1.2. MARKET RISKS

As already mentioned in the Introduction, the Intesa Sanpaolo Group policies on financial risk taking are defined by the Parent Company's Management Bodies, with the support of specific Committees, including the Steering Committee, chaired by the Managing Director and CEO and composed of the heads of the main corporate departments, and the Group Financial Risk Committee.
The Steering Committee, a Group body with a decision-making, reporting and consulting role, is also assigned the functions of assisting the Managing Director and CEO in the performance of his duties, strengthening the coordination and cooperation mechanisms between the various business, governance and control areas of the Bank and the Group, with a view to sharing the main business choices, and helping ensure coordinated and integrated risk management and the safeguarding of business value at Group level, including the correct functioning of the internal control system.
The Group Financial Risk Committee, chaired by the Chief Risk Officer and the Chief Financial Officer, is responsible for setting out the methodological and measurement guidelines for financial risks, establishing the operational limits and assessing the risk profile of the Group and its main operational units. The Committee also sets out the strategies for the management of the banking book to be submitted to the competent Bodies and establishes the guidelines on liquidity, interest rate and foreign exchange risk. The Committee operates on the basis of the operating and functional powers delegated by the Corporate Bodies and coordination of the Steering Committee.
The Group's overall financial risk profile and the eventual necessary changes are examined periodically by the Group Financial Risk Committee.
The Parent Company's Financial and Market Risks Department is responsible for the development of corporate risk measurement and monitoring methodologies as well as for the proposals on the Bank's and the Group's system of operational limits. It is also responsible in outsourcing for the risk measurement for certain operating units on the basis of specific service contracts.

The table below shows the items of the consolidated Balance Sheet that are subject to market risks, showing the positions for which managerial VaR is the main risk measurement metrics and those for which the risks are monitored with other metrics. The latter mostly include the sensitivity analysis to the different risk factors (interest rate, credit spread, etc.).

(millions of euro)

	BOOK VALUE (supervisory scope)	**MAIN RISK MEASUREMENT METRICS**		
		VaR	Other	Risk factors measured using metrics included under Other
Assets subject to market risk	**601,727**	**116,108**	**485,619**	
Financial assets held for trading	45,234	44,668	566	Interest rate risk, credit spread, equity
Financial assets designated at fair value	195	195	-	Interest rate risk, credit spread
Other financial assets mandatorily measured at fair value	4,467	2,290	2,177	Interest rate risk, credit spread
Financial assets measured at fair value through other comprehensive income (ifrs 7 par. 8 lett. h))	72,438	68,847	3,591	Interest rate risk, equity
Due from banks	48,893	-	48,893	Interest rate risk
Loans to customers	419,866	-	419,866	Interest rate risk
Hedging derivatives	3,028	108	2,920	Interest rate risk
Investments in associates and companies subject to joint control	7,606	-	7,606	Equity risk
Liabilities subject to market risk	**575,078**	**46,112**	**528,966**	
Due to banks	102,861	-	102,861	Interest rate risk
Due to customers	332,218	-	332,218	Interest rate risk
Securities issued	85,536	-	85,536	Interest rate risk
Financial liabilities held for trading	45,320	45,280	40	Interest rate risk
Financial liabilities designated at fair value (ifrs 7 par. 8 lett. e))	4	4	-	-
Hedging derivatives	9,139	828	8,311	Interest rate risk

REGULATORY TRADING BOOK

1.2.1. INTEREST RATE RISK AND PRICE RISK

Consistent with the use of internal models and management models for risk management, the sections relative to interest rate and price risk have been grouped within the relevant portfolio.

Qualitative information

The quantification of trading risks (managerial calculation scope) is based on daily and periodic analysis of the trading portfolios of Intesa Sanpaolo and Banca IMI, which represent the main portion of the Group's market risks, to adverse market movements of the following risk factors:

- interest rates;
- equities stocks and indexes;
- investment funds;
- foreign exchange rates;
- implied volatilities;
- spreads in credit default swaps (CDSs);
- spreads in bond issues;
- correlation instruments;
- dividend derivatives;
- asset-backed securities (ABSs);
- commodities.

Some other Group subsidiaries hold smaller trading portfolios with a marginal risk (approximately less than 1% of the Group's overall managerial risk). In particular, the risk factors of the international subsidiaries' trading books are local government bonds, positions in interest rates, and foreign exchange rates relating to linear pay-offs.

Managerial VaR

The analysis of market risk profiles relative to the trading book (managerial scope) uses various quantitative indicators and VaR is the most important. Since VaR is a synthetic indicator which does not fully identify all types of potential loss, risk management has been enriched with other measures, in particular simulation measures for the quantification of risks from illiquid parameters (dividends, correlation, ABS, hedge funds).
VaR estimates are calculated daily based on simulations of historical time-series, a 99% confidence level and 1-day holding period.
The section "Quantitative information" presents the estimates and evolution of managerial VaR, defined as the sum of VaR and of the simulation on illiquid parameters, for Intesa Sanpaolo and Banca IMI's books.
In line with what has been approved by the BoD, with regard to the VaR limits for legal entities, the managerial VaR of the held-for-trading component includes the HTCS portfolio for Banca IMI

Sensitivity and greeks

Sensitivity measures make risk profiling more accurate, especially in the presence of option components. These measure the risk attributable to a change in the value of a financial position to predefined changes in valuation parameters including a one basis point increase in interest rates.

Level measures

Level measures are risk indicators which are based on the assumption of a direct relationship between the size of a financial position and the risk profile. These are used to monitor issuer/sector/country risk exposures for concentration analysis, through the identification of notional value, market value or conversion of the position in one or more benchmark instruments (so-called equivalent position).

Stress tests

Stress tests measure the value changes of instruments or portfolios due to changes in risk factors of unexpected intensity and correlation, or extreme events, as well as changes representative of expectations of the future evolution of market variables. Stress tests for management purposes are applied periodically to market risk exposures, typically adopting scenarios based on historical trends recorded by risk factors, for the purpose of identifying past worst-case scenarios, or defining variation grids of risk factors to highlight the direction and non-linearity of trading strategies.

Internal model validation

For some of the risk factors included in the managerial VaR measurements, with regard to the regulatory trading book, the Supervisory Authority has validated the internal models for the reporting of the capital requirement of both Intesa Sanpaolo and Banca IMI.
More specifically, concerning market risk, the risk profiles validated are: (i) generic/specific on debt securities and on equities for Intesa Sanpaolo and Banca IMI, (ii) position risk on quotas of UCI underlying CPPI (Constant Proportion Portfolio Insurance) products for Banca IMI and the hedge fund portfolios of the Parent Company (look through approach), (iii) position risk on dividend derivatives and (iv) commodity risk for Banca IMI, the only legal entity in the Group authorised to hold open positions in commodities.

Stressed VaR

Capital absorption includes the requirement for stressed VaR. The requirement derives from the determination of the VaR associated with a market stress period. This period was identified considering the following guidelines, on the basis of the indications presented in the Basel document "Revision to the Basel 2 market risk framework":

– the period must represent a stress scenario for the portfolio;
– the period must have a significant impact on the main risk factors for the portfolios of Intesa Sanpaolo and Banca IMI;
– the period must allow real time series to be used for all portfolio risk factors.

While using the historical simulation approach for VaR calculation, the latter point is a discriminating condition in the selection of the holding period. Actually, in order to ensure that the scenario adopted is effectively consistent and to avoid the use of driver or comparable factors, the historical period must ensure the effective availability of market data.
As at the date of preparation of this document, the period for the measurement of Stressed VaR was from 11 October 2011 to 28 September 2012 for both Intesa Sanpaolo and Banca IMI.

Incremental Risk Charge (IRC)

The Incremental Risk Charge (IRC) is the maximum potential loss in the credit trading book resulting from an upgrade/downgrade or bankruptcy of the issuers, over a 1-year period, with a 99.9% confidence level. This measure is additional to VaR and enables the correct representation of the specific risk on debt securities and credit derivatives because, in addition to idiosyncratic risk, it also captures event and default risk.

Quantitative information

Daily managerial VaR evolution

During the fourth quarter of 2019, the managerial market risks generated by the Group decreased compared to the average values of the third quarter, mainly due to the reduction of Banca IMI.
The average managerial VaR of the Group for the period was 120.2 million euro compared to 145.3 million euro in the third average quarter.

Daily managerial VaR of the trading book for Intesa Sanpaolo and Banca IMI [(a)]

(millions of euro)

	average 4th quarter	minimum 4th quarter	maximum 4th quarter	average 3rd quarter	average 2nd quarter	average 1st quarter
Intesa Sanpaolo	13.1	10.7	16.3	16.8	15.0	16.9
Banca IMI	107.2	84.1	125.9	128.5	149.0	160.1
Total	**120.2**	**95.1**	**142.1**	**145.3**	**164.0**	**177.0**

(a) Each line in the table sets out the past estimates of daily operating VaR calculated on the quarterly historical time-series respectively of Intesa Sanpaolo and Banca IMI; total minimum and maximum values are estimated using aggregate historical time-series and therefore do not correspond to the sum of the individual values in the column.

For all of 2019, the Group's average managerial VaR was 151.5 million euro, up compared to 74.1 million euro in the same period of 2018. The performance of this indicator – mainly determined by Banca IMI – derives from an increase in the risk measures, mainly attributable to financial risk operations, consistently with the 2019 Risk Appetite Framework.

