

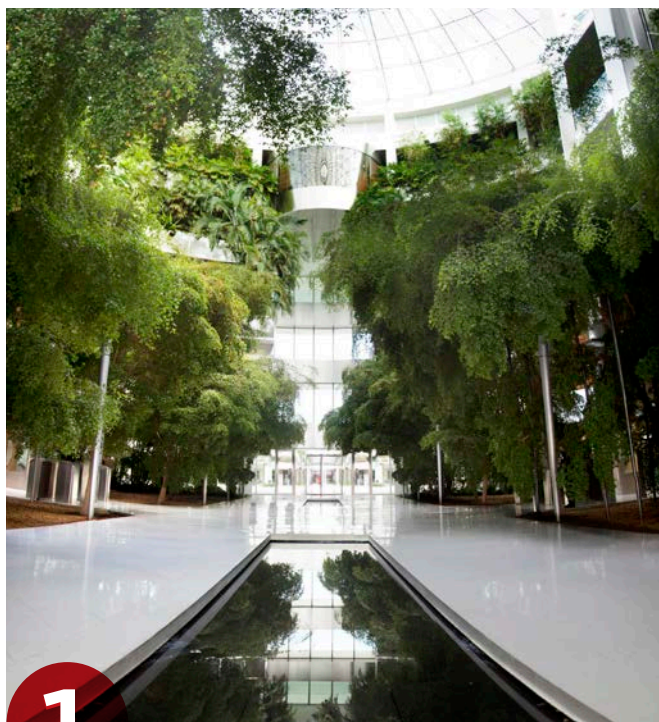


CAPITAL
MANAGEMENT
AND ADEQUACY

2016
Pillar III disclosures

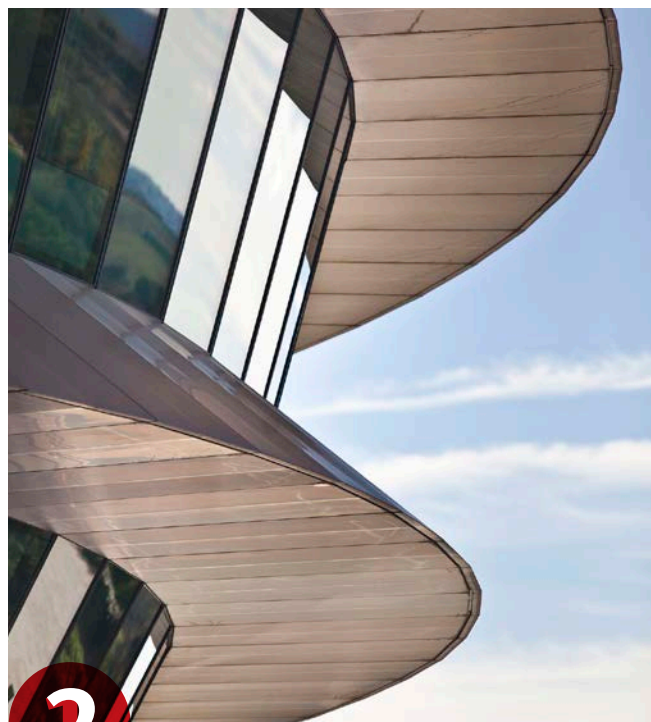
Capital management and adequacy

2016 Pillar III disclosure



Executive summary

- 5 Executive summary
- 10 Background to Pillar III in Grupo Santander
- 15 Regulatory framework



Capital

- 21 Capital
- 23 Capital function
- 24 Capital management and adequacy
- 25 Capital management priorities in 2016
- 26 Capital buffers
- 28 Pillar I regulatory capital
- 73 Pillar II economic capital
- 78 Recovery and resolution plans



3

Risks

- 81 Credit risk
- 147 Credit risk - securitisations
- 161 Market risk
- 173 Operational risk
- 175 Other risks and internal control



4

Grupo Santander

- 179 Remuneration policies
 - 187 Appendix
- Other appendices available on Grupo Santander website



Access file **2016 Pillar III Appendix** available on Grupo Santander website.

1

Introduction

- 5 1.1. Executive summary
- 10 1.2. Grupo Santander background to Pillar III
 - 10 1.2.1. Grupo Santander background information
 - 10 1.2.2. Structure of the 2016 Pillar III Disclosures
 - 11 1.2.3. Governance: approval and publication
 - 11 1.2.4. Transparency enhancements
 - 13 1.2.5. Differences between the consolidation method for accounting purposes and the consolidation method for regulatory capital calculation purposes
 - 13 1.2.6. Equity investments and capital instruments not included in the trading book
 - 14 1.2.7. Disclosure criteria used in this report
 - 14 1.2.8. Substantial modifications due to scope changes and corporate transactions
- 15 1.3. Regulatory framework
 - 15 1.3.1. Regulatory framework
 - 16 1.3.1.1. Regulatory changes in 2016

1. Introduction

1.1. Executive Summary

In 2016, our strategy and business model continued to generate value for our customers and shareholders. Our geographic diversification, with critical mass in our markets, leadership in efficiency, give us a clear competitive advantage that has enabled us to counteract a difficult economic scenario, especially for banks, episodes of elevated volatility and a greater tax burden in some countries.

In this context, we have ended the year with sound financial results, having generated sustainable and predictable returns and fulfilled our financial and commercial commitments.

Profit and dividends are increasing, we have grown in volume excluding the impact of exchange rates, the balance sheet has maintained a balanced structure, with liquidity ratios that are far above required levels, and we have significantly improved our capital position and credit quality. We have achieved this while managing to advance in our process of commercial transformation, renewing the relationship with our customers and enhancing their experience with the bank.

The most important highlights of Grupo Santander in 2016 are:

Strength of results.

Santander's business model has shown its strength in recent years, enabling us to achieve very predictable results and make us a leader in efficiency and profitability.

Ordinary before-tax profit amounted to EUR 11,288 million in the year, with a 3% increase on 2015. In constant euros, the increase is 12%, with increases in nine of the 10 principal markets.

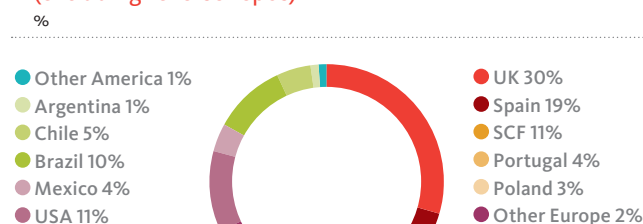
The main lines of the statement reflect the strategy followed during the year:

- Healthy performance of revenue, backed by a margin in interest and in fees, which, as a whole, account for 94% of revenue.
- Strict cost control for the third consecutive year, with a decrease in 2016 of 2% in real terms and with no perimeter change.
- A further year-on-year reduction of provisions and better cost of lending owing to stronger corporate risk culture.

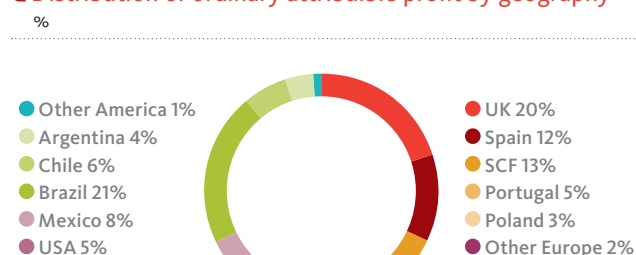
The lower part of the statement shows the heavier tax burden, with the introduction of new taxes in some units, and the recognition of some non-recurring gains and losses, which, in total, amount to a net tax charge of EUR 417 million in 2016. In 2015, non-recurring results amounted to EUR 600 million.

In sum, Grupo Santander earned an attributable profit of EUR 6,204 million, which is 4% more than in 2015, or 15% more if the impact of exchange rates is stripped out.

Loans to customer % of operative areas (excluding reverse repos)



Distribution of ordinary attributable profit by geography*



* In operational areas, excluding Spanish Property Business unit and Corporate Centre.

Process of commercial transformation.

In 2016, we continued to make progress in the transformation of our commercial model, focussing more on digitalization and client loyalty and satisfaction.

All units have made advances towards increasing the numbers of connected customers by developing new products and services both for individuals and for companies, offering innovative solutions and global proposals. Examples include: Mundo 1|2|3, Santander Select, Santander Private Banking, Santander pymes, Santander Trade Network, Global Treasury Solutions, Santander Flame and new digital applications in every country.

In order to improve base customer loyalty, we must ensure operational excellence. For us, this means a better customer experience and efficiency. Capitalising on new technologies is vital to achieving this. We are continuing to work at different levels of digital transformation.

1. Introduction

Our customers are demanding greater availability and closer contact through digital channels, but without overlooking the personal service and treatment that Santander has always featured. So considerable work has also gone into improving branch offices with the SMARTRED project, as well as contact centres. Of no less significance are the major advances being made by our commercial intelligence tool, Santander NEO CRM, which integrates information from every channel – i.e., branch offices, contact centres, digital media, etc. – and adds new transactional capacities, thus enabling us to know our customers better and offer them value propositions based on their experience and needs, and help us make savings in costs.

As a result of this process of transformation, we now have 15.2 million connected customers (+10% in the year) and 20.9 million digital customers (+26% in the year).

These increases reflect the improvement in our revenue base, mainly in fees, where we have doubled the previous year's growth.

In customer satisfaction, we have also achieved major results this year. We now have eight units, three more than in 2015, that stand among the three best local banks in terms of customer experience.

Growth of activity.

This higher degree of customer linkage and our commercial strategy is reflected in an overall increase in volumes, especially in emerging markets, as we maintain a medium-low risk profile and a well-diversified portfolio.

Lending is increasing most in Latin America, SCF and Poland, and more moderately in the United Kingdom. Notable is Brazil, which ends the year at break-even (+0.4%), after improving the trend in the second half of the year. For their part, Spain and Portugal are still undergoing a deleveraging process, and the US has been partially affected by the sale of portfolios of lower quality.

In customer funds, every principal unit is growing, above all in demand deposits and investment funds, as part of our strategy to improve the cost of credit.

Stronger solvency.

In capital, we again showed our capacity to combine generation of sustainable capital with the payment of dividends. Our fully loaded CET1 capital ratio stood at 10.55% at year end, thus exceeding our target, and consistently advancing toward our target of 11% for 2018.

The fully loaded capital ratio and the leverage ratio also improved during the year. In addition, in regulatory terms, we ended the year with a CET1 phase in of 12.53%, which is far above the minimum level required by the European Central Bank.

Better credit quality level.

Santander maintains a medium-low risk profile and high level of quality in its assets. All credit quality indicators improved in the year. Grupo Santander's NPL rate decreased by 43 basis points to 3.93% coverage increased one percentage point to 74% and the cost of credit decreased by 7 basis points, to 1.18%.

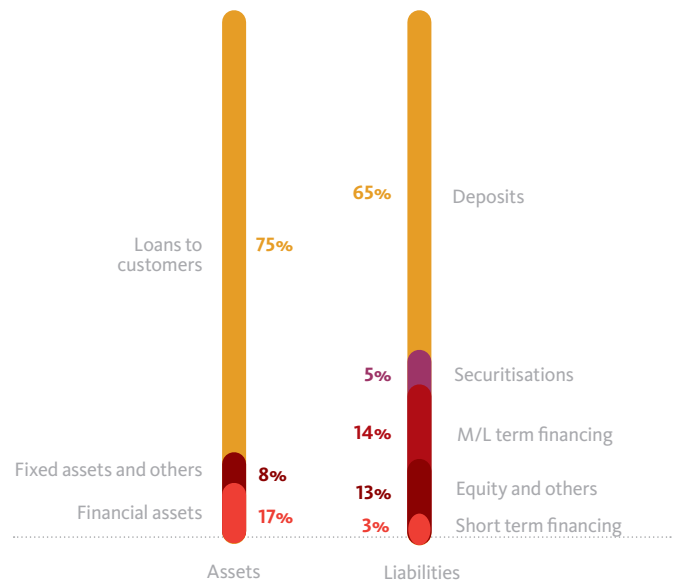
This strong performance is found in nearly every geography and is directly related to the consolidation of our risk culture – called risk pro – throughout Grupo Santander.

Creating value for our shareholders.

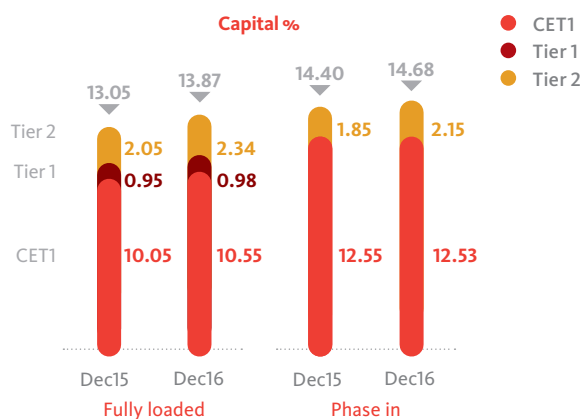
Again this has been one of our key priorities this year. We have increased the earnings per share by 1%, the cash dividend per share by 8% and we continue to offer some of the best return rates in the sector, as measured by RoTE

We have also increased our fully loaded capital by more than EUR 3,000 million, and the tangible book value per share has risen to EUR 4.22 per share, thus showing growth for the fourth consecutive year.

This was reflected in a rise in the share price during the year of 8.8% and of 14.2% in total shareholder return, with both performing far better than the DJ Stoxx Banks and DJ Stoxx 50 indices.



