

## 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 Risks Committee.

The Steering Committee (formerly the Group Risk Governance 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 Risks 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 Risks 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 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.).

	BOOK VALUE (supervisory scope)	MAIN RISK MEASUREMENT METRICS		
		VaR	Other	Risk factors measured using metrics included under Other
(millions of euro)				
<b>Assets subject to market risk</b>	<b>592,046</b>	<b>97,398</b>	<b>494,648</b>	
Financial assets held for trading	38,970	38,066	904	Interest rate risk, credit spread, equity
Financial assets designated at fair value	208	198	10	Interest rate risk, credit spread
Other financial assets mandatorily measured at fair value	3,492	1,997	1,495	Interest rate risk, credit spread
Financial assets measured at fair value through other comprehensive income (ifrs 7 par. 8 lett. h))	60,452	57,129	3,323	Interest rate risk, equity
Due from banks	69,191	-	69,191	Interest rate risk
Loans to customers	410,454	-	410,454	Interest rate risk
Hedging derivatives	2,993	8	2,985	Interest rate risk
Investments in associates and companies subject to joint control	6,286	-	6,286	Equity risk
<b>Liabilities subject to market risk</b>	<b>566,893</b>	<b>42,556</b>	<b>524,337</b>	
Due to banks	106,463	-	106,463	Interest rate risk
Due to customers	327,097	-	327,097	Interest rate risk
Securities issued	84,388	-	84,388	Interest rate risk
Financial liabilities held for trading	42,051	41,987	64	Interest rate risk
Financial liabilities designated at fair value (ifrs 7 par. 8 lett. e))	4	4	-	-
Hedging derivatives	6,890	565	6,325	Interest rate risk

## **REGULATORY TRADING BOOK**

### **1.2.1. INTEREST RATE RISK AND PRICE RISK**

Consistent with the use of internal risk measurement models, 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 VaR 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 and market 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.

A number of the other Group subsidiaries hold smaller trading portfolios with a marginal risk (around 1% of the Group's overall risk). In particular, the risk factors of the international subsidiaries' trading portfolios are interest rates and foreign exchange rates, both relating to linear pay-offs.

#### **Managerial VaR**

The analysis of market risk profiles relative to the trading book (managerial VaR 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 VaR, defined as the sum of VaR and of the simulation on illiquid parameters, for the trading book of Intesa Sanpaolo and 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 VaR measurements, 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.

Starting from 1 July 2014, the capital requirements deriving from the use of internal models will benefit from the reduction in the prudential multipliers established by the Supervisory Authority following completion of the previously recommended corrective actions.

**Stress 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.

Consistently with the historical simulation approach used 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 relevant to the measurement of Stressed VaR was from 1 October 2011 to 30 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 portfolio 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 evolution managerial VaR**

During the fourth quarter of 2018, the market risks originated by Intesa Sanpaolo declined slightly compared to the previous period, whereas those originated by Banca IMI increased: the average daily VaR for the fourth quarter of 2018 was 95.2 million euro, up on the third quarter.

**Daily VaR of the trading book for Intesa Sanpaolo and Banca IMI<sup>(a)</sup>**

	average 4th quarter	minimum 4th quarter	maximum 4th quarter	average 3rd quarter	average 2nd quarter	average 1st quarter
	(millions of euro)					
Intesa Sanpaolo	13.9	11.1	19.4	14.4	11.8	7.8
Banca IMI	81.3	66.9	106.3	75.9	50.1	40.3
<b>Total</b>	<b>95.2</b>	<b>78.8</b>	<b>124.9</b>	<b>90.4</b>	<b>61.9</b>	<b>48.1</b>

(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.

With regard to the whole of 2018, the Group's average risk profile (74.1 million euro) increased compared to the average values in 2017 (69 million euro).

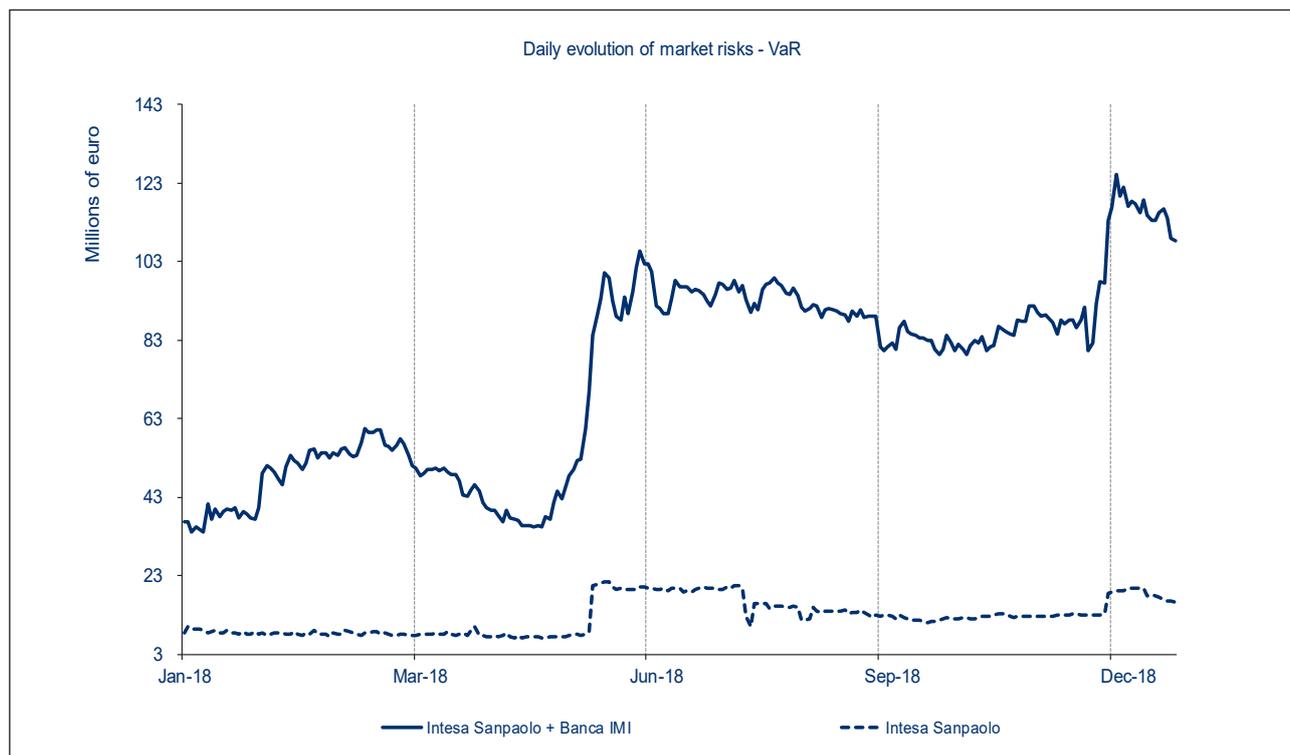
**Daily VaR of the trading book for Intesa Sanpaolo and Banca IMI – Comparison between 2018 and 2017<sup>(a)</sup>**