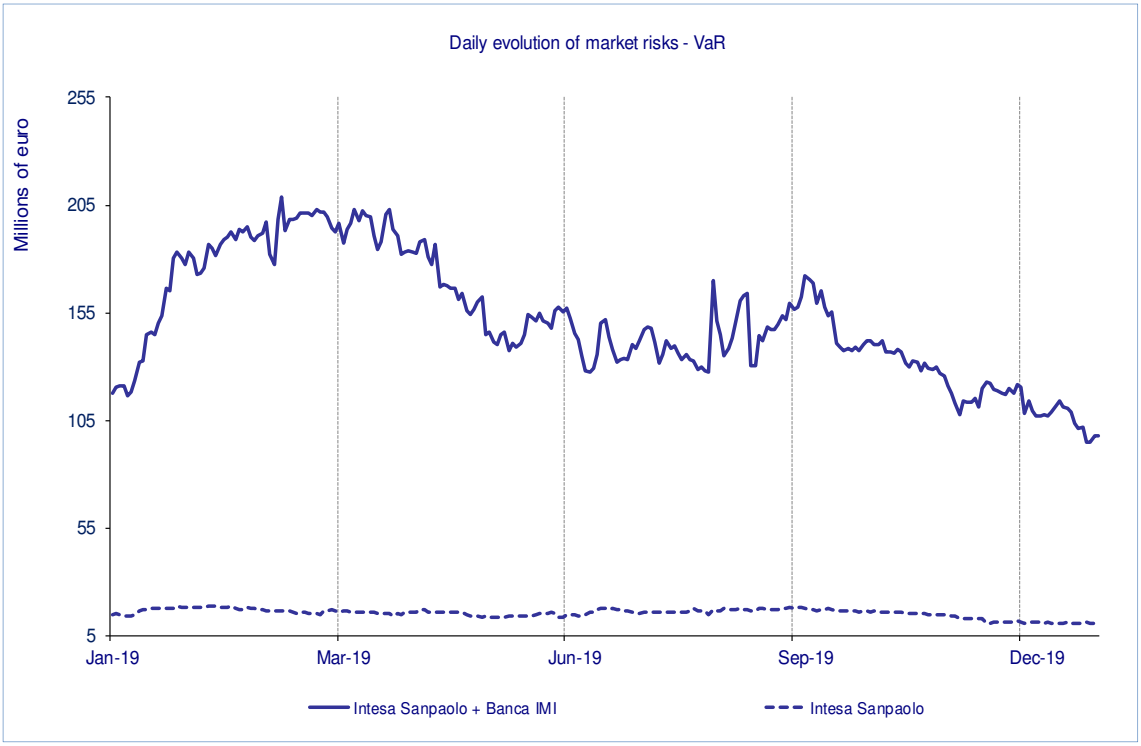
Daily managerial VaR of the trading book for Intesa Sanpaolo and Banca IMI – Comparison between 2019 and 2018 [(a)]

(millions of euro)

	2019				2018		
	average	minimum	maximum	last day	average	minimum	maximum
Intesa Sanpaolo	15.4	10.7	19.0	10.7	12.0	6.7	20.9
Banca IMI	136.0	84.1	192.3	87.4	62.0	24.7	106.3
Total	**151.5**	**95.1**	**208.8**	**98.1**	**74.1**	**33.7**	**124.9**

(a) Each line in the table sets out the past estimates of daily operating VaR calculated on the annual historical time-series respectively of Intesa Sanpaolo and Banca IMI; total minimum and maximum values are estimated using aggregate historical time-series and therefore do not correspond to the sum of the individual values in the column.

The trend in the Group's managerial VaR, shown in the following chart, was mainly determined by Banca IMI.
In detail, in the first half of 2019 risk measures increased in accordance with the 2019 RAF, primarily due to dealings in government bonds, followed by a concurrent reduction attributable to the removal of volatile scenarios from the calculation of the historical simulation in the second quarter. In the second half of 2019, risks increased in August, substantially due to the volatility of the credit spread risk factor. The subsequent VaR performance, which declined on average, is due to both transactions and the scenario "rolling effect".



The breakdown of risk profile in the fourth quarter of 2019 with regard to the different risk factors shows the prevalence of the risk generated by the credit spread, which accounted for 58% of the total managerial VaR for Intesa Sanpaolo and 65% for Banca IMI.

Contribution of risk factors to total managerial VaR [(a)]

4th quarter 2019	Shares	Hedge funds	Interest rates	Credit spreads	Foreign exchange rates	Other parameters	Commodities
Intesa Sanpaolo	1%	3%	26%	58%	11%	1%	0%
Banca IMI	2%	0%	30%	65%	0%	3%	0%
Total	**2%**	**0%**	**29%**	**65%**	**1%**	**2%**	**1%**

(a) Each line in the table sets out the contribution of risk factors considering the overall VaR 100%, calculated as the average of daily estimates in the fourth quarter of 2019, broken down between Intesa Sanpaolo and Banca IMI and indicating the distribution of overall VaR.

Risk control with regard to the trading activity of Intesa Sanpaolo and Banca IMI also uses scenario analyses and stress tests. The impact of selected scenarios relating to the evolution of stock prices, interest rates, credit spreads, foreign exchange rates and commodity prices at the end of December is summarised in the following table.

(millions of euro)

	EQUITY		INTEREST RATES		CREDIT SPREADS		FOREIGN EXCHANGE RATES		COMMODITIES	
	Crash	Bullish	+40bp	lower rate	-25bp	+25bp	-5%	+5%	Crash	Bullish
Total	14	64	-268	148	670	-646	5	-11	2	2

In particular:
- for stock market positions, there would be no losses in both crash and bullish stock market scenarios, given the portfolio non-linearity;
- for positions in interest rates, there would be a loss of 268 million euro in the event of an increase in rate curves of 40 bps;
- for positions in credit spreads, a widening of credit spreads of 25 bps would entail a loss of 646 million euro;

- for positions in exchange rates, there would be a loss of around 11 million euro in the event of a 5% appreciation in the Euro;
- finally, for positions on commodities, there would be no losses in both scenarios given the portfolio non-linearity.

Backtesting

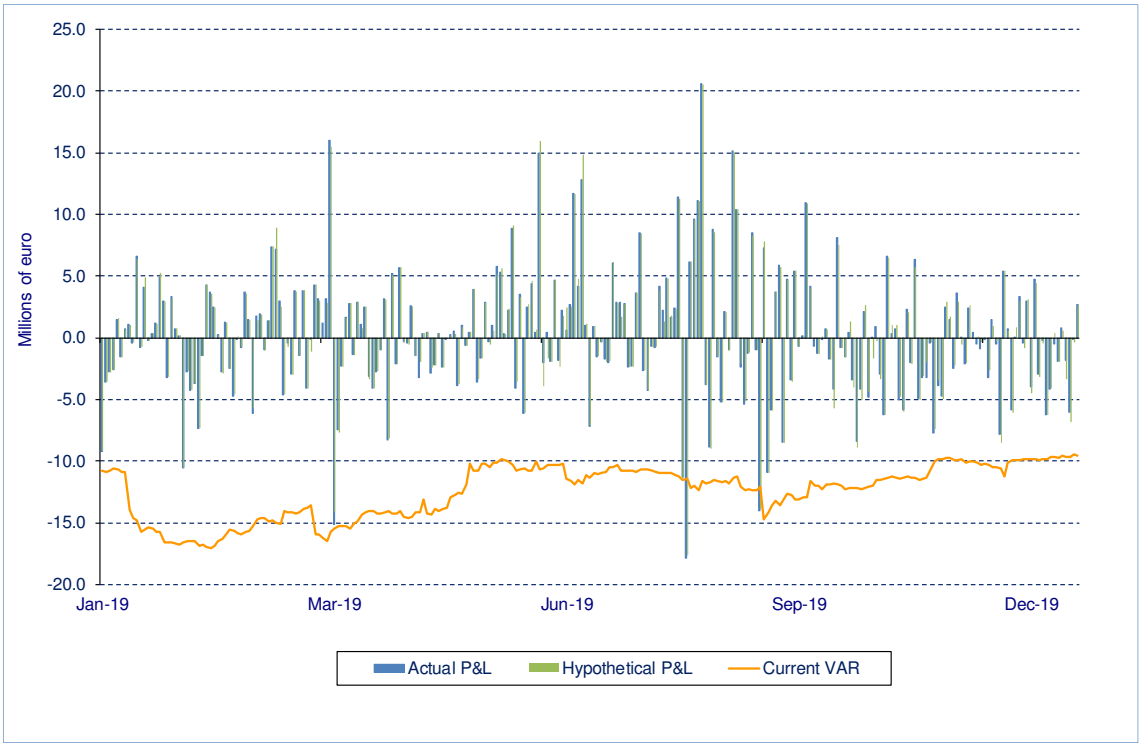
The soundness of the VaR calculation methods must be monitored daily via backtesting which, for the regulatory backtesting, compares:

- the daily estimates of value at risk;
- the daily profits/losses based on backtesting which are determined using actual daily profits and losses achieved by individual desks, net of components which are not considered in backtesting: these include fees, financial costs of managing the positions and P&L reserves that are regularly reported within the managerial area.

Backtesting allows verification of the model's capability of correctly seizing, from a statistical viewpoint, the variability in the daily valuation of trading positions, covering an observation period of one year (approximately 250 estimates). Any critical situations relative to the adequacy of the internal model are represented by situations in which daily profits/losses based on backtesting highlight more than four occasions, in the year of observation, in which the daily loss is higher than the value at risk estimate. Current regulations require that backtesting is performed by taking into consideration both the actual and hypothetical P&L series.

