note 2.f).

- Loans and advances to credit institutions and Loans and advances includes reverse repos amounting to EUR 26,060 million at 31 December 2021.

  Also, mortgage-backed assets totalled EUR 1,299 million.

- Debt instruments include EUR 24,117 million of Spanish and foreign government securities.

  At 31 December 2021 the amount of the change in the year in the fair value of financial assets at fair value through profit or loss attributable to variations in their credit risk (spread) was not material.

The detail of the amount of the liability balances is as follows:

EUR million

	2021	2020	2019
Deposits	40,946	43,598	57,111
Central banks	1,645	2,490	12,854
Credit institutions	7,552	6,765	9,340
Customer	31,749	34,343	34,917
Marketable debt securities	5,454	4,440	3,758
Short positions	12,236	16,698	14,123
Derivatives	53,566	64,469	63,016
Other financial liabilities	—	—	126
	112,202	**129,205**	**138,134**

At 31 December 2021, the amount of the change in the fair value of financial liabilities at fair value through profit or loss attributable to changes in their credit risk during the year is not material.

In relation to liabilities designated at fair value through profit or loss where it has been determined at initial recognition that the credit risk is recorded in accumulated 'Other comprehensive income' (see 'Statement of recognised income and expense') the amount that the Group would be contractually obliged to pay on maturity of these liabilities at 31 December 2021 is EUR 81 million lower than their carrying amount (EUR 119 million at 31 December 2020 and EUR 26 million at 31 December 2019).

Within Deposits, there are repurchase agreements amounting to EUR 14,057 million at 31 December 2021.

44. Exchange differences, net

Exchange differences shows basically the gains or losses on currency dealings, the differences that arise on translations of monetary items in foreign currencies to the functional currency.

Grupo Santander manages the currencies to which it is exposed together with the arrangement of derivative instruments and, accordingly, the changes in this line item should be analysed together with those recognised under 'Gains/losses on financial assets and liabilities' (see note 43).

45. Other operating income and expenses

Other operating income and Other operating expenses in the consolidated income statements include:

EUR million

	2021	2020	2019
Insurance activity	**211**	**210**	**120**
Income from insurance and reinsurance contracts issued	1,516	1,452	2,534
Of which:			
Insurance and reinsurance premium income	*1,381*	*1,349*	*2,404*
Reinsurance income (note 15)	*135*	*103*	*130*
Expenses of insurance and reinsurance contracts	(1,305)	(1,242)	(2,414)
Of which:			
Claims paid, other insurance-related expenses and net provisions for insurance contract liabilities	*(1,097)*	*(1,063)*	*(2,183)*
Reinsurance premiums paid	*(208)*	*(179)*	*(231)*
Other operating income	**2,255**	**1,920**	**1,797**
Non- financial services	291	362	379
Other operating income	1,964	1,558	1,418
Other operating expense	**(2,442)**	**(2,342)**	**(2,138)**
Non-financial services	(283)	(350)	(351)
Other operating expense:	(2,159)	(1,992)	(1,787)
Of which, credit institutions deposit guarantee fund and single resolution fund	*(1,016)*	*(1,005)*	*(911)*
	24	**(212)**	**(221)**

Most of Banco Santander's insurance activity is carried on in life insurance.

The amount of the Group recognises in relation to income from sub-leases of rights of use is not material.

46. Staff costs

a) Breakdown

The detail of Staff costs is as follows:

EUR million

	2021	2020	2019
Wages and salaries	8,466	8,070	8,987
Social Security costs	1,323	1,277	1,426
Additions to provisions for defined benefit pension plans (note 25)	73	76	72
Contributions to defined contribution pension funds	286	283	292
Other Staff costs	1,068	1,077	1,364
	11,216	**10,783**	**12,141**

b) Headcount

The average number of employees in the Group and Banco Santander, S.A., by professional category, was as follows:

Average number of employees

	2021	2020	2019
Banco Santander, S.A.	24,512	27,503	30,009
Executive directors and Senior management	*19*	*21*	*20*
Other line personnel	*23,343*	*26,527*	*29,147*
Branches abroad	*1,150*	*955*	*842*
Rest of Spain	10,348	8,878	8,269
Santander UK plc	15,463	16,790	17,961
Santander Brasil	46,269	44,554	47,253
Other companies*	95,913	96,166	97,622
	192,505	**193,891**	**201,114**

* Does not include staff affected by discontinued operations.

The number of employees, at the end of 2021, 2020 and 2019, was 197,070, 191,189 and 196,419, respectively.

The functional breakdown (final employment), by gender, at 31 December 2021 is as follows:

FUNCTIONAL BREAKDOWN BY GENDER

	Senior executives		Other executives		Other personnel	
	Men	Women	Men	Women	Men	Women
Europe	1,039	390	6,865	3,926	29,934	37,773
North America	223	60	1,181	583	18,299	23,226
South America	318	115	2,955	1,934	29,137	39,112
	1,580	**565**	**11,001**	**6,443**	**77,370**	**100,111**

The same information, expressed in percentage terms at 31 December 2021 is as follows:

Functional breakdown by gender

	Senior executives		Other executives		Other personnel	
	Men	Women	Men	Women	Men	Women
Europe	73%	27%	64%	36%	44%	56%
North America	79%	21%	67%	33%	44%	56%
South America	73%	27%	60%	40%	43%	57%
	74%	**26%**	**63%**	**37%**	**44%**	**56%**

The labour relations between employees and the various Group companies are governed by the related collective agreements or similar regulations.

The number of employees in the Group with disabilities, distributed by professional categories, at 31 December 2021, is as follows:

Number of employees*

	2021
Senior management	10
Management	115
Collaborators	3,578
	3,703

* An employee with disabilities is considered to be a person who is recognised by the State or the company in each jurisdiction where the Group operates and that entitles them to receive direct monetary assistance, or other types of aid such as, for example, reduction of their taxes. In the case of Spain, employees with disabilities have been considered to be those with a degree of disabilities greater than or equal to 33%.

The number of Group employees with disabilities at 2020 and 2019, was 3,577 and 3,584, respectively.

Likewise, the average number of employees of Banco Santander, S.A. with disabilities, equal to or greater than 33%, during 2021 was 288 (319 and 318 employees during 2020 and 2019). At the end of fiscal year 2021, there were 307 employees (317 and 295 employees at 31 December, 2020 and 2019, respectively).

c) Share-based payments

The main share-based payments granted by the Group in force at 31 December, 2021, 2020 and 2019 are described below.

i. Bank

The variable remuneration policy for the Bank's executive directors and certain executive personnel of the Bank and of other Group companies includes Bank share-based payments, the implementation of which requires, in conformity with the law and the Bank's Bylaws, specific resolutions to be adopted by the general meeting.

Were it necessary or advisable for legal, regulatory or other similar reasons, the delivery mechanisms described below may be adapted in specific cases without altering the maximum number of shares linked to the plan or the essential conditions to which the delivery thereof is subject.

These adaptations may involve replacing the delivery of shares with the delivery of cash amounts of an equal value.

The plans that include share-based payments are as follows: (i) Deferred and Conditional Variable Remuneration Plan; (ii) Deferred Multiyear Objectives Variable Remuneration Plan; (iii) Digital Transformation Award. The characteristics of the plans are set forth below:

Deferred variable remuneration systems	Description and plan beneficiaries	Conditions	Calculation Base
(i) Deferred and conditional variable remuneration plan (2015, 2016, 2017, 2018, 2019, 2020 and 2021)	The purpose of these cycles is to defer a portion of the variable remuneration of the beneficiaries over a period of three years for the sixth cycles, and over three or five years for the fifth, seventh, eighth, ninth, tenth and eleventh cycles, for it to be paid, where appropriate, in cash and in Santander shares; the other portion of the variable remuneration is also to be paid in cash and Santander shares, upon commencement of the cycles, in accordance with the rules set forth below. Beneficiaries: • Executive directors and certain executives (including senior management) and employees who assume risk, who perform control functions or receive an overall remuneration which puts them on the same remuneration level as senior executives and employees who assume risks (fifth cycle) • In the case of the sixth, seventh, eighth, ninth, tenth and eleventh cycle, the beneficiaries are Material Risk Takers (Identified staff) that are not beneficiaries of the Deferred Multiyear Objectives Variable Remuneration Plan.	For the fifth and sixth cycles (2015 to 2016), the accrual of deferred compensation is conditioned, in addition to the requirement that the beneficiary remains in the Group's employ, with the exceptions included in the plan regulations upon none of the following circumstances existing during the period prior to each of the deliveries, pursuant to the provisions set forth in each case in the plan regulations: i. Poor financial performance of the Group. ii. breach by the beneficiary of internal regulations, including, in particular, those relating to risks. iii. material restatement of the Group's consolidated financial statements, except when it is required pursuant to a change in accounting standards. iv. Significant changes in the Group's economic capital or risk profile In the case of the seventh, eighth, ninth, tenth and eleventh cycles (2017 to 2021), the accrual of deferred compensation is conditioned, in addition to the permanence of the beneficiary in the Group, with the exceptions contained in the plan's regulations, to no assumptions in which there is a poor performance of the entity as a whole or of a specific division or area of the entity or of the exposures generated by the personnel, and at least the following factors must be considered: v. significant failures in risk management committed by the entity , or by a business unit or risk control unit. vi. the increase suffered by the entity or by a business unit of its capital needs, not foreseen at the time of generation of the exposures. vii. Regulatory sanctions or judicial sentences for events that could be attributable to the unit or the personnel responsible for those. Also, the breach of internal codes of conduct of the entity. viii. Irregular behaviours, whether individual or collective, considering in particular the negative effects derived from the marketing of inappropriate products and the responsibilities of the persons or bodies that made those decisions.	Fifth cycles (2015): • Executive directors and members of the Identified Staff with total variable remuneration higher than 2.6 million euros: 40% paid immediately and 60% deferred over3 years (fourth cycle) or 5 years (fifth cycle). • Division managers, country heads, other executives of the Group with a similar profile and members of the Identified Staff with total variable remuneration between 1.7 million euros (1.8 million in fourth cycle) and 2.6 million euros: 50% paid immediately and 50% deferred over 3 years(fourth cycle) or 5 years (fifth cycle) • Other beneficiaries: 60% paid immediately and 40% deferred over 3 years. Sixth cycle (2016): • 60% of bonus will be paid immediately and 40% deferred over a three years period. Seventh, eighth, ninth, tenth and eleventh cycle (2017, 2018, 2019, 2020 and 2021): • Beneficiaries of these plans with target total variable remuneration higher or equal to 2.7 million euros: 40% paid immediately and 60% deferred over 5 years • Beneficiaries of these plans with target total variable remuneration between 1.7 million euros and 2.7 million euros: 50% paid immediately and 50%paid over 5 years • Other beneficiaries of these plans: 60% paid immediately and 40% deferred over 3 years.

Deferred variable remuneration systems	Description and plan beneficiaries	Conditions	Calculation Base
(ii)Deferred Multiyear Objectives Variable Remuneration Plan (2016, 2017, 2018, 2019, 2020 and 2021)	The aim is simplifying the remuneration structure, improving the ex ante risk adjustment and increasing the impact of the long-term objectives on the Group's most relevant roles. The purpose of these cycles is to defer a portion of the variable remuneration of the beneficiaries over a period of three or five years, for it to be paid, where appropriate, in cash and in Santander shares; the other portion of the variable remuneration is also to be paid in cash and Santander shares, upon commencement of the cycles, in accordance with the rules set forth below. The accrual of the last third of the deferral (in the case of 3 years deferral) of the last three fifths (in the case of 5 years deferral) is also subject to long-term objectives. Beneficiaries Executive directors, senior managers and certain executives of the Group's first lines of responsibility.	In 2016 the accrual is conditioned, in addition to the permanence of the beneficiary in the Group, with the exceptions contained in the plan's regulations that none of The following circumstances during the period prior to each of the deliveries in the terms set forth in each case in the plan's regulations: i. Poor performance of the Group. ii. breach by the beneficiary of the internal regulations, including in particular that relating to risks. iii. material restatement of the Group's consolidated financial statements, except when appropriate under a change in accounting regulations. iv. Significant changes in the Group's economic capital or risk profile. In 2017, 2018, 2019, 2020 and 2021 the accrual is conditioned, in addition to the beneficiary permanence in the Group, with the exceptions contained in the plan's regulations, to the non-occurrence of instances of poor financial performance from the entity as a whole or of a specific division or area thereof or of the exposures generated by the personnel, at least the following factors must be considered: v. Significant failures in risk management committed by the entity, or by a business unit or risk control unit. vi. the increase suffered by the entity or by a business unit of its capital needs, not foreseen at the time of generation of the exposures. vii. Regulatory sanctions or court rulings for events that could be attributable to the unit or the personnel responsible for those. Also, the breach of internal codes of conduct of the entity. viii. Irregular behaviours, whether individual or collective, considering in particular negative effects derived from the marketing of inappropriate products and responsibilities of persons or bodies that made those decisions. Paid half in cash and half in shares. The maximum number of shares to be delivered is calculated by taking into account the weighted average daily volume of weighted average prices for the fifteen trading sessions prior to the previous Friday (excluding) on the date on which the board decides the bonus for the Executive directors of the Bank.	First cycle (2016): • Executive directors and members of the Identified Staff with total variable remuneration higher than or equal to 2.7 million euros: 40% paid immediately and 60% deferred over a 5 years period. • Senior managers, country heads of countries representing at least 1% of the Group´s capital and other members of the identified staff whose total variable remuneration is between 1.7 million and 2.7 million euros: 50% paid immediately and 50% deferred over a 5 years period. • Other beneficiaries: 60% paid immediately and 40% deferred over a 3 years period. The second, third, fourth, fifth and sixth cycles (2017, 2018, 2019,2020 and 2021 respectively) are under the aforementioned deferral rules, except that the variable remuneration considered is the target for each executive and not the actual award. In 2016 the metrics for the deferred portion subject to long-term objectives (last third or last three fifths, respectively, for the cases of three years and five years deferrals) are: • Earnings per share (EPS) growth in 2018 over 2015. • Relative Total Shareholder Return (TSR) in the 2016-2018 period measured against a group of credit institutions. • Compliance with the fully-loaded common equity tier 1 ("CET1") ratio target for financial year 2018. • Compliance with Santander Group's underlying return on risk-weighted assets ("RoRWA") growth target for financial year 2018 compared to financial year 2015. In the second, third, fourth fifth and sixth cycle (2017, 2018, 2019, 2020 and 2021) the metrics for the deferred portion subject to long-term objectives (last third or last three fifths, respectively, for the cases of three years and five years deferrals) are: • EPS growth in 2019, 2020, 2021, 2022 and 2023 (over 2016, 2017, 2018, 2019 and 2020, for each respective cycle) • Relative Total Shareholder Return (TSR) measured against a group of 17 credit institutions (second and third cycles) in the periods 2017-2019 and 2018-2019, respectively, and against a group of 9 entities (fourth, fifth and sixth cycle) for the 2019-2021, 2020-2022 and 2010-2023 period. • Compliance with the fully-loaded common equity tier 1 ("CET1") ratio target for financial years 2019, 2020, 2021,2022 and 2023, respectively.

Deferred variable remuneration systems	Description and plan beneficiaries	Conditions	Calculation Base
(iii) Digital Transformation Award (2019, 2020 and 2021)	The 2019, 2020 and 2021 Digital Transformation Incentive (the "Digital Incentive") is a variable remuneration system that includes the delivery of Santander shares and share options. The aim of the Digital Incentive is to attract and retain the critical skill sets to support and accelerate the digital transformation of the Group. By means of this program, the Group offers a remuneration element which is competitive with the remuneration systems offered by other market operators who also compete for digital talent. The number of beneficiaries is limited to a maximum of 250 employees and the total amount of the incentive is limited to 30 million euros.	The funding of this incentive is subject to meeting important milestones that are aligned with the Group´s digital roadmap and have been approved by the board of directors, taking into account the digitalization strategy of the Group, with the aim of becoming the best open, responsible global financial services platform. Performance of incentive shall be measured based on achievement of the following milestones: 1. Launch of a Global Trade Services (GTS) platform. 2. Launch of a Global Merchant Services (GMS) platform. 3. Migration of our fully digital bank, OpenBank, to a "next generation" platform and launch in 3 markets. 4. Extension of SuperDigital in Brazil to at least one other country. 5. Launch of our international payments app based on blockchain Pago FX to non-Santander customers. The milestones for the 2020 Digital Transformation Award were: (i) rolling out the global merchant services (GMS) platform in 3 new geographies, enhancing the platform functionality and achieving volume targets for transactions and participating merchants; (ii) doing the commercial rollout of the global trade services (GTS) platform in 8 new geographies, enhancing platform functionality, and achieving volume targets for on-boarded clients and monthly active users; (iii) launching OpenBank in a new market and migrating the retail banking infrastructure to "new-mode" bank; (iv) launch the global platform SuperDigital in at least 4 countries, driving target active user growth; (v) deploying machine learning across pre-defined markets for 4 priority use cases, rolling out Conversion Rate Optimization (Digital marketing) for at least 40 sales programs, delivering profit targets, and driving reduction of agent handled calls in contact centers; (vi) successfully implementing initiatives related to on-board and identity services, common API (application programming interface) layer, payment hubs, mobile app for SMEs and virtual assistant services; and (vii) launching the PagoFX global platform in at least 4 countries. The milestones for 2021 are: (i)in relation to Pago Nxt Consumer payment platform: implementation of Superdigital platform in seven countries, acquisition of over 1.5 million active customer base and accelerating growth through B2B (business to business) and B2B2C (business to business to customer) partnerships, acquiring more than 50% of the new customers through these channels, which are more cost-effective; (ii)in relation to Digital Consumer Bank: launching online API for checkout lending in the European Union and completion of controllable items for Openbank launch in USA; (iii)in relation to One Santander strategy: implementation in Europe of One Common Mobile Experience and, specifically, implementation of Europe ONE app for individual customers in at least three of the four countries by December 2021; and be among the three-top rated entities in terms of Mobile NetPromoter Score (Mobile NPS) in at least two of the four countries by December 2021; (iv) In relation to cloud adoption: host 75% of migratable virtual machines on cloud technology (either public cloud or OHE) by December 2021. For these purposes, mainframes, physical servers and servers with non-x86 operating systems will be considered non-migratable.	The Digital Incentive is structured 50% in Santander shares and 50% in options over Santander shares, taking into account the fair value of the option at the moment in which they are granted. For Material Risk Takers subject to five years deferrals, the Digital Incentive (shares and options over shares) shall be delivered in thirds, on the third, fourth and fifth anniversary from their granting. For Material Risk Takers subject to three years deferrals and employees not subject to deferrals, delivery shall be done on the third anniversary from their granting. Any delivery of shares, either directly or via exercise of options overs shares, will be subject generally to the Group's general *malus* & *clawback* provisions as described in the Group's remuneration policy and to the continuity of the beneficiary within the Santander Group. In this regard, the board may define specific rules for non-Identified Staff. Vested share options can be exercised until maturity, with all options lapsing after ten years (for granting the 2019 incentive) and eight years (for granting the 2020 and 2021 incentive). The total achievement for 2021 Digital Incentive was 77.5% (85% en 2020 and 83% en 2019).

ii. Santander UK plc

The long-term incentive plans on shares of the Bank granted by management of Santander UK plc to its employees are as follows:

	Number of shares (in thousand)	Exercise price in pounds sterling*	Year granted	Employee group	Number of persons**	Date of commencement of exercise period	Date of expiry of exercise period
Plans outstanding at 01/01/2019	**26.838**						
Options granted (sharesave)	9,594	2.83	2019	Employees	5,606	01/11/19	01/11/22
						01/11/19	01/11/24
Options exercised	(7,978)	2.83					
Options cancelled (net) or not exercised	(5,081)	3.42					
Plans outstanding at 31/12/2019	**23,373**						
Options granted (sharesave)	11,642	1.65	2020	Employees	5,012	01/11/20	01/11/23
						01/11/20	01/11/25
Options exercised	(860)	2.75					
Options cancelled (net) or not exercised	(12,993)	2.96					
Plans outstanding at 31/12/2020	**21,162**						
Options granted (sharesave)	9,414	2.43	2021	Employees	4,142	11/01/21	11/01/24
						11/01/21	11/01/26
Options exercised	(48)	1.86					
Options cancelled (net) or not exercised	(4,592)	2.95					
Plans outstanding at 31/12/2021	**25,936**						

* At 31 December, 2021, 2020 and 2019, the euro/pound sterling exchange rate was EUR 1.1904 GBP 1, EUR 1.1168 GBP 1; EUR 1.1754 GBP 1, respectively.
** Number of accounts/contracts. A single employee may have more than one account/contract.

In 2008 the Group launched a voluntary savings scheme for Santander UK employees (Sharesave Scheme) whereby employees who join the scheme see deducted between GBP 5 and GBP 500 from their net monthly pay over a period of three or five years. At the end of the chosen period, the employee may choose between collecting the amount contributed, the interest accrued and a bonus (tax-exempt in the United Kingdom) or exercising options on shares of the Bank in an amount equal to the sum of such three amounts at a fixed price. The exercise price will be the result of reducing by up to 20% the average purchase and sale prices of the Bank shares in the three trading sessions prior to the approval of the scheme by the UK tax authorities (HMRC). This approval must be received within 21to 41 days following the publication of the Group's results for the first half of the year. This scheme was approved by the Board of Directors, at the proposal of the appointments and remuneration committee, and, since it involved the delivery of Bank shares, its application was authorized by the Annual General Meeting held on June 21, 2008. Also, the scheme was authorized by the UK tax authorities (HMRC) and commenced in September 2008. In subsequent years, at the Annual General Meetings held on June 19, 2009, June 11, 2010, June 17, 2011, March 30, 2012, March 22, 2013, March 28, 2014, March 27, 2015, March 18, 2016, April 7, 2017, March 23, 2018, April 12, 2019, April 3, 2020 and March 26, 2021, respectively, the shareholders approved the application of schemes previously approved by the board and with similar features to the scheme approved in 2008.

iii. Fair value

The fair value of the performance share plans was calculated as follows:

a) Deferred variable compensation plan linked to multi-year objectives 2019, 2020 and 2021:

The Group calculates at the grant date the fair value of the plan based on the valuation report of an independent expert, Willis Towers Watson. According to the design of the plan for 2019, 2020 and 2021 and the levels of achievement of similar plans in comparable entities, the expert concludes that the reasonable range for estimating the initial achievement ratio is around 60%-80%. It has been considered that the fair value is 70% of the maximum.

b) Santander UK sharesave plans:

The fair value of each option at the date of grant is estimated using an analytical model that also reflects the correlation between EUR and GBP. This model uses assumptions on the share price, the EUR/GBP FX rate, the EUR/GBP risk-free interest rate, dividend yields, the expected volatilities of both the underlying shares and EUR/GBP for the expected lives of options granted. The weighted average grant-date fair value of options granted during the year was GBP 0.20 (GBP 0.21 and GBP 0.49 reported in 2020 and 2019, respectively).

47. Other general administrative expenses

a) Breakdown

The detail of Other general administrative expenses is as follows:

EUR million

	2021	2020	2019
Technology and systems	2,182	2,119	2,161
Property, fixtures and supplies (note 2.k)	789	827	975
Technical reports	689	672	677
Taxes other than income tax	558	537	522
Advertising	510	523	685
Communications	401	473	518
Surveillance and cash courier services	306	325	416
Insurance premiums	109	88	86
Per diems and travel expenses	69	73	226
Other administrative expenses	1,830	1,900	1,872
	7,443	**7,537**	**8,138**

The payments associated with short-term leases (leases less than or equal to 12 months) and leases of low-value assets, that the Group recognises as an expense in the income statement is not material.

b) Technical reports and other

Technical reports includes the fees paid by the various Group companies (detailed in the accompanying appendices) for the services provided by their respective auditors, the detail being as follows:

EUR million

	2021	2020	2019
Audit fees	103.7	99.4	102.4
Audit-related fees	6.0	6	7.8
Tax fees	0.7	0.8	0.7
All other fees	2.4	1.2	2.3
Total	**112.8**	**107.4**	**113.2**

The 'Audit fees' heading includes mainly, audit fees for the Banco Santander, S.A. individual and consolidated financial statements, of the companies forming part of the Group, the integrated audits prepared for the annual report filling in the Form 20-F required by the U.S. Securities and Exchange Commission (SEC) for those entities currently required to do so, the internal control audit (SOx) for those required entities, the limited review of the financial statements and the regulatory reports required by the auditor corresponding to the different locations of Grupo Santander.

The main concepts included in 'Audit-related fees' correspond to aspects such as the issuance of Comfort letters, or other reviews required by different regulations in relation to aspects such as, for example, Securitization.

The services commissioned from the Group's auditors meet the independence requirements stipulated by the Audit Law, the US SEC rules and the Public Company Accounting Oversight Board (PCAOB), applicable to the Group, and they did not involve in any case the performance of any work that is incompatible with the audit function.

Lastly, the Group commissioned services from audit firms other than PwC amounting to EUR 263.8 million in 2021 (EUR 172.4 million and EUR 227.6 million in 2020 and 2019, respectively).

The Audit fees and Audit-related fees caption includes the fees corresponding to the audit for the year, regardless of the date on which the audit was completed. In the event of subsequent adjustments, which are not significant in any case, and for purposes of comparison, they are presented in this note in the year to which the audit relates. The rest of the services are presented according to their approval by the Audit Committee.

c) Number of branches

The number of offices at 31 December 2021, 2020 and 2019 is as follows:

Number of branches

	Group		
	2021	2020	2019
Spain	1,998	2,989	3,286
Group	7,881	8,247	8,666
	9,879	**11,236**	**11,952**

48. Gains or losses on non financial assets, net

The detail of Gains/ (losses) on disposal of assets not classified as non-current assets held for sale is as follows:

EUR million

	2021	2020	2019
Gains			
Tangible and intangible assets	87	89	131
Investments	2	60	1,219
Of which:			
Custody Business (note 3)	—	—	*989*
Prisma	—	—	*194*
	89	149	1,350
Losses			
Tangible and intangible assets	(36)	(34)	(55)
Investments	—	(1)	(4)
	(36)	(35)	(59)
	53	**114**	**1,291**

49. Gains or losses on non-current assets held for sale not classified as discontinued operations

The detail of Gains/(losses) on non-current assets held for sale not classified as discontinued operations is as follows:

EUR million

Net balance	2021	2020	2019
Tangible assets	(52)	(171)	(232)
Impairment	*(141)*	*(215)*	*(146)*
Gain (loss) on sale	*89*	*44*	*(86)*
Other gains and other losses	9	—	—
	(43)	**(171)**	**(232)**

50. Other disclosures

a) Residual maturity periods

The detail, by maturity, of the balances of certain items in the consolidated balance sheet at 31 December 2021, 2020 and 2019 is presented below:

	31 December 2021							
	EUR million							
	On demand	Within 1 month	1 to 3 months	3 to 12 months	1 to 3 years	3 to 5 years	More than 5 years	Total
Assets								
Cash, cash balances at Central Banks and other deposits on demand	210,689	—	—	—	—	—	—	210,689
Financial assets at fair value through other comprehensive income	—	10,378	9,507	10,447	20,001	17,745	37,507	105,585
Debt instruments	—	10,352	9,246	9,609	19,133	16,494	33,088	97,922
Loans and advances	—	26	261	838	868	1,251	4,419	7,663
Customers	—	26	261	838	868	1,251	4,419	7,663
Financial assets at amortized cost	35,520	89,819	72,018	121,272	154,345	130,456	434,468	1,037,898
Debt instruments	—	2,229	1,983	4,171	2,205	15,388	9,732	35,708
Loans and advances	35,520	87,590	70,035	117,101	152,140	115,068	424,736	1,002,190
Central banks	—	14,544	—	—	—	—	1,113	15,657
Credits institutions	11,849	11,042	9,760	4,542	93	150	1,733	39,169
Customers	23,671	62,004	60,275	112,559	152,047	114,918	421,890	947,364
	246,209	**100,197**	**81,525**	**131,719**	**174,346**	**148,201**	**471,975**	**1,354,172**
Liabilities								
Financial liabilities at amortized cost	718,435	98,928	70,085	99,223	194,879	98,210	69,409	1,349,169
Deposits	711,377	81,269	45,687	64,096	117,585	52,658	5,915	1,078,587
Central banks	92	4,657	1,204	2,130	91,651	40,013	10	139,757
Credit institutions	12,854	3,493	12,715	12,507	4,712	1,981	3,973	52,235
Customer deposits	698,431	73,119	31,768	49,459	21,222	10,664	1,932	886,595
Marketable debt securities* **	—	13,599	17,951	29,798	71,333	45,198	62,830	240,709
Other financial liabilities	7,058	4,060	6,447	5,329	5,961	354	664	29,873
	718,435	**98,928**	**70,085**	**99,223**	**194,879**	**98,210**	**69,409**	**1,349,169**
Difference (assets less liabilities)	**(472,226)**	**1,269**	**11,440**	**32,496**	**(20,533)**	**49,991**	**402,566**	**5,003**

* Includes promissory notes, certificates of deposit and other short-term debt issues.
** See breakdown by type of debt (subordinated debt, senior unsecured debt, senior secured debt, notes and other securities) (see note 22).

Grupo Santander has accounted as "On demand", those financial liabilities assumed, in which the counterparty may require the payments.

In addition, when Grupo Santander is committed to have amounts available in different maturity periods, these amounts have been accounted for in the first year, in which they may be required.

Additionally, for issued financial guarantee contracts, the Group has recorded the maximum amount of the financial guarantee issued, in the first year in which the guarantee could be executed.

	31 December 2020							
	EUR million							
	On demand	Within 1 month	1 to 3 months	3 to 12 months	1 to 3 years	3 to 5 years	More than 5 years	Total
Assets								
Cash, cash balances at Central Banks and other deposits on demand	153,839	—	—	—	—	—	—	153,839
Financial assets at fair value through other comprehensive income	—	6,664	4,420	7,738	19,923	21,302	58,123	118,170
Debt instruments	—	6,664	4,244	7,019	18,365	19,969	52,642	108,903
Loans and advances	—	—	176	719	1,558	1,333	5,481	9,267
Customers	—	—	176	719	1,558	1,333	5,481	9,267
Financial assets at amortized cost	51,513	57,047	60,288	109,561	150,399	120,376	409,194	958,378
Debt instruments	—	2,857	1,327	5,760	3,059	5,257	7,818	26,078
Loans and advances	51,513	54,190	58,961	103,801	147,340	115,119	401,376	932,300
Central banks	—	10,762	—	—	673	—	1,064	12,499
Credits institutions	21,337	4,405	4,545	3,910	3,207	34	400	37,838
Customers	30,176	39,023	54,416	99,891	143,460	115,085	399,912	881,963
	205,352	**63,711**	**64,708**	**117,299**	**170,322**	**141,678**	**467,317**	**1,230,387**
Liabilities								
Financial liabilities at amortized cost	640,613	84,875	90,394	93,296	175,238	80,041	83,731	1,248,188
Deposits	632,305	64,630	67,707	61,142	109,856	32,464	22,287	990,391
Central banks	150	5,204	5,295	3,216	83,112	15,827	—	112,804
Credit institutions	14,370	7,158	15,227	9,940	5,618	5,934	4,373	62,620
Customer deposits	617,785	52,268	47,185	47,986	21,126	10,703	17,914	814,967
Marketable debt securities*	—	14,981	18,276	30,994	59,526	47,143	59,909	230,829
Other financial liabilities	8,308	5,264	4,411	1,160	5,856	434	1,535	26,968
	640,613	**84,875**	**90,394**	**93,296**	**175,238**	**80,041**	**83,731**	**1,248,188**
Difference (assets less liabilities)	**(435,261)**	**(21,164)**	**(25,686)**	**24,003**	**(4,916)**	**61,637**	**383,586**	**(17,801)**

* Includes promissory notes, certificates of deposit and other short-term debt issues.

	31 December 2019							
	EUR million							
	On demand	Within 1 month	1 to 3 months	3 to 12 months	1 to 3 years	3 to 5 years	More than 5 years	Total
Assets								
Cash, cash balances at Central Banks and other deposits on demand	101,067	—	—	—	—	—	—	101,067
Financial assets at fair value through other comprehensive income	—	6,933	2,704	7,689	19,101	17,989	68,429	122,845
Debt instruments	—	6,879	2,699	7,554	17,489	17,063	66,721	118,405
Loans and advances	—	54	5	135	1,612	926	1,708	4,440
Customers	—	54	5	135	1,612	926	1,708	4,440
Financial assets at amortized cost	51,702	73,890	76,229	116,511	150,365	103,584	423,201	995,482
Debt instruments	—	1,563	1,847	3,073	2,549	3,642	17,115	29,789
Loans and advances	51,702	72,327	74,382	113,438	147,816	99,942	406,086	965,693
Central banks	—	17,086	—	—	—	—	1,388	18,474
Credit institutions	17,665	6,223	4,602	7,435	3,963	428	627	40,943
Customers	34,037	49,018	69,780	106,003	143,853	99,514	404,071	906,276
	152,769	**80,823**	**78,933**	**124,200**	**169,466**	**121,573**	**491,630**	**1,219,394**
Liabilities								
Financial liabilities at amortized cost	619,003	99,203	88,546	159,120	134,799	61,282	68,792	1,230,745
Deposits	607,051	76,101	61,627	111,190	64,781	14,224	7,443	942,417
Central banks	99	462	64	33,229	28,424	190	—	62,468
Credit institutions	23,526	14,494	18,922	14,245	9,327	5,668	4,319	90,501
Customer deposits	583,426	61,145	42,641	63,716	27,030	8,366	3,124	789,448
Marketable debt securities*	—	16,008	22,569	47,808	65,545	46,577	59,712	258,219
Other financial liabilities	11,952	7,094	4,350	122	4,473	481	1,637	30,109
	619,003	**99,203**	**88,546**	**159,120**	**134,799**	**61,282**	**68,792**	**1,230,745**
Difference (assets less liabilities)	**(466,234)**	**(18,380)**	**(9,613)**	**(34,920)**	**34,667**	**60,291**	**422,838**	**(11,351)**

* Includes promissory notes, certificates of deposit and other short-term debt issues.

The detail of the undiscounted contractual maturities of the existing financial liabilities at amortised cost at 31 December 2021, 2020 and 2019 is as follows:

	31 December 2021							
	EUR million							
	On demand	Within 1 month	1 to 3 months	3 to 12 months	1 to 3 years	3 to 5 years	More than 5 years	Total
Financial liabilities at amortized cost								
Deposits	705,129	75,102	45,552	62,896	116,343	52,031	5,884	1,062,937
Central banks	83	4,657	1,205	2,131	91,327	39,579	10	138,992
Credit institutions	12,683	3,491	12,693	11,867	4,504	1,945	3,950	51,133
Customer	692,363	66,954	31,654	48,898	20,512	10,507	1,924	872,812
Marketable debt securities	—	14,067	18,508	30,618	73,131	46,367	64,318	247,009
Other financial liabilities	7,059	4,060	6,447	5,329	5,961	354	663	29,873
	712,188	**93,229**	**70,507**	**98,843**	**195,435**	**98,752**	**70,865**	**1,339,819**

	31 December 2020							
	EUR million							
	On demand	Within 1 month	1 to 3 months	3 to 12 months	1 to 3 years	3 to 5 years	More than 5 years	Total
Financial liabilities at amortized cost								
Deposits	629,043	62,872	67,567	60,465	108,326	32,260	22,228	982,761
Central banks	150	5,204	5,293	3,217	82,803	15,827	—	112,494
Credit institutions	14,334	7,158	15,209	9,606	5,031	5,903	4,333	61,574
Customer	614,559	50,510	47,065	47,642	20,492	10,530	17,895	808,693
Marketable debt securities	—	15,298	19,009	31,103	58,645	46,118	56,730	226,903
Other financial liabilities	8,308	5,264	4,411	1,160	5,856	434	1,535	26,968
	637,351	**83,434**	**90,987**	**92,728**	**172,827**	**78,812**	**80,493**	**1,236,632**

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	31 December 2019							
	EUR million							
	On demand	Within 1 month	1 to 3 months	3 to 12 months	1 to 3 years	3 to 5 years	More than 5 years	Total
Financial liabilities at amortized cost								
Deposits	603,126	75,899	61,107	109,747	63,013	14,027	7,228	934,147
Central banks	99	454	41	32,805	28,255	190	—	61,844
Credit institutions	23,348	14,491	18,810	14,134	8,519	5,478	4,113	88,893
Customer	579,679	60,954	42,256	62,808	26,239	8,359	3,115	783,410
Marketable debt securities	—	16,252	22,912	48,030	64,650	45,830	58,215	255,889
Other financial liabilities	11,952	7,094	4,350	122	4,473	481	1,637	30,109
	615,078	**99,245**	**88,369**	**157,899**	**132,136**	**60,338**	**67,080**	**1,220,145**

Below is a breakdown of contractual maturities for the rest of financial assets and liabilities as of 31 December 2021, 2020 and 2019 :

	31 December 2021						
	EUR million						
	Within 1 months	1 to 3 months	3 to 12 months	1 to 3 years	3 to 5 years	More than 5 years	Total
FINANCIAL ASSETS							
Financial assets held for trading	**13,120**	**8,767**	**20,627**	**20,047**	**15,105**	**39,287**	**116,953**
Derivatives	1,456	3,487	7,426	12,285	11,980	17,658	54,292
Equity instruments	—	—	—	—	—	15,077	15,077
Debt instruments	922	2,056	8,585	5,766	2,869	6,552	26,750
Loans and advances	10,742	3,224	4,616	1,996	256	—	20,834
Central banks	3,608	—	—	—	—	—	3,608
Credits institutions	4,827	780	3,982	808	—	—	10,397
Customers	2,307	2,444	634	1,188	256	—	6,829
Financial assets designated at fair value through profit or loss	**844**	**1,607**	**2,928**	**3,686**	**2,334**	**4,558**	**15,957**
Debt instruments	2	62	142	699	700	911	2,516
Loans and advances	842	1,545	2,786	2,987	1,634	3,647	13,441
Credit institutions	455	683	1,476	205	10	323	3,152
Customers	387	862	1,310	2,782	1,624	3,324	10,289
Non-trading financial assets mandatorily at fair value through profit or loss	**116**	**—**	**49**	**127**	**67**	**5,177**	**5,536**
Equity instruments	—	—	—	—	—	4,042	4,042
Debt instruments	4	—	40	4	6	903	957
Loans and advances	112	—	9	123	61	232	537
Customers	112	—	9	123	61	232	537
Financial assets at fair value through other comprehensive income	**—**	**—**	**—**	**—**	**—**	**2,453**	**2,453**
Equity instruments	—	—	—	—	—	2,453	2,453
Hedging derivatives	**239**	**129**	**857**	**748**	**1,270**	**1,518**	**4,761**
Changes in the fair value of hedged items in portfolio hedges of interest rate risk	**227**	**202**	**(11)**	**(304)**	**19**	**277**	**410**
TOTAL FINANCIAL ASSETS	**14,546**	**10,705**	**24,450**	**24,304**	**18,795**	**53,270**	**146,070**

	31 December 2021 EUR million						
	Within 1 months	1 to 3 months	3 to 12 months	1 to 3 years	3 to 5 years	More than 5 years	Total
FINANCIAL LIABILITIES							
Financial liabilities held for trading	**22,746**	**3,396**	**9,234**	**15,709**	**12,750**	**15,634**	**79,469**
Derivatives	1,742	2,743	7,583	14,868	11,912	14,718	53,566
Shorts positions	8,337	222	1,290	728	743	916	12,236
Deposits	12,667	431	361	113	95	—	13,667
Central banks	994	44	—	—	—	—	1,038
Credits institutions	5,534	385	361	113	95	—	6,488
Customers	6,139	2	—	—	—	—	6,141
Financial liabilities designated at fair value through profit or loss	**2,756**	**4,244**	**1,685**	**4,669**	**1,225**	**18,154**	**32,733**
Deposits	2,743	4,131	1,246	2,801	764	15,594	27,279
Central banks	569	—	38	—	—	—	607
Credits institutions	128	109	487	30	178	132	1,064
Customers	2,046	4,022	721	2,771	586	15,462	25,608
Marketable debt securities*	13	113	439	1,868	461	2,560	5,454
Hedging derivatives	**360**	**253**	**930**	**1,667**	**824**	**1,429**	**5,463**
Changes in the fair value of hedged items in portfolio hedges of interest rate risk	40	5	16	58	49	80	248
TOTAL FINANCIAL LIABILITIES	**25,902**	**7,898**	**11,865**	**22,103**	**14,848**	**35,297**	**117,913**

* Includes promissory notes, certificates of deposit and other short-term debt issues (see note 22).

	31 December 2021 EUR million						
	Within 1 months	1 to 3 months	3 to 12 months	1 to 3 years	3 to 5 years	More than 5 years	Total
Memorandum items							
Loans commitment granted	116,823	6,706	27,587	51,999	49,781	9,841	262,737
Financial guarantees granted	2,414	1,203	4,251	1,749	687	454	10,758
Other commitments granted	46,614	5,745	12,008	7,297	1,539	2,530	75,733
MEMORANDUM ITEMS	**165,851**	**13,654**	**43,846**	**61,045**	**52,007**	**12,825**	**349,228**

In the Group's experience, no outflows of cash or other financial assets take place prior to the contractual maturity date that might affect the information broken down above.

	31 December 2020						
	EUR million						
	Within 1 month	1 to 3 months	3 to 12 months	1 to 3 years	3 to 5 years	More than 5 years	Total
FINANCIAL ASSETS							
Financial assets held for trading	**5,760**	**6,734**	**27,753**	**22,473**	**18,014**	**34,211**	**114,945**
Derivatives	4,288	5,268	10,044	15,526	13,681	18,330	67,137
Equity instruments	—	—	—	—	—	9,615	9,615
Debt instruments	1,472	1,466	17,709	6,947	4,310	5,990	37,894
Loans and advances	—	—	—	—	23	276	299
Credits institutions	—	—	—	—	3	—	3
Customers	—	—	—	—	20	276	296
Financial assets designated at fair value through profit or loss	**12,500**	**14,834**	**7,205**	**3,680**	**3,933**	**6,565**	**48,717**
Debt instruments	181	78	162	407	719	1,432	2,979
Loans and advances	12,319	14,756	7,043	3,273	3,214	5,133	45,738
Central banks	343	9,138	—	—	—	—	9,481
Credit institutions	6,935	1,514	2,728	590	12	357	12,136
Customers	5,041	4,104	4,315	2,683	3,202	4,776	24,121
Non-trading financial assets mandatorily at fair value through profit or loss	**275**	**—**	**—**	**—**	**69**	**4,142**	**4,486**
Equity instruments	—	—	—	—	—	3,234	3,234
Debt instruments	85	—	—	—	—	615	700
Loans and advances	190	—	—	—	69	293	552
Central banks	—	—	—	—	—	—	—
Credits institutions	—	—	—	—	—	—	—
Customers	190	—	—	—	69	293	552
Financial assets at fair value through other comprehensive income	**—**	**—**	**—**	**—**	**—**	**2,783**	**2,783**
Equity instruments	—	—	—	—	—	2,783	2,783
Hedging derivatives	**1,534**	**469**	**1,293**	**1,107**	**1,083**	**2,839**	**8,325**
Changes in the fair value of hedged items in portfolio hedges of interest rate risk	**173**	**8**	**132**	**205**	**381**	**1,081**	**1,980**
TOTAL FINANCIAL ASSETS	**20,242**	**22,045**	**36,383**	**27,465**	**23,480**	**51,621**	**181,236**

	31 December 2020 EUR million						
	Within 1 month	1 to 3 months	3 to 12 months	1 to 3 years	3 to 5 years	More than 5 years	Total
FINANCIAL LIABILITIES							
Financial liabilities held for trading	**16,754**	**3,727**	**6,286**	**17,635**	**16,036**	**20,729**	**81,167**
Derivatives	1,132	3,206	5,800	17,566	16,036	20,729	64,469
Shorts positions	15,622	521	486	69	—	—	16,698
Deposits	—	—	—	—	—	—	—
Central banks	—	—	—	—	—	—	—
Credits institutions	—	—	—	—	—	—	—
Customers	—	—	—	—	—	—	—
Marketable debt securities	—	—	—	—	—	—	—
Other financial liabilities	—	—	—	—	—	—	—
Financial liabilities designated at fair value through profit or loss	**13,468**	**1,732**	**2,228**	**2,893**	**1,121**	**26,596**	**48,038**
Deposits	13,459	1,709	1,954	2,497	518	23,461	43,598
Central banks	841	866	783	—	—	—	2,490
Credits institutions	3,673	112	935	1,493	171	381	6,765
Customers	8,945	731	236	1,004	347	23,080	34,343
Marketable debt securities	9	23	274	396	603	3,135	4,440
Other financial liabilities	—	—	—	—	—	—	—
Hedging derivatives	**2,619**	**200**	**588**	**748**	**641**	**2,073**	**6,869**
Changes in the fair value of hedged items in portfolio hedges of interest rate risk	3	6	40	74	64	99	286
TOTAL FINANCIAL LIABILITIES	**32,844**	**5,665**	**9,142**	**21,350**	**17,862**	**49,497**	**136,360**

	31 December 2020 EUR million						
	Within 1 month	1 to 3 months	3 to 12 months	1 to 3 years	3 to 5 years	More than 5 years	Total
Memorandum items							
Loans commitment granted	104,725	9,496	28,207	47,876	40,458	10,468	241,230
Financial guarantees granted	1,809	852	3,732	4,134	1,169	681	12,377
Other commitments granted	39,205	4,529	10,497	5,101	3,207	1,999	64,538
MEMORANDUM ITEMS	**145,739**	**14,877**	**42,436**	**57,111**	**44,834**	**13,148**	**318,145**

	31 December 2019						
	EUR million						
	Within 1 month	1 to 3 months	3 to 12 months	1 to 3 years	3 to 5 years	More than 5 years	Total
FINANCIAL ASSETS							
Financial assets held for trading	**4,864**	**3,522**	**19,740**	**21,603**	**18,083**	**40,418**	**108,230**
Derivatives	3,329	2,233	6,552	15,855	14,925	20,503	63,397
Equity instruments	—	—	—	—	—	12,437	12,437
Debt instruments	1,531	1,289	13,188	5,748	3,141	7,144	32,041
Loans and advances	4	—	—	—	17	334	355
Credits institutions	—	—	—	—	—	—	—
Customers	4	—	—	—	17	334	355
Financial assets designated at fair value through profit or loss	**24,110**	**13,167**	**7,602**	**5,175**	**3,878**	**8,137**	**62,069**
Debt instruments	457	10	81	652	381	1,605	3,186
Loans and advances	23,653	13,157	7,521	4,523	3,497	6,532	58,883
Central banks	1,744	4,729	—	—	—	—	6,473
Credit institutions	13,186	4,946	1,534	1,015	9	959	21,649
Customers	8,723	3,482	5,987	3,508	3,488	5,573	30,761
Non-trading financial assets mandatorily at fair value through profit or loss	**272**	**0**	**4**	**11**	**117**	**4,507**	**4,911**
Equity instruments	—	—	—	—	—	3,350	3,350
Debt instruments	—	—	—	11	117	1,047	1,175
Loans and advances	272	—	4	—	—	110	386
Central banks	—	—	—	—	—	—	—
Credits institutions	—	—	—	—	—	—	—
Customers	272	—	4	—	—	110	386
Financial assets at fair value through other comprehensive income	**—**	**—**	**—**	**—**	**—**	**2,863**	**2,863**
Equity instruments	—	—	—	—	—	2,863	2,863
Hedging derivatives	**807**	**86**	**601**	**1,646**	**904**	**3,172**	**7,216**
Changes in the fair value of hedged items in portfolio hedges of interest rate risk	**267**	**1**	**24**	**112**	**265**	**1,033**	**1,702**
TOTAL FINANCIAL ASSETS	30,320	16,776	27,971	28,547	23,247	60,130	186,991

	31 December 2019						
	EUR million						
	Within 1 month	1 to 3 months	3 to 12 months	1 to 3 years	3 to 5 years	More than 5 years	Total
FINANCIAL LIABILITIES							
Financial liabilities held for trading	**10,851**	**3,427**	**7,130**	**17,244**	**16,905**	**21,582**	**77,139**
Derivatives	2,672	1,973	6,591	16,965	16,023	18,792	63,016
Shorts positions	8,179	1,454	539	279	882	2,790	14,123
Deposits	—	—	—	—	—	—	—
Central banks	—	—	—	—	—	—	—
Credits institutions	—	—	—	—	—	—	—
Customers	—	—	—	—	—	—	—
Marketable debt securities	—	—	—	—	—	—	—
Other financial liabilities	—	—	—	—	—	—	—
Financial liabilities designated at fair value through profit or loss	**21,929**	**2,259**	**5,307**	**3,565**	**1,450**	**26,485**	**60,995**
Deposits	21,904	2,225	4,909	2,429	780	24,864	57,111
Central banks	8,831	1,228	2,795	—	—	—	12,854
Credits institutions	4,133	521	1,857	2,132	11	686	9,340
Customers	8,940	476	257	297	769	24,178	34,917
Marketable debt securities	14	34	398	1,021	670	1,621	3,758
Other financial liabilities	11	—	—	115	—	—	126
Hedging derivatives	**1,997**	**337**	**848**	**678**	**528**	**1,660**	**6,048**
Changes in the fair value of hedged items in portfolio hedges of interest rate risk	3	6	26	53	59	122	269
TOTAL FINANCIAL LIABILITIES	**34,780**	**6,029**	**13,311**	**21,540**	**18,942**	**49,849**	**144,451**

	31 December 2019						
	EUR million						
	Within 1 month	1 to 3 months	3 to 12 months	1 to 3 years	3 to 5 years	More than 5 years	Total
Memorandum items							
Loans commitment granted	98,630	16,529	30,370	37,097	48,072	10,481	241,179
Financial guarantees granted	2,176	1,791	5,626	1,933	1,364	760	13,650
Other commitments granted	44,950	3,052	9,957	4,606	4,132	2,198	68,895
MEMORANDUM ITEMS	**145,756**	**21,372**	**45,953**	**43,636**	**53,568**	**13,439**	**323,724**

b) Equivalent euro value of assets and liabilities

The detail of the main foreign currency balances in the consolidated balance sheet, based on the nature of the related items, is as follows:

Equivalent value in EUR million

	2021		2020		2019	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
Cash, cash balances at central banks and other deposits on demand	105,457	—	76,882	—	65,205	—
Financial assets/liabilities held for trading	65,345	49,314	66,448	50,494	60,526	45,262
Non-trading financial assets mandatorily at fair value through profit or loss	2,460	—	2,248	—	2,611	—
Other financial assets/liabilities at fair value through profit or loss	1,230	9,103	24,015	18,347	25,938	29,593
Financial assets at fair value through other comprehensive income	78,086	—	79,688	—	76,402	—
Financial assets at amortized cost	680,774	—	610,152	—	656,564	—
Investments	1,666	—	1,671	—	1,355	—
Tangible assets	22,350	—	21,617	—	24,662	—
Intangible assets	10,066	—	9,609	—	21,942	—
Financial liabilities at amortized cost	—	796,395	—	726,516	—	752,188
Liabilities under insurance contracts	—	10	—	13	—	13
Other	22,631	20,420	26,433	22,801	25,410	23,428
	990,065	**875,242**	**918,763**	**818,171**	**960,615**	**850,484**

c) Fair value of financial assets and liabilities not measured at fair value

The financial assets owned by the Group are measured at fair value in the accompanying consolidated balance sheet, except for cash, cash balances at central banks and other deposits on demand, loans and advances at amortised cost.