	2018				2017		
	(millions of euro)						
	average	minimum	maximum	last day	average	minimum	maximum
Intesa Sanpaolo	12.0	6.7	20.9	14.3	10.0	6.3	12.5
Banca IMI	62.0	24.7	106.3	100.4	59.0	44.2	93.2
<b>Total</b>	<b>74.1</b>	<b>33.7</b>	<b>124.9</b>	<b>114.7</b>	<b>69.0</b>	<b>52.3</b>	<b>104.8</b>

(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 VaR, shown in the following chart, was mainly determined by Banca IMI.

During the first half of 2018 there was an increase in the risk measures as a result of the increase in the volatility of the financial markets, particularly in the Italian government segment in May. In the second half, the trend in VaR for Banca IMI was mainly due to portfolio movements and technical model effects (VaR scenarios) linked to the passage of time, which kept the risks stable on average up to mid-November. Subsequently, there was a further increase in VaR due to greater exposure of the government bond portfolio. For the Parent Company there was an increase in risks, although to a smaller extent, in the second and fourth quarter due to an increase in volatility of the credit spread (indices).



#### Contribution of risk factors to total VaR <sup>(a)</sup>

4th quarter 2018	Shares	Hedge funds	Interest rates	Credit spreads	Foreign exchange rates	Other parameters	Commodities
Intesa Sanpaolo	2%	2%	22%	54%	19%	1%	0%
Banca IMI	3%	0%	15%	77%	0%	4%	1%
<b>Total</b>	<b>3%</b>	<b>0%</b>	<b>16%</b>	<b>74%</b>	<b>3%</b>	<b>3%</b>	<b>1%</b>

(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 2018, broken down between Intesa Sanpaolo and Banca IMI and indicating the distribution of overall VaR.

The breakdown of risk profile in the fourth quarter of 2018 with regard to the various factors shows the prevalence of the risk generated by the spread, which accounted for 54% of the total VaR for Intesa Sanpaolo and 77% for Banca IMI.

Risk control with regard to the trading activity of Intesa Sanpaolo and Banca IMI also uses scenario analyses and stress tests. The impact on the income statement of selected scenarios relating to the evolution of stock prices, interest rates, credit spreads and foreign exchange rates as at the end of December is summarised in the following table: The shocks applied to the portfolio were updated on an annual basis by the Financial and Market Risks Department.

(millions of euro)

	EQUITY		INTEREST RATES		CREDIT SPREADS		FOREIGN EXCHANGE RATES		COMMODITIES	
	Crash	Bullish	+40bp	lower rate	-25bp	+25bp	-10%	+10%	Crash	Bullish
Total	-2	-7	-118	67	361	-351	37	-13	-1	0

Among these:

- for stock market positions, there would be a loss in both crash and bullish scenarios, given the portfolio non-linearity;
- for positions in interest rates, there would be a loss of 118 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 351 million euro;
- for positions in foreign exchange, there would be losses of 13 million euro in the event of a 10% increase in the EUR-USD exchange rate and reduction in volatility of 25%.
- finally, for positions in commodities, there would be a loss of 1 million euro in the event of a reduction in commodity prices of 20% accompanied by an increase in the price of gold of 15%.

### Backtesting

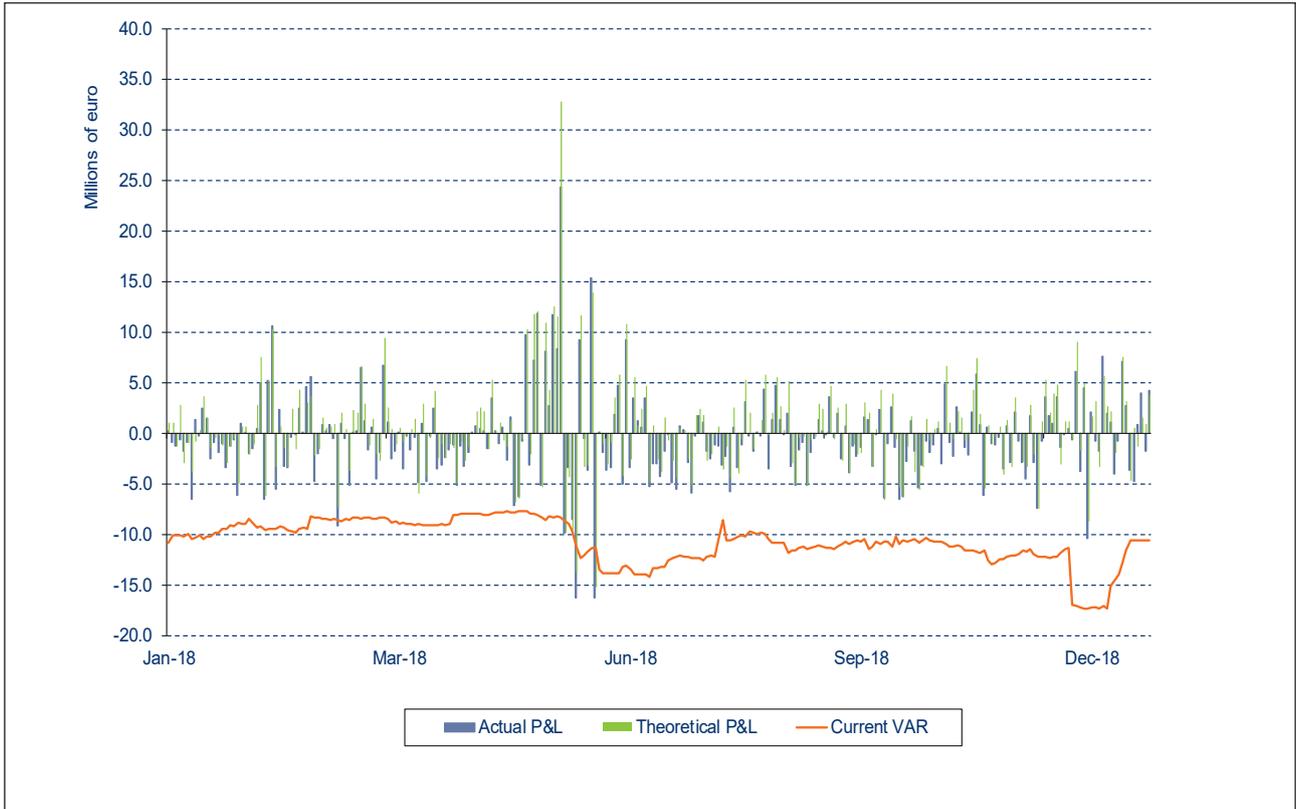
The soundness of the regulatory VaR calculation methods must be monitored daily via backtesting which, for the regulatory backtesting, compares:

- 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 such as commissions and intraday activities.

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. The backtesting used by Intesa Sanpaolo involves both the P&L series actually recorded and the theoretical series. The latter is based on valuation of the portfolio value through the use of pricing models adopted for the VaR measurement calculation. The number of significant backtesting exceptions is determined as the maximum between those for actual P&L and theoretical P&L.

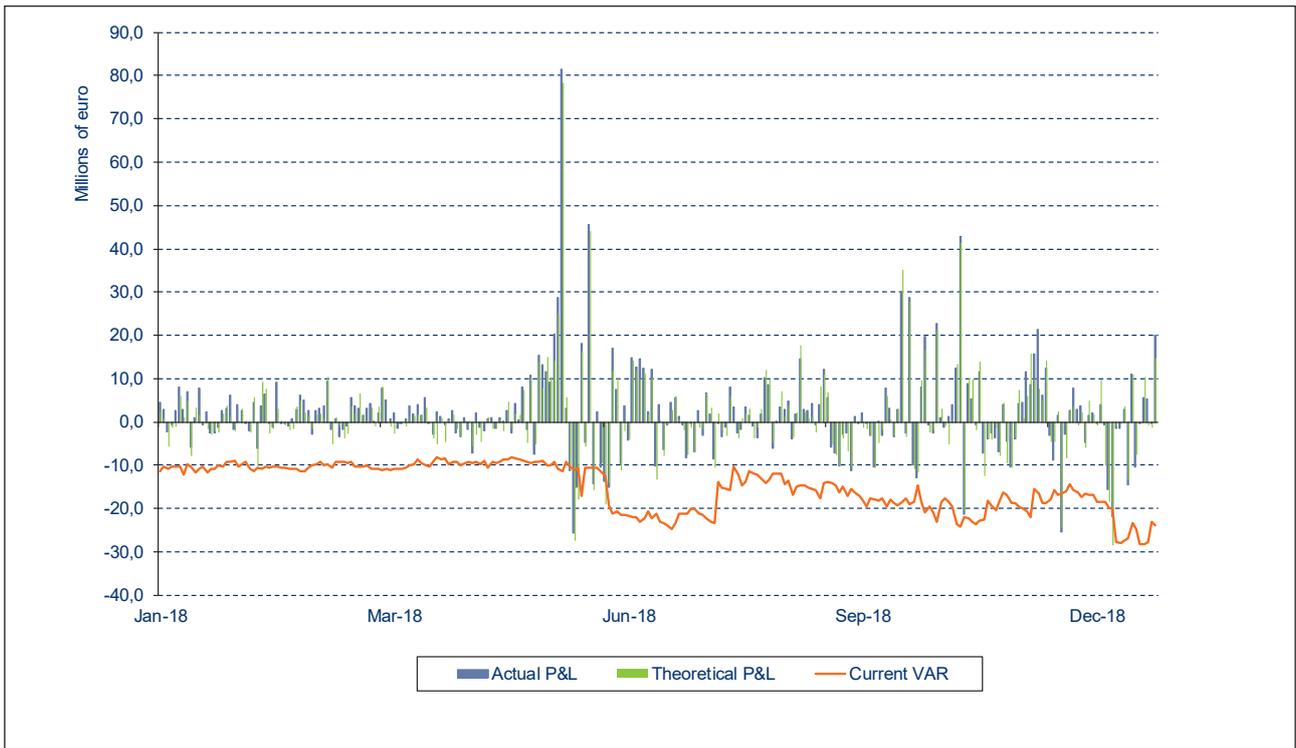
**Backtesting in Intesa Sanpaolo**

Over the last twelve months there have been four backtesting exceptions. The breaches were caused by the credit component of the portfolio, which was particularly affected by the volatility in the second half of May 2018. The volatility was particularly high for buy protection positions on credit indices.



**Backtesting in Banca IMI**

The credit spread volatility was very high in 2018. This volatility led to seven backtesting breaches for both theoretical and actual P&L. The portfolio was particularly sensitive to the performance of the financial sector and to a lesser extent to the government sector.