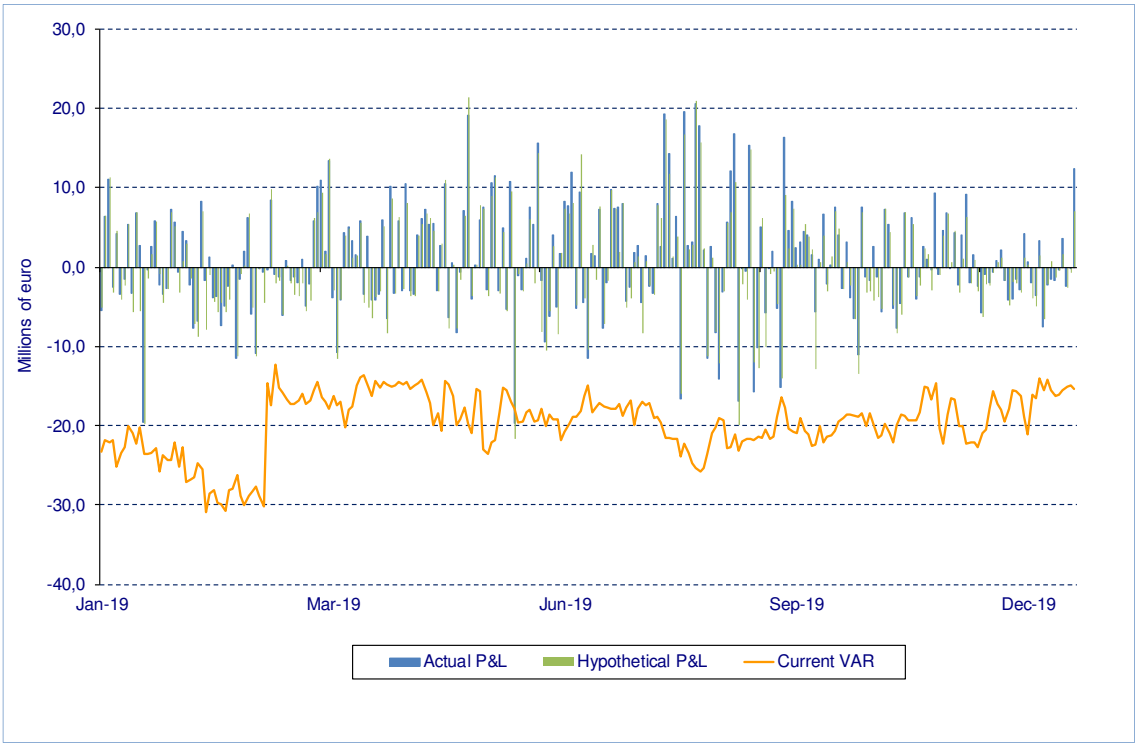
Backtesting in Intesa Sanpaolo

Two backtesting exceptions have been recorded during the last year. The breaches were caused by the volatility of the interest rate component in the trading book.



Backtesting in Banca IMI

Over the last twelve months, there was a single backtesting exception due to the interest rate volatility recorded in the second quarter of 2019.



Issuer risk

Issuer risk in the trading portfolio is analysed through level measures, i.e. in terms of mark to market, with exposures aggregated by rating class and sector, and is monitored through a system of operating limits based on both sector/rating classes and concentration indexes.

Breakdown of exposures by type of issuer for Intesa Sanpaolo and Banca IMI [(a)]

	TOTAL	OF WHICH					
		Corporate	Financial	Emerging	Covered	Government	Securitis.
Intesa Sanpaolo	39%	4%	1%	0%	7%	79%	9%
Banca IMI	61%	1%	36%	3%	6%	8%	46%
Total	**100%**	**2%**	**22%**	**2%**	**7%**	**36%**	**31%**

(a) In the Total column, the table reports the contribution to total exposure of Intesa Sanpaolo and Banca IMI to issuer risk, breaking down the contribution to exposure by type of issuer. The scope is the trading book subject to issuer credit limit (excluding Italian Government and AAA, own securities) , including cds (absolute value).

The breakdown of the portfolio subject to issuer risk shows the prevalence of securities in the government segment for Intesa Sanpaolo and the securitisation and financial segment for Banca IMI.

Operating limits

The structure of limits reflects the risk level deemed to be acceptable with reference to single business areas, consistent with operating and strategic guidelines defined by top management. The attribution and control of limits at the various hierarchical levels implies the assignment of delegated powers to the heads of business areas, aimed at achieving the best trade-off between a controlled risk environment and the need for operating flexibility. The functioning of the system of limits and delegated powers is underpinned by the following basic concepts of hierarchy and interaction.
The application of such principles led to the definition of a structure of limits in which the distinction between first level and second level limits is particularly important:

- first level limits (VaR): at the level of individual legal entities, these are approved by the Board of Directors, concurrently with approval of the RAF. Limit absorption trends and the relative congruity analysis are periodically assessed by the Group Financial Risk Committee. Following approval, these limits are then allocated to the desks of the individual legal entities, considering the proposals by the business units;
- second level limits (sensitivity and greeks): they have the objective of controlling operations of the various desks on the basis of differentiated measures based on the specific characteristics of traded instruments and operating strategies, such as sensitivity, greeks and equivalent exposures;
- other significant limits: they have the objective of monitoring particular transactions (e.g. ceiling for transactions with issuer risk, Incremental Risk Charge limit).

Some of these limits may be covered by the RAF rules.

With regard to VaR limits, for the 2019 RAF, an overall limit was set for the trading component of 220 million euro, up 65 million euro compared to last year. This increase should be viewed against the backdrop of the reduction of 40 million euro in the Group's HTCS VaR limit (from 260 to 220 million euro) and is primarily aimed at concentrating market risks (financial portfolios) within Banca IMI.

With respect to the component sub-allocated to the organisational units, it may be noted that the use of the managerial VaR limit (held for trading component) for Intesa Sanpaolo averaged 63% in 2019, with a maximum use of 84%. For Banca IMI, the average VaR operating limit came to 74%, with a maximum use of 112% (this excess was managed in line with RAF Guidelines and the rules from the Market Risk Charter); it should be specified that, for Banca IMI, the managerial VaR limit also includes the HTCS component. By contrast, the use of VaR operating limits on the HTCS component (excluding Banca IMI) at year-end was 28%.

With regard to the use of the IRC limits, these amounted to 57.6% at year-end for Intesa Sanpaolo (limit of 230 million euro) and 30.7% for Banca IMI (limit of 430 million euro).

BANKING BOOK

1.2.2 INTEREST RATE RISK AND PRICE RISK

Qualitative information

General aspects, interest rate risk and price risk management processes and measurement methods

Market risk originated by the banking book arises primarily in the Parent Company and the main Group companies involved in retail and corporate banking. The banking book also includes exposure to market risks deriving from the equity investments in listed companies not fully consolidated, held by the Parent Company.

The internal system for measuring interest rate risk assesses and describes the effect of changes in interest rates on the economic value and the net interest income and identifies all significant sources of risk that affect the banking book:

- repricing risk: risk arising from maturity mismatches (for fixed-rate positions) and interest rate revision date mismatches (for floating-rate positions) of financial items due to parallel movements in the yield curve;
- yield curve risk: risk arising from maturity mismatches and interest rate revision date mismatches due to changes in the inclination and shape of the yield curve;
- basis risk: risk arising from imperfect correlation in the adjustment of lending and deposit rates of floating-rate instruments which may differ according to indexing parameters, rate revision method, indexing algorithm, etc. This risk arises as a result of non-parallel changes in market rates;
- option risk: risk due to the presence of automatic options or options that depend on the behaviour of the counterparty to the assets, liabilities and off-balance sheet instruments of the Group.

The following metrics are used to measure the interest rate risk generated by the banking book:

1. shift sensitivity of economic value (ΔEVE);
2. net interest income:
   - shift sensitivity of net interest income (ΔNII);
   - dynamic simulation of net interest income (NII);
3. Value at Risk (VaR).

The shift sensitivity of the economic value (or shift sensitivity of the fair value) measures the change in the economic value of the banking book and is calculated at individual cash flow level for each financial instrument, based on different instantaneous rate shocks and reflects the changes in the present value of the cash flows of the positions already in the balance sheet for the entire remaining duration until maturity (run-off balance sheet).
In measurements, capital items are represented based on their contractual profile, except for categories of instruments whose risk profiles are different from those contractually envisaged. In this respect, therefore, the choice was made to use a behavioural representation to calculate the risk measures. More specifically:

- for mortgages, statistical techniques are used to determine the probability of prepayment, in order to reduce the Group's exposure to interest rate risk (overhedging) and to liquidity risk (overfunding);
- for core deposits, a financial representation model is adopted aimed at reflecting the behavioural features of stability of deposits and partial and delayed reaction to market interest rate fluctuations, in order to stabilise net interest income both in absolute terms and in terms of variability over time;
- for the expected loss on loans, which represents the average cost of long-term loans, a shift in the discounting curve is envisaged, according to the aggregate credit risk levels by economic segment, in order to reduce this component in the cash flows;
- the cash flows used for both the contractual and behavioural profile are calculated at the contractual rate or at the FTP;

The models adopted for core deposits and for prepayment are subject to periodic backtesting. This backtesting is duly indicated in the Model Change documents and has been duly approved by the Group Financial Risk Committee.

