

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 securities: 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.
- 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.

During the 2019 financial year, the European Central Bank announced a new program of longer-term financing operations with a specific objective (TLTRO III), which included special conditions, including a reduction in the interest rate applicable between June 2020 and June 2022 subject to compliance with a certain volume of eligible loans.

Grupo Santander chose to accrue interest in accordance with the specific periods of adjustment to market rates, so that the interest corresponding to said period (-1%) has been recorded in the income statement from June 2020 to June 2022, having met the computable loan threshold that gave rise to the extra rate on that date.

Subsequently, and as a result of the modifications introduced by the European Central Bank in the conditions of the program, which include changes in its interest rates, the Group has updated the effective interest rate at which interest accrues on said financial liability, maintaining the criterion adopted in previous years, and considering said modifications a change in the variable interest rate (which affects the EIR) and is applied prospectively.

- 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), 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 2022, 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 recorded 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

| | 2022 | | | 2021 | | | 2020 | | |
|---|--|---------------------------------|---------|--|---------------------------------|---------|--|---------------------------------|---------|
| | 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 | 45,014 | 111,104 | 156,118 | 39,678 | 77,275 | 116,953 | 46,379 | 68,566 | 114,945 |
| Non-trading financial assets mandatorily at fair value through profit or loss | 1,800 | 3,913 | 5,713 | 2,398 | 3,138 | 5,536 | 1,756 | 2,730 | 4,486 |
| Financial assets designated at fair value through profit or loss | 1,976 | 7,013 | 8,989 | 2,113 | 13,844 | 15,957 | 2,509 | 46,208 | 48,717 |
| Financial assets at fair value through other comprehensive income | 64,216 | 21,023 | 85,239 | 77,749 | 30,289 | 108,038 | 91,771 | 29,182 | 120,953 |
| Hedging derivatives (assets) | — | 8,069 | 8,069 | — | 4,761 | 4,761 | — | 8,325 | 8,325 |
| Financial liabilities held for trading | 16,237 | 98,948 | 115,185 | 10,379 | 69,090 | 79,469 | 9,863 | 71,304 | 81,167 |
| Financial liabilities designated at fair value through profit or loss | 212 | 55,735 | 55,947 | 3,620 | 29,113 | 32,733 | 2,118 | 45,920 | 48,038 |
| Hedging derivatives (liabilities) | — | 9,228 | 9,228 | — | 5,463 | 5,463 | — | 6,869 | 6,869 |
| Liabilities under insurance or reinsurance contracts | — | 747 | 747 | — | 770 | 770 | — | 910 | 910 |

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 2022 amounted to EUR 330 million (resulting in an increase of 39.2% compared to 31 December 2021) and DVA amounted to EUR 309 million (resulting in an increase of 90.7% compared to 31 December 2021). The increase is mainly due to movements in the credit markets, whose spread levels have increased substantially compared to those at the end of 2021.

The CVA at 31 December 2021 amounted to EUR 237 million (decrease of 41.9% compared to 31 December 2020) and DVA amounted EUR 162 million (decrease of 30.4% compared to 31 December 2020). These impacts were 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.

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 2022, 2021 and 2020.

Grupo Santander has not carried out significant reclassifications of financial instruments between levels other than those disclosed in level 3 movement table during 2022 continuing the trend observed in 2021 and 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.

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 2022, 2021 and 2020:

EUR million

| | Fair values calculated using internal models at 2022 ^A | | Valuation techniques | Main assumptions |
|--|---|--------------|---|---|
| | Level 2 | Level 3 | | |
| ASSETS | 142,832 | 8,290 | | |
| Financial assets held for trading | 110,721 | 383 | | |
| Central banks ^B | 11,595 | — | Present value method | Yield curves, FX market prices |
| Credit institutions ^B | 16,502 | — | Present value method | Yield curves, FX market prices |
| Customers ^B | 9,550 | — | Present value method | Yield curves, FX market prices |
| Debt and equity instruments | 6,537 | 43 | Present value method | Yield curves, FX market prices |
| Derivatives | 66,537 | 340 | | |
| Swaps | 54,367 | 139 | Present value method, Gaussian Copula | Yield curves, FX market prices, HPI, Basis, Liquidity |
| Exchange rate options | 916 | 4 | Black-Scholes Model | Yield curves, Volatility surfaces, FX market prices, Liquidity |
| Interest rate options | 2,681 | 39 | Black's Model, multifactorial advanced models interest rate | Yield curves, Volatility surfaces, FX market prices, Liquidity |
| Interest rate futures | 113 | — | Present value method | Yield curves, FX market prices |
| Index and securities options | 354 | 48 | Black's Model, multifactorial advanced models interest rate | Yield curves, Volatility surfaces, FX & EQ market prices, Dividends, Liquidity |
| Other | 8,106 | 110 | 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 | 8,069 | — | | |
| Swaps | 6,687 | — | Present value method | Yield curves, FX market prices, Basis |
| Interest rate options | 2 | — | Black's Model | Yield curves, FX market prices, Volatility surfaces |
| Other | 1,380 | — | 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 | 2,080 | 1,833 | | |
| Equity instruments | 643 | 1,269 | Present value method | Market price, Interest rates curves, Dividends and Others |
| Debt securities | 809 | 325 | Present value method | Yield curves |
| Loans and receivables | 628 | 239 | Present value method, swap asset model & CDS | Yield curves and Credit curves |
| Financial assets designated at fair value through profit or loss | 6,586 | 427 | | |
| Credit institutions | 673 | — | Present value method | Yield curves, FX market prices |
| Customers ^C | 5,769 | 5 | Present value method | Yield curves, FX market prices, HPI |
| Debt securities | 144 | 422 | Present value method | Yield curves, FX market prices |
| Financial assets at fair value through other comprehensive income | 15,376 | 5,647 | | |
| Equity instruments | 9 | 700 | Present value method | Market price, Yield curves, Dividends and Others |
| Debt securities | 11,869 | 229 | Present value method | Yield curves, FX market prices |
| Loans and receivables | 3,498 | 4,718 | Present value method | Yield curves, FX market prices and Credit curves |

EUR million

| | Fair values calculated using internal models at 2022 ^A | | Valuation techniques | Main assumptions |
|--|---|------------|---|--|
| | Level 2 | Level 3 | | |
| LIABILITIES | 163,733 | 925 | | |
| Financial liabilities held for trading | 98,533 | 415 | | |
| Central banks ^B | 5,759 | — | Present value method | FX market prices, Yield curves |
| Credit institutions ^B | 9,796 | — | Present value method | FX market prices, Yield curves |
| Customers | 12,226 | — | Present value method | FX market prices, Yield curves |
| Derivatives | 64,147 | 415 | | |
| <i>Swaps</i> | 51,191 | 235 | Present value method, Gaussian Copula | Yield curves, FX market prices, Basis, Liquidity, HPI |
| <i>Interest rate options</i> | 3,268 | 19 | Black's Model, multifactorial advanced models interest rate | Yield curves, Volatility surfaces, FX market prices, Liquidity |
| <i>Exchange rate options</i> | 769 | — | Black-Scholes Model | Yield curves, Volatility surfaces, FX market prices, Liquidity |
| <i>Index and securities options</i> | 591 | 42 | Black's Model, multifactorial advanced models interest rate | Yield curves, Volatility surfaces, FX & EQ market prices, Dividends, Liquidity |
| <i>Futures on interest rate and variable income</i> | 807 | — | Present value method | Yield curves, Volatility surfaces, FX & EQ market prices, Dividends, Correlation, Liquidity, HPI |
| <i>Other</i> | 7,521 | 119 | Present value method, Advanced stochastic volatility models | Yield curves, Volatility surfaces, FX & EQ market prices, Dividends, Correlation, Liquidity, HPI, Credit, Others |
| Short positions | 6,605 | — | Present value method | Yield curves, FX & EQ market prices, Equity |
| Hedging derivatives | 9,214 | 14 | | |
| <i>Swaps</i> | 8,142 | 14 | Present value method | Yield curves, FX & EQ market prices, Basis |
| <i>Other</i> | 1,072 | — | 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 | 55,239 | 496 | Present value method | Yield curves, FX market prices |
| Liabilities under insurance contracts | 747 | — | Present Value Method with actuarial techniques | Mortality tables and interest rate curves |

- A. Level 2 internal models use data based on observable market parameters, while level 3 internal models use significant non-observable inputs in market data.
B. Includes mainly short-term loans/deposits and repurchase/reverse repurchase agreements with corporate customers (mainly brokerage and investment companies).
C. Includes, mainly, structured loans to corporate clients.
D. Includes, mainly, short-term deposits that are managed based on their fair value..

EUR million

| | Fair values calculated using internal models at 2021 ^A | | Fair values calculated using internal models at 2020 ^A | | Valuation techniques |
|--|---|--------------|---|--------------|---|
| | Level 2 | Level 3 | Level 2 | Level 3 | |
| ASSETS | 121,640 | 7,667 | 146,468 | 8,543 | |
| Financial assets held for trading | 76,738 | 537 | 67,826 | 740 | |
| Central banks ^B | 3,608 | — | — | — | Present value method |
| Credit institutions ^B | 10,397 | — | 3 | — | Present Value method |
| Customers ^B | 6,829 | — | 296 | — | Present Value method |
| Debt and equity instruments | 2,312 | 24 | 1,453 | 10 | Present Value method |
| Derivatives | 53,592 | 513 | 66,074 | 730 | |
| Swaps | 43,700 | 224 | 54,488 | 272 | Present Value method, Gaussian Copula |
| Exchange rate options | 539 | 12 | 696 | 22 | Black-Scholes Model |
| Interest rate options | 2,112 | 182 | 3,129 | 241 | Black's Model, advanced multifactor interest rate models |
| Interest rate futures | 409 | — | 1,069 | — | Present Value method |
| Index and securities options | 439 | 41 | 554 | 94 | Black's Model, advanced multifactor interest rate models |
| Other | 6,393 | 54 | 6,138 | 101 | Present Value method, Advanced stochastic volatility models and other |
| Hedging derivatives | 4,761 | — | 8,325 | — | |
| Swaps | 4,204 | — | 6,998 | — | Present Value method |
| Interest rate options | 9 | — | 25 | — | Black's Model |
| Other | 548 | — | 1,302 | — | Present Value method, Advanced stochastic volatility models and other |
| Non-trading financial assets mandatorily at fair value through profit or loss | 1,273 | 1,865 | 1,796 | 934 | |
| Equity instruments | 415 | 1,231 | 984 | 505 | Present Value method |
| Debt securities issued | 589 | 366 | 555 | 134 | Present Value method |
| Loans and receivables | 269 | 268 | 257 | 295 | Present Value method, swap asset model & CDS |
| Financial assets designated at fair value through profit or loss | 13,426 | 418 | 45,559 | 649 | |
| Central banks | — | — | 9,481 | — | Present Value method |
| Credit institutions | 3,152 | — | 11,973 | 163 | Present Value method |
| Customers ^C | 10,270 | 18 | 24,102 | 19 | Present Value method |
| Debt securities | 4 | 400 | 3 | 467 | Present Value method |
| Equity instruments | — | — | — | — | Present Value method |
| Financial assets at fair value through other comprehensive income | 25,442 | 4,847 | 22,962 | 6,220 | |
| Equity instruments | 74 | 821 | 75 | 1,223 | Present Value method |
| Debt securities | 21,585 | 146 | 18,410 | 206 | Present Value method |
| Loans and receivables | 3,783 | 3,880 | 4,477 | 4,791 | Present Value method |

EUR million

| | Fair values calculated using internal models at | | Fair values calculated using internal models at | | Valuation techniques |
|--|---|------------|---|------------|---|
| | 2021 ^A | | 2020 ^A | | |
| | Level 2 | Level 3 | Level 2 | Level 3 | |
| LIABILITIES | 103,807 | 629 | 124,098 | 905 | |
| Financial liabilities held for trading | 68,930 | 160 | 71,009 | 295 | |
| Central banks ^B | 1,038 | — | 0 | 0 | Present Value method |
| Credit institutions ^B | 6,488 | — | 0 | 0 | Present Value method |
| Customers | 6,141 | — | 0 | 0 | Present Value method |
| Derivatives | 53,234 | 160 | 63,920 | 295 | |
| <i>Swaps</i> | 42,438 | 44 | 51,584 | 81 | Present Value method, Gaussian Copula |
| <i>Interest rate options</i> | 2,720 | 26 | 4,226 | 49 | Black's Model, advanced multifactor interest rate models |
| <i>Exchange rate options</i> | 658 | 7 | 724 | 1 | Black-Scholes Model |
| <i>Index and securities options</i> | 446 | 67 | 456 | 97 | Black's Model, advanced multifactor interest rate models |
| <i>Interest rate and equity futures</i> | 184 | — | 1,054 | 2 | Present Value method |
| <i>Other</i> | 6,788 | 16 | 5,876 | 65 | Present Value method, Advanced stochastic volatility models and other |
| Short positions | 2,029 | — | 7,089 | — | Present Value method |
| Hedging derivatives | 5,463 | — | 6,869 | — | |
| <i>Swaps</i> | 4,149 | — | 5,821 | 0 | Present Value method |
| <i>Interest rate options</i> | — | — | 13 | — | Black's Model |
| <i>Other</i> | 1,314 | — | 1,035 | — | Present Value method, Advanced stochastic volatility models and other |
| Financial liabilities designated at fair value through profit or loss^D | 28,644 | 469 | 45,310 | 610 | Present Value method |
| Liabilities under insurance contracts | 770 | — | 910 | — | Present Value method with actuarial techniques |

A. Level 2 internal models use data based on observable market parameters, while level 3 internal models use significant non-observable inputs in market data.

B. Includes mainly short-term loans/deposits and repurchase/reverse repurchase with corporate customers (mainly brokerage and investment companies).

C. Includes, mainly, structured loans to corporate clients.

D. Includes, mainly, short-term deposits that are managed based on their fair value.



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 (Held 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 securities 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 securities, 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 2022 arising from models whose significant inputs are unobservable market data (level 3) amounted to EUR 90 million loss (EUR 73 million and EUR 193 million profit in 2021 and 2020, respectively).

The table below shows the effect, at 31 December 2022, 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:

| 2022 | | | | | | |
|---|-------------------------|--------------------------|-------------------|------------------|-----------------------|---------------------|
| Portfolio/Instrument | | | | | Impacts (EUR million) | |
| (Level 3) | Valuation technique | Main unobservable inputs | Range | Weighted average | Unfavourable scenario | Favourable scenario |
| Financial assets held for trading | | | | | | |
| Debt securities | | | | | | |
| Corporate debt | Discounted Cash Flows | Credit spread | 0%-20% | 10.07% | (1.38) | 1.40 |
| Corporate debt | Price based | Market price | 85%-115% | 100.00% | — | — |
| Government debt | Discounted Cash Flows | Discount curve | 0%-10% | 4.92% | (8.34) | 8.07 |
| Derivatives | | | | | | |
| CCS | Discounted Cash Flows | Interest rate | (0.7)% - 0.7% | 0.00% | — | — |
| CCS | Forward estimation | Interest rate | (4)bps - 4bps | 0.42bps | (0.06) | 0.07 |
| CDS | Discounted Cash flows | Credit Spread | 14.9bps - 42.1bps | 21.99bps | (0.05) | 0.02 |
| EQ Options | EQ option pricing model | Volatility | 0% - 90% | 61.30% | (0.23) | 0.48 |
| EQ Options | Local volatility | Volatility | 10% - 90% | 50.00% | (1.05) | 1.05 |
| FRAs | Asset Swap model | Interest rate | 0% - 6% | 2.71% | (1.16) | 0.95 |
| Fx Swap | Others | Others | n.a. | n.a. | (1.37) | 1.37 |
| Inflation Derivatives | Asset Swap model | Inflation Swap Rate | 0% - 10% | 3.41% | (0.21) | 0.11 |
| Inflation Derivatives | Volatility option model | Volatility | 0% - 40% | 17.37% | (0.14) | 0.11 |
| IR Options | IR option pricing model | Volatility | 0% - 60% | 35.82% | (0.30) | 0.44 |
| IRS | Asset Swap model | Interest rate | 0% - 15.00% | 9.20% | (0.05) | 0.08 |
| IRS | Discounted Cash Flows | Credit spread | 1.25% - 6.29% | 3.89% | (2.25) | 2.47 |
| IRS | Discounted Cash Flows | Swap rate | 8.6% - 9.1% | 8.84% | (0.02) | 0.03 |
| IRS | Forward estimation | Interest rate | (6)bps - 6.1bps | 0.13bps | (0.04) | 0.04 |
| IRS | Others | Others | 5% - n.a. | n.a. | (11.58) | — |
| IRS | Prepayment modelling | Prepayment rate | 2.5% - 6.2% | 4.17% | (0.06) | 0.05 |
| Others | Forward estimation | Price | 0% - 2% | 0.62% | (0.53) | 0.24 |
| Property derivatives | Option pricing model | Growth rate | (5)% - 5% | 0.00% | (5.75) | 5.75 |
| Financial assets designated at fair value through profit or loss | | | | | | |
| Loans and advances to customers | | | | | | |
| Loans | Discounted Cash Flows | Credit spreads | 0.1% - 2% | 1.05% | (0.18) | 0.18 |
| Mortgage portfolio | Black Scholes model | Growth rate | (5)% - 5% | 0.00% | (0.79) | 0.79 |
| Debt securities | | | | | | |
| Other debt securities | Others | Inflation Swap Rate | 0% - 10% | 4.74% | (4.25) | 3.83 |



2022

| Portfolio/Instrument | | Impacts (EUR million) | | | | | |
|--|-------------------------|---------------------------------|---------------|------------------|-----------------------|---------------------|--|
| (Level 3) | Valuation technique | Main unobservable inputs | Range | Weighted average | 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 | 0.01bps | (0.33) | 0.33 | |
| Property securities | Probability weighting | Growth rate | (5)% - 5% | 0.00% | (0.68) | 0.68 | |
| Equity instruments | | | | | | | |
| Equities | Price Based | Price | 90% - 110% | 100.00% | (126.87) | 126.87 | |
| Financial assets at fair value through other comprehensive income | | | | | | | |
| Loans and advances to customers | | | | | | | |
| Loans | Discounted Cash Flows | Credit spread | n.a. | n.a. | (24.1) | — | |
| Loans | Discounted Cash Flows | Interest rate curve | 0.8% - 1.0% | 0.88% | (0.08) | 0.08 | |
| Loans | Discounted Cash Flows | Margin of a reference portfolio | (1)bp - 1bp | 0bp | (17.51) | 17.51 | |
| Loans | Forward estimation | Credit spread | 2.56% - 3.4% | 2.56% | (0.49) | — | |
| Debt securities | | | | | | | |
| Government debt | Discounted Cash Flows | Interest rate | (0.4)% - 1.6% | 0.63% | (0.01) | 0.01 | |
| Equity instruments | | | | | | | |
| Equities | Price Based | Price | 90% - 110% | 100.00% | (70.04) | 70.04 | |
| Financial liabilities held for trading | | | | | | | |
| Derivatives | | | | | | | |
| Cap&Floor | Volatility option model | Volatility | 10% - 90% | 40.73% | (0.29) | 0.18 | |
| Financial liabilities designated at fair value through profit or loss | | | | | | | |
| Loans and advances to customers | | | | | | | |
| Repos/Reverse repos | Others | Long-term repo spread | n.a. | n.a. | (0.13) | — | |

2021

| Portfolio/Instrument | | | | Impacts (EUR million) | | |
|--|-------------------------|---------------------------------|-------------------------------------|-----------------------|-----------------------|---------------------|
| (Level 3) | Valuation technique | Main unobservable inputs | Range | Weighted average | 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)bps | (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 | 1.03% - 3.75% | 2.02% | (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% | 2.5% | (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% | 100.00 % | — | — |
| 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% | (1.90) | 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 |
| 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 | 1bp | (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% | (123.10) | 123.10 |



2021

| Portfolio/Instrument | | | | Impacts (EUR million) | | |
|--|-------------------------|---------------------------------|---------------|-----------------------|-----------------------|---------------------|
| (Level 3) | Valuation technique | Main unobservable inputs | Range | Weighted average | Unfavourable scenario | Favourable scenario |
| 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)bps - 1bps | 1bps | (13.12) | 13.04 |
| Loans | Forward estimation | Credit spread | 0.77% - 2.42% | 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% | (0.50) | 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 | | | | Impacts (EUR million) | | |
|--|-------------------------|---|-------------------|-----------------------|-----------------------|---------------------|
| (Level 3) | Valuation technique | Main unobservable inputs | Range | Weighted average | 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 | 0.79% - 2.02% | 1.18 % | (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 2022, 2021 and 2020 were as follows:

| EUR million | 01/01/2022 | Changes | | | | | | 31/12/2022 |
|--|---|----------------------|--------------------|--|--|-------------------------|-------------|---|
| | 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 | 537 | 91 | (99) | (116) | — | (15) | (15) | 383 |
| Debt securities | 22 | 2 | (2) | 15 | — | 2 | 3 | 42 |
| Equity instruments | 2 | — | — | — | — | (1) | — | 1 |
| Trading derivatives | 513 | 89 | (97) | (131) | — | (16) | (18) | 340 |
| Swaps | 224 | 1 | (47) | (20) | — | 4 | (23) | 139 |
| <i>Exchange rate options</i> | 12 | — | (9) | 2 | — | — | (1) | 4 |
| <i>Interest rate options</i> | 182 | — | — | (142) | — | (1) | — | 39 |
| <i>Index and securities options</i> | 41 | 27 | (28) | 29 | — | (26) | 5 | 48 |
| <i>Other</i> | 54 | 61 | (13) | — | — | 7 | 1 | 110 |
| Financial assets at fair value through profit or loss | 418 | — | (9) | (31) | — | — | 49 | 427 |
| Credit entities | — | — | — | — | — | — | — | — |
| Loans and advances to customers | 18 | — | (9) | (5) | — | — | 1 | 5 |
| Debt securities | 400 | — | — | (26) | — | — | 48 | 422 |
| Non-trading financial assets mandatorily at fair value through profit or loss | 1,865 | 521 | (579) | 98 | — | (22) | (50) | 1,833 |
| Customers | 268 | 276 | (280) | (25) | — | — | — | 239 |
| Debt instruments | 366 | 51 | (33) | (31) | — | (27) | (1) | 325 |
| Equity instruments | 1,231 | 194 | (266) | 154 | — | 5 | (49) | 1,269 |
| Financial assets at fair value through other comprehensive income | 4,847 | 8,564 | (8,029) | — | (172) | 417 | 20 | 5,647 |
| Loans and advances | 3,880 | 8,471 | (7,988) | — | 1 | 349 | 5 | 4,718 |
| Debt securities | 146 | 91 | (23) | — | — | — | 15 | 229 |
| Equity instruments | 821 | 2 | (18) | — | (173) | 68 | — | 700 |
| TOTAL ASSETS | 7,667 | 9,176 | (8,716) | (49) | (172) | 380 | 4 | 8,290 |
| Financial liabilities held for trading | 160 | 328 | (97) | 35 | — | (2) | (9) | 415 |
| Trading derivatives | 160 | 328 | (97) | 35 | — | (2) | (9) | 415 |
| <i>Swaps</i> | 44 | 32 | (16) | 189 | — | 9 | (23) | 235 |
| <i>Exchange rate options</i> | 7 | 6 | (14) | 1 | — | — | — | — |
| <i>Interest rate options</i> | 26 | 56 | (44) | (19) | — | — | — | 19 |
| <i>Index and securities options</i> | 67 | 23 | (19) | (32) | — | (11) | 14 | 42 |
| <i>Securities and interest rate futures</i> | — | — | — | — | — | — | — | — |
| <i>Others</i> | 16 | 211 | (4) | (104) | — | — | — | 119 |
| Hedging derivatives (Liabilities) | — | — | — | 14 | — | — | — | 14 |
| <i>Swaps</i> | — | — | — | 14 | — | — | — | 14 |
| Financial liabilities designated at fair value through profit or loss | 469 | — | (3) | (8) | — | — | 38 | 496 |
| TOTAL LIABILITIES | 629 | 328 | (100) | 41 | — | (2) | 29 | 925 |



| EUR million | 01/01/2021 | Changes | | | | | | 31/12/2021 |
|--|---|----------------------|--------------------|--|--|-------------------------|-------------|---|
| | Fair value calculated using internal models (level 3) | Purchases /Issuances | Sales/ Settlements | Changes in fair value recognized in profit or loss | Changes in fair value recognized in equity | Level reclassifications | Other | Fair value calculated using internal models (level 3) |
| Financial assets held for trading | 740 | 136 | (124) | (181) | — | (15) | (19) | 537 |
| Debt securities | 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 securities | 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 securities | 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 securities | 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 | 0 | 0 | — | (289) | 5 | 469 |
| TOTAL LIABILITIES | 905 | 228 | (42) | (138) | — | (310) | (14) | 629 |



| EUR million | 01/01/2020 | Changes | | | | | | 31/12/2020 |
|--|---|----------------------|--------------------|--|--|-------------------------|--------------|---|
| | 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 | 598 | 52 | (98) | 330 | — | (45) | (97) | 740 |
| Debt securities | 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 securities | 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 securities | 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 |

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.
- Unrealized capital gains on financial assets at fair value through other comprehensive income classified as 'Non-current assets held for sale' because they form part of a disposal group or a discontinued operation that are recorded in the equity balancing entry 'Other accumulated comprehensive income - Items that can be reclassified in income - Non-current assets as 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 2022, 2021 and 2020:

| 31 December 2022 | | | |
|-------------------------------|----------------------------------|--|---|
| EUR million | | | |
| | 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 |
| Assets | | | |
| Derivatives | 176,814 | (101,743) | 75,071 |
| Reverse repurchase agreements | 127,561 | (48,949) | 78,612 |
| Total | 304,375 | (150,692) | 153,683 |

| 31 December 2021 | | | |
|-------------------------------|----------------------------------|--|---|
| EUR million | | | |
| | 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 |
| Assets | | | |
| Derivatives | 101,486 | (42,432) | 59,054 |
| Reverse repurchase agreements | 72,023 | (13,916) | 58,107 |
| Total | 173,509 | (56,348) | 117,161 |

| 31 December 2020 | | | |
|-------------------------------|----------------------------------|--|---|
| EUR million | | | |
| | 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 |
| Assets | | | |
| 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 2022 | | | |
|-------------------------------|---------------------------------------|---|--|
| EUR million | | | |
| | 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 |
| Liabilities | | | |
| Derivatives | 175,862 | (101,743) | 74,119 |
| Reverse repurchase agreements | 148,715 | (48,949) | 99,766 |
| Total | 324,577 | (150,692) | 173,885 |

| 31 December 2021 | | | |
|-------------------------------|---------------------------------------|---|--|
| EUR million | | | |
| | 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 |
| Liabilities | | | |
| Derivatives | 101,462 | (42,432) | 59,029 |
| Reverse repurchase agreements | 73,424 | (13,916) | 59,508 |
| Total | 174,886 | (56,348) | 118,537 |

| 31 December 2020 | | | |
|-------------------------------|---------------------------------------|---|--|
| EUR million | | | |
| | 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 |
| Liabilities | | | |
| Derivatives | 132,313 | (60,975) | 71,338 |
| Reverse repurchase agreements | 77,925 | (16,078) | 61,847 |
| Total | 210,238 | (77,053) | 133,185 |

At 31 December 2022, Grupo Santander has offset other items amounting to EUR 1,024 million (EUR 1,188 million and EUR 1,194 million at 31 December 2021 and 2020, respectively).

At 31 December 2022 the balance sheet shows the amounts EUR 141,529 million (EUR 106,430 million and EUR 130,653 million at 31 December 2021 and 2020) on derivatives and repos as assets and EUR 157,572 million (EUR 104,130 million and EUR 122,416 million at 31 December 2021 and 2020, respectively) 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:

| | |
|-----------------------|---|
| | 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. |
| Quantitative criteria | 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 consecutive days on material arrears for principal, interest or expenses contractually agreed.

This category also includes all loan balances for a client when the operations with more than 90 consecutive days on material arrears are greater than 20% of the amounts pending collection.

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 consecutive days on material arrears 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 consecutive days on material arrears.

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:

- Negative net equity or decrease because of losses of the client's net equity by at least 50% during the last financial year.
- Continued losses or significant decrease in revenue or, in general, in the client's recurring cash flows.
- Generalised delay in payments or insufficient cash flows to service debts.
- Significantly inadequate economic or financial structure or inability to obtain additional financing by the client.
- Existence of an internal or external credit rating showing that the client is in default.
- 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 of 90 consecutive days on material arrears.



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 balances of 90 consecutive days on material arrears.

- **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 complexity of the estimation in this exercise has been derived from the current macroeconomic scenario as a consequence of the war in Ukraine, as well as the increasing level of inflation and interest rates, and the difficulties in the supply chains, which has generated some uncertainty in the evolution of the economy.

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 consecutive days past due material balances with respect to any significant credit obligation.

Grupo Santander has partially and voluntarily aligned during 2022 the accounting definition of Stage 3, as well as 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 has been done taking into account the criteria of IFRS 9 as well as the accounting principles of unbiased presentation of financial information. Grupo Santander has registered an increase in the default rate at around 19 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 be 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 2022 are as follows: Gloval Valuation, S.A.U., Tinsa Tasaciones Inmobiliarias, S.A.U., CBRE Valuation Advisory, S.A., Valoraciones Mediterráneo, S.A. y Sociedad de tasación, 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 2022 the fair value less costs to sell of non-current assets held for sale exceeded their carrying amount by EUR 631 million (EUR 567 million at 31 December 2021); 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.

In the case of real estate assets foreclosed in Spain, which represent 90% 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 type², 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.

1. The assets in a situation of 'stopped development' are included under 'land'

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: = $100 - (\text{sales price} / \text{updated appraisal value})$.
- 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 annual tangible asset depreciation charge is recognised in the consolidated income statement and are essentially equivalent to the following amortization percentages (determined based on the years of estimated useful life, on average, of the different elements):

| | Average annual rate |
|-------------------------|---|
| Buildings for own use | 2.7% |
| Furniture | 8.4% |
| Fixtures | 8.4% |
| Office and IT equipment | 23.6% |
| 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

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 (CGU) (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 liabilities (assets)

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.
- 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 2022 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 CCP, 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 considered contracts that require the issuer to make specific payments to reimburse the creditor for the loss it incurs when a specific debtor defaults on its due date payment obligation in accordance with the original or modified conditions of debt instrument, regardless of its legal form, which may be, among others, a deposit, financial guarantee, insurance contract or credit derivative.

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 374.6 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

In note 50, it is provided an 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 2022 Grupo Santander received interest amounting to EUR 69,282 million (EUR 48,081 and EUR 43,953 in 2021 and 2020, respectively) and paid interest amounting to EUR 23,390 million (EUR 12,738 and EUR 13,690 in 2021 and 2020, 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. Tender offer for shares of Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México

On 21 October 2022, Banco Santander, S.A. ('Banco Santander') announced that it intends to make concurrent cash tender offers to acquire all of the shares of Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México ('Santander Mexico') in Mexico (Series B shares) and United States (American Depositary Shares ('ADSs')) which are not owned by Grupo Santander, which amount to approximately 3.76% of Santander Mexico's share capital.

The offers were launched on 7 February 2023 and will be settled on 13 March, 2023. The shareholders who tender their shares in the offer will receive 24.52 Mexican pesos (approximately 1.20 euro) in cash per Santander Mexico share (and the US dollar equivalent of 122.6 Mexican pesos in cash per ADS based on the US dollar/Mexican peso exchange rate on the expiration date of 8 March, 2023), which corresponds to the book value of each Santander Mexico Share in accordance with Santander Mexico's quarterly report for the fourth quarter of 2022 according to applicable law.

Following the tender offers, Banco Santander intends to (a) cancel the registration of the Series B Shares in the National Securities Registry of the Mexican National Banking and Securities Commission ('CNBV') and delist such Series B Shares from the Mexican Stock Exchange ('BMV'), and (b) remove the ADSs from listing on the New York Stock Exchange and the Series B Shares from registration with the US Securities and Exchange Commission ('SEC') in the United States. Such cancellation has been approved by Santander Mexico's share capital at an extraordinary general shareholders' meeting held on 30 November 2022, with the favourable vote of the holders of the shares representing more than 95% of Santander Mexico's shares, as required by applicable law.

Consummation of the offers is subject to certain conditions, including the absence of any material adverse change in the financial condition, results of operations or prospects of Santander Mexico.

ii. Agreement to acquire a significant holding in Ebury Partners Limited

On 28 April 2020, the investment announced on 4 November 2019 in Ebury, a payments and foreign exchange platform for SMEs, was completed. The transaction involved a total disbursement of GBP 357 million (EUR 409 million) of which GBP 70 million (approximately EUR 80 million) was for new shares. By the end of 2019, 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, which gave the Group 50.38% of the economic rights of the company, without the conditions to obtain control being met, this interest was recorded under 'Investments - Associated entities' in the consolidated balance sheet.

In April 2022 Grupo Santander acquired a new package of shares for GBP 113 million (EUR 135 million) and subscribed in full to a new capital increase, paying an additional GBP 60 million (EUR 72 million). Following these transactions, the Group holds 66.54% of the economic rights and control of the company.

The total value of the net assets identified in the business combination amounted to EUR 413 million, mainly intangible assets (IT developments, customer lists and brand) and resulted in the recognition of goodwill of EUR 316 million.

No gain or loss was recorded for the difference between the book value and the fair value of the previous holding as this difference was not significant.

The amount contributed by this business to the Group's net attributable profit since the date of acquisition is immaterial. Similarly, the result that this business would have contributed to the Group if the transaction had been carried out on 1 January 2022 would also have been immaterial.

iii. 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, with a decrease of reserves of EUR 487 million and a decrease of EUR 1,752 million of minority interests.

iv. Acquisition of Amherst Pierpont Securities LLC, a US fixed-income broker dealer

On 15 July 2021, Santander Holdings USA, Inc. reached an agreement to acquire Amherst Pierpont Securities LLC, 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 450 million (around EUR 405 million). The operation was closed on 11 April 2022 once the pertinent regulatory approvals have been obtained. Immediately after the acquisition, SHUSA has lent financing to the company for an amount of USD 163 million (approximately EUR 147 million), which the company will use to cancel debt with third parties. Amherst Pierpont Securities LLC will become part of Santander Corporate & Investment Banking (Santander CIB) Global business line.

The business combination meant the recognition of a goodwill of EUR 158 million and EUR 24 million of intangible assets (mainly relationships with customers) identified in the purchase price allocation, without other relevant value adjustments to net assets of the business.

The amount contributed by this business to the group net attributable profit since the date of acquisition is not material. Similarly, the result that this business would have brought to the group if the transaction had been carried out on January 1, 2022 is also immaterial.

v. 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 (8.3% of the share capital of Santander México at that time). 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, Grupo Santander holds approximately 96.2% of Santander México share capital.

The shareholders who tendered their shares in the offer 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 meant a disbursement of approximately EUR 335 million.

This transaction entailed a decrease of reserves of EUR 41 million and a decrease of EUR 294 million of minority interests.

vi. 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.

c) Offshore entities

Spanish regulation

According to current Spanish regulation (Law 11/2021, of 9 July, Royal Decree 1080/1991, of 5 July and Order HFP/115/2023, of 9 February), 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 two other subsidiaries incorporated in non-cooperative jurisdictions that are tax resident in the UK and subject to British tax law.

i. Offshore subsidiaries

At the reporting date, Grupo Santander has only one subsidiary resident in Jersey, Abbey National International Limited, with activity of services. In 2022, this subsidiary has contributed to Santander's consolidated profit with immaterial losses and has no employees.

ii. Offshore branches

Grupo Santander also has three offshore branches in the Cayman Islands, the Isle of Man and 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).

These three offshore branches have a total of 155 employees as of December 2022.

iii. Subsidiaries in non-cooperative jurisdictions that are tax resident in the United Kingdom

Grupo Santander also has two subsidiaries that were incorporated in offshore jurisdictions (one in Bermuda without activity and one in Guernsey with leasing activity) but are not deemed offshore entities because they only operate from and are tax resident in the UK and, thus, are subject to British tax law.

Additionally, a subsidiary incorporated in Guernsey but tax resident in the UK was liquidated in 2022.

iv. Other offshore holdings

From Brazil, Grupo Santander manages Santander Brazil Global Investment Fund SPC, a segregated portfolio company located in the Cayman Islands. Grupo Santander also has other non-controlling financial interest of a reduced amount in entities located in non-cooperative jurisdictions.

The European Union (EU)

As of February 2023, the EU blacklist comprises 16 jurisdictions where Santander is only present in The Bahamas. In this jurisdiction, Santander has two banks without third-party activity, Santander Bank & Trust Ltd. and Santander Investment Bank Limited, and one branch of the Swiss bank Banco Santander International SA.

These three entities have a total of 27 employees as of December 2022.

Additionally, the EU grey list comprises 18 jurisdictions which have sufficiently committed to adapt their legislation to international standards, subject to monitoring by the EU. Within these jurisdictions, Santander is mainly present in Hong Kong through a branch.

Organization for Economic Cooperation and Development (OECD)

Grupo Santander is not present in any jurisdictions non-compliant with both OECD standards on transparency and exchange of information for tax purposes (Automatic exchange of information standard -AEOI- and Exchange of information on request standard -EOIR-) according to the last annual report of the OECD Global forum on transparency and exchange of information for tax purposes released in November 2022.

However, the Group is present in The Bahamas and Chile. Although these territories have complete legal and regulatory frameworks in place for the application of the AEOI standard, they need to improve the effectiveness of this standard.

The Group's presence in offshore territories at the end of 2022 is as follows:

| Presence of the Group in non-cooperative jurisdictions | Spanish legislation | | Council of the EU blacklist | | OECD ^a | |
|--|---------------------|----------|-----------------------------|----------|-------------------|----------|
| | Sub. | Branch | Sub. | Branch | Sub. | Branch |
| Jersey | 1 | 1 | | | | |
| Isle of Man | | 1 | | | | |
| Guernsey ^b | | | | | | |
| Bermuda ^b | | | | | | |
| Cayman Islands | | 1 | | | | |
| The Bahamas | | | 2 | 1 | | |
| 2022 | 1 | 3 | 2 | 1 | — | — |
| 2021^c | 1 | 3 | 3 | 1 | — | — |

a Jurisdictions non-compliant with both OECD standards on transparency and exchange of information for tax purposes (AEOI and EOIR). Jersey, the Isle of Man and the Cayman Islands continue to fully comply with both OECD standards.

b Additionally, there is one subsidiary constituted in Guernsey and one in Bermuda, but residents for tax purposes in the UK.

c In 2021 The Bahamas was not included in the EU blacklist. One subsidiary in The Bahamas was merged in 2022.

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 2022, 2021 and 2020.

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 current annual results that the board of directors will propose for approval by the shareholders at the annual general meeting is as follows:

| EUR million | |
|--|--------------|
| To dividends | 1,942 |
| Dividend paid at 31 December 2022 ^A | 979 |
| Complementary dividend ^B | 963 |
| To voluntary reserves ^C | 5,979 |
| Net profit for the year | 7,921 |

A. Total amount paid as interim dividend, at the rate of EUR 5.83 fixed cents per eligible share (recorded in 'Shareholders' equity - Interim dividends').

B. Fixed dividend of EUR 5.95 gross cents per eligible share, payable in cash as from 2 May 2023. The total amount has been estimated on the assumption that, after the implementation of the second buyback program charged to the results of 2022, the number of the Bank's outstanding shares eligible for the dividend will be 16,190,866,119. Therefore, the total dividend may be higher if fewer shares are acquired in the buyback program than expected, and it will be lower in the opposite case.

C. Estimated amount corresponding to a final dividend of EUR 963,356,534. 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 2022 shareholder remuneration policy that is implemented through cash dividends (the interim dividend paid in November 2022 of EUR 5.83 cents per share with dividend entitlement, approved by the board of directors on 27 September 2022, and the complementary dividend expected to be paid as of 2 May 2023, of EUR 5.95 cents per share with the dividend entitlement, proposed by the board of directors on 27 February 2023, and therefore subject to approval by the General Meeting of Shareholders.

In addition, the 2022 remuneration policy also includes expected 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 charged to the results of 2022, amounting to approximately EUR 979 million, was completed between November 2022 and January 2023. A second share buyback program charged to 2022 results amounting to approximately EUR 921 million is planned to be deployed. A capital reduction resolution has been also submitted to the General Meeting of Shareholders to redeem the shares acquired in the buyback program, subject to the relevant regulatory authorization.

Finally, and although it is not part of the remuneration charged to the 2022 financial year, it should be noted that pursuant to the resolution of the Bank's General Meeting of Shareholders held on 1 April 2022, on 2 May 2022 the Bank paid a complementary cash dividend of EUR 5.15 cents per share charged to the results of the 2021 financial year for an amount of EUR 869 million (see Statement of Changes in total Equity). Finally, also charged to the results of 2021, the Bank implemented a repurchase program for an approximate amount of EUR 865 million, which ended on 18 May 2022.

The provisional accounting statement, prepared by the Bank pursuant to legal requirements, evidencing the existence of sufficient liquidity for the payment of the interim dividend on the date and for the amount mentioned above, is as follows:

| EUR million | 31 August 2022 |
|-------------------------------------|----------------|
| Profit before taxes | 3,829 |
| Tax expense | (69) |
| Dividends paid in cash | — |
| Distributable maximum amount | 3,760 |
| Available liquidity | 130,519 |

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 (PPCC) recognised in equity and the capital perpetual preference shares (PPCA) (see note 23), 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:

| | 2022 | 2021 | 2020 |
|--|----------------|----------------|----------------|
| Profit (Loss) attributable to the Parent (EUR million) | 9,605 | 8,124 | (8,771) |
| Remuneration of PPCC and PPCA (EUR million) (note 23) | (529) | (566) | (552) |
| | 9,076 | 7,558 | (9,323) |
| <i>Of which:</i> | | | |
| <i>Profit (Loss) from discontinued operations (non controlling interest net) (EUR million)</i> | — | — | — |
| <i>Profit (Loss) from continuing operations (non-controlling interest and PPCC and PPCA net) (EUR million)</i> | 9,076 | 7,558 | (9,323) |
| Weighted average number of shares outstanding | 16,848,344,667 | 17,272,055,430 | 17,316,288,908 |
| Adjusted number of shares | 16,848,344,667 | 17,272,055,430 | 17,316,288,908 |
| Basic earnings (Loss) per share (euros) | 0.539 | 0.438 | (0.538) |
| Of which, from discounted operations (euros) | — | — | — |
| Basic earnings (Loss) per share from continuing operations (euros) | 0.539 | 0.438 | (0.538) |

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 (PPCC) recognised in equity and the capital perpetual preference shares (PPCA) (see note 23), 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 securities).

Accordingly, diluted earnings/loss per share were determined as follows:

| | 2022 | 2021 | 2020 |
|--|----------------|----------------|----------------|
| Profit (Loss) attributable to the Parent (EUR million) | 9,605 | 8,124 | (8,771) |
| Remuneration of PPCC and PPCA (EUR million) (Note 23) | (529) | (566) | (552) |
| Dilutive effect of changes in profit for the period arising from potential conversion of ordinary shares | — | — | — |
| | 9,076 | 7,558 | (9,323) |
| <i>Of which:</i> | | | |
| <i>Profit (Loss) from discontinued operations (net of non-controlling interests) (EUR million)</i> | — | — | — |
| <i>Profit (Loss) from continuing operations (net of non-controlling interests and PPCC and PPCA) (EUR million)</i> | 9,076 | 7,558 | (9,323) |
| Weighted average number of shares outstanding | 16,848,344,667 | 17,272,055,430 | 17,316,288,908 |
| Dilutive effect of options/rights on shares | 55,316,206 | 48,972,459 | Not applicable |
| Adjusted number of shares | 16,903,660,873 | 17,321,027,889 | 17,316,288,908 |
| Diluted earnings (Loss) per share (euros) | 0.537 | 0.436 | (0.538) |
| Of which, from discounted operations (euros) | — | — | — |
| Diluted earnings (Loss) per share from continuing operations (euros) | 0.537 | 0.436 | (0.538) |

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 2022 and 2021:

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 maximum remuneration established by the annual general meeting was EUR 6 million in 2022 (EUR 6 million in 2021), with two components: (a) an annual emolument and (b) attendance fees.

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 2022 amounted to EUR 4.7 million (EUR 4.8 million in 2021).

Annual allotment

In accordance with the remuneration policy approved at the general shareholders' meeting on 1 April 2022, the amounts for serving and holding roles on the board and committees was the same amount as initially approved for 2021, with the exception of the yearly amount for serving on the board of directors, which was modified from EUR 90,000 to EUR 95,000. The annual amounts received individually by the directors in 2022 and 2021 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 | 2022 | 2021 |
|--|---------|---------|
| Members of the board of directors | 95,000 | 90,000 |
| Members of the executive committee | 170,000 | 170,000 |
| Members of the audit committee | 40,000 | 40,000 |
| Members of the appointments committee | 25,000 | 25,000 |
| Members of the remuneration committee | 25,000 | 25,000 |
| Members of the risk supervision, regulation and compliance committee | 40,000 | 40,000 |
| Members of the responsible banking, sustainability and culture committee | 15,000 | 15,000 |
| Members of the innovation and technology committee | 25,000 | 25,000 |
| Chair of the audit committee | 70,000 | 70,000 |
| Chair of the appointments committee | 50,000 | 50,000 |
| Chair of the remuneration committee | 50,000 | 50,000 |
| Chair of the risk supervision, regulation and compliance committee | 70,000 | 70,000 |
| Chair of the responsible banking, sustainability and culture committee | 50,000 | 50,000 |
| Chair of the innovation and technology committee | 70,000 | 70,000 |
| Lead independent director ^A | 110,000 | 110,000 |
| Non-executive Vice Chair | 30,000 | 30,000 |

A. Bruce Carnegie-Brown, in view of the positions held on the board and its committees, in particular as Chair of the appointments and remuneration committees and as lead independent 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.

Attendance fees

The directors receive fees for attending board and committee meetings, excluding executive committee meetings, where no attendance fees are received.

For 2022 the board voted to keep the same amounts set out in the 2021 policy.

The fees for 2022 and 2021 are as follows:

| Attendance fees per director per meeting in euros | 2022 | 2021 |
|---|-------|-------|
| Board of directors | 2,600 | 2,600 |
| Audit committee and risk supervision, regulation and compliance committee | 1,700 | 1,700 |
| Other committees (excluding executive committee) | 1,500 | 1,500 |

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 2024 and 2025) will be conditional on none of the malus clauses being triggered.
 - The accrual of the third, fourth, and fifth portion (payment in 2026, 2027 and 2028), is linked to objectives related to the period 2022—2024 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, and these targets can reduce these amounts and the number of deferred instruments, or increase them up to a maximum achievement ratio of 125%, so executives have the incentive to exceed their targets.
- 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 instruments, consisting of Banco Santander, S.A. shares, Banco Santander, S.A. share options and restricted stock units (RSUs) of PagoNxt, split as:

- the amount of PagoNxt RSUs set for each year; and
- the rest, shares and share options in equal parts, unless the director chooses to receive options only.

Comparative of executive remuneration (Chair and CEO)

The board voted to maintain the same benchmark incentive for Ana Botín and José Antonio Álvarez in 2022 as in 2021. Variable contributions to pensions were not modified in 2022, so the amounts are the 22% of the 30% of the last three assigned bonus' average.

In 2022, the good business performance (which enabled Banco Santander to reach a 13.37% underlying RoTE, above the end of 2021), the excellent execution of our strategy (with the highest attributable profit ever), and the efficient capital management, boosted the bonus pool once again 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 2022 and 2021 is provided below:

EUR thousand

| | 2022 | | | | | | | | |
|------------------------------|-----------------------------|---------------------|-----------------|------------------------|------------------------|---|---|-------------------------------------|---------------------------------|
| | Bylaw-stipulated emoluments | | | | | | | | |
| | Annual emolument | | | | | | | | |
| | Board ^F | 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 | 95 | 170 | — | — | — | — | — | 74 | 41 |
| José Antonio Álvarez | 95 | 170 | — | — | — | — | — | 25 | 39 |
| Bruce Carnegie-Brown | 280 | 170 | — | 75 | 75 | — | — | 25 | 75 |
| Homaira Akbari | 95 | — | 40 | — | — | — | 15 | 25 | 69 |
| Javier Botín ^A | 95 | — | — | — | — | — | — | — | 34 |
| Álvaro Cardoso ^B | 24 | — | — | — | — | — | 4 | — | 11 |
| R.Martín Chávez ^C | 48 | — | — | 13 | 8 | 11 | — | 29 | 40 |
| Sol Daurella | 95 | — | — | 25 | 25 | — | 15 | — | 70 |
| Henrique de Castro | 95 | — | 40 | — | 25 | — | — | 25 | 76 |
| Gina Díez Barroso | 95 | — | — | 25 | — | — | — | — | 52 |
| Luis Isasi ¹ | 95 | 170 | — | — | 25 | 40 | — | — | 82 |
| Ramiro Mato | 95 | 170 | 40 | — | — | 40 | 65 | — | 90 |
| Sergio Rial | 95 | — | — | — | — | — | — | — | 36 |
| Belén Romana | 95 | 170 | 40 | — | — | 110 | 15 | 25 | 94 |
| Pamela Walkden | 95 | — | 110 | — | — | 40 | — | — | 78 |
| Germán de la Fuente | 66 | — | 31 | — | — | — | — | — | 40 |
| Glenn Hutchins ^E | 3 | — | — | 1 | 1 | — | — | 1 | 4 |
| Total 2022 | 1,561 | 1,020 | 301 | 139 | 159 | 241 | 114 | 229 | 930 |
| Total 2021 | 1,536 | 1,020 | 270 | 126 | 175 | 268 | 125 | 245 | 1,036 |

A. All amounts received were reimbursed to Fundación Botín.

B. Stepped down as director on 1 April 2022.

C. Stepped down as director on 1 July 2022.

D. Director since 1 April 2022.

E. Director since 20 December 2022.

F. Also includes emoluments for other roles in the board.

1. Includes EUR 1,000 thousand for his role as non-executive Chair of Santander España and for Santander España board and committees meetings



| | 2022 | | | | | | 2021 | | | | |
|----------------------------------|--|--------------|----------------|-------------------|----------------|---------------|--------------|----------------------|--------------------|---------------|-------|
| | Short-term and deferred (not subject to long-term goals) salaries of executive directors | | | | | | | | | | |
| | Variable - immediate payment | | | Deferred variable | | | Total | Pension contribution | Other remuneration | Total | Total |
| | Fixed | In cash | In instruments | In cash | In instruments | Total | | | | | |
| Ana Botín | 3,176 | 1,688 | 1,689 | 1,013 | 1,013 | 8,579 | 1,081 | 961 | 11,001 | 11,436 | |
| José Antonio Álvarez | 2,541 | 1,139 | 1,140 | 684 | 684 | 6,188 | 811 | 1,758 | 9,086 | 9,160 | |
| Bruce Carnegie-Brown | — | — | — | — | — | — | — | — | 700 | 700 | |
| Homaira Akbari | — | — | — | — | — | — | — | — | 244 | 248 | |
| Javier Botín ^A | — | — | — | — | — | — | — | — | 129 | 129 | |
| Álvaro Cardoso ^B | — | — | — | — | — | — | — | — | 39 | 183 | |
| R.Martín Chávez ^C | — | — | — | — | — | — | — | — | 147 | 374 | |
| Sol Daurella | — | — | — | — | — | — | — | — | 230 | 239 | |
| Henrique de Castro | — | — | — | — | — | — | — | — | 261 | 267 | |
| Gina Díez Barroso | — | — | — | — | — | — | — | — | 172 | 130 | |
| Luis Isasi ^D | — | — | — | — | — | — | — | 1,000 | 1,412 | 1,406 | |
| Ramiro Mato | — | — | — | — | — | — | — | — | 500 | 499 | |
| Sergio Rial | — | — | — | — | — | — | — | — | 131 | 879 | |
| Belén Romana | — | — | — | — | — | — | — | — | 549 | 533 | |
| Pamela Walkden | — | — | — | — | — | — | — | — | 323 | 303 | |
| Germán de la Fuente ^D | — | — | — | — | — | — | — | — | 137 | — | |
| Glenn Hutchins ^E | — | — | — | — | — | — | — | — | 10 | — | |
| Total 2022 | 5,717 | 2,827 | 2,829 | 1,697 | 1,697 | 14,767 | 1,892 | 3,719 | 25,071 | — | |
| Total 2021 | 6,467 | 3,079 | 3,079 | 1,847 | 1,848 | 16,320 | 1,824 | 3,542 | — | 26,487 | |

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.

| | 2022 | | | | | 2021 |
|----------------------|--|------------|------------------|------------|--------------|--------------|
| | Variable subject to long-term objectives | | | | | Total |
| | In cash | In shares | In share options | In RSUs | Total | |
| Ana Botin | 1,064 | 404 | 404 | 255 | 2,128 | 2,316 |
| José Antonio Álvarez | 718 | 273 | 273 | 172 | 1,436 | 1,563 |
| Total | 1,782 | 677 | 677 | 428 | 3,564 | 3,880 |

1. Corresponds with the fair value of the maximum amount they are entitled to in a total of 3 years: 2026, 2027 and 2028, 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 2022 and the levels of achievement of similar plans in comparable entities, the fair value considered is 70% of the variable remuneration subject to long-term objectives. (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 2022 and 2021 variable remuneration plans.

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 2022 and 2021 the Bank's directors did not receive any remuneration in respect of these representative duties.

On the other hand, in their personal capacity, in 2022 Álvaro Cardoso was paid BRL 150 thousand (EUR 28 thousand) as member of the sustainability committee of Banco Santander Brasil S.A., Homaira Akbari was paid USD 169 thousand (EUR 161 thousand) as member of the board of Santander Consumer USA Holdings, Inc. and EUR 200 thousand as member of the board of PagoNxt S.L., and Henrique de Castro and R. Martín Chávez were each paid the same EUR 200 thousand as members of the board of PagoNxt S.L. Likewise, Pamela Walkden was paid GBP 125 thousand (EUR 147 thousand) as member of Santander UK plc and Santander UK Group Holdings. And Sergio Rial, as non-Executive Chair of Ebury Partners Limited received a total pay of GBP 244 thousand (EUR 286 thousand) and as Chair of board of directors of Banco Santander Brasil S.A. was paid BRL 10,981 thousand (EUR 2,000 thousand).

Likewise, Luis Isasi was paid EUR 1,000 thousand as non-Executive Chair of the board of Santander España and for attending its board and committee meetings (amounts paid by Banco Santander, S.A.).

Additionally, Héctor Grisi has received at the end of 2022 a payment of EUR 2,500 thousand as relocation expenses, for settling in Spain to carry out his CEO role with effect from 1 January 2023. Because the payment is based on his annual allowance capitalized over five years, in accordance with corporate practices and policies, if the CEO terminates his contract before said period, he will reimburse the proportional share of that amount.

c) Post-employment and other long-term benefits

In 2012, the contracts of Ana Botín and José Antonio Álvarez (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.

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 2022 and 2021 for retirement pensions were as follows:

| EUR thousand | 2022 | 2021 |
|----------------------|--------------|--------------|
| Ana Botín | 1,081 | 1,041 |
| José Antonio Álvarez | 811 | 783 |
| Total | 1,892 | 1,825 |

Following is a detail of the balances relating to each of the executive directors under the welfare system as of 31 December 2022 and 2021:

| EUR thousand | 2022 | 2021 |
|----------------------|---------------|---------------|
| Ana Botín | 46,725 | 48,075 |
| José Antonio Álvarez | 18,958 | 18,821 |
| Total | 65,683 | 66,896 |

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 | 2022 | 2021 |
|----------------------|---------------|---------------|
| Ana Botín | 20,988 | 21,489 |
| José Antonio Álvarez | 17,345 | 18,028 |
| Total | 38,333 | 39,517 |

The insured capital has been modified in 2018 for Ana Botín and 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 2022 and 2021, the Group has disbursed a total amount of EUR 48.2 million and EUR 25.5 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 2022 and 2021, 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 2022 and 2021 due to their participation in the deferred variable remuneration systems, which instrumented a portion of their variable remuneration relating to 2022 and prior years, as well as on the deliveries, in shares or in cash, made to them in 2022 and 2021 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 Grupo Santander'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.

Similarly, Banco Santander can claw back 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.

2021 was the last financial year in which a payment was made in application of this plan.

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 variable remuneration of executive directors and certain executives (including senior management) corresponding to 2022 has been approved by the board of directors and implemented through the seventh 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 for executive directors, to be paid, where appropriate, in five portions, provided that the conditions of permanence in the Group, according to the following accrual scheme:

- The accrual of the first and second parts (instalments in 2024 and 2025) is conditional on none of the malus clauses being triggered.
- The accrual of the third, fourth and fifth parts (instalments in 2026, 2027 and 2028) is linked to non-concurrence of malus clauses and the fulfilment of certain objectives related to the 2022- 2024 period. These objective and their respective weights are:
 - Banco Santander's consolidated Return on tangible equity (RoTE) target in 2024 (weight of 40%).
 - Relative performance of Banco Santander's total shareholder return (TSR) in 2022-2024 in respect of the weighted TSR of a peer group comprising 9 credit institutions, with the appropriate TSR ratio based on the group's TSR among its peers (weight of 40%).
 - Five ESG (environmental, social and governance) metrics. Each of the five Responsible banking targets have the same weighting (and total weight of ESG objective, 20%).

The degree of compliance with the above objectives determines the percentage to be applied to the deferred amount in these three annuities, with a maximum achievement ratio of 125%, so executives have the incentive to exceed their targets.

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 instruments.



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.

And among the specific cases that could lead to the application of these clauses, of note the restatement of the annual financial statements that does not result from a regulatory change, but from incorrect application of accounting regulations or criteria, as appreciated by supervisors and as long as it results in a lower variable remuneration to be settled than that initially accrued or where no remuneration would have been paid in accordance with the variable remuneration system of the Entity or a specific unit.

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.

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 2021, 31 December 2021 and 31 December 2022, as well as the gross shares that were delivered to them in 2021 and 2022, 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 the deferred conditional and linked to multi-year objectives in 2016, 2017, 2018, 2019, 2020, 2021 and 2022 were formalized.

Share-based variable remuneration

| | Maximum number of shares to be delivered 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) |
|---|---|---|--|--|--|--|---|
| 2016 variable remuneration | | | | | | | |
| Ana Botín | 110,029 | — | — | — | — | (55,014) | — |
| José Antonio Álvarez | 74,264 | — | — | — | — | (37,133) | — |
| | 184,293 | | | | | (92,147) | |
| 2017 variable remuneration | | | | | | | |
| Ana Botín | 94,083 | — | — | — | (31,361) | — | — |
| José Antonio Álvarez | 62,919 | — | — | — | (20,973) | — | — |
| | 157,001 | | | | (52,334) | | |
| 2018 variable remuneration | | | | | | | |
| Ana Botín | 413,215 | — | — | (103,304) | — | — | — |
| José Antonio Álvarez | 276,129 | — | — | (69,032) | — | — | — |
| | 689,344 | | | (172,336) | | | |
| 2019 variable remuneration | | | | | | | |
| Ana Botín | 532,316 | — | (106,463) | — | — | — | — |
| José Antonio Álvarez | 355,749 | — | (71,150) | — | — | — | — |
| | 888,065 | | (177,613) | | | | |
| 2020 variable remuneration | | | | | | | |
| Ana Botín | 310,615 | (124,246) | — | — | — | — | — |
| José Antonio Álvarez | 168,715 | (67,486) | — | — | — | — | — |
| | 479,330 | (191,732) | | | | | |
| 2021 variable remuneration | | | | | | | |
| Ana Botín | — | — | — | — | — | — | 1,480,622 |
| José Antonio Álvarez | — | — | — | — | — | — | 999,259 |
| | — | — | — | — | — | — | 2,479,881 |
| 2022 variable remuneration¹ | | | | | | | |
| Ana Botín | — | — | — | — | — | — | — |
| José Antonio Álvarez | — | — | — | — | — | — | — |

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. Sergio Rial's 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, as of 31 December 2022, Rodrigo Echenique maintains the right to a maximum of 150,979 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, 2021 | Instruments matured but not consolidated at January 1, 2022 ² | Shares delivered in 2022 (immediate payment 2021 variable remuneration) | Shares delivered in 2022 (deferred payment 2020 variable remuneration) | Shares delivered in 2022 (deferred payment 2019 variable remuneration) | Shares delivered in 2022 (deferred payment 2018 variable remuneration) | Shares delivered in 2022 (deferred payment 2017 variable remuneration) | Shares delivered in 2022 (deferred payment 2016 variable remuneration) | Variable remuneration 2022 (Maximum number of shares to be delivered) | Maximum number of shares to be delivered at December 31, 2022 |
|---|--|---|--|--|--|--|--|---|---|
| 55,015 | — | — | — | — | — | — | (55,015) | — | — |
| 37,131 | — | — | — | — | — | — | (37,131) | — | — |
| 92,146 | | | | | | | (92,146) | | |
| 62,722 | — | — | — | — | — | (31,361) | — | — | 31,361 |
| 41,946 | — | — | — | — | — | (20,973) | — | — | 20,973 |
| 104,668 | | | | | | (52,334) | | | 52,334 |
| 309,911 | (206,618) | — | — | — | (34,431) | — | — | — | 68,862 |
| 207,097 | (138,072) | — | — | — | (23,008) | — | — | — | 46,017 |
| 517,008 | (344,689) | | | | (57,440) | | | | 114,879 |
| 425,853 | — | — | — | (106,463) | — | — | — | — | 319,390 |
| 284,599 | — | — | — | (71,150) | — | — | — | — | 213,449 |
| 710,452 | | | | (177,613) | | | | | 532,839 |
| 186,369 | — | — | (37,274) | — | — | — | — | — | 149,095 |
| 101,229 | — | — | (20,246) | — | — | — | — | — | 80,983 |
| 287,598 | | | (57,520) | | | | | | 230,078 |
| 1,480,622 | — | (592,249) | — | — | — | — | — | — | 888,373 |
| 999,259 | — | (399,704) | — | — | — | — | — | — | 599,555 |
| 2,479,881 | | (991,953) | | | | | | | 1,487,928 |
| — | — | — | — | — | — | — | — | 585,079 | 585,079 |
| — | — | — | — | — | — | — | — | 394,916 | 394,916 |
| | | | | | | | | 979,995 | 979,995 |

2. After reviewing the results of the 3rd cycle of the deferred variable remuneration plan linked to multi-year targets (2018), the board of directors confirmed in 2022, upon recommendation from the remuneration committee, a 33.3% achievement of the long-term metrics of the plan (as the following level of achievement was met during 2018-2020 period: CET1 at 100% at 2020 year-end (the target was 11.30%); underlying EPS growth at 0% (the target was a 25% growth); and TSR metric at 0% (33% minimum target not reach), with a 33% weight each one) and the amounts of the pending deliveries for each executive director, payable in February 2022, 2023 and 2024 in connection with this plan. Therefore, regarding the maximum number of shares to be delivered at December 31 of 2021 in relation with the last three payments of the 2018 variable remuneration (309,911 and 207,097 shares in the case of Ana Botin and José Antonio Álvarez, respectively) only one third have been delivered (corresponding to the 33.3% of the achievement mentioned above), with the rest of shares definitively not collected as "matured but not consolidated". This applies to all persons under this plan.

Furthermore, the maximum number of share options to be delivered regarding the 2022 variable remuneration plan is 1,575,335 options in the case of Ana Botín, and 1,063,316 options in the case of José Antonio Álvarez. Meanwhile, the maximum number of RSUs of PagoNxt, S.L. to be delivered under the current plan is 12,646 and 8,527 units for Ana Botín and José Antonio Álvarez, respectively.

In addition, the table below shows the cash delivered in 2022 and 2021, 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

| | 2022 | | 2021 | |
|----------------------|--|--|--|--|
| | Cash paid (immediate payment 2021 variable remuneration) | Cash paid (deferred payments from 2020, 2019, 2018 and 2017 variable remuneration) | Cash paid (immediate payment 2020 variable remuneration) | Cash paid (deferred payments from 2019, 2018, 2017 and 2016 variable remuneration) |
| Ana Botín | 1,838 | 1,102 | 334 | 1,550 |
| José Antonio Álvarez | 1,241 | 726 | 181 | 1,037 |
| Total | 3,079 | 1,827 | 515 | 2,586 |

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 2021 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 2022 and 2021 to former board members, upon achievement of the conditions for the receipt thereof (see note 46):

Maximum number of shares to be delivered

| | 2022 | 2021 |
|---|--------|---------|
| Deferred conditional variable remuneration plan (2015) | — | — |
| Deferred conditional variable remuneration plan and linked to objectives (2016) | — | 60,251 |
| Deferred conditional variable remuneration plan and linked to objectives (2017) | 33,783 | 64,659 |
| Deferred conditional variable remuneration plan and linked to objectives (2018) | 36,543 | 164,462 |
| Deferred conditional variable remuneration plan and linked to objectives (2019) | 98,092 | 130,790 |
| Deferred conditional variable remuneration plan and linked to objectives (2020) | — | — |

Number of shares delivered

| | 2022 | 2021 |
|---|--------|--------|
| Deferred conditional variable remuneration plan (2015) | — | 92,557 |
| Performance shares plan ILP (2015) | — | — |
| Deferred conditional variable remuneration plan and linked to objectives (2016) | 60,251 | 60,254 |
| Deferred conditional variable remuneration plan and linked to objectives (2017) | 33,783 | 32,330 |
| Deferred conditional variable remuneration plan and linked to objectives (2018) | 18,272 | 54,821 |
| Deferred conditional variable remuneration plan and linked to objectives (2019) | 32,698 | 32,698 |
| Deferred conditional variable remuneration plan and linked to objectives (2020) | — | — |

In addition, EUR 702 thousand and EUR 1,213 thousand relating to the deferred portion payable in cash of the aforementioned plans were paid each in 2022 and 2021.

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

| | 2022 | | | 2021 | | |
|---|-------------------|------------|-------|-------------------|------------|-------|
| | Loans and credits | Guarantees | Total | Loans and credits | Guarantees | Total |
| Mrs Ana Botín-Sanz de Sautuola y O'Shea | 20 | — | 20 | 25 | — | 25 |
| Mr José Antonio Álvarez Álvarez | 7 | — | 7 | 4 | — | 4 |
| Mr Bruce Carnegie-Brown | — | — | — | — | — | — |
| Mr Javier Botín-Sanz de Sautuola y O'Shea | 23 | — | 23 | 16 | — | 16 |
| Mrs Sol Daurella Comadrán | 49 | — | 49 | 69 | — | 69 |
| Mrs Belén Romana García | 1 | — | 1 | — | — | — |
| 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 | 5 | — | 5 | 1 | — | 1 |
| Mr R. Martín Chávez Márquez | — | — | — | — | — | — |
| Mrs Gina Lorenza Díez Barroso | — | — | — | — | — | — |
| Mr Germán de la Fuente Escamilla | — | — | — | — | — | — |
| | 105 | — | 105 | 115 | — | 115 |

g) Senior management

The table below includes the amounts relating to the short-term remuneration of the members of senior management at 31 December 2022 and those at 31 December 2021, excluding the remuneration of the executive directors, which is detailed above. This amount has been reduced by 35% compared to that reported in 2014 (EUR 80,792 thousand):

EUR thousand

| Year | Number of persons | Short-term salaries and deferred remuneration | | | | | | | | |
|------|-------------------|---|---|------------------------|---------|--------------------------------|-------|----------|---------------------------------|-------|
| | | Fixed | Variable remuneration (bonus) - Immediate payment | | | Deferred variable remuneration | | Pensions | Other remuneration ¹ | Total |
| | | | In cash | In shares ² | In cash | In shares ³ | | | | |
| 2022 | 14 | 18,178 | 7,733 | 7,733 | 3,398 | 3,399 | 5,339 | 6,956 | 52,736 | |
| 2021 | 15 | 19,183 | 8,402 | 8,402 | 3,648 | 3,648 | 5,542 | 5,055 | 53,880 | |

1. Includes other remuneration items such as life and medical insurance premiums and localization aids and lastly RSUs from PagoNxt S.L., for his work as a director in said entity.

2. The amount of immediate payment in shares for 2022 is 2,504,000 shares (2,706,819 Santander shares in 2021).

3. The deferred amount in shares not linked to long-term objectives for 2022 is 1,101,000 shares (1,175,191 Santander shares in 2021).