Similarly, the Group's financial liabilities -except for financial liabilities held for trading, those measured at fair value and derivatives other than those having as their underlying equity instruments whose market value cannot be estimated reliably- are measured at amortised cost in the accompanying consolidated balance sheet.

Following is a comparison of the carrying amounts of the Group's financial instruments measured at other than fair value and their respective fair values at year-end:

i) Financial assets measured at other than fair value

EUR million

	2021					2020					2019				
Assets	Carrying amount	Fair value	Level 1	Level 2	Level 3	Carrying amount	Fair value	Level 1	Level 2	Level 3	Carrying amount	Fair value	Level 1	Level 2	Level 3
Loans and advances	1,002,190	1,006,711	—	69,840	936,871	932,300	940,258	—	65,755	874,503	965,693	975,523	—	82,045	893,478
Debt instruments	35,708	35,378	13,558	12,158	9,662	26,078	26,532	6,753	11,899	7,880	29,789	30,031	10,907	9,971	9,153
	1,037,898	**1,042,089**	**13,558**	**81,998**	**946,533**	**958,378**	**966,790**	**6,753**	**77,654**	**882,383**	**995,482**	**1,005,554**	**10,907**	**92,016**	**902,631**

ii) Financial liabilities measured at other than fair value

EUR million

	2021					2020					2019				
Liabilities*	Carrying amount	Fair value	Level 1	Level 2	Level 3	Carrying amount	Fair value	Level 1	Level 2	Level 3	Carrying amount	Fair value	Level 1	Level 2	Level 3
Deposits	1,078,587	1,076,876	—	286,613	790,263	990,391	990,807	—	263,517	727,290	942,417	942,397	—	245,143	697,254
Debt instruments	240,709	246,697	109,346	115,034	22,317	230,829	241,174	91,771	125,031	24,372	258,219	266,784	84,793	149,516	32,475
	1,319,296	**1,323,573**	**109,346**	**401,647**	**812,580**	**1,221,220**	**1,231,981**	**91,771**	**388,548**	**751,662**	**1,200,636**	**1,209,181**	**84,793**	**394,659**	**729,729**

* At 31 December 2021, Grupo Santander had other financial liabilities that amounted to EUR 29,873 million, EUR 26,968 million in 2020 and EUR 30,109 million in 2019.

The main valuation methods and inputs used in the estimates at 31 December 2021 of the fair values of the financial assets and liabilities in the foregoing table were as follows:

- Financial assets at amortised cost: the fair value was estimated using the present value method. The estimates were made considering factors such as the expected maturity of the portfolio, market interest rates, spreads on newly approved transactions or market spreads -when available-.
- Financial liabilities at amortised cost:

i) Deposits: the fair value of short term deposits was taken to be their carrying amount. Factors such as the expected maturity of the transactions and the Group's current cost of funding in similar transactions are consider for the estimation of long term deposits fair value. It had been used also current rates offered for deposits of similar remaining maturities.

ii) Marketable debt securities and subordinated liabilities: the fair value was calculated based on market prices for these instruments -when available- or by the present value method using market interest rates and spreads, as well as using any significant input which is not observable with market data if applicable.

iii) The fair value of cash, cash balances at central banks and other deposits on demand was taken to be their carrying amount since they are mainly short-term balances.

51. Primary and secondary segments reporting

Grupo Santander bases segment reporting on financial information presented to the chief operating decision maker, which excludes certain statutory results items that distort year-on-year comparisons and are not considered for management reporting. This financial information (underlying basis) is computed by adjusting reported results for the effects of certain gains and losses (e.g. capital gains, write-downs, impairment of goodwill, etc.). These gains and losses are items that management and investors ordinarily identify and consider separately to better understand the underlying trends in the business.

Grupo Santander has aligned the information in this note with the underlying information used internally for management reporting and with that presented in Grupo Santander's other public documents.

Grupo Santander executive committee has been determined to be its chief operating decision maker. Grupo Santander's operating segments reflect its organizational and managerial structures. Grupo Santander 's executive committee reviews internal reporting based on these segments to assess performance and allocate resources.

The segments are split by geographic area in which profits are earned and type of business. Grupo Santander prepares the information by aggregating the figures for Grupo Santander's various geographic areas and business units, relating it to both the accounting data of the units integrated in each segment and that provided by management information systems. The same general principles as those used in Grupo Santander are applied.

On 9 April 2021, Grupo Santander announced that, starting and effective with the financial information for the first quarter of 2021, Grupo Santander would carry out a change in the reportable segments to reflect our new organizational and management structure.

These changes in the reportable segments aim to align the segment information with their management and have no impact on the group's accounting figures.

The main changes, which have been applied to management information for all periods included in the consolidated financial statements, are the following:

1. Primary segments

– Creation of the new Digital Consumer Bank (DCB) segment, which includes:

  - Santander Consumer Finance (SCF), previously included in the Europe segment, and the consumer finance business in the United Kingdom, previously recorded in the country.

- Grupo Santander fully digital bank Openbank and the Open Digital Services (ODS) platform, which were previously included in the Santander Global Platform segment.

– Santander Global Platform (SGP), which incorporated our global digital services under a single unit, is no longer a primary segment. Its activities have been distributed as follows:

- Openbank and Open Digital Services (ODS), which, as mentioned above, are now included under the new Digital Consumer Bank reporting segment.

- The business recorded in Global Payment Services (Merchant Solutions -GMS-, Trade Solutions -GTS- and Consumer Solutions -Superdigital and Pago FX-) has been allocated to the three main geographic segments, Europe, North America and South America, with no impact on the information reported for each country.

2. Secondary segments

– Creation of the PagoNxt segment, which incorporates simple and accessible digital payment solutions to drive customer loyalty and allows us to combine our most disruptive payment businesses into a single autonomous company, providing global technology solutions for our banks and new customers in the open market, and which has been structured into three businesses, previously included in SGP:

- Merchant Solutions: acquiring solutions for merchants.

- Trade Solutions: solutions for SMEs and companies operating internationally.

- Consumer Solutions: payment solutions for individuals aimed at underbanked populations.

– Annual adjustment of the perimeter of the Global Customer Relationship Model between Retail Banking and Santander Corporate & Investment Banking and between Retail Banking and Wealth Management & Insurance.

– Elimination of the Santander Global Platform reporting segment:

- Openbank and ODS are now recorded in the Retail Banking segment.

- The remaining Santander Global Platform businesses form the new PagoNxt reporting segment.

Grupo Santander recasted the corresponding information of earlier periods considering the changes included in this section. As stated above, group consolidated figures remain unchanged.

a) Primary segments

This primary level of segmentation, which is based on the Group's management structure, comprises five reportable segments: four operating areas plus the Corporate Centre. The operating areas are:

- Europe: which comprises all business activity carried out in the region, except that included in Digital Consumer Bank. Detailed financial information is provided on Spain, the UK, Portugal and Poland.

- North America: which comprises all the business activities carried out in Mexico and the US, which includes the holding company (SHUSA) and the businesses of Santander Bank, Santander Consumer USA, the specialized business unit Banco Santander International, Santander Investment Securities (SIS) and the New York branch.

- South America: includes all the financial activities carried out by Grupo Santander through its banks and subsidiary banks in the region. Detailed information is provided on Brazil, Chile, Argentina, Uruguay, Peru and Colombia.

- Digital Consumer Bank: includes Santander Consumer Finance, which incorporates the entire consumer finance business in Europe, Openbank and ODS.

In addition to these operating units, which report by geographic area and businesses, Grupo Santander continues to maintain the area of Corporate Centre, that includes the centralized activities relating to equity stakes in financial companies, financial management of the structural exchange rate position, assumed within the sphere of Grupo Santander's assets and liabilities committee, as well as management of liquidity and of shareholders' equity via issuances.

As Grupo Santander's holding entity, this area manages all capital and reserves and allocations of capital and liquidity with the rest of businesses. It also incorporates amortization of goodwill but not the costs related to the Grupo Santander's central services (charged to the areas), except for corporate and institutional expenses related to the Grupo Santander's functioning.

With regard to the balance sheet, due to the required segregation of the various business units (included in a single consolidated balance sheet), the amounts lent and borrowed between the units are shown as increases in the assets and liabilities of each business. These amounts relating to intra-Group liquidity are eliminated and are shown in the Intra-Group eliminations column in the table below in order to reconcile the amounts contributed by each business unit to the consolidated Grupo Santander's balance sheet.

There are no customers located in any of the areas that generate income exceeding 10% of Total income.

The condensed balance sheets and income statements of the various primary segments are as follows:

EUR million

	2021						
Balance sheet (condensed)	**Europe**	**North America**	**South America**	**Digital Consumer Bank**	**Corporate Centre**	**Intra-Group eliminations**	**Total**
Total assets	**981,154**	**244,734**	**257,805**	**159,683**	**215,467**	**(263,008)**	**1,595,835**
Loans and advances to customers	590,610	137,428	123,920	113,937	6,787	—	972,682
Cash, balances at central banks and credit institutions and other deposits on demand	256,433	34,857	43,134	33,482	88,918	(174,152)	282,672
Debt instruments	67,068	38,500	51,451	5,280	1,554	—	163,853
Other financial assets	37,250	12,555	23,809	47	2,203	—	75,864
Other asset accounts	29,793	21,394	15,491	6,937	116,005	(88,856)	100,764
Total liabilities	**936,057**	**215,955**	**237,364**	**147,108**	**136,450**	**(174,152)**	**1,498,782**
Customer deposits	619,486	121,989	120,500	55,327	1,042	—	918,344
Central banks and credit institutions	193,307	35,059	44,303	49,109	53,563	(174,152)	201,189
Marketable debt securities	73,629	38,061	23,461	36,710	74,302	—	246,163
Other financial liabilities***	38,706	14,652	40,490	1,397	430	—	95,675
Other liabilities accounts****	10,929	6,194	8,610	4,565	7,113	—	37,411
Total equity	**45,097**	**28,779**	**20,441**	**12,575**	**79,017**	**(88,856)**	**97,053**
Other customer funds under management	**114,698**	**13,949**	**57,428**	**852**	**—**	**—**	**186,927**
Investment funds	82,641	12,112	51,234	—	—	—	145,987
Pension funds	15,994	84	—	—	—	—	16,078
Assets under management	16,063	1,753	6,194	852	—	—	24,862
Other non-managed marketed customer funds	**25,572**	**20,213**	**103**	**2,497**	**—**	**—**	**48,385**

* Including Trading derivatives and Equity instruments.

** Including Hedging derivatives, Changes in the fair value of hedged items in portfolio hedges of interest risk, Investments in joint ventures and associated entities, Assets under insurance or reinsurance contracts, tangible assets, intangible assets, tax assets, other assets and non-current assets held for sale.

*** Including Trading derivatives, Short positions and Other financial liabilities.

**** Including Hedging derivatives, Changes in the fair value of hedged items in portfolio hedges of interest risk, Liabilities under insurance or reinsurance contracts, provisions, tax liabilities, other liabilities and liabilities associated with non-current assets held for sale.

EUR million

	2020						
Balance sheet (condensed)	Europe	North America	South America	Digital Consumer Bank	Corporate Centre	Intra-Group eliminations	Total
Total assets	**942,620**	**223,797**	**238,746**	**146,851**	**182,587**	**(226,351)**	**1,508,250**
Loans and advances to customers	563,581	120,571	113,745	113,258	5,044	—	916,199
Cash, balances at central banks and credit institutions and other deposits on demand	213,561	28,666	43,154	21,754	61,174	(142,513)	225,796
Debt instruments	81,271	38,403	49,304	5,659	1,917	—	176,554
Other financial assets*	48,313	15,439	17,342	30	1,645	—	82,769
Other asset accounts**	35,894	20,718	15,201	6,150	112,807	(83,838)	106,932
Total liabilities	**899,990**	**199,735**	**218,918**	**134,241**	**106,557**	**(142,513)**	**1,416,928**
Customer deposits	582,353	102,924	111,808	51,399	826	—	849,310
Central banks and credit institutions	167,014	38,017	42,040	41,567	38,554	(142,513)	184,679
Marketable debt securities	84,201	36,583	21,280	35,965	57,240	—	235,269
Other financial liabilities***	54,634	16,182	35,456	1,370	493	—	108,135
Other liabilities accounts****	11,788	6,029	8,334	3,940	9,444	—	39,535
Total equity	**42,630**	**24,062**	**19,828**	**12,610**	**76,030**	**(83,838)**	**91,322**
Other customer funds under management	**99,301**	**12,501**	**55,965**	**475**	**12**	**—**	**168,254**
Investment funds	71,239	10,864	49,850	—	12	—	131,965
Pension funds	15,487	90	—	—	—	—	15,577
Assets under management	12,575	1,547	6,115	475	—	—	20,712
Other non-managed marketed customer funds	**21,913**	**15,920**	**72**	**658**	**—**	**—**	**38,563**

* Including Trading derivatives and Equity instruments.

** Including Hedging derivatives, Changes in the fair value of hedged items in portfolio hedges of interest risk, Investments in joint ventures and associated entities, Assets under insurance or reinsurance contracts, tangible assets, intangible assets, tax assets, other assets and non-current assets held for sale.

*** Including Trading derivatives, Short positions and Other financial liabilities.

**** Including' Hedging derivatives', Changes in the fair value of hedged items in portfolio hedges of interest risk, Liabilities under insurance or reinsurance contracts, provisions, tax liabilities, other liabilities and liabilities associated with non-current assets held for sale.

EUR million

	2019						
Balance sheet (condensed)	**Europe**	**North America**	**South America**	**Digital Consumer Bank**	**Corporate Centre**	**Intra-Group eliminations**	**Total**
Total assets	**926,768**	**223,972**	**253,919**	**140,273**	**168,352**	**(190,589)**	**1,522,695**
Loans and advances to customers	563,101	133,727	125,122	114,504	5,764	—	942,218
Cash, balances at central banks and credit institutions and other deposits on demand	171,974	22,904	51,379	17,440	32,804	(107,895)	188,606
Debt instruments	101,189	33,749	45,622	3,196	840	—	184,596
Other financial assets*	53,918	10,822	14,864	37	2,406	—	82,047
Other asset accounts**	36,586	22,770	16,932	5,096	126,538	(82,694)	125,228
Total liabilities	**882,479**	**199,993**	**231,361**	**128,107**	**77,991**	**(107,895)**	**1,412,036**
Customer deposits	559,720	98,915	114,817	50,120	793	—	824,365
Central banks and credit institutions	156,201	38,952	41,999	33,652	12,254	(107,895)	175,163
Marketable debt securities	94,882	44,097	29,840	38,661	54,497	—	261,977
Other financial liabilities***	59,241	11,773	34,072	1,652	636	—	107,374
Other liabilities accounts****	12,435	6,256	10,633	4,022	9,811	—	43,157
Total equity	**44,289**	**23,979**	**22,558**	**12,166**	**90,361**	**(82,694)**	**110,659**
Other customer funds under management	**86,558**	**14,319**	**76,023**	**—**	**11**	**—**	**176,911**
Investment funds	62,203	11,703	69,071	—	11	—	142,988
Pension funds	11,746	98	—	—	—	—	11,844
Assets under management	12,609	2,518	6,952	—	—	—	22,079
Other non-managed marketed customer funds	**32,707**	**15,872**	**60**	**851**	**—**	**—**	**49,490**

* Including 'Trading derivatives' and 'Equity instruments'.
** Including 'Hedging derivatives', 'Changes in the fair value of hedged items in portfolio hedges of interest risk', 'Investments in joint ventures and associated entities'', 'Assets under insurance or reinsurance contracts', 'Tangible assets', 'Intangible assets', 'Tax assets', other assets and non-current assets held for sale.
*** Including Trading derivatives, Short positions and Other financial liabilities.
**** Including Hedging derivatives, Changes in the fair value of hedged items in portfolio hedges of interest risk, Liabilities under insurance or reinsurance contracts, provisions, tax liabilities, other liabilities and liabilities associated with non-current assets held for sale.

The condensed income statements for the primary segments are as follows:

EUR million

	2021					
Underlying income statement (condensed)	**Europe**	**North America**	**South America**	**Digital Consumer Bank**	**Corporate centre**	**Total**
Net interest income	**10,952**	**8,204**	**11,323**	**4,281**	**(1,390)**	**33,370**
Net fee income	4,344	1,644	3,721	821	(28)	10,502
Gains (losses) on financial transactions*	756	224	716	8	(141)	1,563
Other operating income**	260	914	(407)	229	(27)	969
Total income	**16,312**	**10,986**	**15,353**	**5,339**	**(1,586)**	**46,404**
Administrative expenses, depreciation and amortisation	(8,318)	(4,967)	(5,379)	(2,405)	(346)	(21,415)
Net operating income* **	**7,994**	**6,019**	**9,974**	**2,934**	**(1,932)**	**24,989**
Net loan-loss provisions****	(2,293)	(1,210)	(3,251)	(527)	(155)	(7,436)
Other gains (losses) and provisions*****	(1,290)	(145)	(474)	(194)	(190)	(2,293)
Operating profit/(loss) before tax	**4,411**	**4,664**	**6,249**	**2,213**	**(2,277)**	**15,260**
Tax on profit	(1,362)	(1,055)	(2,365)	(536)	242	(5,076)
Profit from continuing operations	**3,049**	**3,609**	**3,884**	**1,677**	**(2,035)**	**10,184**
Net profit from discontinued operations	—	—	—	—	—	—
Consolidated profit	**3,049**	**3,609**	**3,884**	**1,677**	**(2,035)**	**10,184**
Non-controlling interests	71	556	556	345	2	1,530
Attributable profit to the parent	**2,978**	**3,053**	**3,328**	**1,332**	**(2,037)**	**8,654**

* Gains (losses) on financial transactions includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Gain or losses on financial assets and liabilities not measured at fair value through profit or loss, net, Gain or losses on financial assets and liabilities held for trading, net, Gains or losses on non-trading financial assets and liabilities mandatorily at fair value through profit or loss, net, Gain or losses on financial assets and liabilities measured at fair value through profit or loss, net, Gain or losses from hedge accounting, net and Exchange differences, net.

** Other operating income includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Dividend income; Income from companies accounted for using the equity method, Other operating income, Other operating expenses, Income from assets under insurance or reinsurance contracts and Expenses from liabilities under insurance or reinsurance contracts.

*** 'Net Operating Income' is used for the Group's internal reporting and management reporting purposes but is not a line item in the statutory consolidated income statement.

**** 'Net loan-loss provisions' refers to Impairment or reversal of impairment at financial assets not measured at fair value through profit or loss and net gains and losses from changes line item in the statutory income statement. Additionally, includes a release of EUR 29 million mainly corresponding to the results by commitments and contingent risks includes in the line of the statutory income statement of provisions or reversal of provisions.

***** Other gains (losses) and provisions includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Provisions or reversal of provisions except a release EUR 29 million mainly corresponding to the results by commitments and contingent risks; Impairment of investments in joint ventures and associates, net; Impairment on non-financial assets, net; Gains or losses on non-financial assets, net; Negative goodwill recognised in results and Gains or losses on non-current assets held for sale not classified as discontinued operations.

EUR million

Underlying income statement (condensed)	2020 Europe	North America	South America	Digital Consumer Bank	Corporate Centre	Total
Net interest income	**9,912**	**8,470**	**10,723**	**4,263**	**(1,374)**	**31,994**
Net fee income	4,000	1,684	3,589	771	(29)	10,015
Gains (losses) on financial transactions*	868	251	765	16	287	2,187
Other operating income**	(106)	628	(209)	116	(25)	404
Total income	**14,674**	**11,033**	**14,868**	**5,166**	**(1,141)**	**44,600**
Administrative expenses, depreciation and amortisation	(8,275)	(4,677)	(5,357)	(2,329)	(329)	(20,967)
Net operating income* **	**6,399**	**6,356**	**9,511**	**2,837**	**(1,470)**	**23,633**
Net loan-loss provisions****	(3,345)	(3,917)	(3,924)	(957)	(31)	(12,174)
Other gains (losses) and provisions*****	(970)	(132)	(320)	49	(412)	(1,785)
Operating profit/(loss) before tax	**2,084**	**2,307**	**5,267**	**1,929**	**(1,913)**	**9,674**
Tax on profit	(593)	(574)	(1,923)	(495)	69	(3,516)
Profit from continuing operations	**1,491**	**1,733**	**3,344**	**1,434**	**(1,844)**	**6,158**
Net profit from discontinued operations	—	—	—	—	—	—
Consolidated profit	**1,491**	**1,733**	**3,344**	**1,434**	**(1,844)**	**6,158**
Non-controlling interests	78	261	437	301	—	1,077
Attributable profit to the parent	**1,413**	**1,472**	**2,907**	**1,133**	**(1,844)**	**5,081**

* Gains (losses) on financial transactions includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Gain or losses on financial assets and liabilities not measured at fair value through profit or loss, net, Gain or losses on financial assets and liabilities held for trading, net, Gains or losses on non-trading financial assets and liabilities mandatorily at fair value through profit or loss, net, Gain or losses on financial assets and liabilities measured at fair value through profit or loss, net, Gain or losses from hedge accounting, net and Exchange differences, net.

** Other operating income includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Dividend income; Income from companies accounted for using the equity method, Other operating income, Other operating expenses, Income from assets under insurance or reinsurance contracts and Expenses from liabilities under insurance or reinsurance contracts.

*** 'Net Operating Income' is used for the Group's internal reporting and management reporting purposes but is not a line item in the statutory consolidated income statement.

**** 'Loan loss provisions' refers to Impairment or reversal of impairment at financial assets not measured at fair value through profit or loss and net gains and losses from changes line item in the statutory income statement. Additionally, includes a release of EUR 50 million mainly corresponding to the results by commitments and contingent risks includes in the line of the statutory income statement of provisions or reversal of provisions.

***** Other gains (losses) and provisions includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Provisions or reversal of provisions except a release of EUR 50 million mainly corresponding to the results by commitments and contingent risks; Impairment of investments in joint ventures and associates, net; Impairment on non-financial assets, net; Gains or losses on non-financial assets, net; Negative goodwill recognised in results and Gains or losses on non-current assets held for sale not classified as discontinued operations.

EUR million

	2019					
Underlying income statement (condensed)	**Europe**	**North America**	**South America**	**Digital Consumer Bank**	**Corporate Centre**	**Total**
Net interest income	**10,072**	**8,926**	**13,316**	**4,221**	**(1,252)**	**35,283**
Net fee income	4,423	1,776	4,787	843	(50)	11,779
Gains (losses) on financial transactions*	1,045	229	564	(10)	(297)	1,531
Other operating income**	399	673	(242)	90	(19)	901
Total income	**15,939**	**11,604**	**18,425**	**5,144**	**(1,618)**	**49,494**
Administrative expenses, depreciation and amortisation	(8,912)	(4,983)	(6,673)	(2,339)	(373)	(23,280)
Net operating income* **	**7,027**	**6,621**	**11,752**	**2,805**	**(1,991)**	**26,214**
Net loan-loss provisions****	(1,333)	(3,656)	(3,789)	(508)	(35)	(9,321)
Other gains (losses) and provisions*****	(792)	(203)	(749)	18	(238)	(1,964)
Operating profit/(loss) before tax	**4,902**	**2,762**	**7,214**	**2,315**	**(2,264)**	**14,929**
Tax on profit	(1,340)	(681)	(2,640)	(599)	157	(5,103)
Profit from continuing operations	**3,562**	**2,081**	**4,574**	**1,716**	**(2,107)**	**9,826**
Net profit from discontinued operations	—	—	—	—	—	—
Consolidated profit	**3,562**	**2,081**	**4,574**	**1,716**	**(2,107)**	**9,826**
Non-controlling interests	167	426	664	326	(9)	1,574
Attributable profit to the parent	**3,395**	**1,655**	**3,910**	**1,390**	**(2,098)**	**8,252**

* Gains (losses) on financial transactions includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Gain or losses on financial assets and liabilities not measured at fair value through profit or loss, net, Gain or losses on financial assets and liabilities held for trading, net, Gains or losses on non-trading financial assets and liabilities mandatorily at fair value through profit or loss, net, Gain or losses on financial assets and liabilities measured at fair value through profit or loss, net, Gain or losses from hedge accounting, net and Exchange differences, net.

** Other operating income includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Dividend income; Income from companies accounted for using the equity method, Other operating income, Other operating expenses, Income from assets under insurance or reinsurance contracts and Expenses from liabilities under insurance or reinsurance contracts.

*** 'Net Operating Income' is used for the Group's internal reporting and management reporting purposes but is not a line item in the statutory consolidated income statement.

**** 'Net loan-loss provisions' refers to Impairment or reversal of impairment at financial assets not measured at fair value through profit or loss and net gains and losses from changes line item in the statutory income statement. Additionally, includes a release of EUR 31 million mainly corresponding to the results by commitments and contingent risks includes in the line of the statutory income statement of provisions or reversal of provisions.

***** Other gains (losses) and provisions includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Provisions or reversal of provisions except a release of EUR 31 million mainly corresponding to the results by commitments and contingent risks; Impairment of investments in joint ventures and associates, net; Impairment on non-financial assets, net; Gains or losses on non-financial assets, net; Negative goodwill recognised in results and Gains or losses on non-current assets held for sale not classified as discontinued operations.

b) Secondary segments

At this secondary level, Grupo Santander is structured into Retail Banking, Santander Corporate & Investment Banking (SCIB), Wealth Management & Insurance (WM&I) and PagoNxt.

- Retail Banking: this covers all customer banking businesses, including consumer finance, except those of corporate banking which are managed through Santander Corporate & Investment Banking, asset management, private banking and insurance, which are managed by WM&I. The results of the hedging positions in each country are also included, conducted within the sphere of their respective assets and liabilities committees.
- Santander Corporate & Investment Banking (SCIB): this business reflects revenue from global corporate banking, investment banking and markets worldwide including treasuries managed globally (always after the appropriate distribution with Retail Banking customers), as well as equity business.
- Wealth Management & Insurance: includes the asset management business (Santander Asset Management), the corporate unit of Private Banking and International Private Banking in Miami and Switzerland (Santander Private Banking) and the insurance business (Santander Insurance).
- PagoNxt: this includes digital payment solutions, providing global technology solutions for Grupo Santander's banks and new customers in the open market. It is structured in three businesses: Merchant Solutions, International Trade and Consumer.

Although WM&I and PagoNxt do not meet the quantitative thresholds defined in IFRS 8, these segments are considered reportable by Grupo Santander and are disclosed separately because Grupo Santander's management believes that information about these segments are useful to users of the financial statements.

There are no customers located in a place different from the location of the Group's assets that generate revenues in excess of 10% of ordinary revenues.

The condensed income statements are as follows:

EUR million

	2021					
Underlying income statement (condensed)	**Retail Banking**	**Santander Corporate & Investment Banking**	**Wealth Management & Insurance**	**PagoNxt**	**Corporate centre**	**Total**
Net interest income	**31,389**	**2,995**	**375**	**1**	**(1,390)**	**33,370**
Net fee income	7,011	1,750	1,276	493	(28)	10,502
Gains (losses) on financial transactions*	920	684	101	(1)	(141)	1,563
Other operating income**	316	264	414	2	(27)	969
Total income	**39,636**	**5,693**	**2,166**	**495**	**(1,586)**	**46,404**
Administrative expenses, depreciation and amortisation	(17,193)	(2,301)	(902)	(673)	(346)	(21,415)
Net operating income* **	**22,443**	**3,392**	**1,264**	**(178)**	**(1,932)**	**24,989**
Net loan-loss provisions****	(7,114)	(130)	(27)	(10)	(155)	(7,436)
Other gains (losses) and provisions*****	(2,064)	(10)	10	(39)	(190)	(2,293)
Operating profit/(loss) before tax	**13,265**	**3,252**	**1,247**	**(227)**	**(2,277)**	**15,260**
Tax on profit	(4,052)	(938)	(304)	(24)	242	(5,076)
Profit/(loss) from continuing operations	**9,213**	**2,314**	**943**	**(251)**	**(2,035)**	**10,184**
Net profit/(loss) from discontinued operations	—	—	—	—	—	—
Consolidated profit/(loss)	**9,213**	**2,314**	**943**	**(251)**	**(2,035)**	**10,184**
Non-controlling interests	1,344	146	36	2	2	1,530
Attributable profit/(loss) to the parent	**7,869**	**2,168**	**907**	**(253)**	**(2,037)**	**8,654**

* Gains (losses) on financial transactions includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Gain or losses on financial assets and liabilities not measured at fair value through profit or loss, net, Gain or losses on financial assets and liabilities held for trading, net, Gains or losses on non-trading financial assets and liabilities mandatorily at fair value through profit or loss, net, Gain or losses on financial assets and liabilities measured at fair value through profit or loss, net, Gain or losses from hedge accounting, net and Exchange differences, net.

** Other operating income includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Dividend income; Income from companies accounted for using the equity method, Other operating income, Other operating expenses, Income from assets under insurance or reinsurance contracts and Expenses from liabilities under insurance or reinsurance contracts.

*** Net Operating Income is used for the Group's internal reporting and management reporting purposes but is not a line item in the statutory consolidated income statement.

**** Net loan-loss provisions refers to Impairment or reversal of impairment at financial assets not measured at fair value through profit or loss and net gains and losses from changes line item in the statutory income statement. Additionally, includes an addition of EUR 29 million mainly corresponding to the results by commitments and contingent risks included in the line provisions or reversal of provisions, net of the statutory income statement.

***** Other gains (losses) and provisions includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Provisions or reversal of provisions except an addition of EUR 29 million mainly corresponding to the results by commitments and contingent risks; Impairment of investments in joint ventures and associates, net; Impairment on non-financial assets, net; Gains or losses on non-financial assets, net; Negative goodwill recognized in results and Gains or losses on non-current assets held for sale not classified as discontinued operations.

EUR million

	2020					
Underlying income statement (condensed)	Retail Banking	Santander Corporate & Investment Banking (SCIB)	Wealth Management & Insurance	PagoNxt	Corporate Centre	Total
Net interest income	**30,056**	**2,918**	**394**	**(1)**	**(1,373)**	**31,994**
Net fee income	6,986	1,543	1,154	362	(30)	10,015
Gains (losses) on financial transactions*	1,133	670	98	(1)	287	2,187
Other operating income**	(153)	201	384	(3)	(25)	404
Total income	**38,022**	**5,332**	**2,030**	**357**	**(1,141)**	**44,600**
Administrative expenses, depreciation and amortisation	(17,285)	(2,038)	(872)	(443)	(329)	(20,967)
Net operating income* **	**20,737**	**3,294**	**1,158**	**(86)**	**(1,470)**	**23,633**
Net loan-loss provisions****	(11,633)	(470)	(29)	(12)	(30)	(12,174)
Other gains (losses) and provisions*****	(1,237)	(135)	—	(2)	(411)	(1,785)
Operating profit/(loss) before tax	**7,867**	**2,689**	**1,129**	**(100)**	**(1,911)**	**9,674**
Tax on profit	(2,525)	(773)	(270)	(15)	67	(3,516)
Profit/(loss) from continuing operations	**5,342**	**1,916**	**859**	**(115)**	**(1,844)**	**6,158**
Net profit/(loss) from discontinued operations	—	—	—	—	—	—
Consolidated profit/(loss)	**5,342**	**1,916**	**859**	**(115)**	**(1,844)**	**6,158**
Non-controlling interests	921	118	37	1	—	1,077
Attributable profit/(loss) to the parent	**4,421**	**1,798**	**822**	**(116)**	**(1,844)**	**5,081**

* Gains (losses) on financial transactions includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Gain or losses on financial assets and liabilities not measured at fair value through profit or loss, net, Gain or losses on financial assets and liabilities held for trading, net, Gains or losses on non-trading financial assets and liabilities mandatorily at fair value through profit or loss, net, Gain or losses on financial assets and liabilities measured at fair value through profit or loss, net, Gain or losses from hedge accounting, net and Exchange differences, net.

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**** Net loan-loss provisions refers to Impairment or reversal of impairment at financial assets not measured at fair value through profit or loss and net gains and losses from changes line item in the statutory income statement. Additionally, includes a release of EUR 50 million mainly corresponding to the results by commitments and contingent risks included in the line provisions or reversal of provisions, net of the statutory income statement.

***** Other gains (losses) and provisions includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Provisions or reversal of provisions except a release of EUR 50 million mainly corresponding to the results by commitments and contingent risks; Impairment of investments in joint ventures and associates, net; Impairment on non-financial assets, net; Gains or losses on non-financial assets, net; Negative goodwill recognized in results and Gains or losses on non-current assets held for sale not classified as discontinued operations.

EUR million

	2019					
Underlying income statement (condensed)	Retail Banking	Santander Corporate & Investment Banking (SCIB)	Wealth Management & Insurance	PagoNxt	Corporate Centre	Total
Net interest income	**33,308**	**2,728**	**479**	**20**	**(1,252)**	**35,283**
Net fee income	8,663	1,520	1,190	456	(50)	11,779
Gains (losses) on financial transactions*	1,025	689	117	(3)	(297)	1,531
Other operating income**	291	289	340	—	(19)	901
Total income	**43,287**	**5,226**	**2,126**	**473**	**(1,618)**	**49,494**
Administrative expenses, depreciation and amortisation	(19,280)	(2,281)	(939)	(407)	(373)	(23,280)
Net operating income* **	**24,007**	**2,945**	**1,187**	**66**	**(1,991)**	**26,214**
Net loan-loss provisions****	(9,132)	(155)	23	(21)	(36)	(9,321)
Other gains (losses) and provisions*****	(1,623)	(91)	(13)	—	(237)	(1,964)
Operating profit/(loss) before tax	**13,252**	**2,699**	**1,197**	**45**	**(2,264)**	**14,929**
Tax on profit	(4,132)	(815)	(280)	(33)	157	(5,103)
Profit/(loss) from continuing operations	**9,120**	**1,884**	**917**	**12**	**(2,107)**	**9,826**
Net profit/(loss) from discontinued operations	—	—	—	—	—	—
Consolidated profit/(loss)	**9,120**	**1,884**	**917**	**12**	**(2,107)**	**9,826**
Non-controlling interests	1,364	171	50	(2)	(9)	1,574
Attributable profit/(loss) to the parent	**7,756**	**1,713**	**867**	**14**	**(2,098)**	**8,252**

* Gains (losses) on financial transactions includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Gain or losses on financial assets and liabilities not measured at fair value through profit or loss, net, Gain or losses on financial assets and liabilities held for trading, net, Gains or losses on non-trading financial assets and liabilities mandatorily at fair value through profit or loss, net, Gain or losses on financial assets and liabilities measured at fair value through profit or loss, net, Gain or losses from hedge accounting, net and Exchange differences, net.

** Other operating income includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Dividend income; Income from companies accounted for using the equity method, Other operating income, Other operating expenses, Income from assets under insurance or reinsurance contracts and Expenses from liabilities under insurance or reinsurance contracts.

*** Net Operating Income is used for the Group's internal reporting and management reporting purposes but is not a line item in the statutory consolidated income statement.

**** Net loan-loss provisions refers to Impairment or reversal of impairment at financial assets not measured at fair value through profit or loss and net gains and losses from changes line item in the statutory income statement. Additionally, includes a release of EUR 31 million mainly corresponding to the results by commitments and contingent risks included in the line provisions or reversal of provisions, net of the statutory income statement.

***** Other gains (losses) and provisions includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Provisions or reversal of provisions except a release of EUR 31 million mainly corresponding to the results by commitments and contingent risks; Impairment of investments in joint ventures and associates, net; Impairment on non-financial assets, net; Gains or losses on non-financial assets, net; Negative goodwill recognized in results and Gains or losses on non-current assets held for sale not classified as discontinued operations.

c) Reconciliations of reportable segment results

The tables below reconcile the underlying basis results to the statutory results for each of the periods presented as required by IFRS 8. For the purposes of these reconciliations, all material reconciling items are separately identified and described.

Grupo Santander assets and liabilities for management reporting purposes do not differ from the statutory reported figures and therefore are not reconciled.

EUR million

2021			
Reconciliation of underlying results to statutory results	Underlying results	Adjustments	Statutory results
Net interest income	**33,370**	**—**	**33,370**
Net fee income	10,502	—	10,502
Gains (losses) on financial transactions*	1,563	—	1,563
Other operating income**	969	—	969
Total income	**46,404**	**—**	**46,404**
Administrative expenses, depreciation and amortisation	(21,415)	—	(21,415)
Net operating income* **	**24,989**	**—**	**24,989**
Net loan-loss provisions****	(7,436)	—	(7,436)
Other gains (losses) and provisions*****	(2,293)	(713)	(3,006)
Operating profit/(loss) before tax	**15,260**	**(713)**	**14,547**
Tax on profit	(5,076)	182	(4,894)
Adjusted profit for the year from continuing operations	**10,184**	**(531)**	**9,653**
Profit from discontinued operations (net)	—	—	—
Consolidated profit/(loss)	**10,184**	**(531)**	**9,653**
Non-controlling interests	(1,530)	1	(1,529)
Attributable profit/(loss) to the parent	**8,654**	**(530)**	**8,124**

* Gains (losses) on financial transactions includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Gain or losses on financial assets and liabilities not measured at fair value through profit or loss, net, Gain or losses on financial assets and liabilities held for trading, net, Gains or losses on non-trading financial assets and liabilities mandatorily at fair value through profit or loss, net, Gain or losses on financial assets and liabilities measured at fair value through profit or loss, net, Gain or losses from hedge accounting, net and Exchange differences, net.

** Other operating income includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Dividend income; Income from companies accounted for using the equity method, Other operating income, Other operating expenses, Income from assets under insurance or reinsurance contracts and Expenses from liabilities under insurance or reinsurance contracts.

*** Net Operating Income is used for the Group's internal reporting and management reporting purposes but is not a line item in the statutory consolidated income statement.

**** Net loan-loss provisions refers to Impairment or reversal of impairment at financial assets not measured at fair value through profit or loss and net gains and losses from changes line item in the statutory income statement. Additionally, includes an addition of EUR 29 million mainly corresponding to the results by commitments and contingent risks includes in the line of the statutory income statement of provisions or reversal of provisions.

***** Other gains (losses) and provisions includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Provisions or reversal of provisions except for an addition of EUR 29 million mainly corresponding to results from commitments and contingent risks; Impairment of investments in joint ventures and associates, net; Impairment on non-financial assets, net; Gains or losses on non-financial assets, net; Negative goodwill recognized in results and Gains or losses on non-current assets held for sale not classified as discontinued operations.

Explanation of adjustments:

- Restructuring costs for net impact of EUR -530 million, mainly in the United Kingdom and Portugal.

EUR million

2020			
Reconciliation of underlying results to statutory results	Underlying results	Adjustments	Statutory results
Net interest income	**31,994**	**—**	**31,994**
Net fee income	10,015	—	10,015
Gains (losses) on financial transactions*	2,187	—	2,187
Other operating income**	404	(321)	83
Total income	**44,600**	**(321)**	**44,279**
Administrative expenses, depreciation and amortisation	(20,967)	(163)	(21,130)
Net operating income* **	**23,633**	**(484)**	**23,149**
Net loan-loss provisions****	(12,174)	(258)	(12,432)
Other gains (losses) and provisions*****	(1,785)	(11,008)	(12,793)
Operating profit/(loss) before tax	**9,674**	**(11,750)**	**(2,076)**
Tax on profit	(3,516)	(2,116)	(5,632)
Adjusted profit for the year from continuing operations	**6,158**	**(13,866)**	**(7,708)**
Profit from discontinued operations (net)	—	—	—
Consolidated profit/(loss)	**6,158**	**(13,866)**	**(7,708)**
Non-controlling interests	1,077	(14)	1,063
Attributable profit/(loss) to the parent	**5,081**	**(13,852)**	**(8,771)**

* Gains (losses) on financial transactions includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Gain or losses on financial assets and liabilities not measured at fair value through profit or loss, net, Gain or losses on financial assets and liabilities held for trading, net, Gains or losses on non-trading financial assets and liabilities mandatorily at fair value through profit or loss, net, Gain or losses on financial assets and liabilities measured at fair value through profit or loss, net, Gain or losses from hedge accounting, net and Exchange differences, net.

** Other operating income includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Dividend income; Income from companies accounted for using the equity method, Other operating income, Other operating expenses, Income from assets under insurance or reinsurance contracts and Expenses from liabilities under insurance or reinsurance contracts.

*** Net Operating Income is used for the Group's internal reporting and management reporting purposes but is not a line item in the statutory consolidated income statement.

**** Net loan-loss provisions refers to Impairment or reversal of impairment at financial assets not measured at fair value through profit or loss and net gains and losses from changes line item in the statutory income statement. Additionally, includes an addition of EUR 50 million mainly corresponding to the results by commitments and contingent risks includes in the line of the statutory income statement of provisions or reversal of provisions.

***** Other gains (losses) and provisions includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Provisions or reversal of provisions except for an addition of EUR 50 million mainly corresponding to results from commitments and contingent risks; Impairment of investments in joint ventures and associates, net; Impairment on non-financial assets, net; Gains or losses on non-financial assets, net; Negative goodwill recognized in results and Gains or losses on non-current assets held for sale not classified as discontinued operations

Explanation of adjustments:

- Adjustment to the valuation of goodwill arising from the Group's acquisitions in the amount of EUR -10,100 million, which is included in the line 'Other gains (losses) and provisions'.
- Adjustment to the valuation of the deferred tax assets of the consolidated tax group in Spain in the amount of EUR -2,500 million, which is included in the 'Tax on profit' line.
- Restructuring costs with a net impact of EUR -1,114 million, which are included for their gross amount mainly in the line 'Other gains (losses) and provisions'.
- Other charges of EUR -138 million (related to sales of non-performing loans in Spain, cancellation of pension commitment costs and other expenses), which are recorded gross in 'Other gains (losses) and provisions', 'Net loan-loss provision' and 'Administrative expenses and depreciation and amortization'.

EUR million

2019			
Reconciliation of underlying results to statutory results	Underlying results	Adjustments	Statutory results
Net interest income	**35,283**	**—**	**35,283**
Net fee income	11,779	—	11,779
Gains (losses) on financial transactions*	1,531	—	1,531
Other operating income**	901	(265)	636
Total income	**49,494**	**(265)**	**49,229**
Administrative expenses, depreciation and amortisation	(23,280)	—	(23,280)
Net operating income*	**26,214**	**(265)**	**25,949**
Net loan-loss provisions****	(9,321)	—	(9,321)
Other gains (losses) and provisions*****	(1,964)	(2,121)	(4,085)
Operating profit/(loss) before tax	**14,929**	**(2,386)**	**12,543**
Tax on profit	(5,103)	676	(4,427)
Adjusted profit for the year from continuing operations	**9,826**	**(1,710)**	**8,116**
Profit from discontinued operations (net)	—	—	—
Consolidated profit/(loss)	**9,826**	**(1,710)**	**8,116**
Non-controlling interests	1,574	27	1,601
Attributable profit/(loss) to the parent	**8,252**	**(1,737)**	**6,515**

* Gains (losses) on financial transactions includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Gain or losses on financial assets and liabilities not measured at fair value through profit or loss, net, Gain or losses on financial assets and liabilities held for trading, net, Gains or losses on non-trading financial assets and liabilities mandatorily at fair value through profit or loss, net, Gain or losses on financial assets and liabilities measured at fair value through profit or loss, net, Gain or losses from hedge accounting, net and Exchange differences, net.

** Other operating income includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Dividend income; Income from companies accounted for using the equity method, Other operating income, Other operating expenses, Income from assets under insurance or reinsurance contracts and Expenses from liabilities under insurance or reinsurance contracts.

*** Net Operating Income is used for the Group's internal reporting and management reporting purposes but is not a line item in the statutory consolidated income statement.

**** Net loan-loss provisions refers to Impairment or reversal of impairment at financial assets not measured at fair value through profit or loss and net gains and losses from changes line item in the statutory income statement. Additionally, includes a release of EUR 31 million mainly corresponding to the results by commitments and contingent risks includes in the line of the statutory income statement of provisions or reversal of provisions.

***** Other gains (losses) and provisions includes the following line items in the statutory income statement, which are presented net for internal reporting and management reporting purposes: Provisions or reversal of provisions except a release of EUR 31 million mainly corresponding to results from commitments and contingent risks; Impairment of investments in joint ventures and associates, net; Impairment on non-financial assets, net; Gains or losses on non-financial assets, net; Negative goodwill recognized in results and Gains or losses on non-current assets held for sale not classified as discontinued operations.