To determine the present value, a multi-curve system is adopted which has different discounting and forwarding curves according to the type of instrument and the tenor of its indexing. For the determination of shift sensitivity, the standard shock applied to all the curves is defined as a parallel and uniform shifting of +100 basis points of the curves.
In addition to the standard +100 scenario, the measurement of the economic value (EVE) is also calculated based on the 6 scenarios prescribed by the BCBS document and based on historical stress simulations aimed at identifying worst- and best-case scenarios.

The shift sensitivity of net interest income quantifies the impact on short-term interest income of a parallel, instantaneous and permanent, shock to the interest rate curve.
Margin sensitivity is measured using a method that enables the estimation of the expected change in net interest income as a result of a shock to the curves produced by items subject to interest rate revision within a gapping period set at 12 months from the analysis date.
This measure highlights the effect of variations in market interest rates on the net interest income generated by the portfolio being measured, on a constant balance sheet basis, excluding potential effects resulting from the new operations and from assumptions on future changes in the mix of assets and liabilities and, therefore, it cannot be considered a forecast indicator of the future levels of the interest margin.

To determine changes in net interest income (ΔNII), standard scenarios of parallel rate shocks of +/-50 basis points are applied, in reference to a time horizon of twelve months.
Dynamic margin simulation analyses are also conducted that combine shifts in yield curves with changes in base and liquidity differentials, as well as changes in customer behaviour in different market scenarios.

The changes in net interest income and economic value are subject, at consolidated level and at individual Group company level, to monthly monitoring of compliance with the limits and sub-limits approved by the Group Financial Risk Committee (GFRC).
To this end, the measurements are presented taking into account the structuring for the verification, in terms of ceilings and sub-ceilings, time buckets (short, medium and long term), company and currency.
The scenarios used for the verification of the limits are:
– for the control of the exposure in terms of ΔEVE: instantaneous and parallel shock of +100 bps;
– for the control of the exposure in terms of ΔNII: instantaneous and parallel shock of ±50 bps.

Value at Risk is calculated as the maximum potential loss in the portfolio's market value that could be recorded over a 10-day holding period with a 99% confidence level (parametric VaR). Besides measuring the equity portfolio, VaR is also used to consolidate exposure to financial risks of the various Group companies which perform banking book activities, thereby taking into account diversification benefits. Value at Risk calculation models have certain limitations, as they are based on the statistical assumption of the normal distribution of the returns and on the observation of historical data that may not be repeated in the future. Consequently, VaR results cannot guarantee that the possible future losses will not exceed the statistically calculated estimates.

Quantitative information

Banking book: internal models and other sensitivity analysis methodologies

In 2019, interest rate risk generated by the Intesa Sanpaolo Group's banking book, measured through shift sensitivity of value, averaged 594 million euro, with a minimum value of 233 million euro and a maximum value of 1,226 million euro, reaching a figure of 394 million euro at the end of 2019 (1,143 million euro at the end of 2018), almost entirely concentrated on the euro currency.

The sensitivity of net interest income – assuming a +50, -50 and +100 basis point change in interest rates – amounted to 939 million euro, -1,037 million euro and 1,837 million euro, respectively, at the end of 2019. The last of these figures was up on the 1,759 million euro recorded at the end of 2018.

Interest rate risk, measured in terms of VaR, averaged 172 million euro in 2019, with a maximum value of 282 million euro and a minimum value of 74 million euro, reaching a figure of 227 million euro at the end of 2019 (91 million euro at the end of 2018).

Foreign exchange risk expressed by equity investments in foreign currency (banking book) and measured in terms of VaR averaged 43 million euro in 2019, with a maximum value of 54 million euro and a minimum value of 35 million euro, with the latter coinciding with the value at the end of 2019 (42 million euro at the end of 2018).

Price risk generated by minority stakes in listed companies, mostly held in the HTCS (former AFS) category and measured in terms of VaR, recorded an average level during 2019 of 60 million euro (52 million euro at the end of 2018), with maximum and minimum values of 75 million euro and 43 million euro respectively, with the latter coinciding with the value at the end of 2019.

The table below shows the changes in the main risk measures

(millions of euro)

	2019			31.12.2019	31.12.2018
	average	minimum	maximum		
Shift Sensitivity of the Economic Value +100 bp	594	233	1,226	394	1,143
Shift Sensitivity of Net Interest Income -50bp	-1,017	-952	-1,072	-1,037	-928
Shift Sensitivity of Net Interest Income +50bp	967	914	1,009	939	886
Shift Sensitivity of Net Interest Income +100bp	1,887	1,786	1,964	1,837	1,759
Value at Risk - Interest Rate	172	74	282	227	91
Value at Risk Exchange	43	35	54	35	42
Value at Risk - Equity investments in listed companies	60	43	75	43	52

Lastly, the table below shows a sensitivity analysis of the banking book to price risk, measuring the impact on Shareholders' Equity of a price shock of ±10% for the abovementioned quoted assets recorded in the HTCS category.

Price risk: impact on Shareholders' Equity

(millions of euro)

		1st quarter 2019 impact on shareholders' equity at 31.03.2019	2nd quarter 2019 impact on shareholders' equity at 30.06.2019	3rd quarter 2019 impact on shareholders' equity at 30.09.2019	4th quarter 2019 impact on shareholders' equity at 31.12.2019	Impact on shareholders' equity at 31.12.2018
Price shock	10%	59	56	52	50	39
Price shock	-10%	-59	-56	-52	-50	-39

1.2.3. FOREIGN EXCHANGE RISK

Qualitative information

A. General aspects, foreign exchange risk management processes and measurement methods

"Foreign exchange risk" is defined as the potential loss resulting from changes in the exchange rate that could have a negative impact on the valuation of the assets and liabilities in the financial statements and on earnings and capital ratios.

Two types of Foreign Exchange Risk are identified: *Structural* and *Transaction risk.*

Structural Foreign Exchange Risk is defined as the potential loss resulting from changes in the exchange rate that could have a negative impact on the foreign exchange reserves that are part of the Group's consolidated shareholders' equity, and also includes the foreign exchange risk associated with hybrid capital instruments. The key sources of structural foreign exchange risk are therefore the investments in associates and companies subject to joint control. The Intesa Sanpaolo Group's management of the Structural Foreign Exchange Risk assigns the Parent Company the related management and coordination powers in order to achieve a consistent Group strategy.
This choice, which is consistent with the Parent Company's role as the liaison with the Supervisory Authority, allows the activities to be performed based on the specific responsibilities set out in the prudential supervision regulations, in addition to suitably mitigating and/or managing this type of risk.

Transaction Foreign Exchange Risk is defined as the potential loss resulting from changes in the exchange rate that may have a negative impact both on the valuation of the assets and liabilities in the financial statements and on the earnings from funding and lending transactions in currencies other than the euro. The main sources of this foreign exchange risk consist of: non-euro loans and deposits held by corporate and/or retail customers; conversion into domestic currency of assets, liabilities and income of the international branches; trading of foreign currencies; collection and/or payment of interest, commissions, dividends and administrative expenses in foreign currencies; purchase and sale of securities and financial instruments for the purpose of resale in the short term; etc. Transaction foreign exchange risk also includes the risk related to transactions connected to operations that generate the type of structural foreign exchange risk represented, for example, by dividends, earnings in the process of being generated, and corporate events.

B. Foreign exchange risk hedging activities

The monitoring and hedging of the Transaction Foreign Exchange Risk are carried out at central level by the Group Treasury and Finance Head Office Department of the Parent Company and at local level by the individual treasury functions of the Group Companies and Banks.
According to the general principle underlying the management of the Structural Foreign Exchange Rate Risk, the related exposures are not normally subject to microhedging. This is because the foreign exchange risk arising from the investments in countries where the Group has investments in associates and companies subject to joint control reflects the long-term strategic view of investing in the macroeconomic growth of those countries and any hedging would mean giving up the additional profit arising from the rate spread against the euro rates. In addition, over the long term, the diversification of the Group's portfolio among different currencies optimises its risk/return and mitigates the Group's exposure to Italy country risk, albeit to a limited extent. These investments, due to their nature, also enable the stability of the capital ratios, within certain limits.
The exposures to foreign exchange risk are measured by the Financial and Market Risks Department and, for Transaction Foreign Exchange Risk, are subject to daily VaR limits and stress tests with the rest of the trading book.

As at the date of preparation of the financial statements, there were no transactions hedging shareholders' equity, whereas there were operational hedges of the foreign exchange risk of the assets and liabilities in the financial statements related to the Banking Book.