The board of directors approved the 2022 Digital Transformation Incentive which is a variable remuneration scheme split in two different blocks:

- the first one, with the same design as in previous years, that delivers Santander shares and share options if the group hits major milestones on its digital roadmap. It is aimed at a group of up to 250 employees whose functions are deemed essential to Santander's growth. No senior executives are included within this plan in 2022 and 2021.

- And the second one, which delivers PagoNxt, S.L. RSUs and premium priced options (PPOs), and is aimed at up to 50 employees whose roles are considered key to PagoNxt's success, including 1 senior executive who will receive EUR 500 thousand.

See note 46 to the 2022 Group's consolidated financial statements for further information on the Digital Transformation Incentive.

In 2022, the ratio of variable to fixed pay components was 120% of the total for senior managers, well within the maximum limit of 200% set by 2022 AGM.

Also, the detail of the breakdown of the remuneration linked to long-term objectives of the members of senior management at 31 December 2022 and 31 December 2021 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 | | | | |
|--------------|------------------|--|---------------|-------|
| Year | Number of people | Variable remuneration subject to long-term objectives ¹ | | Total |
| | | Cash payment | Share payment | |
| 2022 | 14 | 3,568 | 3,569 | 7,137 |
| 2021 | 15 | 3,830 | 3,830 | 7,660 |

1. Relates to the fair value of the maximum annual amounts for years 2026, 2027 and 2028 of the seventh cycle of the deferred conditional variable remuneration plan (2025, 2026 and 2027 for the sixth cycle of the deferred variable compensation plan linked to annual objectives for the year 2021).

Additionally, senior executives who stepped down from their roles in 2022 consolidated salary remuneration and other remuneration for a total amount of EUR 3,691 thousand (EUR 5,294 thousand in 2021). They also have the right to receive, in total, EUR 447 thousand in variable pay subject to long-term objectives (this right has been generated in 2021 for a total amount of EUR 55 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 2022 and 31 December 2021 relating to the deferred portion under the various plans then in force is the following (see note 46):

| | 2022 | 2021 |
|---|-----------|-----------|
| Deferred conditional variable remuneration plan (2015) | — | — |
| Deferred conditional variable remuneration plan (2017) | — | — |
| Deferred conditional variable remuneration plan (2018) | — | 3,475 |
| Deferred conditional variable remuneration plan and linked to objectives (2016) | 18,500 | 150,445 |
| Deferred conditional variable remuneration plan and linked to objectives (2017) | 76,053 | 164,428 |
| Deferred conditional variable remuneration plan and linked to objectives (2018) | 155,758 | 803,056 |
| Deferred conditional variable remuneration plan and linked to objectives (2019) | 949,917 | 1,274,450 |
| Deferred conditional variable remuneration plan and linked to objectives (2020) | 1,438,437 | 1,829,720 |
| Deferred conditional variable remuneration plan and linked to objectives (2021) | 2,711,926 | — |

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 2022 and 2021 to the senior management, in addition to the payment of the related cash amounts:

Number of shares delivered

| | 2022 | 2021 |
|---|-----------|-----------|
| Deferred conditional variable remuneration plan (2015) | — | 146,930 |
| Deferred conditional variable remuneration plan (2017) | — | 2,786 |
| Deferred conditional variable remuneration plan (2018) | — | 3,474 |
| Deferred conditional variable remuneration plan and linked to objectives (2016) | 114,006 | 131,938 |
| Deferred conditional variable remuneration plan and linked to objectives (2017) | 107,891 | 79,104 |
| Deferred conditional variable remuneration plan and linked to objectives (2018) | 79,037 | 267,686 |
| Deferred conditional variable remuneration plan and linked to objectives (2019) | 288,041 | 321,006 |
| Deferred conditional variable remuneration plan and linked to objectives (2020) | 360,614 | 1,742,419 |
| Deferred conditional variable remuneration plan and linked to objectives (2021) | 2,556,117 | — |

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 Ana Botín and 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 for some senior executives and since April 1, 2018 for executive directors. 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 2022 in the pension system for those who were part of senior management at year end amounted to EUR 54 million (EUR 57 million at 31 December 2021).

The net charge to income corresponding to pension amounted to EUR 5.3 million in 2022 (EUR 5.5 million in 31 December 2021).

In 2022 and 2021 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 2022 of this group amounts to EUR 98 million (EUR 100 million at 31 December 2021).

h) Post-employment benefits to former directors and former senior executive vice presidents

The post-employment benefits and settlements paid in 2022 to former directors of the Bank, other than those detailed in note 5.c amounted to EUR 5.6 million and EUR 5.6 million in 2021, respectively. Also, the post-employment benefits and settlements paid in 2022 to former executive vice presidents amounted to EUR 4.8 million and EUR 51.6 million in 2021, 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 2022 (EUR 0.17 million in 2021). Likewise, contributions to insurance policies that hedge pensions for previous senior managers amounted to EUR 3.1 million in 2022 (EUR 4.4 million in 2021).

During the 2022 financial year, no releases or charges were 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 or former senior managers in 2022 and 2021.

In addition, 'Provisions - Pension Fund and similar obligations' in the consolidated balance sheet as at 31 December 2022 included EUR 48 million in respect of the post-employment benefit obligations to former Directors of the Bank (EUR 50 million at 31 December 2021) and EUR 99 million corresponding to former senior managers (EUR 114 million at 31 December 2021).

i) Pre-retirement and retirement

The board of directors approved an amendment to the contracts of the executive directors whereby Ana Botín and José Antonio Álvarez ceased 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, Ana Botín 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 | 2022 | 2021 | 2020 |
|---|---------------|---------------|---------------|
| CENTRAL BANKS | | | |
| Classification | | | |
| Financial assets held for trading | 11,595 | 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 |
| Financial assets designated at fair value through other comprehensive income | — | — | — |
| Financial assets at amortised cost | 15,375 | 15,657 | 12,499 |
| | 26,970 | 19,265 | 21,980 |
| Type | | | |
| Time deposits | 15,180 | 13,275 | 11,757 |
| Reverse repurchase agreements | 11,790 | 5,990 | 10,223 |
| Impaired assets | — | — | — |
| Valuation adjustments for impairment | — | — | — |
| | 26,970 | 19,265 | 21,980 |
| CREDIT INSTITUTIONS | | | |
| Classification | | | |
| Financial assets held for trading | 16,502 | 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 | 673 | 3,152 | 12,136 |
| Financial assets designated at fair value through other comprehensive income | — | — | — |
| Financial assets at amortised cost | 46,518 | 39,169 | 37,838 |
| | 63,693 | 52,718 | 49,977 |
| Type | | | |
| Time deposits | 8,891 | 10,684 | 7,338 |
| Reverse repurchase agreements | 27,321 | 18,853 | 20,862 |
| Non- loans advances | 27,487 | 23,188 | 21,784 |
| Impaired assets | — | 1 | 1 |
| Valuation adjustments for impairment | (6) | (8) | (8) |
| | 63,693 | 52,718 | 49,977 |
| CURRENCY | | | |
| Euro | 26,024 | 24,286 | 22,260 |
| Pound sterling | 4,474 | 3,228 | 4,127 |
| US dollar | 18,468 | 12,639 | 13,209 |
| Brazilian real | 34,863 | 24,011 | 26,437 |
| Other currencies | 6,834 | 7,819 | 5,924 |
| TOTAL | 90,663 | 71,983 | 71,957 |

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 their residual maturity periods.

At 31 December 2022 the gross exposure by impairment stage of the assets accounted for amounts to EUR 61,898 million, EUR 1 million and EUR 0 million (EUR 54,833, EUR 0 million and EUR 1 million in 2021 and EUR 50,344 million, EUR 0 million and EUR 1 million in 2020), and the loan loss provision by impairment stage amounts to EUR 6 million, EUR 0 million and EUR 0 million (EUR 8 million, EUR 0 million and EUR 0 million in 2021 and 2020) in stage 1, stage 2 and stage 3, respectively.

7. Debt securities

a) Detail

The detail, by classification, type and currency, of Debt securities in the consolidated balance sheets is as follows:

| EUR million | 2022 | 2021 | 2020 |
|---|----------------|----------------|----------------|
| Classification | | | |
| Financial assets held for trading | 41,403 | 26,750 | 37,894 |
| Non-trading financial assets mandatorily at fair value through profit or loss | 1,134 | 957 | 700 |
| Financial assets designated at fair value through profit or loss | 2,542 | 2,516 | 2,979 |
| Financial assets designated at fair value through other comprehensive income | 75,083 | 97,922 | 108,903 |
| Financial assets at amortised cost | 73,554 | 35,708 | 26,078 |
| | 193,716 | 163,853 | 176,554 |
| Type | | | |
| Spanish government debt securities | 26,876 | 20,638 | 30,397 |
| Foreign government debt securities | 121,018 | 102,976 | 110,570 |
| Issued by financial institutions | 10,176 | 12,324 | 10,133 |
| Other fixed-income securities | 35,468 | 27,850 | 25,337 |
| Impaired financial assets | 404 | 280 | 401 |
| Impairment losses | (226) | (215) | (284) |
| | 193,716 | 163,853 | 176,554 |
| Currency | | | |
| Euro | 63,903 | 45,197 | 58,850 |
| Pound sterling | 6,732 | 6,304 | 7,372 |
| US dollar | 37,749 | 34,229 | 29,009 |
| Brazilian real | 35,841 | 35,907 | 35,139 |
| Other currencies | 49,717 | 42,431 | 46,468 |
| Debt securities excluding impairment adjustments | 193,942 | 164,068 | 176,838 |
| Impairment losses | (226) | (215) | (284) |
| | 193,716 | 163,853 | 176,554 |

The decrease in the year of the debt securities portfolio under the heading 'Financial assets at fair value with changes in other comprehensive income' of EUR 22,839 million is mainly due to portfolio sales performed during the year.

The increase in the debt securities portfolio under the heading 'Financial assets at amortized cost' of EUR 37,846 million during the year is mainly due to the origination of two new business models whose goal is to hold financial assets to collect contractual cash flows. These new business models pursue mainly two different strategies:

- Optimization of excess liquidity for approximately 16,800 million through management aimed at making profitable the liquidity maintained on the balance sheet to comply with regulatory metrics through investment in HQLAs (High Quality Liquid Assets), basically, public debt instruments or bills very short-term central bank (terms not exceeding 2 years) and that offer higher returns than the alternative of keeping the cash deposited in the central bank, with the purpose of generating margin at maturity.

- Management of the maturity of the balance sheet for approximately EUR 14,500 million through the reconstruction of ALCO portfolios that contribute to the generation of financial margin to offset, at least partially, the higher financial cost derived from the increase in the cost of customer deposits and medium/long-term wholesale financing in the face of rising interest rates, while at the same time constituting a hedging position of the balance sheet/ long-term financial margin against potential future decreases in interest rates. This investment is also made mainly through liquid assets, sovereign debt, but at longer periods (3, 5, 7, 10 years).

At 31 December 2022, 2021 and 2020 the gross exposure by impairment stage of the book assets under IFRS 9 amounted to EUR 148,384 million, EUR 133,437 million and EUR 134,792 million in stage 1; EUR 75 million, EUR 128 million and EUR 72 million in stage 2, and EUR 404 million, EUR 280 million and EUR 401 million in stage 3, respectively.

b) Breakdown

The breakdown, by origin of the issuer, of debt securities at 31 December 2022, 2021 and 2020, net of impairment losses, is as follows:

EUR million

| | 2022 | | | | 2021 | | | | 2020 | | | |
|--------------------------|----------------------|---------------------|----------------|-------------|----------------------|---------------------|----------------|-------------|----------------------|---------------------|----------------|-------------|
| | Private fixed-income | Public fixed-income | Total | % | Private fixed-income | Public fixed-income | Total | % | Private fixed-income | Public fixed-income | Total | % |
| Spain | 1,015 | 26,876 | 27,891 | 14.40% | 3,773 | 20,638 | 24,411 | 14.90% | 1,588 | 30,397 | 31,985 | 18.12% |
| United Kingdom | 2,545 | 3,013 | 5,558 | 2.87% | 3,334 | 2,097 | 5,431 | 3.31% | 3,099 | 2,795 | 5,894 | 3.34% |
| Portugal | 2,572 | 3,603 | 6,175 | 3.19% | 3,008 | 3,845 | 6,853 | 4.18% | 3,095 | 6,462 | 9,557 | 5.41% |
| Italy | 1,948 | 8,329 | 10,277 | 5.31% | 1,215 | 1,531 | 2,746 | 1.68% | 1,047 | 4,688 | 5,735 | 3.25% |
| Ireland | 6,141 | 11 | 6,152 | 3.18% | 4,759 | 52 | 4,811 | 2.94% | 2,924 | 2 | 2,926 | 1.66% |
| Poland | 2,830 | 9,443 | 12,273 | 6.34% | 2,848 | 12,727 | 15,575 | 9.51% | 3,126 | 11,400 | 14,526 | 8.23% |
| Other European countries | 8,161 | 9,655 | 17,816 | 9.20% | 8,922 | 3,422 | 12,344 | 7.53% | 8,211 | 2,891 | 11,102 | 6.29% |
| United States | 8,950 | 22,318 | 31,268 | 16.14% | 5,634 | 21,465 | 27,099 | 16.54% | 6,386 | 14,645 | 21,031 | 11.91% |
| Brazil | 9,201 | 28,191 | 37,392 | 19.30% | 5,446 | 29,251 | 34,697 | 21.18% | 5,179 | 33,316 | 38,495 | 21.80% |
| Mexico | 481 | 17,578 | 18,059 | 9.32% | 517 | 14,572 | 15,089 | 9.21% | 435 | 19,053 | 19,488 | 11.04% |
| Chile | 28 | 10,009 | 10,037 | 5.18% | 51 | 9,467 | 9,518 | 5.81% | 41 | 8,082 | 8,123 | 4.60% |
| Other American countries | 1,560 | 5,960 | 7,520 | 3.88% | 655 | 2,128 | 2,783 | 1.70% | 274 | 3,098 | 3,372 | 1.91% |
| Rest of the world | 390 | 2,908 | 3,298 | 1.70% | 77 | 2,419 | 2,496 | 1.52% | 182 | 4,138 | 4,320 | 2.44% |
| | 45,822 | 147,894 | 193,716 | 100% | 40,239 | 123,614 | 163,853 | 100% | 35,587 | 140,967 | 176,554 | 100% |

The detail, by issuer rating, of Debt securities at 31 December 2022, 2021 and 2020 is as follows:

EUR million

| | 2022 | | | | 2021 | | | | 2020 | | | |
|-----------|----------------------|---------------------|----------------|-------------|----------------------|---------------------|----------------|-------------|----------------------|---------------------|----------------|-------------|
| | Private fixed-income | Public fixed-income | Total | % | Private fixed-income | Public fixed-income | Total | % | Private fixed-income | Public fixed-income | Total | % |
| AAA | 13,481 | 5,494 | 18,975 | 9.80% | 15,956 | 1,773 | 17,729 | 10.82% | 14,088 | 2,099 | 16,187 | 9.17% |
| AA | 9,542 | 30,502 | 40,044 | 20.67% | 2,005 | 26,355 | 28,360 | 17.31% | 1,714 | 18,784 | 20,498 | 11.61% |
| A | 10,058 | 48,341 | 58,399 | 30.15% | 8,594 | 44,359 | 52,953 | 32.32% | 6,228 | 53,655 | 59,883 | 33.92% |
| BBB | 5,181 | 29,900 | 35,081 | 18.11% | 5,234 | 20,304 | 25,538 | 15.59% | 6,515 | 31,204 | 37,719 | 21.36% |
| Below BBB | 2,974 | 33,657 | 36,631 | 18.91% | 3,584 | 30,823 | 34,407 | 21.00% | 3,431 | 35,164 | 38,595 | 21.86% |
| Unrated | 4,586 | — | 4,586 | 2.37% | 4,866 | — | 4,866 | 2.97% | 3,611 | 61 | 3,672 | 2.08% |
| | 45,822 | 147,894 | 193,716 | 100% | 40,239 | 123,614 | 163,853 | 100% | 35,587 | 140,967 | 176,554 | 100% |

During 2022, 2021 and 2020, 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 2022, 2021 and 2020, net of impairment losses, is as follows:

| EUR million | 2022 | 2021 | 2020 |
|----------------------------|---------------|---------------|---------------|
| Securitised mortgage bonds | 9,222 | 5,806 | 5,926 |
| Other asset-backed bonds | 7,120 | 6,304 | 5,479 |
| Floating rate debt | 12,397 | 8,081 | 7,829 |
| Fixed rate debt | 17,083 | 20,048 | 16,353 |
| Total | 45,822 | 40,239 | 35,587 |

c) Impairment losses

The changes in the impairment losses on debt securities are summarised below:

| EUR million | 2022 | 2021 | 2020 |
|---|------------|------------|------------|
| Balance at beginning of year | 215 | 284 | 474 |
| Net impairment losses for the year ^A | 16 | 28 | 79 |
| <i>Of which:</i> | | | |
| <i>Impairment losses charged to income</i> | 30 | 49 | 91 |
| <i>Impairment losses reversed with a credit to income</i> | (14) | (21) | (12) |
| Exchange differences and other items | (5) | (97) | (269) |
| Balance at end of year | 226 | 215 | 284 |
| <i>Of which:</i> | | | |
| <i>By geographical location of risk:</i> | | | |
| <i>European Union</i> | 26 | 25 | 21 |
| <i>Latin America</i> | 200 | 190 | 263 |

A. Of the EUR 16 million corresponding to net provisions for the year ended 31 December 2022 (EUR 28 million and EUR 79 million at 31 December 2021 and 2020, respectively), EUR 17 million relates to financial assets at amortized cost (EUR 31 million and EUR 77 million at 31 December 2021 and 2020, respectively) and EUR -1 million relates to financial assets designated at fair value through other comprehensive income (EUR -3 million and EUR 2 million at 31 December 2021 and 2020, respectively).

At 31 December 2022, 2021 and 2020 the loan loss provision by impairment stage of the assets accounted for under IFRS9 amounted to EUR 25 million, EUR 26 million and EUR 25 million in stage 1, EUR 2 million, EUR 8 million and EUR 2 million in stage 2, and EUR 199 million, EUR 181 million and EUR 257 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 | 2022 | 2021 | 2020 |
|---|---------------|---------------|---------------|
| Classification | | | |
| Financial assets held for trading | 10,066 | 15,077 | 9,615 |
| Non-trading financial assets mandatorily at fair value through profit or loss | 3,711 | 4,042 | 3,234 |
| Financial assets designated at fair value through other comprehensive income | 1,941 | 2,453 | 2,783 |
| | 15,718 | 21,572 | 15,632 |
| Type | | | |
| Shares of Spanish companies | 3,284 | 3,896 | 3,364 |
| Shares of foreign companies | 10,494 | 15,184 | 10,437 |
| Shares of investment funds | 1,940 | 2,492 | 1,831 |
| | 15,718 | 21,572 | 15,632 |

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 | 2022 | 2021 | 2020 |
|---|--------------|--------------|--------------|
| Balance at beginning of the year | 2,453 | 2,783 | 2,863 |
| Net additions (disposals) | (33) | (276) | 833 |
| Changes in the fair value of equity instruments measured at fair value through other comprehensive income (EIGR) ^A | (497) | (171) | (917) |
| Changes in the RV hedged with micro-hedging transactions | 18 | 117 | 4 |
| Balance at end of year | 1,941 | 2,453 | 2,783 |

A. 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 2022, 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 | 2022 | | 2021 | | 2020 | |
|---------------|--------------------|----------------|---------------|----------------|---------------|----------------|
| | Debit balance | Credit balance | Debit balance | Credit balance | Debit balance | Credit balance |
| | Interest rate risk | 38,789 | 37,641 | 31,884 | 30,192 | 43,832 |
| Currency risk | 26,391 | 26,063 | 19,823 | 21,894 | 21,162 | 22,028 |
| Price risk | 1,347 | 817 | 1,498 | 891 | 1,931 | 944 |
| Other risks | 475 | 370 | 1,087 | 589 | 212 | 412 |
| | 67,002 | 64,891 | 54,292 | 53,566 | 67,137 | 64,469 |

b) Short positions

Following is a breakdown of the short positions (liabilities):

| EUR million | 2022 | 2021 | 2020 |
|--|---------------|---------------|---------------|
| Borrowed securities | | | |
| Debt instruments | 1,979 | 825 | 625 |
| Of which: | | | |
| Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México | 1,362 | 825 | 625 |
| Banco Santander, S.A. | 617 | — | — |
| Equity instruments | 993 | 389 | 289 |
| Of which: | | | |
| Banco Santander, S.A. | 934 | 318 | 289 |
| Short sales | | | |
| Debt instruments | 19,543 | 11,022 | 15,784 |
| Of which: | | | |
| Banco Santander, S.A. | 12,902 | 8,926 | 8,645 |
| Banco Santander (Brasil) S.A. | 3,857 | 1,952 | 7,085 |
| Pierpont Capital Holdings LLC | 2,690 | — | — |
| Equity instruments | — | — | — |
| | 22,515 | 12,236 | 16,698 |

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 | 2022 | 2021 | 2020 |
|---|------------------|----------------|----------------|
| Financial assets held for trading | 9,550 | 6,829 | 296 |
| Non-trading financial assets mandatorily at fair value through profit or loss | 868 | 537 | 552 |
| Financial assets designated at fair value through profit or loss | 5,774 | 10,289 | 24,121 |
| Financial assets at fair value through other comprehensive income | 8,215 | 7,663 | 9,267 |
| Financial assets at amortized cost | 1,011,597 | 947,364 | 881,963 |
| Of which: | | | |
| Impairment losses | (22,684) | (22,964) | (23,595) |
| | 1,036,004 | 972,682 | 916,199 |
| Loans and advances to customers disregarding impairment losses | 1,058,688 | 995,646 | 939,794 |

Note 50 contains a detail of the residual maturity periods of 'Financial assets at amortized cost'.

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 | | | |
|-----------------------------------|------------------|----------------|----------------|
| | 2022 | 2021 | 2020 |
| Loan type and status | | | |
| Commercial credit | 56,688 | 49,603 | 37,459 |
| Secured loans | 565,609 | 542,404 | 503,014 |
| Reverse repurchase agreements | 39,500 | 33,264 | 35,702 |
| Other term loans | 290,031 | 269,526 | 269,143 |
| Finance leases | 39,833 | 38,503 | 36,251 |
| Receivable on demand | 11,435 | 10,304 | 7,903 |
| Credit cards receivables | 22,704 | 20,397 | 19,507 |
| Impaired assets | 32,888 | 31,645 | 30,815 |
| | 1,058,688 | 995,646 | 939,794 |
| Geographical area | | | |
| Spain | 212,804 | 216,741 | 215,330 |
| European Union (excluding Spain) | 202,958 | 190,032 | 192,988 |
| United States and Puerto Rico | 125,436 | 102,491 | 93,405 |
| Other OECD countries ^A | 385,906 | 374,729 | 338,362 |
| South America (non - OECD) | 112,803 | 94,010 | 79,629 |
| Rest of the world | 18,781 | 17,643 | 20,080 |
| | 1,058,688 | 995,646 | 939,794 |
| Interest rate formula | | | |
| Fixed rate | 642,537 | 593,645 | 550,883 |
| Floating rate | 416,151 | 402,001 | 388,911 |
| | 1,058,688 | 995,646 | 939,794 |

A. Includes, mainly, customers from the United Kingdom.

At 31 December 2022, 2021 and 2020 the Group had granted loans amounting to EUR 14,698 million, EUR 14,131 million and EUR 12,104 million to Spanish public sector agencies which had a rating at 31 December 2022 of A (ratings of A at 31 December 2021 and 31 December 2020), and EUR 12,467 million, EUR 10,263 million, and EUR 10,779 million to the public sector in other countries (at 31 December 2022, the breakdown of this amount by issuer rating was as follows: 3.6% AAA, 17% AA, 1% A, 70.8% BBB, 6.8% below BBB and 0.8% without rating).

Without considering the public administrations, the amount of the loans and advances at 31 December 2022, 2021 and 2020 amounts to EUR 1,031,523 million, EUR 916,911 million and EUR 942,249 million, of which, EUR 998,689 million, EUR 939,645 million and EUR 886,118 million are classified as performing, respectively.

Following is a detail, by activity, of the loans to customers at 31 December 2022, net of impairment losses:

EUR million

| | Secured loans | | | | | | | | | |
|--|------------------|--------------------|------------------------------|---------------------------|----------------------------------|---|---|--|----------------|--|
| | Net exposure | | | | Loan to value ratio ^C | | | | | |
| | 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 | 24,436 | 23,410 | 157 | 869 | 66 | 73 | 18 | 862 | 7 | |
| Other financial institutions (financial business activity) | 83,091 | 28,950 | 5,223 | 48,918 | 4,172 | 2,677 | 739 | 45,934 | 619 | |
| Non-financial corporations and individual entrepreneurs (non-financial business activity) (broken down by purpose) | 345,083 | 195,015 | 70,063 | 80,005 | 25,973 | 25,327 | 19,813 | 55,306 | 23,649 | |
| <i>Of which:</i> | | | | | | | | | | |
| <i>Construction and property development</i> | 20,320 | 1,561 | 17,673 | 1,086 | 6,572 | 6,251 | 2,027 | 2,188 | 1,721 | |
| <i>Civil engineering construction</i> | 2,959 | 1,895 | 149 | 915 | 59 | 109 | 139 | 715 | 42 | |
| <i>Large companies</i> | 188,730 | 127,137 | 19,751 | 41,842 | 8,650 | 6,642 | 6,690 | 29,228 | 10,383 | |
| <i>SMEs and individual entrepreneurs</i> | 133,074 | 64,422 | 32,490 | 36,162 | 10,692 | 12,325 | 10,957 | 23,175 | 11,503 | |
| Households – other (broken down by purpose) | 562,078 | 105,335 | 368,242 | 88,501 | 104,249 | 126,361 | 127,779 | 64,685 | 33,669 | |
| <i>Of which:</i> | | | | | | | | | | |
| <i>Residential</i> | 361,235 | 1,524 | 359,072 | 639 | 97,155 | 118,774 | 116,484 | 24,415 | 2,883 | |
| <i>Consumer loans</i> | 182,097 | 100,686 | 2,118 | 79,293 | 3,436 | 5,183 | 8,294 | 34,501 | 29,997 | |
| <i>Other purposes</i> | 18,746 | 3,125 | 7,052 | 8,569 | 3,658 | 2,404 | 3,001 | 5,769 | 789 | |
| Total^A | 1,014,688 | 352,710 | 443,685 | 218,293 | 134,460 | 154,438 | 148,349 | 166,787 | 57,944 | |
| <i>Memorandum item</i> | | | | | | | | | | |
| <i>Refinanced and restructured transactions^B</i> | 25,907 | 11,662 | 9,001 | 5,244 | 3,566 | 2,006 | 3,611 | 3,422 | 1,640 | |

A. In addition, the Group has granted advances to customers amounting to EUR 21,316 million, bringing the total of loans and advances to EUR 1,036,004 million.

B. Includes the net balance of the impairment of the accumulated value or accumulated losses in the fair value due to credit risk.

C. The ratio is the carrying amount of the transactions at 31 December 2022 provided by the latest available appraisal value of the collateral.

Note 53 contains information relating to the forbore 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 2022, 2021 and 2020:

2022

| EUR million | | | | |
|---------------------------------------|----------------|---------------|---------------|------------------|
| | Stage 1 | Stage 2 | Stage 3 | Total |
| Balance at the beginning of year | 878,700 | 67,584 | 31,287 | 977,571 |
| Movements | | | | |
| Transfers | | | | |
| To stage 2 from stage 1 | (31,811) | 31,811 | | — |
| To stage 3 from stage 1 ^A | (11,143) | | 11,143 | — |
| To stage 3 from stage 2 | | (8,487) | 8,487 | — |
| To stage 1 from stage 2 | 18,907 | (18,907) | | — |
| To stage 2 from stage 3 | | 3,250 | (3,250) | — |
| To stage 1 from stage 3 | 456 | | (456) | — |
| Net changes on financial assets | 86,459 | (8,839) | (2,568) | 75,052 |
| Write-offs | — | — | (12,235) | (12,235) |
| Exchange differences and others | 1,293 | 284 | 209 | 1,786 |
| Balance at the end of the year | 942,861 | 66,696 | 32,617 | 1,042,174 |

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 |

A. It includes the effect of the stage 3 definition alignment with the accounting default definition, mainly by Santander Consumer USA.

In addition, at 31 December 2022, the Group had EUR 322 million (EUR 420 million at 31 December 2021 and EUR 497 million at 31 December 2020) of exposure in assets purchased with impairment of which EUR 271 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 | 2022 | 2021 | 2020 |
|--|---------------|---------------|---------------|
| Amount at beginning of the year | 22,964 | 23,595 | 22,242 |
| Impairment losses charged to income for the year | 11,676 | 8,762 | 13,385 |
| <i>Of which:</i> | | | |
| <i>Impairment losses charged to profit or loss</i> | 19,879 | 18,240 | 20,909 |
| <i>Impairment losses reversed with a credit to profit or loss</i> | (8,203) | (9,478) | (7,524) |
| Change of perimeter | — | — | (82) |
| Write-off of impaired balances against recorded impairment allowance | (12,235) | (9,089) | (8,930) |
| Exchange differences and other changes | 279 | (304) | (3,020) |
| Amount at end of the year | 22,684 | 22,964 | 23,595 |
| <i>Which correspond to:</i> | | | |
| <i>Impaired assets</i> | 13,931 | 13,550 | 13,658 |
| <i>Other assets</i> | 8,753 | 9,414 | 9,937 |
| <i>Of which:</i> | | | |
| <i>Individually calculated</i> | 2,493 | 2,496 | 2,679 |
| <i>Collective calculated</i> | 20,191 | 20,468 | 20,916 |

In addition, provisions for debt securities amounting to EUR 16 million were recorded at 31 December 2022 (provisions amounting to EUR 28 million and EUR 79 million as of 31 December 2021 and 2020, respectively), written-off assets recoveries have been recorded in the year amounting to EUR 1,459 million at 31 December 2022 (EUR 1,383 million and EUR 1,221 million at 31 December 2021 and 2020, respectively).

EUR 630 million were recorded in the account for losses on renegotiation or contractual modification at 31 December 2022 (EUR 0 and EUR 139 million at 31 December 2021 and 2020, respectively) mainly due to the impact, on the one hand, of the Moratorium law approved in July 2022 in Poland, and, on the other hand, of the adjustment of the gross amount of mortgage loans denominated and indexed to foreign currencies in this same country (see note 25.e.).

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 10,863 million at 31 December 2022 (EUR 7,407 million and EUR 12,382 million at 31 December 2021 and 2020, respectively).

Following is the movement of the loan loss provision broken down by impairment stage of loans and advances to customers during 2022, 2021 and 2020:

2022

| EUR million | Stage 1 | Stage 2 | Stage 3 | Total |
|--|--------------|--------------|---------------|---------------|
| Loss allowance at the beginning of the year | 4,188 | 5,226 | 13,550 | 22,964 |
| Transfers | | | | |
| To stage 2 from stage 1 | (713) | 3,046 | | 2,333 |
| To stage 3 from stage 1 | (557) | | 4,586 | 4,029 |
| To stage 3 from stage 2 | | (1,802) | 3,182 | 1,380 |
| To stage 1 from stage 2 | 215 | (894) | | (679) |
| To stage 2 from stage 3 | | 400 | (933) | (533) |
| To stage 1 from stage 3 | 9 | | (161) | (152) |
| Net changes of the exposure and modifications in the credit risk | 414 | (1,056) | 5,940 | 5,298 |
| Write-offs | — | — | (12,235) | (12,235) |
| FX and other movements | 70 | 207 | 2 | 279 |
| Loss allowance at the end of the year | 3,626 | 5,127 | 13,931 | 22,684 |

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 |

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 | | | |
|---------------------------------------|---------------|---------------|---------------|
| | 2022 | 2021 | 2020 |
| Balance at beginning of year | 31,645 | 30,815 | 32,543 |
| Net additions | 13,060 | 9,390 | 10,577 |
| Written-off assets | (12,235) | (9,089) | (8,930) |
| Changes in the scope of consolidation | — | — | (39) |
| Exchange differences and other | 418 | 529 | (3,336) |
| Balance at end of year | 32,888 | 31,645 | 30,815 |

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 2022, the Group's written-off assets totalled EUR 43,675 million (EUR 40,585 million and EUR 39,087 million at 31 December 2021 and 2020, 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 2022:

| EUR million | | | |
|------------------------------------|---------------|----------------------|---|
| | Gross amount | Allowance recognised | Estimated collateral value ^A |
| Without associated real collateral | 14,066 | 7,684 | — |
| With real estate collateral | 10,909 | 2,889 | 7,848 |
| With other collateral | 7,913 | 3,358 | 3,998 |
| Total | 32,888 | 13,931 | 11,846 |

A. 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 | | | |
|-------------------------------|---------------|---------------|---------------|
| | 2022 | 2021 | 2020 |
| Retained on the balance sheet | 82,603 | 80,600 | 88,662 |
| <i>Of which</i> | | | |
| Securitised mortgage assets | 16,265 | 19,523 | 30,145 |
| Of which: UK assets | 4,144 | 5,295 | 9,034 |
| Other securitised assets | 66,338 | 61,077 | 58,517 |
| Total^A | 82,603 | 80,600 | 88,662 |

A. Note 22 details the liabilities associated with these securitisation transactions.

At 31 December 2022, Grupo Santander had loans that had been fully derecognised and for which it retained servicing amounting to EUR 13,711 million (EUR 14,141 million and EUR 13,999 million at 31 December 2021 and 2020, respectively).



11. Trading derivatives

The detail of the notional amounts and the market values of the trading derivatives held by the Group in 2022, 2021 and 2020 is as follows:

EUR million

| | 2022 | | 2021 | | 2020 | |
|--|------------------|--------------|------------------|--------------|------------------|--------------|
| | Notional amount | Market value | Notional amount | Market value | Notional amount | Market value |
| Trading derivatives | | | | | | |
| Interest rate risk | | | | | | |
| Forward rate agreements | 100,579 | 22 | 147,603 | (11) | 515,889 | — |
| Interest rate swaps | 4,844,043 | 2,387 | 3,920,945 | 1,931 | 3,789,169 | 3,638 |
| Options, futures and other derivatives | 495,994 | (1,261) | 508,723 | (228) | 698,500 | (891) |
| Credit risk | | | | | | |
| Credit default swaps | 16,185 | (6) | 13,571 | 436 | 12,378 | (133) |
| Foreign currency risk | | | | | | |
| Foreign currency purchases and sales | 384,024 | 423 | 329,781 | (664) | 304,280 | (45) |
| Foreign currency options | 54,967 | 150 | 49,680 | (114) | 45,074 | (7) |
| Currency swaps | 496,441 | (245) | 430,644 | (1,293) | 394,178 | (814) |
| Securities and commodities derivatives and other | 71,237 | 641 | 69,850 | 669 | 70,861 | 920 |
| Total | 6,463,470 | 2,111 | 5,470,797 | 726 | 5,830,329 | 2,668 |

12. Non-current assets

The detail of Non-current assets held for sale in the consolidated balance sheets is as follows:

EUR million

| | 2022 | 2021 | 2020 |
|-------------------------------------|--------------|--------------|--------------|
| Tangible assets | 3,435 | 4,089 | 4,445 |
| Of which: | | | |
| Foreclosed assets | 3,101 | 3,651 | 4,081 |
| Of which property assets in Spain | 2,596 | 3,120 | 3,485 |
| Other tangible assets held for sale | 334 | 438 | 364 |
| Other assets | 18 | — | — |
| Total | 3,453 | 4,089 | 4,445 |

At 31 December 2022, the provisions recognised for the total non-current assets held for sale totalled EUR 3,425 million (EUR 3,811 million and EUR 4,104 million at 31 December 2021 and 2020, respectively). The charges recorded in those years amounted to EUR 204 million, EUR 239 million and EUR 250 million, respectively, and the recoveries during these exercises are amounted to EUR 110 million, EUR 98 million and EUR 35 million, respectively.

13. Investments

a) Breakdown

The detail, by company, of Investments is as follows:

| EUR million | 2022 | 2021 | 2020 |
|---|--------------|--------------|--------------|
| Associated entities | 5,634 | 5,833 | 6,130 |
| Merlin Properties, SOCIMI, S.A. | 1,653 | 1,640 | 1,581 |
| Caceis | 1,046 | 975 | 1,077 |
| Metrovacesa, S.A. | 979 | 1,087 | 1,157 |
| Zurich Santander Insurance America, S.L. - Consolidated | 916 | 826 | 955 |
| CNP Santander | 406 | 418 | 439 |
| Ebury Partners Limited (note 3) | — | 394 | 388 |
| Other companies | 634 | 493 | 533 |
| Joint Ventures entities | 1,981 | 1,692 | 1,492 |
| U.C.I., S.A. - Consolidated | 416 | 228 | 168 |
| Santander Caceis Latam Holding 1, S.L. - Consolidated (previously Santander Securities Services Latam Holding, S.L) | 359 | 334 | 326 |
| Santander Vida Seguros y Reaseguros, S.A. (note 3) | 356 | 378 | 381 |
| Fortune Auto Finance Co., Ltd | 244 | 222 | 172 |
| Hyundai Capital UK Limited | 223 | 201 | 151 |
| Banco RCI Brasil S.A. | 95 | 92 | 88 |
| Other companies | 288 | 237 | 206 |
| Total Associated entities and Joint ventures | 7,615 | 7,525 | 7,622 |

Of the entities included above, at 31 December 2022, 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 | 2022 | 2021 | 2020 |
|---|--------------|--------------|--------------|
| Goodwill | 1,508 | 1,723 | 1,862 |
| <i>Of which:</i> | | | |
| Zurich Santander Insurance America, S.L. - Consolidated | 526 | 526 | 526 |
| Caceis | 337 | 337 | 337 |

b) Changes

The changes in the investments were as follows:

| EUR million | 2022 | 2021 | 2020 |
|---|--------------|--------------|--------------|
| Balance at beginning of year | 7,525 | 7,622 | 8,772 |
| Acquisitions (disposals) of companies and capital increases (reductions) | 142 | 94 | 676 |
| <i>Of which:</i> | | | |
| Ebury Partners Limited (note 3) | — | — | 409 |
| Santander Vida Seguros y Reaseguros, S.A. (note 3) | — | — | 219 |
| Changes in the consolidation method (note 3) | (320) | — | (1,359) |
| <i>Of which:</i> | | | |
| Ebury Partners Limited | (382) | — | — |
| Project Quasar Investments 2017, S.L. | — | — | (956) |
| Popular Spain Holding de Inversiones, S.L.U. (former Allianz Popular, S.L.) | — | — | (409) |
| Effect of equity accounting | 702 | 432 | (96) |
| Dividends distributed and reimbursements of share premium | (560) | (662) | (186) |
| <i>Of which:</i> | | | |
| Zurich Santander Insurance America S.L. - Consolidated | (160) | (230) | (80) |
| Caceis | — | (144) | — |
| CNP Santander | (15) | (60) | — |
| Metrovacesa, S.A. | (124) | (60) | — |
| Santander Vida Seguros y Reaseguros, S.A. - Consolidated | (40) | (31) | (37) |
| Merlin Properties, SOCIMI, S.A. | (139) | (52) | (17) |
| Other global result | 70 | (13) | (1) |
| Exchange differences and other changes | 56 | 52 | (184) |
| Balance at end of year | 7,615 | 7,525 | 7,622 |

c) Impairment adjustments

During the years 2022, 2021 and 2020 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 2022 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. ^A | Metrovacesa, S.A. ^A | Caceis | Zurich Santander Insurance América, S.L. - Consolidated | CNP Santander | 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 | 1,038 | 2,200 | 36,702 | 1,027 | 166 | 191 | 308 | 2,593 | 176 | 79 | 5 |
| Non current assets | 13,234 | 577 | 87,638 | 16,216 | 2,168 | 497 | 11,228 | 2,064 | 1,863 | 1,725 | 1,939 |
| Total assets | 14,272 | 2,777 | 124,340 | 17,243 | 2,334 | 688 | 11,536 | 4,657 | 2,039 | 1,804 | 1,944 |
| Current liabilities | 737 | 364 | 9,629 | 337 | 19 | 188 | 182 | 2,346 | 29 | 190 | 109 |
| Non current liabilities | 6,508 | 334 | 110,251 | 15,907 | 1,907 | 10 | 10,574 | 1,868 | 1,521 | 1,051 | 1,582 |
| Total liabilities | 7,245 | 698 | 119,880 | 16,244 | 1,926 | 198 | 10,756 | 4,214 | 1,550 | 1,241 | 1,691 |
| Attributable profit for the period | 512 | 18 | 278 | 471 | 93 | 67 | (63) | 68 | 57 | 89 | 40 |
| Other accumulated comprehensive income | 32 | 1 | — | (759) | (86) | (242) | 280 | (19) | 12 | (51) | (217) |
| Rest of equity | 6,483 | 2,060 | 4,182 | 1,287 | 401 | 665 | 563 | 394 | 420 | 525 | 430 |
| Total Equity | 7,027 | 2,079 | 4,460 | 999 | 408 | 490 | 780 | 443 | 489 | 563 | 253 |
| Total liabilities and equity | 14,272 | 2,777 | 124,340 | 17,243 | 2,334 | 688 | 11,536 | 4,657 | 2,039 | 1,804 | 1,944 |
| Ordinary activities income | 551 | 511 | 2,770 | 4,771 | 816 | 120 | 263 | 809 | 257 | 784 | 292 |
| Profit (loss) from continuing operations | 512 | 18 | 278 | 471 | 93 | 67 | (63) | 68 | 57 | 89 | 40 |
| Profit (loss) for the year from discontinuing operations | — | — | — | — | — | — | — | — | — | — | — |

A. Data as of 31 December 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

| | 2022 | 2021 | 2020 |
|--|------------|------------|------------|
| Assets relating to insurance contracts covering post-employment benefit plan obligations: | | | |
| Banco Santander, S.A. | 104 | 149 | 174 |
| | 104 | 149 | 174 |



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

| Technical provisions for: | 2022 | | | 2021 | | | 2020 | | |
|---------------------------------------|--|-------------------|-------------------------|--|-------------------|-------------------------|--|-------------------|-------------------------|
| | 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 | 65 | (58) | 7 | 56 | (50) | 6 | 51 | (45) | 6 |
| Life insurance | 226 | (173) | 53 | 209 | (150) | 59 | 189 | (137) | 52 |
| <i>Unearned premiums and risks</i> | 163 | (150) | 13 | 146 | (130) | 16 | 126 | (122) | 4 |
| <i>Mathematical provisions</i> | 63 | (23) | 40 | 63 | (20) | 43 | 63 | (15) | 48 |
| Claims outstanding | 389 | (51) | 338 | 451 | (55) | 396 | 561 | (59) | 502 |
| Bonuses and rebates | 14 | (6) | 8 | 20 | (11) | 9 | 23 | (11) | 12 |
| Other technical provisions | 53 | (20) | 33 | 34 | (17) | 17 | 86 | (9) | 77 |
| | 747 | (308) | 439 | 770 | (283) | 487 | 910 | (261) | 649 |

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 2020 | 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 ^A | — | — | 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 |
| Additions / disposals (net) due to change in the scope of consolidation | 14 | 89 | — | 103 | 1 | — | — | 1 |
| Additions / disposals (net) | 604 | (822) | (64) | (282) | 109 ^A | — | — | 109 |
| Transfers, exchange differences and other items | 423 | 1,476 | 107 | 2,006 | 153 | — | — | 153 |
| Balance at 31 December 2022 | 26,570 | 25,166 | 1,580 | 53,316 | 4,692 | — | — | 4,692 |
| Accumulated depreciation | | | | | | | | |
| Balances at 1 January 2020 | (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) |
| Disposals due to change in the scope of consolidation | (7) | (30) | 4 | (33) | — | — | — | — |
| Disposals | 1,065 | 2,882 | 16 | 3,963 | 164 | — | — | 164 |
| Charge for the year | (1,821) | — | (13) | (1,834) | (636) | — | — | (636) |
| Transfers, exchange differences and other items | (114) | (3,192) | (30) | (3,336) | (4) | — | — | (4) |
| Balance at 31 December 2022 | (12,892) | (5,578) | (172) | (18,642) | (2,265) | — | — | (2,265) |

A. 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 2020 | (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) |
| Balance 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) |
| Balance at 31 December 2021 | (255) | (102) | (408) | (765) | (15) | — | — | (15) |
| Impairment charge for the year | (95) | (33) | (29) | (157) | (2) | — | — | (2) |
| Releases | 12 | 1 | 4 | 17 | 1 | — | — | 1 |
| Disposals due to change in the scope of consolidation | — | — | — | — | — | — | — | — |
| Disposals | 34 | 76 | 9 | 119 | 13 | — | — | 13 |
| Exchange differences and other | 115 | 25 | 45 | 185 | (11) | — | — | (11) |
| Balance at 31 December 2022 | (189) | (33) | (379) | (601) | (14) | — | — | (14) |
| Tangible assets, net | | | | | | | | |
| 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 |
| Balances at 31 December 2022 | 13,489 | 19,555 | 1,029 | 34,073 | 2,413 | 0 | 0 | 2,413 |

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:

| | Tangible assets for own use | | | | |
|--|-----------------------------|--------------------------|-------------------|-----------------|-----------------------|
| | Cost | Accumulated depreciation | Impairment losses | Carrying amount | Of which: for leasing |
| 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 |
| Land and buildings | 14,623 | (4,467) | (175) | 9,981 | 2,349 |
| IT equipment and fixtures | 5,285 | (3,984) | — | 1,301 | 53 |
| Furniture and vehicles | 6,445 | (4,389) | — | 2,056 | 11 |
| Construction in progress and other items | 217 | (52) | (14) | 151 | — |
| Balances at 31 December 2022 | 26,570 | (12,892) | (189) | 13,489 | 2,413 |

The carrying amount at 31 December 2022 in the foregoing table includes the following approximate amounts EUR 7,083 million (EUR 6,753 million at 31 December 2021 and EUR 6,299 million at 31 December 2020) 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 19,555 million that the Group had assigned to operating leases at 31 December 2022 (EUR 19,083 million and EUR 18,559 million at 31 December 2021 and 2020, respectively), EUR 13,389 million (EUR 13,630 million and EUR 13,473 million at 31 December 2021 and 2020, respectively) relate to vehicles of Santander US Auto's business. The variable lease payments of various items of this entity are not significant.

In addition, the maturity analysis of the undiscounted payments for assets leased out under operating leases from Santander US Auto is as follows:

| EUR million | 2022 |
|--------------------------|-------|
| Maturity Analysis | |
| 2023 | 2,811 |
| 2024 | 5,243 |
| 2025 | 4,762 |
| 2026 | 1,171 |

d) Tangible assets - Investment property

The fair value of investment property at 31 December 2022, 2021, 2020 amounted to EUR 1,153, 1,088 and 1,055 million, respectively. A comparison of the fair value of investment property at 31 December 2022, 2021 and 2020 with the net book value shows gross unrealised gains of EUR 124, 109 and 92 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 2022, 2021 and 2020 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 | 2022 | 2021 | 2020 |
|---|---------------|---------------|---------------|
| Banco Santander (Brasil) | 3,503 | 3,219 | 3,109 |
| SAM Investment Holdings Limited | 1,444 | 1,444 | 1,444 |
| Santander Consumer Germany | 1,304 | 1,304 | 1,314 |
| Santander Bank Polska | 1,075 | 1,095 | 1,104 |
| Santander Portugal | 1,040 | 1,040 | 1,040 |
| Santander US Auto | 1,039 | 979 | 904 |
| Santander España | 998 | 1,027 | 1,027 |
| Santander Holding USA (ex. Auto) ^A | 844 | 643 | 594 |
| Santander UK | 599 | 633 | 592 |
| Banco Santander - Chile | 548 | 516 | 571 |
| Grupo Financiero Santander (México) | 469 | 435 | 399 |
| Ebury Partners | 298 | — | — |
| Santander Consumer Nordics | 215 | 224 | 216 |
| Other companies | 365 | 154 | 157 |
| Total Goodwill | 13,741 | 12,713 | 12,471 |

A. Includes the Amherst Pierpont Securities LLC¹ business (see note 3).

The changes in goodwill were as follows:

| EUR million | 2022 | 2021 | 2020 |
|--|---------------|---------------|---------------|
| Balance at beginning of year | 12,713 | 12,471 | 24,246 |
| Additions (note 3) | 534 | 81 | 429 |
| Of which: | | | |
| Ebury Partners | 316 | — | — |
| Santander Holding USA (ex. Auto) ^A | 158 | — | — |
| SAM Investment Holdings Limited | — | — | 271 |
| Impairment losses | — | (6) | (10,100) |
| Of which: | | | |
| Santander UK | — | — | (6,101) |
| Santander Bank Polska | — | — | (1,192) |
| Santander Holding USA (ex. Auto) | — | — | (1,177) |
| Santander US Auto | — | — | (1,153) |
| Santander Consumer Nordics | — | — | (277) |
| Disposals or changes in scope of consolidation | — | — | — |
| Exchange differences and other items | 494 | 167 | (2,104) |
| Balance at end of year | 13,741 | 12,713 | 12,471 |

A. Acquisition of Amherst Pierpont Securities LLC (see note 3).

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 2022 there was an increase of EUR 494 million (an increase of EUR 167 million in 2021 and a decrease of EUR 2,104 million in 2020), 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 2022, the Group has not recognised any impairment losses.

During 2021, the Group recognised impairment losses of EUR 6 million of immaterial goodwill and 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 CGU 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. Those impairment losses 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.

Following is a detail of the main assumptions taken into account in determining the recoverable amount, at 2022 year-end, of the most significant cash-generating units which were valued using the discounted cash flow method:

| 2022 | | | |
|---|------------------|----------------------------|-------------------------------|
| | Projected period | Discount rate ^A | Nominal perpetual growth rate |
| Santander UK | 5 years | 11.1% | 2.5% |
| Santander Bank Polska | 5 years | 15.6% | 4.8% |
| Santander US Auto | 3 years | 12.2% | 2.8% |
| Santander Holding USA (ex. Auto) ^B | 5 years | 12.6% | 3.5% |
| Santander Consumer Germany | 5 years | 9.4% | 2.3% |
| SAM Investment Holdings, Limited | 5 years | 12.2% | 2.5% |
| Santander Portugal | 5 years | 11.1% | 2.3% |
| Santander Consumer Nordics | 5 years | 11.0% | 2.5% |

A. Post-tax discount rate.

B. 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 2021 and 2020 are presented below for comparison purposes:

| | Discount rate ^A | | Nominal perpetual growth rate | |
|---|----------------------------|-------|-------------------------------|------|
| | 2021 | 2020 | 2021 | 2020 |
| Santander UK | 9.2% | 9.5% | 2.3% | 2.3% |
| Santander Bank Polska | 10.3% | 10.0% | 3.5% | 3.5% |
| Santander US Auto | 10.6% | 10.7% | 1.5% | 1.5% |
| Santander Holding USA (ex. Auto) ^B | 11.6% | 11.6% | 3.0% | 2.5% |
| Santander Consumer Germany | 8.3% | 9.0% | 1.8% | 1.8% |
| SAM Investment Holdings, Limited | 10.4% | 10.1% | 2.5% | 2.5% |
| Santander Portugal | 9.7% | 9.8% | 1.8% | 1.8% |
| Santander Consumer Nordics | 9.9% | 10.1% | 2.0% | 2.0% |

A. Post-tax discount rate.

B. Weighted information of the main assumptions of the segments to which goodwill has been allocated.

The variations reflected in the assumptions used in 2022 are mainly a consequence of the current macroeconomic scenario, as well as the increasing level of inflation and difficulties in supply chains, which have led to a rapid increase in central banks' benchmark interest rates in the main countries where the Group's CGU are operating.

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 as reasonably possible changes in 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 2022, 2021, and 2020 is as follows:

EUR million

| | Estimated useful life | 31/12/2021 | Net additions and disposals | Change in scope of consolidation | Amortization and impairment | Application of amortization and impairment | Exchange differences and other | 31/12/2022 |
|--------------------------|-----------------------|---------------|-----------------------------|----------------------------------|-----------------------------|--|--------------------------------|---------------|
| Cost | | 10,712 | 1,757 | 381 | — | (511) | 163 | 12,502 |
| Brand names | | 4 | — | 27 | | — | 2 | 33 |
| IT developments | 3 -7 years | 9,189 | 1,748 | 153 | | (497) | 128 | 10,721 |
| Other | | 1,519 | 9 | 201 | | (14) | 33 | 1,748 |
| Accumulated amortisation | | (6,707) | — | — | (1,151) | 412 | (108) | (7,554) |
| <i>Development</i> | | (6,149) | — | — | (1,024) | 403 | (96) | (6,866) |
| <i>Other</i> | | (558) | — | — | (127) | 9 | (12) | (688) |
| Impairment losses | | (134) | — | — | (75) | 99 | 66 | (44) |
| <i>Of which addition</i> | | — | — | — | (75) | — | — | — |
| <i>Liberation</i> | | — | — | — | — | — | — | — |
| | | 3,871 | 1,757 | 381 | (1,226) | — | 121 | 4,904 |

EUR million

| | Estimated useful life | 31/12/2020 | Net additions and disposals | Change in scope of consolidation | Amortization and impairment | Application of amortization and impairment | Exchange differences and other | 31/12/2021 |
|--------------------------|-----------------------|--------------|-----------------------------|----------------------------------|-----------------------------|--|--------------------------------|---------------|
| 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) |
| <i>Development</i> | | (5,307) | — | (1) | (922) | 178 | (97) | (6,149) |
| <i>Other</i> | | (502) | — | (1) | (91) | 54 | (18) | (558) |
| Impairment losses | | (130) | — | — | (65) | 61 | — | (134) |
| <i>Of which addition</i> | | — | — | — | (65) | — | — | — |
| <i>Liberation</i> | | — | — | — | — | — | — | — |
| | | 3,437 | 1,409 | 3 | (1,078) | — | 100 | 3,871 |



EUR million

| | Estimated useful life | 31/12/2019 | Net additions and disposals | Change in scope of consolidation | Amortization and impairment | Application of amortization and impairment | Exchange differences and other | 31/12/2020 |
|--------------------------|-----------------------|--------------|-----------------------------|----------------------------------|-----------------------------|--|--------------------------------|--------------|
| 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) |
| <i>Development</i> | | (5,139) | — | 49 | (792) | 88 | 487 | (5,307) |
| <i>Other</i> | | (547) | 35 | — | (104) | 17 | 97 | (502) |
| Impairment losses | | (136) | — | — | (142) | 136 | 12 | (130) |
| <i>Of which addition</i> | | — | — | — | (142) | — | — | — |
| <i>Liberation</i> | | — | — | — | 0 | — | — | — |
| | | 3,441 | 1,486 | 16 | (1,038) | — | (468) | 3,437 |

In 2022, 2021 and 2020, impairment losses of EUR 75 million, EUR 65 million and EUR 142 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

| | 2022 | 2021 | 2020 |
|-----------------------------------|--------------|--------------|---------------|
| Transactions in transit | 83 | 157 | 88 |
| Net pension plan assets (note 25) | 1,345 | 1,990 | 635 |
| Prepayments and accrued income | 3,003 | 2,610 | 2,806 |
| Other (note 2.n) | 5,536 | 3,683 | 7,362 |
| | 9,967 | 8,440 | 10,891 |

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 | 2022 | 2021 | 2020 |
|---|----------------|----------------|----------------|
| CENTRAL BANKS | | | |
| Classification | | | |
| Financial liabilities held for trading | 5,757 | 1,038 | — |
| Financial liabilities designated at fair value through profit or loss | 1,740 | 607 | 2,490 |
| Financial liabilities at amortized cost | 76,952 | 139,757 | 112,804 |
| | 84,449 | 141,402 | 115,294 |
| Type | | | |
| Deposits on demand | — | 10 | 10 |
| Time deposits | 72,320 | 134,439 | 108,090 |
| Reverse repurchase agreements | 12,129 | 6,953 | 7,194 |
| | 84,449 | 141,402 | 115,294 |
| CREDIT INSTITUTIONS | | | |
| Classification | | | |
| Financial liabilities held for trading | 9,796 | 6,488 | — |
| Financial liabilities designated at fair value through profit or loss | 1,958 | 1,064 | 6,765 |
| Financial liabilities at amortized cost | 68,582 | 52,235 | 62,620 |
| | 80,336 | 59,787 | 69,385 |
| Type | | | |
| Deposits on demand | 6,808 | 6,139 | 5,727 |
| Time deposits | 49,221 | 37,332 | 43,308 |
| Reverse repurchase agreements | 24,245 | 16,198 | 20,179 |
| Subordinated deposits | 62 | 118 | 171 |
| | 80,336 | 59,787 | 69,385 |
| Currency | | | |
| Euro | 65,133 | 107,908 | 104,499 |
| Pound sterling | 35,357 | 42,451 | 23,339 |
| US dollar | 30,924 | 24,012 | 26,581 |
| Brazilian real | 14,195 | 11,297 | 12,356 |
| Other currencies | 19,176 | 15,521 | 17,904 |
| TOTAL | 164,785 | 201,189 | 184,679 |

At 31 December 2022, the balance of the conditional long-term financing of the European Central Bank (TLTRO- Targeted Long-Term Refinancing Operation-) amounts to EUR 33,536 million, which corresponds to TLRT0 III (EUR 88,894 million and EUR 77,732 million at 31 December 2021 and 2020, respectively).

At 31 December 2022, the income recognized in the consolidated income statement corresponding to TLTRO III amounts to EUR 489 million (EUR 868 million and EUR 391 million at 31 December 2021 and 2020, respectively).

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 | 2022 | 2021 | 2020 |
|---|------------------|----------------|----------------|
| Classification | | | |
| Financial liabilities held for trading | 12,226 | 6,141 | — |
| Financial liabilities designated at fair value through profit or loss | 46,822 | 25,608 | 34,343 |
| Financial liabilities at amortized cost | 966,353 | 886,595 | 814,967 |
| | 1,025,401 | 918,344 | 849,310 |
| Geographical area | | | |
| Spain | 399,112 | 319,565 | 294,516 |
| European Union (excluding Spain) | 115,323 | 112,361 | 106,013 |
| United Kingdom | 232,364 | 243,734 | 232,840 |
| United States and Puerto Rico | 87,497 | 73,814 | 59,057 |
| Rest of America | 181,782 | 159,381 | 147,300 |
| Rest of the world | 9,323 | 9,489 | 9,584 |
| | 1,025,401 | 918,344 | 849,310 |
| Type | | | |
| Demand deposits- | 710,232 | 717,728 | 642,897 |
| <i>Current accounts</i> | 477,739 | 482,649 | 418,752 |
| <i>Savings accounts</i> | 225,445 | 227,318 | 216,500 |
| <i>Other demand deposits</i> | 7,048 | 7,761 | 7,645 |
| Time deposits- | 251,778 | 164,259 | 171,939 |
| <i>Fixed-term deposits and other term deposits</i> | 248,298 | 162,172 | 170,127 |
| <i>Home-purchase savings accounts</i> | 38 | 38 | 43 |
| <i>Discount deposits</i> | — | 3 | 3 |
| <i>Hybrid financial liabilities</i> | 3,296 | 1,906 | 1,743 |
| <i>Subordinated liabilities</i> | 146 | 140 | 23 |
| Repurchase agreements | 63,391 | 36,357 | 34,474 |
| | 1,025,401 | 918,344 | 849,310 |

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 | 2022 | 2021 | 2020 |
|---|----------------|----------------|----------------|
| Classification | | | |
| Financial liabilities held for trading | — | — | — |
| Financial liabilities designated at fair value through profit or loss | 5,427 | 5,454 | 4,440 |
| Financial liabilities at amortized cost | 274,912 | 240,709 | 230,829 |
| | 280,339 | 246,163 | 235,269 |
| Type | | | |
| Bonds and debentures outstanding | 211,597 | 194,362 | 191,577 |
| Subordinated | 25,717 | 25,938 | 21,686 |
| Notes and other securities | 43,025 | 25,863 | 22,006 |
| | 280,339 | 246,163 | 235,269 |

The distribution of the book value of debt securities issued by contractual maturity at 31 December 2022 is shown below:

| EUR million | Within 3 months | 3 to 12 months | 1 to 3 years | 3 to 5 years | More than 5 years | Total |
|---------------------------------------|-----------------|----------------|---------------|---------------|-------------------|----------------|
| Subordinated debt | — | 678 | 3,706 | 3,774 | 17,559 | 25,717 |
| Senior unsecured debt | 5,224 | 13,924 | 48,113 | 31,854 | 28,342 | 127,457 |
| Senior secured debt | 4,204 | 15,445 | 30,808 | 20,786 | 12,897 | 84,140 |
| Promissory notes and other securities | 25,659 | 17,366 | — | — | — | 43,025 |
| Debt securities issued | 35,087 | 47,413 | 82,627 | 56,414 | 58,798 | 280,339 |

The distribution by contractual maturity of the notional amounts of these debt securities issued at 31 December 2022 is as follows:

| EUR million | Within 3 months | 3 to 12 months | 1 to 3 years | 3 to 5 years | More than 5 years | Total |
|---------------------------------------|-----------------|----------------|---------------|---------------|-------------------|----------------|
| Subordinated debt | — | 663 | 3,728 | 3,810 | 17,502 | 25,703 |
| Senior unsecured debt | 5,255 | 14,006 | 48,398 | 32,042 | 28,510 | 128,211 |
| Senior secured debt | 4,203 | 15,440 | 30,799 | 20,780 | 12,892 | 84,114 |
| Promissory notes and other securities | 25,647 | 17,358 | — | — | — | 43,005 |
| Debt securities issued | 35,105 | 47,467 | 82,925 | 56,632 | 58,904 | 281,033 |

**b) Bonds and debentures outstanding**

The detail, by currency of issue, of 'Bonds and debentures outstanding' is as follows:

| Currency of issue | EUR million | | | 2022 | |
|-------------------------------|----------------|----------------|----------------|--|--------------------------|
| | 2022 | 2021 | 2020 | Outstanding issue amount in foreign currency (Million) | Annual interest rate (%) |
| Euro | 87,295 | 90,348 | 89,031 | 87,295 | 1.38% |
| US dollar | 75,798 | 66,581 | 61,174 | 80,930 | 3.10% |
| Pound sterling | 15,883 | 13,340 | 16,569 | 14,084 | 2.81% |
| Brazilian real | 18,024 | 9,131 | 8,398 | 101,835 | 12.52% |
| Chilean peso | 4,653 | 3,757 | 5,624 | 4,230,507 | 2.74% |
| Other currencies | 9,944 | 11,205 | 10,781 | | |
| Balance at end of year | 211,597 | 194,362 | 191,577 | | |

The changes in 'Bonds and debentures outstanding' were as follows:

| EUR million | 2022 | 2021 | 2020 |
|---|-----------------|-----------------|-----------------|
| Balance at beginning of year | 194,362 | 191,577 | 208,455 |
| Net inclusion of entities in the Group | — | — | 785 |
| Issues | 66,033 | 59,937 | 54,905 |
| <i>Of which:</i> | | | |
| <i>Banco Santander, S.A.</i> | 19,243 | 11,766 | 10,220 |
| <i>Santander Consumer USA Holdings Inc.</i> | 13,315 | 15,771 | 12,246 |
| <i>Banco Santander (Brasil) S.A.</i> | 11,233 | 14,996 | 11,036 |
| <i>Santander UK Group Holdings plc</i> | 10,178 | 3,372 | 6,320 |
| <i>Santander Holdings USA, Inc.</i> | 2,315 | — | 1,269 |
| <i>Banco Santander - Chile</i> | 1,486 | 1,158 | 766 |
| <i>Santander Consumer Finance, S.A.</i> | 1,293 | 1,169 | 2,394 |
| <i>Santander Bank, National Association</i> | 1,222 | 252 | — |
| <i>SC Germany S.A., Compartment Consumer 2022-1</i> | 972 | — | — |
| <i>Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México</i> | 837 | 541 | 1,770 |
| <i>PSA Financial Services Spain, E.F.C., S.A.</i> | 706 | — | 605 |
| <i>Santander Consumer Bank AS</i> | 619 | 779 | 773 |
| <i>Santander International Products, Plc.</i> | 599 | 914 | 1,588 |
| <i>PSA Banque France</i> | 60 | 815 | 385 |
| <i>Santander Factoring Sp. z o.o.</i> | 32 | 819 | 391 |
| <i>PSA Bank Deutschland GmbH</i> | 20 | 600 | — |
| <i>Santander Consumo 4, F.T.</i> | — | 1,531 | — |
| <i>SC Germany S.A., Compartment Consumer 2021-1</i> | — | 1,496 | — |
| <i>Auto ABS French Lease Master Compartment 2016</i> | — | 900 | 300 |
| <i>SC Germany S.A., Compartment Consumer 2020-1</i> | — | — | 1,800 |
| <i>SCF Rahoituspalvelut IX DAC</i> | — | — | 650 |
| Redemptions and repurchases | (49,903) | (61,846) | (62,699) |
| <i>Of which:</i> | | | |
| <i>Santander Consumer USA Holdings Inc.</i> | (15,252) | (15,151) | (13,959) |
| <i>Banco Santander, S.A.</i> | (9,297) | (3,185) | (5,991) |
| <i>Santander UK Group Holdings plc</i> | (5,267) | (14,695) | (14,102) |
| <i>Santander Consumer Finance, S.A.</i> | (3,357) | (3,779) | (4,371) |
| <i>Santander Holdings USA, Inc.</i> | (3,153) | (778) | (1,201) |
| <i>Banco Santander (Brasil) S.A.</i> | (2,721) | (15,182) | (14,211) |
| <i>Banco Santander - Chile</i> | (1,452) | (1,030) | (1,974) |
| <i>Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México</i> | (1,316) | (411) | (415) |
| <i>PSA Banque France</i> | (1,165) | (335) | (684) |
| <i>Santander Consumer Bank AS</i> | (972) | (348) | (936) |
| <i>SC Germany S.A., Compartment Consumer 2020-1</i> | (724) | (92) | — |
| <i>Santander Leasing S.A.</i> | (590) | (291) | (460) |
| <i>Santander Consumer Bank AG</i> | (500) | — | — |
| <i>Santander Factoring Sp. z o.o.</i> | (142) | (920) | (299) |
| <i>Banco Santander Totta, S.A.</i> | (62) | (9) | (784) |
| <i>Auto ABS French Lease Master Compartment 2016</i> | — | (900) | — |
| Exchange differences and other movements | 1,105 | 4,694 | (9,869) |
| Balance at year-end | 211,597 | 194,362 | 191,577 |

c) Notes and other securities

The notes of the Group (see Note 22.a) 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 and Banco Santander S.A. - Uruguay.

d) Guarantees

Set forth below is information on the liabilities secured by assets:

| EUR million | 2022 | 2021 | 2020 |
|--------------------------------------|---------------|---------------|---------------|
| Asset-backed securities | 40,138 | 40,519 | 35,753 |
| Of which, mortgage-backed securities | 1,549 | 1,487 | 2,274 |
| Other mortgage securities | 43,650 | 41,779 | 49,425 |
| Of which: mortgage-backed bonds | 22,049 | 23,197 | 24,736 |
| Territorial covered bond | 352 | 630 | 869 |
| | 84,140 | 82,928 | 86,047 |

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:

- a. 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.
- b. 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.

Additionally, Banco Santander, S.A. issues internationalization certificates, which are securities whose capital and interest are guaranteed by loans and credits that are linked to the financing of export contracts or the internationalization of companies. These internationalization certificates have been fully repurchased by Banco Santander, S.A.

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 scantily material taking into account the Consolidated financial statements as a whole.

e) Mortgage-backed bonds

The members of the board of directors state that Banco Santander operates in the field of issuances in the Spanish mortgage market, has and has established express policies and procedures that cover all the activities carried out and that guarantee strict compliance with the mortgage market regulations applicable to these activities for the purposes of the provisions of Bank of Spain Circular 4/2017.