**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 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 <sup>(a)</sup>**

	TOTAL	OF WHICH					
		Corporate	Financial	Emerging	Covered	Government	Securitis.
Intesa Sanpaolo	71%	5%	3%	0%	4%	79%	9%
Banca IMI	29%	1%	24%	13%	1%	4%	57%
<b>Total</b>	<b>100%</b>	<b>3%</b>	<b>11%</b>	<b>5%</b>	<b>3%</b>	<b>50%</b>	<b>28%</b>

(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 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 Risks 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. plafond for risk issuer operation with issuer risk, Incremental Risk Charge limit).

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

With regard to the VaR limits, for the 2018 RAF, an overall limit was set for the trading component of 155 million euro, in line with the previous year.

With respect to the component sub-allocated to the organisational units, it may be noted that the use of the VaR limit (held for trading component) for Intesa Sanpaolo averaged 49% in 2018, with a maximum use of 88%. For Banca IMI, the average VaR limit came to 50%, with a maximum use of 83%. It should be specified that for Banca IMI the VaR limit also includes the HTCS component.

The use of VaR operating limits on the HTCS component (excluding Banca IMI) at year-end was 63%. For 2018, the limit for this component remained in line with 2017 at 260 million euro.

With regard to the use of the IRC limits, the occupation was at 99.9% at year-end for Intesa Sanpaolo (limit of 150 million euro) and 39.4% 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 ( $\Delta$ EVE);
2. net interest income:
  - shift sensitivity of net interest income ( $\Delta$ NI);
  - dynamic simulation of net interest income (NI);
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 Risks 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 the 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 ( $\Delta$ NI), 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 Risks 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  $\Delta EVE$ : instantaneous and parallel shock of +100 bps;
- for the control of the exposure in terms of  $\Delta NII$ : instantaneous and parallel shock of  $\pm 50$  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 2018, interest rate risk generated by the Intesa Sanpaolo Group's banking book, measured through shift sensitivity of value, averaged 1,346 million euro, with a minimum value of 691 million euro and a maximum value of 1,713 million euro, reaching a figure of 1,143 million euro at the end of 2018 (1,615 million euro at the end of 2017), 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 886 million euro, -928 million euro and 1,759 million euro, respectively, at the end of 2018. The last of these figures was up on the 1,563 million euro recorded at the end of 2017.

Interest rate risk, measured in terms of VaR, averaged 119 million euro in 2018, with a maximum value of 147 million euro and a minimum value of 91 million euro, with the latter coinciding with the value at the end of 2018 (153 million euro at the end of 2017).

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 2018 of 60 million euro (64 million euro at the end of 2017), with maximum and minimum values of 70 million euro and 52 million euro respectively, with the latter coinciding with the value at the end of 2018.

The table below shows the changes in the main risk measures

	average	2018		(millions of euro)	
		minimum	maximum	31.12.2018	31.12.2017
Shift Sensitivity of the Economic Value +100 bp	1,346	691	1,713	1,143	1,615
Shift Sensitivity of Net Interest Income -50bp	-914	-889	-931	-928	-872
Shift Sensitivity of Net Interest Income +50bp	858	831	886	886	794
Shift Sensitivity of Net Interest Income +100bp	1,702	1,625	1,759	1,759	1,563
Value at Risk - Interest Rate	119	91	147	91	153
Value at Risk - Equity investments in listed companies	60	52	70	52	64

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  $\pm 10\%$  for the abovementioned quoted assets recorded in the HTCS category.

### Price risk: impact on Shareholders' Equity

		(millions of euro)				
		1st quarter 2018 impact on shareholders' equity at 31.03.2018	2nd quarter 2018 impact on shareholders' equity at 30.06.2018	3rd quarter 2018 impact on shareholders' equity at 30.09.2018	4th quarter 2018 impact on shareholders' equity at 31.12.2018	Impact on shareholders' equity at 31.12.2017
Price shock	10%	56	53	48	39	60
Price shock	-10%	-56	-53	-48	-39	-60

### 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 possibility that foreign exchange rate fluctuations produce significant changes, both positive and negative, in the Group’s balance sheet aggregates. The key sources of exchange rate risk lie in:

- foreign currency loans and deposits held by corporate and/or retail customers;
- purchases of securities, equity investments and other financial instruments in foreign currencies;
- conversion into domestic currency of assets, liabilities and income of branches and subsidiaries abroad;
- trading of foreign currencies and banknotes;
- collection and/or payment of interest, commissions, dividends and administrative costs in foreign currencies.

More specifically, “structural” foreign exchange risk refers to the exposures deriving from the commercial operations and the strategic investment decisions of the Intesa Sanpaolo Group.

Foreign exchange transactions, spot and forward, are carried out mostly by Banca IMI, which also operates in the name and on behalf of the Parent Company with the task of guaranteeing pricing throughout the Bank and the Group while optimizing the proprietary risk profile deriving from brokerage of foreign currencies traded by customers.

The main types of financial instruments traded include: spot and forward exchange transactions in foreign currencies, forex swaps, domestic currency swaps, and foreign exchange options.

##### **B. Foreign exchange risk hedging activities**

Foreign exchange risk deriving from operating positions in foreign currency in the banking book is systematically transferred from the business units to the Parent Company’s Treasury Department, for the purpose of guaranteeing the elimination of such risk. Similar risk containment is performed by the various Group companies for their banking book. Essentially, foreign exchange risk is mitigated by the funding activity in the same currency as assets.

Held for trading exposures are included in the trading book where foreign exchange risk is measured and subjected to daily VaR limits.