Quantitative information

1. Breakdown by currency of assets and liabilities and of derivatives

(millions of euro)

	CURRENCIES							
	US dollar	GB pound	Swiss franc	Hungarian forint	Egyptian pound	Croatian kuna	Yen	Other currencies
A. FINANCIAL ASSETS	**36,841**	**3,156**	**973**	**4,057**	**4,908**	**6,606**	**3,400**	**9,415**
A.1 Debt securities	12,113	587	16	1,145	1,225	895	2,166	2,139
A.2 Equities	424	17	8	-	36	2	-	455
A.3 Loans to banks	5,766	206	346	715	1,751	2,177	113	2,032
A.4 Loans to customers	18,522	2,346	603	2,036	1,896	3,529	1,121	4,738
A.5 Other financial assets	16	-	-	161	-	3	-	51
B. OTHER ASSETS	**3,289**	**191**	**38**	**147**	**147**	**243**	**277**	**218**
C. FINANCIAL LIABILITIES	**33,870**	**1,227**	**745**	**3,925**	**4,288**	**4,582**	**772**	**5,625**
C.1 Due to banks	10,627	244	59	396	16	187	8	727
C.2 Due to customers	8,499	631	373	3,414	1,973	4,394	187	4,344
C.3 Debt securities	14,739	352	313	-	2,299	-	577	535
C.4 Other financial liabilities	5	-	-	115	-	1	-	19
D. OTHER LIABILITIES	**479**	**14**	**11**	**16**	**94**	**264**	**3**	**110**
E. FINANCIAL DERIVATIVES								
- Options								
long positions	*4,042*	*80*	*9*	*12*	-	-	*108*	*359*
short positions	*4,103*	*142*	*9*	*10*	-	-	*209*	*387*
- Other derivatives								
long positions	*80,641*	*10,766*	*4,423*	*1,550*	-	*23*	*4,498*	*10,665*
short positions	*86,098*	*12,473*	*4,572*	*1,072*	-	*224*	*7,298*	*12,457*
TOTAL ASSETS	**124,813**	**14,193**	**5,443**	**5,766**	**5,055**	**6,872**	**8,283**	**20,657**
TOTAL LIABILITIES	**124,550**	**13,856**	**5,337**	**5,023**	**4,382**	**5,070**	**8,282**	**18,579**
DIFFERENCE (+/-)	**263**	**337**	**106**	**743**	**673**	**1,802**	**1**	**2,078**

2. Internal models and other sensitivity analysis methodologies

As already noted, the management of Transaction Foreign Exchange Risk relating to trading activities is included in the operating procedures and in the estimation methodologies of the internal model based on VaR calculations, as already illustrated.

The (structural) foreign exchange risk expressed by equity investments in foreign currency (banking book), including Group companies, originated a VaR (99% confidence level, 10-day holding period) amounting to 35 million euro as at 31 December 2019. This potential impact would only be reflected in the Shareholders' Equity.

1.3. DERIVATIVES AND HEDGING POLICIES

Starting from 2014, the Parent Company and Banca IMI have been authorised to use EPE (Expected Positive Exposure) internal models to determine the capital requirement for counterparty risk. This approach is applicable to almost the entire derivative portfolio (as shown in the table below, as at 31 December 2019 approximately 98% of the total EAD of financial and credit derivatives is measured using EPE models). Derivatives whose counterparty risk is measured using approaches other than internal models represent a residual portion of the portfolio (as at 31 December 2019 accounting for approximately 2% of overall EAD) and refer to:

- residual contracts of Banca IMI and Intesa Sanpaolo to which EPE is not applied (in compliance with the immateriality of the EBA thresholds);
- EAD generated by all other banks and companies in the Group which report using the mark-to-market approach.

As envisaged by Basel 3, also CCPs generate a capital requirement and are thus included in the EPE scope and in the evidence stated below.

The table below shows the overall EAD of exposures in financial and credit derivatives, broken down by measurement approach (EPE internal models or mark-to-market approach).

(millions of euro)

Transaction categories	31.12.2019		31.12.2018	
	Mark-to-market approach	EPE Internal Method	Mark-to-market approach	EPE Internal Method
Derivative contracts	402	17,138	404	16,950

The EPE internal model considers the collateral collected to mitigate credit exposure and any excess collateral paid. The value of the guarantees received and included in the calculation of the EAD amounts to approximately 4 billion euro for the Parent Company and Banca IMI, while the collateral paid equals 18 billion euro (including the collateral connected with transactions with central counterparties).

1.3.1. Trading derivatives

A. FINANCIAL DERIVATIVES

A.1. Financial trading derivatives: period-end notional amounts

(millions of euro)

Underlying asset/Type of derivatives	31.12.2019				31.12.2018			
	Over the counter			Organised markets	Over the counter			Organised markets
	Central Counterparties	without central counterparties			Central Counterparties	without central counterparties		
		With netting agreements	Without netting agreements			With netting agreements	Without netting agreements	
1. Debt securities and interest rate	**1,638,170**	**171,607**	**56,717**	**211,811**	**1,768,173**	**181,588**	**58,260**	**210,792**
a) Options	-	83,974	7,429	63,006	-	91,854	6,833	51,158
b) Swaps	1,638,170	87,633	47,391	-	1,768,173	89,734	48,737	-
c) Forwards	-	-	1,897	-	-	-	2,690	-
d) Futures	-	-	-	148,805	-	-	-	159,634
e) Other	-	-	-	-	-	-	-	-
2. Equities and stock indices	**-**	**9,152**	**16,504**	**23,392**	**-**	**10,284**	**16,162**	**19,542**
a) Options	-	9,152	16,491	21,046	-	10,244	16,151	18,000
b) Swaps	-	-	13	-	-	40	9	-
c) Forwards	-	-	-	-	-	-	2	-
d) Futures	-	-	-	2,346	-	-	-	1,542
e) Other	-	-	-	-	-	-	-	-
3. Foreign exchange rates and gold	**-**	**189,826**	**19,479**	**339**	**-**	**166,544**	**20,336**	**534**
a) Options	-	26,439	888	80	-	22,682	1,094	71
b) Swaps	-	55,590	6,355	-	-	56,215	6,118	-
c) Forwards	-	107,501	11,815	8	-	87,437	12,612	-
d) Futures	-	-	-	250	-	-	-	222
e) Other	-	296	421	1	-	210	512	241
4. Commodities	**-**	**7,342**	**912**	**1,637**	**-**	**11,405**	**1,904**	**1,838**
5. Other	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Total	**1,638,170**	**377,927**	**93,612**	**237,179**	**1,768,173**	**369,821**	**96,662**	**232,706**

A.2. Financial trading derivatives: gross positive and negative fair value – breakdown by product

(millions of euro)

Type of derivative	31.12.2019				31.12.2018			
	Over the counter			Mercati organizzati	Over the counter			Mercati organizzati
	Central Counterparties	Without central counterparties			Central Counterparties	Without central counterparties		
		With netting agreements	Without netting agreements			With netting agreements	Without netting agreements	
1. Positive fair value								
a) Options	-	2,466	95	581	-	2,583	92	563
b) Interest rate swaps	36,322	12,697	6,724	-	-	10,536	6,010	-
c) Cross currency swaps	-	1,379	262	-	-	1,282	269	-
d) Equity swaps	-	-	4	-	-	3	2	-
e) Forwards	-	917	82	-	-	976	91	1
f) Futures	-	-	-	-	-	-	-	-
g) Other	-	257	68	1	-	2,773	141	-
Total	**36,322**	**17,716**	**7,235**	**582**	**-**	**18,153**	**6,605**	**564**
2. Negative fair value								
a) Options	-	2,499	4,772	1,155	-	2,607	3,711	1,425
b) Interest rate swaps	41,748	12,633	789	-	4,298	11,418	656	-
c) Cross currency swaps	-	1,421	840	-	-	1,340	676	-
d) Equity swaps	-	-	1	-	-	-	-	-
e) Forwards	-	847	93	-	-	1,042	160	1
f) Futures	-	-	-	-	-	-	-	-
g) Other	-	262	70	-	-	2,762	126	-
Total	**41,748**	**17,662**	**6,565**	**1,155**	**4,298**	**19,169**	**5,329**	**1,426**

A.3. Over the counter financial trading derivatives: notional values, gross positive and negative fair value by counterparty

(millions of euro)

Underlying asset	Central Counterparties	Banks	Other financial companies	Other counterparties
Contracts not included under netting agreements				
1) Debt securities and interest rates				
- notional amount	X	8,082	7,387	41,248
- positive fair value	X	1,117	164	5,527
- negative fair value	X	-590	-12	-221
2) Equities and stock indices				
- notional amount	X	310	15,556	638
- positive fair value	X	1	3	11
- negative fair value	X	-56	-4,610	-65
3) Foreign exchange rates and gold				
- notional amount	X	1,728	7,737	10,014
- positive fair value	X	5	17	325
- negative fair value	X	-652	-83	-209
4) Commodities				
- notional amount	X	-	80	832
- positive fair value	X	-	1	64
- negative fair value	X	-	-1	-66
5) Other				
- notional amount	X	-	-	-
- positive fair value	X	-	-	-
- negative fair value	X	-	-	-
Contracts included under netting agreements				
1) Debt securities and interest rates				
- notional amount	1,638,170	98,872	57,224	15,511
- positive fair value	36,322	11,217	2,181	1,340
- negative fair value	-41,748	-11,236	-3,000	-361
2) Equities and stock indices				
- notional amount	-	4,256	4,849	47
- positive fair value	-	102	38	1
- negative fair value	-	-115	-100	-
3) Foreign exchange rates and gold				
- notional amount	-	138,608	38,260	12,958
- positive fair value	-	1,201	1,042	331
- negative fair value	-	-1,600	-460	-505
4) Commodities				
- notional amount	-	2,869	3,073	1,400
- positive fair value	-	103	79	81
- negative fair value	-	-53	-135	-97
5) Other				
- notional amount	-	-	-	-
- positive fair value	-	-	-	-
- negative fair value	-	-	-	-

A.4. Residual maturity of over the counter financial derivatives: notional amounts

(millions of euro)

Underlying/Residual maturity	Up to 1 year	Between 1 and 5 years	Over 5 years	Total
A.1 Financial derivatives on debt securities and interest rates	496,896	712,985	656,613	1,866,494
A.2 Financial derivatives on equities and stock indices	4,115	20,017	1,524	25,656
A.3 Financial derivatives on foreign exchange rates and gold	147,600	40,853	20,852	209,305
A.4 Financial derivatives on commodities	5,834	2,420	-	8,254
A.5 Other financial derivatives	-	-	-	-
Total 31.12.2019	**654,445**	**776,275**	**678,989**	**2,109,709**
Total 31.12.2018	**569,186**	**898,637**	**766,833**	**2,234,656**

B. CREDIT DERIVATIVES

B.1. Credit trading derivatives: period-end notional amounts

(millions of euro)

Categories of transactions	Trading derivatives	
	single counterparty	more counterparties (basket)
1. Protection purchases		
a) Credit default products	9,019	50,385
b) Credit spread products	-	-
c) Total rate of return swap	-	-
d) Other	-	-
Total 31.12.2019	**9,019**	**50,385**
Total 31.12.2018	**7,627**	**45,131**
2. Protection sales		
a) Credit default products	10,559	46,581
b) Credit spread products	-	-
c) Total rate of return swap	-	-
d) Other	-	-
Total 31.12.2019	**10,559**	**46,581**
Total 31.12.2018	**8,152**	**43,937**

As at 31 December 2019, none of the contracts shown in the table above have been included within the structured credit products.