Explanation of adjustments:

- Impairment of the goodwill assigned to Santander UK and provisions for PPI in the UK, with a net impact of EUR -1,491 million and EUR -183 million, respectively, reflected in the line 'Other gains (losses) and provisions'.
- Restructuring costs with a net impact of EUR -864 million, which are included in the line 'Other gains (losses) and provisions'.
- Losses related to real estate assets and holdings in Spain with a net impact of EUR -405 million, which are included in the 'Other operating income' and 'Other gains (losses) and provisions' lines.
- Provisions related to intangible assets and others, amounting to EUR -174 million, which are included for their gross amount in the line 'Other gains (losses) and provisions'.
- Capital gains on the sale of holdings in Prisma and on the integration of the custody business, with a net impact of EUR 136 million and EUR 693 million respectively, which are reflected at their gross amount in the line 'Other gains (losses) and provisions'.
- Positive impact due to changes in tax regulations in Brazil for a net amount of EUR 551 million, which is included in the line "Tax on profit'.

52. Related parties

The parties related to the Group are deemed to include, in addition to its subsidiaries, associates and joint ventures, the Bank's key management personnel (the members of its board of directors and the executive vice presidents, together with their close family members) and the entities over which the key management personnel may exercise significant influence or control.

Following below is the balance sheet balances and amounts of the Group's income statement corresponding to operations with the parties related to it, distinguishing between associates and joint ventures, members of the Bank's board of directors, the Bank's executive vice presidents, and other related parties. Related-party transactions were made on terms equivalent to those that prevail in arm's-length transactions or, when this was not the case, the related compensation in kind was recognized.

EUR million

	2021			
	Associates and joint ventures	Members of the board of directors	Executive vicepresident	Other related parties
Assets	**9,386**	**—**	**14**	**384**
Cash, cash balances at central banks and other deposits on demand	131	—	—	—
Loans and advances: credit institutions	437	—	—	—
Loans and advances: customers	8,148	—	14	384
Debt instruments	496	—	—	—
Others	174	—	—	—
Liabilities	**3,405**	**8**	**11**	**197**
Financial liabilities: credit institutions	867	—	—	—
Financial liabilities: customers	2,464	8	11	197
Marketable debt securities	—	—	—	—
Others	74	—	—	—
Income statement	**1,265**	**—**	**—**	**1**
Interest income	90	—	—	1
Interest expense	(13)	—	—	—
Gains/losses on financial assets and liabilities and others	(32)	—	—	—
Commission income	1,268	—	—	—
Commission expense	(48)	—	—	—
Other	**3,965**	**2**	**2**	**76**
Financial guarantees granted and Others	11	1	1	17
Loan commitments and Other commitments granted	314	1	1	13
Derivative financial instruments	3,640	—	—	46

EUR million

	2020			
	Associates and joint ventures	Members of the board of directors	Executive vicepresident	Other related parties
Assets	**8,473**	**—**	**24**	**95**
Cash, cash balances at central banks and other deposits on demand	151	—	—	—
Loans and advances: credit institutions	562	—	—	—
Loans and advances: customers	6,934	—	24	95
Debt instruments	423	—	—	—
Others	403	—	—	—
Liabilities	**3,593**	**4**	**16**	**159**
Financial liabilities: credit institutions	944	—	—	—
Financial liabilities: customers	2,557	4	16	159
Marketable debt securities	12	—	—	—
Others	80	—	—	—
Income statement	**1,269**	**—**	**—**	**3**
Interest income	106	—	—	2
Interest expense	(8)	—	—	—
Gains/losses on financial assets and liabilities and others	49	—	—	—
Commission income	1,154	—	—	1
Commission expense	(32)	—	—	—
Other	**4,097**	**1**	**1**	**52**
Financial guarantees granted and Others	14	—	—	3
Loan commitments and Other commitments granted	253	1	1	13
Derivative financial instruments	3,830	—	—	36

EUR million

	2019			
	Associates and joint ventures	Members of the board of directors	Executive vicepresident	Other related parties
Assets	**9,659**	**—**	**26**	**104**
Cash, cash balances at central banks and other deposits on demand	740	—	—	—
Loans and advances: credit institutions	961	—	—	—
Loans and advances: customers	6,950	—	26	104
Debt instruments	848	—	—	—
Others	160	—	—	—
Liabilities	**2,689**	**41**	**12**	**57**
Financial liabilities: credit institutions	563	—	—	—
Financial liabilities: customers	2,064	41	12	57
Marketable debt securities	—	—	—	—
Others	62	—	—	—
Income statement	**1,386**	**—**	**—**	**2**
Interest income	111	—	—	1
Interest expense	(15)	—	—	—
Gains/losses on financial assets and liabilities and others	47	—	—	—
Commission income	1,269	—	—	1
Commission expense	(26)	—	—	—
Other	**4,219**	**7**	**3**	**49**
Financial guarantees granted and Others	17	5	2	38
Loan commitments and Other commitments granted	197	1	1	6
Derivative financial instruments	4,005	1	—	5

The remaining required information is detailed in notes 5, 14 and 46.c.

53. Risk management

a) Risk principles and culture

Grupo Santander´s risk principles below are compulsory. They comply with regulatory requirements and are inspired by best market practices:

1. **All employees are risk managers** who must understand the risks associated with their functions and not assume risks with an impact that exceeds the Group's risk appetite or is unknown.

2. **Involvement of senior managers,** with consistent risk management and control through their conduct, actions and communications, as well as oversight of the risk culture and make sure Grupo Santander maintain the risk profile within the defined risk appetite.

3. **Independent risk management and control functions,** according to the three lines of defence model of Grupo Santander.

4. **A forward-looking, comprehensive approach to risk management and control** for all businesses and risk types.

5. **Complete and timely information** to identify, assess, manage and disclose risks to the appropriate level.

Grupo Santander's holistic control structure stands on these principles and includes strategic tools and processes set out in the risk appetite statement, such as annual planning and budget planning, scenario analysis, the risk reporting structure and risk identification and assessment.

1. Risk factors

Grupo Santander's risks categorization ensures effective risk management, control and reporting. The risk framework distinguishes these risk types:

- **Credit risk** relates to financial loss arising from the default or credit quality deterioration of a customer or counterparty, to which Santander has directly provided credit or assumed a contractual obligation.

- **Market risk** results from changes in interest rates, exchange rates, equities, commodities and other market factors, and from their effect on profit or capital. It includes the structural risk relates to market movements or balance sheets behaviour will change the value or profit generation of assets or liabilities in the banking book.

- **Liquidity risk** occurs if liquid financial resources are insufficient or too costly to obtain in order to meet liabilities when they fall due.

- **Capital risk** is the risk that arises from the possibility of having an inadequate quantity or quality of capital to meet internal business objectives, regulatory requirements or market expectations in the area of structural risk.

Grupo Santander also takes into account, on an ongoing basis in its management of the risk function, operational, regulatory compliance, model, reputational and strategic risks.

Besides, environmental and climate-related risk drivers are considered as factors that could impact the existing risks in the medium-to-long-term. These elements include, on the one hand, those derived from the physical effects of climate change, generated by one-off events as well as by chronic changes in the environment and, on the other hand, those derived from the process of transition to a development model with lower emissions, including legislative, technological or behaviour of economic agents changes.

The analysis of climate change scenarios has continued to advance during 2021 in the Group to try to cover the different casuistry related to the risks of transition to a low-carbon economy and/or the effects derived from the physical risk of possible climatic events in certain geographies where the Group operates.

Grupo Santander continues to make progress in the credit granting process following the EBA guidelines as well as in the development of a more restrictive financing policy, taking special account of the most sensitive sectors/activities, which includes ceasing to provide financial services to medium term to electricity generation customers with more than 10% of revenues dependent on coal and eliminate exposure to coal mining production in the world.

Grupo Santander has scheduled a series of actions to continue integrating climatic and environmental factors in the credit admission process, through i) their incorporation in the assessment processes of local credit committees, ii) their inclusion in the assignment of corporate ratings in the wholesale market (with a future expansion to retail banking) and in the process of setting prices through the entities' own ratings and the specific pricing that already exists for specific products with discount rates based on the fulfillment of various conditions , and iii) the inclusion of energy certificates in the valuation of collaterals.

Additionally, Grupo Santander has increased focus on the impact of climate risk in relation to market, structural and liquidity risk, which arise from the possibility that changes in climate may adversely affect the value of a financial instrument, a portfolio or the Group as a whole. This risk may have an impact both on financial instruments value or portfolios and on Santander's liquidity. Grupo Santander measures this risk through stress scenarios for both market and liquidity risk, which arises from the possibility that climate change may adversely affect the value of a financial instrument, a portfolio or the Group as a whole

2. Risk governance

Grupo Santander robust risk and compliance governance structure allows us to conduct effective oversight in line with our risk appetite. It stands on three lines of defence, a structure of committees and strong Group-subsidiary relations, guided by our risk culture, Risk Pro.

2.1 Lines of defence

Grupo Santander model of three lines of defence effectively manages and controls risks:

- **First line:** formed by businesses and functions that take or originate exposure to risk, it recognizes, measures, controls, monitors and reports on risks according to internal risk management regulation. Risk origination must be consistent with the approved risk appetite and related limits.

- **Second line:** formed by the Risk and Compliance and Conduct functions, it independently oversees and challenges the first line's risk management. Its duties include ensuring that risks are managed according to the risk appetite defined by senior management and strengthening our risk culture throughout Grupo Santander.

- **Third line:** the Internal Audit function, which is independent to ensure the board of directors and senior managers with high-quality and efficient internal controls, governance and risk management systems, helping to safeguard our value, solvency and reputation.

The Risk, Compliance & Conduct and Internal Audit functions are separate and independent. Each has direct access to the board of directors and its committees.

2.2 Risk committee structure

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

The **Group chief risk officer (Group CRO)**, who decides risk strategy and promotes proper risk culture, is in charge of overseeing all risks and challenging and advising business lines on risk management.

The **Group chief compliance officer (Group CCO)**, who decides compliance and conduct strategy, is in charge of controlling the risks within their purview and must provide the Group CRO with a complete overview on the situation of risks being monitored.

Both the Group CRO and the Group CCO have direct access and report to the risk supervision, regulation and compliance committee and the board of directors.

The executive risk, risk control and compliance and conduct committees are executive committees and have been delegated powers by the board.

Furthermore, risk functions have forums and regular meetings to manage and control the risks within their purview. Executive committees also delegate some duties to subordinate forums.

Their responsibilities include:

- Reporting to the Group CRO, the Group CCO, the risk control committee and the compliance and conduct committee on risk management according to risk appetite;

- monitoring and ensuring proper management of each risk factor; and

- overseeing measures to comply with supervisors and auditors' expectations.

Besides, Grupo Santander, in order to establish an adequate control environment for the management of each risk factors, the Risk and Compliance and Conduct functions have effective internal regulation to create the right environment to manage and control all risks.

Grupo Santander can also dictate new governance measures for special situations. During the Brexit crisis transition process, it set up separate steering committees and working groups with Santander UK. Also, to cope with the covid-19 crisis, it created special situation forums, in which close coordination with subsidiaries, local contingency plan activation and scenario analysis enhanced allocated resources and governance.

2.3 The Group's relationship with subsidiaries

In all subsidiaries, the risk and compliance management and control model is consistent with the frameworks approved by Grupo Santander's board of directors, which they adhere to through their own boards and can only adapt according to local law and regulation. In its duty to carry out aggregate risk oversight, Grupo Santander validates and challenges subsidiaries' internal regulation and transactions, which results in a common risk management model across the Group.

In 2021, Grupo Santander continued to strengthen the regional subsidiary relations model, based on regions, to find synergies for common operations and platforms building on the global and regional scale; to streamline processes; and to tighten control mechanisms so Grupo Santander's business can grow, allocate capital more efficiently and offer the best service to customers.

In this sense, each local CRO interact regularly with their regional head of risk, the Group CRO and the Group CCO in periodic regional or country control meetings. Local and global Risk and Compliance functions also hold follow-up meetings to address special matters. The Group CRO and the Group CCO and regional heads of risk are involved in appointing, setting of objectives, reviewing and compensating their local counterparts to ensure proper risk management.

Grupo Santander enhances its relations with subsidiaries and its advanced risk management model through:

- Close collaboration between countries in the same region to carry out common initiatives efficiently;

- structural change, subsidiary benchmarks and a strategic vision for the function to implement advanced risk management infrastructures and practices;

- the exchange of best practices to strengthen processes and drive innovation in order to achieve a quantitative impact.;

- identification of talent in risk and compliance teams, promoting international mobility through a global risk talent programme and tightening succession plans.

3. Management processes and tools

Grupo Santander has these effective risk management processes and tools:

3.1 Risk appetite and structure of limits

Risk appetite is the volume and type of risks Grupo Santander deem prudent for the business strategy, even in unforeseen circumstances. It considers adverse scenarios that could have a negative impact on capital, liquidity and profitability.

The board sets the Group's risk appetite statement (RAS) every year. Grupo Santander subsidiaries' boards also set their own risk appetites annually. Each of those risk appetites translates into risk management limits and policies based on risk type, portfolio and segment.

3.1.1. Business model and risk appetite fundamentals

Grupo Santander's risk appetite is consistent with the risk culture and business model built on customer focus, scale and diversification. At the core of Grupo Santander's risk appetite are:

- A medium-low and predictable target risk profile that is centred on retail and commercial banking, internationally diversified operations and strong market share;
- Stable, recurrent earnings and shareholder remuneration, sustained by a sound base of capital, liquidity and sources of funding;
- Independent subsidiaries that manage their own capital and liquidity, with risk profiles that do not compromise Grupo Santander's solvency;
- An independent risk function with involvement by senior management to embed a strong risk culture and drive a sustainable return on capital;
- A global and holistic vision through a meticulous control and monitoring of risks, businesses and markets;
- A focus on products Grupo Santander know well;
- A conduct model that protects Grupo Santander`s customers; and
- A remuneration policy that aligns employees and executives' interests with risk appetite and long-term results.

3.1.2. Corporate risk appetite principles

The principles that inform Grupo Santander's risk appetite are:

- **The board and senior management's responsibility** for risk appetite;
- **An enterprise-wide view of risk, back-testing and challenge of risk profile** based on quantitative metrics and qualitative indicators;
- **A forward-looking view** based on plausible assumptions and adverse/stress scenarios to reflect the desired risk profile in the short and medium term;
- **Strategic and business plans embedded in daily management** by policies and limits;
- **Common standards** that align each subsidiary's appetite with the Group's; and
- **Regular reviews, best practice and regulatory requirements,** with mechanisms in place to keep the risk profile stable and mitigate non-compliance.

3.1.3. Structure of limits, monitoring and control

Risk appetite is expressed in qualitative terms and limits, structured on these five core elements.

1 **Earnings volatility**
The maximum loss Grupo Santander can tolerate in an acute -but- plausible stress scenario.

2 **Solvency**
- Minimum capital position Grupo Santander can tolerate in a stress scenario.
- Maximum leverage Grupo Santander can tolerate in a stress scenario.

3 **Liquidity**
- Minimum structural liquidity position.
- Minimum liquidity horizon Grupo Santander can tolerate in peak stress scenario.
- Minimum liquidity coverage position.

4 **Concentration**
- Concentration in single names, industries and portfolios.
- Concentration in non-investment grade counterparties.
- Concentration in large exposures.

5 **Non-financial risks**
- Maximum operational risk losses.
- Maximum risk profile.
- Non-financial risk indicators:
  - Financial crime compliance (FCC)
  - Cyber and security risk
  - Model risk
  - Reputational risk

b) Credit risk

1. Introduction to the credit risk treatment

Credit risk refers to a potential financial loss from the default or credit quality deterioration of a customer or other third party with whom Grupo Santander has a contractual obligation. It is our most important risk, both in terms of exposure and capital consumption. It also includes counterparty risk, country risk and sovereign risk.

Credit risk management

Grupo Santander identifies, analyses, controls and decides on credit risk based on holistic view of the credit risk cycle, which includes the transaction, the customer and the portfolio.

Credit risk identification is key to managing and controlling Grupo Santander's portfolios effectively. Grupo Santander classify external and internal risks in each business and adopt corrective and mitigating measures when needed through these processes:

1.1. Planning

Grupo Santander´s planning helps to set business targets and define specific action plans within our risk appetite framework.

Strategic commercial plans (SCP) are a management and control tool the business and risk areas prepare for Grupo Santander's credit portfolios. They determine commercial strategies, risk policies, resources and infrastructure, ensuring a holistic view of the portfolios. They provide managers with an updated view of credit portfolio quality to measure credit risk, run internal controls over the defined strategy coupled with regular monitoring, detect significant deviations in risk and potential impacts, and take corrective actions when necessary. They also align with Grupo Santander's risk appetite and its subsidiaries' capital targets, and are approved and monitored by senior managers at each subsidiary before being reviewed and validated by Grupo Santander.

1.2. Risk assessment and credit rating

To analyse customers' ability to meet contractual obligations, Grupo Santander uses valuation and parameter estimation models in each of the segments. Grupo Santander's credit quality valuation models are based on credit rating drivers, which Grupo Santander monitors to calibrate and adjust the decisions and ratings they assign. Depending on each segment, drivers can be:

- Rating: from mathematical algorithms that have a quantitative model based on balance sheet ratios or macroeconomic variables, and a qualitative module supplemented by the credit analyst's expert judgement. It is used for SCIB, corporate, institutional and SME segments (with individualised treatment).
- Scoring: an automatic system to evaluate credit applications that assigns an individual score to customers for subsequent decision-making, generally in the retail and smaller SME segments.

Grupo Santander's parameter estimation models follow econometric models built on Grupo Santander's portfolios' historical defaults and losses. Grupo Santander uses them to calculate economic and regulatory capital as well as IFRS 9 provisions for each portfolio.

Grupo Santander regularly monitoring and evaluate models' appropriateness, predictive capacity, performance, granularity, compliance with policies and other related factors. Grupo Santander reviews ratings with the latest available financial and economic information. Grupo Santander has also increased the reviews for customers who are under closer observation or have automatic warnings in the risk management systems.

1.3. Credit risk mitigation techniques

We approve risks generally on the basis of borrowers' ability to pay in fulfilment of financial obligations, notwithstanding any additional collateral or personal guarantees we can require from them. To determine this, we analyse funds or net cash flows from their businesses or income with no guarantors or the assets pledged as collateral. We always consider guarantors and collateral when deciding to approve a loan as a secondary means of recourse if the first channel fails.

In general, a guarantee is as a reinforcement measure added to a credit transaction to mitigate a loss due to a failure to meet a payment obligation.

Grupo Santander has credit risk mitigation techniques for various types of customer and products. Some are for specific transactions (e.g., property) while others apply to a series of transactions (e.g., derivatives netting and collateral). Grupo Santander can be grouped into personal guarantees, guarantees in the form of credit derivatives or collateral.

1.4. Definition of limits, pre-classifications and pre-approvals

Grupo Santander uses SCPs to manage credit portfolios, defining limits for each of them and for new originations, in line with the Group´s credit risk appetite and its target risk profile. Transposing the risk appetite to portfolio management strengthens controls over our credit portfolios.

Grupo Santander´s limits, pre-classifications and pre-approvals processes determine the risk we can assume with each customer. Limits are approved by the executive risk committee (or delegated committees) and should reflect a transaction's expected risk-return

Grupo Santander applies various limits models to each segment:

- **Large corporate groups**: are subject to a pre-classification model based on a system for measuring and monitoring economic capital. Pre-classification models express the level of risk Grupo Santander is willing to assume in transactions with customers/groups in terms of capital at risk, nominal cap and maximum tenors. To manage limits with financial entities, Grupo Santander uses Credit Equivalent Risk (CER), which includes actual and expected risks with customers according to risk appetite and credit policies.
- **Corporates and institutions**: that meet certain requirements (strong relationships, rating, etc.): Grupo Santander uses simpler pre-classification model with an internal limit. It establishes a reference point in a customer's level of risk based on repayment capacity, overall indebtedness and a pool of banks.

Transactions with large corporates, corporates and institutions above certain limits or with special characteristics could require approval from a senior credit analyst or a committee.

- **For individual customers and SMEs** with low turnover, Grupo Santander manages large volumes of credit transactions with automatic decision models to classify customers and transactions.

1.5. Scenario analysis

Grupo Santander´s scenario analyses determine the potential risks in its credit portfolios and provide a better understanding of our portfolios' performance under various macroeconomic conditions.

They allow us to anticipate management strategies that will avoid future deviations from defined plans and targets. They simulate the impact of alternative scenarios in portfolios' credit parameters (PD, LGD) and expected credit losses. We compare findings with portfolios' credit profile indicators to find the right measures for managers to take. Credit risk management of portfolios and SCPs incorporate scenario analyses.

1.6. Monitoring

Regularly monitoring business performance and comparing it to pre-defined plans is key to our management of risk.

Grupo Santander's holistic monitoring of customers helps detect impacts on risk performance and credit quality early.

Grupo Santander assigns customers a classification with a pre-defined course of action and ad hoc measures to correct any deviations.

Monitoring, which considers transaction forecasts and characteristics, in addition to changes in classification, is performed by local and global risk teams and is based on customer segmentation:

- For SCIB, monitoring is initially a function of business managers and risk analysts which provide an up-to-date view of customers' credit quality to predict a potential customer's deterioration.
- For commercial banking, institutions and SMEs assigned a credit analyst, Grupo Santander tracks customers requiring closer monitoring and review their ratings based on relevant indicators.

- Monitoring of individual customers, businesses and smaller SMEs follows a system of automatic alerts to detect shifts in portfolios' performance.

Monitoring uses the Santander Customer Assessment Note (SCAN) tool. Grupo Santander fully rolled it out in our subsidiaries in 2019. It helps set individual monitoring levels and frequencies, policies, and actions for customers based on credit quality and particular circumstances.

In addition to monitoring customer credit quality, Grupo Santander defines control procedures to analyse portfolios and performance, as well as any deviations from planning or approved alert levels.

1.7. Recovery and collections management

The Collections & Recoveries area carries out recoveries, which are important to risk management. It defines a global, enterprise-wide management strategy with guidelines and general lines of action for Grupo Santander's subsidiaries based on the economic environment. business model and other local recovery conditions. Recovery management follows regulatory requirements set out in the EBA Guidelines on the management of non-performing and forborne exposures. In addition, Grupo Santander applies specific policies on recovery management that include the principles of the different strategies.

The Collections & Recoveries areas directly manage customers. As sustained value creation is based on effective and efficient collections, digital channels that develop new customer relations are gaining importance. Grupo Santander's diverse customer base requires segmentation to manage recoveries appropriately. The highly technological and digital processes Grupo Santander follows help us attend to large groups of customers with similar profiles and products. Grupo Santander's personalized management, however, focuses on customer profiles that require a special manager and approach.

Grupo Santander splits recovery management into four phases: arrears, credit impaired loans, write-offs and foreclosed assets. Grupo Santander may uses mechanisms to rapidly reduce assets like sales of foreclosed assets or credit impaired loans pool sales. Grupo Santander constantly seeks alternatives to legal action in order to collect debt.

Grupo Santander includes debt instruments as written-off loans (even if they are not past-due) if an individual analysis of the solvency of a transaction and the borrower leads us to believe recovery is remote due to a notorious and unrecoverable impairment. Though this may lead to full or partial cancellation and de-recognition of the gross carrying amount of debt, it does not mean we interrupt negotiations and legal proceedings to recover debt. In countries with high exposure to real estate risk, we have efficient sales management instruments that help maximize recovery and optimize balance sheet stocks.

2. Main aggregates and variations

Following are the main aggregates relating to credit risk from our activities with customers:

MAIN CREDIT RISK PERFORMANCE METRICS FROM ACTIVITY WITH CUSTOMERS*

December data

	Credit risk with customers ** (EUR million)			Credit impaired loans (EUR million)			NPL ratio (%)		
	2021	2020	2019	2021	2020	2019	2021	2020	2019
Europe	**636,123**	**606,997**	**605,969**	**19,822**	**20,272**	**21,054**	**3.12**	**3.34**	**3.47**
Spain	221,100	221,341	213,668	12,758	13,796	14,824	5.77	6.23	6.94
UK	262,869	252,255	264,297	3,766	3,138	2,736	1.43	1.24	1.04
Portugal	41,941	40,693	37,978	1,442	1,584	1,834	3.44	3.89	4.83
Poland	33,497	31,578	33,566	1,210	1,496	1,447	3.61	4.74	4.31
North America	**149,792**	**131,626**	**143,839**	**3,632**	**2,938**	**3,165**	**2.42**	**2.23**	**2.20**
US	112,808	99,135	105,792	2,624	2,025	2,331	2.33	2.04	2.20
Mexico	36,984	32,476	38,047	1,009	913	834	2.73	2.81	2.19
South America	**141,874**	**129,590**	**143,428**	**6,387**	**5,688**	**6,972**	**4.50**	**4.39**	**4.86**
Brazil	85,702	74,712	88,893	4,182	3,429	4,727	4.88	4.59	5.32
Chile	41,479	42,826	42,000	1,838	2,051	1,947	4.43	4.79	4.64
Argentina	5,481	4,418	5,044	198	93	171	3.61	2.11	3.39
Digital Consumer Bank	**117,049**	**116,381**	**117,399**	**2,490**	**2,525**	**2,470**	**2.13**	**2.17**	**2.10**
Corporate Centre	**6,277**	**4,862**	**5,872**	**903**	**344**	**138**	**14.38**	**7.08**	**2.34**
Total Group	**1,051,115**	**989,456**	**1,016,507**	**33,234**	**31,767**	**33,799**	**3.16**	**3.21**	**3.32**

*Management perimeter according to the reported segments
** Includes gross lending to customers, guarantees and documentary credits.

Key figures by geographic region are described below at 31 December 2021:

- **Europe**: the NPL ratio fell 22 bps to 3.12% from 2020 due to a significant reduction in credit impaired loans in Spain and Poland, offsetting the increase observed in the UK.

- **North America**: the NPL ratio increased 19 bps to 2.42% from 2020, mainly due to increases at SC USA. NPL stock rose 24% year-on-year.

- **South America**: the NPL ratio rose 11 bps to 4.50%. comparing to 2020, due to the increase observed in Argentina (+150 bps) and Brazil (+29 bps), offsetting the decrease in Chile (-36 bps).

- **Digital Consumer Bank:** The NPL ratio decreased 4 bp to 2.13% comparing to 2020, despite the decrease in automobile financing.

Information on the estimation of impairment losses

Estimation of expected credit losses:

The covid-19 health crisis, since its beginning in 2020, was unexpected, unpredictable and severe, but it is estimated to be of a temporary nature. Grupo Santander's priority in these circumstances has been to look after the health of its employees, customers and shareholders, but also to help reduce the economic impact of the pandemic. This includes trying to offer the best solutions to help customers.

Conceptually, the phases in managing the effects of covid-19 have been:

– Identification of customers or groups affected or potentially affected by the pandemic.

– Early relief of temporary financial difficulties caused by covid-19 through measures promoted by governments, central banks, and financial institutions.

– Monitoring the evolution of customers, to ensure that they continue to be provided with the best solution for their situation, and also to guarantee that their potential impairment is correctly reflected in the risk management and accounting. This point is particularly relevant at the expiry of any moratorium or liquidity support measures to which customers may have availed themselves.

– Monitoring is accompanied by recovery management activities when necessary.

These conceptual phases do not occur sequentially but overlap in time. Additionally, the continuous interaction and coordination between the different subsidiaries proved to be a fundamental asset in the management of this crisis. The experience obtained in the fight against the health crisis and its financial consequences in our different geographies, and the different speeds at which it has been developing in each of them, allow us to share the best practices identified and to implement in an agile and efficient manner those strategies and concrete actions that have been most successful, always adapted to the local reality of each market.

Estimation of expected loss

In the context described above on the measures taken in relation to covid-19, many regulators and supervisors highlighted the uncertainties surrounding the economic impacts of the health crisis. This is also evident in the frequent updates of macroeconomic forecasts, with different perspectives and views on the depth and duration of the crisis. Thus, the general recommendation (including IASB, ESMA, EBA and ECB) was not to mechanistically apply the usual techniques for calculating expected losses under IFRS 9, in order to avoid that this variability of economic conditions would translate into volatility in results, with its potential pro-cyclical effects on the economy.

Thus, Grupo Santander has analysed losses under IFRS 9 on the basis of three types of elements:

1.Continuous monitoring of customers

Monitoring the credit quality of customers could have been more complex in the current circumstances. For such monitoring, and in addition to the application of internal customer monitoring policies, all available information should be used. The availability of information and its relevance is different in the various portfolios of the different countries in which Grupo Santander operates, but it may include, but is not limited to the following:

- The payment of interest in the case of principal-only shortfalls.
- The payment of other operations of the same client in the institution (not subject to moratorium).
- Information on payment of loans in other entities (through credit bureaus).
- Customer financial information: average balances in current accounts, availability/use of limits, etc.
- Available behavioural elements (variables that feed the behavioural scores, etc.).
- Information gathered from customer contacts (surveys, calls, questionnaires, etc.). This may include: customers who have taken up furlough programs, direct government aid, etc.

2. Forward-looking vision

As it was reflected by the IASB, macroeconomic uncertainty makes the usual application of IFRS 9 expected loss calculation models difficult but did not exempt the incorporation of the prospective feature of the standard. To this end, the European Central Bank recommended the use of a stable, long-term view (long-run) of the macroeconomic forecasts, which takes into account in the assessment the multiple support measures explained above.

During 2021, this uncertainty has been reduced as vaccination progressed, hospitalisation rates gradually declined, allowing, in some cases, for the reduction of restriction measures. In parallel, support measures expired while maintaining the good performance of the portfolios.

This implies that once the economic scenarios have been stabilising and converging to their potential growth, these new economic scenarios have been gradually updated in the models by returning to the standard forward-looking calculation.

3. Additional elements

Additional elements will be required when necessary because they have not been captured under the two previous elements. This has included, among others, the analysis of sectors most affected by the pandemic if their impacts are not sufficiently captured by the macroeconomic scenarios. Also collective analysis techniques, when the potential impairment in a group of clients cannot be identified individually.

With the elements indicated above, Grupo Santander has evaluated in each of the geographical areas the evolution of the credit quality of its customers, for the purposes of their classification in Grupo Santander financial statements.

In terms of classification, in 2021 Grupo Santander has maintained the criteria and thresholds for classification applied prior to the start of the pandemic, eliminating regulatory criteria of the effect of moratorium classification as they have expired, as well as the collective analyses associated with these groups of loans.

Regarding moratorium measures, a rigorous identification and periodic monitoring of the credit quality of the clients and their payment behaviour have been carried out and, through a specific individual or collective evaluation, the timely detection of the Significant Increase in Credit Risk (SICR).

As part of governance processes, Grupo Santander issued guideline documents to all subsidiaries to ensure consistent standards and governance in managing the new treatment and particular impacts on pandemic-related provisions. The guidelines included instructions on how to calculate the macroeconomic impact of the crisis using overlay and potential collective assessments that considered impairment caused by covid-19. Those documents also include a monitoring guide to ensure the appropriateness of special insolvency fund adjustments for covid-19-related situations and anticipate any other necessary adjustment.

Regarding moratoria measures, a rigorous identification and regular monitoring of customer credit quality and payment behavior have been performed and through specific individual or collective assessment, the timely detection of SICR have been assured.

Details of the exposure by stage can be found in notes 6, 7, 10, as well as in this note of these consolidated annual accounts.

Grupo Santander estimates the impairment losses by calculating the expected loss at 12 months or for the entire life of the transaction, based on the stage in which each financial asset is classified in accordance with IFRS 9.

Then, considering the most relevant units of the Group (United Kingdom, Spain, United States, Brazil, also Chile, Mexico, Portugal, Poland, Argentina and Santander Consumer Finance), which represent approximately 96% of the total Group's provisions. The table below shows the impairment losses associated with each stage as of 31 December 2021, 2020 and 2019.In addition, depending on the transactions credit quality, the exposure is divided into three categories according to Standard & Poor's rating scale:

EXPOSURE AND IMPAIRMENT LOSSES BY STAGE

EUR million

	2021			
Credit quality *	Stage 1	Stage 2	Stage 3	Total
From AAA to BB	565,443	13,798	—	579,241
From BB- to CCC	237,525	56,170	—	293,695
Default	—	—	30,711	30,711
Total exposure **	**802,968**	**69,968**	**30,711**	**903,647**
Impairment losses***	**4,149**	**5,103**	**12,873**	**22,125**

EXPOSURE AND IMPAIRMENT LOSSES BY STAGE

EUR million

	2020			
Credit quality *	Stage 1	Stage 2	Stage 3	Total
From AAA to BB	489,518	9,124	—	498,642
From BB- to CCC	276,516	55,838	—	332,354
Default	—	—	30,436	30,436
Total exposure **	**766,034**	**64,962**	**30,436**	**861,432**
Impairment losses***	**4,458**	**5,461**	**13,503**	**23,422**

EXPOSURE AND IMPAIRMENT LOSSES BY STAGE

EUR million

	2019			
Credit quality *	Stage 1	Stage 2	Stage 3	Total
From AAA to BB	552,763	5,532	—	558,295
From BB- to CCC	306,880	47,365	—	354,245
Default	—	—	31,363	31,363
Total exposure **	**859,643**	**52,897**	**31,363**	**943,903**
Impairment losses***	**3,980**	**4,311**	**13,276**	**21,567**

* Detail of credit quality ratings calculated for Group management purposes.
** Total exposure includes loan balances (drawn amounts) and off balance (letters of credit + guarantees) and excludes REPOs, FV portfolio, trading portfolio and undrawn commitments.
***Includes provisions for undrawn authorized lines (loan commitments)

The remaining units that form the totality of the Group exposure, contributed EUR 102,631 million in stage 1; EUR 1,870 million in stage 2, and EUR 2,522 million in stage 3 (in 2020 EUR 98,121 million in stage 1; EUR 3,613 million in stage 2, and EUR 1,322 million in stage 3. In 2019, EUR 38,174 million in stage 1; EUR 1,422 million in stage 2, and EUR 1,056 million in stage 3), and impairment losses of EUR 408 million in stage 1; EUR 322 million for stage 2, and EUR 841 million in stage 3 (in 2020, EUR 180 million, EUR 393 million and EUR 277 million and in 2019, EUR 264 million, EUR 306 million and EUR 91 million in stage 1, stage 2 and stage 3, respectively).

The remaining exposure, including all financial instruments not included before, amounts to EUR 349,228 million (EUR 478,093 million in 2020 and EUR 507,479 million in 2019), and it includes all undrawn authorized lines (loan commitments).

As of 31 December 2021, the Group had EUR 420 million net of provisions (EUR 497 million and EUR 706 million at 31 December 2020 and 2019, respectively) of purchased credit-impaired assets, which relate mainly to the business combinations carried out by the Group.

Regarding the evolution of credit risk provisions, the Group, in collaboration with the main geographical areas, monitors them by carrying out sensitivity analyses considering changes in macroeconomic scenarios and main variables that have an impact on the financial assets distribution in the different stages and calculating credit risk provisions.

Additionally, based on consistent macroeconomic scenarios, the Group also performs stress tests and sensitivity analysis in a regular basis, such as ICAAP, strategic plans, budgets and recovery and resolution plans. In this sense, a prospective view of the sensitivity of each of the Group's loan portfolio is created in relation to the possible deviation from the base scenario, considering both the macroeconomic developments in different scenarios and the three year evolution of the business. These tests include potentially adverse and favourable scenarios.

The transactions classification into the different IFRS 9 stages is carried out in accordance with the regulation through the risk management policies of our subsidiaries, which are consistent with the risk management policies defined by the Group. In order to determine the classification in stage 2, the Group assesses whether there has been a significant increase in credit risk (SICR) since the initial recognition of the transactions, considering a series of common principles throughout the Group that guarantee that all financial instruments are subject to this assessment, which considers the particularities of each portfolio and type of product on the basis of various quantitative and qualitative indicators. Furthermore, transactions are subject to the expert judgement of the analysts, who set the thresholds under an effective integration in management. All is implemented according to the approved governance.

The criteria thresholds used by the Group are based on a series of principles, and develop a set of techniques. The principles are as follows:

- Universality: all financial instruments subject to a credit rating must be assessed for their possible SICR.
- Proportionality: the definition of the SICR must take into account the particularities of each portfolio.
- Materiality: its implementation must be also consistent with the relevance of each portfolio so as not to incur in unnecessary costs or efforts.
- Holistic vision: the approach selected must be a combination of the most relevant credit risk aspects (e.g. quantitative and qualitative).
- Application of IFRS 9: the approach must take into consideration IFRS 9 characteristics, focusing on a comparison with credit risk at initial recognition, as well as considering forward-looking information.
- Risk management integration: the criteria must be consistent with those metrics considered in the day-to-day risk management.
- Documentation: Appropriate documentation must be prepared.

The techniques are summarised below:

- Stability of stage 2: in the absence of significant changes in the portfolios credit quality, the volume of assets in stage 2 should maintain a certain stability as a whole.
- Economic reasonableness: at transaction level, stage 2 is expected to be a transitional rating for exposures that could eventually move to a deteriorating credit status at some point or stage 3, as well as for exposures that have suffered credit deterioration and whose credit quality is improving.
- Predictive power: it is expected that the SICR definition avoids, as far as possible, direct migrations from stage 1 to stage 3 without having been previously classified in stage 2.
- Time in stage 2: it is expected that the exposures do not remain categorized as stage 2 for an excessive time.

The application of the aforementioned techniques, conclude in the setting of one or several thresholds for each portfolio in each geography. Likewise, these thresholds are subject to a regular review by means of calibration tests, which may entail updating the thresholds types or their values.

Covid-19 credit risk evolution and customer support programmes

In the context of the general response of Santander to the covid-19 pandemic, and specifically with the purpose to help the customers from the credit perspective and foster their economic resilience during the crisis, Grupo Santander implemented several actions in addition to those listed above, the following:

- The severity of the pandemic's effects was significantly different depending on the economic sector. Consequently, Santander launched a process to identify those that could be more affected in order to focus credit risk management on them.
- Due to the covid-19 crisis, great focus was placed on collections & recoveries readiness across Grupo Santander to deal with the impact expected on its portfolios once the support measures granted have expired.

Since the start of the pandemic in 2020, at the end of December 2021, Grupo Santander granted a total of EUR 93,112 million in payment moratoria, equivalent to 9.68% of the loan portfolio.

From the total moratoria, 99.8% had expired at 31 December 2021, from which 74.6% were classified in stage 1, 18.7% in stage 2 and 6.7% in stage 3. At December 2020, 79.1% of total moratoria has expired, from which 82.4% classified in stage 1, 14.5% in stage 2 and 3.1% in stage 3.

At the end of December 2021, total lending under government liquidity programmes amounted to EUR 39,879 million. By geography, Spain represent 68% of total exposure granted to these types of programmes, with an average coverage of ICO guarantees of 77%. UK constitutes the 13% of total exposure with an average coverage of 98%.

Quantification of additional provisions for covid-19

In relation to the measures in the insolvency funds, the Group set up additional provisions during 2020 based on a collective analysis of vulnerable sectors, and segments affected by the crisis derived from the covid-19 pandemic, as well as an estimate of the additional impairment of the loan and advance portfolio caused by the economic effects of the pandemic, realistically reflecting the structural deterioration of the economy at the date of construction of the estimate. This estimate was made on the basis of the information available at that date, which was affected by the high degree of uncertainty at the time of the estimate, and was aligned with the projections generated by the ECB. This macroeconomic scenario included a balance between short- and long-term forecasts, without being a 'through the cycle' scenario. The convergence of these scenarios with pre-crisis paths was expected to occur in the first quarter of 2022 for most macroeconomic indicators (except for house prices, which were expected to converge in the first quarter of 2023).

Grupo Santander has continuously and regularly monitored the following aspects during 2021 and 2020: (1) the evolution of the pandemic and the macroeconomic outlook, (2) forecasts from institutions and central banks, and (3) the evolution of portfolios in each of the countries where Grupo Santander is present.

Based on that monitoring, the Group updates and evaluates the adequacy of the macroeconomic scenarios in accordance with the established governance, when reliable and supportable information is available. At the end of 2021, we updated the most recent scenarios to calculate IFRS 9 provisions by recalibrating and revising the forward-looking information and risk model parameters. Following that process, during 2021 the model update included the macroeconomic scenarios. Out of the EUR 3,105 million at the end of December 2020, EUR 1,235 million overlay remain in additional provisions, motivated by several countries' government relief measures, in particular income support measures in the US, payment holiday extensions for longer periods in Portugal, and from continued volatility in the UK.

3.Detail of the main geographical areas

Following is the risk information related to the most relevant geographies in exposure and credit risk allowances.

This information includes sensitivity analysis, consisting on simulations of +/-100 bp in the main macroeconomic variables. A set of specific and complete scenarios is used in each geography, where different shocks that affect both the reference variable as well as the rest of the parameters is simulated. These shocks may be originated by productivity, tax, wages or exchange and interest rates factors. Sensitivity is measured as the average variation on expected loss corresponding to the aforementioned scenarios. Following a conservative approach, the negative movements take into account one additional standard deviation in order to reflect the potential higher variability of losses.

3.1. United Kingdom

Credit risk with customers in the UK grew 4.2% (-2.5% in local currency) year-on-year to EUR 262,869 million. The UK accounts for 25% of Santander's loan portfolio.

Since the pandemic began, Santander granted 368,000 moratoriums and EUR 5,280 million in government-backed loans to help our customers.

The NPL ratio in 2021, 1.43%, increased as compared to 2020 (+19 bps) due to the increase in SME segment, as well as the decrease of the portfolio in the wholesale segment. The profile of the different segments remains stable.

Mortgage portfolio

Because of its size, we closely monitor Santander UK's mortgage portfolio for the entity itself and Grupo Santander.

As of December 2021, it amounted to EUR 209,949 million, growing by +4.3% in local currency. It comprises residential mortgages granted to new and existing customers which are first lien mortgages. There are no second or more liens on mortgaged properties.

2021 was a year of strong mortgage activity, mainly due to the higher demand after the covid-19 restrictions were lifted and the reduction of the stamp duty rates up until September. As a consequence, Santander UK achieved all-time high mortgage lending origination levels in June.

In accordance with Santander's risk management principles, properties are appraised independently before we approve a new mortgage.

In line with market practice and legislation, property values used as collateral for granted mortgages are updated quarterly by an independent agency's automatic appraisal system.

Information on the estimation of impairment losses

The detail of Santander's UK exposure and impairment losses associated with each of the stages at 31 December, 2021, 2020 and 2019, is shown below.

In addition, the exposure is divided in three tranches of the Standard & Poor's rating scale, according to their current credit quality:

EXPOSURE AND IMPAIRMENT LOSSES BY STAGE

EUR million

	2021			
Credit quality *	Stage 1	Stage 2	Stage 3	Total
From AAA to BB	210,418	9,088	—	219,506
From BB- to CCC	13,063	11,601	—	24,664
Default	—	—	3,508	3,508
Total exposure **	**223,481**	**20,689**	**3,508**	**247,678**
Impairment losses***	**135**	**372**	**460**	**967**

EXPOSURE AND IMPAIRMENT LOSSES BY STAGE

EUR million

	2020			
Credit quality *	Stage 1	Stage 2	Stage 3	Total
From AAA to BB	184,065	2,227	—	186,292
From BB- to CCC	34,965	16,814	—	51,779
Default	—	—	3,229	3,229
Total exposure **	**219,030**	**19,041**	**3,229**	**241,300**
Impairment losses***	**223**	**557**	**668**	**1,448**

EXPOSURE AND IMPAIRMENT LOSSES BY STAGE

EUR million

	2019			
Credit quality *	Stage 1	Stage 2	Stage 3	Total
From AAA to BB	238,985	2,032	—	241,017
From BB- to CCC	40,281	12,543	—	52,824
Default	—	—	2,821	2,821
Total exposure **	**279,266**	**14,575**	**2,821**	**296,662**
Impairment losses***	**117**	**470**	**588**	**1,175**

* Detail of credit quality ratings calculated for Group management purposes.
** Total exposure includes loan balances (drawn amounts) and off balance (letters of credit + guarantees) and excludes REPOs, FV portfolio, trading portfolio and undrawn commitments.
***Includes provisions for undrawn authorized lines (loan commitments)

The Government support measures taken in the United Kingdom in 2020 as response to the covid-19 pandemic have gradually expired and at the end of December 2021, Santander UK had granted, since the start of the pandemic, a total amount of EUR 40,949 million moratoriums, equivalent to 16.53% of the loan portfolio.

100% of the moratoriums granted had expired at 31 December 2021, from which 81.7% were in stage 1, 15.2% in stage 2 and 3.1% in stage 3 (at the end of 2020, of the total moratoriums, 93.5% had expired, of which 83.6% were in stage 1, 14.7% in stage 2 and 1.7% in stage 3).

For the estimation of expected losses, prospective information is taken into account. Specifically, Santander UK considers five macroeconomic scenarios, which are updated periodically. The evolution forecasted in 2021 for the next five years of the main macroeconomic indicators used by Santander UK to estimate expected losses is presented below:

	2022 - 2026				
Variables	Pessimistic scenario 3	Pessimistic scenario 2	Pessimistic scenario 1	Base scenario	Optimistic scenario 1
Interest rate	-0.1%	2.0%	0.8%	0.7%	1.1%
Unemployment rate	8.4%	6.4%	5.1%	4.4%	4.0%
Housing price change	-5.0%	-3.0%	-1.5%	2.2%	1.5%
GDP growth	—	1.0%	1.3%	2.2%	2.6%

Each of the macroeconomic scenarios is associated with a given weight. In terms of allocation, Santander UK associates the highest weighting to the base scenario, while it associates the lowest weightings to the most extreme or severe scenarios. In addition, at 31 December 2021, the weights used by Santander UK reflect the future prospects of the British economy in relation to its current political and economic position so that higher weights are assigned for negative scenarios:

	2021	2020	2019
Pessimistic scenario 3	5%	10%	—
Pessimistic scenario 2	20%	25%	15%
Pessimistic scenario 1	25%	15%	30%
Base scenario	45%	45%	40%
Optimistic scenario 1	5%	5%	10%
Optimistic scenario 2	—	—	5%

The sensitivity analysis of the main portfolios expected loss to variations of +/-100 bp for the macroeconomic variables used in the construction of the scenarios, as of December 2021, is as follows:

	Change in Provision	
	Mortgages	Corporates
GDP Growth		
-100 bp	19.1%	5.7%
100 bp	-6.7%	-1.0%
Housing price change		
-100 bp	4.0%	3.1%
100 bp	-3.7%	-0.6%
Unemployment rate		
-100 bp	-9.6%	-0.4%
100 bp	21.0%	0.4%

With regards to the determination of classification in stage 2, the quantitative criteria applied by Santander UK are based on identifying whether any increase in PD for the expected life of the transaction is greater than both an absolute and a relative threshold (the PD used in that assessment are adjusted to the transaction's remaining term and also annualised in order to facilitate that the thresholds defined cover the whole range of the transactions maturity dates). The relative threshold established is common to all portfolios and a transaction is considered to exceed this threshold when the PD for the entire life of the transaction increases by 100% with respect to the PD at the time of initial recognition. The absolute threshold, on the other hand, is different for each portfolio depending on the characteristics of the transactions, ranging between 360 bp and 30 bp.

In addition, for each portfolio, a series of specific qualitative criteria is defined to indicate that the exposure has experienced a significant increase in credit risk, regardless of the evolution of its PD since the time of initial recognition. Santander UK, among other criteria, considers that an operation presents a significant increase in credit risk when it presents irregular positions for more than 30 days. These criteria depend on the risk management practices of each portfolio.

3.2. Spain

Portfolio overview

Santander España's credit risk totalled EUR 221,100 million (21% of Grupo Santander's total). It is appropriately diversified among products and customer segments.

Amid economic and credit recovery, as macroeconomic figures improved after the end of the covid-19 lockdowns in 2020, consumer loans (especially mortgages) grew significantly, as the corporate and SME lending remained below 2020 numbers, as we maintained positions with customers in liquidity support programmes (i.e. ICO lines of credit) without having to seek new financing.

Total credit risk decreased -0.1% from December 2020. The ICO loans in Corporate and SME lending amounted to a significant EUR 27,294 (around half of them were extended according to the current regulation).

The credit portfolio's NPL ratio was 5.77%, 46 bp lower than in December 2020. This better overall portfolio performance was driven by customer support programmes; the regularization of several restructured positions; and portfolio sales.