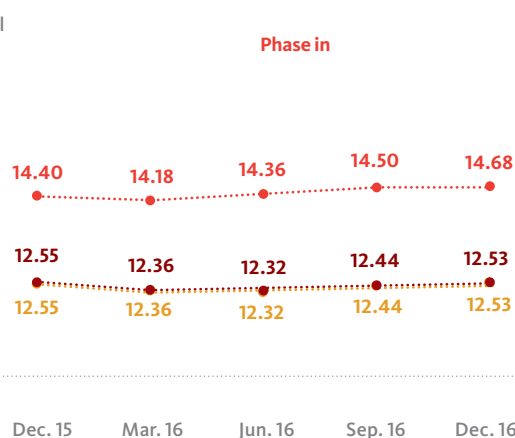
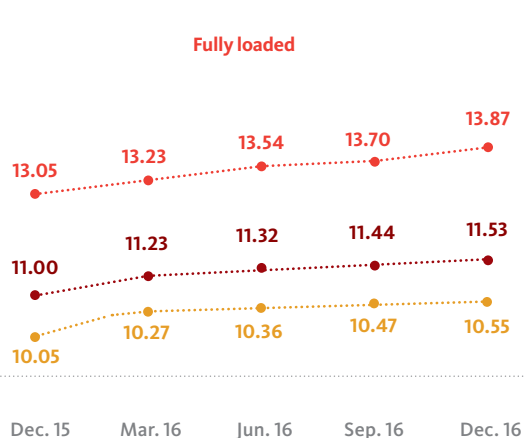
Main capital and solvency ratio figures



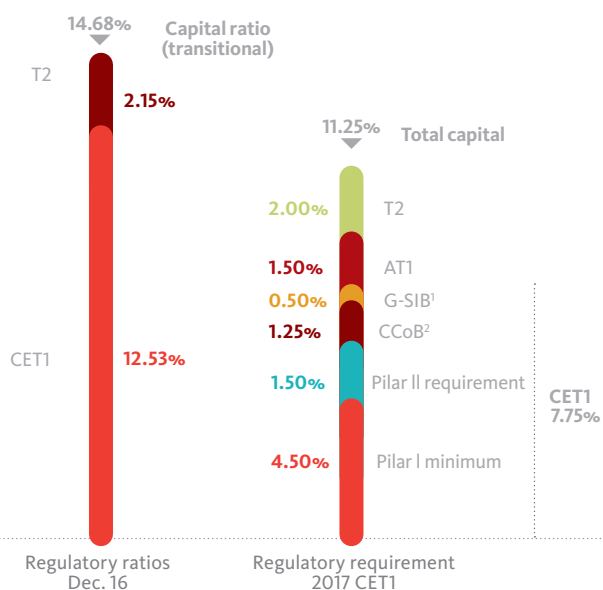
EUR million	Fully loaded		Phase in	
	Dec-16	Dec-15	Dec-16	Dec-15
Common Equity (CET1)	62,068	58,705	73,709	73,478
Tier 1	67,834	64,209	73,709	73,478
Total capital	81,584	76,209	86,337	84,350
Risk weighted assets	588,088	583,917	588,088	585,633
CET1 Ratio	10,55%	10,05%	12,53%	12,55%
Tier 1 Ratio	11,53%	11,00%	12,53%	12,55%
TOTAL CAPITAL RATIO	13,87%	13,05%	14,68%	14,40%

Note: On February 3, 2016, the European Central Bank authorised the use of the Standard Alternative Method for the calculation of capital requirements at consolidated level for operational risk at Banco Santander (Brazil) S.A. The impact of the aforementioned authorization on the risk-weighted assets of Grupo Santander (-7,836 million euros) and consequently its capital ratios were not taken into account in the data published on 27 January 2016 and which are presented in this report for December 15.

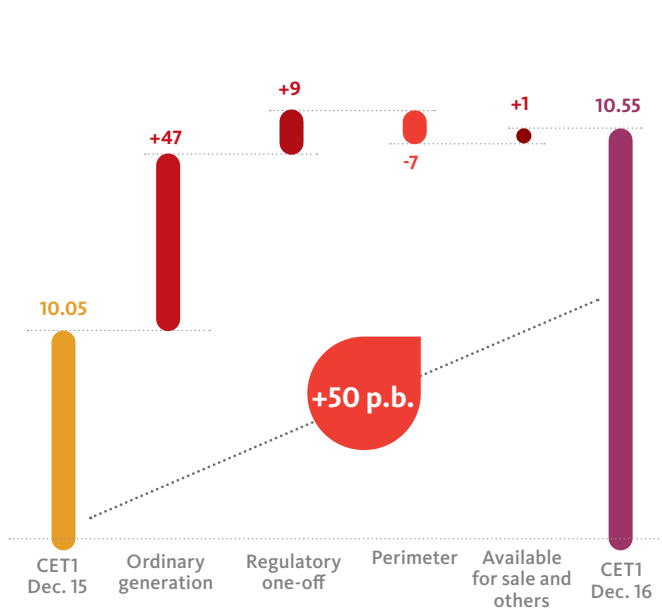
Changes in main capital ratio figures



Regulatory capital



CET1 fully loaded evolution

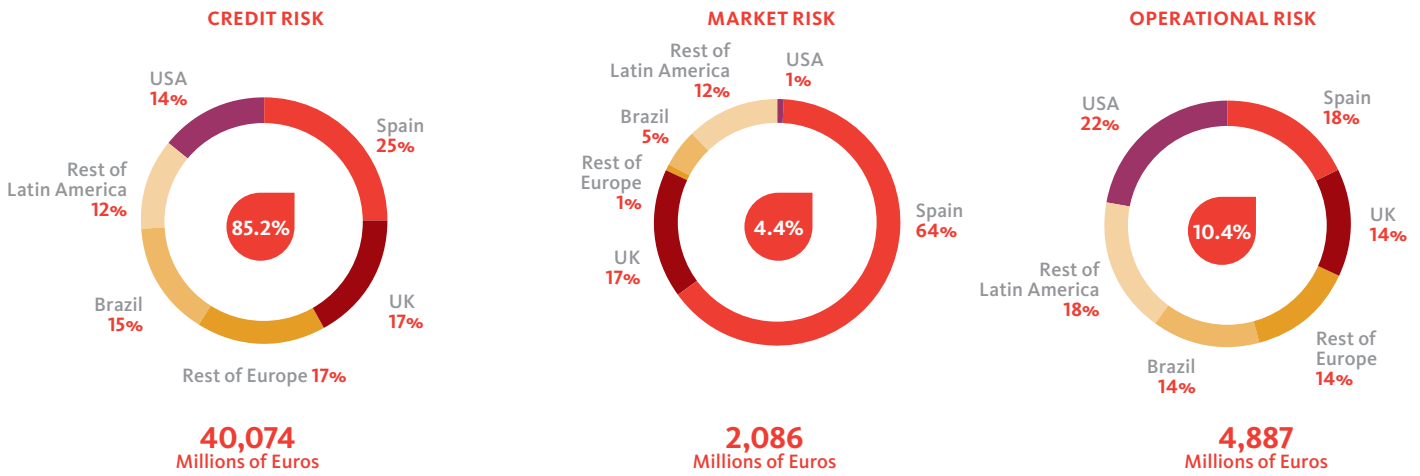


1. Global Systemically Important Banks.
2. Conservation Capital Buffer

1. Introduction

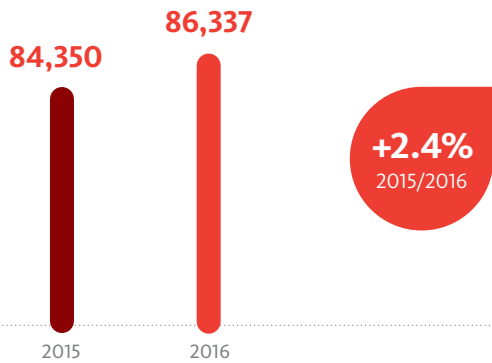
Capital requirements by risk type and geography

Dec. 2016



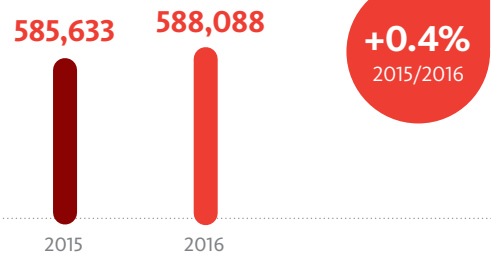
Eligible capital (phase in)

Millions of Euros



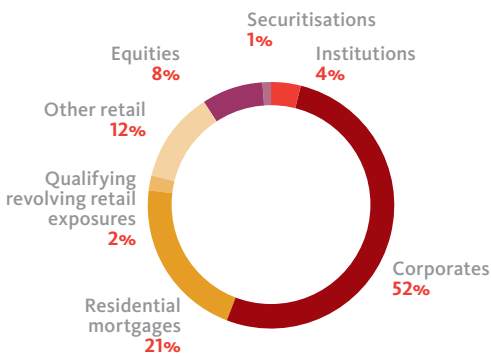
RWA evolution

Millions of Euros

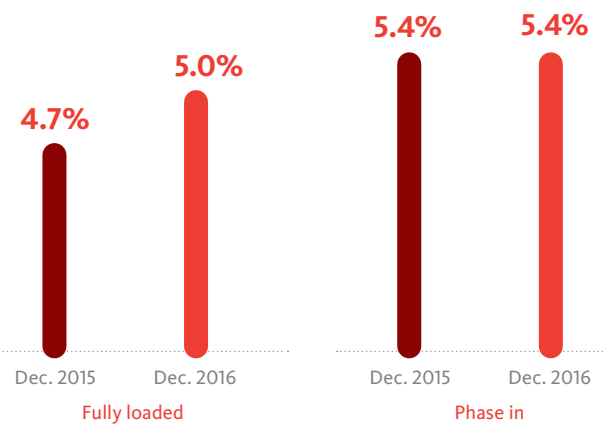


Distribution of capital requirements for credit risk by Basel category. IRB approach

Dec. 2016



Leverage ratios (%)



Flow statement. Capital requirements for credit risk (CR8)*

Millions of Euros

	RWA	Capital
Starting figure (31/12/2015)	491,677	39,334
Business risk changes	-4,130	-330
Changes in parameters that affect exposure	5,505	440
Perimeter changes	5,730	458
Exchange rate	1,434	115
End figure (31/12/2016)	500,216	40,017

* Including capital requirements of equities, securitisations and counterparty risk (excluding CVA and CCP).

Flow statement. Capital requirement for operational risk

Millions of Euros

	Capital	RWAs
Starting figure (31/12/2015)	5,270	65,875
Application of ASA approach in Brzil	-627	-7,832
Acquisition of business PSA Germanyn and PSA Austria	12	144
Acquisition of business PSA Netherlands and PSA Benelux	8	96
Acquisition of business PSA Italy	4	52
Acquisition of business PSA Poland	1	12
Exchange rate effect	13	163
Change in business	206	2,574
End figure (31/12/2016)	4,887	61,084

Flow statement. RWA for IMA market risk exposures (MR2-B)

Millions of Euros

	VaR	SVaR	IRC	CRM	Others	Total RWA	Total capital requirements
RWA December 2015	2,104	4,327	2,738	-	-	9,169	734
Regulatory adjustment	-	-	-	-	-	-	-
RWAs at the previous quarter-end (end of the day)	2,104	4,327	2,738	-	-	9,169	734
Movement in risk levels	-	-	-	-	-	-	-
Model updates/changes	266	2,424	1,521	-	835	5,046	403
Methodology and policy	-	-	-	-	-	-	-
Acquisitions and disposals	-	-	-	-	-	-	-
Foreign exchange movements	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-
RWAs at the end of the reporting period (end of the day)	2,370	6,751	4,259	-	835	14,215	1,137
Regulatory adjustment	-	-	-	-	-	-	-
RWA December 2016	2,370	6,751	4,259	-	835	14,215	1,137

Flow statement. Capital requirements for market risk, standardised approach

Millions of Euros

	Capital	RWAs
Starting Capital (31/12/2015)	1,461	18,263
Changes in business and inclusion of new entities	-675	-8,437
New regulations	163	2,037
Ending Capital (31/12/2016)	949	11,863

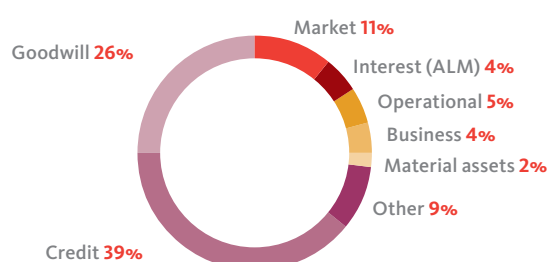
*Does not include securitisations in the trading book.

Rorac and value creation

Millions of Euros

Main segments	31 Dec. 2016		31 Dec. 2015	
	Rorac	Value creation	Rorac	Value creation
Continental Europe	17.3%	1,426	13.9%	883
UK	20.2%	825	22.5%	1,065
Latin America	33.1%	2,879	33.8%	2,746
US	9.2%	-13	13.4%	308
TOTAL BUSINESS UNITS	20.7%	5,117	20.2%	5,001

Distribution of economic capital by risk type



1.2. Background to Pillar III on Grupo Santander



This chapter describes the structure of the 2016 Report, its validation governance, approval and publication, the various reporting criteria used and an explanation of the transparency improvements introduced pursuant to the Basel Committee guidelines and those of other international bodies.

1.2.1. Background information on Grupo Santander

Banco Santander, S.A. is a private-law company, subject to the rules and regulations applicable to banks operating in Spain. In addition to its own activities, Banco Santander is the parent of a group of subsidiaries engaged in a variety of activities, which together make up Grupo Santander. The CRR, CDR IV and its transposition of Bank of Spain 2/2016 Circular, 2 February, of Supervision and Solvency applicable at consolidated level to the whole Group.

The Grupo Santander companies included in the scope of regulatory consolidation for the purposes of calculating the capital ratio under the CRR are the same as those that are included in the scope of consolidation for accounting purposes under Bank of Spain Circular 4/2004.

In application of Part I of the General Provisions of the CRR, certain Grupo Santander companies are consolidated using a different method from that used for the accounting consolidation.

The companies for which a different consolidation method is used, based on the regulations applied, and the equity investments that are deducted from capital are listed in Appendix IV, of 2016 Pillar III Appendix file, distinguishing between financial institutions and insurance companies in which Grupo Santander has a significant ownership interest. As of the reporting date, both types of investment are exempt from deduction pursuant to article 48 of the CRR.



Access file **2016 Pillar III Appendix** available on the Grupo Santander website

Grupo Santander does not make use of the exemption contemplated in article 19 of the CRR, therefore the disclosure of table INS1 (Non-deducted participations in insurance undertakings) does not apply.