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 Articles 18.1 and 21 of RDL 24/2021, 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 fully comply 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 currently required by Bank of Spain circular 4/2017:

| EUR million | 2022 | 2021 | 2020 |
|--|--------|--------|--------|
| 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) | 80,946 | 83,088 | 76,554 |
| <i>Of which:</i> | | | |
| <i>Loans eligible to cover issues of mortgage-backed securities</i> | 65,779 | 64,896 | 57,382 |
| <i>Transfers of assets retained on balance sheet: mortgage-backed certificates and other securitised mortgage assets</i> | 9,769 | 11,133 | 17,610 |

The mortgage bonds issued by Banco Santander are securities that, without prejudice to the universal patrimonial responsibility of the issuer, and in accordance with the provisions of RDL 24/2021, are specially guaranteed, together with the rest of the issuer's obligations under a preferential right on all the assets that make up the Mortgage Bonds Coverage Set at any time without the need to affect said assets as collateral by means of a public deed, or any registration in any public registry or any other formality.

The Mortgage Bonds Coverage Set is made up of: (i) admissible mortgage loans in accordance with the provisions of article 23 of RDL 24/2021, although it may also be made up of, likewise, (ii) admissible liquid assets in accordance with the contained in article 11 of RDL 24/2021, (iii) admissible substitution assets in accordance with the provisions of the third section of article 23 of RDL 24/2021 and (iv) admissible derivative instruments in accordance with the provisions of article 12 of the RDL 24/2021, in the quantity and with the characteristics provided for in RDL 24/2021.

Mortgage bonds incorporate the credit right of their holder against the issuing entity, guaranteed in the manner indicated in the previous paragraph, and are accompanied by execution to claim payment from the issuer after its expiration. The holders of these titles have the character of singularly privileged creditors, with the preference currently indicated in numbers 8 of article 1,922 and 6 of article 1,923 of the Civil Code over any other creditors, in relation to all the assets that integrate the Mortgage Bonds Coverage Set. Pursuant to current regulations, all holders of the Issuer's covered bonds, regardless of their issuance date, will have the same priority over the assets included in the Mortgage Bonds Coverage Set.

In the event of bankruptcy, holders of identity cards, as long as they are not considered 'persons specially related' to the issuing entity in accordance with Royal Legislative Decree 1/2020, of May 5, which approves the consolidated text of the Bankruptcy Law (the 'Bankruptcy Law'), would enjoy the special privilege established in number 7 of article 270 of the aforementioned Bankruptcy Law, which will only apply to the part of the bankruptcy credit that does not exceed the value of the guarantee (calculated in accordance with article 44 of RDL 24/2021). Pursuant to the provisions of said Chapter, in the event of bankruptcy of the Issuer, the coverage assets of the Mortgage Bonds Coverage Set individualized and identified in the special register where the Mortgage Bonds Coverage Set is segregated in accordance with the certification issued by the mortgage bond control body will be materially segregated from the issuer's equity and will form a separate equity that will operate in legal transactions represented by a special administrator.



Once the segregation has been carried out, in accordance with the provisions of article 44.2 of RDL 24/2021, if the total value of the assets that make up each separate patrimony is greater than the total value of the liabilities guaranteed by said separate patrimony plus the legal over-guarantee, contractual or voluntary and the liquidity requirement, the special administrator may decide whether to continue with the current management of the corresponding separate equity until its maturity or make a total or partial assignment of the separate equity to another entity issuing guaranteed bonds. Otherwise, the special administrator will request the liquidation of said separate patrimony following the ordinary bankruptcy procedure. The request for liquidation of the separate patrimony will produce (a) the early maturity of all the issuer's securities guaranteed by the assets that make up the separate patrimony and (b) the beginning of the liquidation of the assets of the separate patrimony. With the amount obtained in the liquidation of the separate patrimony, after deducting the expenses and costs derived from the liquidation of the same, including the remuneration of the special administrator, the holders of the mortgage bonds and the counterparties of derivative contracts included in the Mortgage Bonds Coverage Set (if applicable), in proportion to their credits regardless of the age of the debt. If, once the liquidation of the separate equity has been completed or all its liabilities have expired, there is a remainder, this will correspond to the active mass of the issuer's bankruptcy. If, on the contrary, full satisfaction of the credit is not achieved, in accordance with the provisions of article 42.1 of RDL 24/2021, the unsatisfied part will be recognized in the issuer's bankruptcy with the same priority as that of the rights of credit of the ordinary unsecured creditors of the issuer.

Grupo Santander has a balance corresponding to mortgage bonds at December 31, 2022 of EUR 22,049 million (all of them issued in euros), which correspond to issues of Banco Santander, SA (with an outstanding face value of EUR 22,099 million). The individual annual accounts of this company detail the issues at 31 December of 2022 and 2021.

The issuing entity may repay the mortgage bonds early, if this has been expressly established in the final conditions of the issue in question and in the conditions established there.

None of the mortgage bonds issued by Banco Santander have replacement assets involved.

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:

| Currency of issue | EUR million | | | 2022 | |
|-------------------------------|---------------|---------------|---------------|--|--------------------------|
| | 2022 | 2021 | 2020 | Outstanding issue amount in foreign currency (million) | Annual interest rate (%) |
| Euro | 12,940 | 13,857 | 13,570 | 12,940 | 3.40% |
| US dollar | 8,438 | 8,236 | 5,991 | 9,009 | 4.91% |
| Pound sterling | 1,358 | 1,535 | 565 | 1,204 | 4.18% |
| Brazilian real | 1,127 | 879 | — | 6,367 | 14.77% |
| Other currencies | 2,063 | 1,689 | 1,754 | | |
| Balance at end of year | 25,926 | 26,196 | 21,880 | | |

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 | 2022 | 2021 | 2020 |
|---|---------------|---------------|---------------|
| Balance at beginning of year | 26,196 | 21,880 | 21,062 |
| Issuances ^A | 119 | 5,340 | 4,075 |
| <i>Of which:</i> | | | |
| <i>Banco Santander - Chile</i> | 113 | — | 353 |
| <i>Banco Santander, S.A.</i> | — | 4,469 | 3,722 |
| <i>Banco Santander (Brasil) S.A.</i> | — | 871 | — |
| Redemptions and repurchases ^A | (1,040) | (1,500) | (2,838) |
| <i>Of which:</i> | | | |
| <i>Banco Santander, S.A.</i> | (889) | (1,500) | (1,671) |
| <i>Santander UK plc</i> | (98) | — | (740) |
| <i>Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México</i> | (52) | — | — |
| <i>Santander UK Group Holdings plc</i> | — | — | (316) |
| Santander Bank, National Association | — | — | (111) |
| Exchange differences and other movements | 651 | 476 | (419) |
| Balance at end of year | 25,926 | 26,196 | 21,880 |

A. The balance relating to issuances, redemptions and repurchases (EUR 921 million), together with the interest paid in remuneration of these issuances including PPCC (EUR 1,251 million), is included in the cash flow from financing activities.

c) Other disclosures

This caption includes contingent convertible 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.

On July 6, 2022 and July 20, 2022, two subordinated issues matured for a nominal amount of EUR 114 million and EUR 25 million, respectively.

At 25 April 2022, Banco Santander, S.A. proceeded to prepay all the Tier 1 Contingently Convertible Preferred Securities with ISIN code XS1602466424 and common code 160246642 in circulation, for a total nominal amount of EUR 750 million and which were traded on the Irish Stock Market 'Global Exchange Market' (the 'PPCC').

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 US 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 was carried out at par and the remuneration of the PPCC, whose payment is subject to certain conditions and is also discretionary, was 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 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 ten-year subordinated debenture issue of EUR 1,250 million was carried out. The issue accrues annual interest of 2.125% payable annually.

At 29 September 2017, Banco Santander, S.A. carried out issues of 'PPCCs', for a nominal amount of EUR 1,000 million. The remuneration of the PPCC, the payment of which is subject to certain conditions and is also discretionary, was set 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).

Issues by Banco Santander - Chile

In January 2022, Banco Santander Chile carried out an issuance, in the local market, of subordinated obligations with a term of 6 years, for an amount of UF 3.3 million (equivalent to USD 105 million), which accrues an annual interest of 1.25%.

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.

Issues by Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México

In January 2022, Banco Santander México, S.A. Multiple Institution, Grupo Financiero Santander México proceeded to redeem early a perpetual issue carried out at 30 December 2016 for a nominal amount of USD 500 million, of which 88.2% of the issue had been acquired by the Group.

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.

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 2022 amounted to EUR 992 million (EUR 648 million and EUR 571 million during 2021 and 2020, respectively).

In addition, interests from the PPCC and PPCA during 2022 amounted to EUR 529 million (EUR 566 million and EUR 552 million in 2021 and 2020, respectively).

24. Other financial liabilities

The detail of Other financial liabilities in the consolidated balance sheets is as follows:

| EUR million | 2022 | 2021 | 2020 |
|----------------------------------|---------------|---------------|---------------|
| Trade payables | 1,563 | 1,475 | 1,177 |
| Clearing houses | 1,200 | 650 | 599 |
| Tax collection accounts: | | | |
| Public Institutions | 5,796 | 5,315 | 4,122 |
| Factoring accounts payable | 262 | 275 | 222 |
| Unsettled financial transactions | 5,429 | 3,779 | 5,080 |
| Lease liabilities (note 2.1) | 2,622 | 2,856 | 3,049 |
| Other financial liabilities | 20,187 | 15,523 | 12,719 |
| | 37,059 | 29,873 | 26,968 |

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 2022 was EUR 710 million (EUR 715 million and EUR 789 million in 2021 and 2020, respectively).

The analysis of the maturities of lease liabilities at 31 December 2022, 2021 and 2020 is shown below:

| EUR million | 2022 | 2021 | 2020 |
|---|--------------|--------------|--------------|
| Maturity Analysis - Discounted payments | | | |
| Within 1 year | 707 | 690 | 594 |
| Between 1 and 3 years | 1,005 | 933 | 981 |
| Between 3 and 5 years | 454 | 534 | 637 |
| Later than 5 years | 456 | 699 | 837 |
| Total discounted payments at the end of the year | 2,622 | 2,856 | 3,049 |

During 2022, 2021 and 2020 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 | | | |
|---|--------------|--------------|---------------|
| | 2022 | 2021 | 2020 |
| Provision for pensions and other obligations post-employments | 2,392 | 3,185 | 3,976 |
| Other long term employee benefits | 950 | 1,242 | 1,751 |
| Provisions for taxes and other legal contingencies | 2,074 | 1,996 | 2,200 |
| Contingent liabilities and commitments (note 2) | 734 | 733 | 700 |
| Other provisions | 1,999 | 2,427 | 2,225 |
| Provisions | 8,149 | 9,583 | 10,852 |

b) Changes

The changes in 'Provisions' in the last three years were as follows:

| EUR million | | | | | |
|--|-----------------------|-----------------------------|--|------------------|--------------|
| | 2022 | | | | |
| | Post employment plans | Long term employee benefits | Contingent liabilities and commitments | Other provisions | Total |
| Balances at beginning of year | 3,185 | 1,242 | 733 | 4,423 | 9,583 |
| Incorporation of Group companies, net | — | — | — | — | — |
| Additions charged to income | 128 | 69 | (27) | 1,876 | 2,046 |
| Interest expense (note 39) | 73 | 27 | — | — | 100 |
| Staff costs (note 46) | 57 | 8 | — | — | 65 |
| Provisions or reversion of provisions | (2) | 34 | (27) | 1,876 | 1,881 |
| <i>Addition</i> | 10 | 105 | 618 | 3,484 | 4,217 |
| <i>Release</i> | (12) | (71) | (645) | (1,608) | (2,336) |
| Other additions arising from insurance contracts linked to pensions | (33) | — | — | — | (33) |
| Changes in value recognised in equity | 242 | — | — | — | 242 |
| Payments to pensioners and pre-retirees with a charge to internal provisions | (229) | (363) | — | — | (592) |
| Insurance premiums paid | (3) | — | — | — | (3) |
| Payments to external funds | (451) | — | — | — | (451) |
| Amounts used | — | — | — | (2,817) | (2,817) |
| Transfer, exchange differences and other changes | (447) | 2 | 28 | 591 | 174 |
| Balances at end of year | 2,392 | 950 | 734 | 4,073 | 8,149 |

EUR million

| | 2021 | | | | | 2020 | | | | |
|--|-----------------------|-----------------------------|--|------------------|---------------|-----------------------|-----------------------------|--|------------------|---------------|
| | 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 | 3,976 | 1,751 | 700 | 4,425 | 10,852 | 6,358 | 1,382 | 739 | 5,508 | 13,987 |
| Incorporation of Group companies, net | — | — | — | — | — | (5) | — | (1) | (2) | (8) |
| Additions charged to income | 100 | 101 | 29 | 2,748 | 2,978 | (217) | 782 | 50 | 1,934 | 2,549 |
| Interest expense (note 39) | 78 | 13 | — | — | 91 | 84 | 11 | — | — | 95 |
| Staff costs (note 46) | 67 | 6 | — | — | 73 | 69 | 7 | — | — | 76 |
| Provisions or reversion of provisions | (45) | 82 | 29 | 2,748 | 2,814 | (370) | 764 | 50 | 1,934 | 2,378 |
| Addition | 21 | 154 | 473 | 3,065 | 3,713 | 6 | 787 | 490 | 2,258 | 3,541 |
| Release | (66) | (72) | (444) | (317) | (899) | (376) | (23) | (440) | (324) | (1,163) |
| Other additions arising from insurance contracts linked to pensions | (8) | — | — | — | (8) | 2 | — | — | — | 2 |
| Changes in value recognised in equity | (1,705) | — | — | — | (1,705) | 547 | — | — | — | 547 |
| Payments to pensioners and pre-retirees with a charge to internal provisions | (201) | (605) | — | — | (806) | (303) | (408) | — | — | (711) |
| Benefits paid due to settlements | — | — | — | — | — | (1,551) | — | — | — | (1,551) |
| Insurance premiums paid | — | — | — | — | — | (1) | — | — | — | (1) |
| Payments to external funds | (440) | — | — | — | (440) | (333) | — | — | — | (333) |
| Amounts used | — | — | — | (2,961) | (2,961) | — | — | — | (2,485) | (2,485) |
| Transfer, exchange differences and other changes | 1,463 | (5) | 4 | 211 | 1,673 | (521) | (5) | (88) | (530) | (1,144) |
| Balances at end of year | 3,185 | 1,242 | 733 | 4,423 | 9,583 | 3,976 | 1,751 | 700 | 4,425 | 10,852 |

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 | 2022 | 2021 | 2020 |
|--|--------------|--------------|--------------|
| Provisions for post-employment plans - Spanish entities | 1,245 | 1,709 | 1,881 |
| Provisions for other similar obligations - Spanish entities | 895 | 1,188 | 1,695 |
| Of which pre-retirements | 884 | 1,176 | 1,676 |
| Provisions for post-employment plans - United Kingdom | 29 | 44 | 449 |
| Provisions for post-employment plans - Other subsidiaries | 1,118 | 1,432 | 1,646 |
| Provisions for other similar obligations - Other subsidiaries | 55 | 54 | 56 |
| Provision for pensions and other obligations post-employments and Other long term employee benefits | 3,342 | 4,427 | 5,727 |
| Of which defined benefits | 3,335 | 4,419 | 5,719 |

i. Spanish entities - Post-employment plans and other similar obligations

At 31 December 2022, 2021 and 2020, 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 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, to complete the plan announced in 2020, an amount of EUR 139 million was recognised, increasing the number of early retirements and incentivized dismissals plan to 3,915 employees in the total period.

In 2022, the provision made to cover the commitments with 446 employees covered by early retirement plans and incentivized dismissals plan amounted to EUR 92 million.

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 38 million.

The expenses incurred by the Spanish companies in 2022, 2021 and 2020 in respect of contributions to defined contribution plans amounted to EUR 101 million, EUR 91 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 | | |
|--|-------------------------|-------------------------|-------------------------|---------------------------|-------------------------|-------------------------|
| | 2022 | 2021 | 2020 | 2022 | 2021 | 2020 |
| Annual discount rate | 3.80% | 0.90% | 0.60% | 3.80% | 0.90% | 0.60% |
| Mortality tables | PE2020 M/F Col. Orden 1 | PE2020 M/F Col. Orden 1 | PE2020 M/F Col. Orden 1 | PE2020 M/F Col. Orden 1 | PE2020 M/F Col. Orden 1 | PE2020 M/F Col. Orden 1 |
| Cumulative annual CPI growth | 2.00% | 1.00% | 1.00% | 2.00% | 1.00% | 1.00% |
| Annual salary increase rate | 1.25% ^A | 1.25% ^A | 1.25% ^A | N/A | N/A | N/A |
| Annual social security pension increase rate | 2.00% | 1.00% | 1.00% | N/A | N/A | N/A |
| Annual benefit increase rate | N/A | N/A | N/A | 0% | 0% | 0% |

A. 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, puttable 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 2022, 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 3.80% (-50 bp) to -3.60% (+50 bp), respectively, and an increase or decrease in the present value of the long-term obligations of 1.04% (-50 bp) to -1.02% (+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 | | |
|---|-----------------------|-------|-------|---------------------------|-------|-------|
| | 2022 | 2021 | 2020 | 2022 | 2021 | 2020 |
| Expected rate of return on plan assets | 3.80% | 0.90% | 0.60% | 3.80% | 0.90% | 0.60% |
| Expected rate of return on reimbursement rights | 3.80% | 0.90% | 0.60% | N/A | N/A | N/A |

The funding status of the defined benefit obligations in 2022 and the two preceding years is as follows:

| EUR million | Post-employment plans | | | Other similar obligations | | |
|---|-----------------------|--------------|--------------|---------------------------|--------------|--------------|
| | 2022 | 2021 | 2020 | 2022 | 2021 | 2020 |
| Present value of the obligations | | | | | | |
| To current employees | 25 | 29 | 60 | — | — | — |
| Vested obligations to retired employees | 2,005 | 2,797 | 3,318 | — | — | — |
| To pre-retirees employees | — | — | — | 892 | 1,186 | 1,688 |
| Long-service bonuses and other benefits | — | — | — | 11 | 12 | 18 |
| Other | 46 | 65 | 41 | — | — | 1 |
| | 2,076 | 2,891 | 3,419 | 903 | 1,198 | 1,707 |
| Less - Fair value of plan assets | 861 | 1,217 | 1,542 | 8 | 10 | 12 |
| Provisions - Provisions for pensions | 1,215 | 1,674 | 1,877 | 895 | 1,188 | 1,695 |
| <i>Of which:</i> | | | | | | |
| <i>Internal provisions for pensions</i> | 1,141 | 1,560 | 1,707 | 895 | 1,188 | 1,695 |
| <i>Net pension assets</i> | (24) | (30) | — | — | — | — |
| <i>Insurance contracts linked to pensions (note 14)</i> | 104 | 149 | 174 | — | — | — |
| <i>Unrecognised net assets for pensions</i> | (6) | (5) | (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 | | |
|---|-----------------------|----------|--------------|---------------------------|-----------|------------|
| | 2022 | 2021 | 2020 | 2022 | 2021 | 2020 |
| Current service cost | 3 | 5 | 10 | 1 | 1 | 1 |
| Interest cost (net) | 48 | 24 | 26 | 25 | 11 | 9 |
| Expected return on insurance contracts linked to pensions | (4) | (1) | (1) | — | — | — |
| Provisions or reversion of provisions | | | | | | |
| <i>Actuarial (gains)/losses recognised in the year</i> | — | — | — | (67) | (15) | (3) |
| <i>Past service cost</i> | 2 | 13 | 2 | — | — | — |
| <i>Pre-retirement cost</i> | — | — | — | 92 | 139 | 772 |
| <i>Other^A</i> | (8) | (39) | (372) | — | (55) | (15) |
| | 41 | 2 | (335) | 51 | 81 | 764 |

A. Including reduction/settlement effect

In addition, in 2022 'Other comprehensive income – Items not reclassified to profit or loss – Actuarial gains or (-) losses on defined benefit pension plans' has decreased by EUR 295 million with respect to defined benefit obligations (decrease of EUR 37 and increase of EUR 84 million in 2021 and 2020, respectively).

The changes in the present value of the accrued defined benefit obligations were as follows:

EUR million

| | Post-employment plans | | | Other similar obligations | | |
|--|-----------------------|--------------|--------------|---------------------------|--------------|--------------|
| | 2022 | 2021 | 2020 | 2022 | 2021 | 2020 |
| Present value of the obligations at beginning of year | 2,891 | 3,419 | 5,494 | 1,198 | 1,707 | 1,335 |
| Incorporation of Group companies, net | — | 6 | — | — | — | — |
| Current service cost | 3 | 5 | 10 | 1 | 1 | 1 |
| Interest cost | 78 | 36 | 39 | 25 | 11 | 9 |
| Pre-retirement cost | — | — | — | 92 | 139 | 772 |
| Effect of curtailment/settlement | (8) | (61) | (372) | — | (55) | (15) |
| Benefits paid | (258) | (248) | (359) | (346) | (589) | (392) |
| Benefits paid due to settlements | — | (166) | (1,551) | — | — | — |
| Past service cost | 2 | 13 | 2 | — | — | — |
| Actuarial (gains)/losses | (631) | (121) | 163 | (68) | (15) | (3) |
| <i>Demographic actuarial (gains)/losses</i> | 2 | 9 | 91 | (5) | (8) | (8) |
| <i>Financial actuarial (gains)/losses</i> | (633) | (130) | 72 | (63) | (7) | 5 |
| Exchange differences and other items | (1) | 8 | (7) | 1 | (1) | — |
| Present value of the obligations at end of year | 2,076 | 2,891 | 3,419 | 903 | 1,198 | 1,707 |

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 | | |
|---|-----------------------|--------------|--------------|---------------------------|-----------|-----------|
| | 2022 | 2021 | 2020 | 2022 | 2021 | 2020 |
| Fair value of plan assets at beginning of year | 1,217 | 1,542 | 1,547 | 10 | 12 | 14 |
| Incorporation of Group companies, net | — | 6 | — | — | — | — |
| Expected return on plan assets | 30 | 12 | 13 | — | — | — |
| Gains/(losses) on settlements | — | (22) | — | — | — | — |
| Benefits paid | (78) | (263) | (94) | (2) | (2) | (2) |
| Contributions/(surrenders) | 2 | 15 | 5 | — | — | — |
| Actuarial gains/(losses) | (303) | (76) | 76 | (1) | — | — |
| Exchange differences and other items | (7) | 3 | (5) | 1 | — | — |
| Fair value of plan assets at end of year | 861 | 1,217 | 1,542 | 8 | 10 | 12 |

Insurance Contracts linked to pensions

EUR million

| | Post-employment plans | | | Other similar obligations | | |
|--|-----------------------|------------|------------|---------------------------|----------|----------|
| | 2022 | 2021 | 2020 | 2022 | 2021 | 2020 |
| Fair value of insurance contracts linked to pensions at beginning of year | 149 | 174 | 192 | — | — | — |
| Incorporation of Group companies, net | — | — | — | — | — | — |
| Expected return on insurance contracts linked to pensions | 4 | 1 | 1 | — | — | — |
| Benefits paid | (16) | (19) | (21) | — | — | — |
| Paid premiums | — | 1 | — | — | — | — |
| Actuarial gains/(losses) | (33) | (8) | 2 | — | — | — |
| Fair value of insurance contracts linked to pensions at end of year | 104 | 149 | 174 | — | — | — |

In view of the conversion of the defined-benefit obligations to defined-contribution obligations, the Group will not make material current contributions in Spain in 2023 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 2022 for the next ten years:

EUR million

| | |
|--------------|-----|
| 2023 | 498 |
| 2024 | 426 |
| 2025 | 358 |
| 2026 | 307 |
| 2027 | 251 |
| 2028 to 2032 | 807 |

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 77 million in 2022 (EUR 89 million in 2021 and EUR 91 million in 2020).

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:

| | 2022 | 2021 | 2020 |
|------------------------------|---|---|---|
| Annual discount rate | 4.88% | 1.90% | 1.28% |
| Mortality tables | The S3 Middle tables weighted at 84% of the CMI_2021 projection with an initial addition of 0.25%, smoothing parameter 7 and improving 1.25%. | 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%. |
| Cumulative annual CPI growth | 3.11% | 3.37% | 2.95% |
| Annual salary increase rate | 1.00% | 1.00% | 1.00% |
| Annual pension increase rate | 2.98% | 3.21% | 2.85% |

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 2022, 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 7.05% (-50 bp) and -6.31% (+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 4.72% (+50 bp) and -4.60% (-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 2022 and the two preceding years is as follows:

| EUR million | 2022 | 2021 | 2020 |
|---|----------------|----------------|--------------|
| Present value of the obligations | 8,982 | 15,392 | 15,472 |
| Less- | | | |
| Fair value of plan assets | 10,152 | 17,244 | 15,575 |
| Provisions - Provisions for pensions | (1,170) | (1,852) | (103) |
| <i>Of which:</i> | | | |
| Internal provisions for pensions | 29 | 44 | 449 |
| Net assets for pensions | (1,199) | (1,896) | (552) |

The amounts recognised in the consolidated income statements in relation to the aforementioned defined benefit obligations are as follows:

| EUR million | 2022 | 2021 | 2020 |
|---|------------|-----------|-----------|
| Current service cost | 30 | 33 | 30 |
| Interest cost (net) | (37) | (6) | (12) |
| Provisions or reversal of provisions, net | | | |
| Cost of services provided | — | 6 | — |
| Others | — | — | (1) |
| | (7) | 33 | 17 |

In addition, in 2022 'Other comprehensive income – Items not reclassified to profit or loss – Actuarial gains or (-) losses on defined benefit pension plans' increased by EUR 857 million with respect to defined benefit obligations (decrease of EUR 1,475 million and increase of EUR 568 million in 2021 and 2020, respectively).

The changes in the present value of the accrued defined benefit obligations were as follows:

| EUR million | 2022 | 2021 | 2020 |
|--|--------------|---------------|---------------|
| Present value of the obligations at beginning of year | 15,392 | 15,472 | 14,297 |
| Current service cost | 30 | 33 | 30 |
| Interest cost | 283 | 219 | 284 |
| Benefits paid | (487) | (465) | (445) |
| Contributions made by employees | 9 | 18 | 17 |
| Past service cost | — | 6 | — |
| Actuarial (gains)/losses | (5,660) | (933) | 2,060 |
| Demographic actuarial (gains)/losses | (144) | (17) | 34 |
| Financial actuarial (gains)/losses | (5,516) | (916) | 2,026 |
| Exchange differences and other items | (585) | 1,042 | (771) |
| Present value of the obligations at end of year | 8,982 | 15,392 | 15,472 |

The changes in the fair value of the plan assets were as follows:

| EUR million | 2022 | 2021 | 2020 |
|---|---------------|---------------|---------------|
| Fair value of plan assets at beginning of year | 17,244 | 15,575 | 14,755 |
| Expected return on plan assets | 320 | 225 | 296 |
| Benefits paid | (487) | (463) | (443) |
| Contributions | 262 | 285 | 274 |
| Actuarial gains/(losses) | (6,517) | 541 | 1,492 |
| Exchange differences and other items | (670) | 1,081 | (799) |
| Fair value of plan assets at end of year | 10,152 | 17,244 | 15,575 |

In 2023 the Group expects to make current contributions to fund these obligations for amounts similar to those made in 2022.

The main categories of plan assets as a percentage of total plan assets are as follows:

| | 2022 | 2021 | 2020 |
|--------------------|------|------|------|
| Equity instruments | — | 10% | 9% |
| Debt instruments | 51% | 51% | 55% |
| Properties | 13% | 10% | 10% |
| Other | 36% | 29% | 26% |

The following table shows the estimated benefits payable at 31 December 2022 for the next ten years:

| EUR million | |
|--------------|-------|
| 2023 | 471 |
| 2024 | 408 |
| 2025 | 432 |
| 2026 | 457 |
| 2027 | 481 |
| 2028 to 2032 | 2,632 |

iii. Other foreign subsidiaries

Certain of the consolidated foreign entities have acquired commitments to their employees similar to post-employment benefits.

At 31 December 2022, 2021 and 2020, 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 118 million in 2022 (EUR 106 million at 31 December 2021 and EUR 103 million at 31 December 2020).

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 9.44% and 9.64%, 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 2022, 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 4.27% (-50 bp) and -3.95% (+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 obligations similar to post-employment benefits and other long-term benefits in 2022 and the two preceding years is as follows:

EUR million

| | 2022 | Of which business in Brazil | 2021 | 2020 |
|--|------------|-----------------------------------|------------|--------------|
| Present value of the obligations | 7,578 | 5,185 | 8,018 | 8,434 |
| Less- | | | | |
| <i>Of which: with a charge to the participants</i> | 107 | 107 | 106 | 112 |
| Fair value of plan assets | 7,321 | 5,710 | 7,167 | 7,182 |
| Provisions - Provisions for pensions | 150 | (632) | 745 | 1,140 |
| <i>Of which:</i> | | | | |
| <i>Internal provisions for pensions</i> | 1,166 | 314 | 1,478 | 1,694 |
| <i>Net assets for pensions</i> | (122) | (52) | (64) | (83) |
| <i>Unrecognised net assets for pensions</i> | (894) | (894) | (669) | (471) |

The amounts recognised in the consolidated income statements in relation to these obligations are as follows:

EUR million

| | 2022 | 2021 | 2020 |
|---|------------|-----------|------------|
| Current service cost | 31 | 34 | 35 |
| Interest cost (net) | 64 | 62 | 72 |
| Provisions or reversion of provisions | | | |
| (Actuarial gains)/losses recognised in the year | 8 | 11 | 11 |
| Past service cost | 8 | 3 | 5 |
| Pre-retirement cost | — | (24) | — |
| Other | (3) | (3) | (5) |
| | 108 | 83 | 118 |

In addition, in 2022 'Other comprehensive income – Items not reclassified to profit or loss – Actuarial gains or (-) losses on defined benefit pension plans' decreased by EUR 320 million with respect to defined benefit obligations (decreased EUR 193 million and EUR 105 million in 2021 and 2020, respectively).

The changes in the present value of the accrued obligations were as follows:

EUR million

| | 2022 | 2021 | 2020 |
|--|--------------|--------------|--------------|
| Present value of the obligations at beginning of year | 8,018 | 8,434 | 10,717 |
| Incorporation of Group companies, net | — | (5) | (84) |
| Current service cost | 31 | 34 | 35 |
| Interest cost | 546 | 429 | 465 |
| Pre-retirement cost | — | (24) | — |
| Effect of curtailment/settlement | (3) | (3) | (5) |
| Benefits paid | (653) | (538) | (544) |
| Benefits paid due to settlements | (179) | — | — |
| Contributions made by employees | 5 | 3 | 3 |
| Past service cost | 8 | 3 | 5 |
| Actuarial (gains)/losses | (876) | (486) | 176 |
| <i>Demographic actuarial (gains)/losses</i> | 5 | 16 | 23 |
| <i>Financial actuarial (gains)/losses</i> | (881) | (502) | 153 |
| Exchange differences and other items | 681 | 171 | (2,334) |
| Present value of the obligations at end of year | 7,578 | 8,018 | 8,434 |

The changes in the fair value of the plan assets were as follows:

EUR million

| | 2022 | 2021 | 2020 |
|---|--------------|--------------|--------------|
| Fair value of plan assets at beginning of year | 7,167 | 7,182 | 8,826 |
| Incorporation of Group companies, net | — | (6) | (86) |
| Expected return on plan assets | 570 | 411 | 410 |
| Benefits paid | (766) | (478) | (488) |
| Contributions | 198 | 152 | 63 |
| Actuarial gains/(losses) | (498) | (155) | 536 |
| Exchange differences and other items | 650 | 61 | (2,079) |
| Fair value of plan assets at end of year | 7,321 | 7,167 | 7,182 |

In 2023 the Group expects to make contributions to fund these obligations for amounts similar to those made in 2022.

The main categories of plan assets as a percentage of total plan assets are as follows:

| | 2022 | 2021 | 2020 |
|--------------------|------|------|------|
| Equity instruments | 11% | 12% | 11% |
| Debt instruments | 83% | 83% | 84% |
| Properties | 1% | 1% | 1% |
| Other | 5% | 4% | 4% |

The following table shows the estimated benefits payable at 31 December 2022 for the next ten years:

| EUR million | |
|--------------|-------|
| 2023 | 602 |
| 2024 | 610 |
| 2025 | 620 |
| 2026 | 626 |
| 2027 | 632 |
| 2028 to 2032 | 3,228 |

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 | 2022 | 2021 | 2020 |
|----------------------------------|--------------|--------------|--------------|
| Recognised by Spanish companies | 1,768 | 1,595 | 1,647 |
| Recognised by other EU companies | 328 | 779 | 539 |
| Recognised by other companies | 1,977 | 2,049 | 2,239 |
| <i>Of which:</i> | | | |
| <i>Brazil</i> | 1,243 | 1,339 | 1,475 |
| | 4,073 | 4,423 | 4,425 |

Set forth below is the detail, by type of provision, of the balance at 31 December 2022, 2021 and 2020 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 | 2022 | 2021 | 2020 |
|--|--------------|--------------|--------------|
| Provisions for taxes | 679 | 564 | 600 |
| Provisions for employment-related proceedings (Brazil) | 301 | 328 | 437 |
| Provisions for other legal proceedings | 1,094 | 1,104 | 1,163 |
| Provision for customer remediation | 349 | 745 | 395 |
| Regulatory framework-related provisions | 19 | 36 | 69 |
| Provision for restructuring | 641 | 749 | 810 |
| Other | 990 | 897 | 951 |
| | 4,073 | 4,423 | 4,425 |

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 Grupo Santander 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 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 those related to the banking tax in Poland and Bank Levy in United Kingdom.

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 of the different offices of the Group.

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 the Group assesses the chances of loss to be probable and the Group does not record provisions when the chances of loss are possible or remote. Grupo Santander determines the amounts to be provided for as its 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 2022 of the breakdown provisions are shown below:

With respect to provisions for labor and other legal proceedings, in Brazil, provisions of EUR 174 million and EUR 161 million were recorded, making payments of EUR 241 million and EUR 252 million, respectively.

With respect to provisions for customer compensation, and based on the best information available, the gross amount of mortgage loans denominated and indexed to foreign currencies in Poland has been adjusted, in accordance with IFRS 9, by the new estimated cash flows, as described in Note 25.e.

On the regulatory framework side, EUR 53 million were provisioned in the United Kingdom and a utilization of EUR 70 million was made in the year (Bank Levy). In addition, in Poland, EUR 161 million were recorded under the regulatory framework and paid during the year.

In December 2022, Santander UK plc paid a EUR 127 million financial penalty to settle the Financial Conduct Authority's (FCA) enforcement investigation into the anti-money laundering systems and controls in the Business Banking division in the period between 31 December 2012 and 18 October 2017. This settlement concluded the FCA's investigation.

e) Litigation and other matters

i. Tax-related litigation

At 31 December 2022 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 Programa de Integração Social (PIS) and Contribuição para Financiamento da Seguridade Social (COFINS), 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 and 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 (Imposto sobre a Renda das Pessoas Jurídicas - IRPJ - and Contribuição Social sobre o Lucro Líquido -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 the administrative Court, the Conselho Administrativo de Recursos Fiscais (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 Mobiliários, Ltda. (DTVM, actually Santander Brasil Tecnologia S.A.) and Banco Santander (Brasil) S.A. in relation to the Provisional Tax on Financial Movements (Contribuição Provisória sobre Movimentação Financeira) 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. (Brazil), 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 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.
 - Banco Santander (Brasil) S.A. filed a suspensive judicial measure aiming to avoid the withholding income tax (Imposto sobre a Renda Retido na Fonte - IRRF), on payments derived from technology services provided by Group foreign entities. A favorable decision was handed down and an appeal was filed by the tax authority at the Federal Regional Court, where it awaits judgment. No provision was recognized 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 691 million, and for lawsuits that qualify as contingent liabilities is EUR 4,977 million.
- 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 definitively confirmed these Decisions. The dismissal of the appeal, that only affects these two decisions, had no impact on results.
- At the date of approval of these consolidated annual accounts, there are other less significant tax disputes.
- ii. Non-tax-related proceedings**
- At 31 December 2022 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 2022 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 that two entities of the Axa Group (hereinafter "Axa France" 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 717.2 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 France's claim to be struck out/summarily dismissed, which was heard by the Commercial Court on 22 and 23 February 2022 with judgement reserved. Judgment was handed down by the Commercial Court on 12 July 2022. The Commercial Court upheld a significant part of the Santander Entities' strike-out plead. The Santander Entities have sought permission to appeal aspects of the strike out decision on which they were unsuccessful. Axa France updated the amount of losses claimed from GBP 636 million (EUR 717.2 million) to GBP 670 million (EUR 755.5 million) in their Amended Particulars of Claim dated 21 October 2022.

Regarding those claims admitted or those that may eventually be made in the aforementioned appeal, there are factual issues that will be resolved during the processing of the trial that 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 appealed this decision. This appeal is pending.

In August 2021, a first instance court 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 2022.

- '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 2022, the provision recorded for the economic plan proceedings amounts to EUR 220 million.
- Floor clauses: as a consequence of the acquisition of Banco Popular Español, S.A.U. ('Banco Popular'), 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 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 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 2022, after having processed most of the customer requests, the potential residual loss associated with ongoing court proceedings is estimated at EUR 60.1 million, amount which is fully covered by provisions.
- Banco Popular's acquisition: After the declaration of the resolution of Banco Popular, some investors filed claims against the EU's Single Resolution Board decision, and the FROB's resolution executed in accordance to the aforementioned decision. Likewise, numerous appeals were filed against Banco Santander, S.A. alleging that the information provided by Banco Popular was erroneous and requesting from Banco Santander, S.A. the restitution of the price paid for the acquisition of the investment instruments or, where appropriate, the corresponding compensation.

In relation to these appeals, on the one hand, the General Court of the European Union ("GCUE") selected 5 appeals from among all those filed before the European courts by various investors against the European institutions and processed them as pilot cases. On 1 June 2022, the GCUE has rendered five judgements in which it has completely dismissed the appeals, (i) supporting the legality of the resolution framework applied to Banco Popular, (ii) confirming the legality of the action of the European institutions in the resolution of Banco Popular and (iii) rejecting, in particular, all the allegations that there were irregularities in the sale process of Banco Popular to Banco Santander, S.A. Four of these judgments have been appealed before the Court of Justice of the European Union ("CJEU").

On the other hand, in relation to the lawsuits initiated by investors directly against Banco Santander, S.A. derived from the acquisition of Banco Popular, on 2 September 2020, the Provincial Court of La Coruña submitted a preliminary ruling to the CJEU in which it asked for the correct interpretation of the Article 60, section 2 of Directive 2014/59/EU of the European Parliament and of the Council of 15 May, establishing a framework for the restructuring and resolution of credit institutions and investment services companies. Said article establishes that, in the cases of redemption of capital instruments in a bank resolution, no liability will subsist in relation to the amount of the instrument that has been redeemed. On 5 May 2022, the CJEU has rendered its judgement confirming that Directive 2014/59/EU of the European Parliament and of the Council does not allow that, after the total redemption of the shares of the share capital of a credit institution or an investment services company subject to a resolution procedure, the shareholders who have acquired shares within the framework of a public subscription offer issued by said company before the start of such a resolution procedure, exercise against that entity or against its successor, an action for liability for the information contained in the prospectus, under Directive 2003/71/EC of the European Parliament and of the Council, or an action for annulment of the subscription contract for those shares, which, taking into account its retroactive effects, gives rise to the restitution of the equivalent value of said shares, plus the interest accrued from the date of execution of said contract. In respect to this judgement, in December 2022 the Spanish Supreme Court submitted pre-judicial issues before the CJEU in respect of its applicability to subordinated obligations amortized with the resolution and to subordinated obligations and/or preferred shares converted into shares before resolution.

Separately, 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 these proceedings, Banco Santander, S.A. could potentially be subsidiarily liable for the civil consequences. In view of the CJEU ruling of 5 May 2022, the Bank has requested confirmation of the exclusion of its subsidiary civil liability status in this criminal proceeding. On 26 July 2022, the Court has rejected this request stating that it is a matter to be determined at a later procedural time. This decision has been confirmed on appeal by the Chamber of the National Court by sentence of 5 October 2022. 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. The CJEU judgement of 5 May represents a very significant reduction in the risk associated with these claims.

- 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. was sued in a legal proceeding in which the plaintiff alleges that the Bank breached his contract as CEO of the institution. In the lawsuit, the claimant mainly requested a declaratory ruling that upholds the existence, validity and effectiveness 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 legal action stating that the conditions to which the appointment of that position was subject to were not met; that the executive services contract required by law was not concluded; and that in any case, the parties could terminate the contract without any justified cause. On 17 May 2021, the plaintiff reduced his claims for compensation to EUR 61.9 million.

On 9 December 2021, the Court upheld the claim and ordered the Bank to compensate the claimant in the amount of EUR 67.8 million. By court order of 13 January 2022, the Court corrected and supplemented its judgment, reducing the total amount to be paid by the Bank to EUR 51.4 million and clarifying the part of this amount (buy out) was to be paid under the terms of the offer letter, i.e., entirely in Banco Santander shares, within the deferral period for this type of remuneration at the plaintiff's former employer and subject to the performance metrics or parameters of the plan in force at the Bank, which was that of 2018. As explained in note 5 of the report, the degree of performance of these objectives was 33.3%.

The Bank filed an appeal against the judgment before the Madrid Court of Appeal, which was opposed by the plaintiff. At the same time, the plaintiff filed an application for provisional enforcement of the judgment in the first instance court. A court order was issued ordering enforcement of the judgment, and the Bank deposited in the court bank account the full amount provisionally awarded to the claimant, including interest, for an approximate sum of EUR 35.5 million, within the voluntary compliance period.

On 6 February 2023, Banco Santander was notified of the judgment of 20 January 2023 by which the Madrid Court of Appeal partially upheld the appeal filed by the Bank. The judgment has reduced the amount to be paid by EUR 8 million, which, to the extent that this amount was already paid in the provisional partial enforcement of the judgement of first instance court, must be returned to the Bank together with other amounts for interest, which the appeal judgement also rejects.

The Bank has submitted a brief requesting a supplement to the Madrid Court of Appeal's judgment, as it understands that it has not ruled on some substantial allegations over the merits of the case made in the Bank's appeal. The Bank will file an extraordinary appeal for procedural infringement and an appeal in cassation against the Madrid Court of Appeal's judgment before Spanish Supreme Court. Existing provisions cover the estimated risk of loss.

- 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 MAA was originally entered into by Banco Popular and its purpose is the rendering of acquiring services (point of sale payment terminals) for businesses in the Spanish market. The lawsuit was mainly based on the potential breach of clause 6 of the MAA, which establishes certain obligations of exclusivity, non-competition and customer referral. On 16 December 2022, the Court ruled in favour of the Bank and dismissed the plaintiff's claim in its entirety. The decision has been appealed.

Taking into account the decision at first instance and following the analysis carried out by the Bank's external lawyers, with the best information available to date, it is considered that no provision needs to be registered.

- **CHF Polish Mortgage Loans:** On 3 October 2019, the 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.

In 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 Supreme Court met several times, with the last session taking place on 2 September 2021. However, 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 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.

At the date of the Group's consolidated financial statements, it is not possible to predict the Supreme Court's and CJEU decisions on individual cases. Santander Bank Polska and Santander Consumer Bank Poland estimate legal risk using a model which considers different possible outcomes and regularly monitor court rulings on foreign currency loans to verify changes in case law practice.

As of 31 December 2022, 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 gross amount of PLN 8,393.7 million (EUR 1,791.8 million). As of 1 January 2022, in accordance with IFRS 9 and based on the new best available information, the accounting methodology was adapted so that the gross carrying amount of mortgage loans denominated and indexed in foreign currencies is reduced by the amount in which the estimated cash flows are not expected to cover the gross amount of loans, including as a result of legal controversies relating to these loans. In the absence of exposure or insufficient gross exposure, a provision according to IAS 37 is recorded.

As of 31 December 2022, the total value of adjustment to gross carrying amount in accordance with IFRS9 as well as provisions recorded under IAS37, amount to PLN 3,557.3 million (EUR 759.4 million) of which PLN 3,136.3 million (EUR 669.5 million) corresponds to adjustment to gross carrying amount under IFRS 9 and PLN 421 million (EUR 89.9 million) to provisions recognized in accordance with IAS 37. Throughout 2022, the adjustment to gross carrying amount in accordance with IFRS9 amounted to PLN 1,283.3 million (EUR 274 million), the additional provisions under IAS37 amounted to PLN 236.8 million (EUR 50.6 million) and other costs related to the dispute amounted to PLN 218.1 million (EUR 46.6 million).

These provisions represent the best estimate as at 31 December 2022. 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. The Bank has been testing such settlements in relation to different customer groups in parallel with own settlement solutions. The results of the current tests have been incorporated into the provision calculation model.

On February 16, 2023, the CJEU General Advocate ("AG") issued his opinion in case no. C-520/21 pending before the CJEU, where it considers that Directive 93/13/EEC does not oppose national legislative provisions, or the national jurisprudence that interprets them, that allow the consumer to exercise claims that go beyond the reimbursement of the loan instalments disbursed under the mortgage loan contract that is declared null and the payment of default interest at the legal rate accrued from the date of the payment request. However, it corresponds to the Polish courts to verify, in the light of their national law, whether consumers have the right to exercise this type of claim and, where appropriate, rule on its admissibility. With regard to banks, the opinion of the AG is that the Directive prevents a bank from exercising claims against a consumer that go beyond the repayment of the principal of the loan granted declared null and the payment of default interest at the legal rate accrued from the date of the payment request. The opinion is non-binding, so it does not definitively resolve these issues, which will be decided in the CJEU ruling that is expected in 2023. At the date of the consolidated annual accounts, it is not possible to predict a reliable estimate of the potential impact for the Group if the CJEU assumed the opinion of the AG, since this would also depend on the criterion adopted by the national courts.

On 17 February 2023, the KNF has issued a statement in which upholds in full the opinion expressed by the Chairman of the KNF before the CJEU on 12 October 2022, disagreeing with the conclusions of the AG.

- **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.

Santander Mexico has filed various constitutional review and appeals against the recurso de amparo referred to above, which have been dismissed by the Supreme Court of Justice of the Nation. As of this date, an amparo review filed by the Bank is pending to be resolved in the Collegiate Courts in the State of Nuevo León, thus the judgment is not final. On 29 June 2022, Santander México, within the framework of the amparo review filed by the Bank, requested the First Collegiate Court in Civil Matters of the Fourth Circuit of Nuevo León the recusal of two of the three Magistrates who rendered against Santander Mexico, which has been resolved in favour of Santander Mexico. Plaintiffs have requested the recusal of the third Magistrate who ruled with a dissenting vote against the recurso de amparo referred above.

Santander México believes that the actions taken should prevail and reverse the decision against it. 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. At the current stage of the proceedings, the provisions recorded are considered to be sufficient to cover the risks deriving from this claim.

- URO Property Holdings, SOCIMI SA: on 16 February 2022, legal proceedings were commenced in the Commercial Court of London against Uro Property Holdings SOCIMI SA ("Uro"), a subsidiary of Banco Santander, S.A., by BNP Paribas Trust Corporation UK Limited ("BNP") in its capacity as trustee on behalf of certain bondholders and beneficiaries of security rights. The litigation concerns certain terms of a financing granted to Uro which was supported by a bond issue in 2015. The claimant seeks a declaration by the Court and a monetary award against Uro, in connection with an additional premium above the nominal value of the financing repayment as a consequence of Uro having lost its status as SOCIMI (Sociedad Anónima Cotizada de Inversión Inmobiliaria), such loss causing the prepayment of the bond issue and, in the opinion of the claimant BNP, also the obligation to pay the additional premium by Uro. Uro denies being liable to pay that additional premium and filed its defense statement and announced a counterclaim against the claimant. The trial hearing has not been scheduled yet. Furthermore, Uro filed a summary judgement application for BNP's claim to be dismissed before trial. The Commercial Court dismissed the application and Uro is seeking permission to appeal this decision. It is estimated that the maximum loss associated with this possible contingency, amounts to approximately EUR 250 million.

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 2022, 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 | 2022 | 2021 | 2020 |
|--------------------------------------|---------------|---------------|---------------|
| Transactions in transit | 457 | 545 | 498 |
| Accrued expenses and deferred income | 8,445 | 7,084 | 6,309 |
| Other | 5,707 | 5,069 | 5,529 |
| | 14,609 | 12,698 | 12,336 |

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 returns in accordance with the tax regulations applicable to them.

b) Years open for review by the tax authorities

In June and November 2021 Spanish tax authorities formalized acts with agreement, conformity and non-conformity relating to the corporate income tax financial years 2012 to 2015. 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 the Central Economic Administrative Court (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 consolidated annual accounts, the Corporate Income Tax and other taxes audit for periods 2017 to 2019 are ongoing, and subsequent years up to and including 2022, are subject to review.

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 | 2022 | 2021 | 2020 |
|---|--------------|--------------|--------------|
| Consolidated profit (loss) before tax: | | | |
| From continuing operations | 15,250 | 14,547 | (2,076) |
| From discontinued operations | — | — | — |
| | 15,250 | 14,547 | (2,076) |
| Income tax at tax rate applicable in Spain (30%) | 4,575 | 4,364 | (623) |
| By the effect of application of the various tax rates applicable in each country ^A | 61 | 210 | 362 |
| Of which: | | | |
| Brazil | 472 | 634 | 560 |
| United Kingdom | (161) | (158) | (43) |
| United States | (99) | (179) | (71) |
| Chile | (30) | (34) | (24) |
| Poland | (101) | — | — |
| Effect of profit or loss of associates and joint ventures | (210) | (130) | 29 |
| Effect of reassessment of deferred taxes | — | 9 | 2,500 |
| Permanent differences and other ^B | 60 | 441 | 3,364 |
| Current income tax | 4,486 | 4,894 | 5,632 |
| Effective tax rate | 29.42% | 33.64% | — |
| Of which: | | | |
| Continuing operations | 4,486 | 4,894 | 5,632 |
| Discontinued operations (note 37) | — | — | — |
| Of which: | | | |
| Current taxes | 4,272 | 3,799 | 4,214 |
| Deferred taxes | 214 | 1,095 | 1,418 |
| Income tax (receipts)/payments | 5,498 | 4,012 | 2,946 |

A. 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.

B. In 2020 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 2022, 2021 and 2020:

| EUR million | 2022 | 2021 | 2020 |
|---|--------------|--------------|-------------|
| Other comprehensive income | | | |
| Items not reclassified to profit or loss | 49 | (510) | (82) |
| Actuarial gains or (-) losses on defined benefit pension plans | 96 | (530) | (165) |
| Changes in the fair value of equity instruments measured at fair value through other comprehensive income | (19) | (13) | 92 |
| Financial liabilities at fair value with changes in results attributable to changes in credit risk | (26) | 33 | (9) |
| Other recognised income and expense of investments in subsidiaries, joint ventures and associates | (2) | — | — |
| Items that may be reclassified to profit or loss | 1,522 | 1,136 | 208 |
| Cash flow hedges | 912 | 278 | 5 |
| Changes in the fair value of debt instruments through other comprehensive income | 661 | 857 | 195 |
| Other recognised income and expense of investments in subsidiaries, joint ventures and associates | (51) | 1 | 8 |
| Total | 1,571 | 626 | 126 |

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.

In accordance with the Basel III legal framework included in European law through Directive 2013/36 (CRD IV) and EU Regulation 575/2013 on prudential requirements for credit institutions and investment firms (CRR), and subsequently amended by EU Regulation 2019/876 of the European Parliament and of the Council, deferred tax assets which use does not rely on obtaining future profits (referred to hereinafter as 'monetizable tax assets') generated before 23 November 2016 are exempt from deduction from regulatory capital.

The detail of deferred tax assets, by classification as monetizable or non-monetizable assets, and of deferred tax liabilities at 31 December 2022, 2021 and 2020 is as follows:

EUR million

| | 2022 | | 2021 | | 2020 | |
|---|--------------------------|---------------|--------------------------|--------------|--------------------------|--------------|
| | Monetizable ^A | Other | Monetizable ^A | Other | Monetizable ^A | Other |
| Tax assets | 10,660 | 10,127 | 10,473 | 8,967 | 10,721 | 8,525 |
| Tax losses and tax credits | — | 1,778 | — | 1,249 | — | 1,093 |
| Temporary differences | 10,660 | 8,349 | 10,473 | 7,718 | 10,721 | 7,432 |
| <i>Of which:</i> | | | | | | |
| Non-deductible provisions | — | 2,182 | — | 2,256 | — | 2,139 |
| Valuation of financial instruments | — | 1,535 | — | 600 | — | 483 |
| Loan losses | 7,696 | 1,232 | 6,888 | 988 | 7,134 | 1,007 |
| Pensions | 2,964 | 560 | 3,585 | 669 | 3,587 | 875 |
| Valuation of tangible and intangible assets | — | 1,270 | — | 1,509 | — | 1,373 |
| Tax liabilities | — | 6,428 | — | 6,462 | — | 5,933 |
| Temporary differences | — | 6,428 | — | 6,462 | — | 5,933 |
| <i>Of which:</i> | | | | | | |
| Valuation of financial instruments | — | 1,792 | — | 1,419 | — | 1,791 |
| Valuation of tangible and intangible assets | — | 3,169 | — | 3,081 | — | 2,311 |
| Investments in Group companies | — | 359 | — | 337 | — | 440 |

A. 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 which determined such conversion were met at the end of that year (EUR 995 million). The Spanish tax authorities have expressly confirmed the nature of these assets as monetizables, but they considered that conditions for conversion were not met at the end of 2017, without prejudice to the conversion in future years. The Tax Administration position is being discussed at the Courts.

Besides, due to losses incurred in 2020, the Consolidated Tax Group in Spain converted EUR 642 million of monetizable tax assets into credit against the Tax Administration in its corporate income tax return.

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 directors. 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:

- 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.
- 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 making reasonable changes to the key assumptions, mainly by adjusting 50 basis points for growth (gross domestic product) and adjusting 50 basis points for inflation.

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 9,455 million, of which EUR 6,777 million were for monetizable temporary differences with the right to conversion into a credit against the Public Finance, EUR 1,847 million for other temporary differences and EUR 830 million for tax losses and credits.

Brazil

The deferred tax assets recognised in Brazil total EUR 6,461 million, of which EUR 3,759 million were for monetizable temporary differences, EUR 1,950 million for other temporary differences and EUR 752 million for tax losses and credits.

United States

The deferred tax assets recognised in the United States total EUR 1,578 million, of which EUR 1,398 million were for temporary differences and EUR 180 million for tax losses and credits.

The Group estimates that the recognised deferred tax assets for temporary differences, tax losses and credits in the different jurisdictions will be recovered in a maximum 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 2021 | (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 2022 |
|---------------------------------|------------------------------|---------------------------|--|--|--------------------------------|------------------------------|
| Deferred tax assets | 19,440 | 273 | 376 | 697 | 1 | 20,787 |
| Tax losses and tax credits | 1,250 | 211 | 317 | — | — | 1,778 |
| Temporary differences | 18,190 | 62 | 59 | 697 | 1 | 19,009 |
| <i>Of which monetizable</i> | 10,473 | 507 | (320) | — | — | 10,660 |
| Deferred tax liabilities | (6,462) | (487) | (149) | 684 | (14) | (6,428) |
| Temporary differences | (6,462) | (487) | (149) | 684 | (14) | (6,428) |
| | 12,978 | (214) | 227 | 1,381 | (13) | 14,359 |

EUR million

| | Balance 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) | Balance 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 |
| <i>Of which monetizable</i> | 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

| | Balances 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 |
| <i>Of which monetizable</i> | 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 |

Also, the Group did not recognise deferred tax assets relating to tax losses and deductions and other incentives amounting to approximately EUR 10,800 million the use of which EUR 490 million is subject, among other requirements, to time limits.

f) Tax reforms

The following significant tax reforms were approved in 2022 and previous years:

In Spain, 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 addition, during 2022, Law 38/2022 established a new temporary levy on credit institutions and financial credit institutions for fiscal years 2023 and 2024. The levy will be calculated as 4.8% of net interest and fees earned in the business carried out in Spain in the precedent year and the payment obligation will arise on the first day of each period. Additionally, this law also established a 50% limitation on the integration of negative individual taxable bases into the consolidated tax group's tax base. This limitation is expected to be in force only in 2023, with a 10 year deadline for the reversal of this positive adjustment.

In the United Kingdom, the Budget Act for 2021 increased the main Corporation Tax rate from 19% to 25% with effect from 1 April 2023. In addition, and also with effect from 1 April 2023, the Bank Surcharge tax rate was reduced from 8% to 3%, so the corporate tax rate for banks is set at 28%.

In Brazil, Provisional Measure 1.115/2022 and the subsequent Law 14,446, established a temporary increase from 31 August 2022 to 31 December 2022 in the rate of contribution on net income (CSLL) of banks from 20% to 21% and for other financial institutions, from 15% to 16%. This increase lifted the aggregate tax rate -sum of CSLL and the corporate income tax (IRPJ)- for banks to 46% (25% for income tax and 21% for CSLL), and 41% for other financial institutions. In addition, Law 14,467/2022, with effect from 2025, amends the rules on the tax deductibility of credit provisions in financial institutions, bringing those rules closer to the accounting recognition criterion. In the tax on financial operations (IOF) as of 1 January 2021, the rate of 0,38% on credit operations was reinstated (0% for part of 2020), 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 4.08% for natural persons). In 2022 Decree 10.997/2022 has established the reduction to 0% of the IOF applicable to foreign financing and lending transactions, regardless of the term of the transaction, as from 21 March 2022, and a gradual reduction in the rates applicable to foreign exchange transactions until their reduction to 0% as from 2 January 2029.

In Argentina, Law n.º 27630 (National Bulletin 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 Argentina 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 2021, 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%) and also reducing certain exemptions. Finally, since 2019, different laws on the adjustment for tax inflation have been approved in order to partially defer the adjustment.

In the United States, during 2022, the Inflation Reduction Act (IRA) has been approved, which, among other measures, imposes a minimum taxation on the accounting performance of certain large companies, through the introduction of a new Alternative Minimum Tax (AMT) as of 2023, calculated by applying a rate of 15% on the profit determined on the basis of the adjusted financial statements. The amount to be paid is deductible in future years from the tax rate of ordinary corporation tax.

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 2022, the European Commission approved Directive 2022/2523 ensuring a minimum effective tax rate for the global activities of large multinational groups. The Directive that follows closely the OECD Inclusive Framework on Base Erosion and Profit Shifting should be transposed by the Member States throughout 2023, entering into force on 1 January 2024.

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 2022/23. 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 (His Majesty's Revenue and Customs) 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 | 2022 | 2021 | 2020 |
|---|--------------|---------------|--------------|
| Santander Bank Polska S.A. | 1,603 | 1,559 | 1,676 |
| Grupo PSA | 1,728 | 1,543 | 1,622 |
| Santander Consumer USA Holdings Inc. | — | 1,255 | 986 |
| Banco Santander - Chile | 1,317 | 1,042 | 1,218 |
| Banco Santander (Brasil) S.A. | 1,210 | 1,023 | 1,014 |
| Banco Santander México, S.A. Institución de Banca Múltiple, Grupo Financiero Santander México | 251 | 202 | 461 |
| Other companies ^A | 1,213 | 1,970 | 1,806 |
| | 7,322 | 8,594 | 8,783 |
| Profit/(Loss) for the year attributable to non-controlling interests | 1,159 | 1,529 | 1,063 |
| Of which: | | | |
| Santander Consumer USA Holdings Inc. | — | 494 | 201 |
| Grupo PSA | 323 | 311 | 255 |
| Banco Santander - Chile | 280 | 292 | 198 |
| Banco Santander (Brasil) S.A. | 259 | 251 | 233 |
| Santander Bank Polska S.A. | 196 | 75 | 81 |
| Banco Santander México, S.A. Institución de Banca Múltiple, Grupo Financiero Santander México | 42 | 62 | 61 |
| Other companies | 59 | 44 | 34 |
| TOTAL | 8,481 | 10,123 | 9,846 |

A. Includes perpetual Santander UK plc equity instruments convertible at the option of Santander UK plc into preferred shares of Santander UK plc. During 2022, three issues were redeemed early for a nominal amount of GBP 1,700 million (EUR 1,977 million) of which the Group had repurchased GBP 1,050 million (EUR 1,221 million). At year-end, the outstanding balance on these equity instruments amounted to GBP 500 million (EUR 564 million) (EUR 1,363 million and EUR 1,275 million in 2021 and 2020, respectively).

b) Changes

The changes in Non-controlling interests are summarised as follows:

| EUR million | 2022 | 2021 | 2020 |
|--|--------------|---------------|--------------|
| Balance at the end of the previous year | 10,123 | 9,846 | 10,588 |
| Balance at beginning of year | 10,123 | 9,846 | 10,588 |
| Other comprehensive income | 248 | (304) | (818) |
| Other | (1,890) | 581 | 76 |
| Profit attributable to non-controlling interests | 1,159 | 1,529 | 1,063 |
| Modification of participation rates ^A | (1,811) | (390) | (632) |
| Change of perimeter | 31 | (5) | (54) |
| Dividends paid to minority shareholders | (500) | (648) | (465) |
| Changes in capital and other concepts ^B | (769) | 95 | 164 |
| Balance at end of year | 8,481 | 10,123 | 9,846 |

A. Include the effects of the purchase of shares of Santander Holdings USA, Inc. on Santander Consumer USA Holdings Inc. that occurred in 2022 and of the public offer for the acquisition of shares of Banco Santander México, SA, Institución de Banca Múltiple, Grupo Financiero Santander México that occurred in 2021 (see note 3.b).

B. Includes the effect of the amortization of AT1 UK by EUR 756 million.

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 2022 is summarised below:

EUR million^A

| | Santander Bank Polska S.A. | Banco Santander (Brasil) S.A. | Banco Santander - Chile | Grupo Financiero Santander México, S.A.B. de C.V. | Santander Consumer USA |
|---------------------|-------------------------------|----------------------------------|----------------------------|---|---------------------------|
| Total assets | 52,665 | 184,165 | 78,425 | 92,636 | 40,681 |
| Total liabilities | 47,506 | 168,627 | 72,845 | 84,416 | 30,130 |
| Net assets | 5,159 | 15,538 | 5,580 | 8,220 | 10,551 |
| Total income | 2,474 | 12,910 | 2,449 | 4,623 | 4,300 |
| Total profit | 542 | 2,822 | 956 | 1,257 | 1,407 |

A. 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

| | 2022 | 2021 | 2020 |
|---|-----------------|-----------------|-----------------|
| Other comprehensive income | (35,628) | (32,719) | (33,144) |
| Items that will not be reclassified to profit or loss | (4,635) | (4,241) | (5,328) |
| Actuarial gains and losses on defined benefit pension plans | (3,945) | (3,986) | (5,002) |
| Non-current assets held for sale | — | — | — |
| Share in other income and expenses recognised in investments, joint ventures and associates | 10 | (8) | (2) |
| Other valuation adjustments | — | — | — |
| Changes in the fair value of equity instruments measured at fair value with changes in other comprehensive income | (672) | (157) | (308) |
| 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) | 293 | 275 | 159 |
| Changes in the fair value of equity instruments measured at fair value with changes in other comprehensive income (hedging instrument) | (293) | (275) | (159) |
| Changes in the fair value of financial liabilities measured at fair value through profit or loss attributable to changes in credit risk | (28) | (90) | (16) |
| Items that may be reclassified to profit or loss | (30,993) | (28,478) | (27,816) |
| Hedges of net investments in foreign operations (Effective portion) | (6,750) | (4,283) | (3,124) |
| Exchange differences | (20,420) | (23,887) | (26,911) |
| Hedging derivatives. Cash flow hedges (Effective portion) | (2,437) | (276) | 295 |
| Changes in the fair value of debt instruments measured at fair value with changes in other comprehensive income | (1,002) | 436 | 2,411 |
| 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 | (384) | (468) | (487) |

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 (increase of EUR 56 million in the year) is shown in the consolidated statement of recognised income.

The endowment against equity in 2022 amounts to EUR 242 million - see note 25.b -, with the following breakdown:

- Reduction of EUR 295 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 0.90% to 3.80%.
- Reduction of EUR 171 million in the accumulates actuarial losses relating to the Group's entities in Germany, mainly due to the evolution experienced by the discount rate -increase from 1.45% to 4.21%.

- Reduction of EUR 113 million in the accumulates actuarial losses relating to the Group's entities in Portugal, mainly due to the evolution experienced by the discount rate -increase from 1.10% to 3.70%.
- Increase of EUR 857 million in the cumulative actuarial losses relating to the Group's businesses in the UK, mainly due to the evolution of the asset portfolio and inflation in the short term. These actuarial losses have been partially offset in the obligations due to the evolution of the discount rate- increase from 1.90% to 4.88%- and inflation in the long term - reduction from 3.37% to 3.11%.
- Reduction of EUR 39 million in accumulated actuarial losses corresponding to the Group's business in Brazil, mainly due to the increase in the discount rate -increase from 8.39% to 9.44% in the main pension benefits and 8.44% to 9.46% in the main medical benefit.
- Increase of EUR 3 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 a reduction of EUR 186 million as a result of the evolution of exchange rates and other movements.



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 2022, 2021 and 2020 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

| | 2022 | | | Fair Value |
|-------------------------------|----------------------------|-----------------------------|-------------------------------|--------------|
| | Capital gains by valuation | Capital losses by valuation | Net gains/losses by valuation | |
| Equity instruments | | | | |
| <i>Domestic</i> | | | | |
| <i>Spain</i> | 30 | (926) | (896) | 500 |
| <i>International</i> | | | | |
| <i>Rest of Europe</i> | 84 | (60) | 24 | 225 |
| <i>United States</i> | 15 | — | 15 | 29 |
| <i>Latin America and rest</i> | 244 | (59) | 185 | 1,187 |
| | 373 | (1,045) | (672) | 1,941 |
| <i>Of which:</i> | | | | |
| <i>Publicly listed</i> | 246 | (113) | 133 | 1,200 |
| <i>Non publicly listed</i> | 127 | (932) | (805) | 741 |

EUR million

| | 2021 | | | Fair Value |
|-------------------------------|----------------------------|-----------------------------|-------------------------------|--------------|
| | Capital gains by valuation | Capital losses by valuation | Net gains/losses by valuation | |
| Equity instruments | | | | |
| <i>Domestic</i> | | | | |
| <i>Spain</i> | 25 | (663) | (638) | 759 |
| <i>International</i> | | | | |
| <i>Rest of Europe</i> | 39 | (58) | (19) | 170 |
| <i>United States</i> | 13 | (4) | 9 | 31 |
| <i>Latin America and rest</i> | 496 | (5) | 491 | 1,493 |
| | 573 | (730) | (157) | 2,453 |
| <i>Of which:</i> | | | | |
| <i>Publicly listed</i> | 500 | (44) | 456 | 1,521 |
| <i>Non publicly listed</i> | 73 | (686) | (613) | 932 |

EUR million

| | 2020 | | | Fair Value |
|------------------------|----------------------------|-----------------------------|-------------------------------|--------------|
| | Capital gains by valuation | Capital losses by valuation | Net gains/losses by valuation | |
| 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) | 1359 |

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 2022 reflects the positive effect of the appreciation of the Brazilian real, the US dollar and the Mexican peso and the negative effect of the depreciation of the pound sterling whereas the change in 2021 reflected the positive effect of the generalized appreciation of the main currencies, especially the Brazilian real, the pound sterling, the US dollar and the Mexican peso. 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.

Of the change in the balance in these years, a profit of EUR 496 million, a profit of EUR 167 million and a loss of EUR 2,104 million in 2022, 2021 and 2020, respectively relate to the measurement of goodwill.