**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
<b>A. FINANCIAL ASSETS</b>	<b>34,261</b>	<b>2,381</b>	<b>639</b>	<b>3,799</b>	<b>3,718</b>	<b>4,788</b>	<b>1,834</b>	<b>9,323</b>
A.1 Debt securities	12,324	653	16	1,105	1,002	825	772	2,230
A.2 Equities	210	11	12	-	24	1	-	558
A.3 Loans to banks	6,077	94	293	888	1,251	636	185	2,111
A.4 Loans to customers	15,641	1,623	315	1,772	1,441	3,287	877	4,382
A.5 Other financial assets	9	-	3	34	-	39	-	42
<b>B. OTHER ASSETS</b>	<b>5,020</b>	<b>38</b>	<b>37</b>	<b>62</b>	<b>56</b>	<b>16</b>	<b>464</b>	<b>125</b>
<b>C. FINANCIAL LIABILITIES</b>	<b>38,409</b>	<b>1,301</b>	<b>440</b>	<b>3,776</b>	<b>3,203</b>	<b>4,327</b>	<b>631</b>	<b>5,563</b>
C.1 Due to banks	13,939	397	69	344	12	258	10	878
C.2 Due to customers	8,937	518	367	3,376	1,538	3,975	151	3,617
C.3 Debt securities	15,523	386	-	-	1,653	-	470	1,018
C.4 Other financial liabilities	10	-	4	56	-	94	-	50
<b>D. OTHER LIABILITIES</b>	<b>587</b>	<b>18</b>	<b>8</b>	<b>-</b>	<b>116</b>	<b>166</b>	<b>16</b>	<b>82</b>
<b>E. FINANCIAL DERIVATIVES</b>								
- Options								
<i>long positions</i>	3,415	153	15	2	-	-	105	216
<i>short positions</i>	3,878	71	18	9	-	-	76	240
- Other derivatives								
<i>long positions</i>	72,107	8,865	4,717	1,405	-	2	5,469	8,979
<i>short positions</i>	71,974	9,861	5,006	858	-	1	7,216	11,160
<b>TOTAL ASSETS</b>	<b>114,803</b>	<b>11,437</b>	<b>5,408</b>	<b>5,268</b>	<b>3,774</b>	<b>4,806</b>	<b>7,872</b>	<b>18,643</b>
<b>TOTAL LIABILITIES</b>	<b>114,848</b>	<b>11,251</b>	<b>5,472</b>	<b>4,643</b>	<b>3,319</b>	<b>4,494</b>	<b>7,939</b>	<b>17,045</b>
<b>DIFFERENCE (+/-)</b>	<b>-45</b>	<b>186</b>	<b>-64</b>	<b>625</b>	<b>455</b>	<b>312</b>	<b>-67</b>	<b>1,598</b>

**2. Internal models and other sensitivity analysis methodologies**

Management of foreign exchange risk relative 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.

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 42 million euro as at 31 December 2018. 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 authorisation was extended also to the banks belonging to the Banca dei Territori (BdT) Division starting from 31.12.2016.

This approach is applicable to almost the entire trading portfolio (as shown in the table below, as at 31 December 2018 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 2018 accounting for approximately 2% of overall EAD) and refer to:

- residual contracts of Banca IMI, Intesa Sanpaolo and BdT 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).

Transaction categories	(millions of euro)			
	31.12.2018		31.12.2017	
	Mark-to-market approach	EPE Internal Method	Mark-to-market approach	EPE Internal Method
Derivative contracts	404	16,950	695	15,465

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 3 billion euro for the Parent Company, Banca IMI and the banks of the Banca dei Territori Division, while the collateral paid equals 14 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	31.12.2018				31.12.2017			
	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		
<b>1. Debt securities and interest rate</b>	<b>1,768,173</b>	<b>181,588</b>	<b>58,260</b>	<b>210,792</b>	<b>1,943,893</b>	<b>171,160</b>	<b>45,200</b>	<b>181,701</b>
a) Options	-	91,854	6,833	51,158	-	94,916	2,926	31,016
b) Swaps	1,768,173	89,734	48,737	-	1,943,893	76,244	41,044	-
c) Forwards	-	-	2,690	-	-	-	1,230	-
d) Futures	-	-	-	159,634	-	-	-	150,685
e) Other	-	-	-	-	-	-	-	-
<b>2. Equities and stock indices</b>	<b>-</b>	<b>10,284</b>	<b>16,162</b>	<b>19,542</b>	<b>-</b>	<b>8,040</b>	<b>13,514</b>	<b>16,370</b>
a) Options	-	10,244	16,151	18,000	-	7,993	13,496	14,647
b) Swaps	-	40	9	-	-	47	17	-
c) Forwards	-	-	2	-	-	-	1	-
d) Futures	-	-	-	1,542	-	-	-	1,723
e) Other	-	-	-	-	-	-	-	-
<b>3. Foreign exchange rates and gold</b>	<b>-</b>	<b>166,544</b>	<b>20,336</b>	<b>534</b>	<b>-</b>	<b>145,841</b>	<b>19,585</b>	<b>277</b>
a) Options	-	22,682	1,094	71	-	21,479	1,537	29
b) Swaps	-	56,215	6,118	-	-	48,100	2,257	-
c) Forwards	-	87,437	12,612	-	-	76,005	14,728	-
d) Futures	-	-	-	222	-	-	-	248
e) Other	-	210	512	241	-	257	1,063	-
<b>4. Commodities</b>	<b>-</b>	<b>11,405</b>	<b>1,904</b>	<b>1,838</b>	<b>-</b>	<b>6,460</b>	<b>-</b>	<b>2,031</b>
<b>5. Other</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total</b>	<b>1,768,173</b>	<b>369,821</b>	<b>96,662</b>	<b>232,706</b>	<b>1,943,893</b>	<b>331,501</b>	<b>78,299</b>	<b>200,379</b>

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

(millions of euro)

Type of derivative	31.12.2018				31.12.2017			
	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	
<b>1. Positive fair value</b>								
a) Options	-	2,583	92	563	-	2,859	125	478
b) Interest rate swaps	-	10,536	6,010	-	-	14,814	2,711	-
c) Cross currency swaps	-	1,282	269	-	-	1,220	334	-
d) Equity swaps	-	3	2	-	-	5	-	-
e) Forwards	-	976	91	1	-	748	124	-
f) Futures	-	-	-	-	-	-	-	-
g) Other	-	2,773	141	-	-	87	111	-
<b>Total</b>	<b>-</b>	<b>18,153</b>	<b>6,605</b>	<b>564</b>	<b>-</b>	<b>19,733</b>	<b>3,405</b>	<b>478</b>
<b>2. Negative fair value</b>								
a) Options	-	2,607	3,711	1,425	-	2,967	2,791	546
b) Interest rate swaps	4,298	11,418	656	-	4,141	17,082	630	-
c) Cross currency swaps	-	1,340	676	-	-	1,303	596	-
d) Equity swaps	-	-	-	-	-	2	-	-
e) Forwards	-	1,042	160	1	-	670	155	-
f) Futures	-	-	-	-	-	-	-	-
g) Other	-	2,762	126	-	-	191	86	-
<b>Total</b>	<b>4,298</b>	<b>19,169</b>	<b>5,329</b>	<b>1,426</b>	<b>4,141</b>	<b>22,215</b>	<b>4,258</b>	<b>546</b>