At 31 December 2016, under Article 7 and 9 from the CRR, the subsidiaries Santander Leasing S.A. EFC and Santander Factoring y Confirming S.A. EFC are exempt from the minimum capital requirements, the limit on large exposures and the internal corporate governance obligations. No use of the exemptions under the applicable regulations has been made for any other Grupo Santander subsidiaries.

Grupo Santander is one of the banks that have not required state aid in any of the countries in which it operates



At 31 December 2016 none of the financial institutions included in the Santander consolidated group had less than the minimum capital required under applicable regulations.

1.2.2 Structure of the 2016 Pillar III Disclosures

Santander's Pillar III Disclosures are divided into eight sections and three appendices. The first chapter describes the background to Pillar III in Grupo Santander, material events affecting the Group that occurred in 2016 and the regulatory environment.

The second chapter provides full information on capital, including qualitative information on the capital function in Grupo Santander and quantitative information on Grupo Santander's capital base and capital requirements.

Chapters 3 to 7 describe the risk function in Grupo Santander and provide detailed information on credit risk, securitisations, market and ALM risk, operational risk, liquidity risk, compliance and conduct risk, and a description of the Internal Control function.

Chapter 8 contains information on remuneration policy of Material Risk Takers (MRT).

The appendices contain a listing of regulatory changes in 2016, a list of tables and a glossary of terms to facilitate the understanding of the report.

The Santander website contains five appendices in editable format with information required pursuant to prevailing legislation on certain aspects, such as eligible capital, the issue of preference shares and subordinated debt and the various consolidation methods of Grupo Santander's subsidiaries.

Throughout the report cross references to other public documents are made, amplifying the content via QR codes and hyperlinks:

QR code use and web links



1. If you are reading a printed copy, capture the QR



2. If you are viewing the PDF in a device, click the circle



Access file **2016 Pillar III Appendix** available on the Grupo Santander website

3. File name that contains the information



The Pillar III Disclosures are prepared in order to meet the obligations established in part eight of the CRR, containing the main principles of disclosure by institutions



The information contained in this report has been subject to review by the external auditor, who found no material incidents as regards the reasonableness of the disclosures and compliance with the reporting requirements established in the Directive and the CRR.

1.2.3 Governance: approval and publication

Pursuant to the official disclosure policy approved by the Board and recently updated at its meeting on 12 February 2017 to incorporate the EBA's recommendations, Grupo Santander publishes its annual Pillar II Disclosures following Board approval. Prior to Board approval on 2 March 2017, the report was reviewed by the Committee of Risk Supervision, Regulations and Compliance at its meeting on 17 February and the Capital Committee at its meeting on 9 February 2017.

In addition, since March 2015, a set of quarterly information has been published, in compliance with the European Banking Authority "Guidelines on materiality, proprietary and confidentiality and on disclosure frequency" pursuant to article 432, sections 1 and 2 and article 433 of Regulation (EU) 575/2013.

No exceptions have been made to the publication of information considered reserved or confidential.

In September, the ECB performed a review over the 2015 report to verify compliance with the reporting requirements laid down in the European Capital Requirements Regulation. The scant observations communicated have been included in this report.

In line with the corporate governance recommendations regarding the rotation of the external auditor, the ordinary general meeting of March 18, 2016 appointed Price Waterhouse Coopers Auditores S.L. (PwC) as external auditor of the Bank and its Consolidated Group for 2016, 2017 and 2018.

The Pillar III Disclosures are available in the "Investor Relations" section of Grupo Santander website (www.santander.com), under "Financial reports".



For more details access file **2016 Pillar III disclosures** available on the Grupo Santander website

In addition to the information in this report, some Group subsidiaries publish information on capital and solvency on their websites pursuant to regulatory requirements.

1.2.4 Transparency enhancements

Santander has taken note of the recommendations issued by the EBA and other working groups such as the Financial Stability Board (FSB) through the Enhanced Disclosure Task Force (EDTF) to improve the transparency of the information published each year in its Pillar III report.

In addition, the Basel Committee published, in January 2015, the Revised Pillar 3 Disclosure Requirements. Last year's Pillar II Disclosures incorporated a large number of the recommendations included in the document.

In December 2016, the EBA published its Final Guidelines on disclosure requirements. These Guidelines provide banks with guidance in attaining compliance with the CRR and with the Basel Committee, and they will apply from 31 December 2017. Grupo Santander made an effort to incorporate virtually all the enhancements this year.

The enhancements introduced are detailed below:

Table 1. Transparency enhancements -EBA

ID	Description. Mandatory for 2016	Pillar III 2016
OV1	Overview of RWA	2.2.2.
CR5	Standardised approach (including a breakdown of exposures post conversion factor and post mitigation techniques)	2.2.2.1
CR6	IRB – Credit risk exposures by exposure class and PD range	2.2.2.1.
CR8	RWA flow statements of credit risk exposures under IRB	2.2.2.1.
CCR3	Standardised approach – CCR exposures by regulatory portfolio and risk.	2.2.2.1.3.
CCR4	IRB – CCR exposures by portfolio and PD scale	3.10
CCR7	RWA flow statements of CCR exposures under Internal Model Method (IMM)	N/A
MR1	Market risk under standardised approach	2.2.2.3.
MR2-A	Market risk under IMA	2.2.2.3.
MR2-B	RWA flow statements of market risk exposures under an IMA	2.2.2.3.

ID	Description	Pillar III 2016
OVA	Institution risk management approach	3.1. and Annual Report
LI3	Outline of the differences in the scopes of consolidation – entity by entity	Appendix IV
INS1	Non-deducted participations in insurance undertakings	N/A
CRA	General qualitative information about credit risk	3.1.
CRB-A	Additional disclosure related to the credit quality of assets	3.1. and 3.2.
CRB-B	Total and average net amount of exposures	3.2.
CRB-C	Geographical breakdown of exposures	3.2.
CRB-D	Concentration of exposures by industry or counterparty types	3.2.
CRB-E	Maturity of exposures	3.2.
CRC	Qualitative disclosure requirements related to credit risk mitigation	3.6.
CRD	Qualitative disclosures on institutions' use of external credit ratings under the Standardised Approach for credit risk	2.2.2.1.3.
CRE	Qualitative disclosures related to IRB models	2.2.2.1.1.
CR1-A	Credit quality of exposures by exposure classes and instruments	3.2.
CR1-B	Credit quality of exposures by industry or counterparty types	3.2.
CR1-C	Credit quality of exposures by geography	3.2.
CR1-D	Ageing of past-due exposures	3.2.
CR1-E	Non-performing and forborne exposures	3.2.
CR2-A	Changes in stock of general and specific credit risk	3.2.
CR2-B	Changes in stock of defaulted and impaired loans and debt securities	3.2.
CR3	Credit risk mitigation techniques – overview	3.11.4.
CR4	Standardised approach – Credit risk exposure and CRM effects	3.2.
CR9	IRB approach – Backtesting of PD per exposure class	3.9.1.
CR10	IRB (specialised lending and equities)	2.2.2.1.
CCRA	Qualitative disclosure related to counterparty credit risk	3.10.
CCR2	CCVA capital charge	3.10.
CCR5-B	Composition of collateral for exposures to counterparty credit risk	3.11.2.
CCR6	Credit derivatives exposures	3.11.2.
CCR8	Exposures to CCPs	3.11.5.
SECA	Qualitative disclosure requirements related to securitisation exposures	4.
SEC1	Securitisation exposures in the banking book	4.3.4.
SEC2	Securitisation exposures in the trading book	4.3.4.
SEC3	"Securitisation exposures in the banking book and associated regulatory capital requirements – bank acting as originator or as sponso	4.3.4.
SEC4	Securitisation exposures in the banking book and associated capital requirements – bank acting as investor	4.3.4.
MRA	Qualitative disclosure requirements related to market risk	5.
MRB	Qualitative disclosures for institutions using the Internal Models Approach (IMA)	5.
MR3	IMA values for trading portfolios	5.2.1.
MR4	Comparison of VaR estimates with gains/losses	5.2.5.

1.2.5. Differences between the consolidation method for accounting purposes and the consolidation method for regulatory capital calculation purposes

For the purposes of calculating the solvency ratio in accordance with the nature of their activities, Grupo Santander units included in the prudential scope of consolidation, are consolidated using the global consolidation method, with the exception of jointly controlled entities, which are consolidated using proportionate consolidation. All companies that cannot be consolidated in accordance with their activities are accounted for using the equity method and so are treated as equity exposures.

The basis of the information used for accounting purposes differs from that used for the calculation of regulatory capital requirements. The measures of risk exposure may differ, depending on the purpose for which they are calculated, e.g. generation of accounting information, calculation of regulatory capital or generation of management information. The exposure data included in the quantitative disclosures in this document are used for calculating regulatory capital.

1.2.6. Equity investments and capital instruments not included in the trading book

This section provides definitions of investments in associates and available-for-sale equity instruments, as well as the accounting policies and valuation methods applied to them. In addition, data

accounting for any amounts of such capital instruments not included in the trading book are provided.

Investments in associates are those over which Grupo Santander exercises significant influence, but not control or joint control. This capacity is usually observed with 20% or more of the voting power of the investee.

Equity instruments classified as available for sale are capital instruments issued by entities other than subsidiaries, associates and jointly controlled entities, provided that such instruments have not been classified as financial assets/liabilities held for trading or other financial assets at fair value through profit or loss.

Investments in associates are accounted by its cost and are periodically tested for impairment.

Capital instruments classified as available-for-sale assets are measured and recorded at fair value, with changes in fair value being recognised in equity under valuation adjustments, unless there is evidence of impairment, in which case the impairment loss would be recognised in the income statement.

Capital instruments whose fair value cannot be reliably measured are carried at acquisition cost, less any impairment losses.

Table 2. Available-for-sale capital instruments
Thousands of Euros

	31 Dec. 2016		
	Carrying value	Fair value	Valuation adjustment
Quoted*	2,287,668	2,287,668	1,225,546
Investment funds	546,294	546,294	44,255
Unquoted	1,984,317	636,778	241,169
TOTAL	4,818,279	3,470,740	1,510,970

* The discrepancy in listed securities is mainly due to the Bank of Shanghai stock market listing in November 2016.

Table 3. Available-for-sale equity instruments.
Consolidated gross valuation adjustments
Thousands of Euros

	31 Dec. 2016
Prior-year balance	954,184
Revaluation gains and losses	840,844
Amounts transferred to income:	-284,058
Of which, from sales	-297,883
Of which, from impairment	13,826
Current-year balance	1,510,970

With respect to holdings accounted for using the equity method at year-end 2016, the amounts for associates and jointly controlled entities were EUR 3,457 million and EUR 464 million respectively.

There are also investments in Group entities totalling EUR 2,964 million which are accounted for in the public perimeter using the full consolidation method.

Grupo Santander tests these investments for impairment on a regular basis. No evidence of significant impairment was found during 2016.

1.2.7. Disclosure criteria used in this report

This report has been prepared in accordance with the applicable European Capital Requirements (CRR).

Below are the details of the type of information that best reflects the discrepancies between the regulatory information, shown in this report, and the information shown in the annual report, and the accounting information:

- The measures of credit risk exposure used for calculating regulatory capital requirements include (i) not only current exposures, but also potential future risk exposures arising from future commitments (contingent liabilities and commitments) or changes in market risk factors (derivative instruments) and (ii) the mitigating factors of these exposures (netting arrangements and collateral agreements for derivative exposures and collateral, and personal guarantees for on-balance-sheet exposures).
- The criteria used for classifying defaulted exposures in portfolios subject to advanced approaches for calculation of regulatory capital are more conservative than those used for preparing the disaggregated information provided in the Annual Report.

The reconciliation of public and confidential balance sheets is shown in appendix V.



Access file
2016 Pillar III Appendix
available on the Grupo Santander website

1.2.8. Substantial modifications due to scope changes and corporate transactions

A breakdown is provided below of the main purchases and sales of stakes in other companies, and other major corporate transactions by Grupo Santander last year:

i. Agreement concerning Santander Asset Management

On 16 November 2016, following the discontinuation agreed with the Unicredit Group on 27 July 2016 with regard to the merger project between Santander Asset Management and Pioneer Investments, Grupo Santander announced it had reached an agreement with Warburg Pincus (“WP”) and General Atlantic (“GA”) whereby Santander will purchase the 50% stake held by the companies in Santander Asset Management, thus making it a wholly-owned Grupo Santander company once more.

As part of this operation, Santander, WP and GA agreed to explore a number of alternatives for the sale of stakes in Allfunds Bank, S.A. (“Allfunds Bank”) and these included a possible sale or a stock market listing.

Grupo Santander believes that in 2018 the operation will assist its earnings per share (>1%) and generate a return on invested capital (RoIC) in excess of 20% (and 25% in 2019). Grupo Santander also believes that at year-end 2017 the adverse effect of the operation on its capital (core equity tier 1) will be approximately 11 basis points. All estimates are net of the effect of the foreseeable sale of Grupo Santander’s indirect 25.25% stake in Allfunds Bank.

The operation is subject to the regulatory permits being secured.

ii. Agreement with Banque PSA Finance

Grupo Santander, through its subsidiary Santander Consumer Finance, S.A. and Banque PSA Finance, the vehicle finance unit of the PSA Peugeot Citroën Group, signed an agreement in 2014 for joint operation of the vehicle finance and insurance business in twelve European countries. Under the contract, Grupo Santander will finance this business in certain circumstances and under certain conditions.

Regulatory permits were obtained in January 2015 to commence operations in France and the United Kingdom, and so on 2 and 3 February 2015 Grupo Santander bought up 50% of Société Financière de Banque – SOFIB (now PSA Banque France) and PSA Finance UK Limited for EUR 462 million and EUR 148 million respectively.

PSA Insurance Europe Limited and PSA Life Insurance Europe Limited were incorporated on 1 May (both insurance companies registered in Malta) and Grupo Santander contributed 50% of the capital in the amount of EUR 23 million. 100% of PSA Gestão - Comércio E Aluguer de Veículos, S.A. (a company registered in Portugal) was acquired on 3 August, as was the lending portfolio of the Portuguese subsidiary of Banque PSA Finance, for EUR 10 million and EUR 25 million respectively. PSA Financial Services Spain, E.F.C., S.A. (a company registered in Spain) was incorporated on 1 October, and Grupo Santander contributed EUR 181 million or 50% of the capital (the company in turn holds 100% of the capital of PSA Finance Suisse, S.A., a company registered in Switzerland).