The additional provisions raised to mitigate the potential impacts from the exceptional circumstances of the covid-19 pandemic, increased the NPL coverage ratio to 52% (+5 bp vs. December 2020). On the other hand, the non-performing portfolio declined mainly from loans with the highest expected losses.

The cost of credit reflects the rise in Covid-19 provisions, with slight improvement at the end of 2021 compared to December 2020.

Information on the estimation of impairment losses

The detail of Santander Spain exposure and impairment losses associated with each of the stages at 31 December, 2021, 2020 and 2019, is shown below. In addition, the exposure is divided in three tranches of the Standard & Poor's rating scale, according to their current credit quality:

EXPOSURE AND IMPAIRMENT LOSSES PER STAGE

EUR million

	2021			
Credit quality *	Stage 1	Stage 2	Stage 3	Total
From AAA to BB	153,120	908	—	154,028
From BB- to CCC	33,233	14,740	—	47,973
Default	—	—	12,761	12,761
Total exposure **	**186,353**	**15,648**	**12,761**	**214,762**
Impairment losses***	**422**	**580**	**5,005**	**6,007**

EXPOSURE AND IMPAIRMENT LOSSES PER STAGE

EUR million

	2020			
Credit quality *	Stage 1	Stage 2	Stage 3	Total
From AAA to BB	146,992	1,517	—	148,509
From BB- to CCC	40,630	11,541	—	52,171
Default	—	—	13,762	13,762
Total exposure **	**187,622**	**13,058**	**13,762**	**214,442**
Impairment losses***	**479**	**732**	**5,277**	**6,488**

EXPOSURE AND IMPAIRMENT LOSSES PER STAGE

EUR million

	2019			
Credit quality *	Stage 1	Stage 2	Stage 3	Total
From AAA to BB	139,673	1,315	—	140,988
From BB- to CCC	42,603	9,115	—	51,718
Default	—	—	14,587	14,587
Total exposure **	**182,276**	**10,430**	**14,587**	**207,293**
Impairment losses***	**296**	**503**	**5,195**	**5,994**

* Detail of credit quality ratings calculated for Group management purposes.
** Total exposure includes loan balances (drawn amounts) and off balance (letters of credit + guarantees) and excludes REPOs, FV portfolio, trading portfolio and undrawn commitments.
***Includes provisions for undrawn authorized lines (loan commitments)

The real estate unit in Spain (UAI) was consolidated within Santander Spain in 2019, (this process was completed in 2020). Consequently, unlike in 2019, in 2021 and 2020 the perimeter is aligned.

The remaining legal entities to reach the entire portfolio in Spain contribute another EUR 5,693 million, EUR 445 million and EUR 237 million of exposure in 2019 in stage 1, stage 2 and stage 3 respectively, and impairment losses in the amount of EUR 55 million, EUR 41 million and EUR 8 million in stage 1, stage 2 and stage 3, respectively.

The Government support measures taken in Spain in 2020 as response to the covid-19 pandemic have gradually expired and at the end of December 2021 Santander Spain had granted, since the start of the pandemic in 2020, a total amount of EUR 9,819 million moratoriums, equivalent to 4.87% of the loan portfolio.

Of the total moratoriums, 99.6% had expired at 31 December 2021, from which 75.6% was in stage 1, 14.9% in stage 2 and 9.5% in stage 3. At the end of 2020, of the total moratoria, 26.4% had expired, of which 77.2% were in stage 1, 15% in stage 2 and 7.8% in stage 3.

For the estimation of the expected losses, the prospective information is taken into account. Specifically, Santander Spain considers three macroeconomic scenarios, which are updated periodically. The projected evolution for a period of five years of the main macroeconomic indicators used by Santander Spain for estimating expected losses as of 2021, is presented below:

	2022-2026		
Variables	Pessimistic scenario	Base scenario	Optimistic scenario
Interest rate	0.6%	-0.2%	-0.2%
Unemployment rate	18.3%	13.0%	11.2%
Housing price change	1.6%	2.6%	3.2%
GDP growth	1.1%	2.9%	3.7%

Each macroeconomic scenarios is associated with a given weight. As for its allocation, Santander Spain associates the Base scenario with the highest weight, while associating the lower weights to the most extreme scenarios:

	2021	2020	2019
Pessimistic scenario	30%	30%	30%
Base scenario	40%	40%	40%
Optimistic scenario 1	30%	30%	30%

The sensitivity analysis of the main portfolios expected loss to variations of +/-100 bp for the macroeconomic variables used in the construction of the scenarios is as follows:

	Change in Provision		
	Mortgages	Corporates	Others
GDP Growth			
-100 bp	11.9%	5.4%	4.9%
100 bp	-4.9%	-2.9%	-2.7%
Housing price change			
-100 bp	4.1%	3.2%	3.3%
100 bp	-2.5%	-1.7%	-1.4%

With regards to the stage 2 classification determination, the quantitative criteria applied in Santander Spain are based on identifying whether an increase in the PD for the expected lifetime of the transaction when compared to the one at its origination is greater than an absolute threshold. The threshold established is different for each portfolio based on the transactions characteristics, considering that a transaction is above this threshold when the PD for the life of the transaction increases by a certain quantity over the initial recognized PD. The values of these thresholds depend on their calibration, carried out periodically as indicated in the preceding paragraphs, which currently ranges from 25% to 1%, depending on the type of product and estimated sensitivity.

In the case of non-retail portfolios, Santander Spain uses the transaction's rating as a reference for its PD, taking into account its rating at the time of origination and its current rating, setting absolute thresholds for the different rating bands that depend on each portfolio characteristics. A SICR implies changes in the rating value between 0.1 and 4, depending on the portfolio and the estimated sensitivity (from lower to higher credit quality, the rating range goes from 1 to 9.3).

In addition, for each portfolio, a series of specific qualitative criteria are defined indicating that the exposure experienced a significant increase in credit risk, regardless of the evolution of its PD since the time of initial recognition. Santander Spain, among other criteria, considers that an operation presents a significant increase in credit risk when positions have been past due for more than 30 days. These criteria depend on the risk management practices of each portfolio.

Residential mortgage portfolio

Residential mortgages in Spain, including Santander Consumer Finance business, amounted to EUR 62,324 million in 2021 (EUR 59,605 million and EUR 62,236 million in 2020 and 2019, respectively), 99.33% of which have a mortgage guarantee (99.35% and 99.51% in 2020 and 2019, respectively).

	2021	
EUR Million	Gross amount	Of which: impaired
Home purchase loans to families	62,324	1,860
Without mortgage guarantee	419	115
With mortgage guarantee	61,905	1,745

	2020	
EUR Million	Gross amount	Of which: impaired
Home purchase loans to families	59,605	1,850
Without mortgage guarantee	387	75
With mortgage guarantee	59,218	1,775

	2019	
EUR Million	Gross amount	Of which: impaired
Home purchase loans to families	62,236	2,649
Without mortgage guarantee	306	14
With mortgage guarantee	61,930	2,635

The mortgage portfolio for the acquisition of homes in Spain is characterised by its medium-low risk profile, which limits expectations of any potential additional impairment:

- Principal is repaid on all mortgages from the start.
- Early repayment is common so the average life of the transaction is well below that of the contract.
- High quality of collateral, concentrated almost exclusively in financing for first homes.
- The average affordability rate stood at 27% (27% and 26% in 2020 and 2019, respectively).
- The 89.41% of the portfolio has a LTV below 80% calculated as total risk/latest available house appraisal.

Breakdown of the credit with mortgage guarantee to households for house acquisition, according to the percentage that the total risk represents on the amount of the latest available valuation (loan to value):

	2021					
	Loan to value ratio					
EUR Million	Less than or equal to 40%	More than 40% and less than 60%	More than 60% and less than 80%	More than 80% and less than or equal to 100%	More than 100%	Total
Gross amount	16,479	19,391	19,479	4,376	2,180	61,905
Of which impaired	187	240	349	313	656	1,745

Businesses portfolio

Credit risk with SME and corporates amounted to EUR 117,544 million, 3.1% lower than in December 2020, mainly due to the fall in the portfolio of SMEs. This is Santander Spain's main lending segment, accounting for 51% of the total. Most of the portfolio corresponds to customers with an assigned credit analyst to monitor their loans throughout the risk cycle.

The portfolio is broadly diversified and not concentrated by sector of activity. 2021 was a year of stability in the portfolio figures after the significant growth in 2020 due to the liquidity support programmes (ICO), which after the initial grace period have begun to be amortised.

The portfolio's NPL ratio stood at 7.50% in December 2021. Even though total risk decreased, the NPL ratio increased by 8 bp compared to December 2020, due to lower portfolio volume, while the stock of credit impaired loans slightly reduced.

Real estate activity

The Real Estate Unit in Spain (UAI) was consolidated within Santander Spain in 2019 (this process was completed in 2020). The part of the portfolio resulting from the past financial crisis and the new business that is identified as viable should be differentiated. In both cases, Santander has specialized teams that are in charge of their management and risk areas that cover the entire life cycle of these operations.

In recent years the Group's strategy has been geared towards reducing these assets. The changes in gross property development loans to customers were as follows:

EUR million	2021	2020	2019
Balance at beginning of year	2,871	2,939	4,812
Foreclosed assets	(1)	(6)	(29)
Reductions	(230)	(24)	(1,685)
Written-off assets	(15)	(38)	(159)
Balance at end of year	**2,625**	**2,871**	**2,939**

The NPL ratio of this portfolio ended the year at 5.07% (compared with 6.13% and 9.73% at December 2020 and 2019, respectively) due to the decrease of non-performing assets in the troubled loan portfolio and, in particular, to the sharp reduction in lending in this segment. The table below shows the distribution of the portfolio. The coverage ratio of the real estate doubtful exposure in Spain stands at 30.08% (32.95% and 35.31% in 2020 and 2019, respectively).

	2021		
EUR Million	Gross amount	Excess of gross exposure over maximum recoverable amount of effective collateral	Specific allowance
Financing for construction and property development (including land) (business in Spain)	2,625	380	53
Of which impaired	133	22	40
Memorandum items written-off assets	650	—	—

Memorandum items: Data from the public con solidated balance sheet

	2021
EUR Million	Carrying amount
Total loans and advances to customers excluding the Public sector (business in Spain) (Book value)	239,328
Total consolidated assets (Total business) (Book value)	1,595,835
Impairment losses and credit risk allowances. Coverage for unimpaired assets (business in Spain)	1,472

At year-end, the distribution of this portfolio was as follows:

	2021
EUR Million	Loans: gross amount
1. Without mortgage guarantee	180
2. With mortgage guarantee	2,445
2.1 Completed buildings	1,412
2.1.1 Residential	876
2.1.2 Other	536
2.2 Buildings and other constructions under construction	969
2.2.1 Residential	907
2.2.2 Other	62
2.3 Land	64
2.3.1 Developed consolidated land	46
2.3.2 Other land	18
Total	**2,625**

Policies and strategies in place for the management of these risks

The policies in force for the management of this portfolio are periodically reviewed and approved on a regular basis by Santander's senior management.

As has already been disclosed in this section, the Group's anticipatory management of these risks enabled it to significantly reduce its exposure, and it has a granular, geographically diversified portfolio in which the financing of second residences accounts for a very small proportion of the total.

Mortgage lending on non-urban land represents a low percentage of mortgage exposure to land, while the remainder relates to land already classified as urban or approved for development.

The significant reduction of exposure in the case of residential financing projects in which the construction work has already been completed was based on various actions. As well as the specialised marketing channels already in existence, campaigns were carried out with the support of specific teams of managers for this function who, in the case of the Santander network, were directly supervised by the recoveries business area. These campaigns, which involved the direct management of the projects with property developers and purchasers, reducing sale prices and adapting the lending conditions to the buyers' needs, enabled loans already in force to be subrogated. These subrogations enable the Group to diversify its risk in a business segment that displays a clearly lower non-performing loans ratio.

In the case of construction-phase projects that are experiencing difficulties of any kind, the policy adopted is to ensure completion of the construction work so as to obtain completed buildings that can be sold in the market. To achieve this aim, the projects are analysed on a case-by-case basis in order to adopt the most effective series of measures for each case (structured payments to suppliers to ensure completion of the work, specific schedules for drawing down amounts, etc.).

For the new post-crisis real estate business production, the admission processes are managed by specialized teams that work in direct coordination with the commercial teams, with clearly defined policies and criteria:

- Property developers with a robust solvency profile and a proven track record in the market.
- Medium-high level projects, conducting to contracted demand and significant cities.
- Strict criteria regarding the specific parameters of the transactions: exclusive financing for the construction cost, high percentages of accredited sales, principal residence financing, etc.
- Support of financing of government-subsidised housing, with accredited sales percentages.
- Restricted financing of land purchases dealt with exceptional nature.

In addition to the permanent control performed by its risk monitoring teams, the Group has a specialist technical unit that monitors and controls this portfolio with regard to the stage of completion of construction work, planning compliance and sales control, and validates and controls progress billing payments. The Group has created a set of specific tools for this function. All mortgage distributions, amounts drawn down of any kind, changes made to the grace periods, etc. are authorised on a centralised basis.

Foreclosed properties

At 31 December 2021, the net balance of these assets amounted to EUR 3,591 million gross amount: of EUR 7,364 million; recognised allowance: of EUR 3,773 million, of which EUR 2,729 million related to impairment after the foreclosure date. At 31 December 2020, the net balance of these assets amounted to EUR 3,962 million (gross amount: EUR 7,937 million; recognised allowance: EUR 3,975 million, of which EUR 2,834 million related to impairment after the foreclosure date). At 31 December, 2019, the net balance of these assets amounted to EUR 4,190 million (gross amount: EUR 8,226 million; recognised allowance: EUR 4,036 million, of which EUR 2,812 million related to impairment after the foreclosure date).

The following table shows the detail of the assets foreclosed by the businesses in Spain at the end of 2021:

	2021			
EUR Million	Gross carrying amount	Valuation adjustments	Of which impairment losses on assets since time of foreclosure	Net Carrying amount
Property assets arising from financing provided to construction and property development companies	**6,313**	**3,376**	**2,455**	**2,937**
Of which:				
Completed buildings	*1,900*	*799*	*627*	*1,101*
Residential	*470*	*181*	*143*	*289*
Other	*1,430*	*618*	*484*	*812*
Buildings under construction	*112*	*57*	*42*	*55*
Residential	*56*	*26*	*17*	*30*
Other	*56*	*31*	*25*	*25*
Land	*4,301*	*2,520*	*1,786*	*1,781*
Developed land	*1,506*	*805*	*496*	*701*
Other land	*2,795*	*1,715*	*1,290*	*1,080*
Property assets from home purchase mortgage loans to households	**838**	**310**	**211**	**528**
Other foreclosed property assets	**213**	**87**	**63**	**126**
Total property assets	**7,364**	**3,773**	**2,729**	**3,591**

In addition, the Group has shareholdings in entities holding foreclosed assets amounting to EUR 701 million (mainly Project Quasar Investment 2017, S.L. with EUR 655 million), and equity instruments foreclosed or received in payment of debts amounting to EUR 16 million.

In recent years, the Group has considered foreclosure to be a more efficient method for resolving cases of default than legal proceedings. The Group initially recognises foreclosed assets at the lower of the carrying amount of the debt (net of provisions) and the fair value of the foreclosed asset (less estimated costs to sell).Subsequent to initial recognition, the assets are measured at the lower of fair value (less costs to sell) and the amount initially recognised.

The fair value of this type of assets is determined by the Group's directors based on evidence obtained from qualified valuers or evidence of recent transactions.

The management of real estate assets on the balance sheet is carried out through companies specializing in the sale of real estate that is complemented by the structure of the commercial network. The sale is realised with at prices in accordance with the market situation and the offer of wholesale buyers.

The gross movement in foreclosed properties were as follows (EUR billion):

	EUR Billion		
	2021	2020	2019
Gross additions	0.4	0.5	0.7
Disposals	(1.1)	(0.9)	(2.7)
Difference	(0.7)	(0.4)	(2.0)

3.3. United States

Santander US's credit risk increased to EUR 112,808 million by the end of December 2021. It makes up 11% of Grupo Santander's total credit risk and includes these business units:

Santander Bank, National Association (SBNA)

At 78% of total credit risk, retail and commercial banking is Santander Bank, National Association's main business. 24% of the portfolio is with individuals, and approximately 76% with corporates. The bank's primary goals include expanding the SCIB business — 22% of total credit risk — by enhancing customer experience and growing core customers and deposits through digital, branch and commercial transformation initiatives; leveraging its deposit base to support its commercial real estate business; and strengthening its auto finance partnerships. Its 15.1% hike in lending spanned all segments. Excluding the FX effect, the increase was lower, standing at 9.2%.

The NPL ratio increased to 0.85% (+4 bp in the year) as of December 2021 the cost of credit fell to -0.06% due to the release of provisions based on better-than-expected market performance, customer behaviour (support programmes and fiscal stimulus) and greater workout recoveries.

Information on the estimation of impairment losses

The detail of Santander Bank, National Association exposure and impairment losses associated with each of the stages at 31 December, 2021, 2020 and 2019, is shown below. In addition, the exposure is divided in three tranches of the Standard & Poor's rating scale, according to their current credit quality:

EXPOSURE AND IMPAIRMENT LOSSES BY STAGE

EUR million

	2021			
Credit quality *	Stage 1	Stage 2	Stage 3	Total
From AAA to BB	38,191	1,157	—	39,348
From BB- to CCC	12,212	3,117	—	15,329
Default	—	—	477	477
Total exposure **	**50,403**	**4,274**	**477**	**55,154**
Impairment losses***	**263**	**314**	**45**	**622**

EXPOSURE AND IMPAIRMENT LOSSES BY STAGE

EUR million

	2020			
Credit quality *	Stage 1	Stage 2	Stage 3	Total
From AAA to BB	18,105	1,778	—	19,883
From BB- to CCC	24,380	2,977	—	27,357
Default	—	—	403	403
Total exposure **	**42,485**	**4,755**	**403**	**47,643**
Impairment losses***	**344**	**316**	**42**	**702**

EXPOSURE AND IMPAIRMENT LOSSES BY STAGE

EUR million

	2019			
Credit quality *	Stage 1	Stage 2	Stage 3	Total
From AAA to BB	27,078	763	—	27,841
From BB- to CCC	32,273	3,964	—	36,237
Default	—	—	419	419
Total exposure **	**59,351**	**4,727**	**419**	**64,497**
Impairment losses***	**265**	**208**	**71**	**544**

* Detail of credit quality ratings calculated for Group management purposes.
** Total exposure includes loan balances (drawn amounts) and off-balance (letters of credit + guarantees) and excludes REPOs, FV portfolio, trading portfolio and undrawn commitments.
***Includes provisions for undrawn authorized lines (loan commitments).

The Government support measures taken in the United States in 2020 as response to the covid-19 pandemic have gradually expired and at the end of December 2021 SBNA had granted, since the start of the pandemic in 2020, a total amount of EUR 3,723 million moratoriums, equivalent to 7.32% of the loan portfolio.

Of the total moratoriums granted,99.9% expired at 31 December, 2021, from which 67.9% were in stage 1, 26.2% in stage 2 and 5.9% in stage 3 (at the end of 2020, of the total moratoriums, 90% had expired, of which 62.1% were in stage 1, 35.3% in stage 2 and 2.6% in stage 3).

Total loans granted under government liquidity programmes in SBNA amounted to EUR 221 million at 31 December 2021.

For the estimation of expected losses, prospective information is taken into account. Specifically, Santander Bank, National Association considers four macroeconomic scenarios, which are updated periodically. The evolution projected in 2021 for a period of five years of the main macroeconomic indicators used Santander Bank, National Association to estimate expected losses is presented below:

	2022 - 2026			
Variables	Pessimistic scenario 2	Pessimistic scenario 1	Base scenario	Optimistic scenario
Interest rate (annual averaged)	0.2%	1.2%	1.3%	1.7%
Unemployment rate	6.6%	4.6%	3.8%	3.3%
House price change	1.2%	1.7%	2.3%	2.8%
GDP growth	2.3%	2.8%	2.7%	3.3%

Each of the macroeconomic scenarios is associated with a given weight. As for its allocation, Santander Bank, National Association associates the highest weighting to the Base scenario, while associates the lowest weightings to the most extreme scenarios:

	2021	2020	2019
Pessimistic scenario 2	18%	18%	18%
Pessimistic scenario 1	20%	20%	20%
Base scenario	33%	33%	33%
Optimistic scenario	30%	30%	30%

In the case of SBNA, no additional 'long-run' scenario was generated for the calculation of the post model adjustment The additional provisions for covid-19 were calculated using the internal model.

The sensitivity analysis of the main portfolios expected loss to variations of +/-100 bp for the macroeconomic variables used in the construction of the scenarios as of 2021 is as follows:

	Change in Provision	
	Mortgages	Corporates
GDP Growth		
-100 bp	2.0%	7.4%
100 bp	-1.4%	-4.6%
Housing price change		
-100 bp	3.7%	12.4%
100 bp	-2.0%	-6.3%
Unemployment rate		
-100 bp	-5.5%	-15.1%
100 bp	6.6%	22.8%

In relation to the Stage 2 classification determination, the quantitative criteria applied at SBNA for retail portfolios uses the FICO (Fair Isaac Corporation) score at the time of origination and its current value, establishing different absolute threshold for each portfolio according to their characteristics. A SICR implies changes in that score ranging from 120 bp to 20 bp In the case of some portfolios, the behaviour score complements this criterion.

In the case of wholesale portfolios, SBNA uses the transaction's rating as a reference for its PD, taking into account its rating at the time of origination and its current rating, setting absolute thresholds for the different rating bands that depend on each portfolio characteristics. A SICR implies changes in the rating value between 2 and 0.1, depending on the portfolio and the estimated sensitivity (from lower to higher credit quality, the rating range goes from 1 to 9.3).

Additionally, for each portfolio, a series of specific qualitative criteria are defined, which indicate that the exposure has experienced a significant increase in credit risk, regardless of the evolution of its PD since the initial recognition. Santander Bank, National Association, among other criteria, considers that a transaction presents a significant increase in credit risk when it has arrears positions for more than 30 days. These criteria depend on the risk management practices of each portfolio.

Santander Consumer USA Inc.

Santander Consumer USA Inc. (SC USA) presents higher risk indicators than other Santander US units due to the nature of its business, which focuses on auto finance via loans and leasing.

The focus continues to be on managing the relationship between profitability and risk, via management of prices adjusted to the credit quality of the customer/transaction, while improving the dealers' experience.

In 2021, loan originations grew more than 4% year-on-year, returning to the pre-pandemic prime and non-prime mix on the back of the commercial relationship we have with Stellantis Group. The production mix resumed the segmentation between prime and non-prime prior to the pandemic.

Auto originations continued to increase, driven mainly by hikes in used car prices and demand.

As of December, the NPL ratio rose to 6.27% (+101 bp in the year) and the cost of credit stood at 1.54% (-654 bp YoY). Annual net credit losses fell year on year due to customer support programmes (triggered by the health crisis), federal fiscal stimulus packages and greater recovery driven by a surge in used car prices. Due to the increase in defaults, the non-performing coverage ratio fell to 176% (-54 bp in the year).

Furthermore, leases carried out exclusively under the Stellantis Group agreement (primarily with highly creditworthy customers) dropped 5% to EUR 13,600 million, providing stable and recurring earnings. Risk management and residual value mitigation measures remain a priority.

Information on the estimation of impairment losses

The detail of Santander Consumer USA Holding Inc. exposure and impairment losses associated with each of the stages at 31 December 2021, 2020 and 2019, is shown below. In addition, the exposure is divided in three tranches of the Standard & Poor's rating scale, according to their current credit quality:

EXPOSURE AND IMPAIRMENT LOSSES BY STAGE

EUR million

	2021			
Credit quality *	Stage 1	Stage 2	Stage 3	Total
From AAA to BB	1,218	39	—	1,257
From BB- to CCC	18,876	7,861	—	26,737
Default	—	—	1,658	1,658
**Total exposure ** **	**20,094**	**7,900**	**1,658**	**29,652**
Impairment losses* **	**524**	**1,741**	**572**	**2,837**

EXPOSURE AND IMPAIRMENT LOSSES BY STAGE

EUR million

	2020			
Credit quality *	Stage 1	Stage 2	Stage 3	Total
From AAA to BB	1,689	12	—	1,701
From BB- to CCC	21,491	4,831	—	26,322
Default	—	—	1,019	1,019
**Total exposure ** **	**23,180**	**4,843**	**1,019**	**29,042**
Impairment losses* **	**911**	**1,820**	**726**	**3,457**

EXPOSURE AND IMPAIRMENT LOSSES BY STAGE

EUR million

	2019			
Credit quality *	Stage 1	Stage 2	Stage 3	Total
From AAA to BB	1,029	14	—	1,043
From BB- to CCC	20,083	6,277	—	26,360
Default	—	—	1,600	1,600
**Total exposure ** **	**21,112**	**6,291**	**1,600**	**29,003**
Impairment losses* **	**859**	**1,503**	**731**	**3,093**

* Detail of credit quality ratings calculated for Group management purposes.
** Total exposure includes loan balances (drawn amounts) and off-balance (letters of credit + guarantees) and excludes REPOs, FV portfolio, trading portfolio and undrawn commitments.
***Includes provisions for undrawn authorized lines (loan commitments).

Since the start of the pandemic in 2020, SC USA has granted a total amount of EUR 5,370 million moratoriums, equivalent to 18.11% of the loan portfolio, at the end of 31 December 2021.

100% of the moratoriums granted had expired at 31 December, 2021, which 2.8% were in stage 1, 68.7% in stage 2 and 28.5% in stage 3 (at the end of 2020, of the total moratoriums, 89.8% had expired, of which 78.5% were in stage 1, 14.6%in stage 2 and 6.9% in stage 3).

Given the nature of its business focused on auto financing for individuals, no loans were granted by liquidity programs in SC USA.

SC USA reassessed the suitability of macroeconomic scenarios and adjusted them in light of new information. At the end of 2021, we updated the most recent scenarios to calculate IFRS 9 provisions by recalibrating and revising the forward-looking information and risk model parameters. After this process, there are additional provisions amounting to EUR 849 million mainly due to the volatility of used car prices and the end of public aid. The car price index during 2021 presents an unusually high value, as a result of the exceptional covid-19 context.

In relation to the methodology used to calculate impairment losses, Santander Consumer USA Inc. uses a method for calculating expected losses based on the use of risk parameters: EAD (exposure at default), PD (probability of default) and LGD (loss given default). The expected loss is calculated by adding the estimated monthly expected losses for the entire life of the operation, unless the operation is classified in Stage 1, which will correspond to the sum of the estimated monthly expected losses during the following 12 months.

In general, there is an inverse relationship between the transactions credit quality and the impairment losses projections so that transactions with better credit quality require a lower expected loss. Transactions credit quality, which is reflected in the internal rating associated to each transaction or client, is shown in the probability of default of the transactions.

For the expected losses estimation, prospective information should be taken into account. Specifically, Santander Consumer USA Holdings Inc. considers four macroeconomic scenarios, periodically updated over a 5-year time horizon.

The evolution forecasted in 2021 for a period of five years of the main macroeconomic indicators used by in Santander Consumer USA Holdings Inc in the estimation of expected losses is shown below:

	2022 - 2026			
Variables	Pessimistic scenario 2	Pessimistic scenario 1	Base scenario	Optimistic scenario
Interest rate (annual averaged)	0.2%	1.2%	1.3%	1.7%
Unemployment rate	6.6%	4.6%	3.8%	3.3%
House price change	1.2%	1.7%	2.3%	2.8%
GDP growth	2.3%	2.8%	2.7%	3.3%
Manheim[A] index	-2.3%	-1.9%	-1.9%	-1.8%

A. US used vehicle price car index.

Each of the macroeconomic scenarios is associated with a given weight. Santander Consumer USA Inc. associates the highest weighting to the Base scenario, whereas it associates the lowest weightings to the most extreme or acid scenarios:

	2021	2020	2019
Pessimistic scenario 2	18%	18%	18%
Pessimistic scenario 1	20%	20%	20%
Base scenario	33%	33%	33%
Optimistic scenario	30%	30%	30%

In the case of SC USA, no additional 'long-run' scenario was generated for the calculation of the post model adjustment. The additional provisions for covid-19 were calculated using the internal model.

The sensitivity analysis of the main portfolios expected loss to variations of +/-100 bp for the macroeconomic variables used in the construction of the scenarios at the end of 2021 is as follows:

	Change in provision
	SC Auto
Manheim index	
-100 bp	1.1%
100 bp	-0.7%
Unemployment Rate	
-100 bp	-4.0%
100 bp	4.6%
House Price Change	
-100 bp	2.6%
100 bp	-1.5%
GDP growth	
-100 bp	1.8%
100 bp	-1.2%

In relation to the stage 2 classification determination, the quantitative criteria applied at SC USA uses the FICO (Fair Isaac Corporation) score at the time of origination and its current value, establishing different absolute threshold for each portfolio according to their characteristics. A SICR implies changes in that score ranging from 100 bp to 60 bp.

Additionally, for each portfolio, a series of specific qualitative criteria are defined, which indicate that the exposure has had a significant increase in credit risk, regardless of the evolution of its PD since the initial recognition. Santander Consumer USA Holdings Inc. among other criteria, considers that a transaction presents a significant increase in credit risk when it has irregular positions for more than 30 days. These criteria depend on the risk management practices of each portfolio.

3.4. Banco Santander (Brasil) S.A.

Positive economic recovery due to the reopening of the service sector, in line with the advances in the vaccination campaigns and the lift of restrictions, although international supply problems have continued to hamper industry growth.

Santander Brasil's credit risk amounted to EUR 85,702 million. It increased by 15% from 2020. Minus the exchange rate effect, it grew by 13%. As of December 2021, Santander Brasil accounts for 8% of Grupo Santander's loan book.

The SME portfolio (Varejo PJ) grew significantly due to the contribution of the different billing clusters that make the portfolio and its different products. State-backed guarantees to combat the effects of the pandemic ended in December 2020, although a new window opened in July 2021.

Net loan-loss provisions stood at EUR 2,715 million (-10% compared to 2020), a decrease driven by additional provision made in 2020 related to covid-19. In local currency, provisions declined by 35%. Cost of credit decreased to 3.73% from 4.35% at the end of 2020, driven by the aforementioned provisions evolution.

Information on the estimation of impairment losses

The detail of Banco Santander (Brasil) S.A. exposure and impairment losses associated with each of the stages at 31December, 2021, 2020 and 2019, is shown below. In addition, the exposure is divided in three tranches of the Standard & Poor's rating scale, according to their current credit quality:

EXPOSURE AND IMPAIRMENT LOSSES

EUR million	2021			
Credit quality *	Stage 1	Stage 2	Stage 3	Total
From AAA to BB	46,558	575	—	47,133
From BB- to CCC	28,582	4,785	—	33,367
Default	—	—	4,182	4,182
Total exposure **	**75,140**	**5,360**	**4,182**	**84,682**
Impairment losses***	**1,232**	**909**	**2,510**	**4,651**

EXPOSURE AND IMPAIRMENT LOSSES

EUR million	2020			
Credit quality *	Stage 1	Stage 2	Stage 3	Total
From AAA to BB	38,686	210	—	38,896
From BB- to CCC	26,166	5,942	—	32,108
Default	—	—	3,428	3,428
Total exposure **	**64,852**	**6,152**	**3,428**	**74,432**
Impairment losses***	**971**	**777**	**2,132**	**3,880**

EXPOSURE AND IMPAIRMENT LOSSES

EUR million	2019			
Credit quality *	Stage 1	Stage 2	Stage 3	Total
From AAA to BB	45,765	308	—	46,073
From BB- to CCC	32,698	5,393	—	38,091
Default	—	—	4,727	4,727
Total exposure **	**78,463**	**5,701**	**4,727**	**88,891**
Impairment losses***	**1,054**	**732**	**2,931**	**4,717**

* Detail of credit quality ratings calculated for Group management purposes.
** Total exposure includes loan balances (drawn amounts) and off-balance (letters of credit + guarantees) and excludes REPOs, FV portfolio, trading portfolio and undrawn commitments.
***Includes provisions for undrawn authorized lines (loan commitments).

The Government support measures taken in Brazil in 2020 as response to the covid-19 pandemic have gradually expired and at the end of December 2021, Santander Brazil had granted, since the start of the pandemic, a total amount of EUR 3,835 million moratoriums, equivalent to 5.35% of the loan portfolio.

Of the total moratoriums granted, 99.7% expired at 31 December 2021, from which 70.8% were in stage 1, 17.4% in stage 2 and 11.8% in stage 3. At the end of 2020, of the total moratoriums 92.4% had expired, of which 75.6% were in stage 1, 17.6% in stage 2 and 6.8% of in stage 3.

Total loans granted by liquidity programmes in Brazil amounted to EUR 1,563 million as of 31 December 2021.

For the expected losses estimation, prospective information is taken into account. Particularly, Santander Brazil considers three macroeconomic scenarios, periodically updated. The evolution for a period of five years of the main macroeconomic indicators used to estimate the expected losses in Santander Brazil is as follows:

	2022-2026		
Variables	Pessimistic scenario	Base scenario	Optimistic scenario
Interest rate (annual averaged)	13.3%	6.7%	4.8%
Unemployment rate	13.3%	12.1%	8.8%
House price change	2.6%	8.7%	13.2%
GDP growth	-1.0%	2.1%	4.5%
Burden income	38.9%	34.9%	29.2%

Each macroeconomic scenario is associated with a given weight. Regarding its assignation, Brazil links the highest weight to the base scenario whilst links the lowest weights to the most extreme scenarios:

	2021	2020	2019
Pessimistic scenario	10%	10%	10%
Base scenario	80%	80%	80%
Optimistic scenario	10%	10%	10%

The sensitivity analysis of the main portfolios expected loss to variations of +/-100 bp for the macroeconomic variables used in the construction of the scenarios is at the end of 2021 as follows:

	Change in provision		
	Consumer	Corporate	Other
GDP growth			
-100 bp	0.4%	1.3%	1.9%
100 bp	-0.1%	-0.6%	-0.9%
Burden income			
-100 bp	-0.3%	-0.5%	-1.3%
100 bp	0.7%	2.0%	2.9%
Interest rate (SELIC)			
-100 bp	-0.1%	-0.5%	-0.8%
100 bp	0.6%	2.9%	3.6%

Regarding the stage 2 classification determination, Santander Brazil uses the transaction's rating as a reference for its PD, taking into account its rating at the time of origination and its current rating, setting different thresholds that depend on each portfolio characteristics. SICR is determined by observing the rating's evolution, considering that a significant increase in credit risk has occurred when the rating reduction reaches values between 3.2 and 1, depending on the rating's value at the time of origination.

In addition, for every portfolio, a set of specific qualitative criteria are defined to indicate that the exposure to credit risk has significantly risen, regardless of the evolution of its PD since the initial recognition. Santander Brazil, among other criteria, considers that an operations involves a significant increase in credit risk when it presents irregular positions for more than 30 days, but in Real State, Consigned and Financial portfolios, where, due to their particular attributes, they use a 60 days threshold. Such criteria depend upon each portfolio's risk management practices.

4. Other credit risk aspects

4.1. Credit risk by activity in the financial markets

This section covers credit risk generated in treasury activities with customers, mainly with credit institutions. Transactions are undertaken through money market financial products with different financial institutions and through counterparty risk products, which serve the Group's customer needs.

According to regulation (EU) n.º 575/2013, counterparty credit risk, which includes derivative instruments, transactions with a repurchase obligation, stock and commodities lending, transactions with deferred repayment and financing of guarantees, arises from the likelihood that a counterparty will default before the final settlement of the transaction's cash flows.

There are two methodologies for measuring this exposure: (i) mark-to-market (MtM) methodology (replacement value of derivatives) plus potential future exposure (add-on); and the Montecarlo simulation to calculate exposures for some countries and products. We also calculate capital at risk and unexpected loss, which is the difference between the economic capital, net of guarantees and recoveries, and expected loss.

After market close, the exposures are recalculated by adjusting transactions to their new time frame, adapting potential future exposure and applying mitigation measures (netting, collateral, etc.) to control exposures directly against the limits approved by senior management. Grupo Santander runs risk control with an integrated system in real time that enables us to know the exposure limit with any counterparty, product and maturity and in any of Santander's subsidiaries at any time.

4.2. Concentration risk

Concentration risk control is a vital part of our management. The Group continuously monitors the degree of concentration of its credit risk portfolios using various criteria: geographic areas and countries, economic sectors and groups of customers.

The board, via the risk appetite framework, determines the maximum levels of concentration.

In line with these maximum levels and limits, the executive risk committee establishes the risk policies and reviews the appropriate exposure levels for the effective management of the degree of concentration in Santander's credit risk portfolios.

Grupo Santander must adhere to the regulation on large risks contained in the CRR, according to which the exposure contracted by an entity with a customer or group of associated customers will be considered a large exposure when its value is equal to or greater than 10% of eligible capital.

In addition, in order to limit large exposures, no entity may assume exposures exceeding 25% of its eligible capital with a single customer or group of associated customers, having factored in the credit risk mitigation effect contained in the regulation.

At the end of December, after applying risk mitigation techniques, no group reaches the above-mentioned thresholds.

Regulatory credit exposure with the 20 largest groups within the scope of large risks represented 5% of the outstanding credit risk with customers (lending to customers plus off-balance sheet risks) as of December 2021.

The detail, by activity and geographical area of the Group's risk concentration at 31 December 2021 is as follows:

EUR million

	2021				
	Total	Spain	Other EU countries	America	Rest of the world
Central banks and Credit institutions	327,984	93,520	59,499	81,647	93,318
Public sector	149,623	35,258	26,276	82,194	5,895
Of which:					
Central government	124,807	23,188	24,525	71,639	5,455
Other central government	24,816	12,070	1,751	10,555	440
Other financial institutions (financial business activity)	120,294	14,228	40,344	35,818	29,904
Non-financial companies and individual entrepreneurs (non-financial business activity) (broken down by purpose)	415,297	121,795	86,183	141,139	66,180
Of which:					
Construction and property development	21,523	3,607	3,392	7,309	7,215
Civil engineering construction	5,857	2,397	2,442	847	171
Large companies	248,955	58,030	49,343	94,496	47,086
SMEs and individual entrepreneurs	138,962	57,761	31,006	38,487	11,708
Households – other (broken down by purpose)	543,804	88,763	95,458	122,809	236,774
Of which:					
Residential	353,752	63,487	35,978	40,265	214,022
Consumer loans	169,897	18,078	56,879	75,837	19,103
Other purposes	20,155	7,198	2,601	6,707	3,649
Total	**1,557,002**	**353,564**	**307,760**	**463,607**	**432,071**

* For the purposes of this table, the definition of risk includes the following items in the public balance sheet: 'Loans and advances to credit institutions', 'Loans and advances to Central Banks', 'Loans and advances to Customers', 'Debt Instruments', 'Equity Instruments', 'Trading Derivatives', 'Hedging derivatives', 'Investments and financial guarantees given'.

4.3. Sovereign risk and exposure to other public sector entities

Sovereign risk occurs in transactions with a central bank. It includes the regulatory cash reserve, issuer risk with the Treasury (public debt portfolio) and risk from transactions with government institutions whose funding only come from the state's budgetary revenue and not commercial operations.

The historic criteria of Grupo Santander can differ from regular EBA stress test standards. Though the EBA does include national, regional and local government institutions, it does not include deposits with central banks, exposures with insurance companies, indirect exposures via guarantees and other instruments.

Grupo Santander´s local sovereign exposure, in currencies other than the official currency of the country of issuance, is not significant (EUR 10,013 million, 2.6% of total sovereign risk) according to our management criteria. Furthermore, exposure to non-local sovereign issuers involving cross-border risk[1] is even less significant (EUR 7,011 million, 1.8% of total sovereign risk).

Sovereign exposure in Latin America is mostly in local currency, and is recognised in the local accounts and concentrated in short- term maturities.

Over the past few years, total exposure to sovereign risk has remained in line with regulatory requirements and our strategy to manage this portfolio.

The shifts observed in the different countries exposure is due to our liquidity management strategy and the hedging of interest and exchange rates risks. Santander's exposure spreads among countries with varied macroeconomic outlooks and dissimilar scenarios in terms of growth, interest and exchange rates.

Our investment strategy for sovereign risk considers country's credit quality to set the maximum exposure limits*:

	2021	2020	2019
AAA	15%	18%	20%
AA	32%	25%	24%
A	26%	25%	18%
BBB	11%	14%	15%
Less than BBB	16%	18%	23%

*Internal ratings are applied.

[1] Countries that are not considered low risk by Banco de España.

The exposure in the table below is disclosed following the latest amendments of the regulatory reporting framework carried out by the EBA, which entered into force in 2021:

	2021					2020
	Portfolio					
Country	Financial assets designated at fair value through profit or loss	Financial assets at fair value through other comprehensive income	Financial assets at amortized cost	Non-trading financial assets mandatorily at fair value through profit or loss	Total net direct exposure	Total net direct exposure
Spain	2,574	2,805	14,178	—	19,557	24,245
Portugal	(20)	2,287	4,277	—	6,544	8,730
Italy	(73)	634	323	—	884	4,015
Greece	—	—	—	—	—	—
Ireland	—	—	9	—	9	—
Rest Eurozone	(233)	1,231	2,631	—	3,629	4,054
UK	(538)	676	228	—	366	(97)
Poland	(15)	10,819	489	—	11,293	10,947
Rest of Europe	—	77	1,291	—	1,368	1,070
US	1,050	13,803	7,616	—	22,469	15,548
Brazil	8,733	16,432	3,394	—	28,559	27,717
Mexico	2,150	10,253	1,106	—	13,509	21,029
Chile	56	1,134	4,881	—	6,071	6,955
Rest of America	94	651	680	—	1,425	958
Rest of the World	2	1,524	1,811	—	3,337	4,752
TOTAL	**13,780**	**62,326**	**42,914**	**—**	**119,020**	**129,923**

5. Forborne loan portfolio

Grupo Santander's internal forbearance policy acts as a reference for our subsidiaries locally. It shares the principles of regulations and supervisory expectations. It includes the requirements of the EBA guidelines on management of non performing and forborne exposures.

It defines forbearance as the modification of the payment conditions of a transaction to allow a customer experiencing financial difficulties (current or foreseeable) to fulfil their payment obligations. If forbearance is not allowed, there would be reasonable certainty that the customer would not be able to meet their financial obligations.

In addition, this policy also sets down rigorous criteria for evaluating, classifying and monitoring forbearances to ensure the strictest possible care and diligence in recovering due amounts. Thus, it dictates that we must adapt payment obligations to customers' current circumstances. Our forbearance policy also defines classification criteria to ensure we recognize risks appropriately. They must remain classified as non-performing or in watch-list for a prudential period for reasonable certainty of repayment.

Forbearances may never be used to delay the immediate recognition of losses or hinder the appropriate recognition of risk of default.

Total volume of forborne portfolio, at the end of December 2021, stood at EUR 36,042 million. After years of decreases due to the positive macroeconomic situation of the group's main geographies, the forborne stock remained practically flat in 2020. The portfolio increased by 24% in 2021, as a result of greater volume of forbearance carried out to attend to the needs of customers facing financial difficulties. In terms of credit quality, 43% of the loans is classified as doubtful, with a coverage ratio of 41%.

The following terms are used with the meanings specified below:

- Refinancing transaction: transaction that is granted or used, for reasons relating to current or foreseeable financial difficulties of the borrower, to repay one or more of the transactions granted to it, or through which the payments on such transactions are brought fully or partially up to date, in order to enable the borrowers of the cancelled or refinanced transactions to repay their debt (principal and interest) because they are unable, or might foreseeably become unable, to comply with the conditions there of in due time and form.

- Restructured transaction: transaction with respect to which, for economic or legal reasons relating to current or foreseeable financial difficulties of the borrower, the financial terms and conditions are modified in order to facilitate the payment of the debt (principal and interest) because the borrower is unable, or might foreseeably become unable, to comply with the aforementioned terms and conditions in due time and form, even if such modification is envisaged in the agreement.

Current refinancing and restructuring balances

Amounts in EUR million, except number of transactions that are in units

2021							
	Total						
	Without real guarantee		With real guarantee				
					Maximum amount of the actual collateral that can be considered		
	Number of transactions	Gross amount	Number of transactions	Gross amount	Real estate guarantee	Rest of real guarantees	Impairment of accumulated value or accumulated losses in fair value due to credit risk
Credit entities	—	—	—	—	—	—	—
Public sector	32	18	15	7	2	—	4
Other financial institutions and: individual shareholder	1,002	93	720	200	102	79	30
Non-financial institutions and individual shareholder	248,375	11,548	47,865	8,915	5,517	1,206	4,367
Of which financing for constructions and property development	8,576	113	1,321	550	390	40	176
Other warehouses	3,650,507	4,491	451,930	10,771	6,063	3,615	3,860
Total	**3,899,916**	**16,150**	**500,530**	**19,893**	**11,684**	**4,900**	**8,261**
Financing classified as non-current assets and disposable groups of items that have been classified as held for sale	—	—	—	—	—	—	—

Current refinancing and restructuring balances

Amounts in EUR million, except number of transactions that are in units

2021							
	Of which, non-performing/Doubtful						
	Without real guarantee		With real guarantee				
					Maximum amount of the actual collateral that can be considered		
	Number of transactions	Gross amount	Number of transactions	Gross amount	Real estate guarantee	Rest of real guarantees	Impairment of accumulated value or accumulated losses in fair value due to credit risk
Credit entities	—	—	—	—	—	—	—
Public sector	7	1	14	5	2	—	4
Other financial institutions and: individual shareholder	421	51	528	67	54	7	27
Non-financial institutions and individual shareholder	116,009	4,377	32,263	5,261	3,308	424	3,891
Of which financing for constructions and property development	4,638	63	849	301	172	34	148
Other warehouses	1,839,629	1,879	162,177	3,898	2,641	434	2,382
Total	**1,956,066**	**6,308**	**194,982**	**9,231**	**6,005**	**865**	**6,304**
Financing classified as non-current assets and disposable groups of items that have been classified as held for sale	—	—	—	—	—	—	—

In 2021, the amortised cost of financial assets whose contractual cash flows were modified during the year when the corresponding loss adjustment was valued at an amount equal to the expected credit losses over the life of the asset amounted to EUR 2,480 million, without these modifications having a material impact on the income statement. Also, during 2021, the total of financial assets that have been modified since the initial recognition, and whose correction for expected loss has gone from being valued during the entire life of the asset to the following twelve months, amounts to EUR 1,868 million.

The transactions presented in the foregoing tables were classified at 31 December 2021 by nature, as follows:

- Non-performing: Operations that rest on an inadequate payment scheme will be classified within the non-performing category, regardless they include contract clauses that delay the repayment of the operation throughout regular payments or present amounts written off the balance sheet for being considered irrecoverable.

- Performing: Operations not classifiable as non-performing will be classified within this category. Operations will also be classified as normal if they have been reclassified from the non-performing category for complying with the specific criteria detailed below:

  a) A period of a year must have passed from the refinancing or restructuring date.

  b) The owner must have paid for the accrued amounts of the capital and interests, thus reducing the rearranged capital amount, from the date when the restructuring of refinancing operation was formalised.

c) The owner must not have any other operation with amounts past due by more than 90 days on the date of the reclassification to the normal risk category.

Attending to the credit attention 57% of the forborne loan transactions are classified as other than non-performing. Particularly noteworthy are the level of existing guarantees (46% of transactions are secured by collateral) and the coverage provided by specific allowances (representing 23% of the total forborne loan portfolio and 41% of the non-performing portfolio).

c) Market, structural and liquidity risk

1. Activities subject to market risk and types of market risk

Activities exposed to market risk encompass transactions where risk is assumed as a consequence of potential changes in interest rates, inflation rates, exchange rates, stock prices, credit spreads, commodity prices, volatility and other market factors; the liquidity risk from our products and markets, and the balance-sheet liquidity risk. Therefore, they include trading risks and structural risks.

- Interest rate risk arises from movements in interest rates that reduce the value of a financial instrument, a portfolio or the Grupo Santander. It can affect loans, deposits, debt securities, most assets and liabilities held for trading, and derivatives.

- Inflation rate risk arises from movements in inflation that can reduce the value of a financial instrument, a portfolio or the entire group. It can affect loans, debt securities and derivatives (e.g. inflation swaps and futures) whose profitability is linked to inflation.