The detail, by country is as follows:

EUR million

| | 2022 | 2021 | 2020 |
|----------------------------|----------|----------|----------|
| Net balance at end of year | (27,170) | (28,170) | (30,035) |
| Of which: | | | |
| Brazilian real | (16,735) | (17,440) | (17,417) |
| Pound sterling | (4,219) | (3,415) | (4,205) |
| Mexican peso | (3,010) | (3,088) | (3,091) |
| Argentine peso | (1,755) | (2,109) | (2,288) |
| Chilean peso | (2,081) | (2,039) | (1,776) |
| US dollar | 2,384 | 1,536 | 387 |
| Polish zloty | (999) | (809) | (788) |
| Other | (755) | (806) | (857) |



The breakdown of translation differences by currency is as follows:

EUR million

| Currency | Balance at the beginning of the year | Balance at the end of the year | Movement | Of which: | | |
|--------------------|--------------------------------------|--------------------------------|--------------|---------------|---------------------------|-----------------|
| | | | | From goodwill | From results ^A | From net assets |
| 2022 | | | | | | |
| Brazilian real | (15,913) | (14,199) | 1,714 | 376 | (98) | 1,436 |
| Pound sterling | (3,504) | (4,446) | (942) | (51) | (67) | (824) |
| Mexican peso | (2,012) | (1,132) | 880 | 56 | 18 | 806 |
| Argentine peso | (2,109) | (1,754) | 355 | — | — | 355 |
| Chilean peso | (1,852) | (1,605) | 247 | 31 | 5 | 211 |
| US dollar | 2,775 | 4,062 | 1,287 | 102 | (24) | 1,209 |
| Polish zloty | (678) | (776) | (98) | (21) | — | (77) |
| Other | (594) | (570) | 24 | 3 | (7) | 28 |
| Total Group | (23,887) | (20,420) | 3,467 | 496 | (173) | 3,144 |

A. 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

| Currency | Balance at the beginning of the year | Balance at the end of the year | Movement | Of which: | | |
|--------------------|--------------------------------------|--------------------------------|--------------|---------------|---------------------------|-----------------|
| | | | | From goodwill | From results ^A | From net assets |
| 2021 | | | | | | |
| 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 |

A. 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

| Currency | Balance at the beginning of the year | Balance at the end of the year | Movement | Of which: | | |
|--------------------|--------------------------------------|--------------------------------|-----------------|----------------|---------------------------|-----------------|
| | | | | From goodwill | From results ^A | From net assets |
| 2020 | | | | | | |
| 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) |

A. 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.

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 2022, 2021 and 2020 is as follows:

EUR million

| | 31 December 2022 | | | Fair value |
|--|-------------------|--------------------|--------------------------------|---------------|
| | Revaluation gains | Revaluation losses | Net revaluation gains/(losses) | |
| Debt instruments | | | | |
| Issued by Public-sector | | | | |
| <i>Spain</i> | 26 | (1) | 25 | 9,312 |
| <i>Rest of Europe</i> | 268 | (199) | 69 | 17,593 |
| <i>Latin America and rest of the world</i> | 196 | (937) | (741) | 40,873 |
| Issued by Private-sector | | | | |
| <i>Spain</i> | — | (24) | (24) | 5,727 |
| <i>Rest of Europe^A</i> | 11 | (68) | (57) | 5,203 |
| <i>Latin America and rest of the world</i> | 16 | (290) | (274) | 4,590 |
| | 517 | (1,519) | (1,002) | 83,298 |

EUR million

| | 31 December 2021 | | | Fair value |
|--|-------------------|--------------------|--------------------------------|----------------|
| | Revaluation gains | Revaluation losses | Net revaluation gains/(losses) | |
| Debt instruments | | | | |
| Issued by Public-sector | | | | |
| <i>Spain</i> | 271 | — | 271 | 12,917 |
| <i>Rest of Europe</i> | 544 | (118) | 426 | 20,397 |
| <i>Latin America and rest of the world</i> | 334 | (438) | (104) | 49,847 |
| Issued by Private-sector | | | | |
| <i>Spain</i> | 2 | (20) | (18) | 4,759 |
| <i>Rest of Europe</i> | 47 | (171) | (124) | 11,708 |
| <i>Latin America and rest of the world</i> | 31 | (46) | (15) | 5,957 |
| | 1,229 | (793) | 436 | 105,585 |

EUR million

| | 31 December 2020 | | | Fair value |
|-------------------------------------|-------------------|--------------------|------------------------------------|----------------|
| | Revaluation gains | Revaluation losses | Net revaluation gains/ (losses) | |
| Debt instruments | | | | |
| Issued by Public-sector | | | | |
| 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 |
| Issued by Private-sector | | | | |
| Spain | 2 | (7) | (5) | 6,454 |
| Rest of Europe | 100 | (11) | 89 | 12,191 |
| Latin America and rest of the world | 79 | (3) | 76 | 6,069 |
| | 2,574 | (163) | 2,411 | 118,170 |

A. The revaluation losses decrease includes the effect of the transfer made by Santander Bank Polska, S.A. during 2022, from debt securities under the heading 'Financial assets at fair value through other comprehensive income' to 'Financial assets at amortised cost' which has amounted for EUR 219 million in the Group's consolidated annual accounts.

Santander Bank Polska, S.A. has decided to carry out a change of strategy in its business model which has entailed the cessation of a significant element of its commercial activity corresponding to customer deposits. This decision has been publicly communicated. As a result, the assets, which corresponded to a business model whose objective was to collect the principal and interest flows and the sale of such assets, which were directly related in origin to such liabilities, have to be reclassified to a new business model whose objective is achieved through the collection of the principal and interest flows.

As established in IFRS 9, the transfer has been made prospectively; the financial asset has been reclassified to its fair value at the reclassification date and the cumulative gain or loss previously recognized in other comprehensive income has been eliminated from equity. Consequently, the financial asset is measured at the reclassification date as if it had always been measured at amortized cost and the cumulative gain or loss previously recognized in 'Other comprehensive income' (see consolidated statement of recognized income and expense) is adjusted against the fair value of the financial asset at the reclassification date.

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 2022, 2021 and 2020, 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 7 million, EUR 19 million and EUR 19 million in 2022, 2021 and 2020, 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 | 2022 | 2021 | 2020 |
|---|--------------|--------------|--------------|
| Balance at beginning of year | (476) | (489) | (335) |
| Revaluation gains/(losses) | 117 | 7 | (170) |
| Net amounts transferred to profit or loss | (15) | 6 | 16 |
| Balance at end of year | (374) | (476) | (489) |
| Of which: | | | |
| Zurich Santander Insurance América, S.L. | (315) | (332) | (298) |

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 2019, Banco Santander's share 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.

Likewise, 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.

On 1 April 2022, there was a capital reduction amounting to EUR 129,965,136.50 through the redemption of 259,930,273 shares, corresponding to the share buyback program carried out in 2021.

Likewise, on 28 June 2022, Banco Santander decreased its capital by an amount of EUR 143,154,722.50 through the redemption of 286,309,445 shares, corresponding to the share buyback program carried out during the first half of 2022.

Both operations have not entailed the return of contributions to the shareholders as Banco Santander was the owner of the redeemed shares.

Therefore, Banco Santander's share capital at 31 December 2022 consisted of EUR 8,397 million, represented by 16,794,401,584 shares of EUR 0.50 of nominal value each and all of them of a unique class and series. It includes 340,406,572 shares corresponding to the first 2022 share buyback program (see note 1.g).

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 Depository 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.

As of 31 December 2022, Norges Bank was registered with the CNMV with a direct significant shareholding of 3.006% of voting shares of Banco Santander (3% is the commonly lowest threshold provided under Spanish law to disclose a significant holding in a listed company), as it had announced on 5 May 2022. Even though at 31 December 2022, 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 (14.23%), Chase Nominees Limited (6.88%), The Bank of New York Mellon Corporation (4.82%), Citibank New York (3.90%), BNP (3.28%) and EC Nominees Limited (3.04%).

At 31 December 2022, 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 2022 the shares of the following companies were listed on official stock markets: Banco Santander Argentina 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. and Getnet Adquirência e Serviços para Meios de Pagamento S.A. - Instituição de Pagamento.

At 31 December 2022 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 50 million shares, which represented 0.30% of Banco Santander's share capital (45 and 39 million shares, representing 0.26% and 0.22% of the share capital in 2021 and 2020, respectively). In addition, the number of Banco Santander shares owned by third parties and received as security was 232 million shares (equal to 1.38% of the Bank's share capital).

At 31 December 2022 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 decrease in 2020 was due to the reduction of EUR 361 million to cover the capital increase on 3 December (see note 31). Also, in 2020 an amount of EUR 72 million, was transferred from the Share premium account to the Legal reserve (see note 33.b.i).

The decreased produced in 2021 for an amount of EUR 4,034 million was 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 31).

The decreased produced in 2022 by an amount of EUR 1,433 million has been the consequence of the difference between the purchase value of the redeemed shares (EUR 1,706 million) and the par value of said shares (EUR 273 million) (see note 4.a and consolidated statements of changes in total equity) as a consequence of the capital decreases described in note 31.a).

Likewise, in accordance with the applicable legislation, a reserve has been provided for amortized capital charged to the issue premium for an amount equal to the nominal value of said amortized shares (EUR 273 million).

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 | 2022 | 2021 | 2020 |
|---|---------------|---------------|---------------|
| Restricted reserves | 2,798 | 2,543 | 2,460 |
| Legal reserve ^A | 1,734 | 1,734 | 1,734 |
| Own shares | 737 | 755 | 672 |
| Revaluation reserve Royal Decree-Law 7/1996 | 43 | 43 | 43 |
| Reserve for retired capital | 284 | 11 | 11 |
| Unrestricted reserves | 7,701 | 4,243 | 10,422 |
| Voluntary reserves ^B | 7,917 | 6,123 | 6,128 |
| Consolidation reserves attributable to the Bank | (216) | (1,880) | 4,294 |
| Reserves of subsidiaries | 49,196 | 47,438 | 47,601 |
| Reserves of entities accounted for using the equity method | 1,553 | 1,572 | 1,504 |
| | 61,248 | 55,796 | 61,987 |

A. The board of directors has proposed to the general shareholders' meeting the reclassification of the excess that the amount of the balance of the legal reserve account shows over the figure that is equivalent to 20% of the resulting share capital after the executed capital reductions, to be included in the voluntary reserves account.

B. 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.

Also, in 2020 an amount of EUR 72 million, was transferred 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 met the percentage of 20% of the share capital, and at 31 December 2022 the Legal reserve was at 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 | 2022 | 2021 | 2020 |
|--|---------------|---------------|---------------|
| Banco Santander (Brasil) S.A. (Consolidated Group) | 14,663 | 14,325 | 14,067 |
| Santander UK Group | 8,358 | 8,558 | 8,447 |
| Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México | 5,437 | 4,753 | 4,230 |
| Grupo Santander Holdings USA | 4,324 | 4,913 | 4,793 |
| Banco Santander - Chile | 3,875 | 3,194 | 3,404 |
| Santander Consumer Finance Group | 3,858 | 3,502 | 4,186 |
| Banco Santander Totta, S.A. (Consolidated Group) | 3,297 | 2,940 | 2,960 |
| Banco Santander Argentina S.A. | 2,527 | 2,318 | 2,161 |
| Santander Bank Polska S.A. | 2,140 | 1,990 | 1,748 |
| Santander Investment, S.A. | 1,316 | 1,307 | 1,335 |
| Santander Seguros y Reaseguros, Compañía Aseguradora, S.A. | 1,050 | 869 | 695 |
| Banco Santander International SA (former Banco Santander (Suisse) S.A) | 310 | 277 | 247 |
| Other companies and consolidation adjustments | (1,959) | (1,508) | (672) |
| | 49,196 | 47,438 | 47,601 |
| <i>Of which, restricted</i> | <i>3,614</i> | <i>3,392</i> | <i>3,155</i> |

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 2022 amounted to EUR 688 million.

Additionally, at 31 December 2022 the Group had other equity instruments amounting to EUR 175 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 31 December 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; 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 donations on an extraordinary basis made by Banco Santander to the Banco Santander Foundation.

At 31 December 2021, the number of treasury shares held by the Group was 277,591,940 (1.60% of the issued share capital).

During 2022, 713,359,786 shares of the Bank were acquired at an average price of EUR 2.87 per share, of which 286,309,445 relate to the Share Buyback Program carried out during the first half of 2022, and 220,942,806 relate to the new Share Buyback Program started on November 22. Likewise, 546,239,718 shares were amortised (note 31) and 201,022,983 shares have been transferred (of which 36,700,000 shares correspond to two donations made by Banco Santander to the Banco Santander Foundation) at an average price of EUR 2.85 per share (excluding in the calculation of the average price the transfers made by Banco Santander in the aforementioned donations).

At 31 December 2022, the Group holds 243,689,025 shares of the Bank's issued share capital (1.45%).

The effect on equity, net of tax, arising from the purchase and sale of Bank shares is of EUR 7 million profit in 2022 (EUR 23 million and EUR 1 million profit in 2021 and 2020, 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:

| | 2022 | 2021 | 2020 |
|-------------------------------------|----------------|----------------|----------------|
| Loans commitment granted | 274,075 | 262,737 | 241,230 |
| <i>Of which impaired</i> | 653 | 615 | 274 |
| Financial guarantees granted | 12,856 | 10,758 | 12,377 |
| <i>Of which impaired</i> | 521 | 188 | 124 |
| Financial guarantees | 12,813 | 10,715 | 12,358 |
| Credit derivatives sold | 43 | 43 | 19 |
| Other commitments granted | 92,672 | 75,733 | 64,538 |
| <i>Of which impaired</i> | 608 | 781 | 548 |
| Technical guarantees | 50,508 | 40,158 | 33,526 |
| Other | 42,164 | 35,575 | 31,012 |

The breakdown as at 31 December 2022 of the exposures and the provision fund (see note 25) out of balance sheet by impairment stage is EUR 370,729 million and EUR 331 million (EUR 337,113 million and EUR 372 million in 2021 and EUR 310,435 million and EUR 377 million in 2020) in stage 1, EUR 7,092 million and EUR 191 million (EUR 10,531 million and EUR 200 million in 2021 and EUR 6,764 million and EUR 182 million in 2020) in stage 2 and EUR 1,782 million and EUR 212 million (EUR 1,584 million and EUR 161 million in 2021 and EUR 946 million and EUR 141 million in 2020) 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 | 2022 | 2021 | 2020 |
|-------------------------|----------------|----------------|----------------|
| Investment funds | 142,189 | 145,987 | 131,965 |
| Pension funds | 14,021 | 16,078 | 15,577 |
| Assets under management | 25,670 | 24,862 | 20,712 |
| | 181,880 | 186,927 | 168,254 |

ii. Non-managed marketed funds

Additionally, at 31 December 2022 there are non-managed marketed funds totalling EUR 48,379 million (EUR 48,385 million and EUR 38,563 million at 31 December 2021 and 2020, respectively).

c) Third-party securities held in custody

At 31 December 2022 the Group held in custody debt securities and equity instruments totalling EUR 231,263 million (EUR 236,153 million and EUR 209,269 million at 31 December 2021 and 2020, 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 53 of this report, in the section 'IBOR Reform', 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 6.83% of the total hedging derivatives:

| EUR million | USD LIBOR |
|---|---------------|
| Total hedging instruments affected | |
| Fair value hedges | 17,001 |
| Interest rate risk | 13,907 |
| Interest rate and foreign exchange risk | 3,094 |
| Cash flow hedges | 12,740 |
| Interest rate risk | 9,454 |
| Interest rate and foreign exchange risk | 3,278 |
| Exchange rate risk | 8 |
| | 29,741 |
| Post-transition date agreement | |
| Fair value hedges | 14,879 |
| Interest rate risk | 11,785 |
| Interest rate and foreign exchange risk | 3,094 |
| Cash flow hedges | 11,573 |
| Interest rate risk | 8,295 |
| Interest rate and foreign exchange risk | 3,278 |
| | 26,452 |

As for the hedged items directly affected by the uncertainties related to the IBOR reforms, their nominal amount is shown below, which represents 2.17% of the total notional amount hedged:

| EUR million | USD LIBOR |
|--|--------------|
| Total hedge items directly affected | |
| Fair value hedges | 201 |
| Interest rate risk | 201 |
| Cash flow hedges | 9,357 |
| Interest rate risk | 9,349 |
| Exchange rate risk | 8 |
| | 9,558 |
| Post-transition date agreement | |
| Fair value hedges | 201 |
| Interest rate risk | 201 |
| Cash flow hedges | 8,202 |
| Interest rate risk | 8,202 |
| | 8,403 |

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 2022, 2021 and 2020:

EUR million

| | 2022 | | | | Changes in fair value used for calculating hedge ineffectiveness | Balance sheet line items |
|--|-----------------|--------------|--------------|---------------|--|----------------------------|
| | Carrying amount | | | Nominal value | | |
| | Assets | Liabilities | | | | |
| Fair value hedges | 214,473 | 5,095 | 4,630 | | 3,351 | |
| Interest rate risk | 190,513 | 4,405 | 4,239 | | 2,554 | Hedging derivatives |
| <i>Of which:</i> | | | | | | |
| <i>Interest rate swap</i> | 87,477 | 2,950 | 3,203 | | (716) | |
| <i>Call money swap</i> | 88,059 | 1,367 | 623 | | 3,468 | |
| Exchange rate risk | 4,492 | 147 | 25 | | (9) | Hedging derivatives |
| <i>Fx forward</i> | 3,745 | 147 | 25 | | (36) | |
| <i>Future interest rate</i> | 747 | — | — | | 27 | |
| Interest rate and exchange rate risk | 19,412 | 543 | 366 | | 805 | Hedging derivatives |
| <i>Of which:</i> | | | | | | |
| <i>Interest rate swap</i> | 905 | 4 | 80 | | (79) | |
| <i>Future interest rate</i> | 8,679 | 261 | — | | 922 | |
| <i>Currency swap</i> | 9,522 | 266 | 286 | | (61) | |
| Credit risk | 56 | — | — | | 1 | Hedging derivatives |
| <i>CDS</i> | 56 | — | — | | 1 | |
| Cash flow hedges | 149,756 | 2,730 | 3,767 | | (520) | |
| Interest rate risk | 81,626 | 137 | 1,325 | | (2,461) | |
| <i>Of which:</i> | | | | | | |
| <i>Future interest rate</i> | 2,027 | — | — | | 51 | |
| <i>Interest rate swap</i> | 55,886 | 59 | 1,494 | | (1,439) | |
| <i>Call money swap</i> | 20,784 | 49 | (184) | | (1,151) | |
| Exchange rate risk | 34,973 | 1,358 | 746 | | 1,760 | Hedging derivatives |
| <i>Of which:</i> | | | | | | |
| <i>FX forward</i> | 10,754 | 267 | 172 | | 773 | |
| <i>Currency swap</i> | 20,005 | 951 | 455 | | 982 | |
| Interest rate and exchange rate risk | 16,175 | 1,046 | 292 | | (80) | Hedging derivatives |
| <i>Of which:</i> | | | | | | |
| <i>Interest rate swap</i> | 3,361 | — | 161 | | (333) | |
| <i>Currency swap</i> | 12,814 | 1,046 | 131 | | 249 | |
| Inflation risk | 16,924 | 180 | 1,403 | | 261 | Hedging derivatives |
| <i>Of which:</i> | | | | | | |
| <i>Currency swap</i> | 14,096 | 179 | 1,364 | | 241 | |
| Equity risk | 58 | 9 | 1 | | — | Hedging derivatives |
| <i>Option</i> | 58 | 9 | 1 | | — | |
| Hedges of net investments in foreign operations | 22,614 | 244 | 831 | | (2,467) | |
| Exchange rate risk | 22,614 | 244 | 831 | | (2,467) | Hedging derivatives |
| <i>FX forward</i> | 22,614 | 244 | 831 | | (2,467) | |
| | 386,843 | 8,069 | 9,228 | | 364 | |

EUR million

| | 2021 | | | | Changes in fair value used for calculating hedge ineffectiveness | Balance sheet line items |
|--|-----------------|--------------|--------------|---------------|--|----------------------------|
| | Carrying amount | | | Nominal value | | |
| | Assets | Liabilities | | | | |
| Fair value hedges | 206,957 | 2,528 | 2,656 | | 1,079 | |
| Interest rate risk | 176,176 | 2,227 | 1,778 | | 591 | Hedging derivatives |
| <i>Of which:</i> | | | | | | |
| <i>Interest rate swap</i> | 66,904 | 1,668 | 920 | | (377) | |
| <i>Call money swap</i> | 97,321 | 1 | 734 | | 714 | |
| Exchange rate risk | 21,238 | 7 | 423 | | 287 | Hedging derivatives |
| <i>Of which:</i> | | | | | | |
| <i>FX forward</i> | 13,909 | 7 | 423 | | 22 | |
| <i>Future interest rate</i> | 7,329 | — | — | | 265 | |
| Interest rate and exchange rate risk | 9,326 | 294 | 452 | | 200 | Hedging derivatives |
| <i>Of which:</i> | | | | | | |
| <i>Currency swap</i> | 7,397 | 281 | 443 | | 192 | |
| <i>Interest rate swap</i> | 1,650 | 12 | 9 | | (7) | |
| Credit risk | 173 | — | 2 | | 1 | Hedging derivatives |
| Inflation risk | 44 | — | 1 | | — | Hedging derivatives |
| Cash flow hedges | 160,397 | 2,034 | 2,157 | | (1,703) | |
| Interest rate risk | 99,648 | 156 | 420 | | (526) | Hedging derivatives |
| <i>Of which:</i> | | | | | | |
| <i>Future interest rate</i> | 7,652 | — | — | | (155) | |
| <i>Interest rate swap</i> | 69,471 | 70 | 155 | | (212) | |
| <i>Call money swap</i> | 16,846 | 20 | 182 | | (409) | |
| Exchange rate risk | 27,343 | 396 | 657 | | (112) | Hedging derivatives |
| <i>Of which:</i> | | | | | | |
| <i>FX forward</i> | 8,381 | 280 | 42 | | 26 | |
| <i>Currency swap</i> | 15,004 | 100 | 606 | | (133) | |
| Interest rate and exchange rate risk | 21,609 | 1,425 | 400 | | (815) | Hedging derivatives |
| <i>Of which:</i> | | | | | | |
| <i>Interest rate swap</i> | 3,604 | 95 | 2 | | (112) | |
| <i>Currency swap</i> | 17,005 | 1,330 | 393 | | (702) | |
| Inflation risk | 11,741 | 52 | 679 | | (247) | Hedging derivatives |
| <i>Of which:</i> | | | | | | |
| <i>Currency swap</i> | 10,503 | 51 | 678 | | (232) | |
| Equity risk | 56 | 5 | 1 | | (3) | Hedging derivatives |
| Hedges of net investments in foreign operations | 25,594 | 199 | 650 | | (1,159) | |
| Exchange rate risk | 25,594 | 199 | 650 | | (1,159) | Hedging derivatives |
| <i>FX forward</i> | 25,594 | 199 | 650 | | (1,159) | |
| | 392,948 | 4,761 | 5,463 | | (1,783) | |

EUR million

| | 2020 | | | | Changes in fair value used for calculating hedge ineffectiveness | Balance sheet line items |
|--|-----------------|--------------|--------------|---------------|--|----------------------------|
| | Carrying amount | | | Nominal value | | |
| | Assets | Liabilities | | | | |
| Fair value hedges | 199,260 | 4,199 | 4,671 | | (451) | |
| Interest rate risk | 181,582 | 3,528 | 3,850 | | (456) | Hedging derivatives |
| <i>Of which:</i> | | | | | | |
| <i>Interest rate swap</i> | 94,713 | 2,985 | 2,747 | | (27) | |
| <i>Call money swap</i> | 69,740 | 184 | 886 | | (486) | |
| Exchange rate risk | 9,037 | 293 | 47 | | 11 | Hedging derivatives |
| <i>Of which:</i> | | | | | | |
| <i>Fx forward</i> | 8,422 | 210 | 47 | | 11 | |
| Interest rate and exchange rate risk | 8,434 | 378 | 771 | | (11) | Hedging derivatives |
| <i>Of which:</i> | | | | | | |
| <i>Currency swap</i> | 7,704 | 370 | 757 | | (4) | |
| Credit risk | 207 | 0 | 3 | | 5 | Hedging derivatives |
| Cash flow hedges | 139,156 | 3,436 | 1,739 | | 235 | |
| Interest rate risk | 74,731 | 478 | 522 | | 78 | Hedging derivatives |
| <i>Of which:</i> | | | | | | |
| <i>Futures</i> | 7,492 | — | 322 | | (208) | |
| <i>Interest rate swap</i> | 46,547 | 237 | 108 | | 135 | |
| <i>Call money swap</i> | 12,123 | 204 | 7 | | 145 | |
| Exchange rate risk | 23,483 | 555 | 802 | | (401) | Hedging derivatives |
| <i>Of which:</i> | | | | | | |
| <i>FX forward</i> | 9,151 | 265 | 195 | | (155) | |
| <i>Currency swap</i> | 13,425 | 283 | 600 | | (103) | |
| Interest rate and exchange rate risk | 27,021 | 2,362 | 275 | | 679 | Hedging derivatives |
| <i>Of which:</i> | | | | | | |
| <i>Interest rate swap</i> | 5,218 | 262 | — | | 129 | |
| <i>Currency swap</i> | 19,682 | 2,100 | 264 | | 550 | |
| Inflation risk | 13,907 | 36 | 140 | | (129) | Hedging derivatives |
| <i>Of which:</i> | | | | | | |
| <i>Currency swap</i> | 10,206 | 26 | 136 | | (132) | |
| Equity risk | 14 | 5 | — | | 8 | Hedging derivatives |
| Hedges of net investments in foreign operations | 22,210 | 690 | 459 | | 2,340 | |
| Exchange rate risk | 22,210 | 690 | 459 | | 2,340 | Hedging derivatives |
| <i>FX forward</i> | 22,210 | 690 | 459 | | 2,340 | |
| | 360,626 | 8,325 | 6,869 | | 2,124 | |



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 BoE base rate. 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 28,200 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 2022 | | | | | Total |
|---|------------------|---------------------|--------------------------|------------------------|----------------------|----------------|
| | Up to one month | One to three months | Three months to one year | One year to five years | More than five years | |
| Fair value hedges | 6,588 | 9,811 | 37,723 | 136,223 | 24,128 | 214,473 |
| Interest rate risk | 5,120 | 8,822 | 34,074 | 120,829 | 21,668 | 190,513 |
| <i>Of which:</i> | | | | | | |
| <i>Interest rate swap</i> | 2,535 | 3,005 | 8,854 | 56,868 | 16,215 | 87,477 |
| <i>Call money swap</i> | 2,492 | 5,039 | 23,511 | 54,786 | 2,231 | 88,059 |
| Exchange rate risk | 556 | 741 | 2,448 | — | 747 | 4,492 |
| <i>Fx forward</i> | 556 | 741 | 2,448 | — | — | 3,745 |
| <i>Future interest rate</i> | — | — | — | — | 747 | 747 |
| Interest rate and exchange rate risk | 912 | 238 | 1,193 | 15,356 | 1,713 | 19,412 |
| <i>Of which:</i> | | | | | | |
| <i>Interest rate swap</i> | — | — | 405 | 192 | 308 | 905 |
| <i>Interest Future rate</i> | — | — | — | 8,679 | — | 8,679 |
| <i>Currency swap</i> | 912 | 238 | 788 | 6,188 | 1,396 | 9,522 |
| Credit risk | — | 10 | 8 | 38 | — | 56 |
| <i>CDS</i> | — | 10 | 8 | 38 | — | 56 |
| Cash flow hedges | 10,182 | 15,202 | 41,514 | 75,653 | 7,205 | 149,756 |
| Interest rate risk | 5,546 | 7,424 | 30,568 | 36,501 | 1,587 | 81,626 |
| <i>Of which:</i> | | | | | | |
| <i>Future interest rate</i> | 2,027 | — | — | — | — | 2,027 |
| <i>Interest rate swap</i> | 2,292 | 4,877 | 28,103 | 20,568 | 46 | 55,886 |
| <i>Call money swap</i> | 1,175 | 2,471 | 1,196 | 14,728 | 1,214 | 20,784 |
| Exchange rate risk | 3,777 | 4,295 | 4,452 | 19,940 | 2,509 | 34,973 |
| <i>Of which:</i> | | | | | | |
| <i>FX forward</i> | 1,996 | 2,487 | 1,982 | 4,289 | — | 10,754 |
| <i>Currency swap</i> | 1,313 | 1,809 | 2,470 | 13,028 | 1,385 | 20,005 |
| Interest rate and exchange rate risk | 182 | 509 | 3,982 | 10,294 | 1,208 | 16,175 |
| <i>Of which:</i> | | | | | | |
| <i>Interest rate swap</i> | — | — | 659 | 2,468 | 234 | 3,361 |
| <i>Currency swap</i> | 182 | 509 | 3,323 | 7,826 | 974 | 12,814 |
| Inflation risk | 677 | 2,974 | 2,505 | 8,870 | 1,898 | 16,924 |
| <i>Of which:</i> | | | | | | |
| <i>Currency swap</i> | 483 | 951 | 1,895 | 8,869 | 1,898 | 14,096 |
| Equity risk | — | — | 7 | 48 | 3 | 58 |
| <i>Option</i> | — | — | 7 | 48 | 3 | 58 |
| Hedges of net investments in foreign operations: | 2,249 | 5,393 | 14,972 | — | — | 22,614 |
| Exchange rate risk | 2,249 | 5,393 | 14,972 | — | — | 22,614 |
| <i>FX forward</i> | 2,249 | 5,393 | 14,972 | — | — | 22,614 |
| | 19,019 | 30,406 | 94,209 | 211,876 | 31,333 | 386,843 |

EUR million

| | 31 December 2021 | | | | | Total |
|---|------------------|---------------------|--------------------------|------------------------|----------------------|----------------|
| | Up to one month | One to three months | Three months to one year | One year to five years | More than five years | |
| 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 |
| <i>Of which:</i> | | | | | | |
| <i>Interest rate swap</i> | 267 | 2,138 | 4,189 | 42,398 | 17,912 | 66,904 |
| <i>Call money swap</i> | 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 |
| <i>Of which:</i> | | | | | | |
| <i>Fx forward</i> | 598 | 1,712 | 11,013 | 586 | — | 13,909 |
| <i>Future interest rate</i> | — | — | — | 4,964 | 2,365 | 7,329 |
| Interest rate and exchange rate risk | 624 | 77 | 199 | 5,898 | 2,528 | 9,326 |
| <i>Of which:</i> | | | | | | |
| <i>Currency swap</i> | 624 | 72 | 198 | 4,437 | 2,066 | 7,397 |
| <i>Interest rate swap</i> | — | — | — | 1,232 | 418 | 1,650 |
| 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 |
| <i>Of which:</i> | | | | | | |
| <i>Future interest rate</i> | 7,097 | — | 244 | 311 | — | 7,652 |
| <i>Interest rate swap</i> | 2,336 | 310 | 7,759 | 58,930 | 136 | 69,471 |
| <i>Call money swap</i> | 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 |
| <i>Of which:</i> | | | | | | |
| <i>FX forward</i> | 2,406 | 1,309 | 1,947 | 2,719 | — | 8,381 |
| <i>Currency swap</i> | 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 |
| <i>Of which:</i> | | | | | | |
| <i>Interest rate swap</i> | — | — | — | 2,505 | 1,099 | 3,604 |
| <i>Currency swap</i> | 860 | 336 | 5,924 | 7,660 | 2,225 | 17,005 |
| Inflation risk | 329 | 463 | 1,463 | 7,246 | 2,240 | 11,741 |
| <i>Of which:</i> | | | | | | |
| <i>Currency swap</i> | 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 |
| <i>FX forward</i> | 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 | | | | | Total |
|--|------------------|---------------------|--------------------------|------------------------|----------------------|----------------|
| | Up to one month | One to three months | Three months to one year | One year to five years | More than five years | |
| 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 |
| <i>Of which:</i> | | | | | | |
| <i>Interest rate swap</i> | 3,943 | 4,804 | 24,807 | 33,333 | 27,826 | 94,713 |
| <i>Call money swap</i> | 1,021 | 4,662 | 11,241 | 49,624 | 3,192 | 69,740 |
| Exchange rate risk | 1,516 | 4,264 | 3,257 | — | — | 9,037 |
| <i>Of which:</i> | | | | | | |
| <i>Fx forward</i> | 901 | 4,264 | 3,257 | — | — | 8,422 |
| Interest rate and exchange rate risk | — | 282 | 1,711 | 4,239 | 2,202 | 8,434 |
| <i>Of which:</i> | | | | | | |
| <i>Currency swap</i> | — | 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 |
| <i>Of which:</i> | | | | | | |
| <i>Futures</i> | 5,213 | — | — | 2,279 | — | 7,492 |
| <i>Interest rate swap</i> | 806 | 4,626 | 29,511 | 11,219 | 385 | 46,547 |
| <i>Call money swap</i> | — | 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 |
| <i>Of which:</i> | | | | | | |
| <i>Future interest rate</i> | | | | | | |
| <i>FX forward</i> | 1,532 | 2,243 | 3,040 | 2,336 | — | 9,151 |
| <i>Currency swap</i> | 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 |
| <i>Of which:</i> | | | | | | |
| <i>Interest rate swap</i> | 816 | — | 981 | 2,402 | 1,019 | 5,218 |
| <i>Currency swap</i> | 875 | 972 | 4,653 | 11,164 | 2,018 | 19,682 |
| Inflation risk | 1,033 | 1,614 | 807 | 5,456 | 4,997 | 13,907 |
| <i>Of which:</i> | | | | | | |
| <i>FX forward</i> | | | | | | |
| <i>Currency swap</i> | 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 |
| <i>FX forward</i> | 2,435 | 5,086 | 12,831 | 1,858 | — | 22,210 |
| | 20,056 | 30,936 | 101,855 | 158,387 | 49,392 | 360,626 |

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 2022 | | | | | | |
|--|-----------------|---------------------|--------------------------|------------------------|----------------------|--------|
| 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 | 2,492 | 5,039 | 24,447 | 51,257 | 4,294 | 87,529 |
| Average fixed interest rate (%) GBP | 2.580 | 0.880 | 0.560 | 2.070 | 3.780 | |
| Average fixed interest rate (%) EUR | 1.770 | 1.600 | 0.770 | 0.280 | 3.090 | |
| Average fixed interest rate (%) USD | 1.350 | 3.470 | 3.510 | 2.000 | 4.920 | |
| Interest rate and foreign exchange rate risk | | | | | | |
| Exchange and interest rate instruments | | | | | | |
| Nominal | — | — | 74 | 821 | 16 | 911 |
| Average GBP/EUR exchange rate | — | — | 1.212 | 1.157 | 1.100 | |
| Average GBP/USD exchange rate | — | — | — | 1.186 | — | |
| Average fixed interest rate (%) EUR | — | — | 3.420 | 2.060 | — | |
| Average fixed interest rate (%) USD | — | — | — | 4.630 | — | |
| Cash flow hedges | | | | | | |
| Interest rate risk | | | | | | |
| Interest rate instruments | | | | | | |
| Nominal | 1,175 | 2,471 | 2,188 | 14,728 | 1,213 | 21,775 |
| Average fixed interest rate (%) GBP | 1.770 | 2.290 | 1.980 | 2.350 | 1.840 | |
| Foreign exchange risk | | | | | | |
| Exchange and interest rate instruments | | | | | | |
| Nominal | 3,063 | 3,536 | 2,685 | 14,583 | 2,436 | 26,303 |
| Average GBP/JPY exchange rate | — | 157.450 | 160.039 | — | — | |
| Average GBP/CHF exchange rate | — | 1.131 | — | — | — | |
| Average GBP/EUR exchange rate | — | — | 1.123 | 1.181 | 1.165 | |
| Average GBP/USD exchange rate | 1.224 | 1.253 | 1.171 | 1.314 | 1.388 | |
| Equity risk | | | | | | |
| Equity instruments | | | | | | |
| Nominal | — | — | 7 | 48 | 2 | 57 |
| Interest rate and foreign exchange rate risk | | | | | | |
| Exchange and interest rate instruments | | | | | | |
| Nominal | — | — | 1,983 | 7,621 | 968 | 10,572 |
| Average GBP/EUR exchange rate | — | — | 1.185 | 1.210 | 1.196 | |
| Average GBP/USD exchange rate | — | — | 1.604 | 1.503 | 1.537 | |
| Average fixed interest rate (%) GBP | — | — | 3.270 | 2.580 | 4.590 | |

31 December 2021

| | EUR million | | | | | Total |
|--|-----------------|---------------------|--------------------------|------------------------|----------------------|--------|
| | Up to one month | One to three months | Three months to one year | One year to five years | More than five years | |
| 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 | | | | | Total |
|---|-----------------|---------------------|--------------------------|------------------------|----------------------|---------|
| | Up to one month | One to three months | Three months to one year | One year to five years | More than five years | |
| Fair value hedges | | | | | | |
| Interest rate risk | | | | | | |
| <i>Interest rate instruments</i> | | | | | | |
| 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 | | | | | | |
| <i>Exchange and interest rate instruments</i> | | | | | | |
| 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 | | | | | | |
| <i>Interest rate instruments</i> | | | | | | |
| 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 | | | | | | |
| <i>Exchange and interest rate instruments</i> | | | | | | |
| 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 | | | | | | |
| <i>Exchange and interest rate instruments</i> | | | | | | |
| 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 | |

Banco Santander, S.A.

| | 31 December 2022 | | | | | Total |
|--|------------------|---------------------|--------------------------|------------------------|----------------------|--------|
| | EUR million | | | | | |
| | Up to one month | One to three months | Three months to one year | One year to five years | More than five years | |
| Fair value hedges | | | | | | |
| Interest rate risk | | | | | | |
| Interest rate instruments | | | | | | |
| Nominal | 1,032 | 1,248 | 2,348 | 24,115 | 8,809 | 37,552 |
| Average fixed interest rate (%) GBP | — | 2.04 | 2.04 | 1.86 | 2.04 | |
| Average fixed interest rate (%) EUR | 0.569 | (0.406) | 0.278 | 2.396 | 1.674 | |
| Average fixed interest rate (%) CHF | — | — | — | 0.530 | — | |
| Average fixed interest rate (%) JPY | — | — | — | 0.465 | — | |
| Average fixed interest rate (%) CZK | — | — | — | 1.650 | — | |
| Average fixed interest rate (%) NOK | — | — | — | — | 2.327 | |
| Average fixed interest rate (%) AUD | — | 1.073 | — | — | — | |
| Average fixed interest rate (%) USD | 2.892 | 3.123 | 3.835 | 3.181 | 3.374 | |
| Average fixed interest rate (%) RON | — | — | — | 3.610 | — | |
| Foreign exchange risk | | | | | | |
| Exchange and interest rate instruments | | | | | | |
| Nominal | 250 | 899 | 2,064 | — | — | 3,213 |
| Average GBP/EUR exchange rate | — | — | 0.877 | — | — | |
| Average USD/EUR exchange rate | 1.040 | — | 0.992 | — | — | |
| Average CNY/EUR exchange rate | 7.172 | 7.252 | 7.159 | — | — | |
| Average AUD/EUR exchange rate | — | 1.587 | — | — | — | |
| Average MXN/EUR exchange rate | — | 21.529 | — | — | — | |
| Interest rate and foreign exchange rate risk | | | | | | |
| Exchange and interest rate instruments | | | | | | |
| Nominal | 912 | 38 | 1,101 | 3,767 | 988 | 6,806 |
| Average fixed interest rate (%) AUD/EUR | 4.000 | — | — | 4.800 | 3.824 | |
| Average fixed interest rate (%) CZK/EUR | — | — | 0.860 | — | — | |
| Average fixed interest rate (%) RON/EUR | — | 4.520 | — | 5.130 | — | |
| Average fixed interest rate (%) HKD/EUR | — | — | — | 2.580 | — | |
| Average fixed interest rate (%) JPY/EUR | 0.568 | — | — | 1.442 | 1.360 | |
| Average fixed interest rate (%) NOK/EUR | — | — | — | 3.010 | 3.762 | |
| Average fixed interest rate (%) CHF/EUR | — | — | — | 1.243 | — | |
| Average fixed interest rate (%) EUR/GBP | — | 5.170 | — | — | — | |
| Average fixed interest rate (%) NZD/EUR | — | — | — | — | — | |
| Average fixed interest rate (%) USD/MXN | — | — | 12.982 | — | — | |
| Average fixed interest rate (%) USD/COP | — | — | 15.452 | 13.614 | 7.150 | |
| Average fixed interest rate (%) EUR/USD | — | — | — | (0.140) | — | |
| Average fixed interest rate (%) USD/CLP | — | — | — | 3.450 | — | |
| Average AUD/EUR exchange rate | 1.499 | — | — | 1.499 | 1.545 | |
| Average CZK/EUR exchange rate | — | — | 25.407 | 25.677 | — | |
| Average EUR/GBP exchange rate | — | 1.162 | — | — | — | |
| Average EUR/USD exchange rate | — | — | — | 0.945 | — | |
| Average HKD/EUR exchange rate | — | — | — | 8.851 | — | |
| Average JPY/EUR exchange rate | 133.840 | — | — | 130.227 | 118.180 | |
| Average NOK/EUR exchange rate | — | — | — | 9.492 | 9.685 | |
| Average RON/EUR exchange rate | — | 4.746 | — | 4.842 | 4.927 | |
| Average CHF/EUR exchange rate | — | — | 1.092 | 1.105 | — | |
| Average USD/CLP exchange rate | — | — | — | 0.001 | — | |

31 December 2022

| | EUR million | | | | | Total |
|--|-----------------|---------------------|--------------------------|------------------------|----------------------|--------|
| | Up to one month | One to three months | Three months to one year | One year to five years | More than five years | |
| Average NZD/EUR exchange rate | — | — | — | — | 1.666 | |
| Average USD/MXN exchange rate | — | — | 0.051 | — | — | |
| Credit risk | | | | | | |
| <i>Credit risk instruments</i> | | | | | | |
| Nominal | — | 9 | 8 | 38 | — | 55 |
| Cash flow hedges | | | | | | |
| Interest rate and foreign exchange rate risk | | | | | | |
| <i>Interest rate and foreign exchange rate instruments</i> | | | | | | |
| Nominal | — | 3 | 597 | 1,451 | 184 | 2,235 |
| Average fixed interest rate (%) EUR/PEN | — | — | 6.496 | — | — | |
| Average fixed rate (%) USD/COP | — | — | 15.398 | — | — | |
| Average fixed interest rate (%) EUR/AUD | — | 3.207 | — | — | — | |
| Average fixed interest rate (%) AUD/EUR | — | — | — | 0.305 | — | |
| Average EUR/GBP exchange rate | — | — | 1.084 | 1.173 | — | |
| 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 | — | — | 0.252 | — | — | |
| Average EUR/AUD exchange rate | — | 0.654 | — | — | — | |
| Interest rate risk | | | | | | |
| <i>Bond Forward instruments</i> | | | | | | |
| Nominal | 2,250 | 4,500 | 11,453 | 10,000 | — | 28,203 |
| Average fixed interest rate (%) EUR | (0.431) | (0.404) | (0.348) | (0.010) | — | |
| Inflation risk | | | | | | |
| <i>Bond Forward instruments</i> | | | | | | |
| Nominal | — | — | 700 | — | — | 700 |
| Average fixed interest rate (%) EUR | — | — | 0.322 | — | — | |
| Exchange rate risk | | | | | | |
| <i>Exchange instruments</i> | | | | | | |
| Nominal | 11 | 22 | 99 | — | — | 132 |
| Average exchange rate GBP/EUR | 1.156 | 1.153 | 1.142 | — | — | |
| Hedges of net investments in foreign operations | | | | | | |
| Exchange rate risk | | | | | | |
| <i>Exchange and interest rate instruments</i> | | | | | | |
| Nominal | 2,020 | 4,711 | 13,839 | — | — | 20,570 |
| Average BRL/EUR exchange rate | 6.554 | 5.797 | 5.866 | — | — | |
| Average CLP/EUR exchange rate | 953.549 | 955.790 | 944.113 | — | — | |
| Average COP/EUR exchange rate | — | 4,935.121 | — | — | — | |
| Average GBP/EUR exchange rate | 0.869 | 0.873 | 0.876 | — | — | |
| Average MXN/EUR exchange rate | 25.130 | 23.968 | 22.156 | — | — | |
| Average USD/EUR exchange rate | — | — | 1.158 | — | — | |
| Average PLN/EUR exchange rate | 4.832 | 4.837 | 4.991 | — | — | |

31 December 2021

| | EUR million | | | | | Total |
|--|-----------------|---------------------|--------------------------|------------------------|----------------------|--------|
| | Up to one month | One to three months | Three months to one year | One year to five years | More than five years | |
| 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 COP/USD exchange rate | — | — | — | — | — | |
| Average CZK/EUR exchange rate | — | — | — | 25.506 | — | |
| Average EUR/GBP exchange rate | — | 1.176 | — | — | — | |
| Average EUR/COP exchange rate | — | — | — | — | — | |
| 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/COP exchange rate | — | — | — | — | — | |
| Average USD/CLP exchange rate | — | — | — | 0.001 | — | |
| Average NZD/EUR exchange rate | — | — | — | — | 1.666 | |
| Average USD/MXN exchange rate | — | — | — | 0.050 | — | |
| Credit risk | | | | | | |

31 December 2021

| | EUR million | | | | | Total |
|--|-----------------|---------------------|--------------------------|------------------------|----------------------|--------|
| | Up to one month | One to three months | Three months to one year | One year to five years | More than five years | |
| Credit risk instruments | | | | | | |
| Nominal | — | 19 | 34 | 120 | 0 | 173 |
| Cash flow hedges | | | | | | |
| <i>Interest rate and foreign exchange rate risk</i> | | | | | | |
| <i>Interest rate and foreign exchange rate instruments</i> | | | | | | |
| 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 | — | — | — | — |
| <i>Interest rate risk</i> | | | | | | |
| <i>Bond Forward instruments</i> | | | | | | |
| 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 | | | | | | |
| <i>Exchange rate risk</i> | | | | | | |
| <i>Exchange and interest rate instruments</i> | | | | | | |
| Nominal | 3,778 | 4,848 | 11,815 | 2,916 | — | 23,357 |
| Average BRL/EUR exchange rate | 6.663 | 6.7576 | 6.8411 | — | — | — |
| 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 | | | | | Total |
|---|-----------------|---------------------|--------------------------|------------------------|----------------------|--------|
| | Up to one month | One to three months | Three months to one year | One year to five years | More than five years | |
| Fair value hedges | | | | | | |
| Interest rate risk | | | | | | |
| <i>Interest rate instruments</i> | | | | | | |
| 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 | | | | | | |
| <i>Exchange and interest rate instruments</i> | | | | | | |
| 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 | — | — | — | |
| Interest rate and foreign exchange rate risk | | | | | | |
| <i>Exchange and interest rate instruments</i> | | | | | | |
| Nominal | — | 282 | 818 | 2,621 | 1,083 | 4,804 |
| Average fixed interest rate (%) AUD/EUR | — | — | — | 4.000 | 4.66 | |
| 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 | |

31 December 2020

| | EUR million | | | | | Total |
|--|-----------------|---------------------|--------------------------|------------------------|----------------------|--------|
| | Up to one month | One to three months | Three months to one year | One year to five years | More than five years | |
| 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 | — | — | |
| <i>Credit risk</i> | | | | | | |
| <i>Credit risk instruments</i> | | | | | | |
| Nominal | — | 8 | 8 | 191 | — | 207 |
| Cash flow hedges | | | | | | |
| <i>Interest rate and foreign exchange rate risk</i> | | | | | | |
| <i>Interest rate and foreign exchange rate instruments</i> | | | | | | |
| 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 | |
| <i>Interest rate risk</i> | | | | | | |
| <i>Bond Forward instruments</i> | | | | | | |
| 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 | | | | | | |
| <i>Exchange rate risk</i> | | | | | | |
| <i>Exchange and interest rate instruments</i> | | | | | | |
| 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 | — | — | |

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 Grupo Santander'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, fair value hedges to protect both assets and liabilities from fluctuations in market rates. The market risk coverage management methodology adopted by the Bank segregates transactions by risk factor (BRL/USD exchange rate risk, pre-set interest rate risk in BRL, USD interest rate risk, inflation....). The entity manages this risk by contracting derivatives (Interest Rate Swaps or Interest Rate Futures) to hedge assets or liabilities at a fixed rate.

Brasil 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 or futures.

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.

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.

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.

Additionally, Banco Santander Chile uses fair value hedges with cross currency swaps, interest rate swaps and call money swaps to hedge its exposure to changes in the fair value of the hedged item attributable to interest rates. The aforementioned hedging instruments modify the effective cost of long-term issues, from a fixed interest rate to a variable interest rate.

In addition, it also makes cash flow hedges in which it uses cross currency swaps to cover the risk of variability of flows attributable to changes in the interest rate of bonds and interbank loans issued at variable rates, as well as to cover the variation of foreign currency, mainly in United States dollars. To hedge the inflation risk present in certain items, it uses both forwards and cross currency swaps.

At Santander Bank National Association, Interest Rate Swaps are used to leave commercial loans at a fixed rate at a variable rate in USD indexed to 1-month Libor or SOFR, under cash flow hedges.

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 2022, 2021 and 2020:

| EUR million | | | | | | | | |
|---------------------------------------|---------------------------------|---------------|---|----------------|--|--|---|---------------------|
| 31 December 2022 | | | | | | | | |
| | Carrying amount of hedged items | | Accumulated amount of fair value adjustments on the hedged item | | Balance sheet line item | Change in fair value of hedged item for ineffectiveness assessment | Cash flow reserves or conversion reserves | |
| | Assets | Liabilities | Assets | Liabilities | | | Continuing hedges | Discontinued hedges |
| | | | | | Loans and advances / Deposits and Debt securities / Debt securities issued | | | |
| Fair value hedges | 126,665 | 59,837 | (5,487) | (3,581) | | (3,232) | — | — |
| Interest rate risk | 121,605 | 53,239 | (5,069) | (3,428) | | (2,397) | — | — |
| Exchange rate risk | 2,792 | 1,040 | (284) | — | | (7) | — | — |
| Interest and Exchange rate risk | 2,126 | 5,558 | (134) | (153) | | (826) | — | — |
| Inflation risk | — | — | — | — | | — | — | — |
| Credit risk | 142 | — | — | — | | (2) | — | — |
| Cash flow hedges | | | | | | 475 | (3,353) | (225) |
| Interest rate risk | | | | | | 2,458 | (2,973) | (75) |
| Exchange rate risk | | | | | | (1,764) | (88) | (2) |
| Interest and Exchange rate risk | | | | | | 39 | (309) | 1 |
| Inflation risk | | | | | | (258) | 14 | (149) |
| Equity risk | | | | | | — | 3 | — |
| Net foreign investments hedges | 22,614 | — | | | | 2,467 | (6,750) | — |
| Exchange rate risk | 22,614 | — | | | | 2,467 | (6,750) | — |
| | 149,279 | 59,837 | (5,487) | (3,581) | | (290) | (10,103) | (225) |

| EUR million | | | | | | | | |
|---------------------------------------|---------------------------------|---------------|---|-------------|--|--|---|---------------------|
| 31 December 2021 | | | | | | | | |
| | Carrying amount of hedged items | | Accumulated amount of fair value adjustments on the hedged item | | Balance sheet line item | Change in fair value of hedged item for ineffectiveness assessment | Cash flow reserves or conversion reserves | |
| | Assets | Liabilities | Assets | Liabilities | | | Continuing hedges | Discontinued hedges |
| | | | | | Loans and advances / Deposits and Debt securities / Debt securities issued | | | |
| Fair value hedges | 193,949 | 51,395 | 462 | 453 | | (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 | | | | | | 1,639 | (414) | (148) |
| Interest rate risk | | | | | | 494 | (540) | (52) |
| Exchange rate risk | | | | | | 115 | 81 | 8 |
| Interest and Exchange rate risk | | | | | | 778 | 330 | — |
| Inflation risk | | | | | | 249 | (289) | (104) |
| Equity risk | | | | | | 3 | 4 | — |
| Net foreign investments hedges | 25,594 | — | | | | 1,159 | (4,283) | — |
| Exchange rate risk | 25,594 | — | | | | 1,159 | (4,283) | — |
| | 219,543 | 51,395 | 462 | 453 | | 1,737 | (4,697) | (148) |

| EUR million | | | | | | | | |
|---------------------------------------|---------------------------------|---------------|---|--------------|---|--|---|---------------------|
| 31 December 2020 | | | | | | | | |
| | Carrying amount of hedged items | | Accumulated amount of fair value adjustments on the hedged item | | Balance sheet line item | Change in fair value of hedged item for ineffectiveness assessment | Cash flow reserves or conversion reserves | |
| | Assets | Liabilities | Assets | Liabilities | | | 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 | — | — |
| Inflation risk | — | — | — | — | | (4) | — | — |
| Credit risk | 220 | — | 3 | — | | (3) | — | — |
| Cash flow hedges | | | | | | (286) | 409 | (33) |
| Interest rate risk | | | | | | (69) | (98) | (1) |
| Exchange rate risk | | | | | | 412 | (68) | — |
| Interest and Exchange rate risk | | | | | | (741) | 680 | — |
| Inflation risk | | | | | | 121 | (111) | (32) |
| Equity risk | | | | | | (9) | 6 | — |
| Net foreign investments hedges | 22,210 | — | | | | (2,340) | (3,124) | — |
| Exchange rate risk | 22,210 | — | | | | (2,340) | (3,124) | — |
| | 163,818 | 52,055 | 3,369 | 2,914 | | (2,073) | (2,715) | (33) |

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 2022 is EUR 756 million losses (EUR 460 million and EUR 729 million profit in 2021 and 2020, respectively).

The net impact of the hedges are shown in the following table:

| EUR million | | | | | |
|---------------------------------------|---|--|---|--|---|
| 31 December 2022 | | | | | |
| | 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 | Reclassified amount of reserves to the income statement due to: | |
| | | | Gains or losses financial assets/liabilities | Cover transaction affecting the income statement | Line of the income statement that includes reclassified items |
| Fair value hedges | | 119 | | | |
| Interest rate risk | | 155 | | | |
| Exchange rate risk | | (16) | | | |
| Interest rate and exchange rate risk | | (20) | | | |
| | | | Gains or losses financial assets/liabilities | 1,254 | Interest margin/Gains or losses financial assets/liabilities |
| Cash flow hedges | (3,016) | (45) | | | |
| Interest rate risk | (2,458) | 1 | | (370) | |
| Exchange rate risk | (178) | (10) | | 2,130 | |
| Interest rate and exchange rate risk | (638) | (39) | | 587 | |
| Inflation risk | 258 | 3 | | (1,093) | |
| Equity risk | — | — | | — | |
| Net foreign investments hedges | (2,467) | — | | — | |
| Exchange rate risk | (2,467) | — | | — | |
| | (5,483) | 74 | | 1,254 | |

| EUR million | | | | | |
|---------------------------------------|---|--|---|--|---|
| 31 December 2021 | | | | | |
| | 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 | Reclassified amount of reserves to the income statement due to: | |
| | | | Gains or losses financial assets/liabilities | Cover transaction affecting the income statement | Line of the income statement that includes reclassified items |
| Fair value hedges | | 18 | | | |
| Interest rate risk | | 46 | | | |
| Exchange rate risk | | (55) | | | |
| Interest rate and exchange rate risk | | 27 | | | |
| | | | Gains or losses financial assets/liabilities | (801) | Interest margin/Gains or losses financial assets/liabilities |
| Cash flow hedges | (938) | (64) | | | |
| Interest rate risk | (491) | (34) | | 269 | |
| Exchange rate risk | 155 | 2 | | (262) | |
| Interest rate and exchange rate risk | (350) | (35) | | (350) | |
| Inflation risk | (249) | 3 | | (458) | |
| Equity risk | (3) | — | | — | |
| Net foreign investments hedges | (1,159) | — | | — | |
| Exchange rate risk | (1,159) | — | | — | |
| | (2,097) | (46) | | (801) | |



EUR million

31 December 2020

| | 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 | Reclassified amount of reserves to the income statement due to: | |
|---|--|--|---|--|---|
| | | | Gains or losses financial assets/liabilities | Cover transaction affecting the income statement | Line of the income statement that includes reclassified items |
| Fair value hedges | | 104 | | | |
| Interest rate risk | | 9 | | | |
| Risk of Exchange rate | | 1 | | | |
| Risk of interest rate and exchange rate | | 92 | | | |
| Credit risk | | 2 | | | |
| Cash flow hedges | (53) | (53) | Gains or losses financial assets/liabilities | 852 | Interest margin/Gains or losses financial assets/liabilities |
| Interest rate risk | 69 | 7 | | 118 | |
| Exchange rate risk | (180) | 9 | | (131) | |
| Interest rate and exchange rate risk | 170 | (62) | | 844 | |
| Inflation risk | (121) | (7) | | 21 | |
| Equity risk | 9 | — | | — | |
| Net foreign investments hedges | 2,340 | — | Gains or losses financial assets/liabilities | — | |
| Exchange rate risk | 2,340 | — | | — | |
| | 2,287 | 51 | | 852 | |

The following table shows the movement in the impact of equity for the year:

| EUR million | 2022 | 2021 | 2020 |
|--|----------------|----------------|----------------|
| Balance at beginning of year | (4,559) | (2,829) | (5,164) |
| Cash flow hedges | | | |
| Interest rate risk | (2,458) | (491) | 69 |
| Amounts transferred to income statements | 370 | (269) | (118) |
| Gain or loss in value CFE - recognized in equity | (2,828) | (222) | 187 |
| Exchange rate risk | (178) | 155 | (180) |
| Amounts transferred to income statements | (2,130) | 262 | 131 |
| Gain or loss in value CFE - recognized in equity | 1,952 | (107) | (311) |
| Interest rate and exchange rate risk | (638) | (350) | 170 |
| Amounts transferred to income statements | (587) | 350 | (844) |
| Gain or loss in value CFE - recognized in equity | (51) | (700) | 1,014 |
| Inflation risk | 258 | (249) | (121) |
| Amounts transferred to income statements | 1,093 | 458 | (21) |
| Gain or loss in value CFE - recognized in equity | (835) | (707) | (100) |
| Equity risk | 0 | (3) | 9 |
| Amounts transferred to income statements | — | — | — |
| Gain or loss in value CFE - recognized in equity | — | (3) | 9 |
| Net foreign investments hedges | | | |
| Exchange rate risk | (2,467) | (1,159) | 2,340 |
| Amounts transferred to income statements | — | — | — |
| Gain or loss in value CFE - recognized in equity | (2,467) | (1,159) | 2,340 |
| Minorities | (57) | 89 | 43 |
| Taxes | 912 | 278 | 5 |
| Balance at end of year | (9,187) | (4,559) | (2,829) |

37. Discontinued operations

No operations were discontinued in 2022, 2021 or 2020.

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 2022, 2021 and 2020 is as follows:

| EUR million | 2022 | 2021 | 2020 |
|---|---------------|---------------|---------------|
| Loans and advances, central banks | 1,606 | 476 | 431 |
| Loans and advances, credit institutions | 2,186 | 916 | 894 |
| Debt instruments | 10,416 | 5,724 | 5,022 |
| Loans and advances, customers | 54,110 | 38,649 | 38,788 |
| Other interest | 3,112 | 698 | 606 |
| | 71,430 | 46,463 | 45,741 |

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 2022, 2021 and 2020 is as follows:

| EUR million | 2022 | 2021 | 2020 |
|---|---------------|---------------|---------------|
| Central banks deposits | 706 | 338 | 366 |
| Credit institution deposits | 2,784 | 1,140 | 1,652 |
| Customer deposits | 16,994 | 5,452 | 5,599 |
| Debt securities issued and subordinated liabilities | 8,464 | 4,838 | 5,119 |
| Marketable debt securities | 7,472 | 4,190 | 4,548 |
| Subordinated liabilities (note 23) | 992 | 648 | 571 |
| Provisions for pensions (note 25) | 100 | 91 | 95 |
| Lease Liabilities | 116 | 125 | 186 |
| Other interest expense | 3,647 | 1,109 | 730 |
| | 32,811 | 13,093 | 13,747 |

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 | 2022 | 2021 | 2020 |
|---|------------|------------|------------|
| Dividend income classified as: | | | |
| Financial assets held for trading | 366 | 369 | 272 |
| Non-trading financial assets mandatorily at fair value through profit or loss | 35 | 32 | 31 |
| Financial assets at fair value through other comprehensive income | 87 | 112 | 88 |
| | 488 | 513 | 391 |

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 | 2022 | 2021 | 2020 |
|--|---------------|---------------|---------------|
| Coming from collection and payment services | | | |
| Bills | 245 | 214 | 265 |
| Demand accounts | 1,526 | 1,408 | 1,284 |
| Cards | 4,012 | 3,138 | 2,986 |
| Orders | 625 | 503 | 484 |
| Cheques and other | 172 | 139 | 110 |
| | 6,580 | 5,402 | 5,129 |
| Coming from non-banking financial products | | | |
| Investment funds | 1,017 | 992 | 888 |
| Pension funds | 167 | 161 | 170 |
| Insurance | 2,743 | 2,467 | 2,289 |
| | 3,927 | 3,620 | 3,347 |
| Coming from Securities services | | | |
| Securities underwriting and placement | 438 | 431 | 394 |
| Securities trading | 339 | 319 | 316 |
| Administration and custody | 321 | 402 | 336 |
| Asset management | 446 | 369 | 316 |
| | 1,544 | 1,521 | 1,362 |
| Other | | | |
| Foreign exchange | 822 | 522 | 500 |
| Financial guarantees | 433 | 415 | 409 |
| Commitment fees | 506 | 442 | 366 |
| Other fees and commissions | 2,055 | 1,890 | 1,911 |
| | 3,816 | 3,269 | 3,186 |
| | 15,867 | 13,812 | 13,024 |

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 | 2022 | 2021 | 2020 |
|--|--------------|--------------|--------------|
| Commissions assigned to third parties | 2,554 | 1,993 | 1,856 |
| Cards | 1,872 | 1,355 | 1,249 |
| By collection and return of effects | 18 | 16 | 12 |
| Other fees assigned | 664 | 622 | 595 |
| Other commissions paid | 1,523 | 1,317 | 1,153 |
| Brokerage fees on lending and deposit transactions | 77 | 60 | 26 |
| Sales of insurance and pension funds | 340 | 341 | 248 |
| Other fees and commissions | 1,106 | 916 | 879 |
| | 4,077 | 3,310 | 3,009 |

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 | 2022 | 2021 | 2020 |
|---|--------------|--------------|--------------|
| Gains or losses on financial assets and liabilities not measured at fair value through profit or loss, net | 149 | 628 | 1,107 |
| Financial assets at amortized cost | 34 | 89 | (31) |
| Other financial assets and liabilities | 115 | 539 | 1,138 |
| <i>Of which debt instruments</i> | 122 | 567 | 1,179 |
| Gains or losses on financial assets and liabilities held for trading, net ^A | 842 | 1,141 | 3,211 |
| Gains or losses on non-trading financial assets and liabilities mandatory at fair value through profit or loss | 162 | 132 | 82 |
| Gains or losses on financial assets and liabilities measured at fair value through profit or loss, net ^A | 968 | 270 | (171) |
| Gains or losses from hedge accounting, net | 74 | (46) | 51 |
| | 2,195 | 2,125 | 4,280 |

A. 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 | 2022 | 2021 | 2020 |
|---------------------------|-------|-------|---------|
| Exchange differences, net | (542) | (562) | (2,093) |

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 | 2022 | 2021 | 2020 |
|------------------------|----------------|----------------|----------------|
| Loans and receivables: | 44,962 | 34,812 | 46,589 |
| Central banks | 11,595 | 3,608 | 9,481 |
| Credit institutions | 17,175 | 13,549 | 12,139 |
| Customers | 16,192 | 17,655 | 24,969 |
| Debt instruments | 45,079 | 30,223 | 41,573 |
| Equity instruments | 13,777 | 19,119 | 12,849 |
| Derivatives | 67,002 | 54,292 | 67,137 |
| | 170,820 | 138,446 | 168,148 |

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 2022 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 38,236 million at 31 December 2022.

Also, mortgage-backed assets totalled EUR 920 million.

- Debt instruments include EUR 35,118 million of Spanish and foreign government securities.

At 31 December 2022 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 | 2022 | 2021 | 2020 |
|-----------------------------|----------------|----------------|----------------|
| Deposits | 78,299 | 40,946 | 43,598 |
| Central banks | 7,497 | 1,645 | 2,490 |
| Credit institutions | 11,754 | 7,552 | 6,765 |
| Customer | 59,048 | 31,749 | 34,343 |
| Marketable debt securities | 5,427 | 5,454 | 4,440 |
| Short positions | 22,515 | 12,236 | 16,698 |
| Derivatives | 64,891 | 53,566 | 64,469 |
| Other financial liabilities | — | — | — |
| | 171,132 | 112,202 | 129,205 |

At 31 December 2022, 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 2022 is EUR 1,044 million higher than their carrying amount (EUR 81 million lower at 31 December 2021 and EUR 119 million lower at 31 December 2020).

Within Deposits, there are repurchase agreements amounting to EUR 27,780 million at 31 December 2022.

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 | 2022 | 2021 | 2020 |
|---|----------------|----------------|----------------|
| Insurance activity | 158 | 211 | 210 |
| Income from insurance and reinsurance contracts issued | 2,698 | 1,516 | 1,452 |
| Of which: | | | |
| Insurance and reinsurance premium income | 2,543 | 1,381 | 1,349 |
| Reinsurance income (note 15) | 155 | 135 | 103 |
| Expenses of insurance and reinsurance contracts | (2,540) | (1,305) | (1,242) |
| Of which: | | | |
| Claims paid, other insurance-related expenses and net provisions for insurance contract liabilities | (2,309) | (1,097) | (1,063) |
| Reinsurance premiums paid | (231) | (208) | (179) |
| Other operating income | 1,510 | 2,255 | 1,920 |
| Non-financial services | 770 | 291 | 362 |
| Other operating income | 740 | 1,964 | 1,558 |
| Other operating expense | (2,803) | (2,442) | (2,342) |
| Non-financial services | (661) | (283) | (350) |
| Other operating expense: | (2,142) | (2,159) | (1,992) |
| Of which, credit institutions deposit guarantee fund and single resolution fund | (1,258) | (1,016) | (1,005) |
| | (1,135) | 24 | (212) |

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 | 2022 | 2021 | 2020 |
|---|---------------|---------------|---------------|
| Wages and salaries | 9,563 | 8,466 | 8,070 |
| Social Security costs | 1,441 | 1,323 | 1,277 |
| Additions to provisions for defined benefit pension plans (note 25) | 65 | 73 | 76 |
| Contributions to defined contribution pension funds | 296 | 286 | 283 |
| Other Staff costs | 1,182 | 1,068 | 1,077 |
| | 12,547 | 11,216 | 10,783 |

b) Headcount

The average number of employees of Grupo Santander, as well as the average number and distribution by professional category of Banco Santander, S.A., was as follows:

| Average number of employees | 2022 | 2021 | 2020 |
|---|----------------|----------------|----------------|
| Banco Santander, S.A. | 23,410 | 24,512 | 27,503 |
| Executive directors and Senior management | 17 | 19 | 21 |
| Other line personnel | 21,872 | 23,343 | 26,527 |
| Branches abroad | 1,521 | 1,150 | 955 |
| Total Group | 201,516 | 194,589 | 196,090 |

A. Does not include staff affected by discontinued operations.

The number of employees, at the end of 2022, 2021 and 2020, was 206,462, 199,177 and 193,226, respectively.