B.2. Credit trading derivatives: gross positive and negative fair value – breakdown by product

(millions of euro)

Type of derivative	Total 31.12.2019	Total 31.12.2018
1. Positive fair value		
a) Credit default products	1,770	703
b) Credit spread products	-	-
c) Total rate of return swap	-	-
d) Other	-	-
Total	**1,770**	**703**
2. Negative fair value		**-**
a) Credit default products	1,942	784
b) Credit spread products	-	-
c) Total rate of return swap	-	-
d) Other	-	-
Total	**1,942**	**784**

As at 31 December 2019, none of the contracts shown in the table above have been included within the structured credit products.

B.3. Over the counter credit trading derivatives: notional values, gross positive and negative fair value by counterparty

(millions of euro)

	Central counterparties	Banks	Other financial companies	Other counterparties
Contracts not included under netting agreements				
1) Protection purchases				
– notional amount	X	-	-	192
– positive fair value	X	-	-	45
– negative fair value	X	-	-	-
2) Protection sales				
– notional amount	X	-	54	-
– positive fair value	X	-	-	-
– negative fair value	X	-	-21	-
Contracts included under netting agreements				
1) Protection purchases				
– notional amount	31,101	17,879	10,232	-
– positive fair value	-	127	101	-
– negative fair value	-959	-345	-251	-
2) Protection sales				
– notional amount	29,000	17,068	11,018	-
– positive fair value	856	329	312	-
– negative fair value	-	-152	-214	-

As at 31 December 2019, none of the contracts shown in the table above have been included within the structured credit products.

B.4. Residual maturity of over the counter credit trading derivatives: notional amounts

(millions of euro)

Underlying/Residual maturity	Up to 1 year	Between 1 and 5 years	Over 5 years	Total
1. Protection sales	8,576	47,504	1,060	57,140
2. Protection purchases	8,920	49,569	915	59,404
Total 31.12.2019	**17,496**	**97,073**	**1,975**	**116,544**
Total 31.12.2018	**6,191**	**96,621**	**2,035**	**104,847**

B.5. Credit derivatives associated with the fair value option: annual changes

The Intesa Sanpaolo Group does not hold credit derivatives associated with the fair value option.

1.3.2. Accounting hedges

Qualitative information

On first-time adoption of IFRS 9, the Intesa Sanpaolo Group exercised its option under the standard to continue to fully apply the rules of IAS 39 for all types of hedges (micro and macro hedges). As a result, the provisions of IFRS 9 on hedging do not apply.

A. Fair value hedging

The hedging carried out by the Intesa Sanpaolo Group is aimed at protecting the banking book from variations in the fair value of loans and deposits due to movements in the interest rate curve (interest rate risk).

The Group uses both micro fair value hedges and macro fair value hedges.
The micro fair value hedges mainly hedge bonds issued, securities under assets and loans to customers.
The macro fair value hedges are used for:

- core deposits, based on the applicable standards in the carved-out version of IAS 39 in accordance with the option provided by IFRS 9 to make use of the possibility of fully applying the provisions of IAS 39 on hedges;
- the already fixed portion of floating-rate loans, in which the macro fair value hedge is used to hedge the interest rate risk inherent in the floating-rate coupons of the loans granted, when the coupon rate is set;
- a portion of the fixed-rate loans. For this type, an open-portfolio macrohedging model has been adopted according to a bottom-layer approach that, in accordance with the interest rate risk measurement method involving modelling of the prepayment phenomenon, is more closely correlated with risk management activity and asset dynamics.

The main types of derivative contracts used are plain and structured interest rate swaps (IRS), overnight index swaps (OIS), cross-currency swaps (CCS) and options on interest rates stipulated with third parties or with other Group companies. The latter, in turn, hedge the risk in the market to meet the requirements for the outsourcing of the hedges to third-party counterparties required to qualify the hedges as IAS-compliant in the consolidated financial statements.
The derivatives are not listed on regulated markets but are traded in OTC circuits. The OTC contracts also include contracts brokered through clearing houses.

B. Cash flow hedging

The hedging carried out by the Intesa Sanpaolo Group is aimed at protecting the Group from the exposure to changes in future cash flows attributable to movements in the interest rate curve, associated with a particular asset/liability, such as variable future interest payments on a debt/loan or a highly probable expected future transaction.
The Group uses both micro cash flow hedges and macro cash flow hedges.
The micro cash flow hedges mainly hedge bonds issued.
The macro cash flow hedges are used for:

- floating-rate funding when it is used to finance fixed-rate loans;
- floating-rate loans to hedge the fixed-rate funding.

The derivatives used are interest rate swaps (IRS) with third parties or with other Group companies, which, in turn, hedge the risk in the market to meet the requirements for the outsourcing of the hedges to third-party counterparties required to qualify the hedges as IAS-compliant in the consolidated financial statements.
The derivatives are not listed on regulated markets but are traded in OTC circuits. The OTC contracts also include contracts brokered through clearing houses.

C. Hedging of foreign investments

In 2019, foreign exchange hedges were implemented against transaction foreign exchange risk.

D. Hedging instruments

The main causes of ineffectiveness of the model adopted by the Group for verifying the effectiveness of the hedges are attributable to the following:

- misalignment between the notional value of the derivative and the hedged underlying recognised at the time of initial designation or generated subsequently, such as in the case of partial repayments of loans or the repurchase of bonds;
- application of different curves on the hedging derivative and hedged item for the purpose of carrying out the effectiveness test on fair value hedges. The derivatives, which are normally collateralised, are discounted on the Eonia curve, while the hedged items are discounted on the indexing curve of the hedging instrument;
- inclusion in the effectiveness test of the value of the variable leg of the hedging derivative, in the case of fair value hedges.

The ineffectiveness of the hedge is promptly recognised for the purposes of:

- the determination of the effect on the income statement;
- the assessment of the possibility of continuing to apply the hedge accounting rules.

The Group does not use dynamic hedges, as defined in IFRS 7, paragraph 23C.

E. **Hedged items**

The main types of hedged items are:
- debt securities under assets;
- debt securities issued and non-securities funding;
- fixed-rate loans;
- floating-rate loans;
- optional embedded component of floating-rate mortgages;
- already fixed coupon of floating rate-loans;
- modelled on demand deposits.

E.1 Debt securities under assets

These are hedged by micro fair value hedges, using IRS, OIS and CCS as hedging instruments.
The interest rate risk is hedged for the entire duration of the obligation.
The Dollar Offset Method is used to verify the hedge effectiveness. This method is based on the ratio between the cumulative changes (from the inception of the hedge) in the fair value of the hedging instrument, attributable to the hedged risk, and past changes in the fair value of the hedged item (fair value change), net of accrued interest.

E.2 Debt securities issued and non-securities funding

The Group currently has micro fair value hedges in place on fixed- or structured-rate funding and micro cash flow hedges or macro cash flow hedges on floating-rate funding, using IRS, OIS and CCS as hedging instruments.
The interest rate risk is hedged for the entire duration of the obligation.
For the micro hedges, the hedge effectiveness is verified using the Dollar Offset Method. This method is based on the ratio between the cumulative changes (from the inception of the hedge) in the fair value or the cash flows of the hedging instrument, attributable to the hedged risk, and past changes in the fair value or the cash flows of the hedged item (fair value change), net of accrued interest.
For the macro hedges, the hedge effectiveness is verified by means of a capacity test. This test involves a comparison of the consistency between the hedged items, referring to existing and expected floating-rate funding (so-called highly probable future transactions), and the hedging instruments, which must always be confirmed throughout the life of the hedging relationship and for each time band. In this case, the hedged item is represented by the expected cash flows from funding that will arise over the life of the issues.

E.3 Fixed-rate loans

The Group has designated micro fair value hedges for fixed-rate loans and macro fair value hedges for mortgage loans in the retail segment of the Parent Company and the Network Banks, mainly using IRS as hedging instruments.
The interest rate risk is hedged throughout the life of the underlying.
For the micro hedges, the hedge effectiveness is verified using the Dollar Offset Method.
For the macro hedges, the loan portfolio hedged is open, i.e. it is dynamically composed of fixed-rate instruments managed at aggregate level through hedging derivatives entered into over time.