- Exchange rate risk is the possibility of loss because the currency of a long or open position will depreciate against the base currency. It can affect debt in subsidiaries whose local currency is not the euro, as well as loans denominated in a foreign currency.

- Equity risk is the possibility of loss from open positions in securities if their market price or expected future dividends fall. It affects shares, stock market indices, convertible bonds and derivatives with shares as the underlying asset (put, call, equity swaps, etc.).

- Credit spread risk is the possibility of loss from open positions in fixed-income securities or credit derivatives if their yield curve, or the recovery rate of their issuer or type change. A spread is the yield difference between financial instruments against a benchmark (e.g. the internal rate of return (IRR) of government bonds and interbank interest rates).

- Commodity price risk is the possibility of loss from movements in commodity prices. Grupo Santander's commodity exposure is minor and stems mainly from commodity derivatives.

- Volatility risk is the possibility of loss caused by movements in interest rates, exchange rates, the stock market, credit spreads and other risk factors affecting portfolio value. It is inherent to all financial instruments whose value considers volatility (especially options contracts).

Derivative contracts (such as options, futures, forwards and swaps) can mitigate market risks partially or fully.

Additionally, other more complex hedging market risks are considered, such as correlation risk, market liquidity risk, prepayment or cancellation risk, and underwriting risk.

Balance sheet liquidity risk (unlike market liquidity risk) is the possibility of loss caused by forced disposal of assets or cash flow imbalance if the bank meets its payment obligations late or at excessive cost. It can cause losses by forced asset sales or impacts on margins due to the mismatch between expected cash inflows and outflows.

Pension and actuarial risks (explained at the end of this section) also depend on market variables.

Grupo Santander aim to comply with the *Basel Committee's Fundamental Review of the Trading Book* (FRTB) and the EBA's Guidelines on the management of interest rate risk arising from non-trading book activities. The purpose of several projects Grupo Santander runs is to provide risk control managers and teams with the best market risk management tools under the right governance framework for the models Grupo Santander uses for metric reporting; and to comply with regulation on the risks mentioned above.

2. Trading market risk management

Setting market risk limits in a dynamic process according to the risk appetite in the annual limits plan prepared by senior management and extended to all subsidiaries.

The standard methodology for risk management and control in trading, measures the maximum expected loss with a specific level of confidence and time frame. The standard for historical simulation is a confidence level of 99% over one day. We apply statistical adjustments efficiently to incorporate recent developments affecting our levels of risk. Our time frame is two years or at least 520 days from the reference date of the VaR calculation.

The balance sheet items in the Group's consolidated position that are subject to market risk are shown below, distinguishing those positions for which the main risk metric is VaR from those for which risk monitoring is carried out using other metrics:

EUR million

		Main market risk metric		
	Balance sheet amount	VaR	Other	Main risk factor for 'Other' balance
Assets subject to market risk				
Cash, cash balances at central banks and other deposits on demand	210,689		210,689	Interest rate
Financial assets held for trading	116,953	116,953		
Non-trading financial assets mandatorily at fair value through profit or loss	5,536	4,042	1,494	Interest rate, spread
Financial assets designated at fair value through profit or loss	15,957	5,489	10,468	Interest rate, spread
Financial assets designated at fair value through other comprehensive income	108,038	2,453	105,585	Interest rate, spread
Financial assets at amortized cost	1,037,898		1,037,898	Interest rate, spread
Hedging derivatives	4,761		4,761	Interest rate, exchange rate
Changes in the fair value of hedged items in portfolio hedges of interest risk	410		410	Interest rate
Other assets	95,593			
Total assets	1,595,835			
Liabilities subject to market risk				
Financial liabilities held for trading	79,469	79,469		
Financial liabilities designated at fair value through profit or loss	32,733	390	32,343	Interest rate, spread
Financial liabilities at amortized cost	1,349,169		1,349,169	Interest rate, spread
Hedging derivatives	5,463		5,463	Interest rate, exchange rate
Changes in the fair value of hedged items in portfolio hedges of interest rate risk	248		248	Interest rate
Other liabilities	31,700			
Total liabilities	1,498,782			
Equity	97,053			

The following table displays the latest and average VaR values at 99% by risk factor over the last three years. It also shows the minimum and maximum VaR values in 2021 and 97.5% ES at the end of December 2021:

VaR STATISTICS AND EXPECTED SHORTFALL BY RISK FACTOR[A]

EUR million. VaR at 99% and ES at 97.5% with one day time horizon

	2021					2020		2019	
	VaR (99%)				ES (97.5%)	VaR		VaR	
	Min	Average	Max	Latest	Latest	Average	Latest	Average	Latest
Total Trading	**6.8**	**10.5**	**15.9**	**12.3**	**11.9**	**12.5**	**8.3**	**12.1**	**10.3**
Diversification effect	(6.3)	(12.9)	(26.6)	(13.4)	(15.0)	(13.0)	(11.8)	(8.1)	(9.8)
Interest rate	6.0	9.6	15.3	9.1	9.4	9.2	5.4	10.0	9.2
Equities	2.2	3.5	7.7	5.1	5.1	4.4	3.1	2.9	4.8
Exchange rate	1.9	4.2	8.0	5.7	5.6	5.9	6.0	3.9	2.6
Credit spread	2.6	4.8	8.0	5.1	6.0	5.5	4.5	3.4	3.5
Commodities	0.4	1.3	3.5	0.7	0.8	0.5	1.1	0.0	0.0
Total Europe	**6.1**	**9.3**	**16.1**	**9.9**	**9.7**	**10.5**	**8.0**	**6.3**	**10.1**
Diversification effect	(5.2)	(9.3)	(16.9)	(12.6)	(13.1)	(10.7)	(8.9)	(6.9)	(8.4)
Interest rate	5.3	7.7	11.7	7.1	6.7	7.9	6.5	6.0	8.2
Equities	1.8	3.3	8.3	5.8	5.2	4.3	3.0	1.9	4.9
Exchange rate	1.6	2.8	5.0	4.5	4.9	3.5	2.9	1.9	1.9
Credit spread	2.6	4.8	8.0	5.1	6.0	5.5	4.5	3.4	3.5
Commodities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total North America	**1.6**	**2.5**	**7.4**	**2.7**	**2.8**	**6.6**	**2.9**	**3.5**	**3.8**
Diversification effect	0.2	(0.7)	(2.9)	(0.6)	(0.5)	(2.2)	(1.0)	(1.3)	(2.1)
Interest rate	1.3	2.5	7.0	2.7	2.7	3.4	3.3	2.6	3.4
Equities	0.0	0.1	1.5	0.0	0.0	0.3	0.1	0.2	0.1
Exchange rate	0.1	0.6	1.8	0.6	0.6	5.1	0.5	2.0	2.4
Total South America	**3.3**	**5.9**	**10.5**	**6.3**	**6.4**	**5.6**	**4.5**	**9.5**	**6.0**
Diversification effect	(1.2)	(4.9)	(16.0)	(5.1)	(3.8)	(3.8)	(5.4)	(2.9)	(3.7)
Interest rate	3.0	5.5	12.2	5.8	6.3	5.2	4.1	7.8	5.9
Equities	0.4	1.2	3.2	1.1	1.0	1.0	0.5	2.0	1.7
Exchange rate	0.7	2.8	7.6	3.8	2.1	2.7	4.2	2.6	2.1
Commodities	0.4	1.3	3.5	0.7	0.8	0.5	1.1	0.0	0.0

A. In South and North America, VaR levels of credit spreads and commodities are not shown separately due to their low or null materiality.

At the end of December, VaR had increased by EUR 4 million higher than at the end of 2020; however, average VaR fell by EUR 2.0 million. Average VaR fell for most risk factors owing to low market volatility throughout the year. By region, average VaR decreased in Europe and especially in North America with lower exchange rate volatility.

By risk factor, VaR has followed a generally stable trend in recent years. For many factors, temporary VaR increases generally owe more to short-term price volatility than to significant changes in positions.

Backtesting

Actual losses can differ from predicted losses because of the VaR's limitations. Grupo Santander measures the accuracy of the VaR calculation model to make sure it is reliable. The most important tests Grupo Santander runs involve backtesting:

- Backtesting of hypothetical P/L and of the entire trading book showed no exceptions to 99% VaR and VaE in 2021.
- The exceptions observed in the past year are consistent with the assumptions of the VaR calculation model.

IBOR Reform

Regulatory and supervisory context

In 2013, IOSCO published the Principles for Financial Benchmarks (IOSCO Principles) that establish standards for the development of benchmarks. Subsequently, the FSB established the Official Sector Steering Group (OSSG) for the application of the IOSCO Principles to the IBOR (Interbank Offered Rates) indices. Since then, the central banks and regulators of various jurisdictions have organized working groups to recommend alternative indices to indices such as the EONIA (Euro Overnight Index Average) and the LIBORs (London Interbank Offered Rates).

On 13 September 2018, the European Central Bank's working group recommended that the euro short-term interest rate (€STR) replace the EONIA. From 2 October 2019, the date on which the €STR was made available, the EONIA changed its methodology to be calculated as €STR plus a spread of 8.5 basis points. This change in the EONIA methodology was intended to facilitate the transition of the EONIA market to €STR before its definitive cessation on 3 January 2022.

On 5 March 2021, the Financial Conduct Authority (FCA) announced the final dates for the cessation of LIBORs:

- On 31 December 2021, the publication of USD LIBOR (1 week and 2 months term), CHF LIBOR (all terms), GBP LIBOR (overnight term, 1 week, 2 months and 12 months), JPY LIBOR (overnight term, 1 week, 2 months, and 12 months) and EUR LIBOR (all terms).
- On 31 December 2021, the calculation methodology of some LIBORs was reformed to publish temporary synthetic LIBORs that became non-representative: GBP LIBOR (1-month, 3-month and 6-month terms) and JPY LIBOR (1-month term, 3 months and 6 months).
- On 30 June 2023, the publication of the USD LIBOR will cease (overnight terms, 1 month, 3 months, 6 months and 12 months).

In October 2020, the International Swaps and Derivatives Association (ISDA) launched the fallbacks Protocol and Supplement for IBORs (effective 25 January 2021), and provided market participants with of new derivatives fallbacks of LIBORs (among others IBOR, such as EURIBOR) for current derivative contracts and for new contracts. Additionally, on 19 August 2021, ISDA launched a new protocol that allowed entities to incorporate a fallback to the EONIA as the rate applicable to collateral in ISDA collateral agreements (known as CSAs). Banco Santander SA and various Santander Group entities have adhered to these protocols.

On December 2020, the Council of the European Union endorsed the modification of the EU Benchmark Regulation (BMR), giving the European Commission the power to establish a legislative solution that proposes a replacement rate to indices the cessation of which could cause a significant disturbance to the functioning of financial markets in the EU. In this context, on 14 and 21 October 2021, the European Commission published the Implementing Regulations regarding the designation of a substitute reference index for CHF LIBOR and EONIA.

Given the relevance of the IBOR indices, the volume of contracts and exposures is very high in the banking sector. Santander Group has a significant number of contracts linked to these interest rates. The most relevant are EURIBOR, EONIA, and LIBOR. These benchmarks are widely used, including derivative products, corporate loans, retail, discount products, deposits, repos, securities lending, collateral agreements, and floating rate notes, among others.

LIBOR and EONIA Reform

The main risks to which Santander is exposed arising from the transition of the EONIA and LIBORs are: (i) legal risks arising from potential changes in the documentation required for new or existing operations; (ii) financial and accounting risks derived from market risk models and from the valuation, coverage, cancellation and recognition of the financial instruments associated with the reference indices; (iii) business risk that revenues from LIBOR-linked products decline; (iv) pricing risks arising from how changes to benchmark indices could impact pricing mechanisms on some instruments; (v) operational risks arising from the potential requirement to adapt IT systems, trade reporting infrastructure and operational processes; (vi) conduct risks arising from the potential impact of communications with customers during the transition period and (vii) litigation risks regarding our existing products and services, which could adversely impact our profitability.

In order to monitor the risks and address the challenges of the transition, Santander launched the IBOR Transition Programme in 2019. The global program ensures that all affected business units and subsidiaries have a consistent understanding of the risks associated with the transition and can take appropriate steps to mitigate them.

This transition program incorporates the recommendations, guidelines and milestones defined by the regulators and working groups of the different jurisdictions. The structure of the program focuses on the following areas: Technology and Operations, Legal, Customer Relations, Risk Management and Models, Conduct and Communication, and Accounting and Finance.

During 2021, the IBOR Transition Program has focused on making all the contractual, commercial, operational and technological changes necessary to undertake the transition of the LIBOR and EONIA rates that have been discontinued in 2021. In 2022, the program will continue to attend to the next steps of the transition related to the management of the contract history and the milestone of the cessation of the LIBOR dollar of June 2023.

In addition, Grupo Santander continues to participate, throughout 2022, in the initiatives developed by the public and private sectors related to the reform of the interest rate reference indices.

Additionally, see information included in notes 1.b and 36.

3. Structural balance sheet risks

3.1. Main aggregates and variations

Consistent with previous years, the market risk profile of Grupo Santander's balance sheet remained moderate in 2021 in terms of asset, shareholders' equity and NII volumes. Each subsidiary's finance division manages interest rate risk from commercial banking and is responsible for handling structural risk from interest rate fluctuations.

To measure interest rate risk, Grupo Santander uses statistical models based on strategies to mitigate structural risk with interest-rate instruments (such as bonds and derivatives) to keep risk profile within risk appetite.

The NII and EVE sensitivities below are based on scenarios of parallel interest rate movements from -100 to +100 basis points.

Structural VaR

With such a homogeneous metric as VaR, we can fully monitor market risk in the banking book We differentiate fixed income based on interest rates and credit spreads in ALCO portfolios, FX rates and shares.

In general, the structural VaR of Grupo Santander total assets and equity is minor.

STRUCTURAL VaR

EUR million. Structural VaR 99% with a temporary horizon of one day.

	2021				2020		2019	
	Min	Average	Max	Latest	Average	Latest	Average	Latest
Structural VaR	**895.8**	**993.7**	**1,090.7**	**1,011.9**	**911.1**	**903.2**	**511.4**	**729.2**
Diversification effect	(158.8)	(327.3)	(431.4)	(240.2)	(349.8)	(263.4)	(304.2)	(402.0)
VaR Interest Rate*	224.2	400.7	540.5	287.8	465.1	345.5	345.6	629.7
VaR Exchange Rate	521.3	600.6	655.2	655.2	499.9	502.6	308.1	331.7
VaR Equities	309.1	319.7	326.4	309.1	295.9	318.5	161.9	169.8

* Includes credit spread VaR on ALCO portfolios.

Structural interest rate risk

- Europe

In general, the NII and EVE of Grupo Santander's main balance sheets (i.e. Santander España and Santander UK) show positive sensitivity to rising interest rates. Across our footprint, exposure was moderate in relation to annual budget and capital levels in 2021.

At the end of December 2021, under the scenarios previously described, the most significant NII sensitivity risk concentration in euros amounted to EUR 703 million; in pounds sterling, EUR 541 million; in Polish złoty EUR 65 million; and in the US dollar, EUR 54 million.

The most significant EVE risk concentration amounted to EUR 3,684 million; in the yield curve of the euro; of the pound sterling, EUR 1,056 million ; of the US dollar, EUR 221 million; and of the Polish zloty EUR 56 million, all relating to the interest rate cut risks.

- North America

In general, the NII and EVE of Grupo Santander's North American balance sheets tend to show positive sensitivity to rising interest rates. Exposure was moderate in relation to annual budget and capital levels in 2021.

At the end of December, the most significant risk to NII was mainly in the US and amounted to EUR 152 million.

- South America

The EVE and NII of our Grupo Santander's South American balance sheets are positioned for interest rate cuts.

Exposure in all countries was moderate in relation to the annual budget and capital levels in 2020.

In 2021, exposure was moderate in relation to annual budget and capital levels. At the end of December, the most significant risks to NII were mainly in Chile (EUR 86 million) and Brazil (EUR 83 million).

The most significant risks to EVE were recorded in Brazil (EUR 271 million) and Chile (EUR 258 million).

Structural foreign currency rate risk/results hedging

Grupo Santander's structural FX risk stems mainly from the income and hedging of foreign currency transactions for permanent financial investments. In the dynamic management of this risk, Grupo Santander aims to limit the impact of FX rate movements on the core capital ratio. In 2021, the hedged of the different currencies that have an impact on our core capital ratio was close to 100%.

In December 2021, the permanent exposures (with potential impact on shareholders' equity) were, from largest to smallest, in US dollars, British pounds sterling, Brazilian *reais*, Mexican pesos, Chilean *pesos* and Polish złoty.

Grupo Santander uses FX derivatives to hedge part of those permanent positions. The Finance division manages FX risk and hedging for the expected profits and dividends of subsidiaries whose base currency is not the euro.

Structural equity risk

Grupo Santander holds equity positions in its banking and trading books. They are either equity instruments or stock, depending on the share of ownership or control.

By the end of December 2021, the equities and shareholdings in the banking book were diversified among Spain, China, Morocco, Poland and other countries. Most of them invest in the financial and insurance sectors. Grupo Santander has minor equity exposure to property and other sectors.

Structural equity positions are exposed to market risk. VaR is calculated for these positions with a set of market prices and proxies. At the end of December 2021, VaR at a 99% confidence level over a one day horizon was EUR 325 million (EUR 319 million and EUR 170 million at the end of 2020 and 2019, respectively).

3.2. Methodologies

Structural interest rate risk

As part of structural risk, interest rate risk in the banking book (IRRBB) is the main source of balance sheet risk.

Grupo Santander measures the potential impact of interest rate movements on EVE and NII. Because changing rates may generate impacts, Grupo Santander must manage and control many subtypes of interest rate risk, such as repricing risk, curve risk, basis risk and option risk (e.g. behavioural or automatic). Interest rate risk in the balance sheet and market conditions and outlooks could necessitate certain financial measures to achieve Grupo Santander's desired risk profile (such as selling positions or setting interest rates on products we market). The metrics Grupo Santander uses to monitor IRRBB include NII and EVE sensitivity to interest rate movements.

- Net interest income sensitivity

Net interest income (NII) is the difference between interest income from assets and the interest cost of liabilities in the banking book over a typical one- to three-year horizon (one year being standard in Grupo Santander). Because NII sensitivity is the difference in income between a selected scenario and the base scenario, its values can be as many as considered scenarios. It enables us to see short-term risks and supplement economic value of equity (EVE) sensitivity.

- Economic value of equity sensitivity

Economic value of equity (EVE) is the difference between the current value of all assets minus the current value of all liabilities in the banking book. It does not include shareholders' equity and non-interest-bearing instruments. Because EVE sensitivity is the difference in EVE between a selected scenario and the base scenario, it can have as many values as considered scenarios. It enables us to see long-term risks and supplement NII sensitivity.

Structural exchange-rate risk/hedging of results

Every day, Grupo Santander measures FX positions, VaR and P/L.

Structural equity risk

Grupo Santander measures equity positions, VaR and P/L.

4. Liquidity risk

Structural **liquidity management** aims to fund the Group's recurring activity optimising maturities and costs, while avoiding taking on undesired liquidity risks.

Santander's liquidity management is based on the following principles:

- Decentralised liquidity model.
- Medium- and long-term (M/LT) funding needs must be covered by medium- and long-term instruments.
- High contribution from customer deposits due to the retail nature of the balance sheet.
- Diversification of wholesale funding sources by instruments/ investors, markets/currencies and maturities.
- Limited recourse to short-term funding.
- Availability of sufficient liquidity reserves, including standing facilities/discount windows at central banks to be used in adverse situations.
- Compliance with regulatory liquidity requirements both at Group and subsidiary level, as a new factor conditioning management.

The effective application of these principles by all institutions comprising the Group required the development of a unique **management framework** built upon three fundamental pillars:

- A **solid organisational and governance model** that ensures the involvement of the subsidiaries' senior management in decision-taking and its integration into the Group's global strategy. The decision-making process for all structural risks, including liquidity and funding risk, is carried out by local Asset and Liability Committees (ALCOs) in coordination with the global ALCO, which is the body empowered by the Bank's board in accordance with the corporate Asset and Liability Management (ALM) framework.

This governance model has been reinforced as it has been included within Santander's Risk Appetite Framework. This framework meets demands from regulators and market players emanating from the financial crisis to strengthen banks' risk management and control systems.

- In-depth **balance sheet analysis and measurement of liquidity risk**, supporting decision-taking and its control. The objective is to ensure the Group maintains adequate liquidity levels necessary to cover its short- and long-term needs with stable funding sources, optimising the impact of their costs on the income statement. Grupo Santander's liquidity risk management processes are contained within a conservative risk appetite framework established in each geographic area in accordance with its commercial strategy. This risk appetite establishes the limits within which the subsidiaries can operate in order to achieve their strategic objectives.

- **Management adapted** in practice to the **liquidity needs of each business**. Every year, based on business needs, a liquidity plan is developed which seeks to achieve:
  - a solid balance sheet structure, with a diversified presence in the wholesale markets;
  - the use of liquidity buffers and limited encumbrance of assets;
  - compliance with both regulatory metrics and other metrics included in each entity's risk appetite statement.

Over the course of the year, all dimensions of the plan are monitored.

Grupo Santander continues to develop the **ILAAP** (Internal Liquidity Adequacy Assessment Process), an internal self-assessment of liquidity adequacy which must be integrated into the Group's other risk management and strategic processes. It focuses on both quantitative and qualitative matters and is used as an input to the SREP (Supervisory Review and Evaluation Process). The ILAAP evaluates the liquidity position both in ordinary and stressed scenarios.

i. Liquidity risk measurement

Grupo Santander measures liquidity risk with tools and metrics that account for the appropriate risk factors.

a) Liquidity buffer

The liquidity buffer is the total liquid assets a bank has to cope with cash outflows during periods of stress. The assets are free of encumbrances and can be used immediately to generate liquidity without losses or excessive discounts. The liquidity buffer is a tool for calculating most liquidity metrics. It is also a metric with defined limits for each subsidiary.

b) Liquidity Coverage Ratio (LCR)

The liquidity coverage ratio (LCR) is a regulatory metric. Its purpose is to promote the short-term resilience of a bank's liquidity profile and make sure it has enough high-quality liquid assets to withstand a considerable idiosyncratic or market stress scenario over 30 calendar days.

c) Wholesale liquidity metric

The wholesale liquidity metric measures the number of days Grupo Santander would survive if it used liquid assets to cover lost liquidity from a wholesale deposit run-off (without possible renewal) over a set time horizon. Grupo Santander also uses it as an internal short-term liquidity metric to reduce risk from dependence on wholesale funding.

d) Net Stable Funding Ratio (NSFR)

The net stable funding ratio (NSFR) is a regulatory metric we use to measure long-term liquidity risk. It is the ratio of available stable funding to required stable funding. It requires banks to keep a robust balance sheet, with off-balance-sheet assets and operations financed by stable liabilities.

e) Asset Encumbrance metrics

Grupo Santander calculates two metrics to measure asset encumbrance risk. On the one hand, the asset encumbrance ratio gives the proportion of encumbered assets to total assets; on the other, the structural asset encumbrance ratio gives the proportion of encumbered assets by structural funding transaction (namely long-term collateralized issues and credit transactions with central banks).

f) Other additional liquidity indicators

In addition to traditional tools to measure short and long-term liquidity and funding risk, Grupo Santander has a set of additional liquidity indicators to complement those and to measure other non-covered liquidity risk factors. These include concentration metrics, such as the main and the five largest funding counterparties, or the distribution of funding by maturity.

In addition, we calculate a number of metrics on the institution's ability to generate liquidity through collateralized financing, such as overcollateralization, eligibility ratios assets without charges and deadlines for their placement.

g) Liquidity scenario analysis

As liquidity stress tests, four standard scenarios have been defined:

i. An idiosyncratic scenario of events detrimental only to Santander;

ii. a local market scenario of events highly detrimental to a base country's financial system or real economy;

iii. a global market scenario of events highly detrimental to the global financial system; and

iv. combined scenario consisting of a combination of more severe idiosyncratic and market events (local and global) occurring simultaneously and interactively.

Grupo Santander uses these stress test outcomes as tools to determine risk appetite and support business decision-making.

h) Liquidity early warning indicators

The system of early warning indicators (EWI) consists of quantitative and qualitative liquidity indicators that help predict stress situations and weaknesses in the funding and liquidity structure of Grupo Santander entities. External indicators relate to market-based financial variables; internal indicators relate to our own performance.

i) Intraday liquidity metrics

Grupo Santander follows Basel regulation and calculates several metrics and stress scenarios for intraday liquidity risk to maintain a high level of control.

ii. Liquidity coverage ratio and net stable financing ratio

As regards the liquidity coverage ratio (LCR), the regulatory requirement for this ratio, set at 100%, has been at its maximum level since 2018.

Below is a breakdown of the composition of the Group's liquid assets under the criteria set out in the supervisory prudential reporting (Commission Implementing Regulation (EU) 2017/2114 of 9 November 2017) for the determination of high quality liquid assets for the calculation of the LCR ratio (HQLA):

EUR million

	2021	2020
	Amount weighted applicable	Amount weighted applicable
High-quality liquid assets-HQLAs		
Cash and reserves available at central banks	*206,507*	*149,893*
Marketable assets Level 1	*81,925*	*104,270*
Marketable assets Level 2A	*3,422*	*5,272*
Marketable assets Level 2B	*5,446*	*4,200*
Total high-quality liquid assets	**297,300**	**263,635**

In relation to the net stable funding ratio (NSFR), its definition was approved by the Basel Committee in October 2014. The transposition of this requirement to the European regulation took place in June 2019 with the publication in the Official Gazette of the European Union of Regulation (EU) 2019/876 of the European Parliament and of the Council of May 20, 2019. The Regulation establishes that entities must have a net stable financing ratio, as defined in the Regulation, higher 100% from June 2021. For this reason, the figures for 2019 and 2020 for this ratio are calculated using the Basel methodology, while those for 2021 already include the requirement as transposed into European regulations.

The liquidity coverage ratio, broken down by component, and the net stable funding ratio for the Group at year-end 2021 and 2020 are presented below:

EUR million

	2021	2020
High-quality liquid assets-HQLAs (numerator)	297,300	263,635
Total net cash outflows (denominator)	181,953	157,368
Cash outflows	*233,294*	*204,813*
Cash inflows	*51,341*	*47,445*
LCR ratio (%)	**163%**	**168%**
NSFR ratio (%)	**126%**	**120%**

As regards the funding structure, given the predominantly commercial nature of the Group's balance sheet, the loan portfolio is mainly financed by customer deposits. Note 22) 'Debt securities' shows the composition of these liabilities on the basis of their nature and classification, the movements and maturity profile of the debt securities issued by the Group, reflecting the strategy of diversification by products, markets, issuers and maturities followed by the Group in its approach to the wholesale markets.

iii. Asset encumbrance

In accordance with the guidelines established by the European Banking Authority (EBA) in 2014 on committed and uncommitted assets, the concept of assets committed in financing transactions (asset encumbrance) includes both on-balance sheet assets provided as collateral in transactions to obtain liquidity and off-balance sheet assets that have been received and reused for similar purposes, as well as other assets associated with liabilities for reasons other than financing.

The residual maturities of the liabilities associated with the assets and guarantees received and committed are presented below, as of 31 of December of 2021 (EUR thousand million):

Residual maturities of the liabilities	Unmatured	<=1month	>1 month <=3 months	>3 months <=12 months	>1 year <=2 years	>2 years <=3 years	3 years <=5 years	5 years <=10 years	>10 years	Total
Committed assets	39.5	32.7	8.2	29.6	106.8	37.1	80.1	20.7	10.4	365.1
Guarantees received committed	24.2	15.3	12.8	25.8	1.9	0.4	0.4	—	—	80.8

The reported Group information as required by the EBA at 2021 year-end is as follows:

ON-BALANCE-SHEET ENCUMBERED ASSETS

EUR billion

	Carrying amount of encumbered assets	Fair value of encumbered assets	Fair value of non-encumbered assets	Carrying amount of non-encumbered assets
Loans and advances	262.8		984.4	
Equity instruments	8.4	8.4	13.1	13.1
Debt securities	61.0	61.1	102.9	102.8
Other assets	32.9		130.3	
Total assets	365.1		1,230.7	

ENCUMBRANCE OF COLLATERAL RECEIVED

EUR billion

	Fair value of encumbered collateral received or own debt securities issued	Fair value of collateral received or own debt securities issued available for encumbrance
Collateral received	80.8	31.5
Loans and advances	1.2	—
Equity instruments	5.4	7.0
Debt securities	74.2	24.5
Other collateral received	—	—
Own debt securities issued other than own covered bonds or ABSs	—	0.6

ENCUMBERED ASSETS AND COLLATERAL RECEIVED AND MATCHING LIABILITIES

EUR billion

	Matching liabilities, contingent liabilities or securities lent	Assets, collateral received and own debt securities issued other than covered bonds and ABSs encumbered
Total sources of encumbrance (carrying amount)	325.2	445.9

On-balance-sheet encumbered assets amounted to EUR 365,100 million, of which 72% are loans (mortgage loans, corporate loans, etc.). Guarantees received committed amounted to EUR 80,800 million, relating mostly to debt securities received as security in asset purchase transactions and re-used.

Taken together, these two categories represent a total of EUR 445,900 million of encumbered assets, which give rise to EUR 325,200 million matching liabilities.

As of December 2021, total asset encumbrance in funding operations represented 26.1% of the Group's extended balance sheet under EBA criteria (total assets plus guarantees received: EUR 1,708,000 million as of December 2021). This percentage has decreased from 26.6% that presented the Group as of December 2020, mainly as a result of the increase in the balance sheet.

d) Capital risk

In the second line of defence, capital risk management can independently challenge business and first-line activities by:

- Supervising capital planning and adequacy exercises through a review of the main components affecting the capital ratios.
- Identifying key metrics to calculate the Group's regulatory capital, setting tolerance levels and analysing significant variations, as well as single transactions with impact on capital.
- Reviewing and challenging the execution of capital actions proposed in line with capital planning and risk appetite.

Grupo Santander commands a sound solvency position, above the levels required by regulators and by the European Central bank.

Regulatory capital

At 1 January 2022, at a consolidated level, the Group must maintain a minimum capital ratio of 8.85% of CET1 (4.50% being the requirement for Pillar I, 0.84% being the requirement for Pillar 2R (requirement), 2.50% being the requirement for capital conservation buffer, 1.00% being the requirement for G-SIB and 0.01% being the requirement for anti-cyclical capital buffer).

Grupo Santander must also maintain a minimum capital ratio of 10.64% of tier 1 and a minimum total ratio of 13.01%.

In 2021, the solvency target set was achieved. Santander's CET1 ratio stood at 12.51%[1] at the close of the year, demonstrating its organic capacity to generate capital. The key regulatory capital figures are indicated below:

RECONCILIATION OF ACCOUNTING CAPITAL WITH REGULATORY CAPITAL

EUR million

	2021	2020	2019
Subscribed capital	8,670	8,670	8,309
Share premium account	47,979	52,013	52,446
Reserves	56,606	62,777	56,526
Treasury shares	(894)	(69)	(31)
Attributable profit	8,124	(8,771)	6,515
Approved dividend***	(836)	—	(1,662)
Shareholders' equity on public balance sheet	**119,649**	**114,620**	**122,103**
Valuation adjustments	(32,719)	(33,144)	(22,032)
Non-controlling interests	10,123	9,846	10,588
Total Equity on public balance sheet	**97,053**	**91,322**	**110,659**
Goodwill and intangible assets	(16,132)	(15,711)	(28,478)
Eligible preference shares and participating securities	10,050	9,102	9,039
Accrued dividend***	(895)	(478)	(1,761)
Other adjustments*	(7,624)	(5,734)	(9,923)
Tier 1**	**82,452**	**78,501**	**79,536**

*Fundamentally for non-computable non-controlling interests and deductions and reasonable filters in compliance with CRR
** Figures calculated by applying the transitional provisions of IFRS 9.
***Assumes 20% of ordinary profit, see note 4.a for proposed distribution of results.

The following table shows the capital coefficients and a detail of the eligible internal resources of the Group:

	2021	2020	2019
Capital coefficients			
Level 1 ordinary eligible capital (EUR million)	72,402	69,399	70,497
Level 1 additional eligible capital (EUR million)	10,050	9,102	9,039
Level 2 eligible capital (EUR million)	14,865	12,514	11,531
Risk-weighted assets (EUR million)	578,930	562,580	605,244
Level 1 ordinary capital coefficient (CET 1)	12.51%	12.34%	11.65%
Level 1 additional capital coefficient (AT1)	1.73%	1.61%	1.49%
Level 1 capital coefficient (TIER1)	14.24%	13.95%	13.14%
Level 2 capital coefficient (TIER 2)	2.57%	2.23%	1.91%
Total capital coefficient	**16.81%**	**16.18%**	**15.05%**

1. Figures calculated by applying the transitional provisions of IFRS 9

ELIGIBLE CAPITAL

EUR million

	2021	2020	2019
Eligible capital			
Common Equity Tier I	72,402	69,399	70,497
Capital	8,670	8,670	8,309
(-) Treasure shares and own shares financed	(966)	(126)	(63)
Share Premium	47,979	52,013	52,446
Reserves	58,157	64,766	57,368
Other retained earnings	(34,784)	(34,937)	(22,933)
Minority interests	6,736	6,669	6,441
Profit net of dividends	6,394	(9,249)	3,092
Deductions	(19,784)	(18,407)	(34,163)
Goodwill and intangible assets	(16,064)	(15,711)	(28,478)
Others	(3,720)	(2,696)	(5,685)
Additional Tier I	10,050	9,102	9,039
Eligible instruments AT1	10,102	8,854	9,209
T1-excesses-subsidiaries	(52)	248	(170)
Residual value of dividends	—	—	—
Others	—	—	—
Tier II	14,865	12,514	11,531
Eligible instruments T2	15,424	13,351	12,360
Gen. funds and surplus loans loss prov. IRB	75	—	—
T2-excesses - subsidiaries	(634)	(837)	(829)
Others	—	—	—
Total eligible capital	**97,317**	**91,015**	**91,067**

Note: Banco Santander, S.A. and its affiliates had not taken part in any State aid programmes.

Leverage ratio

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

The Group performs the calculation in accordance with Regulation (EU) 2019/876 of 20 May 2019 amending Regulation (EU) No 575/2013 as regards the leverage ratio.

This ratio is calculated as tier 1 capital divided by leverage exposure. Exposure is calculated as the sum of the following items:

- Accounting assets, excluding derivatives and items treated as deductions from tier 1 capital (for example, the balance of loans is included, but not that of goodwill) further excluding the exposures referred to in Article 429a(1) of the regulation.
- Off-balance-sheet items (mainly guarantees, unused credit limits granted and documentary credits) weighted using credit conversion factors.
- Inclusion of net value of derivatives (gains and losses are netted with the same counterparty, minus collaterals if they comply with certain criteria) plus a charge for the future potential exposure.
- A charge for the potential risk of security funding transactions.
- Lastly, it includes a charge for the risk of credit derivative swaps (CDS).

With the publication of Regulation (EU) 2019/876 of 20 May, 2019, amending Regulation (EU) n.º 575/2013 as regards the leverage ratio, the final calibration of the ratio is set at 3% for all entities and, for systemic entities G-SIB, an additional surcharge is also established which will be 50% of the cushion ratio applicable to the EISM. In addition, modifications are included in its calculation, including the exclusion of certain exposures from the total exposure measure: public loans, transfer loans and officially guaranteed export credits.

Banks implemented this final definition of the leverage ratio in June 2021, however, the new calibration of the ratio (the additional surcharge for G-SIBs) will take effect from January 2023.

EUR million

	2021	2020	2019
Leverage			
Level 1 Capital	82,452	78,501	79,536
Exposure	1,536,516	1,471,480	1,544,614
Leverage Ratio	5.37%	5.33%	5.15%

Global systemically important banks

Grupo Santander is one of 30 banks designated as global systemically important banks (G-SIBs).

The designation as a systemically important entity is based on the measurement set by regulators (the FSB and BCBS), based on 5 criteria (size, cross-jurisdictional activity, interconnectedness with other financial institutions, substitutability and complexity).

This definition means it has to fulfil certain additional requirements, which consist mainly of a capital buffer -1%, in TLAC requirements (total loss absorbing capacity), that we have to publish relevant information more frequently than other banks, greater regulatory requirements for internal control bodies, special supervision and drawing up of special reports to be submitted to supervisors.

The fact that Grupo Santander has to comply with these requirements makes it a more solid bank than its domestic rivals.

54. Explanation added for translation to English

These accompanying Consolidated Financial Statements, translation of the Consolidated Financial Statements originally issued in Spanish, are presented on the basis of the regulatory financial reporting framework applicable to the Group in Spain (see note 1.b).

Appendix

Appendix I

Subsidiaries of Banco Santander, S.A. [1]

		% of ownership held by Banco Santander		Percentage of voting power (k)			EUR million (a)		
Company	Location	Direct	Indirect	Year 2021	Year 2020	Activity	Capital + reserves	Net results	Carrying amount
2 & 3 Triton Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Real estate	78	107	12
A & L CF (Guernsey) Limited (n)	Guernsey	0.00%	100.00%	100.00%	100.00%	Leasing	0	0	0
A & L CF June (2) Limited (e)	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
A & L CF June (3) Limited (e)	United Kingdom	0.00%	100.00%	100.00%	100.00%	Leasing	6	(2)	0
A & L CF March (5) Limited (d)	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	1	0	0
A & L CF September (4) Limited (f)	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	21	0	0
A3T Luxco 1 S.A.	Luxembourg	0.00%	100.00%	100.00%	—	Holding company	4	(1)	4
A3T Luxco 2 S.A.	Luxembourg	100.00%	0.00%	100.00%	—	Holding company	(18)	18	0
Abbey Business Services (India) Private Limited (d)	India	0.00%	100.00%	100.00%	100.00%	Holding company	0	0	0
Abbey Covered Bonds (Holdings) Limited	United Kingdom	—	(b)	—	—	Securitization	0	0	0
Abbey Covered Bonds (LM) Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Securitization	0	0	0
Abbey Covered Bonds LLP	United Kingdom	—	(b)	—	—	Securitization	75	168	0
Abbey National Beta Investments Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
Abbey National Business Office Equipment Leasing Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
Abbey National International Limited	Jersey	0.00%	100.00%	100.00%	100.00%	Financial services	4	0	4
Abbey National Nominees Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
Abbey National PLP (UK) Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
Abbey National Property Investments	United Kingdom	0.00%	100.00%	100.00%	100.00%	Finance company	296	(3)	165
Abbey National Treasury Services Investments Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
Abbey National Treasury Services Overseas Holdings	United Kingdom	0.00%	100.00%	100.00%	100.00%	Holding company	0	0	0
Abbey National UK Investments	United Kingdom	0.00%	100.00%	100.00%	100.00%	Finance company	0	0	0
Abbey Stockbrokers (Nominees) Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
Abbey Stockbrokers Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Securities company	0	0	0
Abent 3T, S.A.P.I de C.V.	Mexico	0.00%	100.00%	100.00%	—	Electricity production	115	(18)	5
Ablasa Participaciones, S.L.	Spain	100.00%	0.00%	100.00%	100.00%	Holding company	210	23	894
Aduro S.A.	Uruguay	0.00%	100.00%	100.00%	100.00%	Payments and collection services	0	0	2
Aevis Europa, S.L.	Spain	96.34%	0.00%	96.34%	96.34%	Cards	1	0	1
AFB SAM Holdings, S.L.	Spain	1.00%	99.00%	100.00%	100.00%	Holding company	0	0	0
Afisa S.A.	Chile	0.00%	100.00%	100.00%	100.00%	Fund management company	4	0	4
Aljardi SGPS, Lda.	Portugal	0.00%	100.00%	100.00%	100.00%	Holding company	1,195	(3)	1,148

Subsidiaries of Banco Santander, S.A. [1]

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Allane Leasing GmbH	Austria	0.00%	46.95%	100.00%	100.00%	Renting	(2)	0	0
Allane Location Longue Durée S.a.r.l.	France	0.00%	46.95%	100.00%	100.00%	Renting	10	3	0
Allane Mobility Consulting AG	Switzerland	0.00%	46.95%	100.00%	100.00%	Consulting services	1	0	0
Allane Mobility Consulting B.V.	Netherlands	0.00%	46.95%	100.00%	100.00%	Consulting services	(2)	0	0
Allane Mobility Consulting GmbH	Germany	0.00%	46.95%	100.00%	100.00%	Consulting services	1	1	0
Allane Mobility Consulting Österreich GmbH	Austria	0.00%	46.95%	100.00%	100.00%	Consulting services	0	0	0
Allane Mobility Consulting S.a.r.l	France	0.00%	46.95%	100.00%	100.00%	Consulting services	(1)	0	0
Allane Schweiz AG	Switzerland	0.00%	46.95%	100.00%	100.00%	Renting	13	0	0
Allane SE	Germany	0.00%	46.95%	92.07%	92.07%	Leasing	192	0	175
Allane Services GmbH & co. KG	Germany	0.00%	46.95%	100.00%	100.00%	Services	1	0	0
Allane Services Verwaltungs GmbH	Germany	0.00%	46.95%	100.00%	100.00%	Management of portfolios	0	0	0
Alliance & Leicester Cash Solutions Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
Alliance & Leicester Commercial Bank Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
Alliance & Leicester Investments (Derivatives) Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Finance company	0	0	0
Alliance & Leicester Investments (No.2) Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
Alliance & Leicester Investments Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
Alliance & Leicester Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Finance company	0	0	0
Alliance & Leicester Personal Finance Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Finance company	(241)	0	0
Altamira Santander Real Estate, S.A.	Spain	100.00%	0.00%	100.00%	100.00%	Real estate	(369)	(161)	0
Alternative Leasing, FIL (Compartimento B)	Spain	100.00%	0.00%	100.00%	99.99%	Investment fund	75	3	75
Amazonia Trade Limited	United Kingdom	100.00%	0.00%	100.00%	100.00%	Holding company	0	0	0
AN (123) Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Holding company	0	0	0
Andaluza de Inversiones, S.A.	Spain	0.00%	100.00%	100.00%	100.00%	Holding company	37	0	27
ANITCO Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
Apê11 Tecnologia e Negócios Imobiliários S.A.	Brazil	0.00%	80.92%	90.00%	—	Real estate	6	0	9
Aquanima Brasil Ltda.	Brazil	0.00%	100.00%	100.00%	100.00%	E-commerce	2	1	0
Aquanima Chile S.A.	Chile	0.00%	100.00%	100.00%	100.00%	Services	2	1	0
Aquanima México S. de R.L. de C.V.	Mexico	0.00%	100.00%	100.00%	100.00%	E-commerce	2	1	2
Aquanima S.A.	Argentina	0.00%	100.00%	100.00%	100.00%	Services	0	0	0
Artarien S.A. (o)	Uruguay	0.00%	100.00%	100.00%	—	Insurance auxiliary services	0	0	0
Asto Digital Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Finance company	39	(26)	0

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Athena Corporation Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Financial services	(9)	0	0
Atlantes Azor No. 2	Portugal	—	(b)	—	—	Securitization	0	0	0
Atlantes Mortgage No. 2	Portugal	—	(b)	—	—	Securitization	0	0	0
Atlantes Mortgage No. 3	Portugal	—	(b)	—	—	Securitization	0	0	0
Atlantes Mortgage No. 4	Portugal	—	(b)	—	—	Securitization	0	0	0
Atlantes Mortgage No. 5	Portugal	—	(b)	—	—	Securitization	0	0	0
Atlantes Mortgage No. 7	Portugal	—	(b)	—	—	Securitization	0	0	0
Atual - Fundo de Invest Multimercado Crédito Privado Investimento no Exterior	Brazil	0.00%	89.91%	100.00%	100.00%	Investment fund	325	18	308
Atual Serviços de Recuperação de Créditos e Meios Digitais S.A.	Brazil	0.00%	89.91%	100.00%	100.00%	Financial services	410	15	383
Auto ABS Belgium Loans 2019, SA/NV	Belgium	—	(b)	—	—	Securitization	0	0	0
Auto ABS DFP Master Compartment France 2013	France	—	(b)	—	—	Securitization	0	0	0
Auto ABS French Leases 2018	France	—	(b)	—	—	Securitization	0	0	0
Auto ABS French Leases 2021	France	—	(b)	—	—	Securitization	0	0	0
Auto ABS French Leases Master Compartiment 2016	France	—	(b)	—	—	Securitization	0	0	0
Auto ABS French Loans Master	France	—	(b)	—	—	Securitization	0	0	0
Auto ABS French LT Leases Master	France	—	(b)	—	—	Securitization	0	0	0
Auto ABS Italian Balloon 2019-1 S.R.L.	Italy	—	(b)	—	—	Securitization	0	0	0
Auto ABS Italian Loans 2018-1 S.R.L.	Italy	—	(b)	—	—	Securitization	0	0	0
Auto ABS Italian Rainbow Loans 2020-1 S.R.L.	Italy	—	(b)	—	—	Securitization	0	0	0
Auto ABS Spanish Loans 2018-1, Fondo de Titulización	Spain	—	(b)	—	—	Securitization	0	0	0
Auto ABS Spanish Loans 2020-1, Fondo de Titulización	Spain	—	(b)	—	—	Securitization	0	0	0
Auto ABS UK Loans 2017 Holdings Limited	United Kingdom	—	(b)	—	—	Securitization	0	0	0
Auto ABS UK Loans 2017 Plc	United Kingdom	—	(b)	—	—	Securitization	0	0	0
Auto ABS UK Loans 2019 Holdings Limited	United Kingdom	—	(b)	—	—	Securitization	0	0	0
Auto ABS UK Loans 2019 Plc	United Kingdom	—	(b)	—	—	Securitization	(3)	0	0
Auto ABS UK Loans Holdings Limited	United Kingdom	—	(b)	—	—	Securitization	0	0	0
Auto ABS UK Loans PLC	United Kingdom	—	(b)	—	—	Securitization	(10)	2	0
Autodescuento, S.L.	Spain	0.00%	93.89%	93.89%	93.89%	Vehicles purchase by Internet	1	1	18
Autohaus24 GmbH	Germany	0.00%	46.95%	100.00%	100.00%	Renting	(2)	0	0
Auttar HUT Processamento de Dados Ltda.	Brazil	0.00%	89.91%	100.00%	100.00%	IT services	4	1	5
Aviación Antares, A.I.E.	Spain	99.99%	0.01%	100.00%	100.00%	Renting	48	5	28
Aviación Británica, A.I.E.	Spain	99.99%	0.01%	100.00%	100.00%	Renting	22	4	6
Aviación Centaurus, A.I.E.	Spain	99.99%	0.01%	100.00%	100.00%	Renting	7	18	25
Aviación Comillas, S.L. Unipersonal	Spain	100.00%	0.00%	100.00%	100.00%	Renting	7	0	8
Aviación Intercontinental, A.I.E.	Spain	99.97%	0.03%	100.00%	100.00%	Renting	66	(24)	42
Aviación Laredo, S.L.	Spain	99.00%	1.00%	100.00%	100.00%	Air transport	3	0	3
Aviación Oyambre, S.L. Unipersonal	Spain	100.00%	0.00%	100.00%	100.00%	Renting	1	0	1
Aviación Santillana, S.L.	Spain	99.00%	1.00%	100.00%	100.00%	Renting	3	1	2
Aviación Suances, S.L.	Spain	99.00%	1.00%	100.00%	100.00%	Air transport	5	1	3
Aviación Tritón, A.I.E.	Spain	99.99%	0.01%	100.00%	100.00%	Renting	22	7	19

Subsidiaries of Banco Santander, S.A. [1]