The functional breakdown (final employment), by gender, at 31 December 2022 is as follows:

Functional breakdown by gender

| | Senior managers | | Other managers | | Other personnel | |
|---------------|-----------------|------------|----------------|--------------|-----------------|----------------|
| | Men | Women | Men | Women | Men | Women |
| Europe | 1,093 | 478 | 6,779 | 3,893 | 33,041 | 40,919 |
| North America | 221 | 66 | 1,334 | 621 | 18,300 | 23,055 |
| South America | 320 | 134 | 3,147 | 2,096 | 31,108 | 39,857 |
| | 1,634 | 678 | 11,260 | 6,610 | 82,449 | 103,831 |

The same information, expressed in percentage terms at 31 December 2022 is as follows:

Functional breakdown by gender

| | Senior managers | | Other managers | | Other personnel | |
|---------------|-----------------|------------|----------------|------------|-----------------|------------|
| | Men | Women | Men | Women | Men | Women |
| Europe | 70% | 30% | 64% | 36% | 45% | 55% |
| North America | 77% | 23% | 68% | 32% | 44% | 56% |
| South America | 70% | 30% | 60% | 40% | 44% | 56% |
| | 71% | 29% | 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 2022, is as follows:

Number of employees^A

| | 2022 |
|-----------------|--------------|
| Senior managers | 13 |
| Management | 136 |
| Collaborators | 3,965 |
| | 4,114 |

A. 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 2021 and 2020, was 3,703 and 3,577, respectively.

Likewise, the average number of employees of Banco Santander, S.A. with disabilities, equal to or greater than 33%, during 2022 was 331 (288 and 319 employees during 2021 and 2020). At the end of fiscal year 2022, there were 444 employees (307 and 317 employees at 31 December, 2021 and 2020, respectively).

c) Share-based payments

The main share-based payments granted by the Group in force at 31 December, 2022, 2021 and 2020 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 and (iv) Digital Transformation Award 2022. 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, 2021 and 2022) | <p>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, over three or five years for the fifth, seventh, eighth, ninth, tenth and eleventh cycles, and over four or five years for the twelfth cycle, 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.</p> <p>Beneficiaries:</p> <ul style="list-style-type: none"> 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, eleventh and twelfth cycle, the beneficiaries are Material Risk Takers (Identified staff) that are not beneficiaries of the Deferred Multiyear Objectives Variable Remuneration Plan. | <p>For the fifth and sixth cycles (2015 to 2016), the accrual of the 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 on none of the following circumstances existing during the period prior to each delivery, pursuant to the provisions set forth in each case in the plan regulations:</p> <ol style="list-style-type: none"> Poor financial performance of the Group. breach by the beneficiary of internal regulations, including, in particular, those relating to risks. material restatement of the Group's consolidated financial statements, except when it is required pursuant to a change in accounting standards. Significant changes in the Group's economic capital or risk profile <p>In the case of the seventh, eighth, ninth, tenth, eleventh and twelfth 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 non-occurrence of 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:</p> <ol style="list-style-type: none"> significant failures in risk management by the entity, or by a business unit or risk control unit. 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. 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. 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. | <p>Fifth cycle (2015):</p> <ul style="list-style-type: none"> Executive directors and members of the Identified Staff with total variable remuneration higher than 2.6 million euros: 40% paid immediately and 60% deferred over 5 years deferral period. Division managers, country heads (of countries which represent at least 1% of Group's economic capital), 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 5 years (fifth cycle) Other beneficiaries: 60% paid immediately and 40% deferred over 3 years. <p>Sixth cycle (2016):</p> <ul style="list-style-type: none"> 60% of bonus will be paid immediately and 40% deferred over a three years period. <p>Seventh, eighth, ninth, tenth and eleventh cycle (2017, 2018, 2019, 2020 and 2021):</p> <ul style="list-style-type: none"> 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. <p>Twelfth cycle (2022):</p> <ul style="list-style-type: none"> 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 4 years . |

Deferred variable remuneration systems

| Description and plan beneficiaries | Conditions | Calculation Base |
|---|--|---|
| (ii) Deferred Multiyear Objectives Variable Remuneration Plan (2016, 2017, 2018, 2019, 2020, 2021 and 2022) | <p>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 (four or five years for the seventh cycle) 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 (regarding the instruments part, executive directors in the seventh cycle have the opportunity to choose all in share options or half in share options and half in 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), the last 2 fourths (in the case of 4 years deferral) and the last three fifths (in the case of 5 years deferral) is also subject to long-term objectives.</p> <p>Beneficiaries Executive directors, senior managers and certain executives of the Group's first lines of responsibility.</p> <p>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, to non-occurrence 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:</p> <ol style="list-style-type: none"> Poor performance of the Group. breach by the beneficiary of the internal regulations, including in particular that relating to risks. material restatement of the Group's consolidated financial statements, except when appropriate under a change in accounting regulations. Significant changes in the Group's economic capital or risk profile. <p>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 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, taking into account the following factors:</p> <ol style="list-style-type: none"> Significant failures in risk management committed by the entity, or by a business unit or risk control unit. 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. 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. 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. | <p>First cycle (2016):</p> <ul style="list-style-type: none"> 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. <p>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.</p> <p>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:</p> <ul style="list-style-type: none"> 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 Grupo Santander's underlying return on risk-weighted assets ("RoRWA") growth target for financial year 2018 compared to financial year 2015. <p>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:</p> <ul style="list-style-type: none"> 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. <p>In the seventh cycle (2022), the metrics for the deferred portion subject to long-term objectives (two last fourths and last three fifths, for the cases of four years and five years deferrals) are:</p> <ul style="list-style-type: none"> Banco Santander's consolidated Return on tangible equity (RoTE) target in 2024. Relative Total Shareholder Return (TSR) measured against a group of 9 credit institutions for the period 2022-2024. Five ESG metrics linked to our public targets of our Responsible Banking agenda. |
| <p>Paid half in cash and half in shares. In the seventh cycle, and only for executive directors: half in cash and 25% in share options and 25% in shares (unless the director chooses to receive options only).</p> | <p>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.</p> | |

Deferred variable remuneration systems

| | Description and plan beneficiaries | Conditions | Calculation Base |
|---|---|---|--|
| (iii) Digital Transformation Award (2019, 2020 and 2021) | <p>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.</p> <p>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.</p> <p>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.</p> | <p>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.</p> <p>Performance of 2019 incentive was measured based on achievement of the following milestones: (i) launch of a Global Trade Services (GTS) platform; (ii) launch of a Global Merchant Services (GMS) platform; (iii) migration of our fully digital bank, OpenBank, to a "next generation" platform and launch in 3 markets; (iv) extension of SuperDigital in Brazil to at least one other country; (v) and launch of our international payments app based on blockchain Pago FX to non-Santander customers.</p> <p>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.</p> <p>The milestones for 2021 were: (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.</p> | <p>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.</p> <p>Any delivery of shares, either directly or via exercise of options over shares, will be subject generally to the Group's general <i>malus</i> & <i>clawback</i> provisions as described in the Group's remuneration policy and to the continuity of the beneficiary within the Grupo Santander. In this regard, the board may define specific rules for non-identified Staff.</p> <p>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).</p> <p>The total achievement for 2021 Digital Incentive was 77.5% (85% en 2020 and 83% en 2019).</p> |

| Deferred variable remuneration systems | Description and plan beneficiaries | Conditions | Calculation base |
|---|---|--|--|
| (iv) Digital Transformation Award (2022) | <p>The board of directors approved the 2022 Digital Transformation Incentive. It is a variable remuneration scheme splits in two different blocks:</p> <ul style="list-style-type: none"> • The first one, with the same mechanism than previous years, that delivers Santander shares and share options if the group hits major milestones on its digital roadmap. This is aimed at a group of up to 250 (is limited to 30 million euros) employees whose functions are deemed essential to Santander's growth. • And the second one, which delivers PagoNxt, S.L. RSUs and premium priced options (PPOs), and is aimed at up to 50 employees (and limited to 15 million euros) whose roles are considered key to PagoNxt's success. <p>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.</p> | <p>Performance of the first block of the incentive shall be measured based on achievement of the following milestones:</p> <ol style="list-style-type: none"> Edelweiss: Our Santander future retail architecture EDELWEISS will mean moving from our current Core centric banking architecture towards a Customer and Data-Centric Core supported by lean Record Processing engines. Simplification: Speed up the simplification of our technology platform and business model by Reducing the total number of applications in production and reducing number of products in the regions. Agile: Agile ways of working enable a better and faster reaction to customers' needs and is based on a value-driven delivery that increases efficiency by reducing time-to-market and development costs, and increasing quality. People working in Agile are more collaborative, engaged, empowered and creative. In Digital Consumer Bank: <ol style="list-style-type: none"> To create the BNPL platform connected to at least one merchant in Netherlands and Germany, and to make sure the platform is ready to connect in Spain. To support the definition of Openbank US's IT digital strategy and achieve 2022 milestones in it. To have the new leasing platform connected to dealers in Italy. To expand the Wabi B2B online business to Germany. To execute the first B2B deal with an Original Equipment Manufacturer or mobility player in at least one country. To expand coches.com business and platform to Portugal. <p>And in regard to the second block of digital incentive: the consolidation of PagoNxt Core Perimeter.</p> | <p>The first block of 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.</p> <p>Any delivery of shares, either directly or via exercise of options over shares, will be subject generally to the Group's general <i>malus & clawback</i> provisions as described in the Group's remuneration policy and to the continuity of the beneficiary within the Grupo Santander. In this regard, the board may define specific rules for non-identified Staff.</p> <p>Vested share options can be exercised until maturity, with all options lapsing after ten years.</p> <p>The total achievement for 2022 Digital Incentive was 96.5%.</p> <p>The second block of Digital Incentive is structured in restricted stock units (RSUs) and premium priced Options (PPOs) of PagoNxt S.L. in a percentage determined by the internal category of the beneficiary. The total achievement for 2022 was 100%.</p> |

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 ^A | Year granted | Employee group | Number of persons ^B | Date of commencement of exercise period | Date of expiry of exercise period |
|--|--------------------------------|--|--------------|----------------|--------------------------------|---|-----------------------------------|
| Plans outstanding at 01/01/2020 | 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 | 01/11/21 | 01/11/24 |
| | | | | | | 01/11/21 | 01/11/26 |
| Options exercised | (48) | 1.86 | | | | | |
| Options cancelled (net) or not exercised | (4,592) | 2.95 | | | | | |
| Plans outstanding at 31/12/2021 | 25,936 | | | | | | |
| Options granted (sharesave) | 13,068 | 1.89 | 2022 | Employees | 4,362 | 11/01/22 | 11/01/25 |
| | | | | | | 11/01/22 | 11/01/27 |
| Options exercised | (242) | 1.69 | | | | | |
| Options cancelled (net) or not exercised | (8,774) | 2.59 | | | | | |
| Plans outstanding at 31/12/2022 | 29,988 | | | | | | |

A. At 31 December, 2022, 2021 and 2020, the euro/pound sterling exchange rate was 1.1277, 1.1904 and 1.1168, respectively.

B. 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 21 to 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 2020, 2021 and 2022:

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 2020, 2021 and 2022 and the levels of achievement of similar plans in comparable entities, it has been considered that the fair value is 70%.

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 0.23 (GBP 0.20 and GBP 0.21 reported in 2021 and 2020, respectively).

47. Other general administrative expenses

a) Breakdown

The detail of Other general administrative expenses is as follows:

| EUR million | 2022 | 2021 | 2020 |
|--|--------------|--------------|--------------|
| Technology and systems | 2,473 | 2,182 | 2,119 |
| Property, fixtures and supplies (note 2.k) | 804 | 789 | 827 |
| Technical reports | 785 | 689 | 672 |
| Taxes other than income tax | 559 | 558 | 537 |
| Advertising | 559 | 510 | 523 |
| Communications | 410 | 401 | 473 |
| Surveillance and cash courier services | 336 | 306 | 325 |
| Per diems and travel expenses | 163 | 69 | 73 |
| Insurance premiums | 108 | 109 | 88 |
| Other administrative expenses | 2,174 | 1,830 | 1,900 |
| | 8,371 | 7,443 | 7,537 |

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 | 2022 | 2021 | 2020 |
|------------------------|--------------|--------------|--------------|
| Audit | 113.4 | 104.6 | 99.4 |
| Audit-related services | 6.4 | 6.0 | 6.0 |
| Tax services | 0.5 | 0.7 | 0.8 |
| All other | 4.8 | 2.4 | 1.2 |
| Total | 125.1 | 113.7 | 107.4 |

The 'Audit' heading mainly includes audit fees for the individual and consolidated financial statements of Banco Santander and its subsidiaries of which PwC is the statutory auditor; for interim consolidated financial statements of Banco Santander; for integrated audits prepared in order to file Form 20-F for the annual report with the SEC in the US regarding required entities; the internal control audit (SOx) for required Group's entities; the limited review of the financial statements; and the regulatory auditor's reports on Grupo Santander's geographies.

The main fees under 'Audit-related services' include, comfort letters, verifying financial and non-financial information (as required by regulators), and other reviews of documents that, due to their nature, the external auditor provides to be submitted to domestic or foreign authorities.

The fees included under the heading 'Tax services' mainly related to tax compliance and advisory services provided to Group companies outside Spain, which are permitted in accordance with independence regulations; none were for tax planning advice.

The 'Audit' heading includes the fees for the year's audit, regardless of the date the audit was completed. Any subsequent adjustments, which are not significant, and for purposes of comparison, are shown in this note for each year. The fees corresponding to the rest of the services are shown by when the audit committee approved them.

The services commissioned from the Group's auditors meet the independence requirements under applicable European and Spanish law, the 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 auditor's role.

Lastly, the Group commissioned services from audit firms other than PwC amounting to EUR 185.5 million in 2022 (EUR 263.8 million and EUR 172.4 million in 2021 and 2020, respectively).

c) Number of branches

The number of offices at 31 December 2022, 2021 and 2020 is as follows:

| Number of branches | Group | | |
|--------------------|--------------|--------------|---------------|
| | 2022 | 2021 | 2020 |
| Spain | 1,966 | 1,998 | 2,989 |
| Group | 7,053 | 7,231 | 7,597 |
| | 9,019 | 9,229 | 10,586 |

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 | 2022 | 2021 | 2020 |
|--------------------------------|-------------|-------------|-------------|
| Gains | | | |
| Tangible and intangible assets | 56 | 87 | 89 |
| Investments | 5 | 2 | 60 |
| | 61 | 89 | 149 |
| Losses | | | |
| Tangible and intangible assets | (49) | (36) | (34) |
| Investments | — | — | (1) |
| | (49) | (36) | (35) |
| | 12 | 53 | 114 |

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 | 2022 | 2021 | 2020 |
|-------------------------------|----------|-------------|--------------|
| Net balance | | | |
| Tangible assets | 7 | (52) | (171) |
| Impairment (note 12) | (94) | (141) | (215) |
| Gain (loss) on sale (note 12) | 101 | 89 | 44 |
| Other gains and other losses | — | 9 | — |
| | 7 | (43) | (171) |

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 2022, 2021 and 2020 is presented below:

| | 31 December 2022 | | | | | | Total |
|---|------------------|-----------------|----------------|----------------|----------------|-------------------|------------------|
| | EUR million | | | | | | |
| | On demand | Within 3 months | 3 to 12 months | 1 to 3 years | 3 to 5 years | More than 5 years | |
| Assets | | | | | | | |
| Cash, cash balances at Central Banks and other deposits on demand | 223,073 | — | — | — | — | — | 223,073 |
| Financial assets at fair value through other comprehensive income | — | 19,215 | 5,425 | 15,377 | 17,693 | 25,588 | 83,298 |
| Debt securities | — | 19,011 | 4,528 | 13,884 | 16,631 | 21,029 | 75,083 |
| Loans and advances | — | 204 | 897 | 1,493 | 1,062 | 4,559 | 8,215 |
| Customers | — | 204 | 897 | 1,493 | 1,062 | 4,559 | 8,215 |
| Financial assets at amortized cost | 45,322 | 194,757 | 137,632 | 196,939 | 135,156 | 437,238 | 1,147,044 |
| Debt securities | — | 7,956 | 7,417 | 21,459 | 6,715 | 30,007 | 73,554 |
| Loans and advances | 45,322 | 186,801 | 130,215 | 175,480 | 128,441 | 407,231 | 1,073,490 |
| Central banks | — | 14,139 | — | — | — | 1,236 | 15,375 |
| Credits institutions | 7,565 | 22,578 | 2,756 | 3,580 | 139 | 9,900 | 46,518 |
| Customers | 37,757 | 150,084 | 127,459 | 171,900 | 128,302 | 396,095 | 1,011,597 |
| | 268,395 | 213,972 | 143,057 | 212,316 | 152,849 | 462,826 | 1,453,415 |
| Liabilities | | | | | | | |
| Financial liabilities at amortized cost | 731,837 | 236,565 | 144,666 | 168,984 | 81,808 | 59,998 | 1,423,858 |
| Deposits | 718,366 | 193,092 | 96,667 | 82,663 | 19,343 | 1,756 | 1,111,887 |
| Central banks | 117 | 6,991 | 18,311 | 47,018 | 4,506 | 9 | 76,952 |
| Credit institutions | 7,172 | 30,557 | 15,901 | 9,670 | 3,925 | 1,357 | 68,582 |
| Customer deposits | 711,077 | 155,544 | 62,455 | 25,975 | 10,912 | 390 | 966,353 |
| Marketable debt securities ^A | — | 34,408 | 46,480 | 81,051 | 55,359 | 57,614 | 274,912 |
| Other financial liabilities | 13,471 | 9,065 | 1,519 | 5,270 | 7,106 | 628 | 37,059 |
| | 731,837 | 236,565 | 144,666 | 168,984 | 81,808 | 59,998 | 1,423,858 |
| Difference (assets less liabilities) | (463,442) | (22,593) | (1,609) | 43,332 | 71,041 | 402,828 | 29,557 |

A. 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 2021 | | | | | | Total |
|---|------------------|-----------------|----------------|-----------------|----------------|-------------------|------------------|
| | EUR million | | | | | | |
| | On demand | Within 3 months | 3 to 12 months | 1 to 3 years | 3 to 5 years | More than 5 years | |
| 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 | — | 19,885 | 10,447 | 20,001 | 17,745 | 37,507 | 105,585 |
| Debt securities | — | 19,598 | 9,609 | 19,133 | 16,494 | 33,088 | 97,922 |
| Loans and advances | — | 287 | 838 | 868 | 1,251 | 4,419 | 7,663 |
| Customers | — | 287 | 838 | 868 | 1,251 | 4,419 | 7,663 |
| Financial assets at amortized cost | 35,520 | 161,837 | 121,272 | 154,345 | 130,456 | 434,468 | 1,037,898 |
| Debt securities | — | 4,212 | 4,171 | 2,205 | 15,388 | 9,732 | 35,708 |
| Loans and advances | 35,520 | 157,625 | 117,101 | 152,140 | 115,068 | 424,736 | 1,002,190 |
| Central banks | — | 14,544 | — | — | — | 1,113 | 15,657 |
| Credits institutions | 11,849 | 20,802 | 4,542 | 93 | 150 | 1,733 | 39,169 |
| Customers | 23,671 | 122,279 | 112,559 | 152,047 | 114,918 | 421,890 | 947,364 |
| | 246,209 | 181,722 | 131,719 | 174,346 | 148,201 | 471,975 | 1,354,172 |
| Liabilities | | | | | | | |
| Financial liabilities at amortized cost | 718,435 | 169,013 | 99,223 | 194,879 | 98,210 | 69,409 | 1,349,169 |
| Deposits | 711,377 | 126,956 | 64,096 | 117,585 | 52,658 | 5,915 | 1,078,587 |
| Central banks | 92 | 5,861 | 2,130 | 91,651 | 40,013 | 10 | 139,757 |
| Credit institutions | 12,854 | 16,208 | 12,507 | 4,712 | 1,981 | 3,973 | 52,235 |
| Customer deposits | 698,431 | 104,887 | 49,459 | 21,222 | 10,664 | 1,932 | 886,595 |
| Marketable debt securities ^A | — | 31,550 | 29,798 | 71,333 | 45,198 | 62,830 | 240,709 |
| Other financial liabilities | 7,058 | 10,507 | 5,329 | 5,961 | 354 | 664 | 29,873 |
| | 718,435 | 169,013 | 99,223 | 194,879 | 98,210 | 69,409 | 1,349,169 |
| Difference (assets less liabilities) | (472,226) | 12,709 | 32,496 | (20,533) | 49,991 | 402,566 | 5,003 |

A. Includes promissory notes, certificates of deposit and other short-term debt issues.

| 31 December 2020 | | | | | | | |
|---|------------------|-----------------|----------------|----------------|----------------|-------------------|------------------|
| EUR million | | | | | | | |
| | On demand | Within 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 | — | 11,084 | 7,738 | 19,923 | 21,302 | 58,123 | 118,170 |
| Debt securities | — | 10,908 | 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 | 117,335 | 109,561 | 150,399 | 120,376 | 409,194 | 958,378 |
| Debt securities | — | 4,184 | 5,760 | 3,059 | 5,257 | 7,818 | 26,078 |
| Loans and advances | 51,513 | 113,151 | 103,801 | 147,340 | 115,119 | 401,376 | 932,300 |
| Central banks | — | 10,762 | — | 673 | — | 1,064 | 12,499 |
| Credit institutions | 21,337 | 8,950 | 3,910 | 3,207 | 34 | 400 | 37,838 |
| Customers | 30,176 | 93,439 | 99,891 | 143,460 | 115,085 | 399,912 | 881,963 |
| | 205,352 | 128,419 | 117,299 | 170,322 | 141,678 | 467,317 | 1,230,387 |
| Liabilities | | | | | | | |
| Financial liabilities at amortized cost | 640,613 | 175,269 | 93,296 | 175,238 | 80,041 | 83,731 | 1,248,188 |
| Deposits | 632,305 | 132,337 | 61,142 | 109,856 | 32,464 | 22,287 | 990,391 |
| Central banks | 150 | 10,499 | 3,216 | 83,112 | 15,827 | — | 112,804 |
| Credit institutions | 14,370 | 22,385 | 9,940 | 5,618 | 5,934 | 4,373 | 62,620 |
| Customer deposits | 617,785 | 99,453 | 47,986 | 21,126 | 10,703 | 17,914 | 814,967 |
| Marketable debt securities ^A | — | 33,257 | 30,994 | 59,526 | 47,143 | 59,909 | 230,829 |
| Other financial liabilities | 8,308 | 9,675 | 1,160 | 5,856 | 434 | 1,535 | 26,968 |
| | 640,613 | 175,269 | 93,296 | 175,238 | 80,041 | 83,731 | 1,248,188 |
| Difference (assets less liabilities) | (435,261) | (46,850) | 24,003 | (4,916) | 61,637 | 383,586 | (17,801) |

A. 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 2022, 2021 and 2020 is as follows:

| 31 December 2022 | | | | | | | |
|---|----------------|-----------------|----------------|----------------|---------------|-------------------|------------------|
| EUR million | | | | | | | |
| | On demand | Within 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 | 718,366 | 192,609 | 96,482 | 82,618 | 19,354 | 1,595 | 1,111,024 |
| Central banks | 117 | 7,003 | 18,210 | 46,933 | 4,506 | 9 | 76,778 |
| Credit institutions | 7,172 | 30,548 | 15,808 | 9,722 | 3,924 | 1,190 | 68,364 |
| Customer | 711,077 | 155,058 | 62,464 | 25,963 | 10,924 | 396 | 965,882 |
| Marketable debt securities | — | 34,312 | 46,396 | 81,059 | 55,357 | 57,576 | 274,700 |
| Other financial liabilities | 13,471 | 9,065 | 1,519 | 5,270 | 7,106 | 626 | 37,057 |
| | 731,837 | 235,986 | 144,397 | 168,947 | 81,817 | 59,797 | 1,422,781 |

| 31 December 2021 | | | | | | | |
|---|----------------|-----------------|----------------|----------------|---------------|-------------------|------------------|
| EUR million | | | | | | | |
| | On demand | Within 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 | 120,654 | 62,896 | 116,343 | 52,031 | 5,884 | 1,062,937 |
| Central banks | 83 | 5,862 | 2,131 | 91,327 | 39,579 | 10 | 138,992 |
| Credit institutions | 12,683 | 16,184 | 11,867 | 4,504 | 1,945 | 3,950 | 51,133 |
| Customer | 692,363 | 98,608 | 48,898 | 20,512 | 10,507 | 1,924 | 872,812 |
| Marketable debt securities | — | 32,575 | 30,618 | 73,131 | 46,367 | 64,318 | 247,009 |
| Other financial liabilities | 7,059 | 10,507 | 5,329 | 5,961 | 354 | 663 | 29,873 |
| | 712,188 | 163,736 | 98,843 | 195,435 | 98,752 | 70,865 | 1,339,819 |

| 31 December 2020 | | | | | | | |
|---|----------------|-----------------|----------------|----------------|---------------|-------------------|------------------|
| EUR million | | | | | | | |
| | On demand | Within 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 | 130,439 | 60,465 | 108,326 | 32,260 | 22,228 | 982,761 |
| Central banks | 150 | 10,497 | 3,217 | 82,803 | 15,827 | — | 112,494 |
| Credit institutions | 14,334 | 22,367 | 9,606 | 5,031 | 5,903 | 4,333 | 61,574 |
| Customer | 614,559 | 97,575 | 47,642 | 20,492 | 10,530 | 17,895 | 808,693 |
| Marketable debt securities | — | 34,307 | 31,103 | 58,645 | 46,118 | 56,730 | 226,903 |
| Other financial liabilities | 8,308 | 9,675 | 1,160 | 5,856 | 434 | 1,535 | 26,968 |
| | 637,351 | 174,421 | 92,728 | 172,827 | 78,812 | 80,493 | 1,236,632 |



Below is a breakdown of contractual maturities for the rest of financial assets and liabilities as of 31 December 2022, 2021 and 2020 :

| | 31 December 2022 | | | | | Total |
|--|------------------|----------------|----------------|----------------|-------------------|----------------|
| | EUR million | | | | | |
| | Within 3 months | 3 to 12 months | 1 to 3 years | 3 to 5 years | More than 5 years | |
| FINANCIAL ASSETS | | | | | | |
| Financial assets held for trading | 44,770 | 27,562 | 29,753 | 20,177 | 33,856 | 156,118 |
| Derivatives | 7,631 | 9,983 | 23,156 | 15,533 | 10,699 | 67,002 |
| Equity instruments | | | | | 10,066 | 10,066 |
| Debt securities | 5,160 | 13,357 | 5,667 | 4,193 | 13,026 | 41,403 |
| Loans and advances | 31,979 | 4,222 | 930 | 451 | 65 | 37,647 |
| Central banks | 11,595 | — | — | — | — | 11,595 |
| Credits institutions | 13,650 | 2,852 | — | — | — | 16,502 |
| Customers | 6,734 | 1,370 | 930 | 451 | 65 | 9,550 |
| Financial assets designated at fair value through profit or loss | 236 | 756 | 2,732 | 1,691 | 3,574 | 8,989 |
| Debt securities | 68 | 77 | 1,026 | 599 | 772 | 2,542 |
| Loans and advances | 168 | 679 | 1,706 | 1,092 | 2,802 | 6,447 |
| Credit institutions | 6 | 181 | 23 | 4 | 459 | 673 |
| Customers | 162 | 498 | 1,683 | 1,088 | 2,343 | 5,774 |
| Non-trading financial assets mandatorily at fair value through profit or loss | 164 | 214 | 265 | 70 | 5,000 | 5,713 |
| Equity instruments | — | — | — | — | 3,711 | 3,711 |
| Debt securities | 6 | 52 | 52 | — | 1,024 | 1,134 |
| Loans and advances | 158 | 162 | 213 | 70 | 265 | 868 |
| Customers | 158 | 162 | 213 | 70 | 265 | 868 |
| Financial assets at fair value through other comprehensive income | — | — | — | — | 1,941 | 1,941 |
| Equity instruments | — | — | — | — | 1,941 | 1,941 |
| Hedging derivatives | 2,200 | 1,076 | 1,356 | 1,451 | 1,986 | 8,069 |
| Changes in the fair value of hedged items in portfolio hedges of interest rate risk | (734) | (498) | (1,178) | (1,036) | (303) | (3,749) |
| TOTAL FINANCIAL ASSETS | 46,636 | 29,110 | 32,928 | 22,353 | 46,054 | 177,081 |

| 31 December 2022 | | | | | | |
|---|-----------------|----------------|---------------|---------------|-------------------|----------------|
| EUR million | | | | | | |
| | Within 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 | 51,621 | 12,012 | 23,669 | 18,273 | 9,610 | 115,185 |
| Derivatives | 7,749 | 9,671 | 22,479 | 16,955 | 8,037 | 64,891 |
| Shorts positions | 17,952 | 888 | 1,031 | 1,071 | 1,573 | 22,515 |
| Deposits | 25,920 | 1,453 | 159 | 247 | — | 27,779 |
| Central banks | 5,757 | — | — | — | — | 5,757 |
| Credits institutions | 7,963 | 1,435 | 151 | 247 | — | 9,796 |
| Customers | 12,200 | 18 | 8 | — | — | 12,226 |
| Financial liabilities designated at fair value through profit or loss | 27,071 | 4,359 | 6,180 | 1,915 | 16,422 | 55,947 |
| Deposits | 26,908 | 3,558 | 5,069 | 818 | 14,167 | 50,520 |
| Central banks | 1,702 | 38 | — | — | — | 1,740 |
| Credits institutions | 1,284 | 129 | 54 | 87 | 404 | 1,958 |
| Customers | 23,922 | 3,391 | 5,015 | 731 | 13,763 | 46,822 |
| Marketable debt securities ^A | 163 | 801 | 1,111 | 1,097 | 2,255 | 5,427 |
| Hedging derivatives | 947 | 1,469 | 3,650 | 1,159 | 2,003 | 9,228 |
| Changes in the fair value of hedged items in portfolio hedges of interest rate risk | 11 | (52) | (140) | 20 | 44 | (117) |
| TOTAL FINANCIAL LIABILITIES | 79,650 | 17,788 | 33,359 | 21,367 | 28,079 | 180,243 |

A. Includes promissory notes, certificates of deposit and other short-term debt issues (see note 22).

| 31 December 2022 | | | | | | |
|------------------------------|-----------------|----------------|---------------|---------------|-------------------|----------------|
| EUR million | | | | | | |
| | Within 3 months | 3 to 12 months | 1 to 3 years | 3 to 5 years | More than 5 years | Total |
| Memorandum items | | | | | | |
| Loans commitment granted | 120,962 | 32,538 | 50,875 | 54,033 | 15,667 | 274,075 |
| Financial guarantees granted | 7,023 | 3,586 | 1,427 | 441 | 379 | 12,856 |
| Other commitments granted | 66,716 | 16,152 | 7,119 | 1,517 | 1,168 | 92,672 |
| MEMORANDUM ITEMS | 194,701 | 52,276 | 59,421 | 55,991 | 17,214 | 379,603 |

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 2021

| | EUR million | | | | | Total |
|--|-----------------|----------------|---------------|---------------|-------------------|----------------|
| | Within 3 months | 3 to 12 months | 1 to 3 years | 3 to 5 years | More than 5 years | |
| FINANCIAL ASSETS | | | | | | |
| Financial assets held for trading | 21,887 | 20,627 | 20,047 | 15,105 | 39,287 | 116,953 |
| Derivatives | 4,943 | 7,426 | 12,285 | 11,980 | 17,658 | 54,292 |
| Equity instruments | — | — | — | — | 15,077 | 15,077 |
| Debt securities | 2,978 | 8,585 | 5,766 | 2,869 | 6,552 | 26,750 |
| Loans and advances | 13,966 | 4,616 | 1,996 | 256 | — | 20,834 |
| Central banks | 3,608 | — | — | — | — | 3,608 |
| Credits institutions | 5,607 | 3,982 | 808 | — | — | 10,397 |
| Customers | 4,751 | 634 | 1,188 | 256 | — | 6,829 |
| Financial assets designated at fair value through profit or loss | 2,451 | 2,928 | 3,686 | 2,334 | 4,558 | 15,957 |
| Debt securities | 64 | 142 | 699 | 700 | 911 | 2,516 |
| Loans and advances | 2,387 | 2,786 | 2,987 | 1,634 | 3,647 | 13,441 |
| Central banks | — | — | — | — | — | — |
| Credit institutions | 1,138 | 1,476 | 205 | 10 | 323 | 3,152 |
| Customers | 1,249 | 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 |
| Central banks | — | — | — | — | — | — |
| Credits institutions | — | — | — | — | — | — |
| 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 | 368 | 857 | 748 | 1,270 | 1,518 | 4,761 |
| Changes in the fair value of hedged items in portfolio hedges of interest rate risk | 429 | (11) | (304) | 19 | 277 | 410 |
| TOTAL FINANCIAL ASSETS | 25,251 | 24,450 | 24,304 | 18,795 | 53,270 | 146,070 |

31 December 2021

| | EUR million | | | | | Total |
|---|-----------------|----------------|---------------|---------------|-------------------|----------------|
| | Within 3 months | 3 to 12 months | 1 to 3 years | 3 to 5 years | More than 5 years | |
| FINANCIAL LIABILITIES | | | | | | |
| Financial liabilities held for trading | 26,142 | 9,234 | 15,709 | 12,750 | 15,634 | 79,469 |
| Derivatives | 4,485 | 7,583 | 14,868 | 11,912 | 14,718 | 53,566 |
| Shorts positions | 8,559 | 1,290 | 728 | 743 | 916 | 12,236 |
| Deposits | 13,098 | 361 | 113 | 95 | — | 13,667 |
| Central banks | 1,038 | — | — | — | — | 1,038 |
| Credits institutions | 5,919 | 361 | 113 | 95 | — | 6,488 |
| Customers | 6,141 | — | — | — | — | 6,141 |
| Marketable debt securities | — | — | — | — | — | — |
| Other financial liabilities | — | — | — | — | — | — |
| Financial liabilities designated at fair value through profit or loss | 7,000 | 1,685 | 4,669 | 1,225 | 18,154 | 32,733 |
| Deposits | 6,874 | 1,246 | 2,801 | 764 | 15,594 | 27,279 |
| Central banks | 569 | 38 | — | — | — | 607 |
| Credits institutions | 237 | 487 | 30 | 178 | 132 | 1,064 |
| Customers | 6,068 | 721 | 2,771 | 586 | 15,462 | 25,608 |
| Marketable debt securities ^A | 126 | 439 | 1,868 | 461 | 2,560 | 5,454 |
| Hedging derivatives | 613 | 930 | 1,667 | 824 | 1,429 | 5,463 |
| Changes in the fair value of hedged items in portfolio hedges of interest rate risk | 45 | 16 | 58 | 49 | 80 | 248 |
| TOTAL FINANCIAL LIABILITIES | 33,800 | 11,865 | 22,103 | 14,848 | 35,297 | 117,913 |

A. Includes promissory notes, certificates of deposit and other short-term debt issues (see note 22).

31 December 2021

| | EUR million | | | | | Total |
|------------------------------|-----------------|----------------|---------------|---------------|-------------------|----------------|
| | Within 3 months | 3 to 12 months | 1 to 3 years | 3 to 5 years | More than 5 years | |
| Memorandum items | | | | | | |
| Loans commitment granted | 123,529 | 27,587 | 51,999 | 49,781 | 9,841 | 262,737 |
| Financial guarantees granted | 3,617 | 4,251 | 1,749 | 687 | 454 | 10,758 |
| Other commitments granted | 52,359 | 12,008 | 7,297 | 1,539 | 2,530 | 75,733 |
| MEMORANDUM ITEMS | 179,505 | 43,846 | 61,045 | 52,007 | 12,825 | 349,228 |

31 December 2020

| | EUR million | | | | | Total |
|--|-----------------|----------------|---------------|---------------|-------------------|----------------|
| | Within 3 months | 3 to 12 months | 1 to 3 years | 3 to 5 years | More than 5 years | |
| FINANCIAL ASSETS | | | | | | |
| Financial assets held for trading | 12,494 | 27,753 | 22,473 | 18,014 | 34,211 | 114,945 |
| Derivatives | 9,556 | 10,044 | 15,526 | 13,681 | 18,330 | 67,137 |
| Equity instruments | — | — | — | — | 9,615 | 9,615 |
| Debt securities | 2,938 | 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 | 27,334 | 7,205 | 3,680 | 3,933 | 6,565 | 48,717 |
| Debt securities | 259 | 162 | 407 | 719 | 1,432 | 2,979 |
| Loans and advances | 27,075 | 7,043 | 3,273 | 3,214 | 5,133 | 45,738 |
| Central banks | 9,481 | — | — | — | — | 9,481 |
| Credit institutions | 8,449 | 2,728 | 590 | 12 | 357 | 12,136 |
| Customers | 9,145 | 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 | 2,003 | 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 | 181 | 132 | 205 | 381 | 1,081 | 1,980 |
| TOTAL FINANCIAL ASSETS | 42,287 | 36,383 | 27,465 | 23,480 | 51,621 | 181,236 |

31 December 2020

| | EUR million | | | | | Total |
|---|-----------------|----------------|---------------|---------------|-------------------|----------------|
| | Within 3 months | 3 to 12 months | 1 to 3 years | 3 to 5 years | More than 5 years | |
| FINANCIAL LIABILITIES | | | | | | |
| Financial liabilities held for trading | 20,481 | 6,286 | 17,635 | 16,036 | 20,729 | 81,167 |
| Derivatives | 4,338 | 5,800 | 17,566 | 16,036 | 20,729 | 64,469 |
| Shorts positions | 16,143 | 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 | 15,200 | 2,228 | 2,893 | 1,121 | 26,596 | 48,038 |
| Deposits | 15,168 | 1,954 | 2,497 | 518 | 23,461 | 43,598 |
| Central banks | 1,707 | 783 | — | — | — | 2,490 |
| Credits institutions | 3,785 | 935 | 1,493 | 171 | 381 | 6,765 |
| Customers | 9,676 | 236 | 1,004 | 347 | 23,080 | 34,343 |
| Marketable debt securities | 32 | 274 | 396 | 603 | 3,135 | 4,440 |
| Other financial liabilities | — | — | — | — | — | — |
| Hedging derivatives | 2,819 | 588 | 748 | 641 | 2,073 | 6,869 |
| Changes in the fair value of hedged items in portfolio hedges of interest rate risk | 9 | 40 | 74 | 64 | 99 | 286 |
| TOTAL FINANCIAL LIABILITIES | 38,509 | 9,142 | 21,350 | 17,862 | 49,497 | 136,360 |

31 December 2020

| | EUR million | | | | | Total |
|------------------------------|-----------------|----------------|---------------|---------------|-------------------|----------------|
| | Within 3 months | 3 to 12 months | 1 to 3 years | 3 to 5 years | More than 5 years | |
| Memorandum items | | | | | | |
| Loans commitment granted | 114,221 | 28,207 | 47,876 | 40,458 | 10,468 | 241,230 |
| Financial guarantees granted | 2,661 | 3,732 | 4,134 | 1,169 | 681 | 12,377 |
| Other commitments granted | 43,734 | 10,497 | 5,101 | 3,207 | 1,999 | 64,538 |
| MEMORANDUM ITEMS | 160,616 | 42,436 | 57,111 | 44,834 | 13,148 | 318,145 |

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

| | 2022 | | 2021 | | 2020 | |
|---|------------------|----------------|----------------|----------------|----------------|----------------|
| | Assets | Liabilities | Assets | Liabilities | Assets | Liabilities |
| Cash, cash balances at central banks and other deposits on demand | 122,391 | — | 105,457 | — | 76,882 | — |
| Financial assets/liabilities held for trading | 94,256 | 60,105 | 65,345 | 49,314 | 66,448 | 50,494 |
| Non-trading financial assets mandatorily at fair value through profit or loss | 3,210 | — | 2,460 | — | 2,248 | — |
| Other financial assets/liabilities at fair value through profit or loss | 1,085 | 20,274 | 1,230 | 9,103 | 24,015 | 18,347 |
| Financial assets at fair value through other comprehensive income | 62,046 | — | 78,086 | — | 79,688 | — |
| Financial assets at amortized cost | 747,138 | — | 680,774 | — | 610,152 | — |
| Investments | 1,296 | — | 1,666 | — | 1,671 | — |
| Tangible assets | 21,834 | — | 22,350 | — | 21,617 | — |
| Intangible assets | 11,881 | — | 10,066 | — | 9,609 | — |
| Financial liabilities at amortized cost | — | 893,531 | — | 796,395 | — | 726,516 |
| Liabilities under insurance contracts | — | 4 | — | 10 | — | 13 |
| Other | 23,886 | 24,372 | 22,631 | 20,420 | 26,433 | 22,801 |
| | 1,089,023 | 998,286 | 990,065 | 875,242 | 918,763 | 818,171 |

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

| Assets | 2022 | | | | | 2021 | | | | | 2020 | | | | |
|--------------------|------------------|------------------|---------------|---------------|------------------|------------------|------------------|---------------|---------------|----------------|-----------------|----------------|--------------|---------------|----------------|
| | 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 | 1,073,490 | 1,053,703 | — | 64,968 | 988,735 | 1,002,190 | 1,006,711 | — | 69,840 | 936,871 | 932,300 | 940,258 | — | 65,755 | 874,503 |
| Debt securities | 73,554 | 70,373 | 37,805 | 19,254 | 13,314 | 35,708 | 35,378 | 13,558 | 12,158 | 9,662 | 26,078 | 26,532 | 6,753 | 11,899 | 7,880 |
| | 1,147,044 | 1,124,076 | 37,805 | 84,222 | 1,002,049 | 1,037,898 | 1,042,089 | 13,558 | 81,998 | 946,533 | 958,378 | 966,790 | 6,753 | 77,654 | 882,383 |

ii) Financial liabilities measured at other than fair value

EUR million

| Liabilities ^A | 2022 | | | | | 2021 | | | | | 2020 | | | | |
|--------------------------|------------------|------------------|----------------|----------------|----------------|------------------|------------------|----------------|----------------|----------------|------------------|------------------|---------------|----------------|----------------|
| | 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 | 1,111,887 | 1,108,918 | — | 258,701 | 850,217 | 1,078,587 | 1,076,876 | — | 286,613 | 790,263 | 990,391 | 990,807 | — | 263,517 | 727,290 |
| Debt securities | 274,912 | 263,191 | 106,169 | 124,939 | 32,083 | 240,709 | 246,697 | 109,346 | 115,034 | 22,317 | 230,829 | 241,174 | 91,771 | 125,031 | 24,372 |
| | 1,386,799 | 1,372,109 | 106,169 | 383,640 | 882,300 | 1,319,296 | 1,323,573 | 109,346 | 401,647 | 812,580 | 1,221,220 | 1,231,981 | 91,771 | 388,548 | 751,662 |

A. At 31 December 2022, Grupo Santander had other financial liabilities that amounted to EUR 37,059 million, EUR 29,873 million in 2021 and EUR 26,968 million in 2020.

The main valuation methods and inputs used in the estimates at 31 December 2022 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 considered 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.

Grupo Santander announced at 4 April 2022 changes in the reportable segments to reflect the new reporting structure effective from the first quarter financial information of 2022.

The main changes, which have been applied to management information for all periods included in the annual accounts, relate to the following:

1. Reallocation of certain financial costs of the Corporate Centre as follows:
 - a. Further clarity in the minimum requirement for own funds and eligible liabilities (MREL) and total loss absorbing capacity (TLAC) regulation makes it possible to allocate the cost of eligible debt issuances to the country units.
 - b. Other financial costs, primarily associated with the cost of funding the excess capital held by the units above the Group's CET1 ratio, have been reassigned accordingly.



2. Downsizing of 'Other Europe':

- a. The Corporate & Investment Banking branches of Banco Santander, S.A. in Europe and other business lines previously reported under 'Other Europe' have been now integrated into the Spain unit to reflect how the business will be managed and supervised, in line with other regions.

Grupo Santander recasted the corresponding information of earlier periods considering the changes included in this section to facilitate a homogeneous comparison.

In addition to these changes, we completed the usual 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.

The above-mentioned changes have no impact on the Group's reported consolidated financial statements.

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.
- 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), Santander's New York branch and Amherst Pierpont Securities (APS).
- South America: includes all the financial activities carried out by Grupo Santander through its banks and subsidiary banks in the region.
- 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

| Balance sheet (condensed) | 2022 | | | | | | Total |
|--|----------------|----------------|----------------|-----------------------|------------------|--------------------------|------------------|
| | Europe | North America | South America | Digital Consumer Bank | Corporate Centre | Intra-Group eliminations | |
| Total assets | 958,207 | 288,595 | 292,925 | 151,015 | 262,218 | (218,301) | 1,734,659 |
| Loans and advances to customers | 591,280 | 171,519 | 144,812 | 122,608 | 5,785 | — | 1,036,004 |
| Cash, balances at central banks and credit institutions and other deposits on demand | 216,308 | 35,607 | 52,358 | 12,311 | 123,230 | (126,078) | 313,736 |
| Debt securities | 76,318 | 44,060 | 57,106 | 7,644 | 8,588 | — | 193,716 |
| Other financial assets ^A | 47,737 | 14,668 | 19,854 | 190 | 271 | — | 82,720 |
| Other asset accounts ^B | 26,564 | 22,741 | 18,795 | 8,262 | 124,344 | (92,223) | 108,483 |
| Total liabilities | 915,167 | 262,931 | 268,417 | 137,986 | 178,651 | (126,078) | 1,637,074 |
| Customer deposits | 659,553 | 168,748 | 137,661 | 58,544 | 895 | — | 1,025,401 |
| Central banks and credit institutions | 112,254 | 25,294 | 42,921 | 39,169 | 71,225 | (126,078) | 164,785 |
| Marketable debt securities | 71,731 | 41,063 | 35,063 | 33,749 | 98,733 | — | 280,339 |
| Other financial liabilities ^C | 60,008 | 20,883 | 41,445 | 1,820 | 309 | — | 124,465 |
| Other liabilities accounts ^D | 11,621 | 6,943 | 11,327 | 4,704 | 7,489 | — | 42,084 |
| Total equity | 43,040 | 25,664 | 24,508 | 13,029 | 83,567 | (92,223) | 97,585 |
| Other customer funds under management | 100,178 | 15,571 | 65,251 | 880 | — | — | 181,880 |
| Investment funds | 70,084 | 13,949 | 58,156 | — | — | — | 142,189 |
| Pension funds | 13,940 | 81 | — | — | — | — | 14,021 |
| Assets under management | 16,154 | 1,541 | 7,095 | 880 | — | — | 25,670 |
| Other non-managed marketed customer funds | 23,305 | 20,908 | 1,077 | 3,089 | — | — | 48,379 |

A. Including Trading derivatives and Equity instruments.

B. 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.

C. Including Trading derivatives, Short positions and Other financial liabilities.

D. 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

| Balance sheet (condensed) | 2021 | | | | | | Total |
|--|----------------|----------------|----------------|-----------------------|------------------|--------------------------|------------------|
| | Europe | North America | South America | Digital Consumer Bank | Corporate Centre | Intra-Group eliminations | |
| Total assets | 943,875 | 244,734 | 257,805 | 148,005 | 215,467 | (214,051) | 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 | 219,154 | 34,857 | 43,134 | 21,804 | 88,918 | (125,195) | 282,672 |
| Debt securities | 67,068 | 38,500 | 51,451 | 5,280 | 1,554 | — | 163,853 |
| Other financial assets ^A | 37,250 | 12,555 | 23,809 | 47 | 2,203 | — | 75,864 |
| Other asset accounts ^B | 29,793 | 21,394 | 15,491 | 6,937 | 116,005 | (88,856) | 100,764 |
| Total liabilities | 899,007 | 216,048 | 237,375 | 135,599 | 135,950 | (125,197) | 1,498,782 |
| Customer deposits | 619,486 | 121,989 | 120,500 | 55,327 | 1,042 | — | 918,344 |
| Central banks and credit institutions | 156,257 | 35,152 | 44,314 | 37,600 | 53,063 | (125,197) | 201,189 |
| Marketable debt securities | 73,629 | 38,061 | 23,461 | 36,710 | 74,302 | — | 246,163 |
| Other financial liabilities ^C | 38,706 | 14,652 | 40,490 | 1,397 | 430 | — | 95,675 |
| Other liabilities accounts ^D | 10,929 | 6,194 | 8,610 | 4,565 | 7,113 | — | 37,411 |
| Total equity | 44,868 | 28,686 | 20,430 | 12,406 | 79,517 | (88,854) | 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 |

A. Including Trading derivatives and Equity instruments.

B. 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.

C. Including Trading derivatives, Short positions and Other financial liabilities.

D. 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

| Balance sheet (condensed) | 2020 | | | | | | Total |
|--|----------------|----------------|----------------|-----------------------|------------------|--------------------------|------------------|
| | Europe | North America | South America | Digital Consumer Bank | Corporate Centre | Intra-Group eliminations | |
| Total assets | 909,304 | 223,797 | 238,746 | 137,155 | 182,587 | (183,339) | 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 | 180,245 | 28,666 | 43,154 | 12,058 | 61,174 | (99,501) | 225,796 |
| Debt securities | 81,271 | 38,403 | 49,304 | 5,659 | 1,917 | — | 176,554 |
| Other financial assets ^A | 48,313 | 15,439 | 17,342 | 30 | 1,645 | — | 82,769 |
| Other asset accounts ^B | 35,894 | 20,718 | 15,201 | 6,150 | 112,807 | (83,838) | 106,932 |
| Total liabilities | 866,949 | 199,789 | 218,927 | 124,720 | 106,044 | (99,501) | 1,416,928 |
| Customer deposits | 582,353 | 102,924 | 111,808 | 51,399 | 826 | — | 849,310 |
| Central banks and credit institutions | 133,973 | 38,071 | 42,049 | 32,046 | 38,041 | (99,501) | 184,679 |
| Marketable debt securities | 84,201 | 36,583 | 21,280 | 35,965 | 57,240 | — | 235,269 |
| Other financial liabilities ^C | 54,634 | 16,182 | 35,456 | 1,370 | 493 | — | 108,135 |
| Other liabilities accounts ^D | 11,788 | 6,029 | 8,334 | 3,940 | 9,444 | — | 39,535 |
| Total equity | 42,355 | 24,008 | 19,819 | 12,435 | 76,543 | (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 |

A. Including 'Trading derivatives' and 'Equity instruments'.

B. 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.

C. Including Trading derivatives, Short positions and Other financial liabilities.

D. 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

| Underlying income statement (condensed) | 2022 | | | | | |
|--|---------------|---------------|---------------|-----------------------|------------------|---------------|
| | Europe | North America | South America | Digital Consumer Bank | Corporate centre | Total |
| Net interest income | 12,565 | 9,705 | 12,979 | 4,022 | (652) | 38,619 |
| Net fee income | 4,493 | 1,958 | 4,515 | 843 | (19) | 11,790 |
| Gains (losses) on financial transactions ^A | 821 | 204 | 1,291 | 60 | (723) | 1,653 |
| Other operating income ^B | 151 | 449 | (761) | 344 | (91) | 92 |
| Total income | 18,030 | 12,316 | 18,024 | 5,269 | (1,485) | 52,154 |
| Administrative expenses, depreciation and amortisation | (8,523) | (5,871) | (6,675) | (2,462) | (372) | (23,903) |
| Net operating income^C | 9,507 | 6,445 | 11,349 | 2,807 | (1,857) | 28,251 |
| Net loan-loss provisions ^D | (2,396) | (2,538) | (5,041) | (544) | 10 | (10,509) |
| Other gains (losses) and provisions ^E | (1,629) | (118) | (544) | (27) | (174) | (2,492) |
| Operating profit/(loss) before tax | 5,482 | 3,789 | 5,764 | 2,236 | (2,021) | 15,250 |
| Tax on profit | (1,492) | (869) | (1,549) | (549) | (27) | (4,486) |
| Profit from continuing operations | 3,990 | 2,920 | 4,215 | 1,687 | (2,048) | 10,764 |
| Net profit from discontinued operations | — | — | — | — | — | — |
| Consolidated profit | 3,990 | 2,920 | 4,215 | 1,687 | (2,048) | 10,764 |
| Non-controlling interests | 179 | 43 | 557 | 379 | 1 | 1,159 |
| Attributable profit to the parent | 3,811 | 2,877 | 3,658 | 1,308 | (2,049) | 9,605 |

- A. 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.
- B. 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.
- C. '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.
- D. '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 27 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.
- E. 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 27 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) | 2021 | | | | | Total |
|--|---------------|---------------|---------------|-----------------------|------------------|---------------|
| | Europe | North America | South America | Digital Consumer Bank | Corporate Centre | |
| Net interest income | 10,574 | 8,072 | 11,307 | 4,041 | (624) | 33,370 |
| Net fee income | 4,344 | 1,644 | 3,721 | 821 | (28) | 10,502 |
| Gains (losses) on financial transactions ^A | 756 | 224 | 716 | 8 | (141) | 1,563 |
| Other operating income ^B | 260 | 914 | (407) | 229 | (27) | 969 |
| Total income | 15,934 | 10,854 | 15,337 | 5,099 | (820) | 46,404 |
| Administrative expenses, depreciation and amortisation | (8,318) | (4,967) | (5,379) | (2,405) | (346) | (21,415) |
| Net operating income^C | 7,616 | 5,887 | 9,958 | 2,694 | (1,166) | 24,989 |
| Net loan-loss provisions ^D | (2,293) | (1,210) | (3,251) | (527) | (155) | (7,436) |
| Other gains (losses) and provisions ^E | (1,290) | (145) | (474) | (194) | (190) | (2,293) |
| Operating profit/(loss) before tax | 4,033 | 4,532 | 6,233 | 1,973 | (1,511) | 15,260 |
| Tax on profit | (1,212) | (1,016) | (2,360) | (464) | (24) | (5,076) |
| Profit from continuing operations | 2,821 | 3,516 | 3,873 | 1,509 | (1,535) | 10,184 |
| Net profit from discontinued operations | — | — | — | — | — | — |
| Consolidated profit | 2,821 | 3,516 | 3,873 | 1,509 | (1,535) | 10,184 |
| Non-controlling interests | 71 | 556 | 556 | 345 | 2 | 1,530 |
| Attributable profit to the parent | 2,750 | 2,960 | 3,317 | 1,164 | (1,537) | 8,654 |

- A. 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.
- B. 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.
- C. '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.
- D. '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.
- E. 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 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 | | | | | Total |
|--|---------------|---------------|---------------|-----------------------|------------------|---------------|
| | Europe | North America | South America | Digital Consumer Bank | Corporate Centre | |
| Net interest income | 9,518 | 8,394 | 10,710 | 4,014 | (642) | 31,994 |
| Net fee income | 4,000 | 1,684 | 3,589 | 771 | (29) | 10,015 |
| Gains (losses) on financial transactions ^A | 868 | 251 | 765 | 16 | 287 | 2,187 |
| Other operating income ^B | (106) | 628 | (209) | 116 | (25) | 404 |
| Total income | 14,280 | 10,957 | 14,855 | 4,917 | (409) | 44,600 |
| Administrative expenses, depreciation and amortisation | (8,275) | (4,677) | (5,357) | (2,329) | (329) | (20,967) |
| Net operating income^C | 6,005 | 6,280 | 9,498 | 2,588 | (738) | 23,633 |
| Net loan-loss provisions ^D | (3,345) | (3,917) | (3,924) | (957) | (31) | (12,174) |
| Other gains (losses) and provisions ^E | (970) | (132) | (320) | 49 | (412) | (1,785) |
| Operating profit/(loss) before tax | 1,690 | 2,231 | 5,254 | 1,680 | (1,181) | 9,674 |
| Tax on profit | (476) | (550) | (1,918) | (421) | (151) | (3,516) |
| Profit from continuing operations | 1,214 | 1,681 | 3,336 | 1,259 | (1,332) | 6,158 |
| Net profit from discontinued operations | — | — | — | — | — | — |
| Consolidated profit | 1,214 | 1,681 | 3,336 | 1,259 | (1,332) | 6,158 |
| Non-controlling interests | 78 | 261 | 437 | 301 | — | 1,077 |
| Attributable profit to the parent | 1,136 | 1,420 | 2,899 | 958 | (1,332) | 5,081 |

- A. 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.
- B. 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.
- C. '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.
- D. '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.
- E. 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 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.



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 four businesses: Merchant, International Trade, Payments 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

| Underlying income statement (condensed) | 2022 | | | | | |
|--|----------------|--|-------------------------------|--------------|------------------|---------------|
| | Retail Banking | Santander Corporate & Investment Banking | Wealth Management & Insurance | PagoNxt | Corporate centre | Total |
| Net interest income | 34,880 | 3,544 | 825 | 22 | (652) | 38,619 |
| Net fee income | 7,650 | 1,988 | 1,291 | 881 | (19) | 11,790 |
| Gains (losses) on financial transactions ^A | 435 | 1,833 | 123 | (14) | (723) | 1,653 |
| Other operating income ^B | (280) | 31 | 369 | 64 | (91) | 92 |
| Total income | 42,685 | 7,396 | 2,608 | 953 | (1,485) | 52,154 |
| Administrative expenses, depreciation and amortisation | (18,568) | (2,898) | (1,041) | (1,024) | (372) | (23,903) |
| Net operating income^C | 24,117 | 4,498 | 1,567 | (71) | (1,857) | 28,251 |
| Net loan-loss provisions ^D | (10,210) | (251) | (14) | (44) | 10 | (10,509) |
| Other gains (losses) and provisions ^E | (2,135) | (131) | (26) | (26) | (174) | (2,492) |
| Operating profit/(loss) before tax | 11,772 | 4,116 | 1,527 | (141) | (2,021) | 15,250 |
| Tax on profit | (2,931) | (1,119) | (347) | (63) | (27) | (4,486) |
| Profit/(loss) from continuing operations | 8,841 | 2,997 | 1,180 | (204) | (2,048) | 10,764 |
| Net profit/(loss) from discontinued operations | — | — | — | — | — | — |
| Consolidated profit/(loss) | 8,841 | 2,997 | 1,180 | (204) | (2,048) | 10,764 |
| Non-controlling interests | 895 | 192 | 60 | 12 | 1 | 1,159 |
| Attributable profit/(loss) to the parent | 7,946 | 2,805 | 1,120 | (216) | (2,049) | 9,605 |

- A. 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.
- B. 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.
- C. 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.
- D. 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 27 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.
- E. 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 27 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

| Underlying income statement (condensed) | 2021 | | | | | Total |
|--|----------------|---|-------------------------------|--------------|------------------|---------------|
| | Retail Banking | Santander Corporate & Investment Banking (SCIB) | Wealth Management & Insurance | PagoNxt | Corporate Centre | |
| Net interest income | 30,595 | 2,921 | 477 | 1 | (624) | 33,370 |
| Net fee income | 7,045 | 1,744 | 1,248 | 493 | (28) | 10,502 |
| Gains (losses) on financial transactions ^A | 839 | 766 | 100 | (1) | (141) | 1,563 |
| Other operating income ^B | 390 | 188 | 416 | 2 | (27) | 969 |
| Total income | 38,869 | 5,619 | 2,241 | 495 | (820) | 46,404 |
| Administrative expenses, depreciation and amortisation | (17,102) | (2,380) | (914) | (673) | (346) | (21,415) |
| Net operating income^C | 21,767 | 3,239 | 1,327 | (178) | (1,166) | 24,989 |
| Net loan-loss provisions ^D | (7,082) | (151) | (38) | (10) | (155) | (7,436) |
| Other gains (losses) and provisions ^E | (2,053) | (17) | 6 | (39) | (190) | (2,293) |
| Operating profit/(loss) before tax | 12,632 | 3,071 | 1,295 | (227) | (1,511) | 15,260 |
| Tax on profit | (3,898) | (821) | (309) | (24) | (24) | (5,076) |
| Profit/(loss) from continuing operations | 8,734 | 2,250 | 986 | (251) | (1,535) | 10,184 |
| Net profit/(loss) from discontinued operations | — | — | — | — | — | — |
| Consolidated profit/(loss) | 8,734 | 2,250 | 986 | (251) | (1,535) | 10,184 |
| Non-controlling interests | 1,345 | 137 | 44 | 2 | 2 | 1,530 |
| Attributable profit/(loss) to the parent | 7,389 | 2,113 | 942 | (253) | (1,537) | 8,654 |

A. 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.

B. 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.

C. 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.

D. 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 included in the line provisions or reversal of provisions, net of the statutory income statement.

E. 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 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

| Underlying income statement (condensed) | 2020 | | | | | Total |
|--|----------------|---|-------------------------------|--------------|------------------|---------------|
| | Retail Banking | Santander Corporate & Investment Banking (SCIB) | Wealth Management & Insurance | PagoNxt | Corporate Centre | |
| Net interest income | 29,401 | 2,842 | 394 | (1) | (642) | 31,994 |
| Net fee income | 6,986 | 1,542 | 1,154 | 362 | (29) | 10,015 |
| Gains (losses) on financial transactions ^A | 1,132 | 670 | 99 | (1) | 287 | 2,187 |
| Other operating income ^B | (153) | 202 | 383 | (3) | (25) | 404 |
| Total income | 37,366 | 5,256 | 2,030 | 357 | (409) | 44,600 |
| Administrative expenses, depreciation and amortisation | (17,285) | (2,038) | (872) | (443) | (329) | (20,967) |
| Net operating income^C | 20,081 | 3,218 | 1,158 | (86) | (738) | 23,633 |
| Net loan-loss provisions ^D | (11,633) | (470) | (28) | (12) | (31) | (12,174) |
| Other gains (losses) and provisions ^E | (1,238) | (134) | 1 | (2) | (412) | (1,785) |
| Operating profit/(loss) before tax | 7,210 | 2,614 | 1,131 | (100) | (1,181) | 9,674 |
| Tax on profit | (2,328) | (750) | (272) | (15) | (151) | (3,516) |
| Profit/(loss) from continuing operations | 4,882 | 1,864 | 859 | (115) | (1,332) | 6,158 |
| Net profit/(loss) from discontinued operations | — | — | — | — | — | — |
| Consolidated profit/(loss) | 4,882 | 1,864 | 859 | (115) | (1,332) | 6,158 |
| Non-controlling interests | 921 | 118 | 37 | 1 | — | 1,077 |
| Attributable profit/(loss) to the parent | 3,961 | 1,746 | 822 | (116) | (1,332) | 5,081 |

- A. 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.
- B. 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.
- C. 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.
- D. 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.
- E. 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.

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

| 2022 | | | |
|--|--------------------|-------------|-------------------|
| Reconciliation of underlying results to statutory results | Underlying results | Adjustments | Statutory results |
| Net interest income | 38,619 | — | 38,619 |
| Net fee income | 11,790 | — | 11,790 |
| Gains (losses) on financial transactions ^A | 1,653 | — | 1,653 |
| Other operating income ^B | 92 | (37) | 55 |
| Total income | 52,154 | (37) | 52,117 |
| Administrative expenses, depreciation and amortisation | (23,903) | — | (23,903) |
| Net operating income^C | 28,251 | (37) | 28,214 |
| Net loan-loss provisions ^D | (10,509) | (327) | (10,836) |
| Other gains (losses) and provisions ^E | (2,492) | 364 | (2,128) |
| Operating profit/(loss) before tax | 15,250 | — | 15,250 |
| Tax on profit | (4,486) | — | (4,486) |
| Adjusted profit for the year from continuing operations | 10,764 | — | 10,764 |
| Profit from discontinued operations (net) | — | — | — |
| Consolidated profit/(loss) | 10,764 | — | 10,764 |
| Non-controlling interests | (1,159) | — | (1,159) |
| Attributable profit/(loss) to the parent | 9,605 | — | 9,605 |

- A. 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.
- B. 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.
- C. 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.
- D. 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 27 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.
- E. 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 a release of EUR 27 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:

- Mainly, payment holidays in Poland.

EUR million

| | 2021 | | |
|--|--------------------|--------------|-------------------|
| | Underlying results | Adjustments | Statutory results |
| Reconciliation of underlying results to statutory results | | | |
| Net interest income | 33,370 | — | 33,370 |
| Net fee income | 10,502 | — | 10,502 |
| Gains (losses) on financial transactions ^A | 1,563 | — | 1,563 |
| Other operating income ^B | 969 | — | 969 |
| Total income | 46,404 | — | 46,404 |
| Administrative expenses, depreciation and amortisation | (21,415) | — | (21,415) |
| Net operating income^C | 24,989 | — | 24,989 |
| Net loan-loss provisions ^D | (7,436) | — | (7,436) |
| Other gains (losses) and provisions ^E | (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 |

- A. 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.
- B. 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.
- C. 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.
- D. 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.
- E. 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 | | |
|--|--------------------|-----------------|-------------------|
| | Underlying results | Adjustments | Statutory results |
| Reconciliation of underlying results to statutory results | | | |
| Net interest income | 31,994 | — | 31,994 |
| Net fee income | 10,015 | — | 10,015 |
| Gains (losses) on financial transactions ^A | 2,187 | — | 2,187 |
| Other operating income ^B | 404 | (321) | 83 |
| Total income | 44,600 | (321) | 44,279 |
| Administrative expenses, depreciation and amortisation | (20,967) | (163) | (21,130) |
| Net operating income^C | 23,633 | (484) | 23,149 |
| Net loan-loss provisions ^D | (12,174) | (258) | (12,432) |
| Other gains (losses) and provisions ^E | (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) |

- A. 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.
- B. 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.
- C. 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.
- D. 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.
- E. 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 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 amortisation'.

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

| | 2022 | | | |
|---|-------------------------------|-----------------------------------|-------------------------|-----------------------|
| | Associates and joint ventures | Members of the board of directors | Executive vicepresident | Other related parties |
| Assets | 10,257 | — | 13 | 455 |
| Cash, cash balances at central banks and other deposits on demand | 227 | — | — | — |
| Loans and advances: credit institutions | 489 | — | — | — |
| Loans and advances: customers | 8,822 | — | 13 | 455 |
| Debt securities | 463 | — | — | — |
| Others | 256 | — | — | — |
| Liabilities | 3,611 | 11 | 11 | 109 |
| Financial liabilities: credit institutions | 938 | — | — | — |
| Financial liabilities: customers | 2,301 | 11 | 11 | 109 |
| Marketable debt securities | — | — | — | — |
| Others | 372 | — | — | — |
| Income statement | 1,357 | — | — | 2 |
| Interest income | 189 | — | — | 1 |
| Interest expense | (60) | — | — | — |
| Gains/losses on financial assets and liabilities and others | (225) | — | — | — |
| Commission income | 1,541 | — | — | 1 |
| Commission expense | (88) | — | — | — |
| Other | 3,535 | 2 | 2 | 79 |
| Financial guarantees granted and Others | 11 | 1 | 1 | 23 |
| Loan commitments and Other commitments granted | 201 | 1 | 1 | 13 |
| Derivative financial instruments | 3,323 | — | — | 43 |

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 securities | 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 securities | 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 |

The remaining required information is detailed in notes 5 and 46.c.

53. Risk management

a) Risk principles and culture

The principles on which Grupo Santander's risk management and control are based are detailed below. They take into account regulatory requirements, best market practices and are mandatory:

1. **All employees are risk managers** who must understand the risks associated with their functions and not assume risks that will exceed the Group's risk appetite or have an unknown impact.
2. **Senior managers** must make sure Grupo Santander keeps its risk profile within risk appetite, with consistent risk conduct, action, communications, and oversight of our risk culture.
3. **Independent risk management and control functions**, according to the three lines of defence model of Grupo Santander.
4. **Grupo Santander takes a forward-looking, comprehensive approach** towards all businesses and risk types.
5. **Santander keeps thorough and timely reporting** to properly pinpoint, assess, manage and disclose risks.

1. Key risk types

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 (includes fraud, technological, cyber, legal and conduct risks), financial crime (includes, among others, money laundering, terrorism financing, violation of international sanctions, corruption, bribery and tax evasion), model, structural (includes risks associated with insurance and pensions), 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.

Climate change and environmental risk could affect other risks in different time horizons on account of physical damage, as well as factors relating to the transition to a more sustainable economy, such as legislative reform, technology and economic agents. Given the nature of its operations, the Group has no environment-related liabilities, expenses, assets or contingencies of a material relevance to its consolidated equity, financial situation and results.

Most exposures in sectors potentially affected by climate change risk are with wholesale clients, whose preliminary reviews, credit approval and credit ratings take such risk into account. Customers' ratings determine the parameters for calculating loan loss (typically in terms of probability of default or "PD"). Thus, when climate factors are relevant, in conjunction with other elements of analysis, they have an impact on the loan loss calculations which support capital and provisions.

The Group also passed the recent regulatory climate stress tests, which had been classified as learning exercises for the industry. Results showed that the Group's coverage for potential losses would be sufficient in view of portfolio maturity over time.

Therefore, based on the best information available at the time these consolidated annual financial statements were prepared, the Group sees no additional environmental or climate change risk having a substantial impact on its equity, financial situation and results in 2022.

Still, this matter is constantly changing, and, like other banks, the Group is working on developing more methodologies to better measure potential loan loss in line with new management needs, best practice, and regulators' and supervisors' requirements.

2. Risk and compliance 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 business and support areas, which are primarily accountable for managing the risk exposure they originate, recognizes, measures, monitors and reports on risks according to risk management policies, models and procedures. Risk origination must be consistent with the approved risk appetite and related limits.



- **Second line:** formed by risk and compliance & conduct functions, independently oversees and challenges risk management at the first line of defence to make sure Grupo Santander keeps risks within risk appetite approved by senior management and promote Risk Pro in the Group.
- **Third line:** Internal audit function, is fully independent to give the board and senior managers assurance of high-quality and efficient risk governance and management to preserve our value, solvency and reputation.

Risk, compliance & conduct, and internal audit are sufficiently separate and autonomous functions, with direct access to the board and its committees.

2.2 Risk committee structure

The **board of directors** has final oversight of risk management and compliance promoting a sound risk culture and reviewing and approving risk appetite and frameworks, with support from its risk, regulation and compliance committee and its executive committee. The Group's risk governance keeps risk control and risk-taking areas separate.

The **Group chief risk officer (Group CRO)**, who leads the application and execution of 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 handles compliance risk and leads the application and execution of the compliance and conduct risk strategy and provides the Group CRO with a complete overview on the situation of risks being monitored.