Permits were obtained from the regulatory authorities to commence operations in the other countries covered by the framework agreement (Italy, the Netherlands, Austria, Belgium, Germany, Brazil and Poland). Grupo Santander disbursed EUR 464 million in 2016 to acquire a 50% stake in each of the structures created in each region, with the exception of PSA Finance Arrendamiento Mercantil S.A., where all the shares were bought up.

The new businesses acquired contributed EUR 79 million to Group results in 2016. Had the business combination taken place on 1 January 2016, the results contributed to Grupo Santander in 2016 would have been approximately EUR 118 million.

iii. Metrovacesa agreement

On 21 June 2016 Grupo Santander announced an agreement with Merlin Properties, SOCIMI, S.A., along with the other shareholders of Metrovacesa, S.A., for the integration in the MERLIN group, following the total spin-off of Metrovacesa, S.A. of Metrovacesa S.A.'s property rental business in Merlin Properties, SOCIMI, S.A. and Metrovacesa, S.A.'s residential rental business in the current Merlin subsidiary, Testa Residencial, SOCIMI, S.A. (formerly Testa Residencial, S.L.). The other assets of Metrovacesa, S.A. not integrated in the Merlin group as a result of the merger, consisting of a residual group of land assets for development and subsequent lease, were to be transferred to a newly created company wholly owned by the current shareholders of Metrovacesa, S.A.

The General Shareholders' Meetings of Merlin Properties, SOCIMI, S.A. and Metrovacesa S.A. were held on 15 September 2016, and both meetings approved the operation.

Subsequently, on 20 October 2016 a deed was drawn up for the total spin-off of Metrovacesa, S.A. in favour of the two companies, and was entered in the Business Register on 26 October 2016.

As a result of the merger, Grupo Santander has a 21.95% stake in Merlin Properties, SOCIMI, S.A., a direct 46.21% stake in Testa Residencial, SOCIMI, S.A. and a 70.27% stake in Metrovacesa Promoción y Arrendamiento, S.A.

The main impacts of the spin-off on the consolidated Group balance sheet were as follows; a decrease of approximately EUR 3,800 million in investment property (see Note 16), a decrease of EUR 621 million in minority interests (see Note 28) and an increase in investments in joint ventures and associates through stakes in the business received by associate companies Merlin Properties and Testa Residencial, in the respective amounts of EUR 1,168 million and EUR 307 million (see Note 13.a).

Moreover, plans have been made for Banco Santander, S.A., along with other companies, to contribute assets to Testa Residencial, SOCIMI, S.A. during the first quarter of 2017, with no major changes to Santander's stake in the company.

1.3. Regulatory framework

1.3.1 Regulatory framework

In December 2010, with the aim of enhancing the quality, consistency and transparency of the capital base and improving risk coverage, the Basel Committee on Banking Supervision (BCBS) published a new global regulatory framework for the international capital standards (Basel III), reinforcing the requirements established in the previous frameworks (known as Basel I, Basel II and Basel 2.5). On 26 June 2013 the Basel III legal framework was incorporated in the European legal order via Directive 2013/36 (CRD IV), which repeals Directives 2006/48 and 2006/49, and Regulation 575/2013 on prudential requirements for credit institutions and investment firms (CRR).

CRD IV was introduced into Spanish law through Law 10/2014 on the ordering, supervision and solvency of credit institutions, and its subsequent regulatory implementation via Royal Decree 84/2015 and Circular 2/2016 of the Bank of Spain, which completes its adaptation to Spanish law. This Circular largely repeals largely Circular 3/2008, on the calculation and monitoring of minimum capital (though, in the aspects covered by Circular 5/2008, on minimum capital and other mandatory reporting of information for mutual guarantee societies, the latter will remain in effect); and a section of Circular 2/2014, on the exercise of various regulatory options contained in the CRR. The CRR is directly applicable in Member States from 1 January 2014, and repeals all subordinate acts that entail additional capital requirements.

The CRR provides for a phase-in period that will allow institutions to adapt gradually to the new requirements in the European Union. The phase-in arrangements have been introduced into Spanish law through Bank of Spain Circular 2/2014 affecting both the new deductions from capital and the instruments and elements of capital that cease to be eligible as capital under the new regulation. The capital conservation buffers provided for in CRD IV will also be phased in gradually, starting in 2016 and reaching full implementation in 2019.

The Basel regulatory framework is based on three pillars. Pillar I determines the minimum capital requirement and allows for the use of internal ratings and models to calculate risk-weighted exposures. The aim is to make the regulatory requirements more sensitive to the risks actually incurred by financial institutions in carrying on their business activities. Pillar II establishes a system of supervisory review, aimed at improving banks' internal risk management and capital adequacy assessment in line with their risk profile. Lastly, Pillar III deals with disclosure and market discipline.

On 23 November 2016, the European Commission released a draft of the new CRR and CRD IV incorporating different Basel standards, such as the Fundamental Review of the Trading Book for Market Risk, the Net Stable Funding Ratio for liquidity risk or the SA-CCR for calculation of the EAD by counterparty risk, and introduces modifications related to the treatment of central counterparties, from the MDA, Pillar II and the leverage ratio, among others. The most significant change is the implementation of the TLAC Term Sheet issued by the Financial Stability Board (FSB) in the capital framework, so that systemically important banks will have to comply with TLAC requirements in a Pillar I, while non-systemically important banks need only comply with MREL in a Pillar II that the resolution authority will decide on a case-by-case basis.

1.3.1.1 Regulatory changes in 2016

Progress continued in review of the prudential framework and in the development of crisis management frameworks in 2016.

The Basel Committee continued to review the frameworks for the calculation of the capital requirements for credit, market and operational risk, in terms of capital consumption, in a bid to improve their simplicity, comparability and sensitivity to risk. While seeking to reduce the variability of risk-weighted assets not justified by the different risk profiles, the Basel Committee is adjusting its initial proposals, with the aim that such reviews should not entail a widespread capital increase within the entire system:

- **Credit risk:** A revised proposal concerning the standardised approach was tabled in December 2015. This proposal simplifies the previous version, and reintroduces the use of external ratings, in a non-mechanistic manner, for exposures to banks and corporates. The revised proposal also includes alternative approaches for jurisdictions that do not allow the use of external ratings for regulatory purposes. Furthermore, in March 2016, a review of internal models was released for consultation purposes, with the aim of eliminating the use of internal models for certain portfolios classified as low default; to set limitations in the estimation of parameters through exposure level floors; to standardise the methodology for estimating risk parameters; and to review treatment of risk mitigation techniques
- **Market risk:** The Basel Committee released in January 2016 the final calibration and fundamental review of capital in the trading book, which includes the standard model, the advanced model, and the separation between the banking book and the trading book.
- **Operational risk:** In March 2016, the first proposed standardised approach was released for consultation purposes. It involved replacing business lines in the current standardised calculation methodology with a size basis as the main driver. This second proposal sets out a new approach that combines size with indicators of losses from past events. The new methodology is expected to not only replace current standardised approaches but also AMA internal models.

This review of the capital framework is expected to be completed in early 2017. The outcome is expected to be a hybrid approach, in which the utilisation of internal models will be permitted, albeit with limitations, and capital floors will be applied based on standardised methodologies of credit, market and operational risk. Accordingly, the calibration of these floors is expected to be between 60% and 90%.

The Basel Committee also worked in the following areas in 2016:

- In April 2016, the Committee released its final proposal on the review of the regulatory treatment of the interest rate in the investment book, which means that this risk is maintained within Pillar II, but with certain additional requirements, such as a quantitative disclosure based on the Pillar I approach proposed for this risk.
- In September 2016, the Committee released the Regulatory Consistency Assessment Program (RCAP) for Argentina, with the aim of evaluating the degree of local implementation of Basel standards relating to the capital and liquidity framework. This report determined that local implementation of Basel III in Argentina is compliant with Basel standards, Argentina jurisdiction.
- In October 2016, the Basel Committee released a consultation and discussion paper on the regulatory treatment of provisions that allow for applying a transitional period for calculating the capital impact of the implementation of IFRS 9 and they propose several long-term alternatives in provisions for review of the interaction between the accounting framework and the prudential framework. Further consultations on this debate are expected throughout 2017.

Another aspect on which the Basel Committee is engaged is a review of the treatment of sovereign debt within the prudential framework, which could lead to withdrawal of the application of zero risk for certain sovereign debt exposure or even the imposition of concentration limits on such exposures and the introduction of additional disclosure requirements. A consultation concerning this debate is expected during the first quarter of 2017.

With respect to the leverage ratio, final calibration has been scheduled for 2017 and will depend on the final calibration of capital measures for credit, operational and market risk. But it is expected to be 3% for all banks except for G-SIBs, which must comply with an additional buffer.

In addition, the publication of the final proposal of the review of the risk framework of the credit valuation adjustment (CVA) is pending. The latter aims at ensuring that all drivers of CVA and coverages are included in the Basel capital framework, aligning the capital standard with measurement of the fair value of the CVA employed for accounting purposes, and guaranteeing consistency with the basic review of the trading book (published for review in October 2015).

Additionally, with respect to the crisis management framework, in 2016, the Financial Stability Board has continued to make progress in developing crisis management frameworks to put an end to the notion of "too big to fail" in the banking sector. After finalising the standard to demand the minimum loss absorbing-capacity in order to recapitalise a bank (Total Loss Absorbing Capacity or TLAC), which will be required of G-SIBs (global systemically important banks), in 2016 it continued to make progress in TLAC holding and disclosure rules.

Hence, in November 2016, the Financial Stability Board (FSB) has updated the list of G-SIBs for 2018. Santander remains in Grupo Santander of the least systemic banks, with the minimum additional capital buffer requirement (1%) and a confirmed phase-in buffer of 0.75% for 2018.

European regulation

The European Banking Authority (EBA) continued to issue standards and guidelines implementing aspects of European capital requirements (CRR/CRD IV) and helping to guarantee harmonious implementation of minimum capital requirements within the European Union. Regulatory initiatives include the following: guidelines on assessment of the risk of information and communications technology (ICT) within the framework of the process of review and evaluation of the SREP, guidelines on customers connected under the regime of large exposures, guidelines on management of credit risk and expected losses and final guidelines on ILAAP and ICAAP reporting.

Also, in a bid to reduce the variability of capital consumptions not justified by the various risk profiles, thereby enhancing the level playing field and the comparability among banks, in February 2016, the EBA released the final working plan announced in the discussion paper on the future of IRB models. This working plan was launched in 2016 and is expected to continue in 2017. It is focused mainly on releasing a series of regulatory proposals on internal models of credit risk, in a bid to improve sturdiness, comparability and transparency, restore confidence in the models and to ensure consistency by regulators. As part of this working plan, the EBA has released the following:

- In July 2016, the final proposal with requirements for appraisal of the use of internal models of credit risk by competent authorities.
- In September 2016, final guidelines for the application of the definition of default, with the aim of improving consistency and harmonising the definition of default within the EU prudential framework.
- In November 2016, a consultation proposal for the methodology of estimating risk parameters (PD, LGD and treatment of defaulted assets).
- In December 2016, the final disclosure requirements to improve comparability and consistency of information between European institutions.

Also, in November 2016, the European Commission published a regulatory proposal that reopens the Capital Requirement Regulation (CRR and CRD IV) to include aspects such as:

- New finalised Basel regulatory developments, such as the fundamental review of the trading book (FRTB), the standardised approach for counterparty credit risk (SA-CCR), new disclosure requirements, the HSFR liquidity ratio, the leverage ratio, TLAC and the treatment of the interest rate in the banking book (IRRBB).
- Modifications to the framework of limits on large exposures and in treatment of risk by CVA.

And also include, among others, the following additional aspects that were identified in consultations (published in 2015) on the impact of CRD IV on financing of the economy and the call for evidence that was aimed at assessing the impact of the regulation and identifying obstacles keeping the financial system from performing its function:

- Application of the principle of proportionality in reporting and disclosure requirements.
- Introduction of supporting factors for financing of infrastructure projects and improvement of the current SME supporting factor.
- Holding Companies for non-EU GSIBs or assets of at least EUR 30bn.
- Establishment of limits to large exposure risks to European exposures.
- Clarification of MDA, Pillar 2R and Pillar 2G.

In addition, the Commission has still to determine the equivalence of the jurisdictions of third countries (such as, for example, Argentina) based on EBA questionnaires. On CCPs, the Commission extended the transitional period to 15 June 2017 and ruled favourably on the rating of the CCPs of Brazil. Lastly, the EBA published in August 2016 a report on the calibration of the leverage ratio, ahead of the end of its mandate in October 2016. The report introduces a 3% level for all banks and, in line with the Basel Committee, recommends an additional add-on for G-SIBs.

In liquidity, the EBA published in 2016 two consultations aimed at specifying disclosure of the Liquidity Coverage Ratio (LCR) and encumbrance. Meanwhile, the European Commission conducted a consultation on defining and developing the NSFR that served as preparation for the Commission proposal for modifying the CRR that includes a proposal for implementation of the NSFR in Europe.

With respect to supervision, the supervisory activity conducted by the Single Supervisory Mechanism in the framework of the Supervisory Review and Evaluation Process (SREP) is notable. In this area, Banco Santander's joint supervisory team worked tirelessly in 2016, holding over 100 meetings with the Bank.

Along with the intense agenda of supervision within the framework of the Supervisory Review and Evaluation Process (SREP), the SSM has made great strides towards the harmonisation of supervisory policies across countries, and in the transparency of their expectations.

1. Introduction


Europe also continues to make progress in the implementation of the crisis management framework. The SRB or Single Resolution Board, the second pillar of Banking Union after the Single Supervisory Mechanism, has been operational since 1 January 2016, and it will undergo gradual mutualisation until the year 2022. This period of gradual mutualisation will allow for a transition from the national resolution funds in place in several eurozone countries until 2016, to the Single Resolution Fund, which will be fully implemented by 2023. In 2016, the first year in the life of the single resolution fund, 60% of the fund's funding target (1% of covered deposits by 2023) was calculated on the basis of a national perimeter (BRRD perimeter) and 40% on the basis of a eurozone perimeter (SRM perimeter). In 2017, these percentages have been inverted, with 40% of funding in the BRRD perimeter and 60% within the SRM perimeter:



Grupo Santander communicates and maintains corporate and local positions on any issues submitted for debate in the financial sector that could affect its business. The corporate and local public policy function, in coordination with the business units and support divisions concerned in each case, identifies the regulatory alerts and establishes Grupo Santander's position.