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

Underlying asset	(millions of euro)			
	Central Counterparties	Banks	Other financial companies	Other counterparties
<b>Contracts not included under netting agreements</b>				
<b>1) Debt securities and interest rates</b>				
- notional amount	X	9,800	6,922	41,538
- positive fair value	X	880	127	5,079
- negative fair value	X	-438	-13	-303
<b>2) Equities and stock indices</b>				
- notional amount	X	628	14,993	541
- positive fair value	X	3	1	2
- negative fair value	X	-84	-3,514	-39
<b>3) Foreign exchange rates and gold</b>				
- notional amount	X	2,055	6,914	11,367
- positive fair value	X	21	77	275
- negative fair value	X	-567	-48	-205
<b>4) Commodities</b>				
- notional amount	X	-	27	1,877
- positive fair value	X	-	1	139
- negative fair value	X	-	-1	-117
<b>5) Other</b>				
- notional amount	X	-	-	-
- positive fair value	X	-	-	-
- negative fair value	X	-	-	-
<b>Contracts included under netting agreements</b>				
<b>1) Debt securities and interest rates</b>				
- notional amount	1,768,173	113,078	54,432	14,078
- positive fair value	-	10,056	1,901	704
- negative fair value	-4,298	-10,764	-2,452	-254
<b>2) Equities and stock indices</b>				
- notional amount	-	4,951	5,333	-
- positive fair value	-	115	57	-
- negative fair value	-	-178	-61	-
<b>3) Foreign exchange rates and gold</b>				
- notional amount	-	114,428	41,432	10,684
- positive fair value	-	1,122	1,010	363
- negative fair value	-	-1,728	-516	-385
<b>4) Commodities</b>				
- notional amount	-	6,595	3,460	1,350
- positive fair value	-	2,057	664	104
- negative fair value	-	-2,249	-490	-92
<b>5) Other</b>				
- notional amount	-	-	-	-
- positive fair value	-	-	-	-
- negative fair value	-	-	-	-

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

Underlying/Residual maturity	(millions of euro)			
	Up to 1 year	Between 1 and 5 years	Over 5 years	Total
A.1 Financial derivatives on debt securities and interest rates	433,609	837,934	736,478	2,008,021
A.2 Financial derivatives on equities and stock indices	2,893	16,017	7,536	26,446
A.3 Financial derivatives on foreign exchange rates and gold	121,469	42,592	22,819	186,880
A.4 Financial derivatives on commodities	11,215	2,094	-	13,309
A.5 Other financial derivatives	-	-	-	-
<b>Total 31.12.2018</b>	<b>569,186</b>	<b>898,637</b>	<b>766,833</b>	<b>2,234,656</b>
<b>Total 31.12.2017</b>	<b>686,078</b>	<b>914,479</b>	<b>753,136</b>	<b>2,353,693</b>

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

Categories of transactions	(millions of euro)	
	Trading derivatives	
	single counterparty	more counterparties (basket)
<b>1. Protection purchases</b>		
a) Credit default products	7,627	45,131
b) Credit spread products	-	-
c) Total rate of return swap	-	-
d) Other	-	-
<b>Total 31.12.2018</b>	<b>7,627</b>	<b>45,131</b>
<b>Total 31.12.2017</b>	<b>7,371</b>	<b>37,390</b>
<b>2. Protection sales</b>		
a) Credit default products	8,152	43,937
b) Credit spread products	-	-
c) Total rate of return swap	-	-
d) Other	-	-
<b>Total 31.12.2018</b>	<b>8,152</b>	<b>43,937</b>
<b>Total 31.12.2017</b>	<b>8,893</b>	<b>32,743</b>

As at 31 December 2018, 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**

Type of derivative	(millions of euro)	
	Total 31.12.2018	Total 31.12.2017
<b>1. Positive fair value</b>		
a) Credit default products	703	1,160
b) Credit spread products	-	-
c) Total rate of return swap	-	-
d) Other	-	-
<b>Total</b>	<b>703</b>	<b>1,160</b>
<b>2. Negative fair value</b>		
a) Credit default products	784	1,275
b) Credit spread products	-	-
c) Total rate of return swap	-	-
d) Other	-	-
<b>Total</b>	<b>784</b>	<b>1,275</b>

As at 31 December 2018, 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
<b>Contracts not included under netting agreements</b>				
<b>1) Protection purchases</b>				
- notional amount	X	-	-	168
- positive fair value	X	-	-	54
- negative fair value	X	-	-	-
<b>2) Protection sales</b>				
- notional amount	X	-	60	-
- positive fair value	X	-	-	-
- negative fair value	X	-	-29	-
<b>Contracts included under netting agreements</b>				
<b>1) Protection purchases</b>				
- notional amount	20,978	22,015	9,597	-
- positive fair value	-	145	102	-
- negative fair value	-37	-249	-117	-
<b>2) Protection sales</b>				
- notional amount	21,150	20,605	10,274	-
- positive fair value	-	219	183	-
- negative fair value	-	-149	-203	-

As at 31 December 2018, 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**

Underlying/Residual maturity	(millions of euro)			
	Up to 1 year	Between 1 and 5 years	Over 5 years	Total
1. Protection sales	2,944	48,053	1,092	52,089
2. Protection purchases	3,247	48,568	943	52,758
<b>Total 31.12.2018</b>	<b>6,191</b>	<b>96,621</b>	<b>2,035</b>	<b>104,847</b>
<b>Total 31.12.2017</b>	<b>15,255</b>	<b>69,633</b>	<b>1,509</b>	<b>86,397</b>

**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 2018, foreign exchange hedges were implemented against the exchange risk on the cost of funding in foreign currency and on foreign currency gains generated by the Parent Company's international branches.