The Group CRO and the Group CCO report directly to both 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 with powers delegated from 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:

- Inform the Group CRO, the Group CCO, the risk control committee and the compliance and conduct committee if risks are being managed within risk appetite;
- Regularly monitor each key risk type; and
- Overseeing measures to meet supervisors and auditors' expectations.

Besides, Grupo Santander, in order to establish an adequate control environment for the management of each risk types, 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 implement extra governance measures for special situations, as it did with Brexit and the covid-19 crisis. Since the beginning of the war in Ukraine, Santander has strengthened the monitoring of all risks, with special attention to the situation in Poland, monitoring of macroeconomic performance, vulnerable sectors/customers, cybersecurity, among other. In addition, the compliance team have continuously reviewed the application of the sanctions. Santander has no presence in, or hardly any direct exposure to, Russia and Ukraine. Our special situations governance enabled the Group to remain resilient against the consequences of the war in Ukraine.

2.3 The Group's relationship with subsidiaries

Grupo Santander subsidiaries have a model for managing risk, compliance and conduct that 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 to higher standards according to local law and regulation.

Furthermore, the Group's aggregate oversight area advises and validates subsidiaries on internal regulation and operations. This reinforces a common risk management model across Santander.

In 2022, Grupo Santander continued to build on our Group-subsidiaries' model through a regional approach, benefiting from the Group's global scale to find synergy for standard operations and platforms; to streamline processes; and tighten control mechanisms to grow our business.

The Group CRO, the Group CCO and regional heads of risk are involved in appointing, setting objectives for, reviewing and compensating their country-unit counterparts to promote proper risk management. Each subsidiary CRO/CCO interacts regularly with the regional head of risk, the Group CRO and the Group CCO in regional or country control meetings.

Local and global risk and compliance areas also meet to address special matters. Country and regional units work closely to effectively strengthen group-subsidiary relations through these common initiatives:

- restructuring based on subsidiary benchmarks, strategic vision, and advanced risk management infrastructures and practices.
- exchange of best practices that will strengthen processes, drive innovation and result in a quantitative impact.
- search for talent in risk and compliance teams with internal mobility through the global risk talent programme and strong 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 aggregate level and types of risk that Grupo Santander deems prudent for our business strategy, even in unforeseen circumstances. In Grupo Santander, these principles influence risk appetite:

- Risk appetite is part of the board's duties. It prepares the risk appetite statement (RAS) for the whole Group every year. In a cascading down process, each subsidiary's board also sets its own risk appetite.
- Comprehensiveness and forward-looking approach. Our appetite includes of all material risks that Santander are exposed to and defines our target risk profile for the current and medium term with a forward-looking view considering stress scenarios.
- Common standards and embedding in the day-to-day risk management. Common standards and embedding in the day-to-day risk management. The Group shares the same risk appetite model, which sets common requirements for processes, metrics, governance bodies, controls and standards.. It also ensures an effective and traceable embedding of our appetite into more granular management policies and limits across our subsidiaries.
- Continuous adaptation to market best practices, regulatory requirements and supervisors' expectations.
- Aligning with business plans and strategy. The risk appetite is a key point of reference for strategic and business planning. Grupo Santander verifies that the three-year strategic plans, the annual budget and capital and liquidity planning are within the limits set in the RAS before Santander approves them.

Grupo Santander's risk appetite and business model rest on the following elements:

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

The risk appetite is expressed through qualitative statements and limits on metrics representative of the bank's risk profile at present and under stress. Those metrics cover all risk types according to our corporate risk framework. Grupo Santander articulates them in five axes that provide the Bank with a holistic view of all risks it incurs in the development of its business model. These five axes are applicable to all Santander's key risk types, and comprise:

- P&L volatility: Control of P&L volatility of business plan under baseline and stressed conditions (aligned with ICAAP stress test)
- Solvency: Control of capital ratios under baseline and stressed scenarios (aligned with ICAAP)

- Liquidity: Control of liquidity ratios under base and stress scenarios (aligned with ILAAP)
- Concentration: Control of credit concentration on top clients, portfolios and industries
- Non financial: Control on non financial risks aimed to minimize events which could lead to financial loss, operative, technological, legal and regulatory breaches, conduct issues or reputational damage.

b) Credit risk

1. Introduction to the credit risk treatment

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

Credit risk management

Grupo Santander takes a holistic view of the credit risk cycle, including the transaction, the customer and the portfolio, in order to identify, analyse, control and decide on credit risk.

Credit risk identification facilitates active and effective portfolio management and control. Grupo Santander classify external and internal risk in each business to adopt any corrective or mitigating measures through:

1.1. Planning

Grupo Santander's planning helps to set business targets and draw up action plans within our risk appetite statement.

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 portfolio credit quality to measure credit risk, run internal controls to regularly monitor credit strategy detect significant risk deviation and potential impacts, and take corrective action.

They are suited to the Grupo Santander's risk appetite and subsidiaries' capital targets, having been reviewed and pre-approved by senior managers before Group management revises and validates them.

1.2. Risk assessment and credit rating

Risk approval generally depends on the applicant's ability to repay the debt, regardless of any collateral or personal guarantees the Bank requires. Grupo Santander reviews their regular sources of income, including funds and net cash flows from any businesses.

Grupo Santander monitors credit rating drivers to calibrate the decisions and ratings that Group credit quality assessment models determine. Risk management uses these ratings for many things like applying approval limits, pre-approvals, monitoring risk, and policies on pricing credit.

Grupo Santander then uses rating models to measure ability to pay. Depending on each segment, credit rating 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: system of automatic evaluation of loan applications. It automatically assigns customers an individual score retail on which the subsequent decision is based. It is used for SME segments without an assigned analyst.

Grupo Santander's parameter estimation models, based on econometric models of past defaults and losses, calculate economic and regulatory capital as well as IFRS 9 provisions for each customer portfolio.

Grupo Santander regularly monitors and evaluates models' suitability, predictive capacity, performance, granularity, and compliance with policy, among other factors. Grupo Santander reviews ratings with the latest financial and other relevant information to assess credit risk due to depreciation caused by customers' lower creditworthiness and manage credit portfolios according to the risk appetite and profile target set out in SCPs, with exposure limits adjusted to an acceptable level for each portfolio and counterparty and for new loan originations.

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, which are highly automated and digitalized, determine the risk Grupo Santander 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. Santander also uses risk-based pricing tools to make sure portfolio growth is sustainable.

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.
- Corporates and institutions that meet certain requirements (strong relationships, rating, etc.) are subject to a simpler pre-classification model that sets a recommended risk level for each customer. Transactions above certain limits or with special characteristics could require approval from a senior credit analyst or a committee.

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.

1.3. 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. Grupo Santander compares 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.

1.4. 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.

The monitoring process considers projections on the performance of the operations and their characteristics, in addition to any variation in their classification. Anticipation and preventive monitoring uses transactional data sources and advanced analytics (early warning engine) which determines specific actions at the client level, based on the assigned monitoring classification.

Monitoring 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.



1.5. Credit risk mitigation techniques

Grupo Santander generally approves risk according to a borrower's ability to make due payment, regardless of any additional collateral or personal guarantees Santander may require to modulate exposure.

To determine ability to pay, the Group analyse funds or cash flows from businesses or other regular income, not including guarantors or loan collateral which are always considered as a secondary means of recourse.

In general, guarantees are to reinforce a credit transaction and mitigate a loss if the borrower defaults. Our techniques to mitigate credit risk cover various types of customer and product. Some are for specific transactions (e.g. property) or a series of transactions (e.g. derivatives netting and collateral). Santander groups them by personal guarantees (with a solvent guarantor), collateral (mainly in primary residence mortgages) and hedges with credit derivatives.

The correct acceptance of these mitigation techniques is established by ensuring their legal enforceability in all jurisdictions. The entire process is subject to internal control and effective monitoring of the valuation of the guarantees, especially mortgages.

1.6. Collections & recoveries management

Collections & recoveries, an important area in risk management, develops a global management strategy based on local economic conditions, business models and other recovery-related particulars, with a full approach and general action lines for our subsidiaries. Recovery management follows regulatory requirements set out in the EBA Guidelines on the management of non-performing and forborne exposures.

For effective and efficient recoveries management, the area segments customers based on certain aspects, using new digital channels that help create value in Collections & Recoveries. It follows hi-tech, digital procedures to handle large groups of similar customer profiles and products; but it also adapts management for customers who need an assigned manager and tailored approach.

Collections & Recoveries splits recoveries into four phases: arrears/early delinquency, default, write-offs and foreclosed assets. To recover debt, the Group always seeks alternatives to court action, like forbearance and other arrears management techniques.

Grupo Santander also reviews debt instruments individually and treat them as write-offs (even when they're not past due) if the Group sees signs of irreversible impairment that suggest recovery to be remote. Though this may lead us to cancel all or part of the gross carrying amount, the Group never interrupt negotiations and legal proceedings to recover debt.

In markets where the real estate risk exposure is high, Grupo Santander can take action to quickly dispose of assets, like selling off portfolios or foreclosed assets with efficient sales instruments to recover as many on-balance-sheet assets as possible.

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^A

December data

| | Credit risk with customers (EUR million) ^B | | | Credit impaired loans (EUR million) | | | NPL ratio (%) | | |
|------------------------------|--|------------------|----------------|--|---------------|---------------|---------------|--------------|-------------|
| | 2022 | 2021 | 2020 | 2022 | 2021 | 2020 | 2022 | 2021 | 2020 |
| Europe | 639,996 | 636,123 | 606,997 | 15,186 | 19,822 | 20,272 | 2.37 | 3.12 | 3.34 |
| Spain | 293,197 | 283,953 | 272,154 | 9,598 | 13,403 | 14,053 | 3.27 | 4.72 | 5.16 |
| UK | 253,455 | 262,869 | 252,255 | 3,059 | 3,766 | 3,138 | 1.21 | 1.43 | 1.24 |
| Portugal | 41,755 | 41,941 | 40,693 | 1,247 | 1,442 | 1,584 | 2.99 | 3.44 | 3.89 |
| Poland | 33,350 | 33,497 | 31,578 | 1,268 | 1,210 | 1,496 | 3.80 | 3.61 | 4.74 |
| North America | 185,614 | 149,792 | 131,626 | 5,629 | 3,632 | 2,938 | 3.03 | 2.42 | 2.23 |
| US | 140,452 | 112,808 | 99,135 | 4,571 | 2,624 | 2,025 | 3.25 | 2.33 | 2.04 |
| Mexico | 45,107 | 36,984 | 32,476 | 1,047 | 1,009 | 913 | 2.32 | 2.73 | 2.81 |
| South America | 167,348 | 141,874 | 129,590 | 10,381 | 6,387 | 5,688 | 6.20 | 4.50 | 4.39 |
| Brazil | 101,801 | 85,702 | 74,712 | 7,705 | 4,182 | 3,429 | 7.57 | 4.88 | 4.59 |
| Chile | 47,811 | 41,479 | 42,826 | 2,384 | 1,838 | 2,051 | 4.99 | 4.43 | 4.79 |
| Argentina | 5,844 | 5,481 | 4,418 | 122 | 198 | 93 | 2.08 | 3.61 | 2.11 |
| Digital Consumer Bank | 125,339 | 116,989 | 116,381 | 2,583 | 2,490 | 2,525 | 2.06 | 2.13 | 2.17 |
| Corporate Centre | 5,824 | 6,337 | 4,862 | 894 | 903 | 344 | 15.35 | 14.38 | 7.08 |
| Total Group | 1,124,121 | 1,051,115 | 989,456 | 34,673 | 33,234 | 31,767 | 3.08 | 3.16 | 3.21 |

A. Management perimeter according to the reported segments

B. Includes gross lending to customers, guarantees and documentary credits.

Key figures by geographic region are described below at 31 December 2022:

- **Europe:** The NPL ratio fell 75 bps to 2.37% from 2021 because impaired loans decreased significantly in the UK, and in Spain and Portugal due to the NPL portfolio sales.
- **North America:** The NPL ratio increased 61 bps to 3.03% from 2021, mainly due to increases at SC USA motivated by the new definition of default.
- **South America:** The NPL ratio rose 170 bp from 2021 to 6.20%, due to increases in Brazil (mainly due to the retail unsecured portfolio performance and a single name in SCIB) and Chile, offset by the decrease in Argentina.
- **Digital Consumer Bank:** The NPL ratio decreased 7 bps to 2.06%, despite the decrease in automobile financing.

All support measures (moratoria) that the Group took in response to the covid-19 pandemic have expired, with positive behaviour thanks to economic recovery in 2021, and improved sanitary-health environment in our main geographies.

Government liquidity programmes also remained in force in 2022, of which 77% of total credit granted was in Spain (77% was secured by the Instituto de Crédito Oficial - ICO), and 12% of total credit was in the UK, with 98% government-secured.

In the case of delinquent operations with ICO guarantee, the transfer of the overdue guaranteed amounts will take place as the guarantee is executed, regardless of whether the guarantor is subrogated to the right to receive said amounts, according to the regulation of these guarantees. The derecognition of the transferred guaranteed amounts will entail the recognition, at its fair value, of a collection right against the guarantor.

In addition, the Group is following the measures launched by the governments of Spain, Portugal and Poland (for more information please see note 10 c.), aimed at relieving the mortgage payment burden for vulnerable customers after the increase in interest rates.

Information on the estimation of impairment losses

The calculation of credit risk provisions is performed at financial asset level, estimating potential credit losses through the difference between the expected cash flows and the contractual cash flows, ensuring that the results are adequate considering the status of the transaction, economic conditions and available forward-looking information.

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) according to the status of each instrument in relation to its level of credit risk:

- 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 classification of financial instrument in the IFRS 9 stages is carried out in accordance with the guidelines through the risk management policies of the subsidiaries, which are consistent with the Group's policies.

Estimation of expected loss

Grupo Santander calculates impairment losses using parameters (mainly EAD, PD, LGD and discount rate) based on internal models, the stage in which each financial asset is classified, and regulatory and management expertise. Far from being a simple adaptation, Santander 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.

Determination of significant increase in credit risk

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 and 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 and returns to stage 1.
- **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.

Identifying a significant increase in credit risk: when classifying financial instruments under stage 2, Santander considers:

- **Quantitative criteria:** Grupo Santander reviews and quantifies 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, Grupo Santander considers 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. Santander supplements these qualitative criteria with expert opinions.

When the presumption of a significant deterioration of credit risk is removed, due to a sufficient improvement of the credit quality, the obligor can be re-classified to Stage 1, without any probationary period in Stage 2.

- **Definition of default:** Santander incorporated the new definition to provisions calculation according to the EBA's guidelines; the Group is also considering applying it to prudential framework. In addition, the default definition and stage 3 have been aligned.

This definition considers the following criteria to classify exposures as stage 3: financial instruments with one or more payments more than 90 consecutive days past due, representing at least 1% of the client's total exposure or the identification of other criteria demonstrating, even in the absence of defaults, that it is unlikely that the counterparty is unlikely to meet all of its financial obligations.

The Group applies the default criteria to all exposures of the impaired client. Where an obligor belongs to a group, the default criteria may also be applied to all exposures of the group.

The default classification is maintained during the 3-month test period following the disappearance of all default indicators described above, and this period is extended to one year for forbearances that have been classified as default.

- Expected life of financial instruments: Santander estimates 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), Santander estimates its expected life based on the total exposure period and effective management practices to mitigate exposure.

The context and monitoring of the expected credit loss was analysed and reviewed during the health crisis by covid-19, and was reinforced with collective analysis, monitoring of government measures, monitoring of the evolution of the Group's customers, as well as remedial management actions if necessary. In terms of classification, 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.

At the end of December 2022 the credit risk provisions not included any special measures or adjustments in relation to health crisis by covid-19.

1. Forward-looking vision

To estimate expected losses, Grupo Santander requires a great deal of expert analysis as well as past, present and future data. Santander quantifies 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. These scenarios take into account the time value of money, the relevant information available about past events and current conditions, and projections of macroeconomic factors that are considered important to estimate this amount (e.g. GDP, house prices, rate of unemployment, among others).

Santander uses forward-looking information in internal management and regulatory processes under several scenarios. The Group's guidelines and governance ensure synergy and consistency between these different processes.

2. 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 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.

Management overlays

During the 2022, the Group has used, through its process of updating forward looking information and recalibration of parameters, the overlay related to government support measures in various countries that the Group had established as of December 31, 2021 for an amount of 1,232 millions of euros. At the end of 2022, Grupo Santander has EUR 1,471 million as management overlays that include, among others, those destined to cover the uncertainties resulting from the war in Ukraine and the current macroeconomic context.

Exposure and impaired losses

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 2022, 2021 and 2020. In addition, depending on the transactions credit quality, the exposure is divided into four categories according to Standard & Poor's rating scale:

Exposure and impairment losses by stage

EUR million

| Credit quality ^A | 2022 | | | Total |
|-----------------------------------|----------------|---------------|---------------|----------------|
| | Stage 1 | Stage 2 | Stage 3 | |
| From AAA to AA- | 172,440 | 1,506 | — | 173,946 |
| From A+ to BB | 394,084 | 10,601 | — | 404,685 |
| From BB- to B- | 272,456 | 32,653 | — | 305,109 |
| CCC and below | 11,799 | 21,436 | 32,608 | 65,843 |
| Total exposure^B | 850,779 | 66,196 | 32,608 | 949,583 |
| Impairment losses | 3,807 | 5,195 | 13,852 | 22,854 |

Exposure and impairment losses by stage

| EUR million | | | | |
|--------------------------------------|----------------|---------------|---------------|----------------|
| 2021 | | | | |
| Credit quality ^A | Stage 1 | Stage 2 | Stage 3 | Total |
| From AAA to AA- | 188,434 | 1,844 | — | 190,278 |
| From A+ to BB | 377,008 | 11,954 | — | 388,962 |
| From BB- to B- | 233,779 | 44,292 | — | 278,071 |
| CCC and below | 3,746 | 11,878 | 30,711 | 46,335 |
| Total exposure^B | 802,967 | 69,968 | 30,711 | 903,646 |
| Impairment losses^C | 4,149 | 5,103 | 12,873 | 22,125 |

Exposure and impairment losses by stage

| EUR million | | | | |
|--------------------------------------|----------------|---------------|---------------|----------------|
| 2020 | | | | |
| Credit quality ^A | Stage 1 | Stage 2 | Stage 3 | Total |
| From AAA to AA- | 110,536 | 1,512 | — | 112,048 |
| From A+ to BB | 378,982 | 7,612 | — | 386,594 |
| From BB- to B- | 273,443 | 42,313 | — | 315,756 |
| CCC and below | 3,073 | 13,525 | 30,436 | 47,034 |
| Total exposure^B | 766,034 | 64,962 | 30,436 | 861,432 |
| Impairment losses^C | 4,458 | 5,461 | 13,503 | 23,422 |

A. Detail of credit quality ratings calculated for Group management purposes.

B. Total exposure includes loan balances (drawn amounts) and off balance (letters of credit + guarantees) and excludes REPOs, FV portfolio, trading portfolio and undrawn commitments.

C. Includes provisions for undrawn authorized lines (loan commitments).

The remaining units that form the totality of the Group exposure, contributed EUR 123,796 million in stage 1; EUR 2,902 million in stage 2, and EUR 2,064 million in stage 3 (in 2021 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), and impairment losses of EUR 147 million in stage 1; EUR 123 million for stage 2, and EUR 294 million in stage 3 (in 2021, EUR 408 million, EUR 322 million and EUR 841 million and in 2020, EUR 180 million, EUR 393 million and EUR 277 million in stage 1, stage 2 and stage 3, respectively).

The remaining exposure, including all financial instruments not included before, amounts to EUR 538,364 million (EUR 349,228 million in 2021 and EUR 478,093 million in 2020), and it includes all undrawn authorized lines (loan commitments).

As of 31 December 2022, the Group had EUR 322 million net of provisions (EUR 420 million and EUR 497 million at 31 December 2021 and 2020, 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.

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 collect mainly the most relevant risks and 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 movement of +/-100 bp. 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 (excluding Santander Consumer UK and Santander London Branch) declined year-on-year by 3.6% (+1.8% in local currency) to EUR 253,455 million. 22.5% of Santander's loan portfolio is in the UK.

At 1.21%, the NPL ratio fell 22 bps from December 2021, due to a significant drop in the corporates segment following covid relief measures and the positive performance of the real estate market. The profile of the different segments remains stable.

Mortgage portfolio

Because of its size, Grupo Santander closely monitor Santander UK's mortgage portfolio for the entity itself and the Group.

As of 31 December 2022, the mortgage portfolio of Santander UK grew by 5.5% in local currency to EUR 209,872 million. 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.

The high loan origination rate observed since 2021 carried on into 2022, with very low credit risk. The economy slowdown and the interest rate hikes have moderated the increasing pace of house price increases from the second half of the year.

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, 2022, 2021 and 2020, is shown below.

In addition, the exposure is divided in four tranches of the Standard & Poor's rating scale, according to their current credit quality:

Exposure and impairment losses by stage

EUR million

| | 2022 | | | |
|--------------------------------------|----------------|---------------|--------------|----------------|
| Credit quality ^A | Stage 1 | Stage 2 | Stage 3 | Total |
| From AAA to AA- | 85,930 | 827 | — | 86,757 |
| From A+ to BB | 118,585 | 7,547 | — | 126,132 |
| From BB- to B- | 16,831 | 11,093 | — | 27,924 |
| CCC and below | 220 | 978 | 3,059 | 4,257 |
| Total exposure^B | 221,566 | 20,445 | 3,059 | 245,070 |
| Impairment losses^C | 166 | 529 | 337 | 1,032 |

Exposure and impairment losses by stage

EUR million

| | 2021 | | | |
|--------------------------------------|----------------|---------------|--------------|----------------|
| Credit quality ^A | Stage 1 | Stage 2 | Stage 3 | Total |
| From AAA to AA- | 97,388 | 1,015 | — | 98,403 |
| From A+ to BB | 113,030 | 8,074 | — | 121,104 |
| From BB- to B- | 13,063 | 10,657 | — | 23,720 |
| CCC and below | — | 943 | 3,508 | 4,451 |
| Total exposure^B | 223,481 | 20,689 | 3,508 | 247,678 |
| Impairment losses^C | 135 | 372 | 460 | 967 |

Exposure and impairment losses by stage

EUR million

| | 2020 | | | |
|--------------------------------------|----------------|---------------|--------------|----------------|
| Credit quality ^A | Stage 1 | Stage 2 | Stage 3 | Total |
| From AAA to AA- | 41,757 | 111 | — | 41,868 |
| From A+ to BB | 142,308 | 2,116 | — | 144,424 |
| From BB- to B- | 34,965 | 16,814 | — | 51,779 |
| CCC and below | — | — | 3,229 | 3,229 |
| Total exposure^B | 219,030 | 19,041 | 3,229 | 241,300 |
| Impairment losses^C | 223 | 557 | 668 | 1,448 |

- A. Detail of credit quality ratings calculated for Group management purposes.
 B. Total exposure includes loan balances (drawn amounts) and off balance (letters of credit + guarantees) and excludes REPOs, FV portfolio, trading portfolio and undrawn commitments.
 C. Includes provisions for undrawn authorized lines (loan commitments).

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 2022 for the next five years of the main macroeconomic indicators used by Santander UK to estimate expected losses is presented below:

| Variables | 2023 - 2027 | | | | |
|----------------------|------------------------|------------------------|------------------------|---------------|-----------------------|
| | Pessimistic scenario 3 | Pessimistic scenario 2 | Pessimistic scenario 1 | Base scenario | Optimistic scenario 1 |
| Interest rate | 4.3% | 3.0% | 2.7% | 3.1% | 2.8% |
| Unemployment rate | 6.0% | 7.3% | 5.5% | 4.6% | 4.4% |
| Housing price change | -4.4% | -4.6% | -3.5% | -0.4% | -0.7% |
| GDP growth | -0.4 | -0.5% | -0.2% | 0.7% | 1.2% |

Each of the macroeconomic scenarios is associated with a given weight. In terms of allocation, Santander UK associates the highest weightings to the base scenario, while it associates the lowest weightings to the most extreme or severe scenarios. In addition, at 31 December 2022, 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:

| | 2022 | 2021 | 2020 |
|------------------------|------|------|------|
| Pessimistic scenario 3 | 20% | 5% | 10 % |
| Pessimistic scenario 2 | 10% | 20% | 25 % |
| Pessimistic scenario 1 | 15% | 25% | 15 % |
| Base scenario | 50% | 45% | 45 % |
| Optimistic scenario 1 | 5% | 5% | 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 2022, is as follows:

| | Change in Provision | |
|-----------------------------|---------------------|------------|
| | Mortgages | Corporates |
| GDP Growth | | |
| -100 bp | 18.9% | 7.1% |
| 100 bp | -8.1% | -4.0% |
| Housing price change | | |
| -100 bp | 10.1% | 10.2% |
| 100 bp | -6.0% | -12.0% |
| Unemployment rate | | |
| -100 bp | -10.8% | -5.4% |
| 100 bp | 27.2% | 10.5% |

In relation to the previously mentioned management overlays, UK has constituted EUR 328 million.

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 bps and 30 bps.

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 293,197 million (26% of Grupo Santander's total). It is appropriately diversified among products and customer segments.

The macroeconomic outlook is marked by an environment of high uncertainty, where there are also factors that have an opposite influence. Positive factors, such as the reactivation of tourism after the end of the pandemic was declared together with a better than expected macro economic performance, and negative factors such as high inflation and the rise in interest rates that will affect the purchasing power of families.

In this context, the activity had a different behaviour between segments, since it grew significantly in consumer credit and large corporates, but it remained stable in mortgages and decreased significantly in SMEs, as customer positions were maintained in the support and liquidity programs (financing lines of the Official Credit Institute - ICO) without having to require new financing.

Total credit risk increased 3.3% from December 2021. The ICO loans that were granted as a result of the pandemic (EUR 25,428 million) maintain a high weight in this segment.

The credit portfolio's NPL ratio was 3.27%, 145 lower than in December 2021. This better overall portfolio performance was driven by customer support programmes, the regularization of several restructured positions and portfolio sales.

The NPL coverage ratio remained at 51%. The cost of credit was reduced to 0.61% (-31 bps vs. December 2021).

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, 2022, 2021 and 2020, is shown below. In addition, the exposure is divided in four tranches of the Standard & Poor's rating scale, according to their current credit quality:

Exposure and impairment losses by stage

EUR million

| Credit quality ^A | 2022 | | | |
|--------------------------------------|----------------|---------------|--------------|----------------|
| | Stage 1 | Stage 2 | Stage 3 | Total |
| From AAA to AA- | 37,133 | 447 | — | 37,580 |
| From A+ to BB | 107,667 | 282 | — | 107,949 |
| From BB- to B- | 46,296 | 6,388 | — | 52,684 |
| CCC and below | 253 | 5,234 | 8,893 | 14,380 |
| Total exposure^B | 191,349 | 12,351 | 8,893 | 212,593 |
| Impairment losses^C | 507 | 666 | 3,472 | 4,645 |

Exposure and impairment losses by stage

EUR million

| Credit quality ^A | 2021 | | | |
|--------------------------------------|----------------|---------------|---------------|----------------|
| | Stage 1 | Stage 2 | Stage 3 | Total |
| From AAA to AA- | 43,978 | 352 | — | 44,330 |
| From A+ to BB | 109,142 | 555 | — | 109,697 |
| From BB- to B- | 33,104 | 11,716 | — | 44,820 |
| CCC and below | 129 | 3,024 | 12,761 | 15,914 |
| Total exposure^B | 186,353 | 15,647 | 12,761 | 214,761 |
| Impairment losses^C | 422 | 580 | 5,005 | 6,007 |

Exposure and impairment losses by stage

EUR million

| Credit quality ^A | 2020 | | | |
|--------------------------------------|----------------|---------------|---------------|----------------|
| | Stage 1 | Stage 2 | Stage 3 | Total |
| From AAA to AA- | 38,656 | 1,199 | — | 39,855 |
| From A+ to BB | 108,336 | 318 | — | 108,654 |
| From BB- to B- | 40,294 | 6,533 | — | 46,827 |
| CCC and below | 336 | 5,008 | 13,762 | 19,106 |
| Total exposure^B | 187,622 | 13,058 | 13,762 | 214,442 |
| Impairment losses^C | 479 | 732 | 5,277 | 6,488 |

- A. Detail of credit quality ratings calculated for Group management purposes. Excluding the SCIB branches business
 B. Total exposure includes loan balances (drawn amounts) and off balance (letters of credit + guarantees) and excludes REPOs, FV portfolio, trading portfolio and undrawn commitments.
 C. Includes provisions for undrawn authorized lines (loan commitments).

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 2022, is presented below:

| Variables | 2023-2027 | | |
|----------------------|----------------------|---------------|---------------------|
| | Pessimistic scenario | Base scenario | Optimistic scenario |
| Interest rate | 2.6% | 2.3% | 2.0% |
| Unemployment rate | 16.6% | 12.2% | 10.7% |
| Housing price change | 2.3% | 3.3% | 3.8% |
| GDP growth | 0.5% | 2.0% | 3.3% |

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:

| | 2022 | 2021 | 2020 |
|-----------------------|------|------|------|
| 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 | 10.9% | 4.7% | 3.9% |
| 100 bp | -5.4% | -2.9% | -2.7% |
| Housing price change | | | |
| -100 bp | 4.4% | 2.6% | 3.4% |
| 100 bp | -3.6% | -2.0% | -2.3% |

In relation to the previously mentioned management overlays, Spain has constituted EUR 274 million.

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. Regarding the relative threshold, all operations that exceed 200% belonging to customers with good credit quality (internal rating greater than 4) will be classified in stage 2 if they also exceed the absolute threshold. On the other hand, those customer contracts with a worse credit quality will be classified in stage 2 if it exceeds the relative threshold or the absolute threshold.

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 63,688 million in 2022 (EUR 62,324 million and EUR 59,605 million in 2021 and 2020, respectively), 99.55% of which have a mortgage guarantee (99.33% and 99.35% in 2021 and 2020, respectively).

| 2022 | | |
|---------------------------------|--------------|--------------------|
| EUR Million | Gross amount | Of which: impaired |
| Home purchase loans to families | 63,688 | 1,088 |
| Without mortgage guarantee | 288 | 24 |
| With mortgage guarantee | 63,400 | 1,064 |
| 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 |

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 26% (27% in 2021 and 2020).
- The 93% 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):

| EUR Million | 2022 | | | | | Total |
|-------------------|---------------------------|---------------------------------|---------------------------------|--|----------------|--------|
| | Loan to value ratio | | | | | |
| | 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% | |
| Gross amount | 17,877 | 20,617 | 20,225 | 3,294 | 1,387 | 63,400 |
| Of which impaired | 132 | 192 | 220 | 181 | 339 | 1,064 |

In November 2022, Royal Decree-Law 19/2022 was published, which establishes a Code of Good Practices in response to the rise in interest rates on mortgage loans for primary residences and Royal Decree-Law 6/2012 of protection measures for mortgage debtors without resources. The entity is analysing the plausible impact based on different adherence hypotheses. The code of good practices is focused on extending the term of the operations (aids ranging between 2 and 7 years of extension).

Corporate & SME financing

Credit risk with SME and corporates in commercial banking amounted to EUR 112,255 million, 2.3% lower than in December 2021, mainly due to the fall in the portfolio of SMEs of 4.3%. This is Santander Spain's main lending segment, accounting for 39% of the total, at the level of CIB portfolio, which in 2022 has come to include branches in Europe.

Most of the portfolio corresponds to clients who have been assigned a credit analyst, who performs continuous management of said clients during all phases of 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 5.79% in December 2022. The NPL ratio decreased by 171 bps compared to December 2021, due to a reduction in the delinquency stock in SMEs, due to the proactive management of delinquent positions with the support of portfolio sales.

Real estate activity

Santander has specialized teams that are in charge of managing real estate business production and risk areas that cover the entire life cycle of these operations.

The changes in gross property development loans to customers were as follows:

| EUR million | 2022 | 2021 | 2020 |
|-------------------------------------|--------------|--------------|--------------|
| Balance at beginning of year | 2,625 | 2,871 | 2,939 |
| Foreclosed assets | — | (1) | (6) |
| Reductions | (295) | (230) | (24) |
| Written-off assets | (3) | (15) | (38) |
| Balance at end of year | 2,327 | 2,625 | 2,871 |

The NPL ratio of this portfolio ended the year at 4.04% (compared with 5.07% and 6.13% at December 2021 and 2020, 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 35.11% (30.08% and 32.95% in 2021 and 2020, respectively).

| EUR Million | 2022 | | |
|--|--------------|--|--------------------|
| | 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) | 2,327 | 211 | 44 |
| Of which impaired | 94 | 21 | 33 |
| Memorandum items written-off assets | 487 | — | — |

Memorandum items: Data from the public consolidated balance sheet

| EUR Million | 2022 |
|--|-----------------|
| | Carrying amount |
| Total loans and advances to customers excluding the Public sector (business in Spain) (Book value) | 250,702 |
| Total consolidated assets (Total business) (Book value) | 1,734,659 |
| Impairment losses and credit risk allowances. Coverage for unimpaired assets (business in Spain) | 1,311 |

At year-end, the distribution of this portfolio was as follows:

| | 2022 |
|--|---------------------|
| EUR Million | Loans: gross amount |
| 1. Without mortgage guarantee | 43 |
| 2. With mortgage guarantee | 2,285 |
| 2.1 Completed buildings | 1,138 |
| 2.1.1 Residential | 674 |
| 2.1.2 Other | 464 |
| 2.2 Buildings and other constructions under construction | 1,110 |
| 2.2.1 Residential | 1,103 |
| 2.2.2 Other | 7 |
| 2.3 Land | 37 |
| 2.3.1 Developed consolidated land | 25 |
| 2.3.2 Other land | 12 |
| Total | 2,328 |

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 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 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 2022, the net balance of these assets amounted to EUR 2,971 million (gross amount of EUR 6,422 million; recognised allowance of EUR 3,451 million, of which EUR 2,526 million related to impairment after the foreclosure date).

At 31 December 2021, the net balance of these assets amounted to EUR 3,591 million (gross amount: EUR 7,364 million; recognised allowance: 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 of EUR 7,937 million; recognised allowance of EUR 3,975 million, of which EUR 2,834 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 2022:

| EUR Million | 2022 | | | Net Carrying amount |
|---|-----------------------|-----------------------|--|---------------------|
| | Gross carrying amount | Valuation adjustments | Of which impairment losses on assets since time of foreclosure | |
| Property assets arising from financing provided to construction and property development companies | 5,587 | 3,097 | 2,275 | 2,490 |
| <i>Of which:</i> | | | | |
| <i>Completed buildings</i> | 1,456 | 713 | 583 | 743 |
| <i>Residential</i> | 341 | 157 | 127 | 184 |
| <i>Other</i> | 1,115 | 556 | 456 | 559 |
| <i>Buildings under construction</i> | 92 | 44 | 32 | 48 |
| <i>Residential</i> | 25 | 7 | 4 | 18 |
| <i>Other</i> | 67 | 37 | 28 | 30 |
| <i>Land</i> | 4,039 | 2,340 | 1,660 | 1,699 |
| <i>Developed land</i> | 1,286 | 689 | 415 | 597 |
| <i>Other land</i> | 2,753 | 1,651 | 1,245 | 1,102 |
| Property assets from home purchase mortgage loans to households | 659 | 274 | 190 | 385 |
| Other foreclosed property assets | 176 | 80 | 61 | 96 |
| Total property assets | 6,422 | 3,451 | 2,526 | 2,971 |

In addition, the Group has shareholdings in entities holding foreclosed assets amounting to EUR 439 million (mainly Project Quasar Investment 2017, S.L. with EUR 405 million), and equity instruments foreclosed or received in payment of debts amounting to EUR 15 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 | | |
|-----------------|-------------|-------|-------|
| | 2022 | 2021 | 2020 |
| Gross additions | 0.2 | 0.4 | 0.5 |
| Disposals | (1.3) | (1.1) | (0.9) |
| Difference | (1.1) | (0.7) | (0.4) |



3.3. United States

Santander US's credit risk increased to EUR 140,452 million at the end of December 2022. It makes up 12.5% of Grupo Santander's total credit risk.

Leases carried out exclusively under the Stellantis Group agreement (primarily with highly creditworthy customers) dropped 1.8% to EUR 13,400 million, providing stable and recurring earnings. Risk management and residual value mitigation measures remain a priority.

Santander US includes the following business units:

Santander Bank, National Association (SBNA)

Its activity is focused on commercial banking with 54% of the portfolio distributed in individuals, and approximately 46% in corporates. The bank's core strategic objectives include continuing to improve customer experience, growing its customer and deposit base with digital initiatives to transform business and branches, and using its deposit base to build up its Commercial Real Estate business. To maximize returns and growth, retail and commercial banking mainly consists of consumer credit, auto-lending and auto-leasing, but not mortgages or any kind of loans or lines of credit secured by collateral. In 2022 lending increased 12.8% across all segments, helped by a stronger US dollar. Excluding the FX effect, the increase was lower, standing at 6.3%.

The NPL ratio increased to 1.8% (+23 bp in the year) as of December 2022 the cost of credit increased to 0.36% once the provisions were normalized after the extraordinary releases of 2021 that were favoured by the fiscal support and stimulus programs still in force at that time.

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, 2022, 2021 and 2020, is shown below. In addition, the exposure is divided in four tranches of the Standard & Poor's rating scale, according to their current credit quality:

Exposure and impairment losses by stage

EUR million

| Credit quality ^A | 2022 | | | |
|--------------------------------------|---------------|--------------|------------|---------------|
| | Stage 1 | Stage 2 | Stage 3 | Total |
| From AAA to AA- | 6,884 | 145 | — | 7,029 |
| From A+ to BB | 20,768 | 366 | — | 21,134 |
| From BB- to B- | 30,359 | 2,225 | — | 32,584 |
| CCC and below | 308 | 558 | 459 | 1,325 |
| Total exposure^B | 58,319 | 3,294 | 459 | 62,072 |
| Impairment losses^C | 392 | 241 | 74 | 707 |

Exposure and impairment losses by stage

EUR million

| Credit quality ^A | 2021 | | | |
|--------------------------------------|---------------|--------------|------------|---------------|
| | Stage 1 | Stage 2 | Stage 3 | Total |
| From AAA to AA- | 8,811 | 124 | — | 8,935 |
| From A+ to BB | 29,379 | 1,033 | — | 30,412 |
| From BB- to B- | 12,193 | 2,756 | — | 14,949 |
| CCC and below | 19 | 361 | 477 | 857 |
| Total exposure^B | 50,402 | 4,274 | 477 | 55,153 |
| Impairment losses^C | 263 | 314 | 45 | 622 |

Exposure and impairment losses by stage

EUR million

| Credit quality ^A | 2020 | | | |
|--------------------------------------|---------------|--------------|------------|---------------|
| | Stage 1 | Stage 2 | Stage 3 | Total |
| From AAA to AA- | 3,284 | 48 | — | 3,332 |
| From A+ to BB | 14,821 | 1,730 | — | 16,551 |
| From BB- to B- | 24,350 | 2,459 | — | 26,809 |
| CCC and below | 30 | 518 | 403 | 951 |
| Total exposure^B | 42,485 | 4,755 | 403 | 47,643 |
| Impairment losses^C | 344 | 316 | 42 | 702 |

A. Detail of credit quality ratings calculated for Group management purposes.

B. Total exposure includes loan balances (drawn amounts) and off-balance (letters of credit + guarantees) and excludes REPOs, FV portfolio, trading portfolio and undrawn commitments.

C. Includes provisions for undrawn authorized lines (loan commitments).

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 2022 for a period of five years of the main macroeconomic indicators used Santander Bank, National Association to estimate expected losses is presented below:

| Variables | 2023 - 2027 | | | |
|---------------------------------|------------------------|------------------------|---------------|---------------------|
| | Pessimistic scenario 2 | Pessimistic scenario 1 | Base scenario | Optimistic scenario |
| Interest rate (annual averaged) | 2.5% | 2.9% | 3.4% | 3.2% |
| Unemployment rate | 6.0% | 4.6% | 4.1% | 3.4% |
| House price change | -1.5% | -0.9% | 0.1% | 1.7% |
| GDP growth | 1.8% | 2.1% | 1.6% | 2.8% |

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:

| | 2022 | 2021 | 2020 |
|------------------------|------|------|------|
| Pessimistic scenario 2 | 18% | 18% | 18% |
| Pessimistic scenario 1 | 20% | 20% | 20% |
| Base scenario | 33% | 33% | 33% |
| Optimistic scenario | 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 as of 2022 is as follows:

| | Change in Provision | |
|-----------------------------|---------------------|------------|
| | Mortgages | Corporates |
| GDP Growth | | |
| -100 bp | 7.7% | 18.1% |
| 100 bp | -5.5% | -8.2% |
| Housing price change | | |
| -100 bp | 12.8% | 20.3% |
| 100 bp | -6.1% | -9.5% |
| Unemployment rate | | |
| -100 bp | -22.8% | -33.6% |
| 100 bp | 29.0% | 48.0% |

In relation to the previously mentioned management overlays, SBNA has constituted EUR 215 million.

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 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. Originations in the auto portfolio did not grow compared to the previous year, as a reflection of the restriction in the supply of new vehicles and the revaluation of used vehicles compared to the levels of previous years.

As of 31 December 2022, risk indicators stabilized with the end of covid relief programmes for customers and government stimulus and with the new definition of default: NPLs increased to 12.1% (+584 bp in the year); and the cost of credit stood at 4.68% (+314 bp YoY). Non-performing coverage ratio fell to 87% (-89 pp in the year).

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 2022, 2021 and 2020, is shown below. In addition, the exposure is divided in four tranches of the Standard & Poor's rating scale, according to their current credit quality:

Exposure and impairment losses by stage

| EUR million | | | | |
|--------------------------------------|---------------|--------------|--------------|---------------|
| 2022 | | | | |
| Credit quality ^A | Stage 1 | Stage 2 | Stage 3 | Total |
| From AAA to AA- | — | — | — | — |
| From A+ to BB | 171 | — | — | 171 |
| From BB- to B- | 14,564 | 512 | — | 15,076 |
| CCC and below | 7,735 | 5,108 | 3,870 | 16,713 |
| Total exposure^B | 22,470 | 5,620 | 3,870 | 31,960 |
| Impairment losses^C | 672 | 1,232 | 1,452 | 3,356 |

Exposure and impairment losses by stage

| EUR million | | | | |
|--------------------------------------|---------------|--------------|--------------|---------------|
| 2021 | | | | |
| Credit quality ^A | Stage 1 | Stage 2 | Stage 3 | Total |
| From AAA to AA- | 417 | 4 | — | 421 |
| From A+ to BB | 800 | 35 | — | 835 |
| From BB- to B- | 18,655 | 5,930 | — | 24,585 |
| CCC and below | 222 | 1,931 | 1,658.00 | 3,811 |
| Total exposure^B | 20,094 | 7,900 | 1,658 | 29,652 |
| Impairment losses^C | 524 | 1,741 | 572 | 2,837 |

Exposure and impairment losses by stage

| EUR million | | | | |
|--------------------------------------|---------------|--------------|--------------|---------------|
| 2020 | | | | |
| Credit quality ^A | Stage 1 | Stage 2 | Stage 3 | Total |
| From AAA to AA- | 359 | 3 | — | 362 |
| From A+ to BB | 1,330 | 9 | — | 1,339 |
| From BB- to B- | 20,585 | 2,694 | — | 23,279 |
| CCC and below | 905 | 2,137 | 1,019 | 4,061 |
| Total exposure^B | 23,179 | 4,843 | 1,019 | 29,041 |
| Impairment losses^C | 911 | 1,820 | 726 | 3,457 |

- A. Detail of credit quality ratings calculated for Group management purposes.
 B. Total exposure includes loan balances (drawn amounts) and off-balance (letters of credit + guarantees) and excludes REPOs, FV portfolio, trading portfolio and undrawn commitments.
 C. Includes provisions for undrawn authorized lines (loan commitments).

SC USA reassessed the suitability of macroeconomic scenarios and adjusted them in light of new information. At the end of 2022, Santander updated the most recent scenarios to calculate IFRS 9 provisions by recalibrating and revising the forward-looking information and risk model parameters. In this process, it has been analysed that the scenarios and models adequately capture the macroeconomic effects on the credit risk profile, therefore no additional funds have been allocated in this regard.

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 2022 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:

| Variables | 2023 - 2027 | | | |
|---------------------------------|------------------------|------------------------|---------------|---------------------|
| | Pessimistic scenario 2 | Pessimistic scenario 1 | Base scenario | Optimistic scenario |
| Interest rate (annual averaged) | 2.5% | 2.9% | 3.4% | 3.2% |
| Unemployment rate | 6.0% | 4.6% | 4.1% | 3.4% |
| House price change | -1.5% | -0.9% | 0.1% | 1.7% |
| GDP growth | 1.8% | 2.1% | 1.6% | 2.8% |
| Manheim ^A index | -3.6% | -3.6% | -3.6% | -3.6% |

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:

| | 2022 | 2021 | 2020 |
|------------------------|------|------|------|
| Pessimistic scenario 2 | 18% | 18% | 18% |
| Pessimistic scenario 1 | 20% | 20% | 20% |
| Base scenario | 33% | 33% | 33% |
| Optimistic scenario | 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 at the end of 2022 is as follows:

| | Change in provision | |
|--------------------|---------------------|-------|
| | SC Auto | |
| Manheim index | | |
| -100 bp | | 2.4% |
| 100 bp | | -2.2% |
| Unemployment Rate | | |
| -100 bp | | -2.6% |
| 100 bp | | 2.8% |
| House Price Change | | |
| -100 bp | | 1.3% |
| 100 bp | | -0.8% |
| GDP growth | | |
| -100 bp | | 1.6% |
| 100 bp | | -0.9% |

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.

Santander Brasil's credit risk amounted to EUR 101,801 million. It increased by 19% from 2021. Minus the exchange rate effect, it grew by 6.2%. As of December 2022, Santander Brasil accounts for 9% of Grupo Santander's loan book.

SME lending grew steadily, as practically all subsegments grew in originations, especially among low-risk borrowers. As of August, the relaunch of Government Guarantee Programmes for all subsegments has contributed to the aforementioned increase in production, in order to combat the effects of generalized macroeconomic volatility.

Lending to corporates saw robust growth. New originations had sound risk profiles, which helped keep credit quality indicators within targets and reinforced the portfolio's profitability. The more challenging environment has created some pressure; but it hasn't had any direct effect on provisions during the year.

2022 in Brazil was marked by economic instability and high inflation rates, although it has been declining in the second half of the year, standing at 5.8% in December (the lowest rate since February 2021).

Because of inflation, benchmark rate ("Selic") hikes and other macroeconomic variables, together with the retail unsecured portfolio performance and a single name in SCIB in the fourth quarter, at 31 December 2022 loan-loss provisions reached EUR 4,417 million, a 63% year-on-year increase (excluding the effect of the exchange rate, the increase would remain at 38%) Cost of risk rose from 3.73% in 2021 to 4.79% in 2022.

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 31 December, 2022, 2021 and 2020, is shown below. In addition, the exposure is divided in four tranches of the Standard & Poor's rating scale, according to their current credit quality:

Exposure and impairment losses

| EUR million | 2022 | | | |
|--------------------------------------|---------------|--------------|--------------|----------------|
| Credit quality ^A | Stage 1 | Stage 2 | Stage 3 | Total |
| From AAA to AA- | 18,033 | 41 | — | 18,074 |
| From A+ to BB | 35,902 | 342 | — | 36,244 |
| From BB- to B- | 31,269 | 3,195 | — | 34,464 |
| CCC and below | 432 | 4,547 | 7,705 | 12,684 |
| Total exposure^B | 85,636 | 8,125 | 7,705 | 101,466 |
| Impairment losses^C | 575 | 1,219 | 4,334 | 6,128 |

Exposure and impairment losses

| EUR million | 2021 | | | |
|--------------------------------------|---------------|--------------|--------------|---------------|
| Credit quality ^A | Stage 1 | Stage 2 | Stage 3 | Total |
| From AAA to AA- | 22,555 | 296 | — | 22,851 |
| From A+ to BB | 24,003 | 280 | — | 24,283 |
| From BB- to B- | 27,040 | 2,241 | — | 29,281 |
| CCC and below | 1,542 | 2,544 | 4,182 | 8,268 |
| Total exposure^B | 75,140 | 5,361 | 4,182 | 84,683 |
| Impairment losses^C | 1,232 | 909 | 2,510 | 4,651 |

Exposure and impairment losses

| EUR million | 2020 | | | |
|--------------------------------------|---------------|--------------|--------------|---------------|
| Credit quality ^A | Stage 1 | Stage 2 | Stage 3 | Total |
| From AAA to AA- | 13,226 | 97 | — | 13,323 |
| From A+ to BB | 25,460 | 112 | — | 25,572 |
| From BB- to B- | 25,180 | 2,946 | — | 28,126 |
| CCC and below | 986 | 2,996 | 3,429 | 7,411 |
| Total exposure^B | 64,852 | 6,151 | 3,429 | 74,432 |
| Impairment losses^C | 971 | 776 | 2,132 | 3,879 |

A. Detail of credit quality ratings calculated for Group management purposes.

B. Total exposure includes loan balances (drawn amounts) and off-balance (letters of credit + guarantees) and excludes REPOs, FV portfolio, trading portfolio and undrawn commitments.

C. Includes provisions for undrawn authorized lines (loan commitments).

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:

| Variables | 2023-2027 | | |
|---------------------------------|----------------------|---------------|---------------------|
| | Pessimistic scenario | Base scenario | Optimistic scenario |
| Interest rate (annual averaged) | 12.6% | 8.6% | 6.4% |
| Unemployment rate | 15.2% | 11.1% | 7.6% |
| House price change | 0.6% | 2.8% | 7.9% |
| GDP growth | -0.8% | 1.1% | 3.3% |
| Burden income | 33.2% | 30.0% | 23.9% |

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:

| | 2022 | 2021 | 2020 |
|----------------------|------|------|------|
| 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 2022 as follows:

| | Change in provision | | |
|------------------------------|---------------------|-----------|-------|
| | Consumer | Corporate | Other |
| GDP growth | | | |
| -100 bp | 0.7% | 3.2% | 1.7% |
| 100 bp | -0.3% | -1.0% | -0.9% |
| Burden income | | | |
| -100 bp | -0.5% | -1.4% | -1.5% |
| 100 bp | 1.1% | 8.9% | 3.8% |
| Interest rate (SELIC) | | | |
| -100 bp | -0.2% | -1.5% | -0.4% |
| 100 bp | 0.9% | 5.6% | 2.4% |

In relation to the previously mentioned management overlays, Santander Brazil has constituted EUR 181 million.

Regarding the stage 2 classification determination, Santander Brazil analyses whether any increase in PD for the entire expected life of the operation is greater than the combination of an absolute threshold and a relative threshold. The established threshold is different for each portfolio depending on the characteristics of the transactions, considering that a transaction exceeds said threshold when the PD for the entire life of the transaction increases a certain amount over the PD it had at the time of initial recognition. The values of said absolute thresholds depend on their calibration, carried out periodically, currently ranging between 30% and 1% depending on the type of product and the estimated sensitivity. Regarding the relative threshold, they range mainly between 500% and 50% depending on the type of product and the estimated sensitivity.



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 from treasury, with money market financing and counterparty risk products to satisfy the needs of customers (especially credit institutions) and the Group.

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

Grupo Santander manages counterparties with several credit risk models based on their characteristics and needs. Model segmentation is by business and risk treatment and based on counterparty disclosures as well as the credit risk cycle. The exposure that the counterparty credit risk model covers includes derivatives contracts, repurchase agreements, securities and commodities lending, long settlements and margin lending.

An infrastructure that can quickly and dynamically measure current and potential exposure with various degrees of aggregation and granularity to generate detailed reports is important for decision-making.

To measure exposure, Santander uses two methods: "Mark-to-market" (MtM) (replacement cost of derivatives), plus potential future exposure ("add-on"); and the Monte Carlo simulation for certain countries and products. In addition, Santander calculates capital at risk and unexpected loss (e.g. economic capital, net of collateral and recoveries, after deducting expected loss).

At market close, Santander recalculates its exposure by adjusting transactions to a new time horizon, adapting potential future exposure, and applying netting, collateral and other mitigants. That way, Santander can check exposure daily against the limits approved by senior management within risk appetite. For risk control, the Group uses a real-time integrated system that shows the exposure limit with a counterparty, for any product and term, in all subsidiaries.

Counterparty credit risk can also give rise to "wrong-way" risk if exposure to a portfolio or a counterparty increases but credit quality declines. It can happen when rising default risk increases exposure to a counterparty.

Another risk called "settlement risk" occurs if a party might fail to hold their end of a contract and deliver the cash or security needed to settle the transaction.

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 5.6% of the outstanding credit risk with customers (lending to customers plus off-balance sheet risks) as of December 2022.



The detail, by activity and geographical area of the Group's risk concentration at 31 December 2022 is as follows:

| EUR million | 2022 ^A | | | | |
|---|-------------------|----------------|--------------------|----------------|-------------------|
| | Total | Spain | Other EU countries | America | Rest of the world |
| Central banks and Credit institutions | 367,620 | 98,405 | 61,138 | 119,005 | 89,072 |
| Public sector | 177,063 | 41,871 | 37,936 | 89,458 | 7,798 |
| Of which: | | | | | |
| Central government | 151,300 | 30,209 | 34,681 | 79,016 | 7,394 |
| Other central government | 25,763 | 11,662 | 3,255 | 10,442 | 404 |
| Other financial institutions (financial business activity) | 152,881 | 15,271 | 45,092 | 54,232 | 38,286 |
| Non-financial companies and individual entrepreneurs (non-financial business activity) (broken down by purpose) | 440,137 | 114,556 | 96,354 | 165,017 | 64,210 |
| Of which: | | | | | |
| Construction and property development | 22,797 | 3,278 | 3,569 | 8,149 | 7,801 |
| Civil engineering construction | 5,178 | 2,502 | 1,415 | 1,113 | 148 |
| Large companies | 267,976 | 53,355 | 56,243 | 111,912 | 46,466 |
| SMEs and individual entrepreneurs | 144,186 | 55,421 | 35,127 | 43,843 | 9,795 |
| Households – other (broken down by purpose) | 566,559 | 90,597 | 99,133 | 141,266 | 235,563 |
| Of which: | | | | | |
| Residential | 361,377 | 65,077 | 36,552 | 45,611 | 214,137 |
| Consumer loans | 185,097 | 17,074 | 60,497 | 90,609 | 16,917 |
| Other purposes | 20,085 | 8,446 | 2,084 | 5,046 | 4,509 |
| Total | 1,704,260 | 360,700 | 339,653 | 568,978 | 434,929 |

A. 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 securities', 'Equity Instruments', 'Trading Derivatives', 'Hedging derivatives', 'Investments and financial guarantees given'.

4.3 Vulnerable sectors identification

Grupo Santander carries out quarterly monitoring of exposure to customers operating in sectors that could be affected by macroeconomic conditions. The monitoring involves the use of internal tools to forecast customer behaviour and trends in each sector under several macro scenarios, as well as this information:

- 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

Following the effects of the pandemic, in the second quarter of 2022, Grupo Santander adapted our definition of 'affected sectors' to the current backdrop of rising energy and commodity prices and high inflation, mindful of internal and external factors.

4.4. 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.

Grupo Santander's standard for sovereign risk differs somewhat 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 from guarantees and other financial instruments. However, its standard does generally include entities run by regional, local and central governments.

Santander continues to track and manage transactions with sovereign risk based on available information, such as reports by rating agencies and international organizations. Grupo Santander monitors each country where the Group has cross-border¹ and sovereign risk. Santander analyses events that could affect the country's political or institutional stability and assign its government or central bank a credit rating. This helps us set limits for transactions with sovereign risk.

At the end of December, Grupo Santander's local sovereign exposure, in currencies other than the official currency of the country of issuance, is not significant (EUR 6,039 million, 1.4% of total sovereign risk) according to our management criteria. Furthermore, exposure to non-local sovereign issuers involving cross-border risk is even less significant² (EUR 8,867 million, 2.1% 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.

1. Risk with domestic public or private borrowers in foreign currency and originated outside the country.
2. Countries that are not considered low risk by Banco de España.

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^A:

| | 2022 | 2021 | 2020 |
|---------------|------|------|------|
| AAA | 27% | 15% | 18% |
| AA | 19% | 32% | 25% |
| A | 34% | 26% | 25% |
| BBB | 11% | 11% | 14% |
| Less than BBB | 9% | 16% | 18% |

A. Internal ratings are applied.

Sovereign exposure at the end of 31 December 2022 is shown in the table below (data in million euros):

| Country | 2022 | | | | 2021 | |
|-------------------|--|---|------------------------------------|---|---------------------------|---------------------------|
| | 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 | 2,666 | 240 | 26,189 | — | 29,095 | 19,557 |
| Portugal | (299) | 2,005 | 3,750 | — | 5,456 | 6,544 |
| Italy | (1,055) | 301 | 8,169 | — | 7,415 | 884 |
| Greece | — | — | — | — | — | — |
| Ireland | — | — | — | — | — | 9 |
| Rest Eurozone | 205 | 789 | 4,657 | — | 5,651 | 3,629 |
| UK | 53 | 315 | 1,738 | — | 2,106 | 366 |
| Poland | 4 | 7,754 | 957 | — | 8,715 | 11,293 |
| Rest of Europe | (7) | 14 | 125 | — | 132 | 1,368 |
| US | 3,503 | 8,938 | 10,857 | — | 23,298 | 22,469 |
| Brazil | 8,017 | 9,969 | 5,742 | — | 23,728 | 28,559 |
| Mexico | 2,627 | 11,303 | 3,376 | — | 17,306 | 13,509 |
| Chile | 175 | 818 | 5,492 | — | 6,485 | 6,071 |
| Rest of America | 123 | 1,211 | 630 | — | 1,964 | 1,425 |
| Rest of the World | 1 | 2,012 | 1,529 | — | 3,542 | 3,337 |
| TOTAL | 16,013 | 45,669 | 73,211 | — | 134,893 | 119,020 |



5. Forborne loan portfolio

The customer debt redirection policy incorporates the regulatory requirements of the EBA guidelines on the management of non-performing exposures, refinancing and restructuring. This policy acts as a reference for the transposition in our subsidiaries and shares the applicable supervisory expectations

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 Santander must adapt payment obligations to customers' current circumstances. Our forbearance policy also defines classification criteria to ensure Grupo Santander recognizes risks appropriately. They must remain classified as non-performing or in watch-list for a prudential period for reasonable certainty of repayment. In no case will repayments be used to delay the immediate recognition of losses or so that their use distorts the timely recognition of the risk of non-payment.

Forbearances may never be used to delay the immediate recognition of losses or hinder the appropriate recognition of risk of default.

After several years where the stock had fallen as a result of the positive economic situation in the main geographies, 2021 was a year of inflection with a growth of 24% to address the financial difficulties of our clients as a result of the situation generated by the pandemic. During 2022 the stock of readjustments has decreased lightly, and has stood at EUR 34,173 million. In terms of credit quality, 44% of the loans is classified as credit impaired, with a coverage ratio of 44%. In addition, 56% of the portfolio is classified as performing.

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

| | 2022 | | | | | | |
|--|------------------------|---------------|------------------------|---------------|--|--------------|--|
| | Total | | | | | | |
| | Without real guarantee | | With real guarantee | | | | |
| | Number of transactions | Gross amount | Number of transactions | Gross amount | Maximum amount of the actual collateral that can be considered | | Impairment of accumulated value or accumulated losses in fair value due to credit risk |
| Real estate guarantee | | | | | Rest of real guarantees | | |
| Credit entities | — | — | — | — | — | — | — |
| Public sector | 6,679 | 227 | 31 | 7 | 2 | — | 6 |
| Other financial institutions and: individual shareholder | 1,210 | 321 | 785 | 339 | 88 | 86 | 61 |
| Non-financial institutions and individual shareholder | 312,934 | 9,578 | 60,003 | 8,419 | 4,790 | 1,834 | 3,912 |
| <i>Of which financing for constructions and property development</i> | 15,578 | 125 | 1,890 | 570 | 423 | 48 | 208 |
| Other warehouses | 5,878,455 | 5,790 | 492,232 | 9,492 | 4,835 | 3,502 | 4,287 |
| Total | 6,199,278 | 15,916 | 553,051 | 18,257 | 9,715 | 5,422 | 8,266 |
| 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

| | 2022 | | | | | | |
|--|-----------------------------------|--------------|------------------------|--------------|--|--------------|--|
| | Of which, non-performing/Doubtful | | | | | | |
| | Without real guarantee | | With real guarantee | | | | |
| | Number of transactions | Gross amount | Number of transactions | Gross amount | Maximum amount of the actual collateral that can be considered | | Impairment of accumulated value or accumulated losses in fair value due to credit risk |
| Real estate guarantee | | | | | Rest of real guarantees | | |
| Credit entities | — | — | — | — | — | — | — |
| Public sector | 7 | 2 | 13 | 5 | 2 | — | 5 |
| Other financial institutions and: individual shareholder | 641 | 9 | 620 | 135 | 22 | 6 | 55 |
| Non-financial institutions and individual shareholder | 174,300 | 3,178 | 39,479 | 4,890 | 2,741 | 886 | 3,439 |
| <i>Of which financing for constructions and property development</i> | 10,325 | 78 | 1,255 | 335 | 213 | 33 | 188 |
| Other warehouses | 3,735,412 | 2,911 | 246,751 | 4,055 | 1,917 | 910 | 3,122 |
| Total | 3,910,360 | 6,100 | 286,863 | 9,085 | 4,682 | 1,802 | 6,621 |
| Financing classified as non-current assets and disposable groups of items that have been classified as held for sale | — | — | — | — | — | — | — |

In 2022, 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 2,379 million (2,480 million in 2021), without these modifications having a material impact on the income statement. Also, during 2022, 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 1,677 million (1,868 million in 2021).

The transactions presented in the foregoing tables were classified at 31 December 2022 by nature, as follows:

- Credit impaired: 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 consecutive days of material delay on the date of the reclassification to the normal risk category.

Attending to the credit attention 56% of the forborne loan transactions are classified as other than non-performing. Particularly noteworthy are the level of existing guarantees (44% of transactions are secured by collateral) and the coverage provided by specific allowances (representing 24% of the total forborne loan portfolio and 44% 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 coverage market risks are considered, such as correlation risk, market liquidity risk, prepayment or cancellation risk and subscription risk.

- **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.

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.

Grupo Santander applies 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:

Risk metric values on the consolidated balance sheet

EUR million

| | Balance sheet amount | Main market risk metric | | Main risk factor for 'Other' balance |
|---|----------------------|-------------------------|-----------|--------------------------------------|
| | | VaR | Other | |
| Assets subject to market risk | | | | |
| Cash, cash balances at central banks and other deposits on demand | 223,073 | | 223,073 | Interest rate |
| Financial assets held for trading | 156,118 | 156,118 | | |
| Non-trading financial assets mandatorily at fair value through profit or loss | 5,713 | 3,711 | 2,002 | Interest rate, spread |
| Financial assets designated at fair value through profit or loss | 8,989 | 815 | 8,174 | Interest rate, spread |
| Financial assets designated at fair value through other comprehensive income | 85,239 | 1,941 | 83,298 | Interest rate, spread |
| Financial assets at amortized cost | 1,147,044 | | 1,147,044 | Interest rate, spread |
| Hedging derivatives | 8,069 | | 8,069 | Interest rate, exchange rate |
| Changes in the fair value of hedged items in portfolio hedges of interest risk | (3,749) | | (3,749) | Interest rate |
| Other assets | 104,163 | | | |
| Total assets | 1,734,659 | | | |
| Liabilities subject to market risk | | | | |
| Financial liabilities held for trading | 115,185 | 115,185 | | |
| Financial liabilities designated at fair value through profit or loss | 55,947 | | 55,947 | Interest rate, spread |
| Financial liabilities at amortized cost | 1,423,858 | | 1,423,858 | Interest rate, spread |
| Hedging derivatives | 9,228 | | 9,228 | Interest rate, exchange rate |
| Changes in the fair value of hedged items in portfolio hedges of interest rate risk | (117) | | (117) | Interest rate |
| Other liabilities | 32,973 | | | |
| Total liabilities | 1,637,074 | | | |
| Equity | 97,585 | | | |

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 2022 and 97.5% ES at the end of December 2022:

VaR statistics and expected shortfall by risk factor^A

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

| | 2022 | | | | | 2021 | | 2020 | |
|----------------------------|------------|-------------|-------------|-------------|---------------|-------------|-------------|-------------|------------|
| | VaR (99%) | | | Latest | ES (97.5%) | VaR | | VaR | |
| | Min | Average | Max | | | Average | Latest | Average | Latest |
| Total Trading | 9.2 | 14.1 | 21.5 | 11.6 | 10.8 | 10.5 | 12.3 | 12.5 | 8.3 |
| Diversification effect | (7.8) | (14.6) | (30.5) | (15.5) | (15.6) | (12.9) | (13.4) | (13.0) | (11.8) |
| Interest rate | 8.1 | 12.6 | 21.5 | 9.9 | 9.8 | 9.6 | 9.1 | 9.2 | 5.4 |
| Equities | 2.4 | 4.2 | 7.3 | 5.5 | 5.5 | 3.5 | 5.1 | 4.4 | 3.1 |
| Exchange rate | 2.5 | 4.8 | 10.3 | 3.6 | 3.2 | 4.2 | 5.7 | 5.9 | 6.0 |
| Credit spread | 3.4 | 5.4 | 8.5 | 5.8 | 4.9 | 4.8 | 5.1 | 5.5 | 4.5 |
| Commodities | 0.6 | 1.7 | 4.4 | 2.3 | 3.0 | 1.3 | 0.7 | 0.5 | 1.1 |
| Total Europe | 7.9 | 12.2 | 21.9 | 10.5 | 9.2 | 9.3 | 9.9 | 10.5 | 8.0 |
| Diversification effect | (5.1) | (10.4) | (16.8) | (14.2) | (12.0) | (9.3) | (12.6) | (10.7) | (8.9) |
| Interest rate | 5.5 | 10.2 | 18.4 | 10.1 | 7.8 | 7.7 | 7.1 | 7.9 | 6.5 |
| Equities | 2.2 | 3.6 | 5.8 | 5.5 | 5.5 | 3.3 | 5.8 | 4.3 | 3.0 |
| Exchange rate | 1.9 | 3.4 | 5.8 | 3.3 | 3.0 | 2.8 | 4.5 | 3.5 | 2.9 |
| Credit spread | 3.4 | 5.4 | 8.7 | 5.8 | 4.9 | 4.8 | 5.1 | 5.5 | 4.5 |
| Commodities | — | — | — | — | — | — | — | — | — |
| Total North America | 1.5 | 2.3 | 4.7 | 2.7 | 2.2 | 2.5 | 2.7 | 6.6 | 2.9 |
| Diversification effect | 0.7 | (0.8) | (4.0) | (1.1) | (1.3) | (0.7) | (0.6) | (2.2) | (1.0) |
| Interest rate | 0.7 | 2.2 | 5.7 | 2.7 | 2.4 | 2.5 | 2.7 | 3.4 | 3.3 |
| Equities | — | 0.1 | 1.0 | 0.1 | 0.1 | 0.1 | — | 0.3 | 0.1 |
| Exchange rate | 0.1 | 0.8 | 2.0 | 1.0 | 1.0 | 0.6 | 0.6 | 5.1 | 0.5 |
| Total South America | 5.2 | 8.0 | 14.2 | 6.2 | 6.5 | 5.9 | 6.3 | 5.6 | 4.5 |
| Diversification effect | (1.3) | (5.0) | (19.8) | (4.2) | (4.4) | (4.9) | (5.1) | (3.8) | (5.4) |
| Interest rate | 4.5 | 7.0 | 14.9 | 5.5 | 5.7 | 5.5 | 5.8 | 5.2 | 4.1 |
| Equities | 0.7 | 1.6 | 4.8 | 1.7 | 1.6 | 1.2 | 1.1 | 1.0 | 0.5 |
| Exchange rate | 0.7 | 2.7 | 9.9 | 0.9 | 0.6 | 2.8 | 3.8 | 2.7 | 4.2 |
| Commodities | 0.6 | 1.7 | 4.4 | 2.3 | 3.0 | 1.3 | 0.7 | 0.5 | 1.1 |

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 2022, VaR was slightly lower (EUR 0.7 million) than at the end of 2021, consequence of an update in calculation model and a lighter pressure in markets as inflation started to moderate in some regions, as the Eurozone.