The effectiveness of the macro hedges on fixed-rate loans is periodically verified through specific prospective and retrospective tests aimed at demonstrating that the hedged portfolio contains an amount of assets whose sensitivity profile and changes in fair value due to interest rate risk reflect those of the derivatives used for the hedge.

E.4 Floating-rate loans

The Group currently has macro cash flow hedges in place on floating-rate loans, mainly using IRS as hedging instruments.
The hedge effectiveness is verified by means of a capacity test. This test involves a comparison of the consistency between the hedged items, referring to the floating-rate loans outstanding, and the hedging instruments, which must always be confirmed throughout the life of the hedging relationship and for each time band. In this case, the hedged item is represented by the expected cash flows originating from the loans that will arise over the life of the assets.

E.5 Optional embedded component of floating-rate mortgages

The optional embedded components (interest rate options) of floating-rate mortgages are hedged by micro fair value hedges, using options (cap, floor, collar) as hedging instruments.
The underlying assets may be partially or totally hedged, over time and in terms of amount.

The Dollar Offset Method is used to verify the hedge effectiveness.

E.6 Already fixed coupon of floating-rate loans

This is hedged by macro fair value hedges, using OIS as hedging instruments.
The purpose of this type of hedge is to neutralise the interest rate risk generated by the coupons already set for floating-rate loans.
The Dollar Offset Method is used to verify the hedge effectiveness, while the actual consistency of the hedged items is verified by a capacity test.

E.7 Modelled on demand deposits.

Modelled on demand deposits are hedged by macro fair value hedges, as required by the "carve out" of IAS 39, using IRS and OIS as hedging instruments.
The purpose of this type of hedge is to protect the net interest income from possible falls in interest rates that reduce the spread generated by core deposits.
The model is subject to continuous monitoring and verification by the Financial and Market Risks Head Office Department, in order to promptly incorporate changes in the main characteristics (volumes, stability, reactivity) and make the necessary adjustments where necessary. The Dollar Offset Method is used to verify the hedge effectiveness.

Quantitative information

A. Financial hedging derivatives

A.1 Financial hedging derivatives: period-end notional amounts

(millions of euro)

Underlying asset/Type of derivative	31.12.2019				31.12.2018			
	Over the counter			Organised markets	Over the counter			Organised markets
	Central Counterparties	Without central counterparties			Central Counterparties	Without central counterparties		
		With netting agreements	Without netting agreements			With netting agreements	Without netting agreements	
1. Debt securities and interest rates	**21,477**	**184,377**	**6,235**	**-**	**13,941**	**175,467**	**4,284**	**-**
a) Options	-	2,689	-	-	-	3,194	-	-
b) Swaps	21,477	181,668	4,645	-	13,941	172,253	4,284	-
c) Forwards	-	-	1,590	-	-	-	-	-
d) Futures	-	-	-	-	-	-	-	-
e) Others	-	20	-	-	-	20	-	-
2. Equities and stock indices	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
a) Options	-	-	-	-	-	-	-	-
b) Swaps	-	-	-	-	-	-	-	-
c) Forwards	-	-	-	-	-	-	-	-
d) Futures	-	-	-	-	-	-	-	-
e) Other	-	-	-	-	-	-	-	-
3. Foreign exchange rates and gold	**-**	**6,682**	**36**	**136**	**-**	**3,192**	**52**	**26**
a) Options	-	-	-	-	-	-	-	-
b) Swaps	-	6,682	36	136	-	3,192	52	26
c) Forwards	-	-	-	-	-	-	-	-
d) Futures	-	-	-	-	-	-	-	-
e) Other	-	-	-	-	-	-	-	-
4. Commodities	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
5. Other	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
TOTAL	**21,477**	**191,059**	**6,271**	**136**	**13,941**	**178,659**	**4,336**	**26**

The average notional amount in the year of the financial hedging derivatives was 192,881 million euro

A.2 Financial hedging derivatives: gross positive and negative fair value – breakdown by product

(millions of euro)

Type of derivative	Positive and negative fair value								Change in value used to calculate hedge effectiveness	
	Total 31.12.2019				Total 31.12.2018					
	Over the counter			Organised markets	Over the counter			Organised markets	Total 31.12.2019	Total 31.12.2018
	Central Counterparties	Without central counterparties			Central Counterparties	Without central counterparties				
		With netting agreements	Without netting agreements			With netting agreements	Without netting agreements			
Positive fair value										
a) Options	-	19	-	-	-	53	-	-	-183	-176
b) Interest rate swap	392	2,583	11	-	-	2,643	7	-	2,127	2,066
c) Cross currency swap	-	385	-	-	-	290	-	-	116	59
d) Equity swap	-	-	-	-	-	-	-	-	-	-
e) Forwards	-	-	28	-	-	-	-	-	-	-
f) Futures	-	-	-	-	-	-	-	-	-	-
g) Other	-	1	-	-	-	-	-	-	-	-
Total	**392**	**2,988**	**39**	**-**	**-**	**2,986**	**7**	**-**	**2,060**	**1,949**
Negative fair value										
a) Options	-	4	-	-	-	4	-	-	1	4
b) Interest rate swap	907	8,039	141	-	300	6,132	109	-	6,242	4,388
c) Cross currency swap	-	397	1	-	-	344	1	-	356	272
d) Equity swap	-	-	-	-	-	-	-	-	-	-
e) Forwards	-	-	-	-	-	-	-	-	-	-
f) Futures	-	-	-	-	-	-	-	-	-	-
g) Other	-	-	-	3	-	-	-	-	-	-
Total	**907**	**8,440**	**142**	**3**	**300**	**6,480**	**110**	**-**	**6,599**	**4,664**

A.3 Over the counter financial hedging derivatives: notional values, gross positive and negative fair values by counterparty

(millions of euro)

Underlying asset	Central counterparties	Banks	Other financial companies	Other counterparties
Contracts not included under netting agreements				
1) Debt securities and interest rates				
- notional amount	X	5,048	1,187	-
- positive fair value	X	19	20	-
- negative fair value	X	-141	-	-
2) Equities and stock indices				
- notional amount	X	-	-	-
- positive fair value	X	-	-	-
- negative fair value	X	-	-	-
3) Foreign exchange rates and gold				
- notional amount	X	36	-	-
- positive fair value	X	-	-	-
- negative fair value	X	-1	-	-
4) Commodities				
- notional amount	X	-	-	-
- positive fair value	X	-	-	-
- negative fair value	X	-	-	-
5) Other				
- notional amount	X	-	-	-
- positive fair value	X	-	-	-
- negative fair value	X	-	-	-
Contracts included under netting agreements				
1) Debt securities and interest rates				
- notional amount	21,477	182,518	1,859	-
- positive fair value	392	2,547	56	-
- negative fair value	-907	-7,390	-653	-
2) Equities and stock indices				
- notional amount	-	-	-	-
- positive fair value	-	-	-	-
- negative fair value	-	-	-	-
3) Foreign exchange rates and gold				
- notional amount	-	6,211	471	-
- positive fair value	-	380	5	-
- negative fair value	-	-231	-166	-
4) Commodities				
- notional amount	-	-	-	-
- positive fair value	-	-	-	-
- negative fair value	-	-	-	-
5) Other				
- notional amount	-	-	-	-
- positive fair value	-	-	-	-
- negative fair value	-	-	-	-

A.4 Residual maturity of over the counter financial hedging derivatives: notional amounts

(millions of euro)

Underlying/Residual maturity	Up to 1 year	Between 1 and 5 years	Over 5 year	Total
A.1 Financial derivatives on debt securities and interest rates	70,305	59,328	82,456	212,089
A.2 Financial derivatives on equities and stock indices	-	-	-	-
A.3 Financial derivatives on foreign exchange rates and gold	171	4,179	2,368	6,718
A.4 Financial derivatives on commodities	-	-	-	-
A.5 Other financial derivatives	-	-	-	-
Total 31.12.2019	**70,476**	**63,507**	**84,824**	**218,807**
Total 31.12.2018	**38,329**	**83,518**	**75,089**	**196,936**

B. Credit hedging derivatives

B.1 Credit hedging derivatives: period-end notional amounts

B.2 Credit hedging derivatives: gross positive and negative fair value - breakdown by product

B.3 Over the counter credit hedging derivatives: notional values, gross positive and negative fair values by counterparty

B.4 Residual maturity of over the counter credit hedging derivatives: notional amounts

The Intesa Sanpaolo Group does not hold credit derivatives classified as hedges in its portfolio.

C. Non-derivative hedging instruments

C.1 Non-derivative hedging instruments: breakdown by accounting portfolio and type of hedge

The Intesa Sanpaolo Group has exercised the option, provided for on the introduction of IFRS 9, of continuing to fully apply the provisions of IAS 39 on hedge accounting (in the carved-out version endorsed by the European Commission) for each type of hedge (both for micro hedges and macro hedges).

For this reason, the Intesa Sanpaolo Group does not hold financial instruments to be shown in table “C.1 Non-derivative hedging instruments: breakdown by accounting portfolio and type of hedge”.