The main courses of action taken as a result were as follows:

- Grupo Santander has been a keen participant in the main banking associations worldwide and in Europe, and in the main markets in which we operate. Among other assistance, it contributes to the replies drawn up in connection with ongoing regulatory consultations.
- Grupo Santander has maintained proactive, constructive dialogue with policy-makers through the existing channels (hearings to send individual replies to official consultations on issues considered relevant to Grupo Santander).
- In particular, Grupo Santander has worked towards acknowledgement of the sturdiness of our organisational model with independent subsidiaries in terms of capital and liquidity, the benefits of geographic diversification and recognition of the equivalence of the jurisdictions of third countries where the Bank operates. In addition, one of the Bank's main objectives is for subsidiaries to adopt advanced return- and capital-based management systems via internal models, given the improvements in comprehensive risk management and adequacy in the calculation of capital these provide.

 **Note:** For further details regarding the new 2016 regulatory requirements, see Appendix I

Capital

2

- **21** 2.1. Capital
 - 23 2.1.1. Capital function
 - 2.1.1.1. Organization
 - 2.1.1.2. Capital governance
 - 24 2.1.2. Capital management and adequacy
 - 25 2.1.3. Capital management priorities in 2016
 - 25 2.1.4. Capital goals
 - 26 2.1.5. Capital Buffers and eligible capital requirements
 - 2.1.5.1 Global systemically important financial institutions
 - 2.1.5.2. Domestic systemically important entities
- **28** 2.2. Pillar I regulatory capital
 - 28 2.2.1., Eligible capital
 - 3 2.2.2. Capital requirements
 - 2.2.2.1. Credit Risk
 - 2.2.2.2. Credit risk – Securitisations
 - 2.2.2.3. Market risk
 - 2.2.2.3. Operational risk
 - 71 2.2.3. Other requirements
 - 2.2.3.1. Total Loss Absorbing Capacity (TLAC) and Minimum Required Eligible Liability (MREL)
 - 2.2.3.2. Leverage ratios
- **73** 2.3. Pillar II Economic capital
 - 74 2.3.1. Rorac and value creation
 - 74 2.3.2. Capital planning and stress tests
 - 76 2.3.3. 2016 EBA transparency exercise
- **78** 2.4. Recovery & resolution plans

2. Capital



This chapter provides quantitative information at consolidated level on eligible capital and capital requirements for the several types of risk included under Pillar I of Basel (Credit, Operational and Market Risk). It also explains the capital planning process, along with the Group's economic capital and RORAC figures.

Additionally, several capital aspects are covered, such as the role that it plays in the Grupo Santander business model, how it is managed and the organizational model involved.

2.1. Capital

Capital management and adequacy in Grupo Santander is performed in an integrated way, seeking to guarantee the Bank's solvency, fulfilment of regulatory requirements and profit maximization. It is determined by the strategic objectives and by risk appetite set by the Board of Directors. In order to achieve this, the following policies have been established to shape the approach that Grupo Santander applies regarding to capital management:

- Establish adequate capital planning that covers current needs and provides the necessary resources to meet the business plan requirements, regulatory requirements and the associated risks in the short and medium term, while maintaining the risk profile approved by the board.
- Ensure that, under stress scenarios, Grupo Santander and its companies maintain enough capital to cover the needs arising from the risk increase due to deterioration of macroeconomic conditions.
- Optimise capital use through appropriate allocation of capital among the businesses, based on the relative return on regulatory and economic capital, considering risk appetite, its growth and strategic objectives.

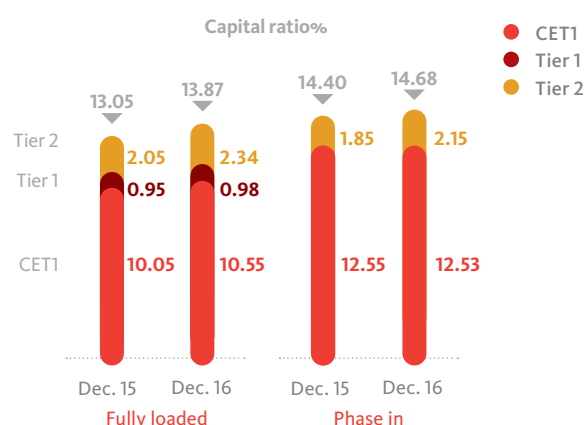
Grupo Santander has a comfortable solvency position which exceeds the levels required by regulations and by the European Central Bank (hereinafter, ECB).

Table 4. Main capital and solvency ratio figures
Millions of Euros

EUR million	Fully loaded		Phase in	
	Dec-16	Dec-15	Dec-16	Dec-15
Common Equity (CET1)	62,068	58,705	73,709	73,478
Tier 1	67,834	64,209	73,709	73,478
Total capital	81,584	76,209	86,337	84,350
Risk wighted assets	588,088	583,917	588,088	585,633
CET1 Ratio	10.55%	10.05%	12.53%	12.55%
Tier 1 Ratio	11.53%	11.00%	12.53%	12.55%
TOTAL CAPITAL RATIO	13.87%	13.05%	14.68%	14.40%

Note: On February 3, 2016, the European Central Bank authorised the use of the Standard Alternative Method for the calculation of capital requirements at consolidated level for operational risk at Banco Santander (Brazil) S.A. The impact of the aforementioned authorization on the risk-weighted assets of Grupo Santander (-7,836 million euros) and consequently its capital ratios was not taken into account in the data published on 27 January 2016 and which are presented in this report for December 15.

Capital and solvency ratios



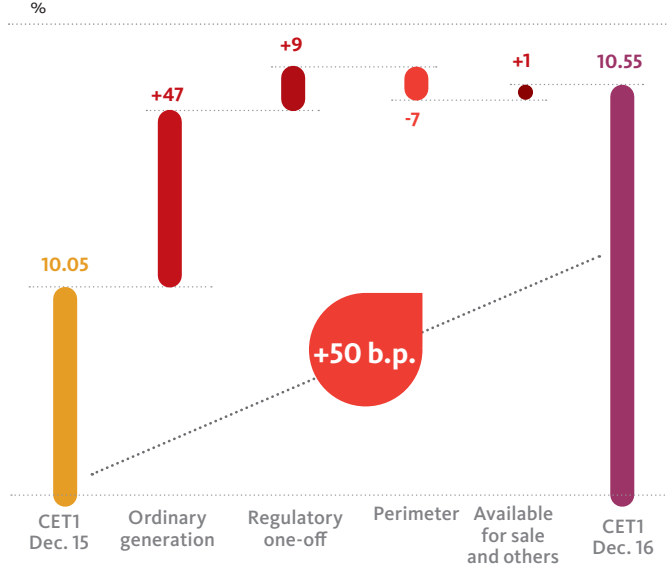
Grupo Santander's main solvency ratios at 31 December 2016 are as shown in table 4. Phase-in ratios are calculated applying the transitory schedules for implementation of Basel III, whereas fully loaded are calculated without applying any schedules, hence with the final regulation.

In fully-loaded terms CET1 in December stood at 10.55%, increasing by 50 basis points during the year and reaching the goal at year-end which was announced at the beginning of the year.

The fully-loaded capital ratio was 13.87%, up by 82 basis points during the year.

2. Capital

Evolution CET1 fully loaded



The increase of 50 basis points in 2016 is, mainly due to profit generation and management of risk assets together with some positive non-recurring impacts (regulatory, valuation of portfolios available for sale and others) and negative ones (increased perimeter).

From the point of view of quality, Grupo Santander has solid ratios suited to its business model, the structure of its balance sheet and its risk profile. Grupo Santander exceeds by 328 basis points the 2017 minimum regulatory capital requirements of total ratio taking into account the surplus and shortfall of AT1 y T2 (see section 2.1.5.).



The Group is working towards a fully-loaded CET1 ratio target of over 11% by 2018.

Strategic principles of the capital function

Capital autonomy

- Autonomy
- Centralised monitoring
- Appropriate capital distribution

Capital strength and discipline

- Capital strengthening
- Capital conservation
- Prudent capital management

Maximisation of value creation

- **Capital autonomy.** The Group's corporate structure is based on a model of legally independent subsidiaries, each with responsibility for its own capital and liquidity. This helps advantage in raising funds and limits the risk of contagion, thus reducing systemic risk, and subjects subsidiaries to two tiers of supervision and internal control: local and global. The local units have the necessary capital to carry on their activity autonomously and to meet regulatory requirements.
- **Centralised monitoring.** The capital management model must ensure a holistic view, through a corporate environment of global coordination and review (every business, every geographic region). The first level of monitoring, by the local units themselves, is supplemented by the monitoring activity of the corporate units.
- **Appropriate capital distribution.** The allocation of capital resources must be consistent with the effective location of risk assumed within the Group and proportional to the risk taken, in order to strike an optimal balance between solvency and profitability. Both the subsidiaries and the parent entity must be adequately capitalised, and capital must be allocated using balanced criteria.
- **Capital strengthening.** Independently of the need to operate with a level of adequate capital (available capital) to meet legal requirements, the right mix of capital must also be ensured, encouraging the choice of the eligible elements with the maximum possible quality (based on its loss-absorbing capacity, its likelihood of remaining on the entity's balance sheet in the longer term, and its ranking in the priority of payments), so as to guarantee the capital stability over time and support the Group's sustained growth strategy.
- **Capital conservation.** Capital is a scarce resource which must be used as efficiently as possible, given the high cost of generating capital organically or by resorting to the markets. All units must therefore have ongoing monitoring mechanisms to optimise capital usage.
- **Prudent capital management.** The fundamental aim of capital management is to preserve the entity's solvency without losing focus on the return on invested capital. This requires setting capital targets that are consistent with the entity's risk profile, both locally and globally, so as to limit the levels and types of risk the entity is willing to assume in the course of its business and ensure that capital levels consistent with those risks are maintained.
- **Maximisation of value creation.** Investment decisions are aimed at optimising value creation from invested capital. In order to align business management with capital management, a set of metrics relating the cost of capital to the return on capital investment are monitored, allowing the profitability of transactions, customer portfolios and businesses to be compared on a consistent basis.

2.1.1. Capital function

The core principles provide the basic guidelines for Grupo Santander entities in capital management, monitoring and control.

2.1.1.1. Organisation

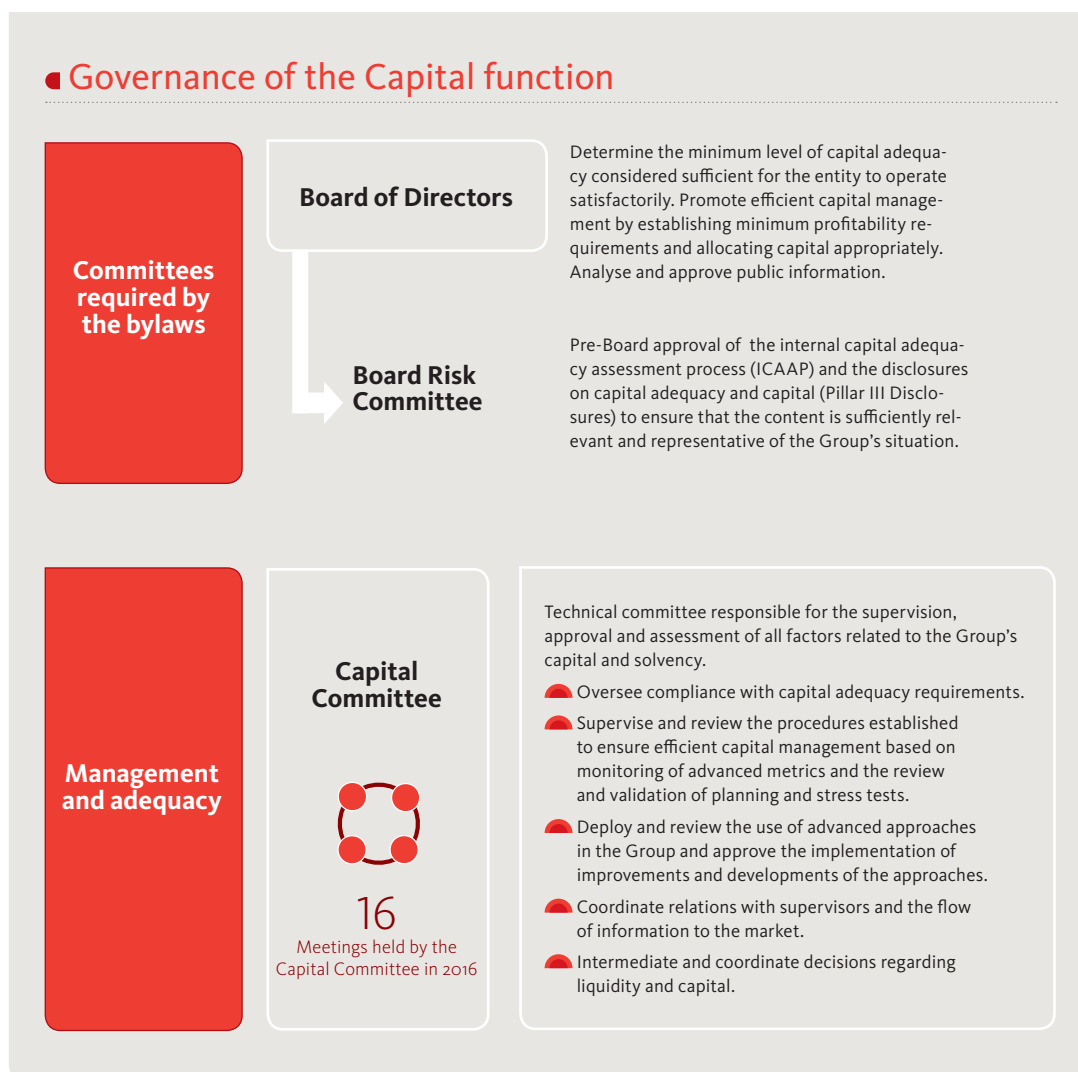
The organisational structure has been defined with to ensure compliance with the principles of capital management, and to guarantee that the existing relationship between each subsidiary and the corporation in this function is such as to facilitate the subsidiary's financial autonomy, subject to strict monitoring, coordinated at Group level.