Although by risk factor, VaR has followed a generally stable trend in recent years, in 2022 the average VaR rose by EUR 3.6 million compared to 2021. By risk factor, average VaR was greater in all of them, specially in interest rate due to a higher market volatility. The temporary increases in VaR are due more to short-term price volatility than to significant changes in positions.

By region, average VaR grew for all risk types in Europe and South America, which have the highest market risk exposure.

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 in 2022. Regarding to 99% VaE, there was an exception the 15th of December as a consequence of market volatility concurrent with the last ECB's year meeting where a 50 bp interest rate hike was confirmed.
- The exceptions observed in the past year are consistent with the assumptions of the VaR calculation model.



IBOR reform

Since 2013, different organizations and supranational authorities (IOSCO and FSB) have promoted and monitored initiatives aimed at carrying out reforms to strengthen interest rate indices. In this context, in order to execute the transition in a non-disruptive and progressive manner, central banks and regulators from various jurisdictions have organized working groups to recommend risk-free indices.

The objective was mainly to facilitate the transition to risk-free indices identified in different jurisdictions, highlighting the SONIA index as a replacement for the Libor in pounds, the SOFR for Libor in dollars, and the €STR for Libor in euros.

In this sense, and as a result of the joint effort of authorities and market participants, this transition process has materialized in different milestones during the period between 2019 and 2022, remaining only in 2023 the execution of the substitution plans for GBP LIBOR and USD LIBOR.

According with the regulatory milestones of the transition, the USD LIBOR terms (overnight, 1M, 3M, 6M and 12M) will continue to be calculated using the contributions of panel banks until mid-2023, although their use for new operations was limited from the end 2021. The last date of publication of the USD LIBOR for the overnight and 12M terms will be June 30, 2023. For the 1, 3 and 6 month terms, on November 23, 2022, the FCA announced an inquiry of its proposal to require the LIBOR administrator, IBA, to continue to publish these USD LIBOR terms under a non-representative "synthetic" methodology until the end of September 2024. After that date, publication would cease permanently.

Regarding the GBP LIBOR, its publication is confirmed under the synthetic methodology for the 3-month term until the end of March 2024, while the 1- and 6-month terms will cease to be published in March 2023.

In accordance with the milestones indicated, the Group and its entities have focused on making all the contractual, commercial, operational and technological changes necessary to undertake the transition from these reference indices. In 2023, the following transition milestones will continue to be met in the different jurisdictions where the Grupo Santander operates.

Following is a detail of the carrying amount at 31 December 2022 of financial assets, financial liabilities, derivatives and loan commitments that continue to be referenced to the pending transition ratios:

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 LIBOR | 24,641 | 3,229 | 9,150 | 6,931 | 12,897 | 12,385 | 1,211 |
| <i>of which USD</i> | 24,296 | 2,854 | 8,840 | 5,063 | 12,561 | 12,339 | 1,166 |
| <i>of which GBP</i> | 345 | 375 | 310 | 1,868 | 336 | 46 | 45 |
| TOTAL | 24,641 | 3,229 | 9,150 | 6,931 | 12,897 | 12,385 | 1,211 |

Additionally, see information included in note 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 2022 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, Grupo Santander can fully monitor market risk in the banking book (excluding SCIB trading activity). The Bank differentiates 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.

| | 2022 | | | | 2021 | | 2020 | |
|--------------------------------|--------------|--------------|----------------|--------------|--------------|----------------|--------------|--------------|
| | Min | Average | Max | Latest | Average | Latest | Average | Latest |
| Structural VaR | 538.5 | 664.0 | 1,084.4 | 538.5 | 993.7 | 1,011.9 | 911.0 | 903.1 |
| Diversification effect | (323.5) | (417.1) | (489.5) | (422.4) | (327.3) | (240.2) | (349.8) | (263.4) |
| VaR Interest Rate ^A | 266.2 | 350.8 | 577.0 | 304.5 | 400.7 | 287.8 | 465.1 | 345.5 |
| VaR Exchange Rate | 400.4 | 493.4 | 682.3 | 461.0 | 600.6 | 655.2 | 499.9 | 502.6 |
| VaR Equities | 195.4 | 236.9 | 314.6 | 195.4 | 319.7 | 309.1 | 295.9 | 318.5 |

A. Includes credit spread VaR on ALCO portfolios.

Structural interest rate risk

• Europe

At the end of December, the sensitivity of NII on our core balance sheets and of Santander España's EVE to interest rate hikes was positive; but at Santander UK it was negative.

Across our footprint, exposure was moderate in relation to annual budget and capital levels in 2022.

At the end of December, under the scenarios previously described, significant risk of NII sensitivity to the euro amounted to EUR 1,009 million; to the pound sterling, EUR 191 million; to the US dollar, EUR 51 million; and to the Polish zloty, EUR 64 million, all with risk of rate cuts.

Significant risk of EVE sensitivity to yield curves of the euro was EUR 2,820 million; of the pound sterling, EUR 440 million; of the US dollar, EUR 11 million euros; and of the Polish zloty, EUR 91 million euros, mostly with risk of rate cuts.

• North America

At the end of December, sensitivity of NII on our North America balance sheet to interest rate hikes was positive, while EVE sensitivity was negative.

Exposure was moderate in relation to annual budget and capital levels in 2022.

At the end of December, significant risk to NII was mainly in the US and amounted to EUR 151 million.

The most significant risk to EVE was in the US and amounted to EUR 763 million.

• South America

EVE and NII on our main 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 2022.



At the end of December, most significant risk to NII was mainly in Chile (EUR 72 million) and in Brazil (EUR 169 million).

Most significant risk to EVE was recorded in Chile (EUR 309 million) and in Brazil (EUR 386 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 2022, the hedged of the different currencies that have an impact on our core capital ratio was close to 100%.

In December 2022, our permanent exposures (with potential impact on shareholders' equity) were, from largest to smallest, in US dollars, Brazilian reais, British pounds sterling, Mexican pesos, Chilean pesos and Polish zloty.

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.

At the end of December 2022, 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. The Group calculates its VaR with a set of market prices and proxies. At the end of the year 2022, VaR at a 99% confidence level over a one-day horizon was EUR 195 million (EUR 309 million and EUR 319 million in 2021 and 2020, respectively).

3.2. Methodologies

Structural interest rate 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 Grupo Santander markets).

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 uses the Basel regulatory definition and calculates a set of metrics and stress scenarios in relation to intraday liquidity risk to maintain a high level of management and control. On the one hand, the regulatory liquidity metrics (LCR, NSFR, etc.) are prepared following the regulatory criteria established in the CRR-II and CRD IV. Regarding internal metrics, liquidity scenarios are determined using a combination of behavioral observation in actual liquidity crises occurred at other banks, regulatory assumptions (e.g. the assumptions in the LiST) and expert judgment.

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, Santander calculates 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:

- An idiosyncratic scenario of events detrimental only to Santander;
- a local market scenario of events highly detrimental to a base country's financial system or real economy;
- 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.
- v. climate scenarios where different stress cases derived from the effects that climate change could have on the economy are collected.

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 | 2022 | 2021 |
|---|----------------------------|----------------------------|
| | Amount weighted applicable | Amount weighted applicable |
| High-quality liquid assets-HQLAs | | |
| <i>Cash and reserves available at central banks</i> | 127,285 | 206,507 |
| <i>Marketable assets Level 1</i> | 177,887 | 81,925 |
| <i>Marketable assets Level 2A</i> | 3,308 | 3,422 |
| <i>Marketable assets Level 2B</i> | 3,562 | 5,446 |
| Total high-quality liquid assets | 312,042 | 297,300 |

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 20 May 2019. The Regulation establishes that entities must have a net stable financing ratio, as defined in the Regulation, higher 100% from June 2021. The liquidity coverage ratio, broken down by component, and the net stable funding ratio for the Group at year-ends 2022 and 2021 are presented below:

EUR million

| | 2022 | 2021 |
|--|-------------|-------------|
| High-quality liquid assets-HQLAs (numerator) | 312,042 | 297,300 |
| Total net cash outflows (denominator) | 204,759 | 181,953 |
| <i>Cash outflows</i> | 270,748 | 233,294 |
| <i>Cash inflows</i> | 65,989 | 51,341 |
| LCR ratio (%) | 152% | 163% |
| NSFR ratio (%) | 121% | 126% |

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.

In the last quarter of 2022, Grupo Santander has begun to repay in advance a significant part of the financing received under the TLTRO-III program launched by the European Central Bank, which originally matured in 2023. The replacement of these funds has been carried out after having strengthened the balance sheet through a combination of growth in customer deposits, an increase in short-term instruments and greater activity in medium and long-term issuances, which has allowed Grupo Santander to maintain liquidity coverage ratios (LCR) and net stable funding (NSFR) at prudent levels after the repayment.

The movement in the composition of the buffer between 'Cash and reserves available at central banks' to 'Level 1 marketable assets' corresponds to a reclassification of deposits with the Central Bank, due to the change in the remuneration of deposits with the European Central Bank.

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

Finally, the moderate use of assets by Grupo Santander as collateral in the sources of structural financing of the balance sheet should be highlighted.

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 2022 (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 | 44.6 | 32.3 | 10.6 | 49.7 | 39.2 | 50.1 | 51.6 | 20.1 | 10.7 | 308.9 |
| Guarantees received committed | 29.2 | 37.5 | 13.3 | 21.4 | 0.6 | 1.3 | 1.0 | — | — | 104.3 |

The reported Group information as required by the EBA at 2022 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 | 197.3 | | 1,143.5 | |
| Equity instruments | 8.3 | 8.3 | 7.4 | 7.4 |
| Debt securities | 71.7 | 71.7 | 122.0 | 125.8 |
| Other assets | 31.6 | | 152.8 | |
| Total assets | 308.9 | | 1,425.7 | |

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 | 104.3 | 29.4 |
| Loans and advances | 1.3 | — |
| Equity instruments | 4.8 | 6.8 |
| Debt securities | 98.2 | 22.5 |
| Other collateral received | — | 0.1 |
| Own debt securities issued other than own covered bonds or ABSs | — | 0.5 |

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) | 313.2 | 413.2 |

On-balance-sheet encumbered assets amounted to EUR 308,900 million, of which 64% are loans (mortgage loans, corporate loans, etc.). Guarantees received committed amounted to EUR 104,300 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 413,200 million of encumbered assets, which give rise to EUR 313,200 million matching liabilities.

As of December 2022, total asset encumbrance in funding operations represented 22.1% of the Group's extended balance sheet under EBA criteria (total assets plus guarantees received: EUR 1,868,400 million as of December 2022). This percentage has decreased from 26.1% that presented the Group as of December 2021, mainly as a result of the early repayment of collateralized financing with central banks, especially the European Central Bank (TLTRO) and the Bank of England (TFSME).

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 2023, at a consolidated level, the Group must maintain a minimum capital ratio of 9.07% of CET1 (4.50% being the requirement for Pillar I, 0.89% being the requirement for Pillar 2R (requirement), 2.50% being the requirement for capital conservation buffer, 1% being the requirement for global systemically entity (G-SIB) and 0.18% being the requirement for anti-cyclical capital buffer).

Grupo Santander must also maintain a minimum capital ratio of 10.87% of tier 1 and a minimum total ratio of 13.26%.

In 2022, the solvency target set was achieved. Santander's CET1 ratio stood at 12.18%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 | 2022 | 2021 | 2020 |
|---|----------------|----------------|----------------|
| Subscribed capital | 8,397 | 8,670 | 8,670 |
| Share premium account | 46,273 | 47,979 | 52,013 |
| Reserves | 62,111 | 56,606 | 62,777 |
| Treasury shares | (675) | (894) | (69) |
| Attributable profit | 9,605 | 8,124 | (8,771) |
| Approved dividend ^C | (979) | (836) | — |
| Shareholders' equity on public balance sheet | 124,732 | 119,649 | 114,620 |
| Valuation adjustments | (35,628) | (32,719) | (33,144) |
| Non-controlling interests | 8,481 | 10,123 | 9,846 |
| Total Equity on public balance sheet | 97,585 | 97,053 | 91,322 |
| Goodwill and intangible assets | (17,272) | (16,132) | (15,711) |
| Eligible preference shares and participating securities | 8,831 | 10,050 | 9,102 |
| Accrued dividend ^C | (942) | (895) | (478) |
| Other adjustments ^A | (5,169) | (7,624) | (5,734) |
| Tier 1^B | 83,033 | 82,452 | 78,501 |

A. Fundamentally for non-computable non-controlling interests and deductions and reasonable filters in compliance with CRR.

B. Figures calculated by applying the transitional provisions of IFRS 9.

C. Assumes 20% of ordinary profit, see note 4.a for proposed distribution of results.

Note: Certain figures presented in this capital note have been rounded for ease of presentation. Consequently, the amounts corresponding to the rows or columns of totals in the tables presented in this note may not coincide with the arithmetic sum of the concepts or items that make up the total.

The following table shows the capital coefficients and a detail of the eligible internal resources of the Group:

Capital coefficients

| EUR million | 2022 | 2021 | 2020 |
|---|---------------|---------------|---------------|
| Level 1 ordinary eligible capital (EUR million) | 74,202 | 72,402 | 69,399 |
| Level 1 additional eligible capital (EUR million) | 8,831 | 10,050 | 9,102 |
| Level 2 eligible capital (EUR million) | 14,359 | 14,865 | 12,514 |
| Risk-weighted assets (EUR million) | 609,266 | 578,930 | 562,580 |
| Level 1 ordinary capital coefficient (CET 1) | 12.18% | 12.51% | 12.34% |
| Level 1 additional capital coefficient (AT1) | 1.45% | 1.73% | 1.61% |
| Level 1 capital coefficient (TIER1) | 13.63% | 14.24% | 13.95% |
| Level 2 capital coefficient (TIER 2) | 2.36% | 2.57% | 2.23% |
| Total capital coefficient | 15.99% | 16.81% | 16.18% |

Eligible capital

| EUR million | 2022 | 2021 | 2020 |
|---|-----------------|-----------------|-----------------|
| Eligible capital | | | |
| Common Equity Tier I | 74,202 | 72,402 | 69,399 |
| Capital | 8,397 | 8,670 | 8,670 |
| (-) Treasury shares and own shares financed | (60) | (966) | (126) |
| Share Premium | 46,273 | 47,979 | 52,013 |
| Reserves | 62,246 | 58,157 | 64,766 |
| Other retained earnings | (37,439) | (34,784) | (34,937) |
| Minority interests | 7,416 | 6,736 | 6,669 |
| Profit net of dividends | 7,684 | 6,394 | (9,249) |
| Deductions | (20,315) | (19,784) | (18,407) |
| <i>Goodwill and intangible assets</i> | <i>(17,182)</i> | <i>(16,064)</i> | <i>(15,711)</i> |
| <i>Others</i> | <i>(3,133)</i> | <i>(3,720)</i> | <i>(2,696)</i> |
| Additional Tier I | 8,831 | 10,050 | 9,102 |
| Eligible instruments AT1 | 8,344 | 10,102 | 8,854 |
| AT1-excesses-subsiaries | 487 | (52) | 248 |
| Tier II | 14,359 | 14,865 | 12,514 |
| Eligible instruments T2 | 14,770 | 15,424 | 13,351 |
| Gen. funds and surplus loans loss prov. IRB | — | 75 | — |
| T2-excesses - subsidiaries | (411) | (634) | (837) |
| Total eligible capital | 97,392 | 97,317 | 91,015 |

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 429.a (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

| | 2022 | 2021 | 2020 |
|-----------------------|-----------|-----------|-----------|
| Leverage | | | |
| Level 1 Capital | 83,033 | 82,452 | 78,501 |
| Exposure | 1,750,626 | 1,536,516 | 1,471,480 |
| Leverage Ratio | 4.74% | 5.37% | 5.33% |

Global systemically important banks

Grupo Santander is one of 30 banks designated as global systemically important banks (G-SIBs).

The designation as a globally systemic entity comes from a measurement established by the regulators (FSB and BCBS) that they have implemented based on five indicators (size, interjurisdictional activity, interconnection with other financial entities, substitutability and complexity). The application methodology has been modified in December 2021, incorporating, among other things, an additional score considering the Member States of the SRM as a single jurisdiction.

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 Grupo Santander has 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

| Company | Location | % of ownership held by Banco Santander | | Percentage of voting power (k) | | | EUR million (a) | | |
|--|----------------|--|----------|--------------------------------|-----------|----------------------------------|--------------------|-------------|-----------------|
| | | Direct | Indirect | Year 2022 | Year 2021 | Activity | Capital + reserves | Net results | Carrying amount |
| 2 & 3 Triton Limited | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Real estate | 40 | 1 | 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 | 0 | 0 | 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 | 20 | 0 | 0 |
| A3T Luxco 1 S.A. (c) | Luxembourg | 0.00% | 100.00% | 100.00% | 100.00% | Holding company | 4 | (1) | 4 |
| A3T Luxco 2 S.A. (c) | Luxembourg | 100.00% | 0.00% | 100.00% | 100.00% | Holding company | (20) | 21 | 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 | 231 | 159 | 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 | 278 | (1) | 156 |
| 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% | 100.00% | Electricity production | 52 | (86) | 0 |
| Ablasa Participaciones, S.L. Unipersonal | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Holding company | 233 | 48 | 894 |
| Aduro S.A. | Uruguay | 0.00% | 100.00% | 100.00% | 100.00% | Payments and collection services | 1 | (1) | 3 |
| 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 |
| Allane Leasing GmbH | Austria | 0.00% | 46.95% | 100.00% | 100.00% | Renting | (2) | 0 | 0 |

Subsidiaries of Banco Santander, S.A. ¹

| Company | Location | % of ownership held by Banco Santander | | Percentage of voting power (k) | | | EUR million (a) | | |
|--|----------------|--|----------|--------------------------------|-----------|--------------------------|--------------------|-------------|-----------------|
| | | Direct | Indirect | Year 2022 | Year 2021 | Activity | Capital + reserves | Net results | Carrying amount |
| Allane Location Longue Durée S.a.r.l. | France | 0.00% | 46.95% | 100.00% | 100.00% | Renting | 14 | 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 | (3) | 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 | (1) | 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 | 14 | 0 | 0 |
| Allane SE | Germany | 0.00% | 46.95% | 92.07% | 92.07% | Renting | 192 | 4 | 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 | (228) | 0 | 0 |
| Altira Santander Real Estate, S.A. | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Real estate | 20 | (109) | 0 |
| Alternative Leasing, FIL (Compartimento B) | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Investment fund | 108 | 6 | 105 |
| Amazonia Trade Limited | United Kingdom | 100.00% | 0.00% | 100.00% | 100.00% | Holding company | 0 | 0 | 0 |
| Amherst ASG Holdings, LLC | United States | 0.00% | 100.00% | 100.00% | — | Holding company | 225 | (50) | 175 |
| Amherst Pierpont Commercial Mortgage Securities LLC | United States | 0.00% | 100.00% | 100.00% | — | Securitization | 0 | 0 | 0 |
| Amherst Pierpont International Ltd. | Hong-Kong | 0.00% | 100.00% | 100.00% | — | Intermediation | 3 | 0 | 3 |
| Amherst Pierpont Securities LLC | United States | 0.00% | 100.00% | 100.00% | — | Securities Investment | 366 | (43) | 323 |
| AN (123) Limited | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Holding company | 0 | 0 | 0 |
| Andaluz de Inversiones, S.A. Unipersonal | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Holding company | 37 | 1 | 27 |
| ANITCO Limited | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Inactive | 0 | 0 | 0 |
| AP Acquisition Trust I | United States | 0.00% | 100.00% | 100.00% | — | Trust company | 0 | 0 | 0 |
| AP Asset Acquisition LLC | United States | 0.00% | 100.00% | 100.00% | — | Financial services | 1 | 0 | 1 |
| Apê11 Tecnologia e Negócios Imobiliários S.A. | Brazil | 0.00% | 81.26% | 90.00% | 90.00% | Real estate | 7 | (1) | 5 |
| APSG GP LLC | United States | 0.00% | 100.00% | 100.00% | — | Holding company | 0 | 0 | 0 |

Subsidiaries of Banco Santander, S.A. ¹

| Company | Location | % of ownership held by Banco Santander | | Percentage of voting power (k) | | | EUR million (a) | | |
|---|----------------|--|----------|--------------------------------|-----------|--------------------------------|--------------------|-------------|-----------------|
| | | Direct | Indirect | Year 2022 | Year 2021 | Activity | Capital + reserves | Net results | Carrying amount |
| Aquanima Brasil Ltda. | Brazil | 0.00% | 100.00% | 100.00% | 100.00% | E-commerce | 2 | 0 | 0 |
| Aquanima Chile S.A. | Chile | 0.00% | 100.00% | 100.00% | 100.00% | Services | 3 | 0 | 0 |
| Aquanima México S. de R.L. de C.V. | Mexico | 0.00% | 100.00% | 100.00% | 100.00% | E-commerce | 3 | 1 | 2 |
| Aquanima S.A. | Argentina | 0.00% | 100.00% | 100.00% | 100.00% | Services | 4 | (1) | 4 |
| Artarien S.A. (o) | Uruguay | 100.00% | 0.00% | 100.00% | 100.00% | Insurance auxiliary services | 0 | 0 | 1 |
| Asto Digital Limited | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 12 | (2) | 0 |
| Athena Corporation Limited | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Financial services | (8) | 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 |
| Atual - Fundo de Invest Multimercado Crédito Privado Investimento no Exterior | Brazil | 0.00% | 90.28% | 100.00% | 100.00% | Investment fund | 433 | 49 | 436 |
| 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 2021 | France | — | (b) | — | — | Securitization | 0 | 0 | 0 |
| Auto ABS French Leases Master Compartment 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 Spanish Loans 2022-1, 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 2019 Holdings Limited | United Kingdom | — | (b) | — | — | Securitization | 0 | 0 | 0 |
| Auto ABS UK Loans 2019 Plc | United Kingdom | — | (b) | — | — | Securitization | (3) | 2 | 0 |
| Auto ABS UK Loans Holdings Limited | United Kingdom | — | (b) | — | — | Securitization | 0 | 0 | 0 |
| Auto ABS UK Loans PLC | United Kingdom | — | (b) | — | — | Securitization | (7) | 40 | 0 |
| Autodescuento, S.L. | Spain | 0.00% | 93.89% | 93.89% | 93.89% | Vehicles purchased by internet | 2 | 0 | 18 |
| Autohaus24 GmbH | Germany | 0.00% | 46.95% | 100.00% | 100.00% | Internet | (3) | 1 | 0 |
| Auttar HUT Processamento de Dados Ltda. | Brazil | 0.00% | 97.10% | 100.00% | 100.00% | IT services | 6 | 0 | 6 |
| Aviación Antares, A.I.E. | Spain | 99.99% | 0.01% | 100.00% | 100.00% | Renting | 53 | 6 | 28 |
| Aviación Británica, A.I.E. | Spain | 99.99% | 0.01% | 100.00% | 100.00% | Renting | 26 | 5 | 6 |
| Aviación Centaurus, A.I.E. | Spain | 99.99% | 0.01% | 100.00% | 100.00% | Renting | 0 | 1 | 0 |
| Aviación Comillas, S.L. Unipersonal | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Renting | 8 | 0 | 8 |
| Aviación Intercontinental, A.I.E. | Spain | 99.97% | 0.03% | 100.00% | 100.00% | Renting | 42 | (11) | 31 |

Subsidiaries of Banco Santander, S.A. ¹

| Company | Location | % of ownership held by Banco Santander | | Percentage of voting power (k) | | | EUR million (a) | | |
|--|---------------|--|----------|--------------------------------|-----------|------------------|--------------------|-------------|-----------------|
| | | Direct | Indirect | Year 2022 | Year 2021 | Activity | Capital + reserves | Net results | Carrying amount |
| 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 | (4) | 1 |
| Aviación Santillana, S.L. | Spain | 99.00% | 1.00% | 100.00% | 100.00% | Renting | 5 | 1 | 2 |
| Aviación Suances, S.L. | Spain | 99.00% | 1.00% | 100.00% | 100.00% | Air transport | 8 | 1 | 3 |
| Aviación Tritón, A.I.E. | Spain | 99.99% | 0.01% | 100.00% | 100.00% | Renting | 0 | 2 | 0 |
| Aymoré Crédito, Financiamiento e Investimento S.A. | Brazil | 0.00% | 90.28% | 100.00% | 100.00% | Finance company | 7,414 | 312 | 6,974 |
| 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 | 393 | 69 | 153 |
| Banco Bandepe S.A. | Brazil | 0.00% | 90.28% | 100.00% | 100.00% | Banking | 902 | 78 | 885 |
| Banco de Albacete, S.A. Unipersonal | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Banking | 14 | 0 | 9 |
| Banco Hyundai Capital Brasil S.A. | Brazil | 0.00% | 45.14% | 50.00% | 50.00% | Banking | 65 | 12 | 35 |
| Banco PSA Finance Brasil S.A. | Brazil | 0.00% | 45.14% | 50.00% | 50.00% | Banking | 42 | 5 | 21 |
| Banco Santander - Chile | Chile | 0.00% | 67.13% | 67.18% | 67.18% | Banking | 3,920 | 889 | 3,860 |
| Banco Santander (Brasil) S.A. | Brazil | 0.04% | 90.25% | 90.90% | 90.50% | Banking | 12,320 | 2,187 | 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 | 168 | 18 | 128 |
| Banco Santander (México), S.A., Institución de Banca Múltiple, Grupo Financiero Santander México como Fiduciaria del Fideicomiso 2002114 | Mexico | 0.00% | 96.58% | 100.00% | 100.00% | Finance company | 5 | 1 | 5 |
| 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 | 22 | 1 | 22 |
| Banco Santander Argentina S.A. | Argentina | 0.00% | 99.82% | 99.77% | 99.26% | Banking | 1,851 | 390 | 578 |
| Banco Santander de Negocios Colombia S.A. | Colombia | 94.90% | 5.10% | 100.00% | 100.00% | Banking | 120 | 5 | 127 |
| Banco Santander International | United States | 0.00% | 100.00% | 100.00% | 100.00% | Banking | 1,226 | 134 | 1,360 |
| Banco Santander International SA | Switzerland | 0.00% | 100.00% | 100.00% | 100.00% | Banking | 1,215 | 39 | 837 |
| Banco Santander México, S.A., Institución de Banca Múltiple, Grupo Financiero Santander México | Mexico | 21.19% | 75.04% | 96.24% | 96.24% | Banking | 6,708 | 1,270 | 8,165 |
| Banco Santander Perú S.A. | Peru | 99.90% | 0.10% | 100.00% | 100.00% | Banking | 236 | 41 | 122 |
| Banco Santander S.A. | Uruguay | 97.75% | 2.25% | 100.00% | 100.00% | Banking | 480 | 106 | 191 |
| Banco Santander Totta, S.A. | Portugal | 0.00% | 99.87% | 99.96% | 99.96% | Banking | 2,887 | 604 | 3,815 |
| Bansa Santander S.A. | Chile | 0.00% | 100.00% | 100.00% | 100.00% | Real estate | 23 | 4 | 27 |
| BEN Benefícios e Serviços Instituição de Pagamento S.A. | Brazil | 0.00% | 90.28% | 100.00% | 100.00% | Payment services | 12 | (1) | 9 |
| Bilkreditt 6 Designated Activity Company (j) | Ireland | — | (b) | — | — | Securitization | 0 | 0 | 0 |
| Bilkreditt 7 Designated Activity Company (j) | Ireland | — | (b) | — | — | Securitization | 0 | 0 | 0 |
| Blechno Investments, S.L. Unipersonal | Spain | 100.00% | 0.00% | 100.00% | — | Real estate | 172 | 10 | 202 |
| BRS Investments S.A. | Argentina | 5.10% | 94.90% | 100.00% | 100.00% | Finance company | 76 | 12 | 75 |
| Cántabra de Inversiones, S.A. | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Holding company | 126 | 0 | 115 |
| Cántabro Catalana de Inversiones, S.A. | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Holding company | 275 | (2) | 267 |
| Canyon Multifamily Impact Fund IV LLC (c) | United States | 0.00% | 98.00% | 98.00% | 98.00% | Real estate | 0 | 0 | 0 |

Subsidiaries of Banco Santander, S.A. ¹

| Company | Location | % of ownership held by Banco Santander | | Percentage of voting power (k) | | | EUR million (a) | | |
|--|----------------|--|----------|--------------------------------|-----------|----------------------|--------------------|-------------|-----------------|
| | | Direct | Indirect | Year 2022 | Year 2021 | Activity | Capital + reserves | Net results | Carrying amount |
| 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 | 1,184 | 15 | 1,200 |
| Capital Street S.A. | Luxembourg | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 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 | 62 | 4 | 66 |
| 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 | 343 | 56 | 251 |
| 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% | 100.00% | 100.00% | 100.00% | Leasing | 365 | 42 | 407 |
| Centro de Capacitación Santander, A.C. | Mexico | 0.00% | 96.24% | 100.00% | 100.00% | Non-profit institute | 1 | 0 | 1 |
| Certidesa, S.L. Unipersonal | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Aircraft rental | (64) | (8) | 0 |
| Chrysler Capital Auto Funding II LLC | United States | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 0 | 37 | 0 |
| Chrysler Capital Master Auto Receivables Funding 2 LLC | United States | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | (258) | 0 | 0 |
| Chrysler Capital Master Auto Receivables Funding LLC | United States | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 116 | 3 | 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 | (1) | (1) | 1 |
| Compagnie Generale de Credit Aux Particuliers - Credipar S.A. | France | 0.00% | 50.00% | 100.00% | 100.00% | Banking | 460 | 22 | 428 |
| Compagnie Pour la Location de Vehicules - CLV | France | 0.00% | 50.00% | 100.00% | 100.00% | Banking | 22 | (1) | 26 |
| Compartment German Auto Loans 2021-1 | Luxembourg | — | (b) | — | — | Securitization | 0 | 0 | 0 |
| Consulteam Consultores de Gestão, Unipessoal, Lda. | Portugal | 100.00% | 0.00% | 100.00% | 100.00% | Real estate | 0 | 0 | 0 |
| Consumer Totta 1 | Portugal | — | (b) | — | — | Securitization | 0 | 0 | 0 |
| Crawfall S.A. (g) (j) | Uruguay | 100.00% | 0.00% | 100.00% | 100.00% | Services | 0 | 0 | 0 |
| Credileads S.A. | Uruguay | 0.00% | 100.00% | 100.00% | — | Advertising | 0 | 0 | 4 |
| Darep Designated Activity Company | Ireland | 100.00% | 0.00% | 100.00% | 100.00% | Reinsurances | 7 | 0 | 7 |
| Decarome, S.A.P.I. de C.V. | Mexico | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 50 | 3 | 52 |
| Deva Capital Advisory Company, S.L. Unipersonal | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Advisory services | 2 | 1 | 2 |
| Deva Capital Holding Company, S.L. Unipersonal | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Holding company | 227 | (17) | 235 |
| Deva Capital Investment Company, S.L. Unipersonal | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Holding company | 117 | 6 | 111 |
| Deva Capital Management Company, S.L. Unipersonal | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Advisory services | 21 | (13) | 8 |
| Deva Capital Servicer Company, S.L. Unipersonal | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Holding company | 99 | (10) | 90 |
| Digital Procurement Holdings N.V. | Netherlands | 0.00% | 100.00% | 100.00% | 100.00% | Holding company | 5 | 0 | 1 |

Subsidiaries of Banco Santander, S.A. ¹

| Company | Location | % of ownership held by Banco Santander | | Percentage of voting power (k) | | | EUR million (a) | | |
|---|----------------|--|----------|--------------------------------|-----------|------------------------|--------------------|-------------|-----------------|
| | | Direct | Indirect | Year 2022 | Year 2021 | Activity | Capital + reserves | Net results | Carrying amount |
| Diglo Servicer Company 2021, S.L. Unipersonal | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Real estate management | 19 | 1 | 19 |
| Diners Club Spain, S.A. Unipersonal | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Cards | 9 | 1 | 10 |
| Dirección Estratega, S.C. | Mexico | 0.00% | 100.00% | 100.00% | 100.00% | Services | 0 | 0 | 0 |
| Drive Auto Receivables Trust 2018-5 | United States | — | (b) | — | — | Securitization | 44 | 37 | 0 |
| Drive Auto Receivables Trust 2019-1 | United States | — | (b) | — | — | Securitization | 57 | 40 | 0 |
| Drive Auto Receivables Trust 2019-2 | United States | — | (b) | — | — | Securitization | 49 | 46 | 0 |
| Drive Auto Receivables Trust 2019-3 | United States | — | (b) | — | — | Securitization | 71 | 66 | 0 |
| Drive Auto Receivables Trust 2019-4 | United States | — | (b) | — | — | Securitization | 60 | 72 | 0 |
| Drive Auto Receivables Trust 2020-1 | United States | — | (b) | — | — | Securitization | 37 | 79 | 0 |
| Drive Auto Receivables Trust 2020-2 | United States | — | (b) | — | — | Securitization | 50 | 80 | 0 |
| Drive Auto Receivables Trust 2021-1 | United States | — | (b) | — | — | Securitization | (122) | 185 | 0 |
| Drive Auto Receivables Trust 2021-2 | United States | — | (b) | — | — | Securitization | (329) | 264 | 0 |
| Drive Auto Receivables Trust 2021-3 | United States | — | (b) | — | — | Securitization | (292) | 172 | 0 |
| Drive Auto Receivables Trust 2022-1 | United States | — | (b) | — | — | Inactive | 0 | 0 | 0 |
| Drive Auto Receivables Trust 2022-2 | United States | — | (b) | — | — | Inactive | 0 | 0 | 0 |
| Drive Auto Receivables Trust 2022-3 | United States | — | (b) | — | — | Inactive | 0 | 0 | 0 |
| Drive Auto Receivables Trust 2022-4 | United States | — | (b) | — | — | Inactive | 0 | 0 | 0 |
| Drive S.r.l. | Italy | 0.00% | 100.00% | 100.00% | — | Renting | 5 | (1) | 5 |
| Ductor Real Estate, S.L. Unipersonal | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Real estate | 25 | 1 | 20 |
| Ebury Brasil Consultoria Ltda. (q) | Brazil | 0.00% | 66.54% | 100.00% | — | Consulting services | 1 | 0 | 0 |
| Ebury Brasil Participações Ltda. (q) | Brazil | 0.00% | 66.54% | 100.00% | — | Holding company | 2 | 0 | 3 |
| Ebury Facilitadora De Pagamentos Ltda. (q) | Brazil | 0.00% | 66.54% | 100.00% | — | Software | 0 | 0 | 0 |
| Ebury Finance Belgium NV (q) | Belgium | 0.00% | 66.54% | 100.00% | — | Finance company | 0 | 0 | 0 |
| Ebury Mass Payments Holdco Limited (q) | United Kingdom | 0.00% | 66.54% | 100.00% | — | Holding company | 0 | 0 | 17 |
| Ebury Mass Payments Limited (q) | United Kingdom | 0.00% | 66.54% | 100.00% | — | Payment services | 5 | 3 | 0 |
| Ebury Partners Australia Pty Ltd. (q) | Australia | 0.00% | 66.54% | 100.00% | — | Finance company | 1 | 0 | 1 |
| Ebury Partners Belgium NV (q) | Belgium | 0.00% | 66.54% | 100.00% | — | Payment services | 60 | 21 | 82 |
| Ebury Partners Canada Limited (q) | Canada | 0.00% | 66.54% | 100.00% | — | Finance company | 3 | 0 | 7 |
| Ebury Partners China Limited (q) | China | 0.00% | 66.54% | 100.00% | — | Inactive | 5 | 0 | 0 |
| Ebury Partners Finance Limited (q) | United Kingdom | 0.00% | 66.54% | 100.00% | — | Finance company | (8) | (2) | 0 |
| Ebury Partners Holdings Limited (q) | United Kingdom | 0.00% | 66.54% | 100.00% | — | Holding company | 0 | 0 | 0 |
| Ebury Partners Hong Kong Limited (q) | Hong-Kong | 0.00% | 66.54% | 100.00% | — | Finance company | 3 | 0 | 3 |

Subsidiaries of Banco Santander, S.A. ¹

| Company | Location | % of ownership held by Banco Santander | | Percentage of voting power (k) | | | EUR million (a) | | |
|---|--------------------------|--|----------|--------------------------------|-----------|-------------------------|--------------------|-------------|-----------------|
| | | Direct | Indirect | Year 2022 | Year 2021 | Activity | Capital + reserves | Net results | Carrying amount |
| Ebury Partners Limited (q) | United Kingdom | 0.00% | 66.54% | 66.54% | 51.28% | Holding company | 250 | (6) | 531 |
| Ebury Partners Markets Limited (q) | United Kingdom | 0.00 % | 66.54% | 100.00% | — | Finance company | 5 | 0 | 0 |
| Ebury Partners SA (Pty) Ltd. (q) | Republic of South Africa | 0.00% | 66.54% | 100.00% | — | Inactive | 0 | 0 | 0 |
| Ebury Partners Switzerland AG (q) | Switzerland | 0.00% | 66.54% | 100.00% | — | Finance company | 5 | 0 | 5 |
| Ebury Partners UK Limited (q) | United Kingdom | 0.00% | 66.54% | 100.00% | — | Electronic money | 56 | (31) | 148 |
| Ebury Payments PTE Ltd. (q) | Singapur | 0.00% | 66.54% | 100.00% | — | Payment services | 0 | 0 | 0 |
| Ebury Technology Limited (q) | United Kingdom | 0.00% | 66.54% | 100.00% | — | Software | (48) | (5) | 0 |
| 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% | 70.00% | Holding company | 0 | 0 | 0 |
| Electrolyser, S.A. de C.V. | Mexico | 0.00% | 96.24% | 100.00% | 100.00% | Services | 0 | 0 | 0 |
| Elevate Tech Platforms, S.L. Unipersonal | Spain | 100.00% | 0.00% | 100.00% | — | Holding company | 2 | 0 | 2 |
| 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 | 33 | 4 | 34 |
| Erestone S.A.S. | France | 0.00% | 90.00% | 90.00% | 90.00% | Inactive | 1 | 0 | 1 |
| Esfera Fidelidade S.A. | Brazil | 0.00% | 90.28% | 100.00% | 100.00% | Services | 126 | 110 | 213 |
| Evidence Previdência S.A. | Brazil | 0.00% | 90.28% | 100.00% | 100.00% | Insurance | 134 | 2 | 121 |
| Eyemobile Tecnologia S.A. | Brazil | 0.00% | 58.26% | 60.00% | 60.00% | IT services | 2 | (1) | 0 |
| F1rst Tecnologia e Inovação Ltda. | Brazil | 0.00% | 90.28% | 100.00% | 100.00% | IT services | 52 | 8 | 54 |
| Financeira El Corte Inglés, Portugal, S.F.C., S.A. | Portugal | 0.00% | 51.00% | 100.00% | 100.00% | Finance company | 8 | 1 | 4 |
| Financiera El Corte Inglés, E.F.C., S.A. | Spain | 0.00% | 51.00% | 51.00% | 51.00% | Finance company | 278 | 58 | 140 |
| Finsantusa, S.L. Unipersonal | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Holding company | 1,257 | (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 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 |
| 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 |

Subsidiaries of Banco Santander, S.A. ¹

| Company | Location | % of ownership held by Banco Santander | | Percentage of voting power (k) | | | EUR million (a) | | |
|--|----------------|--|----------|--------------------------------|-----------|----------------------------------|--------------------|-------------|-----------------|
| | | Direct | Indirect | Year 2022 | Year 2021 | Activity | Capital + reserves | Net results | Carrying amount |
| Foreign Exchange Solutions (UK) Limited (q) | United Kingdom | 0.00% | 66.54% | 100.00% | — | IT services | 0 | 0 | 0 |
| Foreign Exchange Solutions S.L. (q) | Spain | 0.00% | 66.54% | 100.00% | — | IT services | 0 | (1) | 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 | 1 | 81 | 0 |
| Fosse Master Issuer PLC | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Securitization | (1) | 0 | 0 |
| Fosse Trustee (UK) Limited | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Securitization | 0 | 0 | 0 |
| Freedom Depository Holdings, LLC | United States | 0.00% | 100.00% | 100.00% | — | Holding company | 0 | 0 | 0 |
| Freedom Depository, LLC | United States | 0.00% | 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 | 0.00% | 90.28% | 100.00% | — | Investment fund | 83 | 11 | 85 |
| Fundo de Investimentos em Direitos Creditórios Multisegmentos NPL Ipanema VI – Não padronizado | Brazil | 0.00% | 90.28% | 100.00% | — | Investment fund | 350 | 38 | 350 |
| Gamma, Sociedade Financeira de Titularização de Créditos, S.A. | Portugal | 0.00% | 99.87% | 100.00% | 100.00% | Securitization | 7 | 0 | 8 |
| GC FTPYME Pastor 4 Fondo de Titulización de Activos | Spain | — | (b) | — | — | Securitization | 0 | 0 | 0 |
| 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 | 1 | 1 |
| Gesban UK Limited | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Payments and collection services | 1 | 0 | 0 |
| Gestión de Inversiones JILT, S.A. Unipersonal | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Services | 15 | 0 | 15 |
| Gestora de Procesos S.A. en liquidación (j) | Peru | 0.00% | 100.00% | 100.00% | 100.00% | Holding company | (1) | 0 | 0 |
| Getnet Adquirência e Serviços para Meios de Pagamento S.A. - Instituição de Pagamento | Brazil | 0.04% | 97.07% | 97.10% | 89.91% | Payment services | 444 | 102 | 356 |
| Getnet Argentina S.A.U. | Argentina | 0.00% | 100.00% | 100.00% | 100.00% | Payment methods | 26 | (10) | 16 |
| Getnet Europe, Entidad de Pago, S.L. Unipersonal | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Payment services | 215 | 2 | 207 |
| Getnet Fundo de Investimento em Direitos Creditórios | Brazil | 0.00% | 90.28% | 100.00% | — | Investment fund | 1 | 0 | 1 |
| Getnet Merchant Solutions UK Ltd | United Kingdom | 0.00% | 100.00% | 100.00% | — | Financial services | 0 | 0 | 0 |
| Getnet Sociedade de Crédito Direto S.A. | Brazil | 0.00% | 97.10% | 100.00% | 100.00% | Finance company | 14 | 7 | 21 |
| Gira, Gestão Integrada de Recebíveis do Agronegócio S.A. (e) | Brazil | 0.00% | 72.23% | 80.00% | 80.00% | Consulting services | 1 | (3) | 0 |
| GNXT Serviços de Atendimento Ltda. | Brazil | 0.00% | 97.10% | 100.00% | — | Telemarketing | 4 | (1) | 3 |
| Golden Bar (Securitisation) S.r.l. | Italy | — | (b) | — | — | Securitization | 0 | 0 | 0 |
| Golden Bar Stand Alone 2016-1 | Italy | — | (b) | — | — | Securitization | 0 | 0 | 0 |

Subsidiaries of Banco Santander, S.A. ¹

| Company | Location | % of ownership held by Banco Santander | | Percentage of voting power (k) | | | EUR million (a) | | |
|--|----------------|--|----------|--------------------------------|-----------|------------------------|--------------------|-------------|-----------------|
| | | Direct | Indirect | Year 2022 | Year 2021 | Activity | Capital + reserves | Net results | Carrying amount |
| 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 |
| Golden Bar Stand Alone 2022-1 | Italy | — | (b) | — | — | Securitization | 0 | 0 | 0 |
| Gravity Cloud Technology, S.L. | Spain | 100.00% | 0.00% | 100.00% | — | IT services | 33 | 1 | 31 |
| Grupo Empresarial Santander, S.L. | Spain | 99.62% | 0.38% | 100.00% | 100.00% | Holding company | 3,985 | 571 | 2,861 |
| Grupo Financiero Santander México, S.A. de C.V. | Mexico | 100.00% | 0.00% | 100.00% | 100.00% | Holding company | 5,093 | 954 | 5,164 |
| Guaranty Car, S.A. Unipersonal | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Automotive | 3 | 0 | 2 |
| Hipototta No. 13 | Portugal | — | (b) | — | — | Securitization | 0 | 0 | 0 |
| Hipototta No. 4 FTC | Portugal | — | (b) | — | — | Securitization | (53) | (1) | 0 |
| Hipototta No. 4 plc | Ireland | — | (b) | — | — | Securitization | (4) | 2 | 0 |
| Hipototta No. 5 FTC | Portugal | — | (b) | — | — | Securitization | (46) | 0 | 0 |
| Hipototta No. 5 plc | Ireland | — | (b) | — | — | Securitization | (13) | 2 | 0 |
| Holbah Santander, S.L. Unipersonal | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Holding company | 563 | 157 | 820 |
| Holmes Funding Limited | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Securitization | 8 | 58 | 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 | 17 | 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 | 3,596 | 53 | 3,649 |
| 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 | 98 | (1) | 109 |
| Inversiones Marítimas del Mediterráneo, S.A. | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Inactive | 4 | (1) | 0 |
| Isar Valley S.A. | Luxembourg | — | (b) | — | — | Securitization | 8 | 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 | 4 | (3) | 0 |
| Landcompany 2020, S.L. | Spain | 17.66% | 82.34% | 100.00% | 100.00% | Real estate management | 1,701 | (22) | 1,689 |
| Langton Securities (2008-1) plc (j) | United Kingdom | — | (b) | — | 100.00% | Securitization | 0 | 0 | 0 |
| Laparanza, S.A. | Spain | 61.59% | 0.00% | 61.59% | 61.59% | Agricultural holding | 28 | 0 | 16 |
| Lerma Investments 2018, S.L. Unipersonal | Spain | 100.00% | 0.00% | 100.00% | — | Real estate | 10 | 2 | 13 |
| Liderança Serviços Especializados em Cobranças Ltda. | Brazil | 0.00% | 90.28 % | 100.00% | 100.00% | Collection services | 46 | 1 | 42 |

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 2022 | Year 2021 | | Capital + reserves | Net results | Carrying amount |
| Liquetine, S.L. Unipersonal | Spain | 0.00% | 70.00% | 100.00% | 100.00% | Renewable energies | 1 | 0 | 2 |
| Liquidity Limited | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Factoring | (1) | 0 | 0 |
| Luri 6, S.A. Unipersonal | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Real estate investment | 1,358 | 13 | 1,390 |
| Lynx Financial Crime Tech, S.A. Unipersonal | Spain | 0.00% | 100.00% | 100.00% | — | IT services | 2 | 0 | 2 |
| 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. Unipersonal | Spain | 0.00% | 61.59% | 100.00% | 100.00% | Agricultural holding | 0 | 0 | 0 |
| Mercadotecnia, Ideas y Tecnología, S.A. de C.V. | Mexico | 0.00% | 70.00% | 70.00% | 70.00% | Payment methods | 1 | 7 | 14 |
| 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% | 100.00% | IT services | 0 | 0 | 0 |
| Mercury Trade Finance Solutions SpA | Chile | 0.00% | 50.10% | 100.00% | 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 | 22 |
| Mertion Aviation One Designated Activity Company | Ireland | — | (b) | — | — | Renting | 32 | (3) | 0 |
| Mob Soluções em Tecnologia Ltda. - EPP | Brazil | 0.00% | 56.88% | 100.00% | — | Advertising | 0 | 0 | 0 |
| Mobills Corretora de Seguros Ltda. | Brazil | 0.00% | 56.88% | 100.00% | — | Insurance brokerage | 1 | 0 | 0 |
| Mobills Labs Soluções em Tecnologia Ltda. - EPP | Brazil | 0.00% | 56.88% | 100.00% | — | IT services | 2 | 1 | 2 |
| Monetus Investimentos S.A. | Brazil | 0.00% | 56.88% | 100.00% | — | Securities Investment | 2 | (1) | 1 |
| 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 (j) | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Securitization | 0 | 0 | 0 |
| Motor Securities 2018-1 Designated Activity Company | Ireland | — | (b) | — | — | Securitization | (2) | (1) | 0 |
| Mouro Capital I LP | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Investment fund | 822 | (84) | 305 |
| Multiplica SpA | Chile | 0.00% | 100.00% | 100.00% | 100.00% | Payment services | 5 | (1) | 4 |
| Munduspar Participações S.A. | Brazil | 80.00% | 0.00% | 80.00% | — | Holding company | 27 | (1) | 74 |
| Navegante Américo Vespucio SpA | Chile | 0.00% | 100.00% | 100.00% | — | Real estate | 73 | (1) | 105 |
| Naviera Mirambel, S.L. Unipersonal | 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 | 34 | (2) | 38 |
| Naviera Trans Iron, S.L. Unipersonal | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Leasing | 26 | 0 | 21 |
| Naviera Trans Ore, A.I.E. | Spain | 99.99% | 0.01% | 100.00% | 100.00% | Renting | 28 | 9 | 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 purchased 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 2022 | Year 2021 | | Capital + reserves | Net results | Carrying amount |
| Novimovest – Fundo de Investimento Imobiliário | Portugal | 0.00% | 78.64% | 78.74% | 78.74% | Investment fund | 217 | 3 | 174 |
| NW Services CO. | United States | 0.00% | 100.00% | 100.00% | 100.00% | E-commerce | 7 | 2 | 2 |
| One Mobility Management GmbH | Germany | 0.00% | 46.95% | 100.00% | — | Services | 0 | 0 | 0 |
| Open Bank Argentina S.A. | Argentina | 0.00% | 99.91% | 100.00% | 100.00% | Banking | 46 | (23) | 24 |
| Open Bank, S.A. | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Banking | 550 | 15 | 566 |
| Open Digital Market, S.L. | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Commerce | 0 | 0 | 0 |
| Open Digital Services Argentina S.A.U. en liquidación (j) | Argentina | 0.00% | 100.00% | 100.00% | 100.00% | IT services | 0 | 0 | 0 |
| Open Digital Services, S.L. | Spain | 99.97% | 0.03% | 100.00% | 100.00% | Services | 116 | (87) | 0 |
| Open Mx Servicios Administrativos, S.A. de C.V. | Mexico | 0.00% | 100.00% | 100.00% | 100.00% | Financial services | 0 | (1) | 0 |
| Openbank Santander México, S.A. de C.V., S.O.F.O.M., E.R., Grupo Financiero Santander México | Mexico | 0.00% | 96.24% | 100.00% | — | Inactive | 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 | 10 | 1 | 8 |
| Optimal Investment Services SA | Switzerland | 100.00% | 0.00% | 100.00% | 100.00% | Fund management company | 44 | (1) | 29 |
| Optimal Multiadvisors Ireland Plc / Optimal Strategic US Equity Ireland Euro Fund (m) (p) | Ireland | 0.00% | 0.00% | 0.00% | 0.00% | Fund management company | 0 | 0 | 0 |
| Optimal Multiadvisors Ireland Plc / Optimal Strategic US Equity Ireland US Dollar Fund (m) (p) | Ireland | 0.00% | 0.00% | 0.00% | 0.00% | Fund management company | 0 | 0 | 0 |
| Paga Después, S.A. de C.V. | Mexico | 0.00% | 100.00% | 100.00% | — | Financial services | 4 | 0 | 4 |
| PagoFX Europe S.A. (c) | Belgium | 0.00% | 100.00% | 100.00% | 100.00% | Inactive | 2 | (1) | 1 |
| PagoFX UK Ltd | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Payment services | 6 | (2) | 4 |
| PagoNxt Ltd | United Kingdom | 100.00% | 0.00% | 100.00% | 100.00% | Holding company | 6 | (3) | 6 |
| PagoNxt Merchant SoluçõesTecnológicas Brasil Ltda. | Brazil | 0.00% | 100.00% | 100.00% | 100.00% | IT services | 85 | (30) | 54 |
| PagoNxt Merchant Solutions FZ-LLC | United Arab Emirates | 0.00% | 100.00% | 100.00% | 100.00% | Financial services | 2 | 1 | 2 |
| PagoNxt Merchant Solutions India Private Limited | India | 0.00% | 100.00% | 100.00% | 100.00% | Financial services | 1 | 0 | 1 |
| PagoNxt Merchant Solutions, S.L. | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Holding company | 1,098 | (93) | 1,175 |
| PagoNxt One Trade UK Ltd | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Financial services | 0 | 0 | 0 |
| PagoNxt OneTrade España, E.D.E., S.L. | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Financial services | 2 | (1) | 1 |
| PagoNxt Payments Platform México, S.A. de C.V. | Mexico | 0.00% | 100.00% | 100.00% | — | IT services | 0 | 0 | 0 |
| PagoNxt Solutions, S.L. | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Payment services | 36 | (16) | 21 |
| Pagonxt Trade Brasil Ltda. | Brazil | 0.00% | 100.00% | 100.00% | — | Financial services | 0 | 0 | 0 |
| PagoNxt Trade Chile SpA | Chile | 0.00% | 100.00% | 100.00% | — | Services | 0 | 0 | 0 |
| PagoNxt Trade Services, S.L. | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Services | 231 | (87) | 144 |
| PagoNxt Trade, S.L. | Spain | 0.00% | 100.00% | 100.00% | 100.00% | IT services | 277 | (101) | 180 |
| PagoNxt, S.L. | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Holding company | 2,289 | (229) | 2,616 |
| Parasant SA | Switzerland | 100.00% | 0.00% | 100.00% | 100.00% | Holding company | 1,212 | (3) | 969 |
| Paytec Logística e Armazém Ltda. | Brazil | 0.00% | 97.10% | 100.00% | 100.00% | Logistic services | 0 | 0 | 0 |
| Paytec Tecnologia em Pagamentos Ltda. | Brazil | 0.00% | 97.10% | 100.00% | 100.00% | Commerce | 3 | 2 | 5 |

Subsidiaries of Banco Santander, S.A. ¹

| Company | Location | % of ownership held by Banco Santander | | Percentage of voting power (k) | | | EUR million (a) | | |
|---|----------------|--|----------|--------------------------------|-----------|-------------------------|--------------------|-------------|-----------------|
| | | Direct | Indirect | Year 2022 | Year 2021 | Activity | Capital + reserves | Net results | Carrying amount |
| PBD Germany Auto 2018 UG (Haftungsbeschränkt) (j) | 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 | 117 | 0 | 117 |
| Pereda Gestión, S.A. | Spain | 99.99% | 0.01% | 100.00% | 100.00% | Securities brokerage | 52 | 11 | 4 |
| Phoenix C1 Aviation Designated Activity Company | Ireland | — | (b) | — | — | Renting | 18 | 1 | 0 |
| Phoenix S.A. | Uruguay | 0.00% | 100.00% | 100.00% | 100.00% | Payment methods | 0 | 0 | 4 |
| Pierpont Advisory Management LLC | United States | 0.00% | 100.00% | 100.00% | — | Administrative services | 0 | 0 | 0 |
| Pierpont Capital Holdings LLC | United States | 0.00% | 100.00% | 100.00% | — | Holding company | 301 | (57) | 244 |
| Pierpont Financial Services LLC | United States | 0.00% | 100.00% | 100.00% | — | Financial services | (3) | 0 | 0 |
| 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% | 90.28% | 100.00% | 100.00% | Investment fund | 22 | (2) | 16 |
| PSA Bank Deutschland GmbH | Germany | 0.00% | 50.00% | 50.00% | 50.00% | Banking | 497 | 47 | 229 |
| PSA Banque France | France | 0.00% | 50.00% | 50.00% | 50.00% | Banking | 1,142 | 62 | 881 |
| 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% | 100.00% | Finance company | 95 | 14 | 47 |
| PSA Finance Polska Sp. z o.o. | Poland | 0.00% | 40.22% | 50.00% | 50.00% | Finance company | 38 | 5 | 10 |
| PSA Finance UK Limited | United Kingdom | 0.00% | 50.00% | 100.00% | 100.00% | Finance company | 323 | 28 | 159 |
| PSA Financial Services Nederland B.V. | Netherlands | 0.00% | 50.00% | 100.00% | 100.00% | Finance company | 58 | 18 | 26 |
| PSA Financial Services Spain, E.F.C., S.A. | Spain | 0.00% | 50.00% | 50.00% | 50.00% | Finance company | 684 | 60 | 363 |
| PSA Renting Italia S.p.A. | Italy | 0.00% | 50.00% | 100.00% | 100.00% | Renting | 13 | 12 | 3 |
| Punta Lima Wind Farm, LLC | United States | 0.00% | 100.00% | 100.00% | 100.00% | Renewable energies | 45 | (6) | 39 |
| Punta Lima, LLC | United States | 0.00% | 100.00% | 100.00% | 100.00% | Leasing | 45 | (6) | 39 |
| Retail Company 2021, S.L. Unipersonal | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Real estate | 259 | (4) | 255 |
| Retop S.A. (f) | Uruguay | 100.00% | 0.00% | 100.00% | 100.00% | Finance company | 19 | 7 | 61 |
| Return Capital S.A. | Brazil | 0.00% | 90.28% | 100.00% | 100.00% | Collection services | 1,131 | 12 | 1,031 |
| Riemersma Leasing B.V. | Netherlands | 0.00% | 100.00% | 100.00% | — | Renting | 7 | 2 | 21 |
| 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 | (4) | (1) | 0 |
| Roc Shipping One Designated Activity Company | Ireland | — | (b) | — | — | Renting | (4) | 0 | 0 |
| Rojo Entretenimento S.A. | Brazil | 0.00% | 85.41% | 94.60% | 94.60% | Real estate | 23 | 2 | 21 |
| SAFO Alternative Lending, S.L. Unipersonal | Spain | 0.00% | 100.00% | 100.00% | — | Finance company | 0 | 0 | 0 |

Subsidiaries of Banco Santander, S.A. ¹

| Company | Location | % of ownership held by Banco Santander | | Percentage of voting power (k) | | | EUR million (a) | | |
|---|----------------|--|----------|--------------------------------|-----------|------------------------------------|--------------------|-------------|-----------------|
| | | Direct | Indirect | Year 2022 | Year 2021 | Activity | Capital + reserves | Net results | Carrying amount |
| SALCO, Servicios de Seguridad Santander, S.A. | Spain | 99.99% | 0.01% | 100.00% | 100.00% | Security | 2 | 0 | 1 |
| 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 | 35 | 26 | 188 |
| SAM Investment Holdings, S.L. | Spain | 92.37% | 7.63% | 100.00% | 100.00% | Holding Company | 1,373 | 92 | 1,597 |
| SANB Promotora de Vendas e Cobrança S.A. | Brazil | 0.00% | 90.28% | 100.00% | 100.00% | Finance company | 3 | (3) | 0 |
| Sancap Investimentos e Participações S.A. | Brazil | 0.00% | 90.28% | 100.00% | 100.00% | Holding company | 125 | 112 | 192 |
| 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 Asesorías Financieras Limitada | Chile | 0.00% | 67.44% | 100.00% | 100.00% | Financial advisory | 58 | 5 | 43 |
| Santander Asset Finance (December) Limited | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Leasing | 74 | 4 | 0 |
| Santander Asset Finance Opportunities | Luxembourg | 100.00% | 0.00% | 100.00% | — | Investment fund | 42 | 0 | 42 |
| Santander Asset Finance plc | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Leasing | 282 | 18 | 164 |
| Santander Asset Management - S.G.O.I.C., S.A. | Portugal | 0.00% | 100.00% | 100.00% | 100.00% | Fund management company | 9 | 4 | 12 |
| Santander Asset Management Chile S.A. | Chile | 0.00% | 100.00% | 100.00% | 100.00% | Securities Investment | 0 | 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 | 3 | 12 | 132 |
| Santander Asset Management UK Holdings Limited | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Holding company | 221 | 14 | 186 |
| Santander Asset Management UK Limited | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Management of funds and portfolios | 40 | 8 | 157 |
| Santander Asset Management, S.A., S.G.I.I.C. | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Fund management company | 260 | 52 | 393 |
| Santander Auto Lease Titling Ltd. | United States | 0.00% | 100.00% | 100.00% | — | Leasing | 0 | 0 | 0 |
| Santander Back-Offices Globales Mayoristas, S.A. | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Services | 2 | 0 | 1 |
| Santander Banca de Inversión Colombia, S.A.S. | Colombia | 100.00% | 0.00% | 100.00% | 100.00% | Advisory services | 1 | 0 | 2 |
| Santander Bank & Trust Ltd. | Bahamas | 0.00% | 100.00% | 100.00% | 100.00% | Banking | 374 | 3 | 332 |
| Santander Bank Polska S.A. | Poland | 67.41% | 0.00% | 67.41% | 67.41% | Banking | 5,091 | 523 | 4,361 |
| Santander Bank, National Association | United States | 0.00% | 100.00% | 100.00% | 100.00% | Banking | 10,201 | 276 | 10,475 |
| Santander Brasil Administradora de Consórcio Ltda. | Brazil | 0.00% | 90.28% | 100.00% | 100.00% | Services | 179 | 77 | 232 |
| Santander Brasil Gestão de Recursos Ltda. | Brazil | 0.08% | 99.92% | 100.00% | 100.00% | Securities Investment | 445 | 39 | 520 |
| Santander Capital Structuring, S.A. de C.V. | Mexico | 0.00% | 100.00% | 100.00% | 100.00% | Investment Company | 13 | (1) | 0 |
| Santander Capitalização S.A. | Brazil | 0.00% | 90.28% | 100.00% | 100.00% | Insurance | (17) | 92 | 67 |
| Santander Cards Ireland Limited | Ireland | 0.00% | 100.00% | 100.00% | 100.00% | Cards | (8) | 0 | 0 |

Subsidiaries of Banco Santander, S.A. ¹

| Company | Location | % of ownership held by Banco Santander | | Percentage of voting power (k) | | | EUR million (a) | | |
|--|----------------|--|----------|--------------------------------|-----------|-------------------|--------------------|-------------|-----------------|
| | | Direct | Indirect | Year 2022 | Year 2021 | Activity | Capital + reserves | Net results | Carrying amount |
| Santander Cards Limited | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Cards | 95 | 0 | 95 |
| Santander Cards UK Limited | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 154 | 2 | 109 |
| Santander Chile Holding S.A. | Chile | 22.11% | 77.75% | 99.86% | 99.84% | Holding company | 1,579 | 271 | 1,522 |
| Santander Consulting (Beijing) Co., Ltd. | China | 0.00% | 100.00% | 100.00% | 100.00% | Advisory services | 9 | 1 | 4 |
| Santander Consumer (UK) plc | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 947 | 146 | 294 |
| Santander Consumer Auto Receivables Funding 2013-B2 LLC | United States | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | (88) | 84 | 0 |
| Santander Consumer Auto Receivables Funding 2018-L1 LLC | United States | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 273 | 22 | 0 |
| Santander Consumer Auto Receivables Funding 2018-L3 LLC | United States | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 119 | 20 | 0 |
| Santander Consumer Auto Receivables Funding 2018-L5 LLC | United States | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 161 | 31 | 0 |
| Santander Consumer Auto Receivables Funding 2019-B1 LLC | United States | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 53 | 85 | 0 |
| Santander Consumer Auto Receivables Funding 2020-B1 LLC | United States | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | (18) | 33 | 0 |
| Santander Consumer Auto Receivables Funding 2020-L1 LLC | United States | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 117 | 10 | 0 |
| Santander Consumer Auto Receivables Funding 2020-L2 LLC | United States | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 18 | 9 | 0 |
| Santander Consumer Auto Receivables Funding 2022-B1 LLC | United States | 0.00% | 100.00% | 100.00% | — | Finance company | 0 | (134) | 0 |
| Santander Consumer Auto Receivables Funding 2022-B2 LLC | United States | 0.00% | 100.00% | 100.00% | — | Finance company | 0 | (162) | 0 |
| Santander Consumer Auto Receivables Funding 2022-B3 LLC | United States | 0.00% | 100.00% | 100.00% | — | Finance company | 0 | (267) | 0 |
| Santander Consumer Auto Receivables Funding 2022-B4 LLC | United States | 0.00% | 100.00% | 100.00% | — | Finance company | 0 | (183) | 0 |
| Santander Consumer Auto Receivables Funding 2022-B5 LLC | United States | 0.00% | 100.00% | 100.00% | — | Inactive | 0 | 0 | 0 |
| Santander Consumer Auto Receivables Grantor Trust 2021-D | United States | 0.00% | 100.00% | 100.00% | 100.00% | Inactive | 0 | 0 | 0 |
| Santander Consumer Auto Receivables Trust 2021-D | United States | 0.00% | 100.00% | 100.00% | 100.00% | Inactive | 0 | 0 | 0 |
| Santander Consumer Bank AG | Germany | 0.00% | 100.00% | 100.00% | 100.00% | Banking | 3,313 | 469 | 5,070 |
| Santander Consumer Bank AS | Norway | 0.00% | 100.00% | 100.00% | 100.00% | Banking | 2,403 | 211 | 2,251 |
| Santander Consumer Bank GmbH | Austria | 0.00% | 100.00% | 100.00% | 100.00% | Banking | 424 | 58 | 363 |
| Santander Consumer Bank S.A. | Poland | 0.00% | 80.44% | 100.00% | 100.00% | Banking | 744 | 77 | 478 |
| Santander Consumer Bank S.p.A. | Italy | 0.00% | 100.00% | 100.00% | 100.00% | Banking | 833 | 92 | 603 |
| Santander Consumer Credit Services Limited | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | (37) | 0 | 0 |
| Santander Consumer Finance Global Services, S.L. | Spain | 0.00% | 100.00% | 100.00% | 100.00% | IT | 6 | 3 | 5 |
| Santander Consumer Finance Inc. | Canada | 100.00% | 0.00% | 100.00% | 96.42% | Holding company | 91 | 0 | 140 |
| Santander Consumer Finance Limitada | Chile | 49.00% | 34.24% | 100.00% | 100.00% | Finance company | 88 | 23 | 52 |
| Santander Consumer Finance Oy | Finland | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 368 | 49 | 163 |
| Santander Consumer Finance Schweiz AG | Switzerland | 0.00% | 100.00% | 100.00% | 100.00% | Leasing | 56 | 10 | 60 |
| Santander Consumer Finance, S.A. | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Banking | 9,328 | 852 | 10,025 |
| Santander Consumer Financial Solutions Sp. z o.o. | Poland | 0.00% | 80.44% | 100.00% | 100.00% | Leasing | 2 | (1) | 2 |
| Santander Consumer Finanse Sp. z o.o. w likwidacji (j) | Poland | 0.00% | 80.44% | 100.00% | 100.00% | Services | 15 | 0 | 12 |

Subsidiaries of Banco Santander, S.A. ¹

| Company | Location | % of ownership held by Banco Santander | | Percentage of voting power (k) | | | EUR million (a) | | |
|--|---------------|--|----------|--------------------------------|-----------|---------------------|--------------------|-------------|-----------------|
| | | Direct | Indirect | Year 2022 | Year 2021 | Activity | Capital + reserves | Net results | Carrying amount |
| Santander Consumer Holding Austria GmbH | Austria | 0.00% | 100.00% | 100.00% | 100.00% | Holding company | 364 | 0 | 518 |
| Santander Consumer Holding GmbH | Germany | 0.00% | 100.00% | 100.00% | 100.00% | Holding company | 5,564 | 317 | 6,077 |
| Santander Consumer Inc. | Canada | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 82 | 13 | 48 |
| Santander Consumer Leasing GmbH | Germany | 0.00% | 100.00% | 100.00% | 100.00% | Leasing | 70 | 93 | 151 |
| Santander Consumer Mobility Services, S.A. | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Renting | 12 | (4) | 12 |
| Santander Consumer Multirent Sp. z o.o. | Poland | 0.00% | 80.44% | 100.00% | 100.00% | Leasing | 58 | 5 | 26 |
| Santander Consumer Operations Services GmbH | Germany | 0.00% | 100.00% | 100.00% | 100.00% | Services | 12 | 1 | 18 |
| Santander Consumer Receivables 10 LLC | United States | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 1,113 | (1) | 0 |
| Santander Consumer Receivables 11 LLC | United States | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 653 | (95) | 0 |
| Santander Consumer Receivables 15 LLC | United States | 0.00% | 100.00% | 100.00% | — | Finance company | 0 | (71) | 0 |
| Santander Consumer Receivables 16 LLC | United States | 0.00% | 100.00% | 100.00% | — | Finance company | 0 | (48) | 0 |
| Santander Consumer Receivables 17 LLC | United States | 0.00% | 100.00% | 100.00% | — | Inactive | 0 | 0 | 0 |
| Santander Consumer Receivables 3 LLC | United States | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 397 | 5 | 0 |
| Santander Consumer Receivables 7 LLC | United States | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 713 | (211) | 0 |
| Santander Consumer Receivables Funding LLC | United States | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 4 | 2 | 0 |
| Santander Consumer Renting S.r.l. | Italy | 0.00% | 100.00% | 100.00% | — | Renting | 4 | (1) | 4 |
| Santander Consumer Renting, S.L. | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Renting | 38 | 3 | 38 |
| Santander Consumer S.A. | Argentina | 0.00% | 99.82% | 100.00% | 100.00% | Finance company | 18 | (3) | 15 |
| Santander Consumer S.A. Compañía de Financiamiento | Colombia | 79.02% | 20.98% | 100.00% | 100.00% | Finance company | 22 | (1) | 23 |
| 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 | 13 | 1 | 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 Spain Auto 2022-1, 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 | 24 | 3 | 22 |
| Santander Consumer USA Holdings Inc. | United States | 0.00% | 100.00% | 100.00% | 80.22% | Holding company | 3,816 | 1,203 | 6,067 |
| Santander Consumer USA Inc. | United States | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 4,300 | 1,007 | 5,307 |
| 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 | 1,490 | 312 | 1,734 |
| Santander Corredora de Seguros Limitada | Chile | 0.00% | 67.21% | 100.00% | 100.00% | Insurance brokerage | 78 | 9 | 59 |
| Santander Corredores de Bolsa Limitada | Chile | 0.00% | 83.24% | 100.00% | 100.00% | Securities company | 52 | 4 | 46 |
| Santander Corretora de Câmbio e Valores Mobiliários S.A. | Brazil | 0.00% | 90.28% | 100.00% | 100.00% | Securities company | 142 | 22 | 148 |