#### 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 the bank’s 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	31.12.2018				31.12.2017			
	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		
<b>1. Debt securities and interest rates</b>	<b>13,941</b>	<b>175,467</b>	<b>4,284</b>	-	<b>11,614</b>	<b>247,995</b>	-	-
a) Options	-	3,194	-	-	-	3,708	-	-
b) Swaps	13,941	172,253	4,284	-	11,614	244,287	-	-
c) Forwards	-	-	-	-	-	-	-	-
d) Futures	-	-	-	-	-	-	-	-
e) Others	-	20	-	-	-	-	-	-
<b>2. Equities and stock indices</b>	-	-	-	-	-	-	-	-
a) Options	-	-	-	-	-	-	-	-
b) Swaps	-	-	-	-	-	-	-	-
c) Forwards	-	-	-	-	-	-	-	-
d) Futures	-	-	-	-	-	-	-	-
e) Other	-	-	-	-	-	-	-	-
<b>3. Foreign exchange rates and gold</b>	-	<b>3,192</b>	<b>52</b>	<b>26</b>	-	<b>3,198</b>	-	-
a) Options	-	-	-	-	-	-	-	-
b) Swaps	-	3,192	52	26	-	3,162	-	-
c) Forwards	-	-	-	-	-	-	-	-
d) Futures	-	-	-	-	-	-	-	-
e) Other	-	-	-	-	-	36	-	-
<b>4. Commodities</b>	-	-	-	-	-	-	-	-
<b>5. Other</b>	-	-	-	-	-	-	-	-
<b>TOTAL</b>	<b>13,941</b>	<b>178,659</b>	<b>4,336</b>	<b>26</b>	<b>11,614</b>	<b>251,193</b>	-	-

The average notional amount in the year of the financial hedging derivatives was 201,391 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 31.12.2018				Total 31.12.2017				Total 31.12.2018	Total 31.12.2017
	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						
<b>Positive fair value</b>										
a) Options	-	53	-	-	-	75	-	-	-176	129
b) Interest rate swap	-	2,643	7	-	-	3,858	-	-	2,066	2,930
c) Cross currency swap	-	290	-	-	-	279	-	-	59	87
d) Equity swap	-	-	-	-	-	-	-	-	-	-
e) Forwards	-	-	-	-	-	-	-	-	-	-
f) Futures	-	-	-	-	-	-	-	-	-	-
g) Other	-	-	-	-	-	1	-	-	-	-
<b>Total</b>	-	<b>2,986</b>	<b>7</b>	-	-	<b>4,213</b>	-	-	<b>1,949</b>	<b>3,146</b>
<b>Negative fair value</b>										
a) Options	-	4	-	-	-	-	-	-	4	-
b) Interest rate swap	300	6,132	109	-	75	6,993	1	-	4,388	4,174
c) Cross currency swap	-	344	1	-	-	420	-	-	272	301
d) Equity swap	-	-	-	-	-	-	-	-	-	-
e) Forwards	-	-	-	-	-	-	-	-	-	-
f) Futures	-	-	-	-	-	-	-	-	-	-
g) Other	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>300</b>	<b>6,480</b>	<b>110</b>	-	<b>75</b>	<b>7,413</b>	<b>1</b>	-	<b>4,664</b>	<b>4,475</b>

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

Underlying asset	(millions of euro)			
	Central counterparties	Banks	Other financial companies	Other counterparties
<b>Contracts not included under netting agreements</b>				
<b>1) Debt securities and interest rates</b>				
- notional amount	X	4,232	-	52
- positive fair value	X	6	-	1
- negative fair value	X	-109	-	-
<b>2) Equities and stock indices</b>				
- notional amount	X	-	-	-
- positive fair value	X	-	-	-
- negative fair value	X	-	-	-
<b>3) Foreign exchange rates and gold</b>				
- notional amount	X	13	-	39
- positive fair value	X	-	-	-
- negative fair value	X	-	-	-1
<b>4) Commodities</b>				
- notional amount	X	-	-	-
- positive fair value	X	-	-	-
- negative fair value	X	-	-	-
<b>5) Other</b>				
- notional amount	X	-	-	-
- positive fair value	X	-	-	-
- negative fair value	X	-	-	-
<b>Contracts included under netting agreements</b>				
<b>1) Debt securities and interest rates</b>				
- notional amount	13,941	173,805	1,662	-
- positive fair value	-	2,643	54	-
- negative fair value	-300	-5,610	-526	-
<b>2) Equities and stock indices</b>				
- notional amount	-	-	-	-
- positive fair value	-	-	-	-
- negative fair value	-	-	-	-
<b>3) Foreign exchange rates and gold</b>				
- notional amount	-	2,914	278	-
- positive fair value	-	288	1	-
- negative fair value	-	-210	-134	-
<b>4) Commodities</b>				
- notional amount	-	-	-	-
- positive fair value	-	-	-	-
- negative fair value	-	-	-	-
<b>5) Other</b>				
- notional amount	-	-	-	-
- positive fair value	-	-	-	-
- negative fair value	-	-	-	-

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

Underlying/Residual maturity	(millions of euro)			
	Up to 1 year	Between 1 and 5 years	Over 5 year	Total
A.1 Financial derivatives on debt securities and interest rates	37,433	81,781	74,478	193,692
A.2 Financial derivatives on equities and stock indices	-	-	-	-
A.3 Financial derivatives on foreign exchange rates and gold	896	1,737	611	3,244
A.4 Financial derivatives on commodities	-	-	-	-
A.5 Other financial derivatives	-	-	-	-
<b>Total 31.12.2018</b>	<b>38,329</b>	<b>83,518</b>	<b>75,089</b>	<b>196,936</b>
<b>Total 31.12.2017</b>	<b>70,445</b>	<b>121,304</b>	<b>71,058</b>	<b>262,807</b>

**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). As a result, it does not have any hedging instruments in its portfolio other than derivatives.