Santander's risk management and control model is based on three lines of defence. The first line is composed of the business functions or activities that assume or generate exposure to risk. Risks undertaken or generated within the first line of defence must be in accordance with appetite and the limited defined. To carry out its function, the first line of defence must have the resources to identify, measure, manage and report the risks assumed. The second line of defence comprises the function of controlling and supervising risk, and the compliance function. The second line is charged with effective control of risks, and ensures that they are managed in accordance with the risk appetite defined.

Internal audit is the third line of defence and the last layer of control, and regularly assesses policies, methods and procedures to ensure they are suitable and also checks they are operational. The risk control function, the compliance function and the Internal Audit function are sufficiently separate and independent from each other and also regarding other functions that they control and supervise in order to carry out their tasks, and have access to the Board of Directors and/or to its Committees at the highest level.

2.1.1.2. Capital governance

To ensure the proper exercise of the capital function, both in terms of decision making and in terms of supervision and control, Grupo Santander has developed a structure of responsive and efficient governance bodies, which ensure the participation of all the areas concerned and guarantee the necessary involvement of senior management. Because of Grupo Santander's characteristic subsidiaries structure, the governance structure of the capital function has to be adapted to preserve the subsidiaries' capital autonomy, while allowing centralised monitoring and coordinated management at Group level. There are also committees that have responsibilities both at local level and also for coordination at Group level. The local committees must report to the corporate committees as and when required on any relevant aspects of their activity that may affect capital, so as to ensure proper coordination between the subsidiaries and the corporate level.



2.1.2. Capital management and adequacy

The goal of capital management and adequacy at Grupo Santander is to guarantee the entity's solvency and maximise its profitability, while ensuring compliance with internal capital goals and regulatory requirements. Capital management and control is a fundamental strategic tool for decision making at both local and corporate level, and serves to create a common framework of action by establishing definitions and homogenisation of capital management criteria, policies, functions, metrics and processes.

Capital variables

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

Regulatory capital

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

Economic capital

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

Cost of capital

The minimum return required by investors (shareholders) as compensation for the opportunity cost incurred and the risk assumed in investing their capital in the entity. This cost of capital represents a "cut-off rate" or "minimum return" to be achieved and allows comparisons to be made between the different business units and their efficiency to be assessed.

Leverage ratio

The minimum return required by investors (shareholders) as compensation for the opportunity cost incurred and the risk assumed in investing their capital in the entity. This cost of capital represents a "cut-off rate" or "minimum return" to be achieved and allows comparisons to be made between the different business units and their efficiency to be assessed.

Return on risk-adjusted capital (Rorac)

The return (understood as net profit after tax) on internally required economic capital. Therefore, the higher the economic capital, the lower the Rorac. For this reason, the Bank must demand a higher return from transactions or business units that consume more capital.

Rorac takes the investment risk into account and so provides a risk-adjusted measure of return.

The use of Rorac allows the Bank to better manage its activities, assess the real risk-adjusted return of businesses and be more efficient in decision-making relating to investments.

Return on Risk Weighted Asset (RoRWA)

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

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

Value creation

Any profit generated above and beyond the cost of economic capital.


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

Expected loss

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

Grupo Santander's capital function is performed at two levels:

- **Regulatory capital:** Regulatory capital management is based on the analysis of the capital base, the solvency ratios as defined by applicable regulation and the scenarios used in capital planning. The aim of the capital structure is to be as efficient as possible, both in terms of cost and in terms of compliance with the requirements of regulators. Active capital management includes strategies for capital allocation and for efficient usage of business units, securitisations, asset sales and issues of capital instruments (preferred stock, subordinated debt) and hybrid capital instruments.
- **Economic capital:** Economic capital management aims to optimise value creation in the Group and its business units. For this purpose, economic capital, RORAC and value creation per business unit are calculated, analysed and reported to the capital management committee. Within the framework of the internal capital adequacy assessment process (Basel Pillar II), Grupo Santander uses an economic capital measurement model to ensure that sufficient capital is available to support all the risks of its activity under several economic scenarios, and with the capital adequacy levels set by the Group.

 As of 31st December 2016, Grupo Santander meets all the minimum capital requirements under the current regulations.

2.1.3. Capital management priorities in 2016

Details of the most significant actions taken in 2016 are set out below:

Issues of financial instruments with the legal status of capital

In April Banco Santander S.A. issued EUR 1,500 million in subordinated debt eligible as Tier 2 capital with a fixed annual return of 3.25%, to boost its overall capital ratio.

In June and August Banco Santander S.A. issued the total equivalent of EUR 84 million in two private issues of subordinated debt in yens eligible as Tier 2 capital with fixed annual returns of 1.94% and 2.195% respectively, to boost its overall capital ratio.

In September Banco Santander S.A. issued the equivalent of EUR 125 million in a private issue of subordinated debt in dollars eligible as Tier 2 capital with a fixed annual return of 4.65%, to boost its overall capital ratio.

Also, in October, November and December Banco Santander S.A. issued the equivalent of EUR 493 million in three issues of subordinated debt in dollars with fixed annual returns of 4.75%, 5.25% and 5.25% respectively; and in December it issued EUR 110 million in two issues of subordinated debt with fixed annual returns of 4.35% and 4.46%, all of which were intended to boost the total capital ratio, although their Tier 2 eligibility is still pending ECB approval.

Finally, in December Bank Zachodni WBK S.A. issued EUR 120 million of subordinated debt to boost the overall capital ratio, and this is pending KNF approval to be eligible as Tier 2 capital.]

Dividend policy

In 2016 cash pay-outs were maintained for most quarterly remuneration, and it was announced that remuneration charged against 2016 would be EUR 0.21 - three cash dividends, and a scrip dividend (Santander Dividendo Elección) of EUR 0.045 per share. It was also announced that cash pay-outs this year and in the years following would account for 30%-40% of profits, and shareholder remuneration would be in line with rising profits.

Targets were met in 2016, with an effective dividend of 40% of profits and an increase of the per-share cash dividend of 8%.

In December 2016 the European Central Bank issued a recommendation for dividend allocation policies, applicable to all Eurozone credit institutions as of 2016. The recommendation urges banks to establish conservative dividend policies with prudent assumptions.

Finally, in some areas restrictions on the distribution of dividends were established on the basis of the new more stringent regulation concerning solvency although, notwithstanding the objections voiced by the Boston Federal Reserve concerning the Comprehensive Capital Analysis Review (CCAR) of the sub-holding of our subsidiary in the United States and the new dividend policy published by the National Competent Authority of our subsidiary in Poland (KNF) for Banks with significant participation in foreign currency mortgages, there is no record of any other practical or legal impediment, to the transfer of funds from the subsidiaries to the parent through dividends, loans or advances, repatriation of capital or other instruments, by Grupo Santander subsidiaries.

2.1.4. Capital goals

Grupo Santander is working with the objective of achieving a fully loaded CET 1 ratio of above 11% in 2018.



The continuous improvement in capital ratios reflects the profitable growth strategy followed by the Group, where we aim to increase lending and profits above the increase in risk assets. It is also due to a number of actions taken by the Group, including the effort to improve and deepen a culture of more active capital management throughout the organization.

2. Capital

To achieve this, a number of instruments have been activated or strengthened during the year, including:

- Increases in teams dedicated to management of capital, while improvements continue to be made in coordination of the corporate center and local teams.
- Greater weight of capital in 2016 incentives.
- The launch of a global training programme.
- All local units and business units have developed individual capital plans with the priority of having a business that consumes less capital per unit of return in the future.

2.1.5. Capital buffers and eligible capital requirements

At all times the Group must meet the combined capital buffer requisite, understood as the total ordinary Tier 1 capital necessary to meet the obligation to maintain the following:

- Capital conservation buffer (CCoB): obligatory for all entities, phased-in beginning on 1 January 2016. So that the surcharge for entities in 2017 will be 1.25%.
- Systemic buffers: a four-year phase-in period is established for systemic buffers. This includes two types:
 - Systemically Important Institutions: for entities designated as systemically important, using a common methodology. There are two different sub-categories, with the largest buffer rate of the two being applicable:
 1. G-SIB buffer (Global Systemically Important Institutions): Common methodology, classifying the different entities into buckets based on their systemic risk.
 2. D-SIB buffer (Other Systemically Important Institutions).
 - Systemic risk buffer (SRB): for entities with systemic importance that must hold additional loss-absorbing capacity. This buffer is discretionary in nature and applicable to either all exposures of an entity or to part of its exposures (domestic and/or foreign, specific business sector, etc.), as determined by the relevant authorities.

If the SRB covers all types of exposures, the greatest of the three systemic buffer rates will be applied. If the SRB only applies to a certain type of exposure, the SRB buffer will be added to the greater of the other two systemic buffers (G-SIB and O-SIB).

- Countercyclical buffer (CCyB): The CCyB will be applied when the authorities deem that lending growth is giving rise to an unacceptable accumulation of systemic risks. This buffer is specifically calculated for each bank or group, and consists of the weighted average of percentages of countercyclical buffers applied in regions in which the bank's credit exposures are located.

The table below summarizes the required regulatory rates based on the different capital buffers to be applied, along with the phase-in timeline and Grupo Santander's situation in 2017:

Applicable to	Buffers (% RWAs)	2016	2017	2018	2019
All entities	Conservation (CCoB)	0.625%	1.25%	1.875%	2.5%
Designated entities	G-SIB entities (1% - 3%) ⁽¹⁾	25% of buffer	50% of buffer	75% of buffer	100% of buffer
	D-SIB entities ⁽²⁾	25% of buffer	50% of buffer	75% of buffer	100% of buffer
At discretion of competent national authority	Systemic risk (SRB) ⁽³⁾	0%-5%	0%-5%	0%-5%	0%-5%
	Countercyclical (CCyB) ⁽⁴⁾	0%-0.625%	0%-1.25%	0% - 1.875%	0% - 2.5%
	Consolidated combined buffer	CCoB + CCyB + Max ⁽⁵⁾ (G-SIB, D-SIB, SRB)			

(1) Global Systemically Important Institutions. FSB has published for 2017, and has demanded a total buffer of 1% for Santander (this means that 0.50% is required in 2017).

(2) Other Systemically Important Institutions. The Bank of Spain requires a 1% buffer for Santander (this means that 0.5% is required in 2017).

(3) To Grupo Santander the requirement by this concept is of 0%.

(4) Bank of Spain, first quarter of 2017: exposures located in Spain: 0%.

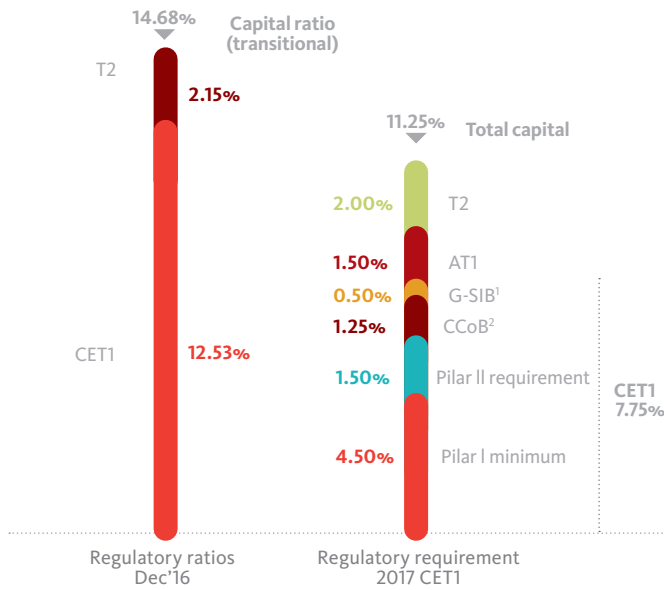
(5) The maximum of the 3 buffers applies if the SRB buffer covers domestic and non-domestic exposures. Otherwise, the higher of G-SIB and D-SIB plus the SRB buffer applies.

Capital requirements

The decision on capital, which is the result of the Supervisory Review and Evaluation Process (SREP) of the European Central Bank's (ECB) Single Supervisory Mechanism, for the first time consists of a Pillar 2 Requirement (Pillar 2R) and Pillar 2 Guidance (Pillar 2G). Pillar 2R is binding, and failure to comply may have direct legal consequences for banks. Pillar 2G is not directly binding, and failure to comply with it is not significant in terms of the Maximum Distributable Amount (MDA). In addition, the latter does not automatically produce action by the ECB. However, the ECB does expect compliance with the Pillar 2G at all times. If a bank is not compliant with Pillar 2G, the ECB will give careful consideration to the reasons and circumstances therefore and may devise additional supervisory measures for control. In deciding whether to require an additional buffer under Pillar 2G, the ECB will make use of the bank's stress test results, among other data.

At the end of 2016 the ECB sent each bank the minimum prudential capital requirements for the following year. In 2017, Grupo Santander must maintain a minimum consolidated capital ratio of 7.75% of phase-in CET1 (Pillar I requires 4.5%, Pillar II 1.5%, 1.25% is the capital conservation buffer requirement and 0.50% the G-SIB requirement). Grupo Santander must also maintain a minimum capital ratio of 9.25% for phase-in T1, and a minimum total ratio of 11.25% for phase-in. At 31 December 2016, Banco Santander had a CET1 regulatory capital ratio of 12.53% and a total ratio of 14.68%.

Regulatory capital %



1, Global Systemically Important Banks,
2, Conservation Capital Buffer

2.1.5.1 Global systemically important financial institutions

Grupo Santander is one of the 30 institutions designated as global systemically important institution.

The situation of global systemically important financial institutions may jeopardize the financial stability. Bankruptcy of a systemically important institution, or even its mere expectation, could generate adverse effects of an unpredictable scale on the financial system and even the real economy

This requires special prudential treatment, which has led to the introduction of specific capital buffer requirements for both global (G-SIB) and domestic (D-SIB) systemically important financial institutions.