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Aymoré Crédito, Financiamento e Investimento S.A.	Brazil	0.00%	89.91%	100.00%	100.00%	Finance company	205	160	328
Azor Mortgages PLC (j)	Ireland	—	(b)	—	—	Securitization	0	0	0
Banca PSA Italia S.p.A.	Italy	0.00%	50.00%	50.00%	50.00%	Banking	320	72	153
Banco Bandepe S.A.	Brazil	0.00%	89.91%	100.00%	100.00%	Banking	832	24	770
Banco de Albacete, S.A.	Spain	100.00%	0.00%	100.00%	100.00%	Banking	14	0	9
Banco Hyundai Capital Brasil S.A.	Brazil	0.00%	44.96%	50.00%	50.00%	Banking	51	5	25
Banco Madesant - Sociedade Unipessoal, S.A.	Portugal	0.00%	100.00%	100.00%	100.00%	Banking	1,076	(3)	1,073
Banco PSA Finance Brasil S.A.	Brazil	0.00%	44.96%	50.00%	50.00%	Banking	37	4	18
Banco Santander - Chile	Chile	0.00%	67.12%	67.18%	67.18%	Banking	2,963	803	2,827
Banco Santander (Brasil) S.A.	Brazil	0.04%	89.88%	90.50%	90.58%	Banking	10,104	2,373	10,795
Banco Santander (México), S.A., Institución de Banca Múltiple, Grupo Financiero Santander México como Fiduciaria del Fideicomiso 100740	Mexico	0.00%	96.24%	100.00%	100.00%	Finance company	66	11	74
Banco Santander (México), S.A., Institución de Banca Múltiple, Grupo Financiero Santander México como Fiduciaria del Fideicomiso 2002114	Mexico	0.00%	96.47%	100.00%	100.00%	Holding company	8	0	7
Banco Santander (México), S.A., Institución de Banca Múltiple, Grupo Financiero Santander México como Fiduciaria del Fideicomiso GFSSLPT	Mexico	0.00%	96.64%	100.00%	100.00%	Finance company	14	1	14
Banco Santander de Negocios Colombia S.A.	Colombia	94.90%	5.10%	100.00%	100.00%	Banking	134	6	141
Banco Santander International	United States	0.00%	100.00%	100.00%	100.00%	Banking	1,110	85	1,195
Banco Santander International SA	Switzerland	0.00%	100.00%	100.00%	100.00%	Banking	1,113	49	815
Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México	Mexico	21.19%	75.04%	96.24%	91.80%	Banking	6,376	778	7,425
Banco Santander Perú S.A.	Peru	100.00%	0.00%	100.00%	100.00%	Banking	194	37	122
Banco Santander Río S.A.	Argentina	0.00%	99.31%	99.26%	99.26%	Banking	1,532	92	550
Banco Santander S.A.	Uruguay	97.75%	2.25%	100.00%	100.00%	Banking	359	69	191
Banco Santander Totta, S.A.	Portugal	0.00%	99.86%	99.96%	99.96%	Banking	3,857	303	3,415
Bansa Santander S.A.	Chile	0.00%	100.00%	100.00%	100.00%	Real estate	21	1	22
BEN Benefícios e Serviços Instituição de Pagamento S.A.	Brazil	0.00%	89.91%	100.00%	100.00%	Payment services	11	(1)	9
Bilkreditt 6 Designated Activity Company (j)	Ireland	—	(b)	—	—	Securitization	0	0	0
Bilkreditt 7 Designated Activity Company	Ireland	—	(b)	—	—	Securitization	0	0	0
Bond Company Merger Sub LLC	United States	0.00%	100.00%	100.00%	—	Inactive	0	0	0
Bond First Merger Sub Inc.	United States	0.00%	100.00%	100.00%	—	Inactive	0	0	0
Bond Fourth Merger Sub LLC	United States	0.00%	100.00%	100.00%	—	Inactive	0	0	0
Bond Second Merger Sub LLC	United States	0.00%	100.00%	100.00%	—	Inactive	0	0	0
Bond Third Merger Sub LLC	United States	0.00%	100.00%	100.00%	—	Inactive	0	0	0
BRS Investments S.A.	Argentina	5.10%	94.90%	100.00%	100.00%	Finance company	41	23	35
Cántabra de Inversiones, S.A.	Spain	100.00%	0.00%	100.00%	100.00%	Holding company	(118)	262	187
Cántabro Catalana de Inversiones, S.A.	Spain	100.00%	0.00%	100.00%	100.00%	Holding company	275	3	267
Canyon Multifamily Impact Fund IV LLC (c)	United States	0.00%	98.00%	98.00%	98.00%	Real estate	26	0	27
Capital Street Delaware LP	United States	0.00%	100.00%	100.00%	100.00%	Holding company	0	0	0
Capital Street Holdings, LLC	United States	0.00%	100.00%	100.00%	100.00%	Holding company	14	0	14
Capital Street REIT Holdings, LLC	United States	0.00%	100.00%	100.00%	100.00%	Holding company	1,212	1	1,213

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		Direct	Indirect	Year 2021	Year 2020		Capital + reserves	Net results	Carrying amount
Capital Street S.A.	Luxembourg	0.00%	100.00%	100.00%	100.00%	Finance company	0	0	0
Carfax (Guernsey) Limited (j) (n)	Guernsey	0.00%	100.00%	100.00%	100.00%	Insurance brokerage	0	0	0
Casa de Bolsa Santander, S.A. de C.V., Grupo Financiero Santander México	Mexico	0.00%	99.97%	99.97%	99.97%	Securities company	55	2	58
Cater Allen Holdings Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
Cater Allen International Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
Cater Allen Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Banking	685	34	265
Cater Allen Lloyd's Holdings Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Holding company	0	0	0
Cater Allen Syndicate Management Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
CCAP Auto Lease Ltd.	United States	0.00%	80.22%	100.00%	100.00%	Leasing	182	162	276
Centro de Capacitación Santander, A.C.	Mexico	0.00%	96.24%	100.00%	100.00%	Non-profit institute	1	0	1
Certidesa, S.L.	Spain	0.00%	100.00%	100.00%	100.00%	Aircraft rental	(59)	(5)	0
Chrysler Capital Auto Funding I LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	30	24	0
Chrysler Capital Auto Funding II LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	4	(4)	0
Chrysler Capital Auto Receivables LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	0	0	0
Chrysler Capital Master Auto Receivables Funding 2 LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	(217)	(27)	0
Chrysler Capital Master Auto Receivables Funding 4 LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	(3)	(4)	0
Chrysler Capital Master Auto Receivables Funding LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	61	48	0
Cobranza Amigable, S.A.P.I. de C.V.	Mexico	0.00%	85.00%	100.00%	100.00%	Collection services	4	0	3
Community Development and Affordable Housing Fund LLC (c)	United States	0.00%	96.00%	96.00%	96.00%	Asset management	0	0	0
Compagnie Generale de Credit Aux Particuliers - Credipar S.A.	France	0.00%	50.00%	100.00%	100.00%	Banking	363	161	428
Compagnie Pour la Location de Vehicules - CLV	France	0.00%	50.00%	100.00%	100.00%	Banking	20	2	26
Compartment German Auto Loans 2021-1	Luxembourg	—	(b)	—	—	Securitization	0	0	0
Comunidad Laboral Trabajando Argentina S.A. (j)	Argentina	0.00%	100.00%	100.00%	100.00%	Services	0	0	0
Consulteam Consultores de Gestão, Unipessoal, Lda.	Portugal	100.00%	0.00%	100.00%	100.00%	Real estate	0	0	0
Consumer Lending Receivables LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	0	0	0
Crawfall S.A. (g) (j)	Uruguay	100.00%	0.00%	100.00%	100.00%	Services	0	0	0
Darep Designated Activity Company	Ireland	100.00%	0.00%	100.00%	100.00%	Reinsurances	8	0	7
Decarome, S.A.P.I. de C.V.	Mexico	0.00%	100.00%	100.00%	100.00%	Finance company	50	5	51
Deva Capital Advisory Company, S.L.	Spain	0.00%	100.00%	100.00%	100.00%	Advisory services	1	1	2
Deva Capital Holding Company, S.L.	Spain	100.00%	0.00%	100.00%	100.00%	Holding company	226	(9)	228
Deva Capital Investment Company, S.L.	Spain	0.00%	100.00%	100.00%	100.00%	Holding company	111	4	111
Deva Capital Management Company, S.L.	Spain	0.00%	100.00%	100.00%	100.00%	Advisory services	17	(10)	7

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Deva Capital Servicer Company, S.L. Unipersonal	Spain	0.00%	100.00%	100.00%	100.00%	Holding company	97	4	96
Digital Procurement Holdings N.V.	Netherlands	0.00%	100.00%	100.00%	100.00%	Holding company	5	0	1
Diners Club Spain, S.A. Unipersonal	Spain	100.00%	0.00%	100.00%	75.00%	Cards	10	(1)	9
Dirección Estratega, S.C.	Mexico	0.00%	100.00%	100.00%	100.00%	Services	0	0	0
Drive Auto Receivables Trust 2017-3	United States	—	(b)	—	—	Securitization	38	53	0
Drive Auto Receivables Trust 2018-1	United States	—	(b)	—	—	Securitization	25	45	0
Drive Auto Receivables Trust 2018-2	United States	—	(b)	—	—	Securitization	(6)	77	0
Drive Auto Receivables Trust 2018-3	United States	—	(b)	—	—	Securitization	(31)	82	0
Drive Auto Receivables Trust 2018-4	United States	—	(b)	—	—	Securitization	(41)	82	0
Drive Auto Receivables Trust 2018-5	United States	—	(b)	—	—	Securitization	(37)	79	0
Drive Auto Receivables Trust 2019-1	United States	—	(b)	—	—	Securitization	(29)	83	0
Drive Auto Receivables Trust 2019-2	United States	—	(b)	—	—	Securitization	(51)	97	0
Drive Auto Receivables Trust 2019-3	United States	—	(b)	—	—	Securitization	(69)	136	0
Drive Auto Receivables Trust 2019-4	United States	—	(b)	—	—	Securitization	(92)	149	0
Drive Auto Receivables Trust 2020-1	United States	—	(b)	—	—	Securitization	(122)	156	0
Drive Auto Receivables Trust 2020-2	United States	—	(b)	—	—	Securitization	(135)	181	0
Drive Auto Receivables Trust 2021-1	United States	—	(b)	—	—	Securitization	0	(115)	0
Drive Auto Receivables Trust 2021-2	United States	—	(b)	—	—	Securitization	0	(310)	0
Drive Auto Receivables Trust 2021-3	United States	—	(b)	—	—	Securitization	0	(275)	0
Ductor S.à r.l. (f)	Luxembourg	100.00 %	0.00 %	100.00 %	—	Holding company	26	1	20
EDT FTPYME Pastor 3 Fondo de Titulización de Activos	Spain	—	(b)	—	—	Securitization	0	0	0
Elcano Renovables, S.L	Spain	0.00 %	70.00 %	70.00 %	—	Holding company	1	0	1
Electrolyser, S.A. de C.V.	Mexico	0.00%	96.24%	100.00%	100.00%	Services	0	0	0
Entidad de Desarrollo a la Pequeña y Micro Empresa Santander Consumo Perú S.A.	Peru	100.00%	0.00%	100.00%	100.00%	Finance company	27	6	33
Erestone S.A.S.	France	0.00%	90.00%	90.00%	90.00%	Inactive	1	0	1
Esfera Fidelidade S.A.	Brazil	0.00%	89.91%	100.00%	100.00%	Services	58	56	102
Evidence Previdência S.A.	Brazil	0.00%	89.91%	100.00%	100.00%	Insurance	132	(12)	95
Eyemobile Tecnologia S.A.	Brazil	0.00%	53.95%	60.00%	—	IT services	2	0	1
F1rst Tecnologia e Inovação Ltda.	Brazil	0.00%	89.91%	100.00%	100.00%	IT services	2	2	4
Financeira El Corte Inglés, Portugal, S.F.C., S.A.	Portugal	0.00%	51.00%	100.00%	100.00%	Finance company	8	0	4
Financiera El Corte Inglés, E.F.C., S.A.	Spain	0.00%	51.00%	51.00%	51.00%	Finance company	260	59	140
Finsantusa, S.L. Unipersonal	Spain	0.00%	100.00%	100.00%	100.00%	Holding company	1,259	(2)	1,020
First National Motor Business Limited (j)	United Kingdom	0.00%	100.00%	100.00%	100.00%	Leasing	0	0	0
First National Motor Contracts Limited (j)	United Kingdom	0.00%	100.00%	100.00%	100.00%	Leasing	0	0	0
First National Motor Facilities Limited (j)	United Kingdom	0.00%	100.00%	100.00%	100.00%	Leasing	0	0	0
First National Motor Finance Limited (j)	United Kingdom	0.00%	100.00%	100.00%	100.00%	Advisory services	0	0	0
First National Motor Leasing Limited (j)	United Kingdom	0.00%	100.00%	100.00%	100.00%	Leasing	0	0	0
First National Motor plc	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
First National Tricity Finance Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Finance company	6	0	6
Fondation Holding Auto ABS Belgium Loans	Belgium	—	(b)	—	—	Securitization	0	0	0
Fondo de Titulización de Activos Santander Consumer Spain Auto 2014-1	Spain	—	(b)	—	—	Securitization	0	0	0

Subsidiaries of Banco Santander, S.A. [1]

		% of ownership held by Banco Santander		Percentage of voting power (k)			EUR million (a)		
Company	Location	Direct	Indirect	Year 2021	Year 2020	Activity	Capital + reserves	Net results	Carrying amount
Fondo de Titulización PYMES Santander 13	Spain	—	(b)	—	—	Securitization	0	0	0
Fondo de Titulización PYMES Santander 14	Spain	—	(b)	—	—	Securitization	0	0	0
Fondo de Titulización PYMES Santander 15	Spain	—	(b)	—	—	Securitization	0	0	0
Fondo de Titulización Santander Consumer Spain Auto 2016-1	Spain	—	(b)	—	—	Securitization	0	0	0
Fondo de Titulización Santander Consumer Spain Auto 2016-2	Spain	—	(b)	—	—	Securitization	0	0	0
Fondo de Titulización Santander Financiación 1	Spain	—	(b)	—	—	Securitization	0	0	0
Fondo de Titulización, RMBS Santander 7	Spain	—	(b)	—	—	Securitization	0	0	0
Fondos Santander, S.A. Administradora de Fondos de Inversión (en liquidación) (j)	Uruguay	0.00%	100.00%	100.00%	100.00%	Fund management company	0	0	0
Fortensky Trading, Ltd.	Ireland	0.00%	100.00%	100.00%	100.00%	Finance company	0	0	0
Fosse (Master Issuer) Holdings Limited	United Kingdom	—	(b)	—	—	Securitization	0	0	0
Fosse Funding (No.1) Limited	United Kingdom	0.00%	100.00 %	100.00 %	100.00 %	Securitization	(134)	136	0
Fosse Master Issuer PLC	United Kingdom	0.00%	100.00%	100.00%	100.00%	Securitization	5	(6)	0
Fosse PECOH Limited	United Kingdom	—	(b)	—	—	Inactive	0	0	0
Fosse Trustee (UK) Limited	United Kingdom	0.00%	100.00 %	100.00 %	100.00 %	Securitization	0	0	0
FTPYME Banesto 2, Fondo de Titulización de Activos	Spain	—	(b)	—	—	Securitization	0	0	0
Fundo de Investimento em Direitos Creditórios Atacado- Não Padronizado	Brazil	—	(b)	—	—	Investment fund	130	(6)	0
Fundo de Investimentos em Direitos Creditórios Multisegmentos NPL Ipanema VI – Não padronizado	Brazil	—	(b)	—	—	Investment fund	194	23	0
Gamma, Sociedade Financeira de Titularização de Créditos, S.A.	Portugal	0.00%	99.86 %	100.00 %	100.00 %	Securitization	7	0	8
GC FTPYME Pastor 4 Fondo de Titulización de Activos	Spain	—	(b)	—	—	Securitization	0	0	0
Gentium Payments Processing FZ-LLC	United Arab Emirates	0.00%	100.00%	100.00%	—	Financial services	4	(2)	2
Gesban México Servicios Administrativos Globales, S.A. de C.V.	Mexico	0.00%	100.00%	100.00%	100.00%	Services	1	0	0
Gesban Santander Servicios Profesionales Contables Limitada	Chile	0.00%	100.00%	100.00%	100.00%	Accounting services	1	0	0
Gesban Servicios Administrativos Globales, S.L.	Spain	99.99%	0.01%	100.00%	100.00%	Services	5	0	1
Gesban UK Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Payments and collection services	1	0	0
Gestión de Instalaciones Fotovoltaicas, S.L. Unipersonal	Spain	0.00%	100.00%	100.00%	100.00%	Renewable energies	1	0	0
Gestión de Inversiones JILT, S.A. Unipersonal	Spain	100.00%	0.00%	100.00%	100.00%	Services	5	(2)	5
Gestora de Procesos S.A. en liquidación (j)	Peru	0.00%	100.00%	100.00%	100.00%	Holding company	0	0	0
Getnet Adquirência e Serviços para Meios de Pagamento S.A.	Brazil	0.04%	89.88%	89.91%	100.00%	Payment services	340	75	297
Getnet Europe, Entidad de Pago, S.L.	Spain	0.00%	100.00%	100.00%	100.00%	Payment services	215	6	218
Getnet Sociedade de Credito Direto S.A.	Brazil	0.00%	89.91%	100.00%	—	Finance company	12	1	12

Subsidiaries of Banco Santander, S.A. [1]

		% of ownership held by Banco Santander		Percentage of voting power (k)			EUR million (a)		
Company	Location	Direct	Indirect	Year 2021	Year 2020	Activity	Capital + reserves	Net results	Carrying amount
Gira, Gestão Integrada de Recebíveis do Agronegócio S.A.	Brazil	0.00%	71.93%	80.00%	—	Consulting services	1	(1)	2
Golden Bar (Securitisation) S.R.L.	Italy	—	(b)	—	—	Securitization	0	0	0
Golden Bar Stand Alone 2016-1	Italy	—	(b)	—	—	Securitization	0	0	0
Golden Bar Stand Alone 2018-1	Italy	—	(b)	—	—	Securitization	0	0	0
Golden Bar Stand Alone 2019-1	Italy	—	(b)	—	—	Securitization	0	0	0
Golden Bar Stand Alone 2020-1	Italy	—	(b)	—	—	Securitization	0	0	0
Golden Bar Stand Alone 2020-2	Italy	—	(b)	—	—	Securitization	0	0	0
Golden Bar Stand Alone 2021-1	Italy	—	(b)	—	—	Securitization	0	0	0
Grupo Empresarial Santander, S.L.	Spain	99.62%	0.38%	100.00%	100.00%	Holding company	3,348	637	2,406
Grupo Financiero Santander México, S.A. de C.V.	Mexico	100.00%	0.00%	100.00%	100.00%	Holding company	4,837	584	4,510
Guaranty Car, S.A. Unipersonal	Spain	0.00%	100.00%	100.00%	100.00%	Automotive	2	1	2
Hipototta No. 13	Portugal	—	(b)	—	—	Securitization	0	0	0
Hipototta No. 4 FTC	Portugal	—	(b)	—	—	Securitization	(51)	(2)	0
Hipototta No. 4 plc	Ireland	—	(b)	—	—	Securitization	(3)	(1)	0
Hipototta No. 5 FTC	Portugal	—	(b)	—	—	Securitization	(39)	(2)	0
Hipototta No. 5 plc	Ireland	—	(b)	—	—	Securitization	(11)	(2)	0
Holbah II Limited	Bahamas	0.00%	100.00%	100.00%	100.00%	Holding company	404	0	557
Holbah Santander, S.L. Unipersonal	Spain	0.00%	100.00%	100.00%	100.00%	Holding company	213	349	785
Holmes Funding Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Securitization	(3)	11	0
Holmes Holdings Limited	United Kingdom	—	(b)	—	—	Securitization	0	0	0
Holmes Master Issuer plc	United Kingdom	0.00%	100.00%	100.00%	100.00%	Securitization	(11)	(1)	0
Holmes Trustees Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Securitization	0	0	0
Hyundai Capital Bank Europe GmbH	Germany	0.00%	51.00%	51.00%	51.00%	Banking	701	(6)	391
Ibérica de Compras Corporativas, S.L.	Spain	97.17%	2.83%	100.00%	100.00%	E-commerce	7	1	6
Independence Community Bank Corp.	United States	0.00%	100.00%	100.00%	100.00%	Holding company	3,501	85	3,587
Insurance Funding Solutions Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Finance company	0	0	0
Interfinance Holanda B.V.	Netherlands	100.00%	0.00%	100.00%	100.00%	Holding company	0	0	0
Inversiones Capital Global, S.A. Unipersonal	Spain	100.00%	0.00%	100.00%	100.00%	Holding company	105	(6)	111
Inversiones Marítimas del Mediterráneo, S.A.	Spain	0.00%	100.00%	100.00%	100.00%	Inactive	5	(1)	0
Isar Valley S.A.	Luxembourg	—	(b)	—	—	Securitization	0	0	0
Isla de los Buques, S.A.	Spain	99.98%	0.02%	100.00%	100.00%	Finance company	1	0	1
Klare Corredora de Seguros S.A.	Chile	0.00%	33.63%	50.10%	50.10%	Insurance brokerage	6	(3)	1
Landcompany 2020, S.L.	Spain	17.66%	82.34%	100.00%	100.00%	Real estate management	1,779	(78)	1,704
Langton Funding (No.1) Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Securitization	(22)	22	0
Langton Mortgages Trustee (UK) Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Securitization	0	0	0
Langton PECOH Limited	United Kingdom	—	(b)	—	—	Inactive	0	0	0
Langton Securities (2008-1) plc	United Kingdom	0.00%	100.00%	100.00%	100.00%	Securitization	1	(1)	0

Subsidiaries of Banco Santander, S.A. [1]

		% of ownership held by Banco Santander		Percentage of voting power (k)			EUR million (a)		
Company	Location	Direct	Indirect	Year 2021	Year 2020	Activity	Capital + reserves	Net results	Carrying amount
Langton Securities (2010-1) PLC	United Kingdom	0.00%	100.00%	100.00%	100.00%	Securitization	2	(2)	0
Langton Securities (2010-2) PLC	United Kingdom	0.00%	100.00%	100.00%	100.00%	Securitization	0	0	0
Langton Securities Holdings Limited	United Kingdom	—	(b)	—	—	Securitization	0	0	0
Laparanza, S.A.	Spain	61.59%	0.00%	61.59%	61.59%	Agricultural holding	28	0	16
Liderança Serviços Especializados em Cobranças Ltda.	Brazil	0.00%	89.91%	100.00%	—	Collection services	(1)	2	1
Liquetine, S.L	Spain	0.00%	70.00%	100.00%	—	Renewable energies	0	0	1
Liquidity Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Factoring	(1)	0	0
Luri 1, S.A., en liquidación (j) (m)	Spain	46.00%	0.00%	46.00%	46.00%	Real estate	0	0	0
Luri 6, S.A. Unipersonal	Spain	100.00%	0.00%	100.00%	100.00%	Real estate investment	1,366	(8)	1,373
MAC No. 1 Limited	United Kingdom	—	(b)	—	—	Mortgage credit company	0	0	0
Master Red Europa, S.L.	Spain	96.34%	0.00%	96.34%	96.34%	Cards	1	0	1
Mata Alta, S.L.	Spain	0.00%	61.59%	100.00%	100.00%	Real estate	0	0	0
Max Merger Sub, Inc.	United States	0.00%	100.00%	100.00%	—	Inactive	0	0	0
Mercadotecnia, Ideas y Tecnología, S.A. de C.V.	Mexico	0.00%	70.00%	70.00%	—	Payment methods	1	3	15
Merciver, S.L.	Spain	99.90%	0.10%	100.00%	100.00%	Financial advisory	1	0	1
Mercury Trade Finance Solutions S.A.S.	Colombia	0.00%	50.10%	100.00%	—	IT services	0	0	0
Mercury Trade Finance Solutions, S.A. de C.V.	Mexico	0.00%	50.10%	100.00%	100.00%	IT services	0	0	0
Mercury Trade Finance Solutions, S.L.	Spain	0.00%	50.10%	50.10%	50.10%	IT services	10	1	24
Mercury Trade Finance Solutions, S.p.A.	Chile	0.00%	50.10%	100.00%	100.00%	IT services	1	0	0
Merlion Aviation One Designated Activity Company	Ireland	—	(b)	—	—	Renting	25	6	0
Mortgage Engine Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Financial services	(7)	(4)	0
Motor 2016-1 Holdings Limited	United Kingdom	—	(b)	—	—	Securitization	0	0	0
Motor 2016-1 PLC	United Kingdom	0.00%	100.00%	100.00%	100.00%	Securitization	0	0	0
Motor 2017-1 Holdings Limited	United Kingdom	—	(b)	—	—	Securitization	0	0	0
Motor 2017-1 PLC	United Kingdom	0.00%	100.00%	100.00%	100.00%	Securitization	(6)	6	0
Motor Securities 2018-1 Designated Activity Company	Ireland	—	(b)	—	—	Securitization	(1)	(1)	0
Mouro Capital I LP	United Kingdom	0.00%	100.00%	100.00%	100.00%	Investment fund	281	211	249
Multiplica SpA	Chile	0.00%	100.00%	100.00%	100.00%	Payment services	4	0	4
Naviera Mirambel, S.L.	Spain	0.00%	100.00%	100.00%	100.00%	Finance company	0	0	0
Naviera Trans Gas, A.I.E.	Spain	99.99%	0.01%	100.00%	100.00%	Renting	21	(3)	40
Naviera Trans Iron, S.L.	Spain	100.00%	0.00%	100.00%	100.00%	Leasing	24	0	21
Naviera Trans Ore, A.I.E.	Spain	99.99%	0.01%	100.00%	100.00%	Renting	25	3	17
Naviera Transcantábrica, S.L.	Spain	100.00%	0.00%	100.00%	100.00%	Leasing	5	0	4
Naviera Transchem, S.L. Unipersonal	Spain	100.00%	0.00%	100.00%	100.00%	Leasing	1	0	1
NeoAuto S.A.C.	Peru	0.00%	55.00%	55.00%	55.00%	Vehicles purchase by Internet	1	0	1
Newcomar, S.L., en liquidación (j)	Spain	40.00%	40.00%	80.00%	80.00%	Real estate	1	0	0

Subsidiaries of Banco Santander, S.A. [1]

Company	Location	% of ownership held by Banco Santander		Percentage of voting power (k)		Activity	EUR million (a)		
		Direct	Indirect	Year 2021	Year 2020		Capital + reserves	Net results	Carrying amount
Novimovest – Fundo de Investimento Imobiliário	Portugal	0.00%	78.63%	78.74%	78.74%	Investment fund	254	4	203
NW Services CO.	United States	0.00%	100.00%	100.00%	100.00%	E-commerce	6	0	2
Open Bank Argentina S.A.	Argentina	0.00%	99.66%	100.00%	100.00%	Banking	35	(8)	33
Open Bank, S.A.	Spain	100.00%	0.00%	100.00%	100.00%	Banking	451	10	462
Open Digital Market, S.L.	Spain	0.00%	100.00%	100.00%	100.00%	Services	0	0	0
Open Digital Services Argentina S.A.U.	Argentina	0.00 %	100.00 %	100.00 %	—	IT services	0	0	0
Open Digital Services, S.L.	Spain	99.97%	0.03%	100.00%	100.00%	Services	176	(108)	18
Open Mx Servicios Administrativos, S.A. de C.V.	Mexico	0.00%	100.00%	100.00%	—	Financial services	0	0	0
Operadora de Carteras Gamma, S.A.P.I. de C.V.	Mexico	100.00%	0.00%	100.00%	100.00%	Holding company	8	1	6
Optimal Investment Services SA	Switzerland	100.00%	0.00%	100.00%	100.00%	Fund management company	33	9	29
Optimal Multiadvisors Ireland Plc / Optimal Strategic US Equity Ireland Euro Fund (e) (p)	Ireland	0.00%	0.00%	0.00%	54.10%	Fund management company	0	0	0
Optimal Multiadvisors Ireland Plc / Optimal Strategic US Equity Ireland US Dollar Fund (e) (p)	Ireland	0.00%	0.00%	0.00%	51.93%	Fund management company	0	0	0
PagoFX Europe S.A.	Belgium	0.00%	100.00%	100.00%	100.00%	Payment services	2	(1)	1
PagoFX UK Ltd	United Kingdom	0.00%	100.00%	100.00%	100.00%	Payment services	5	(3)	2
PagoNxt Ltd	United Kingdom	100.00%	0.00%	100.00%	—	Holding company	0	0	0
PagoNxt Merchant SoluçõesTecnológicas Brasil Ltda.	Brazil	0.00%	100.00%	100.00%	100.00%	IT services	57	(20)	37
PagoNxt Merchant Solutions, S.L.	Spain	0.00%	100.00%	100.00%	100.00%	Holding company	913	(46)	938
PagoNxt One Trade UK Ltd	United Kingdom	0.00%	100.00%	100.00%	—	Financial services	0	0	0
PagoNxt OneTrade España, E.D.E., S.L.	Spain	0.00%	100.00%	100.00%	—	Financial services	0	0	0
PagoNxt Solutions, S.L.	Spain	0.00%	100.00%	100.00%	100.00%	Payment services	90	(61)	29
PagoNxt Trade Services, S.L.	Spain	0.00%	100.00%	100.00%	100.00%	Services	197	(58)	140
PagoNxt Trade, S.L.	Spain	0.00%	100.00%	100.00%	100.00%	IT services	244	(71)	172
PagoNxt, S.L.	Spain	100.00%	0.00%	100.00%	100.00%	Holding company	1,815	(153)	1,838
Parasant SA	Switzerland	100.00%	0.00%	100.00%	100.00%	Holding company	1,162	(2)	927
Paytec Logística e Armazém Ltda.	Brazil	0.00%	89.91%	100.00%	—	Logistics services	0	0	0
Paytec Tecnologia em Pagamentos Ltda.	Brazil	0.00%	89.91%	100.00%	—	Commerce	3	0	3
PBD Germany Auto 2018 UG (Haftungsbeschränkt)	Germany	—	(b)	—	—	Securitization	0	0	0
PBD Germany Auto Lease Master 2019	Luxembourg	—	(b)	—	—	Securitization	0	0	0
PBD Germany Auto Lease Master S.A, Compartment 2021-1	Luxembourg	—	(b)	—	—	Securitization	0	0	0
PBD Germany Auto Loan 2021 UG (Haftungsbeschränkt)	Germany	—	(b)	—	—	Securitization	0	0	0
PBE Companies, LLC	United States	0.00%	100.00%	100.00%	100.00%	Real estate	110	0	110
PECOH Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
Pereda Gestión, S.A.	Spain	99.99%	0.01%	100.00%	100.00%	Holding company	45	35	4
Phoenix C1 Aviation Designated Activity Company	Ireland	—	(b)	—	—	Renting	13	4	0

Subsidiaries of Banco Santander, S.A. [1]

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Phoenix S.A.	Uruguay	0.00%	100.00%	100.00%	—	Payment methods	0	0	3
PI Distribuidora de Títulos e Valores Mobiliários S.A.	Brazil	0.00%	89.91%	100.00%	100.00%	Securities company	79	(6)	66
Pingham International, S.A. (j)	Uruguay	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
Pony S.A.	Luxembourg	—	(b)	—	—	Securitization	0	0	0
Portal Universia Argentina S.A.	Argentina	0.00%	75.75%	75.75%	75.75%	Internet	0	0	0
Portal Universia Portugal, Prestação de Serviços de Informática, S.A.	Portugal	0.00%	100.00%	100.00%	100.00%	Internet	0	0	0
Prime 16 – Fundo de Investimentos Imobiliário	Brazil	0.00%	89.91%	100.00%	100.00%	Investment fund	31	(2)	24
PSA Bank Deutschland GmbH	Germany	0.00%	50.00%	50.00%	50.00%	Banking	517	57	229
PSA Banque France	France	0.00%	50.00%	50.00%	50.00%	Banking	1,068	74	463
PSA Consumer Finance Polska Sp. z o.o.	Poland	0.00%	40.22%	100.00%	100.00%	Finance company	3	1	0
PSA Finance Belux S.A.	Belgium	0.00%	50.00%	100.00%	50.00%	Finance company	91	15	52
PSA Finance Polska Sp. z o.o.	Poland	0.00%	40.22%	50.00%	50.00%	Finance company	33	5	10
PSA Finance UK Limited	United Kingdom	0.00%	50.00%	100.00%	50.00%	Finance company	339	65	181
PSA Financial Services Nederland B.V.	Netherlands	0.00%	50.00%	100.00%	50.00%	Finance company	52	17	32
PSA Financial Services Spain, E.F.C., S.A.	Spain	0.00%	50.00%	50.00%	50.00%	Finance company	739	53	363
PSA Renting Italia S.p.A.	Italy	0.00%	50.00%	100.00%	100.00%	Renting	9	11	3
PSRT 2019-A	United States	—	(b)	—	—	Securitization	58	53	0
Punta Lima Wind Farm, LLC	United States	0.00%	100.00%	100.00%	100.00%	Renewable energies	44	(1)	43
Punta Lima, LLC	United States	0.00%	100.00%	100.00%	100.00%	Leasing	44	(1)	43
Retail Company 2021, S.L. Unipersonal	Spain	100.00%	0.00%	100.00%	—	Real estate	262	(3)	262
Retop S.A. (f)	Uruguay	100.00%	0.00%	100.00%	100.00%	Finance company	14	14	45
Return Capital S.A.	Brazil	0.00%	89.91%	100.00%	100.00%	Collection services	(1)	4	3
Riobank International (Uruguay) SAIFE (p)	Uruguay	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
Roc Aviation One Designated Activity Company	Ireland	—	(b)	—	—	Renting	(2)	(2)	0
Roc Shipping One Designated Activity Company	Ireland	—	(b)	—	—	Renting	(4)	0	0
Rojo Entretenimento S.A.	Brazil	0.00%	85.06%	94.60%	94.60%	Services	21	0	17
SAM Asset Management, S.A. de C.V., Sociedad Operadora de Fondos de Inversión	Mexico	0.00%	100.00%	100.00%	100.00%	Fund management company	20	21	162
SAM Investment Holdings, S.L.	Spain	92.37%	7.63%	100.00%	100.00%	Management of funds	1,326	74	1,597
SANB Promotora de Vendas e Cobrança S.A.	Brazil	0.00%	89.91%	100.00%	100.00%	Finance company	3	(1)	2
Sancap Investimentos e Participações S.A.	Brazil	0.00%	89.91%	100.00%	100.00%	Holding company	139	39	142
Santander (CF Trustee Property Nominee) Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
Santander (CF Trustee) Limited (d)	United Kingdom	—	(b)	—	—	Inactive	0	0	0
Santander (UK) Group Pension Schemes Trustees Limited (d)	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
Santander Ahorro Inmobiliario 1, S.A.	Spain	98.53%	0.00%	98.53%	98.53%	Real estate rental	1	0	1
Santander Ahorro Inmobiliario 2, S.A.	Spain	99.91%	0.00%	99.91%	99.91%	Real estate rental	1	0	1

Subsidiaries of Banco Santander, S.A. [1]

		% of ownership held by Banco Santander		Percentage of voting power (k)			EUR million (a)		
Company	Location	Direct	Indirect	Year 2021	Year 2020	Activity	Capital + reserves	Net results	Carrying amount
Santander Asesorías Financieras Limitada	Chile	0.00%	67.44%	100.00%	100.00%	Securities company	53	2	37
Santander Asset Finance (December) Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Leasing	73	5	0
Santander Asset Finance plc	United Kingdom	0.00%	100.00%	100.00%	100.00%	Leasing	287	11	173
Santander Asset Management - S.G.O.I.C., S.A.	Portugal	0.00%	100.00%	100.00%	100.00%	Fund management company	7	5	12
Santander Asset Management Chile S.A.	Chile	0.01%	99.94%	100.00%	100.00%	Securities investment	(5)	0	0
Santander Asset Management Luxembourg, S.A.	Luxembourg	0.00%	100.00%	100.00%	100.00%	Fund management company	4	4	0
Santander Asset Management S.A. Administradora General de Fondos	Chile	0.00%	100.00%	100.00%	100.00%	Fund management company	13	9	132
Santander Asset Management UK Holdings Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Holding company	195	5	186
Santander Asset Management UK Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Management of funds and portfolios	41	15	201
Santander Asset Management, LLC (j)	Puerto Rico	0.00%	100.00%	100.00%	100.00%	Management	0	(1)	0
Santander Asset Management, S.A., S.G.I.I.C.	Spain	0.00%	100.00%	100.00%	100.00%	Fund management company	248	61	393
Santander Back-Offices Globales Mayoristas, S.A.	Spain	100.00%	0.00%	100.00%	100.00%	Services	2	1	1
Santander Banca de Inversión Colombia, S.A.S.	Colombia	100.00%	0.00%	100.00%	100.00%	Advisory services	2	0	2
Santander Bank & Trust Ltd.	Bahamas	0.00%	100.00%	100.00%	100.00%	Banking	66	(1)	22
Santander Bank Polska S.A.	Poland	67.41%	0.00%	67.41%	67.41%	Banking	4,984	199	4,270
Santander Bank, National Association	United States	0.00%	100.00%	100.00%	100.00%	Banking	10,197	444	10,637
Santander Brasil Administradora de Consórcio Ltda.	Brazil	0.00%	89.91%	100.00%	100.00%	Services	107	53	144
Santander Brasil Gestão de Recursos Ltda.	Brazil	0.08%	99.92%	100.00%	100.00%	Securities investment	396	30	470
Santander Capital Desarrollo, SGEIC, S.A. Unipersonal	Spain	100.00%	0.00%	100.00%	100.00%	Management company of investment entities	5	0	3
Santander Capital Structuring, S.A. de C.V.	Mexico	0.00%	100.00%	100.00%	100.00%	Investment companies	11	0	0
Santander Capitalização S.A.	Brazil	0.00%	89.91%	100.00%	100.00%	Insurance	9	58	60
Santander Cards Ireland Limited	Ireland	0.00%	100.00%	100.00%	100.00%	Cards	(8)	0	0
Santander Cards Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Cards	100	0	100
Santander Cards UK Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Finance company	163	0	115
Santander Chile Holding S.A.	Chile	22.11%	77.73%	99.84%	99.84%	Holding company	1,490	310	1,208
Santander Consulting (Beijing) Co., Ltd.	China	0.00%	100.00%	100.00%	100.00%	Advisory services	9	0	4
Santander Consumer (UK) plc	United Kingdom	0.00%	100.00%	100.00%	100.00%	Finance company	853	296	310
Santander Consumer Auto Receivables Funding 2013-B2 LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	(283)	200	0
Santander Consumer Auto Receivables Funding 2013-B3 LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	101	70	0
Santander Consumer Auto Receivables Funding 2018-L1 LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	182	75	0
Santander Consumer Auto Receivables Funding 2018-L3 LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	63	49	0

Subsidiaries of Banco Santander, S.A. [1]

Company	Location	% of ownership held by Banco Santander		Percentage of voting power (k)		Activity	EUR million (a)		
		Direct	Indirect	Year 2021	Year 2020		Capital + reserves	Net results	Carrying amount
Santander Consumer Auto Receivables Funding 2018-L5 LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	53	99	0
Santander Consumer Auto Receivables Funding 2019-B1 LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	(140)	190	0
Santander Consumer Auto Receivables Funding 2019-L2 LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	58	87	0
Santander Consumer Auto Receivables Funding 2019-L3 LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	32	36	0
Santander Consumer Auto Receivables Funding 2020-B1 LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	(98)	82	0
Santander Consumer Auto Receivables Funding 2020-L1 LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	71	39	0
Santander Consumer Auto Receivables Funding 2020-L2 LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	7	11	0
Santander Consumer Auto Receivables Funding 2021-B1 LLC	United States	0.00%	80.22%	100.00%	—	Inactive	0	0	0
Santander Consumer Auto Receivables Funding 2021-B2 LLC	United States	0.00%	80.22%	100.00%	—	Inactive	0	0	0
Santander Consumer Auto Receivables Funding 2021-L1 LLC	United States	0.00%	80.22%	100.00%	—	Inactive	0	0	0
Santander Consumer Auto Receivables Grantor Trust 2021-D	United States	0.00%	80.22%	100.00%	—	Inactive	0	0	0
Santander Consumer Auto Receivables Trust 2021-D	United States	0.00%	80.22%	100.00%	—	Inactive	0	0	0
Santander Consumer Bank AG	Germany	0.00%	100.00%	100.00%	100.00%	Banking	3,313	461	5,070
Santander Consumer Bank AS	Norway	0.00%	100.00%	100.00%	100.00%	Banking	2,540	202	2,313
Santander Consumer Bank GmbH	Austria	0.00%	100.00%	100.00%	100.00%	Banking	399	45	363
Santander Consumer Bank S.A.	Poland	0.00%	80.44%	100.00%	100.00%	Banking	743	35	484
Santander Consumer Bank S.p.A.	Italy	0.00%	100.00%	100.00%	100.00%	Banking	824	178	603
Santander Consumer Banque S.A.	France	0.00%	100.00%	100.00%	100.00%	Banking	544	40	492
Santander Consumer Credit Services Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Finance company	(39)	0	0
Santander Consumer Finance Global Services, S.L.	Spain	0.00%	100.00%	100.00%	100.00%	IT	6	2	5
Santander Consumer Finance Inc.	Canada	96.42%	0.00%	96.42%	96.42%	Holding company	63	0	94
Santander Consumer Finance Limitada	Chile	49.00%	34.23%	100.00%	100.00%	Finance company	63	20	41
Santander Consumer Finance Oy	Finland	0.00%	100.00%	100.00%	100.00%	Finance company	314	54	165
Santander Consumer Finance Schweiz AG	Switzerland	0.00%	100.00%	100.00%	100.00%	Leasing	50	7	60
Santander Consumer Finance, S.A.	Spain	100.00%	0.00%	100.00%	100.00%	Banking	8,807	601	10,022
Santander Consumer Financial Solutions Sp. z o.o.	Poland	0.00%	80.44%	100.00%	100.00%	Leasing	2	0	2
Santander Consumer Finanse Sp. z o.o. w likwidacji (j)	Poland	0.00%	80.44%	100.00%	100.00%	Services	16	0	12
Santander Consumer Holding Austria GmbH	Austria	0.00%	100.00%	100.00%	100.00%	Holding company	364	20	518
Santander Consumer Holding GmbH	Germany	0.00%	100.00%	100.00%	100.00%	Holding company	5,564	309	6,077
Santander Consumer Inc.	Canada	0.00%	96.42%	100.00%	100.00%	Finance company	66	16	46
Santander Consumer International Puerto Rico LLC	Puerto Rico	0.00%	80.22%	100.00%	100.00%	Services	9	0	7
Santander Consumer Leasing GmbH	Germany	0.00%	100.00%	100.00%	100.00%	Leasing	20	109	101
Santander Consumer Mobility Services, S.A.	Spain	0.00%	100.00%	100.00%	100.00%	Renting	12	0	12
Santander Consumer Multirent Sp. z o.o.	Poland	0.00%	80.44%	100.00%	100.00%	Leasing	27	4	5
Santander Consumer Operations Services GmbH	Germany	0.00%	100.00%	100.00%	100.00%	Services	11	1	18

Subsidiaries of Banco Santander, S.A. [1]

Company	Location	% of ownership held by Banco Santander		Percentage of voting power (k)		Activity	EUR million (a)		
		Direct	Indirect	Year 2021	Year 2020		Capital + reserves	Net results	Carrying amount
Santander Consumer Receivables 10 LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	764	286	0
Santander Consumer Receivables 11 LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	420	196	0
Santander Consumer Receivables 3 LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	315	60	0
Santander Consumer Receivables 7 LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	303	369	0
Santander Consumer Receivables Funding LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	1	3	0
Santander Consumer Renting, S.L.	Spain	0.00%	100.00%	100.00%	100.00%	Leasing	37	1	38
Santander Consumer S.A.	Argentina	0.00%	99.31%	100.00%	100.00%	Finance company	7	(2)	6
Santander Consumer S.A. Compañía de Financiamiento	Colombia	79.02%	20.98%	100.00%	—	Finance company	6	(1)	6
Santander Consumer Services GmbH	Austria	0.00%	100.00%	100.00%	100.00%	Services	0	0	0
Santander Consumer Services, S.A.	Portugal	0.00%	100.00%	100.00%	100.00%	Finance company	11	2	6
Santander Consumer Spain Auto 2019-1, Fondo de Titulización	Spain	—	(b)	—	—	Securitization	0	0	0
Santander Consumer Spain Auto 2020-1, Fondo de Titulización	Spain	—	(b)	—	—	Securitization	0	0	0
Santander Consumer Spain Auto 2021-1, Fondo de Titulización	Spain	—	(b)	—	—	Securitization	0	0	0
Santander Consumer Technology Services GmbH	Germany	0.00%	100.00%	100.00%	100.00%	IT services	21	3	22
Santander Consumer USA Holdings Inc.	United States	0.00%	80.22%	80.22%	80.24%	Holding company	4,688	2,871	6,705
Santander Consumer USA Inc.	United States	0.00%	80.22%	100.00%	100.00%	Finance company	5,257	(917)	3,481
Santander Consumo 4, F.T.	Spain	—	(b)	—	—	Securitization	0	0	0
Santander Consumo, S.A. de C.V., S.O.F.O.M., E.R., Grupo Financiero Santander México	Mexico	0.00%	96.24%	100.00%	100.00%	Cards	1,123	222	1,295
Santander Corredora de Seguros Limitada	Chile	0.00%	67.20%	100.00%	100.00%	Insurance brokerage	72	2	50
Santander Corredores de Bolsa Limitada	Chile	0.00%	83.23%	100.00%	100.00%	Securities company	47	2	40
Santander Corretora de Câmbio e Valores Mobiliários S.A.	Brazil	0.00%	89.91%	100.00%	100.00%	Securities company	114	13	115
Santander Corretora de Seguros, Investimentos e Serviços S.A.	Brazil	0.00%	89.91%	100.00%	100.00%	Holding company	567	166	656
Santander Customer Voice, S.A.	Spain	99.50%	0.50%	100.00%	100.00%	Services	2	0	1
Santander de Titulización, S.G.F.T., S.A.	Spain	81.00%	19.00%	100.00%	100.00%	Fund management company	5	3	2
Santander Digital Assets, S.L.	Spain	100.00%	0.00%	100.00%	100.00%	IT services	0	2	4
Santander Drive Auto Receivables LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	0	0	0
Santander Drive Auto Receivables Trust 2017-3	United States	—	(b)	—	—	Securitization	52	29	0
Santander Drive Auto Receivables Trust 2018-1	United States	—	(b)	—	—	Securitization	41	39	0
Santander Drive Auto Receivables Trust 2018-2	United States	—	(b)	—	—	Securitization	18	37	0
Santander Drive Auto Receivables Trust 2018-3	United States	—	(b)	—	—	Securitization	1	52	0
Santander Drive Auto Receivables Trust 2018-4	United States	—	(b)	—	—	Securitization	4	46	0
Santander Drive Auto Receivables Trust 2018-5	United States	—	(b)	—	—	Securitization	(4)	50	0

Subsidiaries of Banco Santander, S.A. [1]