## 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)	Cumulative fair value changes (hedged instrument)	Micro-hedges Termination of hedging: residual cumulative fair value changes	Changes in value used to assess hedge ineffectiveness	Macro- hedges: book value
<b>A. Assets</b>							
<b>Financial assets designated at fair value through other comprehensive income – hedging of:</b>							
		<b>37,058</b>	-	<b>333</b>	<b>76</b>	<b>160</b>	-
1.1	Debt securities and interest rates	36,944	-	329	76	155	X
1.2	Equities and stock indices	-	-	-	-	-	X
1.3	Foreign exchange rates and gold	114	-	4	-	5	X
1.4	Loans	-	-	-	-	-	X
1.5	Other	-	-	-	-	-	X
<b>2. Financial assets measured at amortised cost - hedging of:</b>							
		<b>18,662</b>	-	<b>3,339</b>	<b>28</b>	<b>2,564</b>	<b>46,720</b>
1.1	Debt securities and interest rates	18,065	-	3,075	28	2,300	X
1.2	Equities and stock indices	-	-	-	-	-	X
1.3	Foreign exchange rates and gold	134	-	-	-	-	X
1.4	Loans	-	-	-	-	-	X
1.5	Other	463	-	264	-	264	X
	<b>Total 31.12.2018</b>	<b>55,720</b>	-	<b>3,672</b>	<b>104</b>	<b>2,724</b>	<b>46,720</b>
	<b>Total 31.12.2017</b>	<b>54,640</b>	-	<b>3,852</b>	<b>12</b>	<b>4,336</b>	<b>70,218</b>
<b>B. Liabilities</b>							
<b>1. Financial liabilities measured at amortised cost - hedging of:</b>							
		<b>88,772</b>	-	<b>1,014</b>	<b>102</b>	<b>1,487</b>	<b>7,225</b>
1.1	Debt securities and interest rates	85,864	-	962	102	1,427	X
1.2	Foreign exchange rates and gold	-	-	-	-	-	X
1.3	Other	2,908	-	52	-	60	X
	<b>Total 31.12.2018</b>	<b>88,772</b>	-	<b>1,014</b>	<b>102</b>	<b>1,487</b>	<b>7,225</b>
	<b>Total 31.12.2017</b>	<b>52,273</b>	-	<b>1,896</b>	<b>129</b>	<b>2,410</b>	-

## 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
<b>A. Cash flow hedge</b>				
<b>1. Assets</b>				
1.1 Debt securities and interest rates		-	-	-
1.2 Equities and stock indices		-	-	-
1.3 Foreign exchange rates and gold		-	-	-
1.4 Loans		-	-	-
1.5 Other		-	-	-
<b>2. Liabilities</b>				
1.1 Debt securities and interest rates		-311	-354	-
1.2 Foreign exchange rates and gold		-	-	-
1.3 Other		-	-44	-
<b>Total (A)</b>	<b>31.12.2018</b>	<b>-311</b>	<b>-354</b>	<b>-</b>
<b>Total (A)</b>	<b>31.12.2017</b>	<b>-367</b>	<b>-365</b>	<b>-</b>
<b>B. Hedges of foreign investments</b>				
		X	-	-
<b>Total (A+B)</b>	<b>31.12.2018</b>	<b>-311</b>	<b>-354</b>	<b>-</b>
<b>Total (A+B)</b>	<b>31.12.2017</b>	<b>-367</b>	<b>-365</b>	<b>-</b>

## E. Effects of hedging on shareholders' equity

## E.1 Reconciliation of components of shareholders' equity

	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
<b>Initial amount</b>	<b>-367</b>	-	-	-	<b>-51</b>	-	-	-	-	-
Fair value changes (effective portion)	57	-	-	-	9	-	-	-	-	-
Reclassification to the income statement	-	-	-	-	-	-	-	-	-	-
of which: future transactions no longer expected	-	-	-	-	-	X	X	X	X	X
Other changes	-	-	-	-	-2	-	-	-	-	-
of which: transfer to the initial book value of the hedged instruments	-	-	-	-	-	X	X	X	X	X
<b>Final amount</b>	<b>-310</b>	-	-	-	<b>-44</b>	-	-	-	-	-

The table "Hedging instruments (undesignated items)" has not been included because these are not present. This table must be provided by banks that apply IFRS 9 for hedges. The above table (E1) is required by banks that apply IFRS 9 for hedges, but has been provided - because the IAS 39 figure is available - in order to provide further information.

### 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

	Central counterparties	Banks	Other financial companies	(millions of euro) Other counterparties
<b>A. Financial derivatives</b>				
<b>1) Debt securities and interest rates</b>				
- notional amount	1,782,114	300,915	63,016	55,668
- positive net fair value	-	1,944	226	5,346
- negative net fair value	-4,598	-791	-23	-321
<b>2) Equities and stock indices</b>				
- notional amount	-	5,579	20,326	541
- positive net fair value	-	99	9	2
- negative net fair value	-	-84	-3,566	-39
<b>3) Foreign exchange rates and gold</b>				
- notional amount	-	119,410	48,624	22,090
- positive net fair value	-	57	83	502
- negative net fair value	-	-592	-43	-227
<b>4) Commodities</b>				
- notional amount	-	6,595	3,487	3,227
- positive net fair value	-	-	1	139
- negative net fair value	-	-	-1	-117
<b>5) Other</b>				
- notional amount	-	-	-	-
- positive net fair value	-	1,237	365	174
- negative net fair value	-	-6,652	-947	-188
<b>B. Credit derivatives</b>				
<b>1) Protection purchases</b>				
- notional amount	20,978	22,015	9,597	168
- positive net fair value	-	-	-	54
- negative net fair value	-	-	-	-
<b>2) Protection sales</b>				
- notional amount	21,150	20,605	10,334	-
- positive net fair value	-	-	-	-
- negative net fair value	-37	-	-30	-