This designation requires Grupo Santander to meet additional requirements mainly relating to the following:

- Its capital buffer (we are in the group of banks with the smallest capital buffer, 1%)
- TLAC (Total Loss-Absorbing Capacity) requirements
- The requirement to publish relevant information with more frequency than other banks
- Greater regulatory requirements for the internal control bodies
- Special supervision
- The requirement to submit special reports to the supervisors

The designation as an entity that is globally systemically important is made by the Basel Committee, together with the Financial Stability Board, using a metric that will be modified in 2017. This metric is currently based on five "indicators" (size, interjurisdictional activity, interconnection with other financial entities, substitutability and complexity).

Table 5. Indicators for systemically important institutions

Category	Individual indicator	Rationale
Size	Exposure used for the leverage ratio calculation	The larger the bank, the greater its destabilising impact,
Cross-jurisdictional activity	Cross-jurisdictional claims	This indicator is intended to capture a bank's global footprint.
	Cross-jurisdictional liabilities	
Interconnectedness	Intra-financial system assets	A bank's systemic impact is likely to be positively related to its interconnectedness Intra-financial system liabilities with other financial institutions.
	Intra-financial system liabilities	
	Securities outstanding	
Substitutability/financial institution infrastructure	Assets under custody	The systemic impact is likely to be greater if the bank's activity is not substitutable by other banks.
	Payments activity	
	Underwritten transactions in debt and equity	
Complexity	Notional amount of over-the-counter (OTC) derivatives	The more complex a bank is, the greater are the costs and time needed to resolve it.
	Level 3 assets	
	Trading and available-for-sale	

2. Capital

For the evaluation of these risks banks with a leveraged position in excess of 200bn Euros (76 banks as of December 2014) are required to publish information before 30 April of the following years (see the Investor Relations section of the corporate website for more details regarding quantitative indicators for Grupo Santander).

On the basis of this information a global indicator is developed. The score obtained by each bank will determine the size of the additional loss absorbency requirement, demanded in accordance with the buckets defined by regulators.

In November 2016, the Financial Stability Board (FSB) released the list of global systematically important financial institutions, based on December 2015 data, which will become applicable in 2018. Compliance with these requirements provides Grupo Santander with greater solidity than its domestic competitors. At present, Grupo Santander has an additional capital buffer of 1%.



For more details regarding Quantitative Indicators access the file **GSIBS indicadores cuantitativos**, section **Shareholders and Investors/Other presentations** (April month) on the Grupo Santander website.

Table 6. Global systemically important financial institutions

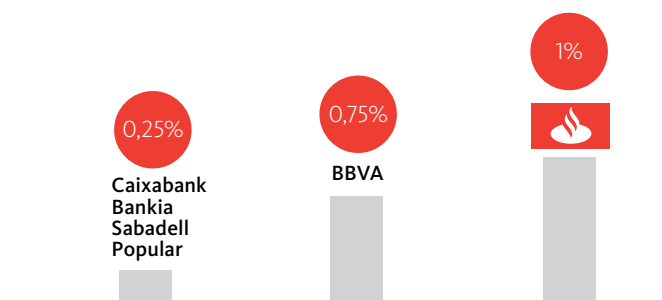
Capital buffer	Entity
5 (-3,50%)	(Empty)
4 (-2,50%)	Citigroup JP Morgan Chase
3 (-2,00%)	Bank of America BNP Paribas Deutsche Bank HSBC
2 (-1,50%)	Barclays Credit Suisse Goldman Sachs Industrial and Commercial Bank of China Limited Mitsubishi UFJ FG Wells Fargo
1 (-1,00%)	Agricultural Bank of China Bank of China Bank of New York Mellon China Constructuon Bank Groupe BPCE Group Crédit Agricole ING Bank Mizuho FG Morgan Stanley Nordea Royal Bank of Scotland Santander Société Générale Société Générale Standard Chartered State Street Sumitomo Mitsui FG UBS Unicredit Group

2.5.1.2. Domestic systemically important entities

In order to identify other systemically important entities, the Bank of Spain applies a mix of guidelines based on size, importance, complexity and the degree of interconnection between entities. Bank of Spain reviews the classification annually, considering in 2016 the following entities:

Systemic buffer

Other systemic entities



Grupo Santander is on the lists of both global and domestic systemically important financial institutions. Bank of Spain, based on the Norm 23 from Circular 2/2016, requires the application of the highest of both corresponding buffers.

2.2. Pillar I regulatory capital

The current regulatory framework for capital calculation is based on three pillars:

- Pillar I sets the minimum capital requirement for credit, market and operational risk, allowing the possibility of using internal ratings and internal models (IRB approach) for calculating credit-risk-weighted average exposures, internal models for market risk and internal models for operational risk. The aim is to make the regulatory requirements more sensitive to the risks actually incurred by financial institutions in carrying out their business activities.
- Pillar II establishes a system of supervisory review, aimed at improving banks' internal risk management and capital adequacy self-assessment in line with their risk profile.
- Lastly, Pillar III defines the elements related to market discipline and disclosure.

2.2.1. Eligible capital

Total eligible capital, after retained earnings, amounts to EUR 105,978, up EUR 3,575 million in the year (3.4%).

In January 2015, Banco Santander carried out a capital increase of EUR 7,500 million, through the issue of 1,213 million new shares. In addition, during 2016 the bank launched an ordinary share issue to meet the demand of shareholders opting to receive an amount equal to dividends in shares under the Santander Dividendo Elección programme. Hence, under the scrip dividend carried out in the year, a total of 147,848,122 shares have been issued, with a combined take-up of 89.1%.

Valuation adjustments decreased by EUR 678 million, mainly due to the net impact of exchange rate fluctuations, valuations of the available-for-sale portfolio and changes in actuarial losses.

A reconciliation of accounting capital, which is the subject of the preceding paragraphs, to regulatory capital is shown below:

● **Table 7. Reconciliation of accounting capital with regulatory capital**
Thousands of Euros

	31 Dec. 2016	31 Dec. 2015
Subscribed capital	7,291,170	7,217,246
Share premium account	44,912,482	45,001,191
Reserves	49,243,853	45,974,744
Treasury shares	-6,714	-209,735
Attributable profit	6,204,188	5,966,120
Approved dividend	-1,666,652	-1,546,410
Shareholders' equity on public balance sheet	105,978,327	102,403,156
Valuation adjustments	-15,039,194	-14,361,538
Minority interests	11,760,770	10,712,847
Total equity on public balance sheet	102,699,903	98,754,465
Goodwill and intangible assets	-28,405,092	-28,253,941
Eligible preference shares and participating securities	6,469,083	6,570,176
Accrued dividend	-802,104	-721,725
Other adjustments	-6,252,932	-2,870,841
Tier I (Phase-in)	73,708,859	73,478,132

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

● **Table 8. Eligible capital**
Thousands of Euros

	31 Dec. 2016	31 Dec. 2015
Common Equity Tier 1	73,708,859	73,478,132
Capital	7,291,170	7,217,246
(-) Treasury shares and own shares financed	-9,799	-213,829
Share premium	44,912,482	45,001,191
Reserves	49,233,524	45,974,744
Other retained earnings	-14,924,287	-13,435,490
Minority interests	8,018,330	7,825,106
Attributable profit net of dividends	3,735,436	3,697,963
Deductions	-24,547,997	-22,588,799
Goodwill and intangible assets	-21,585,371	-21,587,333
Others	-2,962,626	-1,001,466
Additional Tier 1	-	-
Eligible instruments AT1	6,469,083	6,570,176
T1 excesses - subsidiaries	350,637	96,432
Residual value of intangibles	-6,819,721	-6,666,608
Deductions	-	-
Tier II	12,628,041	10,871,630
Eligible instruments T2	9,038,877	6,936,602
Gen. funds and surplus loan loss prov. IRB	3,492,850	3,866,305
T2 excesses - subsidiaries	96,314	68,723
Deductions	-	-
TOTAL ELIGIBLE CAPITAL	86,336,900	84,349,762

2. Capital

Common equity tier 1 (CET1) capital comprises the elements of Tier 1 capital (applying prudential filters) and CET1 deductions after applying the threshold exemptions specified in the CRR. The CRR provides for a phase-in period that will give institutions time to adapt to the new requirements in the European Union. This phase-in applies to Grupo Santander under EU Regulation 2016/445 of the European Central Bank on the exercise of options and discretions published on 14 March 2016.

Without considering the phase-in schedule, CET1 is made up of:

- Subscribed share capital, which stood at EUR 7,291 million in December 2016
- Other tier 1 capital items: (i) paid-up share premium; (ii) effective and disclosed reserves generated against profits and those amounts that are not taken to the income statement but are recorded under "Other reserves" (any item); (iii) other retained earnings, which includes certain valuation adjustments, primarily for exchange differences and for hedges of net investments in foreign operations.
- The paid-up portion of any minority interest arising from the issue of ordinary shares by consolidated companies, subject to the limits specified in the CRR.
- Attributable profit net of dividends, which stood at EUR 3,735 million in December 2016.
- The prudential filters exclude any gain or loss on cash flow hedges. They also exclude gains or losses on liabilities and liabilities from derivatives valued at fair value resulting from changes in the institution's own credit standing.
- The deductions from CET1 items: treasury shares; losses for the current financial year; goodwill and other intangible assets recognized in the balance sheet; deferred tax assets that rely on future profitability (with the limitations specified in the CRR); the expected loss on equity exposures and defined-benefit pension fund assets on the balance sheet.

Tier 1 capital comprises CET1 capital plus Additional Tier 1 (AT1) capital, including preferred securities issued by the Group less the deductions from AT1, consisting essentially of direct, indirect or synthetic holdings of own AT1 instruments and AT1 instruments of other financial sector entities.

Tier 2 capital comprises Tier 1 capital plus Tier 2 capital (T2) and include the following items, among others:

- Capital instruments and subordinated loans where the conditions laid down in the CRR are met.
- The carrying amount of the general provision for portfolios subject to the Standardised approach, up to a maximum of 1.25% of the credit risk-weighted assets used as the basis for calculating the general provision.
- Any excess of the sum of impairment loss allowances and risk provisions for IRB exposures over the expected losses on those exposures, up to a maximum of 0.6% of credit-risk-weighted assets calculated under the IRB approach.

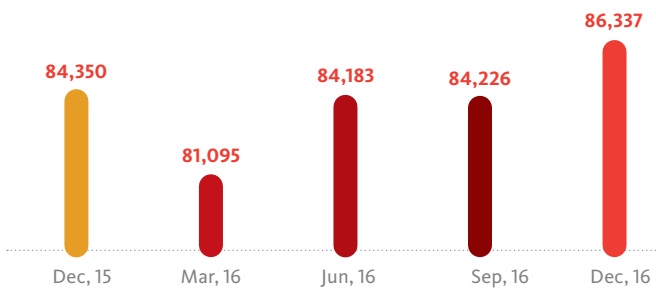
- Deductions from Tier 2 capital, which consist essentially of direct, indirect or synthetic holdings of own Tier 2 instruments and Tier 2 instruments of other financial sector entities.

● **Table 9. Flow statement. Regulatory capital**
Thousands of Euros

	31 Dec. 2016
Core Tier 1 capital	
Starting figure (31/12/2015)	73,478,132
Shares issued during the year and share premium account	-14,785
Treasury shares and own shares financed	204,030
Reserves	-439,183
Attributable profit net of dividends	3,735,436
Changes in other retained earnings	-1,488,797
Minority interests	193,224
Decrease/(increase) in goodwill and other intangibles	1,962
Other deductions	-1,961,160
End figure (31/12/2016)	73,708,859
	31 Dec. 2016
Additional Tier 1 capital	
Starting figure (31/12/2015)	-
Eligible instruments AT1	-101,093
T1 excesses - subsidiaries	254,205
Residual value of intangibles	-153,113
Deductions	-
End figure (31/12/2016)	-
	31 Dec. 2016
Capital Tier II	
Starting figure (31/12/2015)	10,871,630
Eligible instruments T2	2,102,275
Gen, funds and surplus loan loss prov, IRB	-373,455
T2 excesses - subsidiaries	27,591
Deductions	-
End figure (31/12/2016)	12,628,041
Deductions from total capital	-
FINAL FIGURE FOR TOTAL CAPITAL (31/12/2016)	86,336,900

Eligible capital evolution

Millions of Euros



Total eligible capital rose EUR 1,987 million from 2015 to 2016, to EUR 86,337 million.

Regulatory capital changes include the estimated cash dividend for 2016 (EUR 2,469 million), which brings attributable profit net of dividends to EUR 3,735 million.

Minority interests rose, primarily due to earnings generated during the period and to incorporation of PSA. Movement in "Other retained earnings" mainly reflects valuation adjustments due to the above-mentioned fluctuations.

Other deductions are impacted mainly by the application of the phase-in period of Basel III, changes in deductions for deferred tax assets and the greater impact of prudential filters of prudent value adjustments.

During 2016, eligible Tier 2 capital instruments increased, primarily due to new preference share issues by Santander Issuances for EUR 2,302 million.

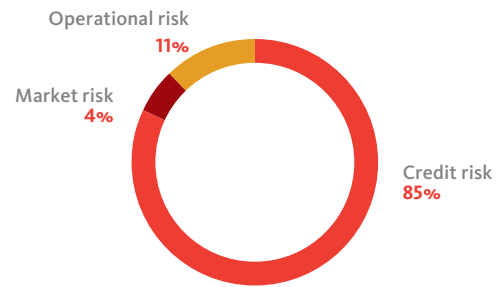
2.2.2. Capital requirements

This section gives details of capital requirements by risk type and portfolio (see Table 11) and by geography (see Table 12). Table 10 shows that capital requirements barely changed from 2015 to 2016, maintaining a Pillar I risk distribution similar to that of the prior year: credit risk 85%, market risk 4% and operational risk 11%.

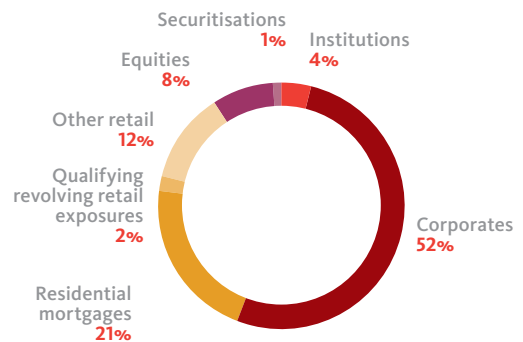
Capital requirements for credit risk increased 1.7% compared to 2015 up to 40,074 MM €. On the other hand, capital requirements for market and operational risk fell 5% and 7.3%, respectively.