INFORMATION ON THE UNCERTAINTY DERIVING FROM HEDGING DERIVATIVE BENCHMARK INDICES

As illustrated in Part A – Accounting policies, the Intesa Sanpaolo Group has exercised the option of early adoption of Regulation (EU) 34/2020 of 15 January 2020 for the 2019 Financial Statements, which adopted the document issued by the IASB in September 2019 on "Interest Rate Benchmark Reform (amendments to IFRS 9 Financial Instruments, IAS 39 Financial Instruments: Recognition and Measurement and IFRS 7 Financial Instruments: Disclosures)". This regulation introduced several amendments regarding hedges (hedge accounting) designed to prevent uncertainties about the amount and timing of the cash flows arising from the rate reform from resulting in the discontinuation of existing hedges and difficulties in designating new hedging relationships. Therefore, the analysis of hedge effectiveness was carried out considering the flows and timing of outstanding hedging derivatives, assuming that the interest rate benchmarks used to set existing interest rates will not be changed as a result of the Interest Rate Benchmark Reform (IBOR Reform).
The disclosure required by IFRS 7, paragraph 24H, on the uncertainty arising from interest rate benchmark reform on hedging relationships and the nominal amount of hedging instruments potentially impacted by the benchmark rate reform is provided below. Reference should also be made to that set out in these Notes to the financial statements, in the Introduction of Part E – Information on risks and relative hedging policies, for an illustration of how the Group is managing the process to transition to alternative benchmark rates.

Fair value hedge derivatives

Fair value hedge derivatives of the Intesa Sanpaolo Banking Group are mainly index-linked to the Euribor, whose calculation method was revised during 2019 to be able to continuing using that parameter also after 1 January 2022, both for outstanding contracts and new contracts. To make the Euribor compliant with the EU Benchmarks Regulation (BMR - Regulation 2016/1011/EU) the EMMI - European Money Markets Institute - completed the change to a new "hybrid" calculation method. The new calculation system – which was completed at the end of November 2019 - does not change the economic variable that the benchmark measures: the Euribor expresses the actual cost of funding for contributing European banks, and is always available and consultable.
Therefore, the Group does not deem that there is uncertainty on the timing or cash flows of the Euribor, and does not consider the fair value hedges linked to the Euribor to be impacted by the reform as at 31 December 2019.
The fair value hedges also include derivatives index-linked to benchmarks impacted by the reform, specifically to the EONIA and the LIBOR, for the various currencies, which will be replaced in the future with new risk-free interest rates. Specifically, in Europe, the EONIA fixing, calculated starting from October 2019 based on the new risk-free rate €STR, will be published until the end of 2021 and then permanently replaced by €STR. The publication of the LIBOR is also expected to be discontinued at the end of 2021 and there are already alternative risk-free rates available in the individual nations, which will gradually replace the LIBOR.
Specifically, as at 31 December 2019, there were fair value hedges index-linked to the EONIA for a notional amount of 67,651 million euro, of which 18,529 million euro maturing after 31 December 2021, to the LIBOR USD for a notional amount of 15,535 million euro, of which 14,857 million euro maturing after 31 December 2021, and to other interest rates impacted by the reform, such as the LIBOR of other currencies, for a notional amount of 622 million euro, of which 469 million euro maturing after 31 December 2021. These amounts represent 39% of the total of fair value hedge derivatives of the Group and 16% considering only derivatives maturing after 31 December 2021.

Cash flow hedge derivatives

Cash flow hedge derivatives of the Intesa Sanpaolo Banking Group are index-linked to the Euribor. As illustrated for fair value hedges, the Group does not deem that there is uncertainty on the timing or cash flows of the Euribor, and, therefore does not consider the cash flow hedges linked to the Euribor to be impacted by the reform as at 31 December 2019.

D. Hedged items

The Intesa Sanpaolo Group has exercised the option, provided for on the introduction of IFRS 9, of continuing to fully apply the provisions of IAS 39 on hedge accounting (in the carved-out version endorsed by the European Commission) for each type of hedge (both for micro hedges and macro hedges).

D.1 Fair value hedges

(millions of euro)

	Micro-hedges: book value	Micro-hedges – net positions: book value of assets and liabilities (prior to netting)	Micro-hedges			Macro-hedges: book value
			Cumulative fair value changes (hedged instrument)	Termination of hedging: residual cumulative fair value changes	Changes in value used to assess hedge ineffectiveness	
A. Assets						
Financial assets designated at fair value through other comprehensive income – hedging of:	**44,424**	**-**	**596**	**103**	**284**	**-**
1.1 Debt securities and interest rates	42,902	-	603	103	250	X
1.2 Equities and stock indices	-	-	-	-	-	X
1.3 Foreign exchange rates and gold	-	-	-	-	-	X
1.4 Loans	-	-	-	-	-	X
1.5 Other	1,522	-	-7	-	34	X
2. Financial assets measured at amortised cost - hedging of:	**25,544**	**-**	**3,866**	**4**	**2,923**	**68,055**
1.1 Debt securities and interest rates	24,919	-	3,571	4	2,628	X
1.2 Equities and stock indices	-	-	-	-	-	X
1.3 Foreign exchange rates and gold	94	-	-	-	-	X
1.4 Loans	-	-	-	-	-	X
1.5 Other	531	-	295	-	295	X
Total 31.12.2019	**69,968**	**-**	**4,462**	**107**	**3,207**	**68,055**
Total 31.12.2018	**55,720**	**-**	**3,672**	**104**	**2,724**	**46,720**
B. Liabilities						
1. Financial liabilities measured at amortised cost - hedging of:	**40,312**	**-**	**1,391**	**264**	**1,641**	**20,016**
1.1 Debt securities and interest rates	35,868	-	1,308	264	1,548	X
1.2 Foreign exchange rates and gold	-	-	-	-	-	X
1.3 Other	4,444	-	83	-	93	X
Total 31.12.2019	**40,312**	**-**	**1,391**	**264**	**1,641**	**20,016**
Total 31.12.2018	**88,772**	**-**	**1,014**	**102**	**1,487**	**7,225**

D.2 Cash flow hedges and hedges of foreign investments

(millions of euro)

	Change in value used to assess hedge ineffectiveness	Hedging reserves	Termination of hedging: residual cumulative value of the hedging reserves
A. Cash flow hedge			
1. Assets	**-**	**3**	**-**
1.1 Debt securities and interest rates	-	3	-
1.2 Equities and stock indices	-	-	-
1.3 Foreign exchange rates and gold	-	-	-
1.4 Loans	-	-	-
1.5 Other	-	-	-
2. Liabilities	**-1,216**	**-1,262**	**-**
1.1 Debt securities and interest rates	-1,216	-1,262	-
1.2 Foreign exchange rates and gold	-	-	-
1.3 Other	-	-	-
Total (A) 31.12.2019	**-1,216**	**-1,259**	**-**
Total (A) 31.12.2018	**-1,036**	**-1,194**	**-**
B. Hedges of foreign investments	X	-	-
Total (A+B) 31.12.2019	**-1,216**	**-1,259**	**-**
Total (A+B) 31.12.2018	**-1,036**	**-1,194**	**-**

E. **Effects of hedging on shareholders' equity**

E.1 Reconciliation of components of shareholders' equity

(millions of euro)

	Cash flow hedging reserve					Reserve for hedging of foreign investments				
	Debt securities and interest rates	Equities and stock indices	Foreign exchange rates and gold	Loans	Other	Debt securities and interest rates	Equities and stock indices	Foreign exchange rates and gold	Loans	Other
Initial amount	**-1,194**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Fair value changes (effective portion)	-65	-	-	-	-	-	-	-	-	-
Reclassification to the income statement	-	-	-	-	-	-	-	-	-	-
of which: future transactions no longer expected	-	-	-	-	-	X	X	X	X	X
Other changes	-	-	-	-	-	-	-	-	-	-
of which: transfer to the initial book value of the hedged instruments	-	-	-	-	-	X	X	X	X	X
Final amount	**-1,259**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

It is noted that "Hedging instruments (non-designated items)" is not present, as the Intesa Sanpaolo Group has exercised the option, provided for on the introduction of IFRS 9, of continuing to fully apply the provisions of IAS 39 on hedge accounting (in the carved-out version endorsed by the European Commission) for each type of hedge (both for micro hedges and macro hedges).

1.3.3. Other information on derivative instruments (trading and hedging)

A. Credit and financial derivatives

A.1 Over the counter credit and financial derivatives: net fair values by counterparty

(millions of euro)

	Central counterparties	Banks	Other financial companies	Other counterparties
A. Financial derivatives				
1) Debt securities and interest rates				
- notional amount	1,659,647	294,520	67,657	56,759
- positive net fair value	2	2,749	440	6,266
- negative net fair value	-5,944	-1,065	-73	-221
2) Equities and stock indices				
- notional amount	-	4,566	20,405	685
- positive net fair value	-	5	20	11
- negative net fair value	-	-56	-4,610	-65
3) Foreign exchange rates and gold				
- notional amount	-	146,583	46,468	22,972
- positive net fair value	-	94	48	456
- negative net fair value	-	-699	-127	-228
4) Commodities				
- notional amount	-	2,869	3,153	2,232
- positive net fair value	-	-	2	64
- negative net fair value	-	-	-1	-66
5) Other				
- notional amount	-	-	-	-
- positive net fair value	-	1,559	255	174
- negative net fair value	-	-8,001	-1,620	-235
B. Credit derivatives				
1) Protection purchases				
- notional amount	31,101	17,879	10,232	192
- positive net fair value	-	-	-	45
- negative net fair value	-	-	-	-
2) Protection sales				
- notional amount	29,000	17,068	11,072	-
- positive net fair value	1	-	-	-
- negative net fair value	-103	-	-21	-