Subsidiaries of Banco Santander, S.A. ¹

| Company | Location | % of ownership held by Banco Santander | | Percentage of voting power (k) | | | EUR million (a) | | |
|---|----------------|--|----------|--------------------------------|-----------|-------------------------|--------------------|-------------|-----------------|
| | | Direct | Indirect | Year 2022 | Year 2021 | Activity | Capital + reserves | Net results | Carrying amount |
| Santander Corretora de Seguros, Investimentos e Serviços S.A. | Brazil | 0.00% | 90.28% | 100.00% | 100.00% | Insurance brokerage | 816 | 250 | 960 |
| Santander Customer Voice, S.A. | Spain | 99.50% | 0.50% | 100.00% | 100.00% | Services | 2 | 0 | 2 |
| 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 Distribuidora de Títulos e Valores Mobiliários S.A. | Brazil | 0.00% | 90.28% | 100.00% | 100.00% | Securities company | 100 | (17) | 75 |
| Santander Drive Auto Receivables Grantor Trust 2022-A | United States | 0.00% | 100.00% | 100.00% | — | Inactive | 0 | 0 | 0 |
| Santander Drive Auto Receivables LLC | United States | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 0 | 0 | 0 |
| Santander Drive Auto Receivables Trust 2019-1 | United States | — | (b) | — | — | Securitization | 46 | 24 | 0 |
| Santander Drive Auto Receivables Trust 2019-2 | United States | — | (b) | — | — | Securitization | 60 | 35 | 0 |
| Santander Drive Auto Receivables Trust 2019-3 | United States | — | (b) | — | — | Securitization | 50 | 39 | 0 |
| Santander Drive Auto Receivables Trust 2020-1 | United States | — | (b) | — | — | Securitization | 24 | 58 | 0 |
| Santander Drive Auto Receivables Trust 2020-2 | United States | — | (b) | — | — | Securitization | 47 | 76 | 0 |
| Santander Drive Auto Receivables Trust 2020-3 | United States | — | (b) | — | — | Securitization | 32 | 114 | 0 |
| Santander Drive Auto Receivables Trust 2020-4 | United States | — | (b) | — | — | Securitization | (9) | 101 | 0 |
| Santander Drive Auto Receivables Trust 2021-1 | United States | — | (b) | — | — | Securitization | (46) | 138 | 0 |
| Santander Drive Auto Receivables Trust 2021-2 | United States | — | (b) | — | — | Securitization | (171) | 196 | 0 |
| Santander Drive Auto Receivables Trust 2021-3 | United States | — | (b) | — | — | Securitization | (279) | 259 | 0 |
| Santander Drive Auto Receivables Trust 2021-4 | United States | — | (b) | — | — | Securitization | (288) | 199 | 0 |
| Santander Drive Auto Receivables Trust 2022-1 | United States | — | (b) | — | — | Securitization | 0 | (139) | 0 |
| Santander Drive Auto Receivables Trust 2022-2 | United States | — | (b) | — | — | Securitization | 0 | (193) | 0 |
| Santander Drive Auto Receivables Trust 2022-3 | United States | — | (b) | — | — | Securitization | 0 | (195) | 0 |
| Santander Drive Auto Receivables Trust 2022-4 | United States | — | (b) | — | — | Securitization | 0 | (267) | 0 |
| Santander Drive Auto Receivables Trust 2022-5 | United States | — | (b) | — | — | Securitization | 0 | (314) | 0 |
| Santander Drive Auto Receivables Trust 2022-6 | United States | — | (b) | — | — | Securitization | 0 | (323) | 0 |
| Santander Drive Auto Receivables Trust 2022-7 | United States | — | (b) | — | — | Securitization | 0 | (156) | 0 |
| Santander Drive Auto Receivables Trust 2022-A | United States | — | (b) | — | — | Inactive | 0 | 0 | 0 |
| Santander Drive Auto Receivables Trust 2023-1 | United States | — | (b) | — | — | Inactive | 0 | 0 | 0 |
| Santander Equity Investments Limited | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 28 | 6 | 33 |
| 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 | (6) | (1) | 0 |
| Santander European Hospitality Opportunities | Luxembourg | 100.00% | 0.00% | 100.00% | 100.00% | Investment fund | 23 | (4) | 20 |
| Santander F24 S.A. | Poland | 0.00% | 67.41% | 100.00% | 100.00% | Finance company | 2 | 0 | 2 |

Subsidiaries of Banco Santander, S.A. ¹

| Company | Location | % of ownership held by Banco Santander | | Percentage of voting power (k) | | | EUR million (a) | | |
|--|----------------|--|----------|--------------------------------|-----------|--------------------|--------------------|-------------|-----------------|
| | | Direct | Indirect | Year 2022 | Year 2021 | Activity | Capital + reserves | Net results | Carrying amount |
| Santander Facility Management España, S.L. Unipersonal | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Real estate | 415 | (1) | 392 |
| Santander Factoring S.A. | Chile | 0.00% | 99.86% | 100.00% | 100.00% | Factoring | 8 | 1 | 15 |
| Santander Factoring Sp. z o.o. | Poland | 0.00% | 67.41% | 100.00% | 100.00% | Financial services | 37 | 11 | 1 |
| Santander Factoring y Confirming, S.A. Unipersonal, E.F.C. | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Factoring | 208 | 73 | 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 | 351 | 45 | 436 |
| Santander Financiamientos S.A. | Peru | 100.00% | 0.00% | 100.00% | 100.00% | Finance company | 18 | (4) | 15 |
| Santander Financing S.A.S. | Colombia | 100.00% | 0.00% | 100.00% | 100.00% | Financial advisory | 0 | (1) | 0 |
| Santander Finanse Sp. z o.o. | Poland | 0.00% | 67.41% | 100.00% | 100.00% | Financial services | 66 | 7 | 19 |
| Santander Fintech Holdings, S.L. | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Holding company | 327 | (13) | 357 |
| Santander Fintech Limited | United Kingdom | 100.00% | 0.00% | 100.00% | 100.00% | Finance company | (21) | 22 | 0 |
| Santander Fundo de Investimento Santillana Multimercado Crédito Privado Investimento No Exterior (e) | Brazil | — | (b) | — | — | Investment fund | 455 | 23 | 478 |
| Santander Fundo de Investimento SBAC Referenciado di Crédito Privado (h) | Brazil | 0.00% | 90.28% | 100.00% | 100.00% | Investment fund | 1,638 | 187 | 1,586 |
| Santander Gestión de Recaudación y Cobranzas Ltda. | Chile | 0.00% | 99.86% | 100.00% | 100.00% | Financial services | 6 | 2 | 8 |
| Santander Global Cards & Digital Solutions Brasil S.A. | Brazil | 0.00% | 100.00% | 100.00% | 100.00% | IT consulting | 36 | (1) | 40 |
| Santander Global Cards & Digital Solutions, S.L. | Spain | 100.00% | 0.00% | 100.00% | 100.00% | IT services | 25 | (4) | 17 |
| 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% | Services | 143 | 5 | 152 |
| Santander Global Services S.A. (j) | Uruguay | 0.00% | 100.00% | 100.00% | 100.00% | Services | 0 | 0 | 0 |
| Santander Global Services, S.L. | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Real estate | 393 | (1) | 394 |
| Santander Global Sport, S.A. | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Sports activity | 19 | (2) | 18 |
| Santander Global Technology and Operations Brasil Ltda. | Brazil | 0.00% | 100.00% | 100.00% | 100.00% | IT services | 4 | 0 | 1 |
| Santander Global Technology and Operations Chile Limitada | Chile | 0.00% | 100.00% | 100.00% | 100.00% | IT services | 21 | 2 | 20 |
| Santander Global Technology and Operations, S.L. Unipersonal | Spain | 100.00% | 0.00% | 100.00% | 100.00% | IT services | 454 | 36 | 438 |
| Santander Green Investment, S.L. | Spain | 99.97% | 0.03% | 100.00% | 100.00% | Holding company | 32 | 0 | 32 |
| Santander Guarantee Company | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Leasing | 4 | 0 | 3 |
| 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% | 90.28% | 100.00% | 100.00% | Real estate | 81 | 4 | 77 |
| Santander Holding Internacional, S.A. | Spain | 99.95% | 0.05% | 100.00% | 100.00% | Holding company | 4,057 | 67 | 2,432 |

Subsidiaries of Banco Santander, S.A. ¹

| Company | Location | % of ownership held by Banco Santander | | Percentage of voting power (k) | | | EUR million (a) | | |
|---|----------------|--|----------|--------------------------------|-----------|------------------------------------|--------------------|-------------|-----------------|
| | | Direct | Indirect | Year 2022 | Year 2021 | Activity | Capital + reserves | Net results | Carrying amount |
| Santander Holdings USA, Inc. | United States | 100.00% | 0.00% | 100.00% | 100.00% | Holding company | 15,477 | 1,316 | 13,468 |
| 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 Innoenergy Climate VC I, S.C.R., S.A. (i) | Spain | 0.00% | 100.00% | 100.00% | — | Inactive | — | — | — |
| Santander Innoenergy Climate VC II, S.C.R., S.A. (i) | Spain | 0.00% | 100.00% | 100.00% | — | Inactive | — | — | — |
| 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 | 42 | 1 | 43 |
| Santander Intermediación Correduría de Seguros, S.A. | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Insurance brokerage | 26 | 3 | 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 | 1,237 | 198 | 1,032 |
| Santander Investment Bank Limited | Bahamas | 0.00% | 100.00% | 100.00% | 100.00% | Banking | 468 | 5 | 583 |
| Santander Investment Chile Limitada | Chile | 0.00% | 100.00% | 100.00% | 100.00% | Finance company | 508 | 41 | 321 |
| Santander Investment Securities Inc. | United States | 0.00% | 100.00% | 100.00% | 100.00% | Securities company | 517 | (2) | 516 |
| Santander Investment, S.A. | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Banking | 1,309 | 8 | 245 |
| Santander Investments GP 1 S.à.r.l. | Luxembourg | 0.00% | 100.00% | 100.00% | 100.00% | Fund management company | 1 | 0 | 1 |
| Santander Inwestycje Sp. z o.o. | Poland | 0.00% | 67.41% | 100.00% | 100.00% | Securities company | 20 | 0 | 7 |
| Santander ISA Managers Limited | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Management of funds and portfolios | 43 | 5 | 6 |
| Santander Lease, S.A., E.F.C. | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Leasing | 61 | 7 | 51 |
| Santander Leasing Poland Securitization 01 Designated Activity Company (j) | Ireland | — | (b) | — | — | Securitization | 0 | 0 | 0 |
| Santander Leasing S.A. | Poland | 0.00% | 67.41% | 100.00% | 100.00% | Leasing | 152 | 15 | 36 |
| Santander Leasing S.A. Arrendamento Mercantil | Brazil | 0.00% | 90.28% | 100.00% | 100.00% | Leasing | 1,964 | 101 | 1,864 |
| Santander Leasing, LLC | United States | 0.00% | 100.00% | 100.00% | 100.00% | Leasing | 2 | (1) | 1 |
| Santander Lending Limited | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00% | Mortgage credit company | 239 | 8 | 234 |
| Santander Mediación Operador de Banca-Seguros Vinculado, S.A. | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Insurance intermediary | 50 | 1 | 3 |
| Santander Merchant Platform Operations, S.A. de C.V. | Mexico | 0.00% | 98.16% | 100.00% | 100.00% | Financial services | 2 | 0 | 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 | 148 | 32 | 150 |
| Santander Merchant Platform Solutions Uruguay S.A. | Uruguay | 0.00% | 100.00% | 100.00% | 100.00% | Payment methods | 8 | (3) | 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% | Holding company | (23) | 1 | 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 2022 | Year 2021 | | Capital + reserves | Net results | Carrying amount |
| Santander Paraty Qif PLC | Ireland | 0.00% | 90.28% | 100.00% | 100.00% | Investment Company | (39) | 414 | 381 |
| Santander Pensiones, S.A., E.G.F.P. | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Pension fund management company | 85 | 14 | 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 | (4) | 2 | 0 |
| Santander Prime Auto Issuance Notes 2018-B Designated Activity Company | Ireland | — | (b) | — | — | Securitization | (31) | (7) | 0 |
| Santander Prime Auto Issuance Notes 2018-C Designated Activity Company | Ireland | — | (b) | — | — | Securitization | (7) | (1) | 0 |
| Santander Prime Auto Issuance Notes 2018-D Designated Activity Company | Ireland | — | (b) | — | — | Securitization | (28) | (11) | 0 |
| Santander Prime Auto Issuance Notes 2018-E Designated Activity Company | Ireland | — | (b) | — | — | Securitization | (15) | (6) | 0 |
| Santander Private Banking Gestión, S.A., S.G.I.I.C. | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Fund management company | 64 | 10 | 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 | 288 | 338 | 392 |
| 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 | 15 | 1 | 16 |
| 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% | 100.00% | 100.00% | 100.00% | Finance company | 0 | 0 | 0 |
| Santander Retail Auto Lease Trust 2020-A | United States | — | (b) | — | — | Securitization | 87 | 30 | 0 |
| Santander Retail Auto Lease Trust 2020-B | United States | — | (b) | — | — | Securitization | 70 | 43 | 0 |
| Santander Retail Auto Lease Trust 2021-A | United States | — | (b) | — | — | Securitization | 67 | 53 | 0 |
| Santander Retail Auto Lease Trust 2021-B | United States | — | (b) | — | — | Securitization | 67 | 52 | 0 |
| Santander Retail Auto Lease Trust 2021-C | United States | — | (b) | — | — | Securitization | 93 | 48 | 0 |
| Santander Retail Auto Lease Trust 2022-A | United States | — | (b) | — | — | Securitization | 0 | 14 | 0 |
| Santander Retail Auto Lease Trust 2022-B | United States | — | (b) | — | — | Securitization | 0 | 22 | 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 | (1) | 32 | 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 | 16 | 8 | 3 |
| Santander RMBS 6, Fondo de Titulización | Spain | — | (b) | — | — | Securitization | 0 | 0 | 0 |
| Santander S.A. Sociedad Securitizadora | Chile | 0.00% | 67.25% | 100.00% | 100.00% | Fund management company | 1 | 0 | 1 |

Subsidiaries of Banco Santander, S.A. ¹

| Company | Location | % of ownership held by Banco Santander | | Percentage of voting power (k) | | | EUR million (a) | | |
|--|----------------|--|----------|--------------------------------|-----------|-------------------------|--------------------|-------------|-----------------|
| | | Direct | Indirect | Year 2022 | Year 2021 | Activity | Capital + reserves | Net results | Carrying amount |
| 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 | 27 | (2) | 26 |
| Santander Seguros y Reaseguros, Compañía Aseguradora, S.A. | Spain | 100.00% | 0.00% | 100.00% | 100.00 % | Insurance | 1,473 | 128 | 1,188 |
| Santander Servicios Corporativos, S.A. de C.V. | Mexico | 0.00% | 96.24% | 100.00% | 100.00 % | Services | 12 | 0 | 12 |
| 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 | 73 | (11) | 62 |
| Santander Tecnología Argentina S.A. | Argentina | 0.00% | 99.83% | 100.00% | 100.00 % | IT services | 7 | 7 | 10 |
| Santander Tecnología México, S.A. de C.V. | Mexico | 0.00% | 96.24% | 100.00% | 100.00 % | IT services | 52 | 0 | 50 |
| Santander Totta Seguros, Companhia de Seguros de Vida, S.A. | Portugal | 0.00% | 99.91% | 100.00% | 100.00 % | Insurance | 92 | 15 | 47 |
| Santander Totta, SGPS, S.A. | Portugal | 99.91% | 0.00% | 99.91% | 99.91 % | Holding company | 3,008 | 1,508 | 5,352 |
| Santander Towarzystwo Funduszy Inwestycyjnych S.A. | Poland | 50.00% | 33.70% | 100.00% | 100.00 % | Fund management company | 4 | 16 | 10 |
| Santander Trade Services Limited | Hong-Kong | 0.00% | 100.00% | 100.00% | 100.00 % | Inactive | 24 | 2 | 16 |
| Santander Trust S.A. | Argentina | 0.00% | 99.99% | 100.00% | 100.00 % | Services | 0 | 0 | 0 |
| Santander UK Group Holdings plc | United Kingdom | 77.67% | 22.33% | 100.00% | 100.00 % | Holding company | 13,935 | 1,359 | 17,015 |
| Santander UK Investments | United Kingdom | 100.00% | 0.00% | 100.00% | 100.00 % | Finance company | 48 | (2) | 45 |
| Santander UK Operations Limited | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00 % | Finance company | 7 | 0 | 17 |
| Santander UK plc | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00 % | Banking | 13,075 | 956 | 14,913 |
| Santander UK Technology Limited | United Kingdom | 0.00% | 100.00% | 100.00% | 100.00 % | IT services | 40 | 1 | 6 |
| Santander Valores S.A. | Argentina | 5.10% | 94.73% | 100.00% | 100.00 % | Securities company | 4 | 0 | 4 |
| Santander Wealth Management International SA, en liquidation (j) | Switzerland | 0.00% | 100.00% | 100.00% | 100.00 % | Inactive | 0 | 0 | 0 |
| Santusa Holding, S.L. | Spain | 69.76% | 30.24% | 100.00% | 100.00 % | Holding company | 8,940 | 273 | 6,504 |
| SC Austria Consumer Loan 2021 Designated Activity Company | Ireland | — | (b) | — | — | Securitization | 0 | 0 | 0 |
| SC Austria Finance 2020-1 Designated Activity Company | Ireland | — | (b) | — | — | Securitization | 0 | 0 | 0 |
| SC Germany Auto 2014-2 UG (haftungsbeschränkt) (j) | 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) (j) | Germany | — | (b) | — | — | Securitization | 0 | 0 | 0 |
| SC Germany Auto 2019-1 UG (haftungsbeschränkt) | Germany | — | (b) | — | — | Securitization | 0 | 0 | 0 |
| SC Germany Consumer 2014-1 UG (haftungsbeschränkt) (j) | 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 |

Subsidiaries of Banco Santander, S.A. ¹

| Company | Location | % of ownership held by Banco Santander | | Percentage of voting power (k) | | | EUR million (a) | | |
|--|----------------|--|----------|--------------------------------|-----------|------------------------|--------------------|-------------|-----------------|
| | | Direct | Indirect | Year 2022 | Year 2021 | Activity | Capital + reserves | Net results | Carrying amount |
| 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 Consumer 2022-1 | 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) (j) | Germany | — | (b) | — | — | Securitization | 0 | 0 | 0 |
| SC Germany Vehicles 2015-1 UG (haftungsbeschränkt) (j) | Germany | — | (b) | — | — | Securitization | 0 | 0 | 0 |
| SC Poland Consumer 23-1 Designated Activity Company | Ireland | — | (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 (j) | 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 Ajoneuvohallinto XI 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 | 11 | 0 | 0 |
| SCF Rahoituspalvelut KIMI VI Designated Activity Company (j) | Ireland | — | (b) | — | — | Securitization | 0 | 0 | 0 |
| SCF Rahoituspalvelut VII Designated Activity Company (j) | Ireland | — | (b) | — | — | Securitization | 0 | 0 | 0 |
| SCF Rahoituspalvelut VIII Designated Activity Company | Ireland | — | (b) | — | — | Securitization | 2 | 0 | 0 |
| SCF Rahoituspalvelut X DAC | Ireland | — | (b) | — | — | Securitization | 0 | 0 | 0 |
| SCF Rahoituspalvelut XI Designated Activity Company | 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., Institución de Fondos de Pago Electrónico | Mexico | 0.00% | 100.00% | 100.00% | 100.00% | Payment platform | 4 | (1) | 3 |
| Secur 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 | 64 | 2 | 66 |
| Services and Promotions Miami LLC | United States | 0.00% | 100.00% | 100.00% | 100.00% | Real estate | 57 | 3 | 60 |
| Servicios de Cobranza, Recuperación y Seguimiento, S.A. de C.V. | Mexico | 0.00% | 85.00% | 85.00% | 85.00% | Finance company | 39 | 2 | 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 | 344 | 1 | 345 |

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 2022 | Year 2021 | | Capital + reserves | Net results | Carrying amount |
| Silk Finance No. 5 | Portugal | — | (b) | — | — | Securitization | 9 | 42 | 0 |
| SMPS Merchant Platform Solutions México, S.A de C.V | Mexico | 0.00% | 98.16% | 100.00% | 100.00% | Payments and collection services | 145 | 32 | 173 |
| Sociedad Integral de Valoraciones Automatizadas, S.A. Unipersonal | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Appraisals | 1 | 2 | 1 |
| Sociedad Operadora de Tarjetas de Pago Santander Getnet Chile S.A. | Chile | 0.00% | 67.13% | 100.00% | 100.00% | Payments and collection services | 12 | 4 | 11 |
| Socur S.A. (f) | Uruguay | 100.00% | 0.00% | 100.00% | 100.00% | Finance company | 58 | 13 | 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% | 72.23% | 80.00% | 80.00% | Vehicle rental | 3 | (1) | 1 |
| Sovereign Community Development Company | United States | 0.00% | 100.00% | 100.00% | 100.00% | Holding company | 41 | 1 | 42 |
| Sovereign Delaware Investment Corporation | United States | 0.00% | 100.00% | 100.00% | 100.00% | Holding company | 143 | 4 | 147 |
| Sovereign Lease Holdings, LLC | United States | 0.00% | 100.00% | 100.00% | 100.00% | Financial services | 235 | 1 | 236 |
| Sovereign REIT Holdings, Inc. | United States | 0.00% | 100.00% | 100.00% | 100.00% | Holding company | 8,035 | 159 | 8,194 |
| 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% | 100.00% | Asset management | 1 | 0 | 4 |
| Sterrebeek B.V. | Netherlands | 100.00% | 0.00% | 100.00% | 100.00% | Holding company | 4,771 | 633 | 10,840 |
| Suleyado 2003, S.L. Unipersonal | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Securities Investment | 31 | (1) | 28 |
| Summer Empreendimentos Ltda. | Brazil | 0.00% | 90.28% | 100.00% | 100.00% | Real estate management | 4 | 1 | 4 |
| Superdigital Argentina S.A.U. | Argentina | 0.00% | 100.00% | 100.00% | 100.00% | IT services | 3 | (2) | 2 |
| Superdigital Colombia S.A.S. | Colombia | 0.00% | 100.00% | 100.00% | 100.00% | IT services | 1 | 0 | 0 |
| Superdigital Holding Company, S.L. | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Holding company | 144 | (12) | 132 |
| Superdigital Instituição de Pagamento S.A. | Brazil | 0.00% | 100.00% | 100.00% | 100.00% | Payment services | 46 | (11) | 100 |
| Superdigital Perú S.A.C. | Peru | 0.00% | 100.00% | 100.00% | 100.00% | Financial services | 1 | (1) | 0 |
| Suzuki Servicios Financieros, S.L. | Spain | 0.00% | 51.00% | 51.00% | 51.00% | Intermediation | 12 | 2 | 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 | 63 | 42 | 0 |
| SX Negócios Ltda. | Brazil | 0.00% | 90.28% | 100.00% | 100.00% | Telemarketing | 13 | 2 | 14 |
| SX Tools Soluções e Serviços Compartilhados Ltda. | Brazil | 0.00% | 90.28% | 100.00% | — | Services | 33 | 1 | 31 |
| Tabasco Energía España, S.L. Unipersonal | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Holding company | 1 | 0 | 0 |
| Tagest Sociedade Gestora de Participações Sociais, S.A. | Portugal | 0.00% | 99.87% | 100.00% | 100.00% | Holding company | 56 | 0 | 0 |
| Taxos Luz, S.L. Unipersonal | Spain | 0.00% | 70.00% | 100.00% | — | Renewable energies | 0 | 0 | 9 |
| Teatinos Siglo XXI Inversiones S.A. | Chile | 50.00% | 50.00% | 100.00% | 100.00% | Holding company | 1,869 | 285 | 2,136 |
| 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 | 2 | (1) | 1 |

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 2022 | Year 2021 | | Capital + reserves | Net results | Carrying amount |
| 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 | 45 | (4) | 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% | 56.88% | 63.00% | 60.00% | Securities company | 53 | 1 | 31 |
| Toro Investimentos S.A. | Brazil | 0.00% | 56.88% | 91.32% | 100.00% | Securities company | 38 | 0 | 22 |
| Totta (Ireland), PLC (h) | Ireland | 0.00% | 99.87% | 100.00% | 100.00% | Finance company | 451 | 5 | 450 |
| Totta Urbe - Empresa de Administração e Construções, S.A. | Portugal | 0.00% | 99.87% | 100.00% | 100.00% | Real estate | 98 | (10) | 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 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 | 71 | 3 | 17 |
| Tresmares Santander Direct Lending, SICC, S.A. | Spain | 99.60% | 0.00% | 99.60% | 99.60% | Fund management company | 685 | 19 | 678 |
| 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 | 20 | (5) | 17 |
| 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% | 99.76% | Internet | 0 | 0 | 0 |
| Universia Uruguay, S.A. | Uruguay | 0.00% | 100.00% | 100.00% | 100.00% | Internet | 0 | 0 | 0 |
| Uro Property Holdings, S.A. | Spain | 99.99% | 0.00% | 99.99% | 99.99% | Real estate investment | 178 | (22) | 179 |
| Verbena FCVS - Fundo de Investimentos em Direitos Creditórios (e) | Brazil | — | (b) | — | — | Investment fund | (3) | 3 | 0 |
| Wallcesa, S.A. | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Financial services | (928) | 6 | 0 |
| Wave Holdco, S.L. | Spain | 0.00% | 100.00% | 100.00% | 100.00% | Holding company | 0 | 0 | 0 |
| Waycarbon Soluções Ambientais e Projetos de Carbono S.A. | Brazil | 0.00% | 80.00% | 100.00% | — | Consulting services | 27 | (1) | 21 |

Subsidiaries of Banco Santander, S.A.¹

| Company | Location | % of ownership held by Banco Santander | | Percentage of voting power (k) | | | EUR million (a) | | |
|--|---------------|--|----------|--------------------------------|-----------|-------------------|--------------------|-------------|-----------------|
| | | Direct | Indirect | Year 2022 | Year 2021 | Activity | Capital + reserves | Net results | Carrying amount |
| 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 | 16 | (3) | 9 |

- Amount according to the provisional books of each company as of the date of publication of these annexes, generally referring to 31 December 2022 without considering, where appropriate, interim dividends that have been made during the year. In the book value (net provision cost), the percentage of ownership of the Group has been applied to the figure of each of the holding companies, without considering the impairment of goodwill made in the consolidation process. The data for foreign companies are converted into euros at the exchange rate at the end of the year.
- Companies over which effective control is maintained.
- Data as at 31 December 2021, latest available accounts.
- Data as at 31 March 2022, latest accounts available.
- Data as at 30 June 2022, last accounts available.
- Data as at 30 September 2022, last accounts available.
- Data as at 31 July 2022, last accounts available.
- Data as at 30 November 2022, last accounts available.
- Recently created company, with no available financial information.
- Company in liquidation as at 31 December 2022.
- 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.
- Company resident for tax purposes in Spain.
- Data as of 30 June 2022, latest available accounts.
- Company resident for tax purposes in the United Kingdom.
- Data as at 28 February 2022, last accounts available.
- Companies in liquidation. Pending registration.
- Data as at 30 April 2022, latest available accounts.

(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 2022 | Year 2021 | | | Asset | Capital + reserves | Net results |
| | | | | | | | | | | |
| Abra 1 Limited (k) | Cayman Island | — | (h) | — | — | Leasing | Joint ventures | — | — | — |
| 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% | 13.43% | 20.00% | 20.00% | Payments and collection services | Associated | 67 | 20 | 4 |
| Aegon Santander Portugal Não Vida - Companhia de Seguros, S.A. | Portugal | 0.00% | 48.96% | 49.00% | 49.00% | Insurance | Joint ventures | 64 | 12 | 12 |
| Aegon Santander Portugal Vida - Companhia de Seguros Vida, S.A. | Portugal | 0.00% | 48.96% | 49.00% | 49.00% | Insurance | Joint ventures | 139 | 19 | 20 |
| 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 (b) | United Kingdom | 30.00% | 0.00% | 30.00% | 30.00% | Holding company | Joint ventures | 4 | 4 | 0 |
| Altamira Asset Management, S.A. (consolidado) | Spain | 0.00% | 15.00% | 15.00% | 15.00% | Real estate | — | 171 | 2 | (21) |
| Apolo Fundo de Investimento em Direitos Creditórios | Brazil | 0.00% | 30.09% | 33.33% | 33.33% | Investment fund | Joint ventures | 405 | 343 | 63 |
| Attijariwafa Bank Soci t  Anonyme (consolidado) (b) | Morocco | 0.00% | 5.10% | 5.10% | 5.10% | Banking | — | 53,452 | 4,898 | 461 |
| AutoFi Inc. (b) | United States | 0.00% | 19.75% | 19.75% | — | E-commerce | — | 7 | 7 | (8) |
| Autopistas del Sol S.A. (b) | Argentina | 0.00% | 14.17% | 14.17% | 14.17% | Motorway concession | — | 156 | 77 | (3) |
| Avanath Affordable Housing IV LLC | United States | 0.00% | 7.27% | 7.27% | — | Investment Company | — | 258 | 188 | 1 |
| Banco RCI Brasil S.A. | Brazil | 0.00% | 36.02% | 39.89% | 39.89% | Banking | Joint ventures | 1,945 | 215 | 37 |
| Banco S3 Caceis M xico, S.A., Instituci n de Banca M ltiple | Mexico | 0.00% | 50.00% | 50.00% | 50.00% | Banking | Joint ventures | 244 | 79 | 8 |
| Bank of Beijing Consumer Finance Company | China | 0.00% | 20.00% | 20.00% | 20.00% | Finance company | Associated | 1,430 | 125 | 12 |
| Bank of Shanghai Co., Ltd. (consolidado) (b) | China | 6.54% | 0.00% | 6.54% | 6.54% | Banking | — | 360,213 | 24,944 | 2,993 |
| Bizum, S.L. (b) | Spain | 20.92% | 0.00% | 20.92% | — | Payment services | Associated | 11 | 2 | 1 |
| CACEIS (consolidado) | France | 0.00% | 30.50% | 30.50% | 30.50% | Custody services | Associated | 124,340 | 4,182 | 278 |
| Campo Grande Empreendimentos Ltda. (k) | Brazil | 0.00% | 22.86% | 25.32% | — | Inactive | — | — | — | — |
| Cantabria Capital, SGEIC, S.A. | Spain | 50.00% | 0.00% | 50.00% | 50.00% | Venture capital | Associated | 0 | 0 | 0 |
| Car10 Tecnologia e Informa o S.A. | Brazil | 0.00% | 42.13% | 46.67% | 46.67% | Internet | Joint ventures | 13 | 0 | (2) |
| CCPT - ComprarCasa, Rede Servi os Imobili rios, S.A. | Portugal | 0.00% | 49.98% | 49.98% | 49.98% | Real estate services | Joint ventures | 0 | 0 | 0 |
| Centro de Compensaci n Automatizado S.A. | Chile | 0.00% | 22.38% | 33.33% | 33.33% | Payments and collection services | Associated | 21 | 11 | 5 |
| Centro para el Desarrollo, Investigaci n y Aplicaci n de Nuevas Tecnolog as, S.A. (b) | Spain | 0.00% | 49.00% | 49.00% | 49.00% | Technology | Associated | 3 | 3 | 0 |
| CIP S.A. | Brazil | 0.00% | 16.13% | 17.87% | — | Financial services | Associated | 468 | 354 | 49 |
| CNP Santander Insurance Europe Designated Activity Company | Ireland | 49.00% | 0.00% | 49.00% | 49.00% | Insurance | Associated | 1,075 | 189 | 40 |
| CNP Santander Insurance Life Designated Activity Company | Ireland | 49.00% | 0.00% | 49.00% | 49.00% | Insurance | Associated | 1,226 | 119 | 52 |

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 2022 | Year 2021 | | | Asset | Capital + reserves | Net results |
| CNP Santander Insurance Services Ireland Limited | Ireland | 49.00% | 0.00% | 49.00% | 49.00% | Services | Associated | 26 | 5 | 1 |
| Comder Contraparte Central S.A | Chile | 0.00% | 8.37% | 12.47% | 12.47% | Financial services | Associated | 37 | 11 | 3 |
| Companhia Promotora UCI | Brazil | 0.00% | 25.00% | 25.00% | 25.00% | Financial services | Joint ventures | 1 | 0 | 0 |
| Compañía Española de Financiación de Desarrollo, Cofides, S.A., SME (b) | Spain | 20.18% | 0.00% | 20.18% | 20.18% | Finance company | — | 179 | 152 | 21 |
| 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 | — | 1,078 | 431 | 96 |
| Compañía Española de Viviendas en Alquiler, S.A. | Spain | 24.07% | 0.00% | 24.07% | 24.07% | Real estate | Associated | 556 | 353 | 27 |
| Compañía para los Desarrollos Inmobiliarios de la Ciudad de Hispalis, S.L., en liquidación (d) (e) | Spain | 21.98% | 0.00% | 21.98% | 21.98% | Real estate promotion | — | 38 | (325) | 0 |
| Connecting Visions Ecosystems, S.L. | Spain | 19.90% | 0.00% | 19.90% | 19.90% | Consulting services | Joint ventures | 1 | 1 | (1) |
| Corkfoc Cortiças, S.A. (c) | Portugal | 0.00% | 27.55% | 27.58% | 27.58% | Cork industry | — | 3 | 20 | 0 |
| CSD Central de Serviços de Registro e Depósito Aos Mercados Financeiro e de Capitais S.A. | Brazil | 0.00% | 18.06% | 20.00% | — | Financial services | Associated | 38 | 37 | 0 |
| Desarrollo Eólico las Majas VI, S.L. | Spain | 45.00% | 0.00% | 45.00% | 45.00% | Renewable energies | Joint ventures | 52 | 6 | 1 |
| Energias Renovables de Ormonde 25, S.L. | Spain | 0.00% | 55.00% | 55.00% | 55.00% | Renewable energies | Joint ventures | 1 | 1 | 0 |
| Energias Renovables de Ormonde 26, S.L. | Spain | 0.00% | 55.00% | 55.00% | 55.00% | Renewable energies | Joint ventures | 1 | 1 | 0 |
| Energias Renovables de Ormonde 27, S.L. | Spain | 0.00% | 55.00% | 55.00% | 55.00% | Renewable energies | Joint ventures | 1 | 1 | 0 |
| Energias Renovables de Ormonde 30, S.L. | Spain | 0.00% | 55.00% | 55.00% | 55.00% | Renewable energies | Joint ventures | 1 | 1 | 0 |
| Energias Renovables de Titania, S.L. | Spain | 0.00% | 55.00% | 55.00% | 55.00% | Renewable energies | Joint ventures | 1 | 1 | 0 |
| Energias Renovables Gladiateur 45, S.L. | Spain | 0.00% | 55.00% | 55.00% | 55.00% | Renewable energies | Joint ventures | 1 | 1 | 0 |
| Energias Renovables Prometeo, S.L. | Spain | 0.00% | 55.00% | 55.00% | 55.00% | Renewable energies | Joint ventures | 1 | 1 | 0 |
| Euro Automatic Cash Entidad de Pago, S.L. | Spain | 50.00% | 0.00% | 50.00% | 50.00% | Payment services | Associated | 54 | 35 | (6) |
| European Hospitality Opportunities S.à r.l. (b) | Luxembourg | 0.00% | 49.00% | 49.00% | 49.00% | Holding company | Joint ventures | 1 | 1 | 0 |
| Evolve SPV S.r.l. | Italy | — | (h) | — | — | Securitization | Joint ventures | 91 | 0 | 0 |
| 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 Home Loan Bank of Pittsburgh (b) | United States | 0.00% | 6.05% | 6.05% | — | Banking | — | 35,264 | 2,482 | 81 |
| Federal Reserve Bank of Boston (b) | United States | 0.00% | 19.12% | 19.12% | 20.09% | Banking | — | 214,885 | 1,640 | 7 |
| Fondo de Titulización de Activos UCI 11 | Spain | — | (h) | — | — | Securitization | Joint ventures | 113 | 0 | 0 |
| Fondo de Titulización de Activos UCI 14 | Spain | — | (h) | — | — | Securitization | Joint ventures | 269 | 0 | 0 |
| Fondo de Titulización de Activos UCI 15 | Spain | — | (h) | — | — | Securitization | Joint ventures | 337 | 0 | 0 |
| Fondo de Titulización de Activos UCI 16 | Spain | — | (h) | — | — | Securitization | Joint ventures | 454 | 0 | 0 |
| Fondo de Titulización de Activos UCI 17 | Spain | — | (h) | — | — | Securitization | Joint ventures | 397 | 0 | 0 |
| Fondo de Titulización Hipotecaria UCI 12 | Spain | — | (h) | — | — | Securitization | Joint ventures | 154 | 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 2022 | Year 2021 | | | Asset | Capital + reserves | Net results |
| Fondo de Titulización, RMBS Prado IX | Spain | — | (h) | — | — | Securitization | Joint ventures | 479 | 0 | 0 |
| Fondo de Titulización, RMBS Prado V | Spain | — | (h) | — | — | Securitization | Joint ventures | 277 | 0 | 0 |
| Fondo de Titulización, RMBS Prado VI | Spain | — | (h) | — | — | Securitization | Joint ventures | 311 | 0 | 0 |
| Fondo de Titulización, RMBS Prado VII | Spain | — | (h) | — | — | Securitization | Joint ventures | 467 | 0 | 0 |
| Fondo de Titulización, RMBS Prado VIII | Spain | — | (h) | — | — | Securitization | Joint ventures | 422 | 0 | 0 |
| Fondo de Titulización, RMBS Prado X | Spain | — | (h) | — | — | Securitization | Joint ventures | 566 | 0 | 0 |
| Fortune Auto Finance Co., Ltd | China | 0.00% | 50.00% | 50.00% | 50.00% | Finance company | Joint ventures | 2,039 | 434 | 54 |
| Fremman limited | United Kingdom | 33.00% | 0.00% | 4.99% | 4.99% | Finance company | Associated | 10 | 2 | (1) |
| Gestora de Inteligência de Crédito S.A. | Brazil | 0.00% | 14.05% | 10.00% | 20.00% | Collection services | Joint ventures | 277 | 84 | (14) |
| Gire S.A. | Argentina | 0.00% | 58.22% | 58.33% | 58.33% | Payments and collection services | Associated | 157 | 76 | 4 |
| HCUK Auto Funding 2017-2 Ltd | United Kingdom | — | (h) | — | — | Securitization | Joint ventures | 395 | 0 | 0 |
| HCUK Auto Funding 2022-1 Limited (m) | United Kingdom | — | (h) | — | — | Securitization | Joint ventures | 456 | 0 | 0 |
| Healthy Neighborhoods Equity Fund I LP (b) | United States | 0.00% | 22.37% | 22.37% | 22.37% | Real estate | — | 13 | 12 | (1) |
| Hyundai Capital UK Limited | United Kingdom | 0.00% | 50.01% | 50.01% | 50.01% | Finance company | Joint ventures | 4,658 | 381 | 65 |
| Hyundai Corretora de Seguros Ltda. | Brazil | 0.00% | 45.14% | 50.00% | 50.00% | Insurance brokerage | Joint ventures | 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 |
| Innohub S.A.P.I. de C.V. | Mexico | 0.00% | 40.84% | 40.84% | 20.00% | IT services | Associated | 2 | 4 | (2) |
| Inverlur Aguilas I, S.L. | Spain | 0.00% | 50.00% | 50.00% | 50.00% | Real estate | Joint ventures | 0 | 0 | 0 |
| Inverlur Aguilas II, S.L. | Spain | 0.00% | 50.00% | 50.00% | 50.00% | Real estate | Joint ventures | 1 | 1 | 0 |
| Inversiones Ibersuizas, S.A. (b) | Spain | 25.42% | 0.00% | 25.42% | 25.42% | Venture capital | — | 11 | 11 | 0 |
| Inversiones ZS América Dos Ltda. | Chile | 0.00% | 49.00% | 49.00% | 49.00% | Real estate and securities investment | Associated | 285 | 285 | 36 |
| Inversiones ZS América SpA | Chile | 0.00% | 49.00% | 49.00% | 49.00% | Real estate and securities investment | Associated | 395 | 395 | 34 |
| J.C. Flowers I L.P. (b) (l) | United States | 0.00% | 0.00% | 0.00% | 0.00% | Holding company | — | 2 | 3 | (1) |
| LB Oprent, S.A. (b) | Spain | 40.00% | 0.00% | 40.00% | 40.00% | Industrial machinery rent | Associated | 4 | 1 | 1 |
| Loop Gestão de Pátios S.A. | Brazil | 0.00% | 32.23% | 35.70% | 35.70% | Business services | Joint ventures | 8 | 0 | (2) |
| Mapfre Santander Portugal - Companhia de Seguros, S.A. | Portugal | 0.00% | 49.94% | 49.99% | 49.99% | Insurance | Associated | 17 | 7 | 0 |
| Massachusetts Business Development Corp. (consolidado) (b) | United States | 0.00% | 21.61% | 21.61% | 21.61% | Finance company | — | 75 | 14 | 3 |
| MB Capital Fund IV, LLC (b) | United States | 0.00% | 21.51% | 21.51% | 21.51% | Finance company | — | 27 | 27 | 2 |
| Merlin Properties, SOCIMI, S.A. (consolidado) (b) | Spain | 19.01% | 5.63% | 24.64% | 24.77% | Real estate investment | Associated | 14,273 | 6,585 | 512 |

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 2022 | Year 2021 | | | Asset | Capital + reserves | Net results |
| Metrovacesa, S.A. (consolidado) (b) | Spain | 31.94% | 17.50% | 49.44% | 49.44% | Real estate promotion | Associated | 2,777 | 2,061 | 18 |
| Niuco 15, S.L. (k) | Spain | 57.10% | 0.00% | 57.10% | 37.23% | Technical services | — | — | — | — |
| Ocyener 2008, S.L. | Spain | 0.00% | 45.00% | 45.00% | 45.00% | Holding company | Associated | 2 | 2 | 0 |
| 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% | 42.13% | 46.67% | 46.67% | Factoring | Joint ventures | 0 | 0 | 0 |
| Payever GmbH | Germany | 0.00% | 10.00% | 10.00% | 10.00% | Software | Associated | 3 | 2 | 0 |
| Platinum Care, S.A. | Spain | 0.00% | 50.00% | 50.00% | — | Holding company | Joint ventures | 5 | 5 | (3) |
| Play Digital S.A. | Argentina | 0.00% | 15.35% | 15.38% | 15.70% | Payment platform | Associated | 23 | 42 | (24) |
| POLFUND - Fundusz Poręczeń Kredytowych S.A. | Poland | 0.00% | 33.70% | 50.00% | 50.00% | Management company | Associated | 29 | 20 | 0 |
| Portland SPV S.r.l. | Italy | — | (h) | — | — | Securitization | Joint ventures | 195 | 0 | 0 |
| Procapital - Investimentos Imobiliários, S.A. (b) (e) | Portugal | 0.00% | 39.97% | 40.00% | 40.00% | Real estate | — | 0 | 13 | 0 |
| Project Quasar Investments 2017, S.L. (consolidado) (b) | Spain | 49.00% | 0.00% | 49.00% | 49.00% | Holding company | — | 5,861 | 679 | (317) |
| Promontoria Manzana, S.A. (consolidado) (b) | Spain | 20.00% | 0.00% | 20.00% | 20.00% | Holding company | Associated | 953 | 279 | (55) |
| PSA Corretora de Seguros e Serviços Ltda. | Brazil | 0.00% | 45.14% | 50.00% | 50.00% | Insurance brokerage | Joint ventures | 1 | 0 | 0 |
| Redbanc S.A. | Chile | 0.00% | 22.44% | 33.43% | 33.43% | Services | Associated | 34 | 11 | 2 |
| Redsys Servicios de Procesamiento, S.L. (consolidado) | Spain | 24.90% | 0.06% | 24.96% | 24.96% | Cards | Associated | 126 | 75 | 4 |
| Relevante e Astuto, S.A. | Portugal | 0.00% | 70.00% | 70.00% | 70.00% | Real estate management | Joint ventures | 0 | 0 | 0 |
| Retama Real Estate, S.A. Unipersonal | Spain | 0.00% | 50.00% | 50.00% | 50.00% | Real estate | Joint ventures | 21 | (46) | (1) |
| Rías Redbanc S.A. | Uruguay | 0.00% | 25.00% | 25.00% | 25.00% | Services | — | 4 | 1 | 0 |
| RMBS Belém No.2 | Portugal | — | (h) | — | — | Securitization | Joint ventures | 333 | 0 | 0 |
| RMBS Green Belém No. 1 | Portugal | — | (h) | — | — | Securitization | Joint ventures | 241 | 0 | 0 |
| S3 Caceis Brasil Distribuidora de Títulos e Valores Mobiliários S.A. | Brazil | 0.00% | 50.00% | 50.00% | 50.00% | Securities company | Joint ventures | 237 | 168 | 28 |
| S3 Caceis Brasil Participações S.A. | Brazil | 0.00% | 50.00% | 50.00% | 50.00% | Holding company | Joint ventures | 199 | 170 | 28 |
| San Preca Federal I Fundo de Investimento em Direitos Creditórios Não-Padronizados | Brazil | 0.00% | 45.14% | 50.00% | — | Investment fund | Joint ventures | 10 | 10 | 0 |
| Sancus Green Investments II, S.C.R., S.A. (b) | Spain | 0.00% | 41.60% | 41.60% | 43.29% | Venture capital | — | 4 | 5 | 0 |
| Santander Allianz Towarzystwo Ubezpieczeń na Życie S.A. | Poland | 0.00% | 33.03% | 49.00% | 49.00% | Insurance | Associated | 303 | 12 | 27 |
| Santander Allianz Towarzystwo Ubezpieczeń S.A. | Poland | 0.00% | 33.03% | 49.00% | 49.00% | Insurance | Associated | 82 | 36 | 9 |
| Santander Assurance Solutions, S.A. | Spain | 0.00% | 66.67% | 66.67% | 66.67% | Insurance intermediary | Joint ventures | 14 | 5 | 1 |
| Santander Auto S.A. | Brazil | 0.00% | 45.14% | 50.00% | 50.00% | Insurance | Associated | 39 | 6 | 5 |
| Santander Caceis Colombia S.A. Sociedad Fiduciaria | Colombia | 0.00% | 50.00% | 50.00% | 50.00% | Finance company | Joint ventures | 6 | 6 | 0 |
| Santander Caceis Latam Holding 1, S.L. | Spain | 0.00% | 50.00% | 50.00% | 50.00% | Holding company | Joint ventures | 731 | 722 | 10 |
| Santander Caceis Latam Holding 2, S.L. | Spain | 0.00% | 50.00% | 50.00% | 50.00% | Holding company | Joint ventures | 2 | 2 | 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 2022 | Year 2021 | | | Asset | Capital + reserves | Net results |
| Santander Generales Seguros y Reaseguros, S.A. | Spain | 0.00% | 49.00% | 49.00% | 49.00% | Insurance | Joint ventures | 770 | 185 | 44 |
| Santander Mapfre Seguros y Reaseguros, S.A. | Spain | 0.00% | 49.99% | 49.99% | 49.99% | Insurance | Associated | 123 | 65 | (1) |
| Santander Vida Seguros y Reaseguros, S.A. | Spain | 0.00% | 49.00% | 49.00% | 49.00% | Insurance | Joint ventures | 1,023 | 333 | 44 |
| 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% | 8.38% | 12.48% | 12.48% | Services | Associated | 39 | 14 | 1 |
| SIBS-SGPS, S.A. (consolidado) (b) | Portugal | 0.00% | 16.53% | 16.55% | 16.55% | Management of portfolios | — | 396 | 67 | 44 |
| Siguler Guff SBIC Fund LP (b) | United States | 0.00% | 20.00% | 20.00% | 20.00% | Investment company | — | 28 | 14 | 1 |
| Sistema de Tarjetas y Medios de Pago, S.A. (b) | Spain | 20.61% | 0.00% | 20.61% | 20.61% | Payment methods | Associated | 749 | 5 | 0 |
| Sistemas Técnicos de Encofrados, S.A. (consolidado) (b) | Spain | 27.15% | 0.00% | 27.15% | 27.15% | Construction materials | — | 102 | 15 | 4 |
| 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 ventures | 112 | 36 | 1 |
| Sociedad de Garantía Recíproca de Santander, S.G.R. (b) | Spain | 25.35% | 0.25% | 25.60% | 25.60% | 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 | — | 25,311 | 586 | (1,626) |
| Sociedad Interbancaria de Depósitos de Valores S.A. | Chile | 0.00% | 19.66% | 29.29% | 29.29% | Securities deposits | Associated | 8 | 7 | 2 |
| Solar Maritime Designated Activity Company (b) | Ireland | — | (h) | — | — | Leasing | Joint ventures | 148 | (1) | 0 |
| STELLANTIS Insurance Europe Limited | Malta | 0.00% | 50.00% | 50.00% | 50.00% | Insurance | Joint ventures | 245 | 60 | 28 |
| STELLANTIS Life Insurance Europe Limited | Malta | 0.00% | 50.00% | 50.00% | 50.00% | Insurance | Joint ventures | 110 | 11 | 16 |
| Stephens Ranch Wind Energy Holdco LLC (consolidado) (b) | United States | 0.00% | 20.50% | 20.50% | 17.10% | Renewable energies | — | 220 | 176 | (2) |
| Tbforte Segurança e Transporte de Valores Ltda. | Brazil | 0.00% | 17.13% | 18.98% | 18.98% | Security | Associated | 111 | 74 | (3) |
| Tbnet Comércio, Locação e Administração Ltda. | Brazil | 0.00% | 17.13% | 18.98% | 18.98% | Telecommunications | Associated | 107 | 79 | (2) |
| Tecban Serviços Integrados Ltda. | Brazil | 0.00% | 17.13% | 18.98% | 18.98% | IT services | Associated | 4 | 1 | 0 |
| Tecnologia Bancária S.A. | Brazil | 0.00% | 17.13% | 18.98% | 19.81% | ATM | Associated | 527 | 160 | 9 |
| Tonopah Solar Energy Holdings I, LLC (k) | United States | 0.00% | 26.80% | 26.80% | 26.80% | Holding company | Joint ventures | — | — | — |
| 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 | 1,648 | 93 | 29 |
| Tresmares Growth Fund II, S.C.R., S.A. | Spain | 40.00% | 0.00% | 40.00% | 40.00% | Holding company | — | 54 | 42 | 12 |
| Tresmares Growth Fund III, S.C.R., S.A. | Spain | 40.00% | 0.00% | 40.00% | 40.00% | Holding company | — | 41 | 32 | 9 |
| Tresmares Growth Fund Santander, S.C.R., S.A. (n) | Spain | 100.00% | 0.00% | 100.00% | 100.00% | Holding Company | — | 59 | 53 | (1) |
| U.C.I., S.A. | Spain | 50.00% | 0.00% | 50.00% | 50.00% | Holding company | Joint ventures | 794 | 261 | (2) |
| UCI Hellas Credit and Loan Receivables Servicing Company S.A. | Greece | 0.00% | 50.00% | 50.00% | 50.00% | Financial services | Joint ventures | 1 | 1 | 0 |
| UCI Holding Brasil Ltda. | Brazil | 0.00% | 50.00% | 50.00% | 50.00% | Holding company | Joint ventures | 2 | 0 | 0 |
| UCI Mediação de Seguros Unipessoal, Lda. | Portugal | 0.00% | 50.00% | 50.00% | 50.00% | Insurance brokerage | Joint ventures | 0 | 0 | 0 |
| UCI Servicios para Profesionales Inmobiliarios, S.A. Unipersonal | Spain | 0.00% | 50.00% | 50.00% | 50.00% | Real estate services | Joint ventures | 1 | 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 2022 | Year 2021 | | | Asset | Capital + reserves | Net results |
| Unicre-Instituição Financeira de Crédito, S.A. | Portugal | 0.00% | 21.83% | 21.86% | 21.86% | Finance company | Associated | 452 | 110 | 24 |
| Unión de Créditos Inmobiliarios, S.A. Unipersonal, EFC | Spain | 0.00% | 50.00% | 50.00% | 50.00% | Mortgage credit company | Joint ventures | 11,247 | 1,080 | (53) |
| VCFS Germany GmbH | Germany | 0.00% | 50.00% | 50.00% | 50.00% | Marketing | Joint ventures | 1 | 0 | 0 |
| Venda de Veículos Fundo de Investimento em Direitos Creditórios | Brazil | — | (h) | — | — | Securitization | Joint ventures | 217 | 196 | 20 |
| Volvo Car Financial Services UK Limited | United Kingdom | 0.00% | 50.01% | 50.01% | 50.01% | Leasing | Joint ventures | 1,755 | 107 | 16 |
| Webmotors S.A. | Brazil | 0.00% | 63.20% | 70.00% | 70.00% | Services | Joint ventures | 70 | 41 | 14 |
| Zurich Santander Brasil Seguros e Previdência S.A. | Brazil | 0.00% | 48.79% | 48.79% | 48.79% | Insurance | Associated | 15,099 | 359 | 183 |
| Zurich Santander Brasil Seguros S.A. | Brazil | 0.00% | 48.79% | 48.79% | 48.79% | Insurance | Associated | 189 | (14) | 44 |
| Zurich Santander Holding (Spain), S.L. Unipersonal | Spain | 0.00% | 49.00% | 49.00% | 49.00% | Holding company | Associated | 937 | 936 | 193 |
| Zurich Santander Holding Dos (Spain), S.L. Unipersonal | Spain | 0.00% | 49.00% | 49.00% | 49.00% | Holding company | Associated | 384 | 382 | 101 |
| Zurich Santander Insurance América, S.L. | Spain | 49.00% | 0.00% | 49.00% | 49.00% | Holding company | Associated | 1,497 | 1,490 | 322 |
| Zurich Santander Seguros Argentina S.A. (j) | Argentina | 0.00% | 49.00% | 49.00% | 49.00% | Insurance | Associated | 60 | 36 | 6 |
| Zurich Santander Seguros de Vida Chile S.A. | Chile | 0.00% | 49.00% | 49.00% | 49.00% | Insurance | Associated | 254 | 24 | 37 |
| Zurich Santander Seguros Generales Chile S.A. | Chile | 0.00% | 49.00% | 49.00% | 49.00% | Insurance | Associated | 326 | 60 | 26 |
| Zurich Santander Seguros México, S.A. | Mexico | 0.00% | 49.00% | 49.00% | 49.00% | Insurance | Associated | 1,169 | 45 | 158 |
| Zurich Santander Seguros Uruguay S.A. | Uruguay | 0.00% | 49.00% | 49.00% | 49.00% | Insurance | Associated | 42 | 18 | 8 |

- a. Amount according to the provisional books at the date of publication of these annexes of each company, generally referring to 31 December 2022, except where otherwise indicated due to the fact that the annual accounts are pending formulation. The data for foreign companies are converted into euros at the exchange rate at the end of the year.
- b. Data as at 31 December 2021, latest available accounts.
- c. Data as at 31 December 2019, latest available accounts.
- d. Data as at 30 November 2021, latest available accounts.
- e. Company in liquidation as at 31 December 2022.
- 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 2021, latest available accounts.
- j. Data as at 30 June 2022, latest available accounts.
- k. Company with no financial information available.
- l. Company in liquidation. Pending registration.
- m. Data as at 30 September 2022, latest available accounts.
- n. Investment managed discretely by a manager outside the Santander Group, the voting rights not being, in this case, decisive in determining control of the entity.

Appendix III

Issuing subsidiaries of shares and preference shares

| Company | Location | % of ownership held by Banco Santander | | | EUR million (a) | | | |
|---|----------------|--|----------|-----------------|-----------------|----------|-------------------|-------------|
| | | Direct | Indirect | Activity | 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 | 5,231 | (3,477) | 55 | 13 |

a. Amount according to the books of each interim company as at 31 December 2022, 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 2022

Details of the notifications of acquisitions and disposals of participations for 2022 in accordance with Article 125 of the Securities Market Law may be found below:

On 13 May 2022, Banco Santander, S.A. disclosed to the CNMV the decrease of its stake in REPSOL, S.A. below the 3% threshold, keeping a stake of 2.291%, as of 9 May 2022.

With respect to compliance with Article 125 of the Securities Market Law, no communications required under this article were made in 2020. 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 2022, 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 2022, 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 1 April 2022, 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.

Additionally, the company issued GBP 50 million additional tier 1 (AT) capital securities to Santander UK Group Holdings plc on 19 December 2022.

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 2022 year-end, the bank's treasury shares consisted of 31,161,607 ordinary shares and 31,161,607 preferred shares, with a total of 62,323,214 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 2022, 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 2022, 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 2022 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.

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 November 30, 2022, an Extraordinary Shareholders' Meeting of Banco Santander México, S.A. was held at which it was approved (a) to cancel the registration of all of the shares representing the capital stock of the Company in the National Securities Registry maintained by the National Banking and Securities Commission and to delist them from the Mexican Stock Exchange (Bolsa Mexicana de Valores, S.A.B. de C.V.), and (b) delist the American Depositary Shares (each representing five series "B" shares of the Company) from the New York Stock Exchange and delist the Company's series "B" shares and such American Depositary Shares from registration with the US Securities and Exchange Commission; and (c) to conduct certain tender offers for the series "B" shares representing the capital stock of the Company and the American Depositary Shares, which tender offers are expected to take place in the first quarter of 2023.

b) Ongoing capital stock increases.

To this date there are not ongoing capital stock increases.

c) Authorized Capital by the Shareholders Meeting.

On April 20, 2021, the Company held an Extraordinary General Shareholders' Meeting, at which, among other items, it was approved an increase in the authorized capital stock of the Company to 6,825,447,481.00 Mexican pesos represented by 1,805,300,000 unsubscribed and unpaid shares, which are held in treasury so that the Company may issue Capital Instruments representing non-preferred subordinated debt. This increase was approved by the National Banking and Securities Commission (CNBV) through official communication number 312-3/10039041/2021 dated November 8, 2021.

As a result of said agreement, the Company requested the update of the registration of the shares representing the capital stock of Banco Santander Mexico, S.A. in the National Securities Registry, which was authorized by the CNBV through official communication number 153/2800/2022 dated May 20, 2022. In the aforementioned official communication, it was requested that the Company adjusted the amounts in pesos corresponding to the capital stock to include cents, and therefore, through an Extraordinary General Stockholders' Meeting held on July 19, 2022, the corresponding adjustment was made, which was authorized by the CNBV through official communication number 312-3/93573/2023 dated January 3, 2023.

The capital stock of the Bank is 32,485,600,109.44 Mexican pesos represented by a total of 8,592,294,357 shares with a nominal value of 3.780782962 Mexican pesos each one; divided in 4,385,824,012 stocks "F" Series and 4,206,470,345 shares "B" Series. The capital stock is constituted as follows:

- Paid-in and subscribed capital of the Bank is 25,660,152,628.14 Mexican pesos represented by a total of 6,786,994,357 shares with a nominal value of 3.780782962 Mexican pesos each one; divided in 3,464,309,145 shares "F" Series and 3,322,685,212 shares Series.
- The authorized capital stock for the conversion of obligations into shares of the Company is 6,825,447,481.30 Mexican pesos, represented by a total of 1,805,300,000 shares with a nominal value of 3,780782962 Mexican pesos each; divided into 921,514,867 Series "F" shares and 883,785,133 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-2026 | 55,000 million Mexican pesos, or its equivalent in UDIs, dollars or any other foreign currency | \$35,040 million Mexican pesos With fix rate according to Banxico 31/Dec/ 2022 |
| Private banking structured bonds Act with subsequent placements (JBSANPRIV 21-1) | Not Revolving ^A | 28-Ene-2026 | 20,000 million Mexican pesos | \$3,356 million Mexican pesos |
| Private banking structured bonds Act with subsequent placements (JBSANPRIV 22-1) | Not Revolving ^A | 9-Mar-2027 | 20,000 million Mexican pesos | \$0 million Mexican pesos |
| Private banking structured bonds Act with subsequent placements (JBSANPRIV 22-2) | Not Revolving ^A | 28-Oct-2027 | 20,000 million Mexican pesos | \$14,719 million Mexican pesos |
| Public banking structured bonds Act with subsequent placements (JBSANPRIV 22-1) | Not Revolving | 16-Dic-2027 | 10,000 million Mexican pesos | \$10,000 million Mexican pesos |
| 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 |

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 1,000 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.

The amount issued of 1,300 million American dollars covers in full the sum of the repurchase of the Subordinated Notes 2013, for 1,222,907,000 American dollars.

Regarding the acquisition of the Subordinated Notes 2013: (a) the acquired total amount was 1,222,907,000 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 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 million.

- (iii) 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 million American dollars (the "Instruments"), whose resources were used mainly for the acquisition of the 94.07% of the Subordinated Notes 2013.

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 April 20, 2021, a General Extraordinary Shareholders' Meeting of Banco Santander México was held, where among other issues, it was approved that the Bank may issue subordinated non preferential perpetual and convertible capital notes, to be placed abroad, in accordance with the Banco de Mexico authorization.

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 million 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 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 1,391,241,670 ordinary shares through its subsidiaries: Santander Totta, SGPS, S.A. with 1,376,219,267 shares, Taxagest Sociedade Gestora de Participações Sociais, S.A. with 14,593,315 shares, and Banco Santander Totta, S.A. with 429,088 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 2022, 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 2022, 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 2022, there were no approved capital increases.

c) Capital authorised by the shareholders at the general meeting

Share capital at 31 December 2022 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).

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.

9. Santander Bank Polska S.A.

a) Number of financial equity instruments held by the Group

At 31 December, 2022, 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, 2022, there were no equity increases in progress.

c) Capital authorised by the shareholders at the general meeting

There was no share capital increase in 2022.

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.

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 20.5 billion, including more than EUR 9.7 billion in taxes incurred directly (corporate income tax, non-recoverable value added tax (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 5,498 million in 2022, with an effective tax rate of 36.1%) 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 4,486 million in 2022, representing an effective rate of 29.4%, see note 27). 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 2022.

The breakdown of information is as follows:

| 2022 | | | | | |
|---------------------------------|------------------------|----------------|---|-------------------------------------|--|
| Jurisdiction | Turnover (EUR million) | Employees | Gross profit or loss before tax (EUR million) | Tax on profit or loss (EUR million) | |
| Germany | 1,701 | 5,206 | 633 | 167 | |
| Argentina | 1,810 | 8,274 | 410 | 34 | |
| Austria | 198 | 334 | 106 | 21 | |
| Bahamas | 10 | 27 | 3 | — | |
| Belgium | 60 | 160 | 24 | 6 | |
| Brazil ¹ | 12,315 | 52,483 | 3,513 | 1,295 | |
| Canada | 60 | 216 | 18 | 5 | |
| Chile | 2,388 | 9,762 | 1,024 | (2) | |
| China | 14 | 82 | (9) | — | |
| Colombia | 66 | 730 | 8 | 11 | |
| United Arab Emirates | 1 | 42 | — | — | |
| Spain ² | 7,122 | 33,157 | (378) | 1,652 | |
| United States | 7,607 | 14,185 | 2,258 | 610 | |
| Denmark | 174 | 208 | 90 | 25 | |
| Finland | 104 | 150 | 65 | 23 | |
| France | 867 | 975 | 487 | 74 | |
| Greece | 2 | 24 | (4) | — | |
| Hong Kong | 103 | 187 | 14 | 5 | |
| India | 1 | 75 | — | — | |
| Ireland | (18) | 1 | (30) | 1 | |
| Isle of Man | 48 | 70 | 30 | 1 | |
| Italy | 547 | 1,015 | 279 | 50 | |
| Jersey | 30 | 78 | 21 | 2 | |
| Luxembourg | 375 | 21 | 366 | 107 | |
| Mexico | 4,459 | 28,841 | 1,555 | 331 | |
| Norway | 245 | 502 | 142 | 64 | |
| Netherlands | 87 | 265 | 34 | 77 | |
| Peru | 152 | 616 | 62 | 26 | |
| Poland | 2,749 | 12,183 | 941 | 182 | |
| Portugal | 1,339 | 5,274 | 798 | 135 | |
| Puerto Rico | — | 3 | — | — | |
| United Kingdom | 6,694 | 19,905 | 2,472 | 553 | |
| Singapore | 20 | 25 | 11 | 1 | |
| Sweden | 172 | 235 | 58 | — | |
| Switzerland | 160 | 295 | 51 | 4 | |
| Uruguay | 455 | 1,488 | 198 | 38 | |
| Consolidated Group Total | 52,117 | 197,094 | 15,250 | 5,498 | |

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 438 million.

2. Includes the Corporate Centre.

At 31 December 2022, the Group's return on assets (ROA) was 0.63%.



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 2022 fiscal year in eXtensible HyperText Markup Language (XHTML) format and, with respect to the main consolidated financial statements and the notes to the consolidated 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 2022 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), 27 February 2023

ANA PATRICIA BOTÍN-SANZ DE SAUTUOLA Y O'SHEA
Chair

HÉCTOR BLAS GRISI CHECA
Chief Executive Officer

BRUCE CARNEGIE-BROWN
Vice Chair

JOSÉ ANTONIO ÁLVAREZ ÁLVAREZ
Vice Chair



MEMBERS:

HOMAIRA AKBARI

FRANCISCO JAVIER BOTÍN-SANZ DE SAUTUOLA
Y O'SHEA

SOL DAURELLA COMADRÁN

HENRIQUE MANUEL DRUMMOND BORGES
CIRNE DE CASTRO

GERMÁN DE LA FUENTE ESCAMILLA

GINA LORENZA DÍEZ BARROSO AZCÁRRAGA

GLENN HOGAN HUTCHINS

LUIS ISASI FERNÁNDEZ DE BOBADILLA

RAMIRO MATO GARCÍA-ANSORENA

BELÉN ROMANA GARCÍA

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

Santander Group City
Pereda, 2ª planta
Avda. de Cantabria, s/n
28660 Boadilla del Monte
Madrid
Spain
Telephone: (+34) 91 276 92 90
accionistas@santander.com
investor@gruposantander.com

Hard copies of the Bank's annual report can be requested by shareholders free of charge at the address and phone number indicated above.

Customer service department

Apartado de Correos 35.250
28080 Madrid
Fax: 91 759 48 36
santander_reclamaciones@gruposantander.es

Media enquiries

Santander Group City
Arrecife, 2ª planta
Avda. de Cantabria, s/n
28660 Boadilla del Monte
Madrid
Spain
Telephone: (+34) 91 289 52 11
comunicacion@gruposantander.com

Banking Ombudsman in Spain (Defensor del cliente en España)

Mr José Luis Gómez-Dégano
Calle Raimundo Fernández Villaverde, 61
28003 Madrid
Telephone: (+34) 91 429 56 61
oficina@defensorcliente.es