		% of ownership held by Banco Santander		Percentage of voting power (k)			EUR million (a)		
Company	Location	Direct	Indirect	Year 2021	Year 2020	Activity	Capital + reserves	Net results	Carrying amount
Santander Drive Auto Receivables Trust 2019-1	United States	—	(b)	—	—	Securitization	(15)	58	0
Santander Drive Auto Receivables Trust 2019-2	United States	—	(b)	—	—	Securitization	(23)	80	0
Santander Drive Auto Receivables Trust 2019-3	United States	—	(b)	—	—	Securitization	(38)	86	0
Santander Drive Auto Receivables Trust 2020-1	United States	—	(b)	—	—	Securitization	(111)	134	0
Santander Drive Auto Receivables Trust 2020-2	United States	—	(b)	—	—	Securitization	(131)	175	0
Santander Drive Auto Receivables Trust 2020-3	United States	—	(b)	—	—	Securitization	(241)	271	0
Santander Drive Auto Receivables Trust 2020-4	United States	—	(b)	—	—	Securitization	(242)	233	0
Santander Drive Auto Receivables Trust 2021-1	United States	—	(b)	—	—	Securitization	0	(43)	0
Santander Drive Auto Receivables Trust 2021-2	United States	—	(b)	—	—	Securitization	0	(162)	0
Santander Drive Auto Receivables Trust 2021-3	United States	—	(b)	—	—	Securitization	0	(263)	0
Santander Drive Auto Receivables Trust 2021-4	United States	—	(b)	—	—	Securitization	0	(272)	0
Santander Drive Auto Receivables Trust 2022-1	United States	—	(b)	—	—	Inactive	0	0	0
Santander Drive Auto Receivables Trust 2022-2	United States	—	(b)	—	—	Inactive	0	0	0
Santander Drive Auto Receivables Trust 2022-3	United States	—	(b)	—	—	Inactive	0	0	0
Santander Drive Auto Receivables Trust 2022-4	United States	—	(b)	—	—	Inactive	0	0	0
Santander Equity Investments Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Finance company	41	(11)	35
Santander España Servicios Legales y de Cumplimiento, S.L.	Spain	99.97%	0.03%	100.00%	100.00%	Services	9	1	8
Santander Estates Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Real estate	3	(10)	0
Santander European Hospitality Opportunities	Luxembourg	100.00%	0.00%	100.00%	—	Investment fund	1	0	1
Santander F24 S.A.	Poland	0.00%	67.41%	100.00%	100.00%	Finance company	0	0	0
Santander Facility Management España, S.L. Unipersonal	Spain	100.00%	0.00%	100.00%	100.00%	Real estate	417	(3)	392
Santander Factoring S.A.	Chile	0.00%	99.84%	100.00%	100.00%	Factoring	37	0	37
Santander Factoring Sp. z o.o.	Poland	0.00%	67.41%	100.00%	100.00%	Financial services	27	11	1
Santander Factoring y Confirming, S.A., E.F.C.	Spain	100.00%	0.00%	100.00%	100.00%	Factoring	208	70	126
Santander Finance 2012-1 LLC	United States	0.00%	100.00%	100.00%	100.00%	Financial services	3	0	3
Santander Financial Exchanges Limited	United Kingdom	100.00%	0.00%	100.00%	100.00%	Inactive	0	0	0
Santander Financial Services plc	United Kingdom	0.00%	100.00%	100.00%	100.00%	Banking	356	32	401
Santander Financial Services, Inc.	Puerto Rico	0.00%	100.00%	100.00%	100.00%	Finance company	22	(7)	14
Santander Financiamientos S.A.	Peru	100.00%	0.00%	100.00%	—	Finance company	8	(1)	8
Santander Financing S.A.S.	Colombia	100.00%	0.00%	100.00%	100.00%	Financial advisory	1	(1)	1
Santander Finanse Sp. z o.o.	Poland	0.00%	67.41%	100.00%	100.00%	Financial services	60	7	19
Santander Fintech Holdings, S.L.	Spain	100.00%	0.00%	100.00%	100.00%	Holding company	79	(14)	61

Subsidiaries of Banco Santander, S.A. [1]

		% of ownership held by Banco Santander		Percentage of voting power (k)			EUR million (a)		
Company	Location	Direct	Indirect	Year 2021	Year 2020	Activity	Capital + reserves	Net results	Carrying amount
Santander Fintech Limited	United Kingdom	100.00%	0.00%	100.00%	100.00%	Finance company	218	(7)	144
Santander Fundo de Investimento Santillana Multimercado Crédito Privado Investimento No Exterior (e)	Brazil	—	(b)	—	—	Investment fund	413	19	432
Santander Fundo de Investimento SBAC Referenciado di Crédito Privado (h)	Brazil	0.00%	89.91%	100.00%	100.00%	Investment fund	1,440	11	1,303
Santander Gestión de Recaudación y Cobranzas Ltda.	Chile	0.00%	99.84%	100.00%	100.00%	Financial services	6	0	5
Santander Global Cards & Digital Solutions Brasil S.A.	Brazil	0.00%	100.00%	100.00%	100.00%	IT consulting	0	0	0
Santander Global Consumer Finance Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Finance company	7	0	7
Santander Global Facilities, S.A. de C.V.	Mexico	100.00%	0.00%	100.00%	100.00%	Real estate management	125	3	127
Santander Global Facilities, S.L.	Spain	100.00%	0.00%	100.00%	100.00%	Real estate	73	2	70
Santander Global Services S.A. (j)	Uruguay	0.00%	100.00%	100.00%	100.00%	Services	0	0	0
Santander Global Sport, S.A.	Spain	100.00%	0.00%	100.00%	100.00%	Sports activity	21	(2)	19
Santander Global Technology and Operations Brasil Ltda.	Brazil	0.00%	100.00%	100.00%	100.00%	IT services	3	0	1
Santander Global Technology and Operations Chile Limitada	Chile	0.00%	100.00%	100.00%	100.00%	IT services	22	2	20
Santander Global Technology and Operations, S.L.	Spain	100.00%	0.00%	100.00%	100.00%	IT services	434	19	370
Santander Green Investment, S.L.	Spain	99.97%	0.03%	100.00%	—	Holding company	14	0	14
Santander Guarantee Company	United Kingdom	0.00%	100.00%	100.00%	100.00%	Leasing	5	0	3
Santander Hipotecario 1 Fondo de Titulización de Activos	Spain	—	(b)	—	—	Securitization	0	0	0
Santander Hipotecario 2 Fondo de Titulización de Activos	Spain	—	(b)	—	—	Securitization	0	0	0
Santander Hipotecario 3 Fondo de Titulización de Activos	Spain	—	(b)	—	—	Securitization	0	0	0
Santander Holding Imobiliária S.A.	Brazil	0.00%	89.91%	100.00%	100.00%	Real estate	71	1	65
Santander Holding Internacional, S.A.	Spain	99.95%	0.05%	100.00%	100.00%	Holding company	4,031	26	2,247
Santander Holdings USA, Inc.	United States	100.00%	0.00%	100.00%	100.00%	Holding company	17,120	2,633	12,579
Santander Inclusión Financiera, S.A. de C.V., S.O.F.O.M., E.R., Grupo Financiero Santander México	Mexico	0.00%	96.24%	100.00%	100.00%	Finance company	14	(7)	7
Santander Insurance Agency, U.S., LLC	United States	0.00%	100.00%	100.00%	100.00%	Insurance	1	0	1
Santander Insurance Services UK Limited	United Kingdom	100.00%	0.00%	100.00%	100.00%	Asset management	44	0	44
Santander Intermediación Correduría de Seguros, S.A.	Spain	100.00%	0.00%	100.00%	100.00%	Insurance brokerage	24	2	18
Santander International Products, Plc. (l)	Ireland	99.99%	0.01%	100.00%	100.00%	Finance company	1	0	0
Santander Inversiones S.A.	Chile	0.00%	100.00%	100.00%	100.00%	Holding company	968	201	1,032
Santander Investment Bank Limited	Bahamas	0.00%	100.00%	100.00%	100.00%	Banking	577	15	529
Santander Investment Chile Limitada	Chile	0.00%	100.00%	100.00%	100.00%	Finance company	473	6	321
Santander Investment Securities Inc.	United States	0.00%	100.00%	100.00%	100.00%	Securities company	456	32	488
Santander Investment, S.A.	Spain	100.00%	0.00%	100.00%	100.00%	Banking	1,408	77	245
Santander Investments GP 1 S.à.r.l.	Luxembourg	0.00%	100.00%	100.00%	100.00%	Management of funds	1	0	1
Santander Inwestycje Sp. z o.o.	Poland	0.00%	67.41%	100.00%	100.00%	Securities company	17	1	7

Subsidiaries of Banco Santander, S.A. [1]

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Company	Location	Direct	Indirect	Year 2021	Year 2020	Activity	Capital + reserves	Net results	Carrying amount
Santander ISA Managers Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Management of funds and portfolios	37	8	6
Santander Lease, S.A., E.F.C.	Spain	100.00%	0.00%	100.00%	100.00%	Leasing	61	11	51
Santander Leasing Poland Securitization 01 Designated Activity Company	Ireland	—	(b)	—	—	Securitization	0	0	0
Santander Leasing S.A.	Poland	0.00%	67.41%	100.00%	100.00%	Leasing	133	9	28
Santander Leasing S.A. Arrendamento Mercantil	Brazil	0.00%	89.91%	100.00%	100.00%	Leasing	1,709	59	1,590
Santander Leasing, LLC	United States	0.00%	100.00%	100.00%	100.00%	Leasing	0	1	2
Santander Lending Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Mortgage credit company	243	10	247
Santander Mediación Operador de Banca-Seguros Vinculado, S.A.	Spain	100.00%	0.00%	100.00%	100.00%	Insurance intermediary	49	1	3
Santander Merchant Platform Operations, S.A. de C.V.	Mexico	0.00%	98.16%	100.00%	100.00%	Financial services	1	1	2
Santander Merchant Platform Services, S.A. de C.V.	Mexico	0.00%	98.16%	100.00%	100.00%	Financial services	1	0	1
Santander Merchant Platform Solutions México, S.A. de C.V.	Mexico	0.00%	98.16%	100.00%	100.00%	Holding company	119	28	134
Santander Merchant Platform Solutions S.A.	Argentina	0.00%	99.66%	100.00%	100.00%	Payment methods	15	(6)	10
Santander Merchant Platform Solutions Uruguay S.A.	Uruguay	0.00%	100.00%	100.00%	100.00%	Payment methods	5	0	5
Santander Merchant S.A.	Argentina	5.10%	94.90%	100.00%	100.00%	Finance company	1	0	2
Santander Mortgage Holdings Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Financial services	(1)	(23)	0
Santander Paraty Qif PLC	Ireland	0.00%	89.91%	100.00%	100.00%	Investment companies	261	0	235
Santander Pensiones, S.A., E.G.F.P.	Spain	0.00%	100.00%	100.00%	100.00%	Pension fund management company	83	16	184
Santander Pensões - Sociedade Gestora de Fundos de Pensões, S.A.	Portugal	100.00%	0.00%	100.00%	100.00%	Pension fund management company	3	0	3
Santander Prime Auto Issuance Notes 2018-A Designated Activity Company	Ireland	—	(b)	—	—	Securitization	(15)	10	0
Santander Prime Auto Issuance Notes 2018-B Designated Activity Company	Ireland	—	(b)	—	—	Securitization	(17)	(12)	0
Santander Prime Auto Issuance Notes 2018-C Designated Activity Company	Ireland	—	(b)	—	—	Securitization	(6)	(1)	0
Santander Prime Auto Issuance Notes 2018-D Designated Activity Company	Ireland	—	(b)	—	—	Securitization	(24)	(2)	0
Santander Prime Auto Issuance Notes 2018-E Designated Activity Company	Ireland	—	(b)	—	—	Securitization	(10)	(4)	0
Santander Private Banking Gestión, S.A., S.G.I.I.C.	Spain	100.00%	0.00%	100.00%	100.00%	Fund management company	52	12	35
Santander Private Banking s.p.a. in Liquidazione (j)	Italy	100.00%	0.00%	100.00%	100.00%	Finance company	13	1	7
Santander Private Banking UK Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Holding company	304	0	414
Santander Private Real Estate Advisory & Management, S.A.	Spain	99.99%	0.01%	100.00%	100.00%	Real estate	4	0	4
Santander Private Real Estate Advisory, S.A.	Spain	100.00%	0.00%	100.00%	100.00%	Real estate	14	1	15
Santander Real Estate, S.A.	Spain	100.00%	0.00%	100.00%	100.00%	Inactive	1	0	1
Santander Retail Auto Lease Funding LLC	United States	0.00%	80.22%	100.00%	100.00%	Finance company	0	0	0

Subsidiaries of Banco Santander, S.A. [1]

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		Direct	Indirect	Year 2021	Year 2020		Capital + reserves	Net results	Carrying amount
Santander Retail Auto Lease Trust 2019-A	United States	—	(b)	—	—	Securitization	67	89	0
Santander Retail Auto Lease Trust 2019-B	United States	—	(b)	—	—	Securitization	42	71	0
Santander Retail Auto Lease Trust 2019-C	United States	—	(b)	—	—	Securitization	45	59	0
Santander Retail Auto Lease Trust 2020-A	United States	—	(b)	—	—	Securitization	48	33	0
Santander Retail Auto Lease Trust 2020-B	United States	—	(b)	—	—	Securitization	26	40	0
Santander Retail Auto Lease Trust 2021-A	United States	—	(b)	—	—	Securitization	0	63	0
Santander Retail Auto Lease Trust 2021-B	United States	—	(b)	—	—	Securitization	0	63	0
Santander Retail Auto Lease Trust 2021-C	United States	—	(b)	—	—	Securitization	0	88	0
Santander Retail Auto Lease Trust 2022-A	United States	—	(b)	—	—	Inactive	0	0	0
Santander Retail Auto Lease Trust 2022-B	United States	—	(b)	—	—	Inactive	0	0	0
Santander Retail Auto Lease Trust 2022-C	United States	—	(b)	—	—	Inactive	0	0	0
Santander Revolving Auto Loan Trust 2019-A	United States	—	(b)	—	—	Securitization	(112)	111	0
Santander Revolving Auto Loan Trust 2021-A	United States	—	(b)	—	—	Inactive	0	0	0
Santander Río Asset Management Gerente de Fondos Comunes de Inversión S.A.	Argentina	0.00%	100.00%	100.00%	100.00%	Fund management company	6	7	3
Santander Río Trust S.A.	Argentina	0.00%	99.97%	100.00%	100.00%	Services	0	0	0
Santander Río Valores S.A.	Argentina	5.10%	94.25%	100.00%	100.00%	Securities company	3	1	4
Santander RMBS 6, Fondo de Titulización	Spain	—	(b)	—	—	Securitization	0	0	0
Santander S.A. Sociedad Securitizadora	Chile	0.00%	67.24%	100.00%	100.00%	Fund management company	0	0	0
Santander Secretariat Services Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Holding company	0	0	0
Santander Securities LLC	United States	0.00%	100.00%	100.00%	100.00%	Securities company	39	4	43
Santander Seguros y Reaseguros, Compañía Aseguradora, S.A.	Spain	100.00%	0.00%	100.00%	100.00%	Insurance	1,434	191	1,188
Santander Servicios Corporativos, S.A. de C.V.	Mexico	0.00%	96.24%	100.00%	100.00%	Services	11	0	11
Santander Servicios Especializados, S.A. de C.V.	Mexico	0.00%	96.24%	100.00%	100.00%	Services	3	0	3
Santander Technology USA, LLC	United States	0.00%	100.00%	100.00%	100.00%	IT services	80	(12)	69
Santander Tecnología Argentina S.A.	Argentina	0.00%	99.35%	100.00%	100.00%	IT services	3	2	4
Santander Tecnología México, S.A. de C.V.	Mexico	0.00%	96.24%	100.00%	100.00%	IT services	45	1	45
Santander Tecnología y Operaciones España, S.L.	Spain	100.00%	0.00%	100.00%	100.00%	IT services	46	(4)	37
Santander Totta Seguros, Companhia de Seguros de Vida, S.A.	Portugal	0.00%	99.91%	100.00%	100.00%	Insurance	117	25	47
Santander Totta, SGPS, S.A.	Portugal	99.91 %	0.00 %	99.91 %	99.91 %	Holding company	3,550	54	5,351

Subsidiaries of Banco Santander, S.A. [1]

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Santander Towarzystwo Funduszy Inwestycyjnych S.A.	Poland	50.00 %	33.70 %	100.00 %	100.00 %	Fund management company	4	25	15
Santander Trade Services Limited	Hong Kong	0.00 %	100.00 %	100.00 %	100.00 %	Inactive	19	3	16
Santander UK Group Holdings plc	United Kingdom	77.67 %	22.33 %	100.00 %	100.00 %	Finance company	14,302	1,783	16,444
Santander UK Investments	United Kingdom	100.00 %	0.00 %	100.00 %	100.00 %	Finance company	53	(2)	48
Santander UK Operations Limited	United Kingdom	0.00 %	100.00 %	100.00 %	100.00 %	Services	27	2	18
Santander UK plc	United Kingdom	0.00 %	100.00 %	100.00 %	100.00 %	Banking	16,029	937	15,741
Santander UK Technology Limited	United Kingdom	0.00 %	100.00 %	100.00 %	100.00 %	IT services	39	4	7
Santander Wealth Management International SA	Switzerland	0.00 %	100.00 %	100.00 %	100.00 %	Asset management	0	0	0
Santusa Holding, S.L.	Spain	69.76 %	30.24 %	100.00 %	100.00 %	Holding company	8,423	637	6,524
SC Austria Finance 2020-1 Designated Activity Company	Ireland	—	(b)	—	—	Securitization	0	0	0
SC Germany Auto 2014-2 UG (haftungsbeschränkt)	Germany	—	(b)	—	—	Securitization	0	0	0
SC Germany Auto 2016-2 UG (haftungsbeschränkt)	Germany	—	(b)	—	—	Securitization	0	0	0
SC Germany Auto 2018-1 UG (haftungsbeschränkt)	Germany	—	(b)	—	—	Securitization	(1)	0	0
SC Germany Auto 2019-1 UG (haftungsbeschränkt)	Germany	—	(b)	—	—	Securitization	0	0	0
SC Germany Consumer 2014-1 UG (haftungsbeschränkt)	Germany	—	(b)	—	—	Securitization	0	0	0
SC Germany Consumer 2018-1 UG (haftungsbeschränkt)	Germany	—	(b)	—	—	Securitization	0	0	0
SC Germany Mobility 2019-1 UG (haftungsbeschränkt)	Germany	—	(b)	—	—	Securitization	0	0	0
SC Germany S.A.	Luxembourg	—	(b)	—	—	Securitization	0	0	0
SC Germany S.A., Compartment Consumer 2020-1	Luxembourg	—	(b)	—	—	Securitization	0	0	0
SC Germany S.A., Compartment Consumer 2021-1	Luxembourg	—	(b)	—	—	Securitization	0	0	0
SC Germany S.A., Compartment Mobility 2020-1	Luxembourg	—	(b)	—	—	Securitization	0	0	0
SC Germany Vehicles 2013-1 UG (haftungsbeschränkt)	Germany	—	(b)	—	—	Securitization	0	0	0
SC Germany Vehicles 2015-1 UG (haftungsbeschränkt)	Germany	—	(b)	—	—	Securitization	0	0	0
SC Poland Consumer 15-1 Sp. z.o.o. (j)	Poland	—	(b)	—	—	Securitization	0	0	0
SC Poland Consumer 16-1 Sp. z o.o.	Poland	—	(b)	—	—	Securitization	0	0	0
SCF Ajoneuvohallinto I Limited (j)	Ireland	—	(b)	—	—	Securitization	0	0	0
SCF Ajoneuvohallinto II Limited (j)	Ireland	—	(b)	—	—	Securitization	0	0	0
SCF Ajoneuvohallinto IX Limited	Ireland	—	(b)	—	—	Securitization	0	0	0
SCF Ajoneuvohallinto KIMI VI Limited (j)	Ireland	—	(b)	—	—	Securitization	0	0	0
SCF Ajoneuvohallinto VII Limited	Ireland	—	(b)	—	—	Securitization	0	0	0
SCF Ajoneuvohallinto VIII Limited	Ireland	—	(b)	—	—	Securitization	0	0	0
SCF Ajoneuvohallinto X Limited	Ireland	—	(b)	—	—	Securitization	0	0	0
SCF Eastside Locks GP Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Real estate management	0	0	0
SCF Rahoituspalvelut I Designated Activity Company (j)	Ireland	—	(b)	—	—	Securitization	0	0	0
SCF Rahoituspalvelut II Designated Activity Company (j)	Ireland	—	(b)	—	—	Securitization	0	0	0
SCF Rahoituspalvelut IX DAC	Ireland	—	(b)	—	—	Securitization	1	0	0

Subsidiaries of Banco Santander, S.A. [1]

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		Direct	Indirect	Year 2021	Year 2020		Capital + reserves	Net results	Carrying amount
SCF Rahoituspalvelut KIMI VI Designated Activity Company (j)	Ireland	—	(b)	—	—	Securitization	0	0	0
SCF Rahoituspalvelut VII Designated Activity Company	Ireland	—	(b)	—	—	Securitization	0	0	0
SCF Rahoituspalvelut VIII Designated Activity Company	Ireland	—	(b)	—	—	Securitization	0	0	0
SCF Rahoituspalvelut X DAC	Ireland	—	(b)	—	—	Securitization	0	0	0
SCM Poland Auto 2019-1 DAC	Ireland	—	(b)	—	—	Securitization	0	0	0
SDMX Superdigital, S.A. de C.V.	Mexico	0.00%	100.00%	100.00%	100.00%	Payment platform	0	0	2
Secucor Finance 2013-I Designated Activity Company (i) (j)	Ireland	—	(b)	—	—	Securitization	0	0	0
Secucor Finance 2021-1, DAC	Ireland	—	(b)	—	—	Securitization	0	0	0
Services and Promotions Delaware Corp.	United States	0.00%	100.00%	100.00%	100.00%	Holding company	58	2	60
Services and Promotions Miami LLC	United States	0.00%	100.00%	100.00%	100.00%	Real estate	51	3	53
Servicio de Alarmas Controladas por Ordenador, S.A.	Spain	99.99%	0.01%	100.00%	100.00%	Security	2	0	1
Servicios de Cobranza, Recuperación y Seguimiento, S.A. de C.V.	Mexico	0.00%	85.00%	85.00%	85.00%	Finance company	34	1	32
Sheppards Moneybrokers Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
Shiloh III Wind Project, LLC	United States	0.00%	100.00%	100.00%	100.00%	Renewable energies	324	1	325
Silk Finance No. 5	Portugal	—	(b)	—	—	Securitization	1	9	0
SMPS Merchant Platform Solutions México, S.A de C.V	Mexico	0.00%	98.16%	100.00%	100.00%	Payments and collection services	112	27	141
Sociedad Integral de Valoraciones Automatizadas, S.A.	Spain	100.00%	0.00%	100.00%	100.00%	Appraisals	1	1	1
Sociedad Operadora de Tarjetas de Pago Santander Getnet Chile S.A.	Chile	0.00%	67.12%	100.00%	100.00%	Payments and collection services	20	(8)	8
Socur S.A. (f)	Uruguay	100.00%	0.00%	100.00%	100.00%	Finance company	43	23	59
Solarlaser Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
Solution 4Fleet Consultoria Empresarial S.A.	Brazil	0.00%	71.93%	80.00%	—	Vehicle rental	3	0	2
Sovereign Community Development Company	United States	0.00%	100.00%	100.00%	100.00%	Holding company	38	1	39
Sovereign Delaware Investment Corporation	United States	0.00%	100.00%	100.00%	100.00%	Holding company	134	1	135
Sovereign Lease Holdings, LLC	United States	0.00%	100.00%	100.00%	100.00%	Financial services	221	1	221
Sovereign REIT Holdings, Inc.	United States	0.00%	100.00%	100.00%	100.00%	Holding company	7,501	74	7,575
Sovereign Spirit Limited (n)	Bermudas	0.00%	100.00%	100.00%	100.00%	Leasing	0	0	0
SSA Swiss Advisors AG	Switzerland	0.00%	100.00%	100.00%	—	Asset management	0	0	3
Sterrebeeck B.V.	Netherlands	100.00%	0.00%	100.00%	100.00%	Holding company	4,058	713	10,331
Suleyado 2003, S.L. Unipersonal	Spain	0.00%	100.00%	100.00%	100.00%	Securities investment	25	0	24
Summer Empreendimentos Ltda.	Brazil	0.00%	89.91%	100.00%	100.00%	Real estate management	3	0	3
Super Pagamentos e Administração de Meios Eletrônicos S.A.	Brazil	0.00%	100.00%	100.00%	100.00%	Payment services	30	(7)	79
Superdigital Argentina S.A.U.	Argentina	0.00%	100.00%	100.00%	100.00%	IT services	1	(1)	1
Superdigital Colombia S.A.S.	Colombia	0.00%	100.00%	100.00%	99.97%	IT services	0	0	0

Subsidiaries of Banco Santander, S.A. [1]

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Company	Location	Direct	Indirect	Year 2021	Year 2020	Activity	Capital + reserves	Net results	Carrying amount
Superdigital Holding Company, S.L.	Spain	0.00%	100.00%	100.00%	100.00%	Holding company	103	3	106
Superdigital Perú S.A.C.	Peru	0.00%	100.00%	100.00%	100.00%	Financial services	1	0	0
Suzuki Servicios Financieros, S.L.	Spain	0.00%	51.00%	51.00%	51.00%	Intermediation	9	3	0
Svensk Autofinans WH 1 Designated Activity Company	Ireland	—	(b)	—	—	Securitization	0	0	0
Swesant SA	Switzerland	0.00%	100.00%	100.00%	100.00%	Holding company	19	42	0
SX Negócios Ltda.	Brazil	0.00%	89.91%	100.00%	100.00%	Telemarketing	10	2	11
Tabasco Energía España, S.L. Unipersonal	Spain	100.00%	0.00%	100.00%	100.00%	Holding company	6	0	0
Taxagest Sociedade Gestora de Participações Sociais, S.A.	Portugal	0.00%	99.87%	100.00%	100.00%	Holding company	56	0	0
Teatinos Siglo XXI Inversiones S.A.	Chile	50.00%	50.00%	100.00%	100.00%	Holding company	1,497	277	2,064
Tekutina Private Limited	India	0.00%	100.00%	100.00%	—	Financial services	1	0	1
The Alliance & Leicester Corporation Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Real estate	14	0	14
The Best Specialty Coffee, S.L. Unipersonal	Spain	100.00%	0.00%	100.00%	100.00%	Restaurant services	3	0	2
Time Retail Finance Limited (j)	United Kingdom	0.00%	100.00%	100.00%	100.00%	Services	0	0	0
TIMFin S.p.A.	Italy	0.00%	51.00%	51.00%	51.00%	Finance company	53	(8)	28
Tonopah Solar I, LLC	United States	0.00%	100.00%	100.00%	100.00%	Holding company	5	0	5
Tornquist Asesores de Seguros S.A. (j)	Argentina	0.00%	99.99%	99.99%	99.99%	Inactive	0	0	0
Toro Corretora de Títulos e Valores Mobiliários Ltda.	Brazil	0.00%	53.95%	60.00%	—	Securities investment	11	(2)	5
Toro Investimentos S.A.	Brazil	0.00%	53.95%	100.00%	—	Consulting services	5	(1)	2
Totta (Ireland), PLC (h)	Ireland	0.00%	99.86%	100.00%	100.00%	Finance company	451	9	450
Totta Urbe - Empresa de Administração e Construções, S.A.	Portugal	0.00%	99.86%	100.00%	100.00%	Real estate	102	(5)	100
Trabajando.com Mexico, S.A. de C.V. en liquidación (j)	Mexico	0.00%	100.00%	100.00%	100.00%	Services	0	0	0
Trade Maps 3 Hong Kong Limited	Hong-Kong	—	(b)	—	—	Securitization	0	0	0
Trade Maps 3 Ireland Limited (j)	Ireland	—	(b)	—	—	Securitization	0	0	0
Trans Rotor Limited (j)	United Kingdom	100.00%	0.00%	100.00%	100.00%	Renting	0	0	0
Transolver Finance EFC, S.A.	Spain	0.00%	51.00%	51.00%	51.00%	Leasing	67	4	17
Tresmares Growth Fund Santander, SCR, S.A.	Spain	100.00%	0.00%	100.00%	100.00%	Holding company	32	0	32
Tresmares Santander Direct Lending, SICC, S.A.	Spain	99.60%	0.00%	99.60%	99.60%	Management of funds	414	6	413
Tuttle and Son Limited	United Kingdom	0.00%	100.00%	100.00%	100.00%	Inactive	0	0	0
Universia Brasil S.A.	Brazil	0.00%	100.00%	100.00%	100.00%	Internet	0	0	0
Universia Chile S.A.	Chile	0.00%	86.84%	86.84%	86.84%	Internet	0	0	0
Universia Colombia S.A.S.	Colombia	0.00%	100.00%	100.00%	100.00%	Internet	0	0	0
Universia España Red de Universidades, S.A.	Spain	0.00%	89.45%	89.45%	89.45%	Internet	2	0	2
Universia Holding, S.L.	Spain	100.00%	0.00%	100.00%	100.00%	Holding company	19	(3)	17

Subsidiaries of Banco Santander, S.A.[1]

		% of ownership held by Banco Santander		Percentage of voting power (k)			EUR million (a)		
Company	Location	Direct	Indirect	Year 2021	Year 2020	Activity	Capital + reserves	Net results	Carrying amount
Universia México, S.A. de C.V.	Mexico	0.00%	100.00%	100.00%	100.00%	Internet	0	0	0
Universia Perú, S.A.	Peru	0.00%	99.76%	99.76%	100.00%	Internet	0	0	0
Universia Uruguay, S.A.	Uruguay	0.00%	100.00%	100.00%	100.00%	Internet	0	0	0
Uro Property Holdings, SOCIMI, S.A. (c)	Spain	99.99%	0.00%	99.99%	99.99%	Real estate investment	163	9	179
Verbena FCVS - Fundo de Investimentos em Direitos Creditórios	Brazil	—	(b)	—	—	Investment fund	(3)	3	0
Wallcesa, S.A.	Spain	100.00%	0.00%	100.00%	100.00%	Financial services	(936)	9	0
Wave Holdco, S.L.	Spain	0.00%	100.00%	100.00%	100.00%	Holding company	0	0	0
Waypoint Insurance Group, Inc.	United States	0.00%	100.00%	100.00%	100.00%	Holding company	9	0	9
WIM Servicios Corporativos, S.A. de C.V.	Mexico	0.00%	100.00%	100.00%	100.00%	Advisory services	0	0	0
WTW Shipping Designated Activity Company	Ireland	100.00%	0.00%	100.00%	100.00%	Leasing	15	1	9
Yera Servicer Company 2021, S.L. Unipersonal	Spain	0.00%	100.00%	100.00%	—	Real estate management	19	(1)	18

a. Amount according to the provisional books of each company at the date of publication of these annexes generally referring to 31 December 2021 without taking into account, where applicable, interim dividends paid during the year. In the carrying amount (cost net of provision), the Group's percentage ownership has been applied to the figure for each holding company, disregarding goodwill impairments made in the consolidation process. The figures for foreign companies are converted into euros at the year-end exchange rate.
b. Companies over which effective control is maintained.
c. Data as at 31 December 2020, latest available accounts.
d. Data as at 31 March 2021, latest accounts available.
e. Data as at 30 June 2021, last accounts available.
f. Data as at 30 September 2021, last accounts available.
g. Data as at 31 July 2021, last accounts available.
h. Data as at 30 November 2021, last accounts available.
i. Data as at 31 January 2021, latest available accounts.
j. Company in liquidation as at 31 December 2021.
k. Pursuant to Article 3 of Royal Decree 1159/ 2010, of 17 September, approving the rules for the preparation of consolidated annual accounts, in order to determine the voting rights, voting rights held directly by the parent company have been added to those held by companies controlled by the parent company or by other persons acting in their own name but on behalf of a Group company. For these purposes, the number of votes corresponding to the parent company, in relation to the companies indirectly dependent on it, is that corresponding to the dependent company that directly participates in the share capital of the latter.
l. Company resident for tax purposes in Spain.
m. See note 2.b.i.
n. Company resident for tax purposes in the United Kingdom.
o. Data as at 28 February 2021, last accounts available.
p. Companies in liquidation. Pending registration.

(1) Companies issuing preference shares are listed in Annex III, together with other relevant information.

Appendix II

Societies of which Grupo Santander owns more than 5% (g) , entities associated with Grupo Santander and jointly controlled entities

Company	Location	% of ownership held by Banco Santander		Percentage of voting power (f)		Activity	Type of company	EUR million (a)		
		Direct	Indirect	Year 2021	Year 2020			Asset	Capital + reserves	Net results
Abra 1 Limited (k)	Caymand Island	—	(h)	—	—	Leasing	Joint venture	—	—	—
Achmea Tussenholding, B.V. (b)	Netherlands	8.89%	0.00%	8.89%	8.89%	Holding company	-	356	356	20
Administrador Financiero de Transantiago S.A.	Chile	0.00%	13.42%	20.00%	20.00%	Payment and collection services	Associated	56	18	2
Aegon Santander Portugal Não Vida - Companhia de Seguros, S.A.	Portugal	0.00%	48.95%	49.00%	49.00%	Insurance	Joint venture	56	14	9
Aegon Santander Portugal Vida - Companhia de Seguros Vida, S.A.	Portugal	0.00%	48.95%	49.00%	49.00%	Insurance	Joint venture	129	23	18
Aeroplan - Sociedade Construtora de Aeroportos, Lda. (e)	Portugal	0.00%	19.97%	20.00%	20.00%	Inactive	-	0	0	0
Aguas de Fuensanta, S.A. (e) (k)	Spain	36.78%	0.00%	36.78%	36.78%	Food	-	—	—	—
Alcuter 2, S.L. (k)	Spain	37.23%	0.00%	37.23%	37.23%	Technical services	-	—	—	—
Alma UK Holdings Ltd	United Kingdom	30.00%	0.00%	30.00%	—	Holding company	Joint venture	4	4	(1)
Altamira Asset Management, S.A. (consolidado)	Spain	0.00%	15.00%	15.00%	15.00%	Real estate	-	236	3	(2)
Apolo Fundo de Investimento em Direitos Creditórios	Brazil	0.00%	29.97%	33.33%	33.33%	Investment fund	Joint venture	454	421	33
Arena Communications Network, S.L. (consolidado) (b)	Spain	20.00%	0.00%	20.00%	20.00%	Advertising	Associated	296	99	(6)
Attijariwafa Bank Société Anonyme (consolidado) (b)	Morocco	0.00%	5.10%	5.10%	5.11%	Banking	-	54,011	4,809	352
Autopistas del Sol S.A. (b)	Argentina	0.00%	14.17%	14.17%	14.17%	Motorway concession	-	169	82	0
Banco RCI Brasil S.A.	Brazil	0.00%	35.87%	39.89%	39.89%	Banking	Joint venture	1,699	217	25
Banco S3 Caceis México, S.A., Institución de Banca Múltiple	Mexico	0.00%	50.00%	50.00%	50.00%	Banking	Joint venture	157	67	4
Bank of Beijing Consumer Finance Company	China	0.00%	20.00%	20.00%	20.00%	Finance company	Associated	1,369	120	8
Bank of Shanghai Co., Ltd. (consolidado) (b)	China	6.54%	0.00%	6.54%	6.54%	Banking	-	342,252	23,563	2,903
CACEIS (consolidado)	France	0.00%	30.50%	30.50%	30.50%	Custody services	Associated	122,132	3,979	187
Câmara Interbancária de Pagamentos - CIP	Brazil	0.00%	16.07%	17.87%	17.65%	Payment and collection services	-	342	235	69
Cantabria Capital, SGEIC, S.A.	Spain	50.00%	0.00%	50.00%	50.00%	Venture capital	Associated	0	0	0
Car10 Tecnologia e Informação S.A.	Brazil	0.00%	41.96%	46.67%	—	Internet	Joint venture	8	2	(1)
CCPT - ComprarCasa, Rede Serviços Imobiliários, S.A.	Portugal	0.00%	49.98%	49.98%	49.98%	Real estate services	Joint venture	0	0	0
Centro de Compensación Automatizado S.A.	Chile	0.00%	22.37%	33.33%	33.33%	Payment and collection services	Associated	14	9	3
Centro para el Desarrollo, Investigación y Aplicación de Nuevas Tecnologías, S.A. (b)	Spain	0.00%	49.00%	49.00%	49.00%	Technology	Associated	3	2	0
CNP Santander Insurance Europe Designated Activity Company	Ireland	49.00%	0.00%	49.00%	49.00%	Insurance brokerage	Associated	1,004	191	42
CNP Santander Insurance Life Designated Activity Company	Ireland	49.00%	0.00%	49.00%	49.00%	Insurance brokerage	Associated	1,294	151	43
CNP Santander Insurance Services Ireland Limited	Ireland	49.00%	0.00%	49.00%	49.00%	Services	Associated	31	4	1
Comder Contraparte Central S.A	Chile	0.00%	8.37%	12.47%	12.47%	Financial services	Associated	34	11	1
Companhia Promotora UCI	Brazil	0.00%	25.00%	25.00%	25.00%	Financial services	Joint venture	1	(1)	0

Societies of which Grupo Santander owns more than 5% (g) , entities associated with Grupo Santander and jointly controlled entities

		% of ownership held by Banco Santander		Percentage of voting power (f)				EUR million (a)		
Company	Location	Direct	Indirect	Year 2021	Year 2020	Activity	Type of company	Asset	Capital + reserves	Net results
Compañia Española de Financiación de Desarrollo, Cofides, S.A., SME (b)	Spain	20.18%	0.00%	20.18%	20.18%	Finance company	-	153	140	10
Compañía Española de Seguros de Crédito a la Exportación, S.A., Compañía de Seguros y Reaseguros (consolidado) (b)	Spain	23.33%	0.55%	23.88%	23.88%	Credit insurance	-	942	385	34
Compañía Española de Viviendas en Alquiler, S.A.	Spain	24.07%	0.00%	24.07%	24.07%	Real estate	Associated	528	333	14
Compañía para los Desarrollos Inmobiliarios de la Ciudad de Hispalis, S.L., en liquidación (l) (e)	Spain	21.98%	0.00%	21.98%	21.98%	Real estate development	-	38	6	0
Connecting Visions Ecosystems, S.L.	Spain	19.90%	0.00%	19.90%	19.90%	Consulting services	Joint venture	2	2	(1)
Corkfoc Cortiças, S.A. (c)	Portugal	0.00%	27.55%	27.58%	27.58%	Cork industry	-	3	20	0
Corridor Texas Holdings LLC (consolidado) (b)	United States	0.00%	33.40%	33.40%	36.30%	Holding company	-	190	163	(5)
Desarrollo Eólico las Majas VI, S.L.	Spain	45.00%	0.00%	45.00%	—	Renewable energies	Joint venture	28	6	0
Ebury Partners Limited (consolidado) (d) (m)	United Kingdom	0.00%	44.06%	51.28%	50.41%	Payment services	Associated	781	55	(69)
Energias Renovables de Ormonde 25, S.L.	Spain	0.00%	55.00%	55.00%	—	Renewable energies	Joint venture	0	0	0
Energias Renovables de Ormonde 26, S.L.	Spain	0.00%	55.00%	55.00%	—	Renewable energies	Joint venture	0	0	0
Energias Renovables de Ormonde 27, S.L.	Spain	0.00%	55.00%	55.00%	—	Renewable energies	Joint venture	0	0	0
Energias Renovables de Ormonde 30, S.L.	Spain	0.00%	55.00%	55.00%	—	Renewable energies	Joint venture	1	0	0
Energias Renovables de Titania, S.L.	Spain	0.00%	55.00%	55.00%	—	Renewable energies	Joint venture	0	0	0
Energias Renovables Gladiateur 45, S.L.	Spain	0.00%	55.00%	55.00%	—	Renewable energies	Joint venture	0	0	0
Energias Renovables Prometeo, S.L.	Spain	0.00%	55.00%	55.00%	—	Renewable energies	Joint venture	0	0	0
Euro Automatic Cash Entidad de Pago, S.L.	Spain	50.00%	0.00%	50.00%	50.00%	Payment services	Associated	57	46	(12)
European Hospitality Opportunities S.à r.l. (o)	Luxembourg	0.00%	49.00%	49.00%	—	Holding company	Joint venture	—	—	—
Evolve SPV S.r.l.	Italy	—	(h)	—	—	Securitizations	Joint venture	105	0	7
FAFER- Empreendimentos Urbanísticos e de Construção, S.A. (b) (e)	Portugal	0.00%	36.57%	36.62%	36.62%	Real estate	-	0	1	0
Federal Reserve Bank of Boston (b)	United States	0.00%	20.09%	20.09%	25.73%	Banking	-	194,429	1,573	(1)
Fondo de Titulización de Activos UCI 11	Spain	—	(h)	—	—	Securitizations	Joint venture	133	0	0
Fondo de Titulización de Activos UCI 14	Spain	—	(h)	—	—	Securitizations	Joint venture	346	0	0
Fondo de Titulización de Activos UCI 15	Spain	—	(h)	—	—	Securitizations	Joint venture	426	0	0
Fondo de Titulización de Activos UCI 16	Spain	—	(h)	—	—	Securitizations	Joint venture	597	0	0
Fondo de Titulización de Activos UCI 17	Spain	—	(h)	—	—	Securitizations	Joint venture	517	0	0
Fondo de Titulización Hipotecaria UCI 12	Spain	—	(h)	—	—	Securitizations	Joint venture	189	0	0
Fondo de Titulización, RMBS Prado III	Spain	—	(h)	—	—	Securitizations	Joint venture	0	0	0
Fondo de Titulización, RMBS Prado IV	Spain	—	(h)	—	—	Securitizations	Joint venture	288	0	0
Fondo de Titulización, RMBS Prado IX	Spain	—	(h)	—	—	Securitizations	Joint venture	499	0	0

Societies of which Grupo Santander owns more than 5% (g) , entities associated with Grupo Santander and jointly controlled entities

Company	Location	% of ownership held by Banco Santander		Percentage of voting power (f)		Activity	Type of company	EUR million (a)		
		Direct	Indirect	Year 2021	Year 2020			Asset	Capital + reserves	Net results
Fondo de Titulización, RMBS Prado V	Spain	—	(h)	—	—	Securitizations	Joint venture	309	0	0
Fondo de Titulización, RMBS Prado VI	Spain	—	(h)	—	—	Securitizations	Joint venture	340	0	0
Fondo de Titulización, RMBS Prado VII	Spain	—	(h)	—	—	Securitizations	Joint venture	481	0	0
Fondo de Titulización, RMBS Prado VIII	Spain	—	(h)	—	—	Securitizations	Joint venture	467	0	0
Fortune Auto Finance Co., Ltd	China	0.00%	50.00%	50.00%	50.00%	Finance company	Joint venture	3,181	384	61
Fremman limited	United Kingdom	33.00%	0.00%	4.99%	4.99%	Finance company	Associated	2	0	(3)
Gestora de Inteligência de Crédito S.A.	Brazil	0.00%	17.98%	20.00%	20.00%	Collection	Joint venture	186	21	(10)
Gire S.A.	Argentina	0.00%	57.93%	58.33%	58.33%	Payment and collection services	Associated	158	25	13
HCUK Auto Funding 2017-2 Ltd	United Kingdom	—	(h)	—	—	Securitizations	Joint venture	833	0	0
Healthy Neighborhoods Equity Fund I LP (b)	United States	0.00%	22.37%	22.37%	22.37%	Real estate	-	14	14	(2)
Hyundai Capital UK Limited	United Kingdom	0.00%	50.01%	50.01%	50.01%	Finance company	Joint venture	4,338	323	79
Hyundai Corretora de Seguros Ltda.	Brazil	0.00%	44.96%	50.00%	50.00%	Insurance brokerage	Joint venture	1	0	0
Imperial Holding S.C.A. (e) (i)	Luxembourg	0.00%	36.36%	36.36%	36.36%	Securities investment	-	0	(112)	0
Imperial Management S.à r.l. (b) (e)	Luxembourg	0.00%	40.20%	40.20%	40.20%	Holding company	-	0	0	0
Indice Iberoamericano de Investigación y Conocimiento, A.I.E.	Spain	0.00%	51.00%	51.00%	51.00%	Information system	Joint venture	1	(6)	(1)
Inmoalemania Gestión de Activos Inmobiliarios, S.A.	Spain	0.00%	20.00%	20.00%	20.00%	Holding company	-	0	0	0
Innohub S.A.P.I. de C.V.	Mexico	0.00%	20.00%	20.00%	20.00%	IT services	Associated	1	3	(2)
Inverlur Aguilas I, S.L.	Spain	0.00%	50.00%	50.00%	50.00%	Real estate	Joint venture	0	0	0
Inverlur Aguilas II, S.L.	Spain	0.00%	50.00%	50.00%	50.00%	Real estate	Joint venture	1	1	0
Inversiones Ibersuizas, S.A. (b)	Spain	25.42%	0.00%	25.42%	25.42%	Venture capital	-	31	19	10
Inversiones ZS América Dos Ltda.	Chile	0.00%	49.00%	49.00%	49.00%	Real estate and securities investment	Associated	269	269	34
Inversiones ZS América SpA	Chile	0.00%	49.00%	49.00%	49.00%	Real estate and securities investment	Associated	395	396	35
J.C. Flowers I L.P. (b)	United States	0.00%	11.10%	0.00%	0.00%	Holding company	-	2	2	(1)
JCF AIV P L.P. (b)	Canada	0.00%	7.67%	4.99%	4.99%	Holding company	-	5	5	0
LB Oprent, S.A.	Spain	40.00%	0.00%	40.00%	38.33%	Industrial machinery rent	Associated	4	1	1
Loop Gestão de Pátios S.A.	Brazil	0.00%	32.10%	35.70%	35.70%	Business services	Joint venture	7	2	(1)
Mapfre Santander Portugal - Companhia de Seguros, S.A.	Portugal	0.00%	49.94%	49.99%	49.99%	Insurance	Associated	13	8	(3)
Massachusetts Business Development Corp. (consolidado) (b)	United States	0.00%	21.61%	21.61%	21.61%	Finance company	-	55	11	1
MB Capital Fund IV, LLC (b)	United States	0.00%	21.51%	21.51%	21.51%	Finance company	-	18	17	1
Merlin Properties, SOCIMI, S.A. (consolidado) (b)	Spain	19.07%	5.70%	24.77%	24.81%	Real estate investment	Associated	13,478	6,640	56

Societies of which Grupo Santander owns more than 5% (g) , entities associated with Grupo Santander and jointly controlled entities

Company	Location	% of ownership held by Banco Santander Direct	% of ownership held by Banco Santander Indirect	Percentage of voting power (f) Year 2021	Percentage of voting power (f) Year 2020	Activity	Type of company	EUR million (a) Asset	EUR million (a) Capital + reserves	EUR million (a) Net results
Metrovacesa, S.A. (consolidado) (b)	Spain	31.94%	17.50%	49.44%	49.45%	Real estate development	Associated	2,927	2,343	(164)
New PEL S.à r.l. (c) (e)	Luxembourg	0.00%	7.67%	0.00%	0.00%	Holding company	-	0	0	0
NIB Special Investors IV-A LP (n)	Canada	0.00%	0.00%	0.00%	4.99%	Holding company	-	—	—	—
NIB Special Investors IV-B LP (n)	Canada	0.00%	0.00%	0.00%	4.99%	Holding company	-	—	—	—
Niuco 15, S.L. (k)	Spain	37.23%	0.00%	37.23%	37.23%	Technical services	-	—	—	—
Ocyener 2008, S.L.	Spain	0.00%	45.00%	45.00%	—	Holding company	Associated	2	1	1
Operadora de Activos Beta, S.A. de C.V.	Mexico	49.99%	0.00%	49.99%	49.99%	Finance company	Associated	0	0	0
Pag10 Fomento Mercantil Eireli	Brazil	0.00%	41.96%	46.67%	—	Factoring	Joint venture	0	0	0
Payever GmbH	Germany	0.00%	10.00%	10.00%	10.00%	Software	Associated	3	2	0
Play Digital S.A.	Argentina	0.00%	15.59%	15.70%	—	Payment platform	Associated	11	23	(12)
POLFUND - Fundusz Poręczeń Kredytowych S.A.	Poland	0.00%	33.70%	50.00%	50.00%	Management	Associated	28	20	0
Portland SPV S.r.l.	Italy	—	(h)	—	—	Securitizations	Joint venture	234	0	0
Procapital - Investimentos Imobiliários, S.A. (c) (e)	Portugal	0.00%	39.96%	40.00%	40.00%	Real estate	-	2	13	0
Project Quasar Investments 2017, S.L. (consolidado) (b)	Spain	49.00%	0.00%	49.00%	49.00%	Holding company	-	6,984	2,638	(1,852)
Promontoria Manzana, S.A. (consolidado) (b)	Spain	20.00%	0.00%	20.00%	20.00%	Holding company	Associated	1,068	319	(38)
PSA Corretora de Seguros e Serviços Ltda.	Brazil	0.00%	44.96%	50.00%	50.00%	Insurance	Joint venture	0	0	0
PSA Insurance Europe Limited	Malta	0.00%	50.00%	50.00%	50.00%	Insurance	Joint venture	254	59	26
PSA Life Insurance Europe Limited	Malta	0.00%	50.00%	50.00%	50.00%	Insurance	Joint venture	110	13	20
Redbanc S.A.	Chile	0.00%	22.44%	33.43%	33.43%	Services	Associated	29	9	1
Redsys Servicios de Procesamiento, S.L. (consolidado)	Spain	24.90%	0.06%	24.96%	20.06%	Cards	Associated	108	71	4
Relevante e Astuto, S.A.	Portugal	0.00%	70.00%	70.00%	—	Real estate management	Joint venture	5	0	0
Retama Real Estate, S.A.	Spain	0.00%	50.00%	50.00%	50.00%	Services	Joint venture	30	(45)	(1)
Rías Redbanc S.A.	Uruguay	0.00%	25.00%	25.00%	25.00%	Services	-	3	1	0
RMBS Green Belem I	Portugal	—	(h)	—	—	Securitizations	Joint venture	309	0	0
S3 Caceis Brasil Distribuidora de Títulos e Valores Mobiliários S.A.	Brazil	0.00%	50.00%	50.00%	50.00%	Securities investment	Joint venture	207	143	18
S3 Caceis Brasil Participações S.A.	Brazil	0.00%	50.00%	50.00%	50.00%	Holding company	Joint venture	163	145	18
Sancus Green Investments II, S.C.R., S.A. (o)	Spain	0.00%	43.29%	43.29%	—	Venture capital	-	—	—	—
Santander Alternatives SICAV RAIF (c)	Luxembourg	0.00%	48.03%	48.03%	100.00%	Investment company	-	13	12	0
Santander Assurance Solutions, S.A.	Spain	0.00%	66.67%	66.67%	73.99%	Insurance intermediary	Joint venture	10	4	1
Santander Auto S.A.	Brazil	0.00%	44.96%	50.00%	50.00%	Insurance	Associated	25	5	2
Santander Aviva Towarzystwo Ubezpieczeń na Życie S.A.	Poland	0.00%	33.03%	49.00%	49.00%	Insurance	Associated	299	20	21
Santander Aviva Towarzystwo Ubezpieczeń S.A.	Poland	0.00%	33.03%	49.00%	49.00%	Insurance	Associated	94	39	12
Santander Caceis Colombia S.A. Sociedad Fiduciaria	Colombia	0.00%	50.00%	50.00%	50.00%	Finance company	Joint venture	7	7	(1)

Societies of which Grupo Santander owns more than 5% (g) , entities associated with Grupo Santander and jointly controlled entities

		% of ownership held by Banco Santander		Percentage of voting power (f)				EUR million (a)		
Company	Location	Direct	Indirect	Year 2021	Year 2020	Activity	Type of company	Asset	Capital + reserves	Net results
Santander Caceis Latam Holding 1, S.L.	Spain	0.00%	50.00%	50.00%	50.00%	Holding company	Joint venture	722	716	5
Santander Caceis Latam Holding 2, S.L.	Spain	0.00%	50.00%	50.00%	50.00%	Holding company	Joint venture	2	2	0
Santander Generales Seguros y Reaseguros, S.A.	Spain	0.00%	49.00%	49.00%	49.00%	Insurance	Joint venture	732	206	39
Santander Mapfre Seguros y Reaseguros, S.A.	Spain	0.00%	49.99%	49.99%	49.99%	Insurance	Associated	90	57	(13)
Santander Vida Seguros y Reaseguros, S.A.	Spain	0.00%	49.00%	49.00%	49.00%	Insurance	Joint venture	1,036	367	36
Sedesa Seguros de Depósitos S.A. (b)	Argentina	0.00%	13.47%	13.56%	—	Fund management	-	2	2	0
Sepacon 31, S.L. (k)	Spain	37.23%	0.00%	37.23%	37.23%	Technical services	-	—	—	—
Servicios de Infraestructura de Mercado OTC S.A	Chile	0.00%	8.37%	12.48%	12.48%	Services	Associated	37	13	0
SIBS-SGPS, S.A. (b)	Portugal	0.00%	16.52%	16.55%	16.55%	Portfolio management	-	365	59	41
Siguler Guff SBIC Fund LP (b)	United States	0.00%	20.00%	20.00%	20.00%	Investment fund	-	8	1	0
Sistema de Tarjetas y Medios de Pago, S.A. (b)	Spain	20.61%	0.00%	20.61%	18.11%	Payment methods	Associated	673	4	0
Sistemas Técnicos de Encofrados, S.A. (consolidado) (b)	Spain	27.15%	0.00%	27.15%	27.15%	Building materials	-	89	14	0
Sociedad Conjunta para la Emisión y Gestión de Medios de Pago, E.F.C., S.A.	Spain	45.70%	0.00%	45.70%	45.70%	Payment services	Joint venture	107	36	1
Sociedad de Garantía Recíproca de Santander, S.G.R. (b)	Spain	25.35%	0.25%	25.60%	25.73%	Financial services	-	17	11	0
Sociedad de Gestión de Activos Procedentes de la Reestructuración Bancaria, S.A. (b)	Spain	22.21%	0.00%	22.21%	22.21%	Financial services	-	27,586	230	(1,073)
Sociedad Interbancaria de Depósitos de Valores S.A.	Chile	0.00%	19.66%	29.29%	29.29%	Securities deposit	Associated	7	6	1
Solar Maritime Designated Activity Company (b)	Ireland	—	(h)	—	—	Leasing	Joint venture	113	(7)	0
Stephens Ranch Wind Energy Holdco LLC (consolidado) (b)	United States	0.00%	17.10%	17.10%	19.20%	Renewable energies	-	218	208	(7)
Tbforte Segurança e Transporte de Valores Ltda.	Brazil	0.00%	17.06%	18.98%	19.81%	Security	Associated	101	62	2
Tbnet Comércio, Locação e Administração Ltda.	Brazil	0.00%	17.06%	18.98%	19.81%	Telecommunications	Associated	69	66	2
Tecban Serviços Integrados Ltda.	Brazil	0.00%	17.06%	18.98%	—	IT services	Associated	0	0	0
Tecnologia Bancária S.A.	Brazil	0.00%	17.06%	19.81%	19.81%	ATM	Associated	428	115	26
Tikgi Aviation One Designated Activity Company	Ireland	—	(h)	—	—	Renting	-	224	(2)	1
Tonopah Solar Energy Holdings I, LLC (consolidado) (b)	United States	0.00%	26.80%	26.80%	26.80%	Holding company	Joint venture	0	0	0
Trabajando.com Chile S.A.	Chile	0.00%	33.33%	33.33%	33.33%	Services	Associated	2	(1)	1
Transbank S.A.	Chile	0.00%	16.78%	25.00%	25.00%	Cards	Associated	1,366	101	(13)
Tresmares Growth Fund II, SCR, S.A.	Spain	40.00%	0.00%	40.00%	40.00%	Holding company	-	49	45	(2)
Tresmares Growth Fund III, SCR, S.A.	Spain	40.00%	0.00%	40.00%	40.00%	Holding company	-	38	34	(2)
U.C.I., S.A.	Spain	50.00%	0.00%	50.00%	50.00%	Holding company	Joint venture	448	127	(6)
UCI Hellas Credit and Loan Receivables Servicing Company S.A.	Greece	0.00%	50.00%	50.00%	50.00%	Financial services	Joint venture	1	1	0
UCI Holding Brasil Ltda.	Brazil	0.00%	50.00%	50.00%	50.00%	Holding company	Joint venture	1	0	0
UCI Mediação de Seguros Unipessoal, Lda.	Portugal	0.00%	50.00%	50.00%	50.00%	Insurance brokerage	Joint venture	0	0	0

Societies of which Grupo Santander owns more than 5% (g) , entities associated with Grupo Santander and jointly controlled entities

		% of ownership held by Banco Santander		Percentage of voting power (f)				EUR million (a)		
Company	Location	Direct	Indirect	Year 2021	Year 2020	Activity	Type of company	Asset	Capital + reserves	Net results
UCI Servicios para Profesionales Inmobiliarios, S.A.	Spain	0.00%	50.00%	50.00%	50.00%	Real estate services	Joint venture	1	0	0
Unicre-Instituição Financeira de Crédito, S.A.	Portugal	0.00%	21.83%	21.86%	21.86%	Finance company	Associated	409	99	20
Unión de Créditos Inmobiliarios, S.A., EFC	Spain	0.00%	50.00%	50.00%	50.00%	Mortgage credit company	Joint venture	11,294	459	7
VCFS Germany GmbH	Germany	0.00%	50.00%	50.00%	50.00%	Marketing	Joint venture	1	0	0
Venda de Veículos Fundo de Investimento em Direitos Creditórios	Brazil	—	(h)	—	—	Securitizations	Joint venture	107	103	4
Volvo Car Financial Services UK Limited	United Kingdom	0.00%	50.01%	50.01%	50.00%	Leasing	Joint venture	927	81	(4)
Webmotors S.A.	Brazil	0.00%	62.94%	70.00%	70.00%	Services	Joint venture	54	32	10
Zurich Santander Brasil Seguros e Previdência S.A.	Brazil	0.00%	48.79%	48.79%	48.79%	Insurance	Associated	11,892	365	106
Zurich Santander Brasil Seguros S.A.	Brazil	0.00%	48.79%	48.79%	48.79%	Insurance	Associated	156	(2)	29
Zurich Santander Holding (Spain), S.L.	Spain	0.00%	49.00%	49.00%	49.00%	Holding company	Associated	1,182	936	246
Zurich Santander Holding Dos (Spain), S.L.	Spain	0.00%	49.00%	49.00%	49.00%	Holding company	Associated	587	384	204
Zurich Santander Insurance América, S.L.	Spain	49.00%	0.00%	49.00%	49.00%	Holding company	Associated	1,996	1,490	475
Zurich Santander Seguros Argentina S.A. (j)	Argentina	0.00%	49.00%	49.00%	49.00%	Insurance	Associated	60	18	18
Zurich Santander Seguros de Vida Chile S.A.	Chile	0.00%	49.00%	49.00%	49.00%	Insurance	Associated	213	23	30
Zurich Santander Seguros Generales Chile S.A.	Chile	0.00%	49.00%	49.00%	49.00%	Insurance	Associated	249	45	13
Zurich Santander Seguros México, S.A.	Mexico	0.00%	49.00%	49.00%	49.00%	Insurance	Associated	887	34	88
Zurich Santander Seguros Uruguay S.A.	Uruguay	0.00%	49.00%	49.00%	49.00%	Insurance	Associated	32	14	7

a. Amount according to the provisional books at the date of publication of these annexes of each company generally referring to 31 December 2021, unless otherwise indicated because the annual accounts have not yet been prepared. Data for foreign companies are converted into euros at the year-end exchange rate.
b. Data as at 31 December 2020, latest available accounts.
c. Data as at 31 December 2019, latest available accounts.
d. The Group is entitled to receive 51.28% of the dividends distributed by the company.
e. Company in liquidation as at 31 December 2021.
f. Pursuant to Article 3 of Royal Decree 1159/ 2010, of 17 September, approving the rules for the preparation of consolidated annual accounts, in order to determine the voting rights, voting rights held directly by the parent company have been added to those held by companies controlled by the parent company or by other persons acting in their own name but on behalf of a group company. For these purposes, the number of votes corresponding to the parent company, in relation to the companies indirectly dependent on it, is that corresponding to the dependent company that directly participates in the share capital of the latter.
g. Excluding the Group companies listed in Appendix I, as well as those which are of negligible interest with respect to the true and fair view that the consolidated financial statements must give (in accordance with articles 48 of the Commercial Code and 260 of the Spanish Companies Act).
h. Companies over which joint control is maintained.
i. Data as at 31 October 2020, latest available accounts.
j. Data as at 30 June 2021, latest available accounts.
k. Company with no financial information available.
l. Data as at 30 November 2018, latest available accounts.
m. Data as at 30 April 2021, latest available accounts.
n. Company in liquidation. Pending registration.
o. Company recently incorporated, no accounts available.

Appendix III

Issuing subsidiaries of shares and preference shares

Company	Location	% of ownership held by Banco Santander		Activity	EUR million (a)			
		Direct	Indirect		Capital	Reserves	Cost of preferred	Net results
Emisora Santander España, S.A. Unipersonal	Spain	100.00%	0.00%	Finance company	2	0	0	0
Santander UK (Structured Solutions) Limited	United Kingdom	0.00%	100.00%	Finance company	0	0	0	0
Sovereign Real Estate Investment Trust	United States	0.00%	100.00%	Finance company	4,931	(3,219)	43	74

a. Amount according to the books of each interim company as at 31 December 2021, converted into euro (in the case of foreign companies) at the year-end exchange rate.

Appendix IV

Notifications of acquisitions and disposals of investments in 2021

Details of the notifications of acquisitions and disposals of participations for 2021 in accordance with Article 125 of the Securities Market Law may be found below:

On 10 May 2021, Banco Santander, S.A. notified to the CNMV of the increase of its stake in REPSOL above the 3% threshold up to 3.584%, dated as of 4 May 4 2021.

On 25 June 2021, Banco Santander, S.A. notified to the CNMV of the decrease of its stake in REPSOL, S.A. below the 3% threshold up to 2.718%, dated as of 21 June 2021.

On 26 November 2021, Banco Santander, S.A. notified to the CNMV of the increase of its stake in REPSOL above the 3% threshold up to 3.829%, dated as of 22 November 2021.

In relation to the information required by 155 of the Corporate Enterprises Act, on the shareholdings in which Grupo Santander owns more than 10% of the capital of another company, and the successive acquisitions of more than 5% of the share capital, see appendices I, II and III.

Appendix V

Other information on the Group's banks

Following is certain information on the share capital of the Group's main banks based on their total assets.

1. Santander UK plc

a) Number of financial equity instruments held by the Group.

At 31 December 2021, the Company was a subsidiary of Banco Santander, S.A. and Santusa Holding, S.L.

On 12 November 2004 Banco Santander, S.A. acquired the then entire issued ordinary share capital of 1,485,893,636 Ordinary shares of 10p. each. On 12 October 2008 a further 10 billion Ordinary shares of 10p. each were issued to Banco Santander, S.A. and an additional 12,631,375,230 Ordinary shares of 10p. each were issued to Banco Santander, S.A. on 9 January on 2009. On 3 August 2010, 6,934,500,000 Ordinary shares of 10p. each were issued to Santusa Holding, S.L. With effect from 10 January 2014, Santander UK Group Holdings Limited, a subsidiary of Banco Santander, S.A. and Santusa Holding, S.L., became the beneficial owner of 31,051,768,866 Ordinary shares of 10p. each, being the entire issued ordinary share capital of the Company, by virtue of a share exchange agreement between Santander UK Group Holdings Limited, Banco Santander, S.A. and Santusa Holding, S.L. Santander UK Group Holdings Limited became the legal owner of the entire issued Ordinary share capital of the Company on 1 April 2014 and on 25 March 2015 became a public limited company and changed its name from Santander UK Group Holdings Limited to Santander UK Group Holdings plc. In addition to this, there are 325,000,000 Non-Cumulative Non-Redeemable 10.375% and 8.625% Sterling Preference Shares of GBP 1.00 each. In addition to this there were 13,780 Series A Fixed (6.222%)/Floating Rate Non-Cumulative Callable Preference Shares of GBP 1.00 each which were redeemed and cancelled in their entirety on 24 May 2019. The legal and beneficial title to the entire issued Preference share capital is held by third parties and is not held by Banco Santander, S.A.

b) Capital increases in progress

At 31 December 2021, there were no approved capital increases.

c) Share capital authorised by the shareholders at the general meeting

The shareholders resolved at the Annual General Meeting held on 18 March 2021, to authorise unconditionally, the company to carry out the following repurchases of the share capital:

(1) To buy back its own 8.625% Sterling Preference shares on the following terms:

(a) The Company may buy back up to 125,000,000 8.625% Sterling Preference shares;

(b) The lowest price which the Company can pay for 8.625% Sterling Preference shares is 75% of the average of the market values of the preference shares for five business days before the purchase is made; and

(c) The highest price (not including expenses) which the Company can pay for each 8.625% Sterling Preference share is 125% of the average of the market values of the preference shares for five business days before the purchase is made.

This authority shall begin on the date of the passing of this resolution and end on the conclusion of the next Annual General Meeting of the Company. The Company may agree, before this authorisation ends, to buy back its own 8.625% preference shares even though the purchase may be completed after this authorisation ends.

(2) To buy back its own 10.375% Sterling Preference shares on the following terms:

(a) The Company may buy up to 200,000,000 10.375% Sterling Preference shares;

(b) The lowest price which the Company can pay for 10.375% Sterling Preference shares is 75% of the average of the market values of the preference shares for five business days before the purchase is made; and

(c) The highest price (not including expenses) which the Company can pay for each 10.375% Sterling Preference share is 125% of the average of the market values of the preference shares for five business days before the purchase is made.

This authority shall begin on the date of the passing of this resolution and end on the conclusion of the next Annual General Meeting of the Company. The Company may agree, before this authorisation ends, to buy back its own 10.375% preference shares even though the purchase may be completed after this authorisation ends.

d) Rights on founder's shares, "rights" bonds, convertible debentures and similar securities or rights

Not applicable.

e) Specific circumstances that restrict the availability of reserves

Not applicable.

f) Non-Group entities which hold, directly or through subsidiaries, 10% or more of equity

Not applicable.

g) Quoted equity instruments

The preference share capital of Santander UK plc is traded on the London Stock Exchange under the following details:

- 10.375% Sterling Preference - ISIN: GB0000064393
- 8.625% Sterling Preference - ISIN: GB0000044221

2. Santander Financial Services plc

a) Number of financial equity instruments held by the Group

The Group holds ordinary shares amounting to GBP 249,998,000 through Santander UK Group Holdings plc (249,998,000 ordinary shares with a par value of GBP 1 each).

The Group also holds 1,000 tracker shares (shares without voting rights but with preferential dividend rights) amounting to GBP 1,000 and 1,000 B tracker shares amounting to GBP 1,000 through Santander UK Group Holdings plc, both with a par value of GBP 1 each.

b) Capital increases in progress

No approved capital increases are in progress.

c) Capital authorised by the shareholders at the general meeting

Not applicable.

d) Rights on founder's shares, "rights" bonds, convertible debentures and similar securities or rights

Not applicable.

e) Specific circumstances that restrict the availability of reserves

Not applicable.

f) Non-Group entities which hold, directly or through subsidiaries, 10% or more of equity

Not applicable.

g) Quoted equity instruments

Not applicable.

3. Banco Santander (Brasil) S.A.

a) Number of financial equity instruments held by the Group

The Group holds 3,440,170,512 ordinary shares and 3,273,507,089 preference shares through Banco Santander, S.A. and its subsidiaries Sterrebeeck B.V., Grupo Empresarial Santander, S.L., Banco Santander, S.A..

The shares composing the share capital of Banco Santander (Brasil) S.A. have no par value and there are no pending payments. At 2021 year-end, the bank's treasury shares consisted of 15,755,205 ordinary shares and 15,755,205 preferred shares, with a total of 31,510,410 shares.

In accordance with current Bylaws (Article 5.7), the preference shares do not confer voting rights on their holders, except under the following circumstances:

a) In the event of transformation, merger, consolidation or spin-off of the company.

b) In the event of approval of agreements between the company and the shareholders, either directly, through third parties or other companies in which the shareholders hold a stake, provided that, due to legal or bylaw provisions, they are submitted to a general meeting.

c) In the event of an assessment of the assets used to increase the company's share capital.

The General Assembly may, at any moment decide to convert the preference shares into ordinary shares, establishing a reason for the conversion.

However, the preference shares do have the following advantages (Article 5.6):

a) Their dividends are 10% higher than those distributed to ordinary shares.

b) Priority in the dividends distribution.

c) Participation, on the same terms as ordinary shares, in capital increases resulting from the reserves and profits capitalization and in the distribution of bonus shares arising from the capitalization of retained earnings, reserves or any other funds.

d) Priority in the reimbursement of capital in the event company's dissolution.

e) In the event of a public offering due to a change in control of the company, the holders of preferred shares are guaranteed the right to sell the shares at the same price paid for the block of shares transferred as part of the change of control, i.e. they are treated the same as shareholders with voting rights.

b) Capital increases in progress

No approved capital increases are in progress.

c) Capital authorised by the shareholders at the general meeting

The company is authorised to increase share capital, subject to approval by the Board of Directors, up to a limit of 9,090,909,090 ordinary shares or preferred shares, and without need to maintain any ratio between any of the different classes of shares, provided they remain within the limits of the maximum number of preferred shares provided in Law.

As of 31 December 2021, the share capital consists of 7,498,531,051 shares (3,818,695,031 ordinary shares and 3,679,836,020 preferred shares).

d) Rights on founder's shares, "rights" bonds, convertible debentures and similar securities or rights

At the general meeting held on 21 December 2016 the shareholders approved the rules relating to the deferred remuneration plans for the directors, management and other employees of the company and of companies under its control. Shares delivery is linked to achievement of certain targets.

e) Specific circumstances that restrict reserves availability

The only restriction on the availability of Banco Santander (Brasil) S.A.'s reserves is connected to the requirement for the legal reserve formation (restricted reserves), which can only be used to offset losses or to increase capital.

The legal reserve requirement is set-forth in Article 193 of the Brazilian Corporations Law, which establishes that before allocating profits to any other purpose, 5% of profits must be transferred to the legal reserve, which must not exceed 20% of the company's share capital.

f) Non-Group entities which hold, directly or through subsidiaries, 10% or more of equity

Not applicable.

g) Listed capital instruments

All the shares are listed on the São Paulo Stock Exchange (B3 - Brasil, Bolsa, Balcão) and the shares deposit certificates (American Depositary Receipts - ADR) are listed on the New York Stock Exchange (NYSE).

4. Santander Bank, National Association

a) Number of financial equity instruments held by the Group

At 31 December 2021, the Group held 530,391,043 ordinary shares that carry the same voting and dividend acquisition rights over Santander Holdings USA, Inc. (SHUSA). This holding company and Independence Community Bank Corp. (ICBC) hold 1,237 ordinary shares with a par value of USD 1 each, which carry the same voting rights. These shares constitute all the share capital of Santander Bank, National Association (SBNA). SHUSA holds an 80.84% ownership interest in SBNA, and the remaining 19.16% belongs to ICBC. ICBC is wholly owned by SHUSA. There is no shareholders' meeting for the ordinary shares of SBNA.

b) Capital increases in progress

At 31 December 2021 there were no approved capital increases.

c) Capital authorised by the shareholders at the general meeting

Not applicable.

d) Rights on founder's shares, "rights" bonds, convertible debentures and similar securities or rights

Not applicable.

e) Specific circumstances that restrict the availability of reserves

Not applicable.

f) Non-Group entities which hold, directly or through subsidiaries, 10% or more of equity

Not applicable.

g) Quoted equity instruments

Not applicable.

5. Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México

a) Number of financial instruments of capital held by the group.

On December 8, 2021 the period for the acceptance of the public offering to acquire up to 561,353,228 shares of Banco Santander México that were not held directly by Banco Santander, S.A., which represented the 8.27% of the capital stock Banco Santander Méxcio. As a result of the offer Banco Santander, S.A. increased its position in Banco Santander México from 91.64% to 96.15%, with the remaining 3.76% held by minority shareholders, 0.08% in own shares and 0.01% to Gesban México Servicios Administrativos Globales, S.A. de C.V.

On June 15, 2020, Gesban México Servicios Administrativos Globales, S.A. de C.V., acquired the 1,340 shares of Banco Santander México owned by Santander Global Facilities, S.A. de C.V.

As a result Grupo Financiero Santander México, S.A. de C.V. ('Grupo Financiero') and Gesban México Servicios Administrativos Globales,, S.A. de C.V. (México), hold 5,087,801,602 shares which represent the 74.97% of the capital stock of Banco Santander México and Banco Santander, S.A. holds 1,438,256,710 shares which represent the 21.19% of such capital stock.

On September 30, 2020, the General Extraordinary Shareholders' Meetings of Banco Santander México and Santander Vivienda, S.A. de C.V., SOFOM E.R., GFSM, were held. In such meetings the merger by absorption of Banco Santander México with Santander Vivienda, S.A. de C.V., SOFOM E.R., GFSM, was approved. This merger did not result in a movement of the share capital of Banco Santander México, since it was a shareholder of 99.99998% of the shares representative of the share capital of Santander Vivienda , S.A. de C.V., SOFOM, E.R., GFSM, and such circumstance results in the material and legal impossibility for Banco Santander México, S.A., Institución de Banca Multiple, Grupo Financiero Santander México to perform the redemption of the shares, since these shares are already integrated into the assets of the merger.

b) Ongoing capital stock increases.

To this date there are not on going capital stock increases.

c) Authorized Capital by the Shareholders Meeting.

The capital stock of the Bank is 32,485,600,110.00 Mexican pesos (thirty-two thousand four hundred eighty-five million six hundred thousand one hundred ten Mexican pesos) represented by a total of 8,592,294,357 (eight thousand five hundred ninety-two million two hundred ninety-four thousand three hundred fifty-seven) shares with a nominal value of 3.780782962 Mexican pesos (three Mexican pesos 780782962/1000000000) each one; divided in 4,385,824,012 (four thousand three hundred eighty-five million eight hundred twenty-four thousand twelve) stocks "F" Series and 4,206,470,345 four thousand two hundred six million four hundred seventy thousand three hundred forty-five) shares "B" Series. The capital stock is constituted as follows:

- Paid-in and subscribed capital of the Bank is 25,660,152,629.00 Mexican pesos (twenty five thousand six hundred sixty million one hundred fifty two thousand six hundred and twenty nine Mexican pesos) represented by a total of 6,786,994,357 (six thousand seven hundred eighty six million nine hundred ninety four thousand three hundred and fifty seven) shares with a nominal value of 3.780782962 Mexican pesos (three Mexican pesos 780782962/1000000000) each one; divided in 3,464,309,145 (three thousand four hundred sixty four million three hundred and nine thousand one hundred and forty five) shares "F" Series and 3,322,685,212 (three thousand three hundred twenty two million six hundred eighty five thousand two hundred and twelve) shares Series.
- The authorized capital stock for the conversion of obligations into shares of the Company is 6,825,447,481.00 Mexican pesos, (six thousand eight hundred twenty-five million four hundred forty-seven thousand four hundred eighty-one), represented by a total of 1,805 ,300,000 (one thousand eight hundred five million three hundred thousand) shares with a nominal value of 3,780782962 Mexican pesos (three pesos 780782962/1000000000) each; divided into 921,514,867 (nine hundred twenty-one million five hundred fourteen thousand eight hundred sixty-seven) Series "F" shares and 883,785,133 (eight hundred eighty-three million seven hundred eighty-five thousand one hundred thirty-three) Series "B shares ". which are kept in the treasury of the Bank.

d) Rights incorporated into parts of founder, bonds or debt, convertible obligations and securities or similar rights.

(i) The Board of Directors on its meeting held on October 22, 2015, was updated regarding the situation of the debt issuance of Banco Santander Mexico, S.A. , which had been previously ratified in the meeting held on October 17, 2013, in order to issue debt for the amount of 6,500 million dollars in local or international markets, for a maximum period of 15 years, senior or subordinated debt including debt instruments qualifying for purposes of capital in accordance with the legislation in force, which can be implemented individually or through several issuance programs.

The approved debt issuance of Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México is currently composed as follows:

Instrument	Type	Term	Amount	Available
Issuance Program of unsecured bonds and unsecured certificates of deposit	*Revolving*	4-Mar-26	55,000 million Mexican pesos, or its equivalent in UDIs, dollars or any other foreign currency	$27,461 million Mexican pesos
				With fix rate according to Banxico 31/Dec/ 2021
Private banking structured bonds Act	*Not Revolving**	16-Ago-34	20,000 million Mexican pesos	$3,356 million Mexican pesos
Structured bonds without public offering	Not Revolving	16-Feb-32	10,000 million Mexican pesos	$10,000 million Mexican pesos
Senior Bonds	*Not Revolving*	09-Nov-22	1,000 million American dollars	N/A
Capital Notes (Tier 2 Capital)	*Not Revolving*	1-Oct-2028	1,300 million American dollars	N/A
Senior notes 144.ª/RegS	*Not Revolving*	17-Abr-2025	1,750 million American dollars	N/A
Subordinated Notes, perpetual and convertible (Tier 1)	Not Revolving	Perpetual	700 million American dollars	N/A

* The issuance of the structured private banking bonds isn't revolving. Once placed the amount laid down in the corresponding brochure a new certificate will be issued on the authorized amount.

(ii) The Board of Directors on its meeting held on January 27, 2011 approved the general conditions for the senior debt issue among international markets. On October 18, 2012 such issuance was approved on the amount of 500 and 1000 million American dollars, for a term of 5 to 10 years. The issuance was approved with the purpose of obtaining resources to finance the increase in business assets and the liquidity of the Bank. Under these agreements adopted by the Board of Directors, the debt was issued for an amount of 1,000 million American dollars on November 9, 2012.

(iii) On December 27, 2013 Banco Santander México, S.A., issued subordinated notes (subordinated notes 2013) for a total amount of 1,300,000,000 American dollars, in accordance with the capital requirements established in the Basilea III criteria for complementary capital/ Tier 2 at a rate of 5.95% with redemption date of January, 30, 2024. The controlling shareholder, Banco Santander, S.A., agreed to buy 975,000,000 American dollars of such notes equivalent to the 75% of the latter.

Such notes were offered through a private offering only to qualified institutional buyers, in accordance with Rule 144A of the U.S. Securities Act of 1933 and it´s modifications, and outside the U.S. under the Regulation S of the Market Law.

The issuance was approved with the purpose of increasing the efficiency of the capital of the Bank, to adequate its capital profile to its main competitors, as well as to increase the cost effectiveness of resources with the same capital strength and capacity for growth in risk-weighted assets.

(iv) The Board of Director on its meeting held on October 27, 2016 approved the issuance in Mexico of debt up to 500 million American dollars or its equivalent in Mexican pesos. The Ordinary and Extraordinary Shareholder´s meeting held on December 5, 2016, approved to issuance of a financial instrument complying with the requirements of regulatory capital established in Basilea III, which was considered as not fundamental basic capital, for up to 500 million American dollars.

On December 29, 2016, Banco Santander México made an overseas private offering of subordinated, non preferred, perpetual and convertible obligations ("2016 Obligations") representing the share capital by a total amount of 500,000,000 American dollars, which had the character of a 'mirror issuance'(back-to-back), as a guarantee of liquidity of the subordinated non preferred perpetual and convertible obligations, issued by Grupo Financiero Santander Mexico.

It is worth mentioning that in September, 2019, it was requested before the Registro Nacional de Valores of the National Banking and Securities Commission (Comision Nacional Bancaria y de Valores) ("CNBV"), the registry cancellation of the above mentioned 2016 Obligations, as well as the list cancellation of such notes in the Bolsa Mexicana de Valores, S.A.B. de C.V. ("BMV"). By means of official note No. 153/12251/2019 dated November 4, 2019, CNBV authorized such cancellation.

(v) As a result of the corporate restructure which included, among others, the merger of Banco Santander México, as the merging entity with Grupo Financiero Santander Mexico as the merged entity, the subordinated obligations referred to in paragraph (iv), were acquired entirely by Banco Santander México; therefore the subordinate obligations of Banco Santander Mexico became extinct by confusion of rights and obligations, since the Bank as a merging party met the quality of debtor and creditor in these instruments at the moment that the merger was finalized.

(vi) On September 20, 2018, Banco Santander México, issued and placed equity instruments, subordinated, preferential, and not convertible into shares, governed by foreign law, representative of the complementary part of the net capital of Banco Santander Mexico (Tier 2 subordinated preferred capital notes), for the amount of 1,300,000,000.00 American dollars (the "Instruments"), whose resources were used mainly for the acquisition of the 94.07% of the Subordinated Notes 2013.

The amount issued of 1,300,000,000.00 American dollars covers in full the sum of the repurchase of the Subordinated Notes 2013, for 1,222,907,000.00 American dollars.

Regarding the acquisition of the Subordinated Notes 2013: (a) the acquired total amount was 1,222,907,000.00 American dollars (nominal value), at a price of 1,010.50 American dollars and (b) the amount acquired by Banco Santander, S.A. (Spain), was a nominal 1,078,094,000.00 American dollars.

In connection with the issuance of the Instruments, the total amount distributed with Banco Santander, S.A. (Spain), was 75% of such issuance; that is, the placed amount was 975,000,000.00.

Therefore, the Bank's General Extraordinary Shareholder´s Meeting held on September 10, 2018, among other subjects, approved to ratify the issuance limit for up to 6,500 million and a term of 15 years, senior or subordinate, in local and/or international markets, instrumented individually or through issuance programs, which was previously authorized by the Board of Directors on its meeting held on April 26, 2018.

On January 30, 2019, Banco Santander México paid off the total remaining due amount of the Subordinated Notes 2013.

On April 17th., 2020, Banco Santander Mexico issued an international Senior Note, due on five years in the global market, on the amount of 1,750 million dollars, with a rate of 5.375 per cent, whereas the demand exceeded three times the placed amount. The due date of such notes will be April 17th, 2025.

On September 15, 2021, Banco Santander Mexico issued abroad the "Perpetual Subordinated Non-Preferred Contingent Convertible Additional Tier 1 Notes", up to an amount of 700,000,000.00. American dollars. On the same date, the Bank paid the "2016 Obligations" above mentioned, on a fixed initial rate of 4.625% up to an amount of 700,000,000.00.American dollars.

e) Specific circumstances restricting the availability of reserves.

According to the Law of Financial Institutions, general dispositions applicable to financial institutions, General Corporations law and the bylaws, the Bank has to constitute or increase its capital reserves to ensure the solvency to protect the payments system and the public savings.

The Bank increases its legal reserve annually accordingly to the results obtained in the fiscal year (benefits).

The Bank must constitute the different reserves established in the legal provisions applicable to financial institutions, which are determined accordingly to the qualification granted to credits and they are released when the credit rating improves, or when it is settled.

f) Entities outside the Group which own, directly or through subsidiaries, a stake equal to or greater than 10% of the equity.

Not applicable.

g) Equity instruments admitted to trading.

Not applicable.

6. Banco Santander Totta, S.A

a) Number of equity instruments held by the Group

The Group holds 1,256,195,888 ordinary shares through its subsidiaries: Santander Totta, SGPS, S.A. with 1,241,179,513 shares, Taxagest Sociedade Gestora de Participações Sociais, S.A. with 14,593,315 shares, and Banco Santander Totta, S.A. with 423,060 treasury shares, all of which have a par value of EUR 1 each and identical voting and dividend rights and are subscribed and paid in full.

b) Capital increases in progress

At 31 December 2021, there were no equity increases in progress.

c) Capital authorised by the shareholders at the general meeting

Not applicable.

d) Rights on founder's shares, "rights" bonds, convertible debentures and similar securities or rights

Not applicable.

e) Specific circumstances that restrict the availability of reserves

Under Article 296 of the Portuguese Companies' Code, the legal and merger reserves can only be used to offset losses or to increase capital.

Non-current asset revaluation reserves are regulated by Decree- Law 31/98, under which losses can be offset or capital increased by the amounts for which the underlying asset is depreciated, amortised or sold.

f) Non-Group entities which hold, directly or through subsidiaries, 10% or more of equity

Not applicable.

g) Equity instruments

Not applicable.

7. Santander Consumer Bank AG

a) Number of financial equity instruments held by the Group

At 31 December 2021, through Santander Consumer Holding GmbH, the Group held 30,002 ordinary shares with a par value of EUR 1,000 each, all of which carry the same voting rights.

b) Capital increases in progress

Not applicable.

c) Capital authorised by the shareholders at the general meeting

Not applicable.

d) Rights on founder's shares, "rights" bonds, convertible debentures and similar securities or rights

Not applicable.

e) Specific circumstances that restrict the availability of reserves

Not applicable.

f) Non-Group entities which hold, directly or through subsidiaries, 10% or more of equity

Not applicable.

g) Quoted equity instruments

Not applicable.

8. Banco Santander - Chile

a) Number of equity instruments held by the Group

The Group holds a 67.18% ownership interest in its subsidiary in Chile corresponding to 126,593,017,845 ordinary shares of Banco Santander - Chile through its subsidiaries: Santander Chile Holding S.A. with 66,822,519,695 ordinary shares, Teatinos Siglo XXI Inversiones S.A., with 59,770,481,573 ordinary shares and Santander Inversiones S.A. with 16,577 fully subscribed and paid ordinary shares that carry the same voting and dividend rights.

b) Capital increases in progress

At 31 December 2021, there were no approved capital increases.

c) Capital authorised by the shareholders at the general meeting

Share capital at 31 December 2021 amounted to CLP 891,302,881,691.

d) Rights on founder's shares, "rights" bonds, convertible debentures and similar securities or rights

Not applicable.

e) Specific circumstances that restrict the availability of reserves

Remittances to foreign investors in relation to investments made under the Statute of Foreign Investment (Decree-Law 600/1974) and the amendments thereto require the prior authorisation of the foreign investment promotion agency.

f) Non-Group entities which hold, directly or through subsidiaries, 10% or more of equity

Not applicable.

g) Quoted equity instruments

All the shares are listed on the Chilean stock exchanges and, through American Depositary Receipts (ADRs), on the New York Stock Exchange (NYSE).

9. Santander Bank Polska S.A.

a) Number of financial equity instruments held by the Group

At 31 December, 2021, Banco Santander, S.A. held 68,880,774 ordinary shares with a par value of PLN 10 each, all of which carry the same voting rights.

b) Capital increases in progress

At 31 December, 2021, there were no equity increases in progress.

c) Capital authorised by the shareholders at the general meeting

There was no share capital increase in 2021.

d) Rights on founder's shares, "rights" bonds, convertible debentures and similar securities or rights

Not applicable.

e) Specific circumstances that restrict the availability of reserves

Not applicable.

f) Non-Group entities, which hold, directly or through subsidiaries, 10% or more of equity

Not applicable.

g) Quoted equity instruments

All the shares of Santander Bank Polska S.A. are listed on the Warsaw Stock Exchange.

Appendix VI

Annual banking report

Grupo Santander's total tax contribution (taxes incurred directly and by third parties, generated in the course of business) is around EUR 16,200 million, including more than EUR 7,600 million in taxes incurred directly (corporate income tax, non-recoverable VAT and other indirect taxes, employer Social Security contributions, payroll taxes and other taxes and levies).

This report complies with Article 89 of Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, and its transposition into Spanish law pursuant to Article 87 of Act 10/2014 of 26 June on the regulation, supervision and capital adequacy of credit institutions.

The criteria used to prepare this report were:

a) Name(s), activities and location

Appendices I to III to the consolidated financial statements contain details of the companies operating in each jurisdiction, including their name(s), location and activities.

Santander main activity in the jurisdictions where operate is commercial banking. The Group primarily operates in ten markets through subsidiaries that are autonomous in capital and liquidity. This has clear strategic and regulatory advantages, since it limits the risk of contagion between units, imposes a double layer of global and local oversight, and facilitates crisis management and resolution.

b) Turnover and profit or loss before tax

Turnover in this report is Total income, and profit or loss before tax, Operating profit/(loss) before tax, both as defined and presented in the consolidated income statement that forms part of the consolidated financial statements.

c) Number of full time equivalent employees

The data on full-time equivalent employees stem from the average headcount of each jurisdiction.

d) Tax on profit or loss

In the absence of specific criteria, we have included the amount effectively paid (EUR 4,012 million in 2021, with an effective tax rate of 27.6%) in respect of taxes whose effect is recognized under Income tax in the consolidated income statement.

Taxes effectively paid by the companies in each jurisdiction include:

- Supplementary payments relating to income tax returns, usually for prior years.
- Advances, prepayments, withholdings made or borne in respect of tax on profit or loss for the year. We included taxes borne abroad in the jurisdiction of the company that bore them.
- Refunds received with respect to prior years' returns.
- Where appropriate, the amount payable from assessments and litigation relating to these taxes.

The foregoing form part of the cash flow statement and differ from the corporate income tax expense recognized in the consolidated income statement (EUR 4,894 million in 2021, representing an effective rate of 33.6%, or, discounting extraordinary results, EUR 5,076 million, which represents an effective rate of 33.3%, see note 27 and 51.c). This is because each country's tax regulations establish:

- when taxes must be paid. There is often a mismatch between the payment dates and the generation of the income bearing the tax.
- their own calculation criteria to define temporary or permanent restrictions on expense deduction, exemptions and relief or deferrals of certain income, generating the differences between the accounting profit (or loss) and taxable profit (or tax loss) which is ultimately taxed; tax loss carry forwards from prior years, tax credits and/or relief, etc., must also be added. In certain cases, special regimes such as the tax consolidation of companies in the same jurisdiction are established.

e) Public subsidies

In the context of the legally-required disclosures, this was interpreted as any aid or subsidy in line with the European Commission's Guidance on the notion of State aid. Grupo Santander did not receive public subsidies in 2021.

The breakdown of information is as follows :

	2021			
Jurisdiction	**Turnover (millions of euros)**	**Employees**	**Gross profit or loss before tax (EUR million)**	**Tax on profit or loss (EUR million)**
Germany	1,659	5,097	650	204
Argentina	1,362	8,637	274	115
Austria	177	348	86	17
Bahamas	4	26	(2)	2
Belgium	75	171	58	3
Brazil[1]	10,585	45,191	4,383	1,385
Canada	55	203	20	5
Chile	2,406	10,334	1,140	180
China	22	72	1	—
Colombia	49	334	6	4
United Arab Emirates	—	24	(2)	—
Spain[2]	7,026	33,408	(1,588)	399
United States	7,389	14,994	3,693	376
Denmark	176	218	113	10
Finland	117	166	64	14
France	823	975	474	93
Greece	—	18	(4)	—
Hong Kong	94	172	13	3
India	—	47	—	—
Ireland	(37)	2	(31)	1
Isle of Man	15	67	5	1
Italy	507	937	279	46
Jersey	36	73	21	1
Luxembourg	179	18	158	41
Mexico	3,529	25,428	1,086	207
Norway	255	524	95	22
Netherlands	95	268	55	51
Peru	110	292	56	26
Poland	1,929	12,314	435	206
Portugal	1,371	6,189	477	17
Puerto Rico	4	18	(12)	—
United Kingdom	5,722	20,820	2,292	525
Singapore	12	19	6	1
Sweden	180	251	58	26
Switzerland	138	280	45	4
Uruguay	340	1,457	143	27
Consolidated Group Total	**46,404**	**189,392**	**14,547**	**4,012**

1. Including the information relating to a branch in the Cayman Islands, the profits of which are taxed in full in Brazil. The contribution of this branch profit before tax from continuing operations is EUR 432 million.
2. Includes the Corporate Centre.

At 31 December 2021, the Group's return on assets (ROA) was 0.62%.

Pursuant to Article 253, section 1 of the revised Spanish Companies Act (*Ley de Sociedades de Capital*), the board of directors of Banco Santander, S.A. draws up the consolidated financial statements (comprising the consolidated balance sheet, income statement, statement of recognized income and expense, statement of changes in total equity, statement of cash flows and the notes to the consolidated financial statements) and the consolidated directors' report for the 2021 fiscal year in eXtensible HyperText Markup Language (XHTML) format and, with respect to the main financial statements, with tags in the standard eXtensible Business Reporting Language (XBRL), all of which conforms to the single electronic reporting format required under Directive 2004/109/EC and Delegated Regulation (EU) 2019/815.

The directors of Banco Santander, S.A., listed below with an indication of their respective positions, declare that, to the best of their knowledge, the company's consolidated financial statements for the 2021 financial year were drawn up in accordance with the applicable accounting principles and give a true and fair view of the assets, liabilities, financial position and profit or loss of the company and of the undertakings included in the consolidation taken as a whole, and that the consolidated directors' report includes a fair review of the development, performance and position of the company and of the undertakings included in the consolidation taken as a whole, together with a description of the principal risks and uncertainties that they face.

Boadilla del Monte (Madrid), 24 February 2022

ANA PATRICIA BOTÍN-SANZ DE SAUTUOLA Y O'SHEA

Chair

BRUCE CARNEGIE-BROWN	JOSÉ ANTONIO ÁLVAREZ ÁLVAREZ
Vice Chair	Vice Chair and Chief Executive Officer

MEMBERS:

HOMAIRA AKBARI

LUIS ISASI FERNÁNDEZ DE BOBADILLA

FRANCISCO JAVIER BOTÍN-SANZ DE SAUTUOLA Y O'SHEA

HENRIQUE MANUEL DRUMMOND BORGES CIRNE DE CASTRO

SOL DAURELLA COMADRÁN

SERGIO AGAPITO LIRES RIAL

GINA DÍEZ BARROSO

R. MARTÍN CHÁVEZ MÁRQUEZ

RAMIRO MATO GARCÍA-ANSORENA

BELÉN ROMANA GARCÍA

ÁLVARO ANTONIO CARDOSO DE SOUZA

PAMELA ANN WALKDEN

General information

Corporate information

Banco Santander, S.A. is a Spanish bank, incorporated as sociedad anónima in Spain and is the parent company of Grupo Santander. Banco Santander, S.A. operates under the commercial name Santander.

The Bank's Legal Entity Identifier (LEI) is 5493006QMFDDMYWIAM13 and its Spanish tax identification number is A-39000013. The Bank is registered with the Companies Registry of Cantabria, and its Bylaws have been adapted to the Spanish Companies Act by means of the notarial deed instrument executed in Santander on 29 July 2011 before the notary Juan de Dios Valenzuela García, under number 1209 of his book and filed with the Companies Registry of Cantabria in volume 1006 of the archive, folio 28, page number S-1960, entry 2038.

The Bank is also registered in the Official registry of entities of Bank of Spain with code number 0049.

The Bank's registered office is at:

Paseo de Pereda, 9-12
39004 Santander
Spain

The Bank's principal executive offices are located at:

Santander Group City
Avda. de Cantabria s/n
28660 Boadilla del Monte
Madrid
Spain
Telephone: (+34) 91 259 65 20

Corporate history

The Bank was established in the city of Santander by public deed before the notary José Dou Martínez on 3 March 1856, which was later ratified and amended in part by a second public deed dated 21 March 1857 executed before the notary José María Olarán. The Bank commenced operations upon incorporation on 20 August 1857 and, according to article 4 of the Bylaws, its duration shall be for an indefinite period. It was transformed into a credit corporation (sociedad anónima de crédito) by public deed, executed

before notary Ignacio Pérez, on 14 January 1875 and registered in the Companies Registry Book of the Government's Trade Promotion Section in the province of Santander. The Bank amended its Bylaws to conform to the Spanish public companies act of 1989 by means of a public deed executed in Santander on 8 June 1992 before the notary José María de Prada Díez and recorded in his notarial record book under number 1316.

On 15 January 1999, the boards of directors of Santander and Banco Central Hispanoamericano, S.A. agreed to merge Banco Central Hispanoamericano, S.A. into Santander, and to change Banco Santander's name to Banco Santander Central Hispano, S.A. The shareholders of Santander and Banco Central Hispanoamericano, S.A. approved the merger on 6 March 1999, at their respective general meetings and the merger became effective in April 1999.

The Bank's general shareholders' meeting held on 23 June 2007 approved the proposal to change back the name of the Bank to Banco Santander, S.A.

As indicated above, the Bank brought its Bylaws into line with the Spanish Companies Act by means of a public deed executed in Santander on 29 July 2011.

The Bank's general shareholders' meeting held on 22 March 2013 approved the merger by absorption of Banco Español de Crédito, S.A.

On 7 June 2017, Santander acquired the entire share capital of Banco Popular Español, S.A. in an auction in connection with a resolution plan adopted by the European Single Resolution Board (the European banking resolution authority) and executed by the FROB (the Spanish banking resolution authority) following a determination by the European Central Bank that Banco Popular was failing or likely to fail, in accordance with Regulation (EU) 806/2014 establishing a framework for the recovery and resolution of credit institutions and investment firms. On 24 April 2018, the Bank announced that the boards of directors of Banco Santander, S.A. and Banco Popular Español, S.A.U. had agreed to an absorption of Banco Popular by Banco Santander. The legal absorption was effective on 28 September 2018.

Shareholder and investor relations

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Hard copies of the Bank's annual report can be requested by shareholders free of charge at the address and phone number indicated above.

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Banking Ombudsman in Spain (Defensor del cliente en España)

Mr José Luis Gómez-Dégano
Apartado de Correos 14019
28080 Madrid
Spain

Here. Now.

Santander