Note: Further details on the causes behind these variations are provided in sections 2.2.2.1, 2.2.2.3 y 2.2.2.4

Capital requirements by risk type

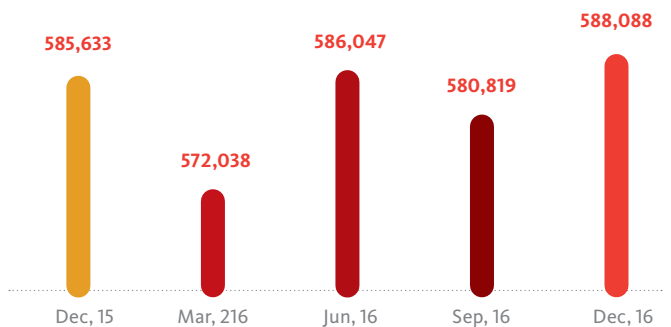


Distribution of capital requirements for credit risk by Basel category, IRB approachB



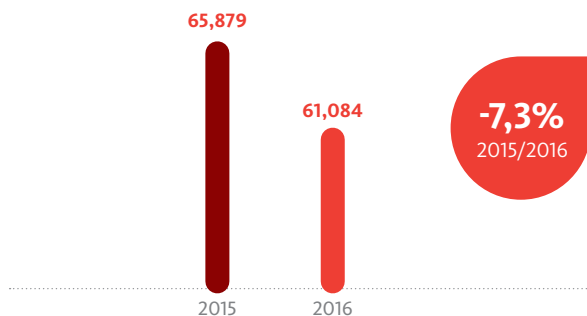
RWA evolution

Millions of Euros



RWA by operational risk

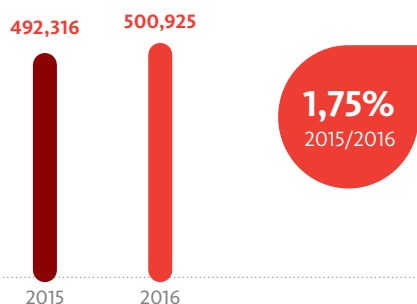
Millions of Euros



2. Capital

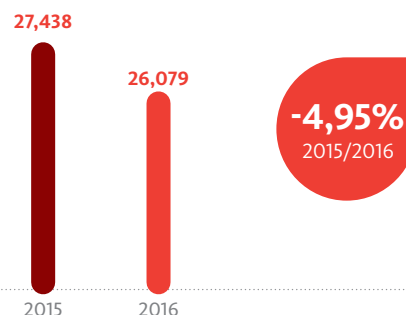
RWA by credit risk

Millions of Euros



RWA by market risk

Millions of Euros



A general overview of total RWA by type of risk is provided below. Moreover, in the next sections additional disclosures are presented.

Table 10. RWA Overview (OV1)

Thousands of Euros

	RWA	RWA	Capital
	31 Dec. 2016	31 Dec. 2015	31 Dec. 2016
Credit risk (excluding CCR)	476,348,973	466,590,018	38,107,918
Of which the standardised approach	271,519,313	259,568,447	21,721,545
Of which the foundation IRB (FIRB) approach	27,986,097	29,434,967	2,238,888
Of which the advanced IRB (AIRB) approach	160,497,089	167,456,613	12,839,767
Of which equity IRB under the simple risk weighted approach or the IMA	16,346,474	10,129,990	1,307,718
CCR	4,559,259	4,749,657	364,741
Of which the standardised approach	3,851,459	4,110,929	308,117
Of which risk exposure amount for contributions to the default fund of a CCP	312,678	381,777	25,014
Of which CVA	395,122	256,951	31,610
Settlement risk	699	566	56
Securitisation exposures in the banking book (after the cap)	2,234,250	1,855,484	178,740
Of which IRB approach	1,224,331	918,242	97,946
Of which IRB supervisory formula approach (SFA)	111,817	237,679	8,945
Of which standardised approach	898,102	699,563	71,848
Market risk	26,078,889	27,437,989	2,086,311
Of which with standardised approach	11,863,939	18,269,027	949,115
Of which with internal model approach (IMA)	14,214,950	9,168,963	1,137,196
Operational risk	61,083,820	65,879,234	4,886,706
Of which standardised approach	61,083,820	65,879,234	4,886,706
Amounts below the thresholds for deduction (subject to 250% risk weight)	17,781,702	19,120,341	1,422,536
Floor adjustment	-	-	-
TOTAL	588,087,593	585,633,290	47,047,007

Details of own funds required for credit risk follows:

Table 11. Credit risk capital requirements*
Thousands of Euros

	31 Dec. 2016		31 Dec. 2015	
	Capital	RWAs	Capital	RWAs
Credit Risk. IRB approach				
Central governments and central banks	32,802	410,020	67,628	845,345
Institutions	628,217	7,852,716	729,825	9,122,817
Corporates	8,781,918	109,773,978	8,863,458	110,793,220
Retail portfolios	5,635,718	70,446,472	6,090,416	76,130,199
Residential mortgages	3,437,606	42,970,074	3,810,903	47,636,288
Qualifying revolving retail exposures	287,362	3,592,026	345,543	4,319,292
Other retail	1,910,750	23,884,372	1,933,970	24,174,619
Equities	1,307,718	16,346,474	810,399	10,129,990
Simple method	410,436	5,130,450	-	-
PD/LGD Method	764,439	9,555,485	382,529	4,781,612
Internal models	132,843	1,660,539	427,870	5,348,378
Securitisation positions or exposures	106,892	1,336,148	92,474	1,155,921
Total IRB approach	16,493,265	206,165,808	16,654,199	208,177,492
Credit risk. Standardised approach				
Central governments and central banks	415,723	5,196,539	522,699	6,533,735
Regional governments and local authorities	37,287	466,087	68,231	852,883
Public sector entities and other non-profit public institutions	22,948	286,844	26,555	331,941
Multilateral development banks	70	878	-	-
International organisations	-	-	-	-
Institutions	611,168	7,639,605	696,153	8,701,916
Corporates	6,188,524	77,356,553	5,841,516	73,018,950
Retail portfolios	7,350,688	91,883,602	6,858,466	85,730,819
Exposures secured by real estate property	3,135,260	39,190,746	3,392,936	42,411,704
Defaulted exposures	635,675	7,945,936	535,646	6,695,574
High-risk exposures	159,578	1,994,731	15,022	187,775
Covered bonds	34,316	428,955	32,479	405,993
Securitisation positions	71,848	898,102	55,965	699,563
Exposures to institutions and corporates with short-term credit ratings	26,058	325,720	27,388	342,353
Exposures to collective investment schemes (CIS)	8,463	105,785	150	1,870
Equity	412,154	5,151,927	510,221	6,377,757
Other exposures	4,414,285	55,178,566	4,096,516	51,206,448
Total standardised approach	23,524,046	294,050,576	22,679,943	283,499,282
TOTAL CREDIT RISK	40,017,311	500,216,384	39,334,142	491,676,774

* Includes counterparty risk excluding CVA and CCP.



At 31 December 2016, Grupo Santander had no additional capital requirements due to application of the floors set out in the CRR.

2. Capital

The following table shows capital requirements by geographical area:

Table 12. Capital requirements by geographical distribution
Thousands of Euros

	TOTAL	Spain	UK	Rest of Europe	Brazil	Rest of Latin America	USA	Rest of world
Credit risk	36,800,200	8,226,499	6,498,223	6,551,189	5,382,655	4,693,362	5,367,176	81,096
Of which internal rating-based (IRB) approach (*)	15,078,655	5,868,814	4,205,939	2,694,879	1,026,621	733,493	530,491	18,417
- Central governments and central banks	32,802	32,709	-	92	-	-	-	-
- Institutions	628,217	222,280	172,174	111,767	-	57,810	59,051	5,135
- Corporates – SME	1,236,981	737,228	160,472	237,061	-	101,765	454	-
- Corporates - Specialised Lending	1,466,027	620,395	578,693	141,231	-	111,657	14,052	-
- Corporates – Other	6,078,910	2,868,613	498,831	752,606	1,026,621	462,261	456,696	13,283
Retail - Secured by real estate SME	58,586	58,555	30	-	-	-	1	-
Retail - Secured by real estate non-SME	3,379,020	717,579	2,391,036	270,207	-	-	198	-
Retail - Qualifying revolving	287,362	101,439	179,727	6,182	-	-	13	-
Retail - Other SME	232,282	151,432	162	80,686	-	-	2	-
Retail - Other non-SME	1,678,467	358,584	224,812	1,095,045	-	-	26	-
Other non-credit-obligation assets	-	189,782	40,285	-	176,755	3,613	-	-
Of which standardised approach (SA)	21,721,545	2,357,685	2,292,283	3,856,310	4,356,035	3,959,869	4,836,685	62,678
Central governments or central banks	414,908	35	180	-	162,330	252,014	349	-
Regional governments or local authorities	37,234	-	26	13,529	14,489	6,481	2,708	-
Public sector entities	22,948	-	-	1,454	-	12,384	9,109	-
Multilateral Development Banks	70	-	-	-	-	70	-	-
International Organisations	-	-	-	-	-	-	-	-
Institutions	552,449	40,374	22,142	50,118	82,989	98,943	257,440	442
Corporates	5,947,214	326,088	1,360,872	998,459	1,232,525	994,280	1,032,243	2,747
Retail	7,348,253	253,101	509,589	1,716,695	1,649,283	1,269,603	1,890,909	59,072
Secured by mortgages on immovable property	3,135,260	216,198	69,377	629,027	328,723	827,225	1,064,710	-
Exposures in default	635,675	56,831	32,612	132,077	175,597	167,494	70,739	324
Items associated with particular high risk	159,579	-	-	5,167	-	132,841	21,570	-
Covered bonds	34,316	-	27,788	6,528	-	-	-	-
Claims on institutions and corporates with a short-term credit assessment	26,058	55	-	25,979	-	-	24	-
Collective investments undertakings (CIU)	5,802	5,802	-	-	-	-	-	-
Equity exposures	412,154	331,047	1,042	56,946	4,567	14,109	4,443	-
Other items	2,989,627	1,128,154	268,654	220,330	705,532	184,425	482,439	92
Equity IRB	1,307,718	1,053,579	50,176	-	195,970	7,993	-	-
Under the PD/LGD approach	764,439	730,954	9,890	-	19,214	4,380	-	-
Under internal model	132,843	132,843	-	-	-	-	-	-
Under the simple risk-weight approach	410,436	189,782	40,285	-	176,755	3,613	-	-
Counterparty credit risk	364,741	36,224	179,703	31,929	44,083	40,612	20,549	11,640
Of which standardised approach	308,117	10,278	154,531	31,562	42,471	37,170	20,464	11,640
Of which: Risk exposure amount for contributions to the default fund of a CCP	25,014	11,860	13,100	-	11	43	-	-
Of which: CVA	31,610	14,087	12,071	367	1,601	3,399	85	-
Settlement risk	56	56	-	-	-	-	-	-

* Including counterparty credit risk

Table 12. Capital requirements by geographical distribution (contd.)
Thousands of Euros

	TOTAL	Spain	UK	Rest of Europe	Brazil	Rest of Latin America	USA	Rest of World
Securitisation exposures in banking book (after cap)	178,740	50,475	53,220	29,268	-	12,944	32,834	-
Of which IRB ratings-based approach (RBA)	97,946	39,883	37,275	20,788	-	-	-	-
Of which IRB Supervisory Formula Approach (SFA)	8,945	8,945	-	-	-	-	-	-
Of which Standardised approach (SA)	71,848	1,647	15,945	8,479	-	12,944	32,834	-
Market risk	2,086,311	1,344,557	346,304	26,421	107,622	250,951	10,456	-
Of which standardised approach (SA)	949,115	734,162	54,461	26,162	107,622	16,252	10,456	-
Of which internal model approaches (IM)	1,137,196	610,395	291,843	259	-	234,699	-	-
Operational risk	4,886,706	874,585	672,910	685,089	711,154	881,252	1,061,715	-
Of which Standardised Approach	4,886,706	874,585	672,910	685,089	711,154	881,252	1,061,715	-
Amounts below the thresholds for deduction and other non-deducted investments	1,422,536	629,677	1,042	163,211	351,753	203,905	71,762	1,187
Floor adjustment	-	-	-	-	-	-	-	-
TOTAL	47,047,007	12,215,653	7,801,577	7,487,106	6,793,237	6,091,020	6,564,492	93,922

2.2.2.1. Credit Risk

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

Table 13. Flow statement. Capital requirements for credit risk (CR8)*
Millions of Euros

	RWA	Capital
Starting figure (31/12/2015)(*)	491,677	39,334
Business risk changes	-4,130	-330
Changes in parameters that affect exposure	5,505	440
Perimeter changes	5,730	458
Exchange rate	1,434	115
End figure (31/12/2016)	500,216	40,017

* Includes capital requirements of equity, securitisations and counterparty risk (excluding CVA and CCP)

The growth of capital requirements for credit risk is mainly due to changes in the Perimeter (entry of PSA businesses) and due to perimeter changes, particularly the PD model of Wholesale Banking recalibration and the application of advanced models to new equity portfolios.

These increases are partially offset by the drop in business.

2.2.2.1.1. Internal ratings-based (IRB) approach

The tables in this section show, by segment and grade of credit quality (by internal levels and by Standard & Poor's levels), the value of the exposures, parameters and capital for the IRB operation, distinguishing between basic IRB and (FIRB and AIRB, respectively).

Table 14. AIRB approach. Central banks and central governments
Thousands of Euros

PD scale	S&P Levels	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RWA density	EL	Value adjustments and provisions
0,00 a <0,15	AAA to A-	34,301	233,030	47,08%	1,076,760	0,04%	8	45,75%	1,709	330,030	30,65%	194	-124
0,15 a <0,25	A- to BBB+	184,877	95	100,00%	2,152	0,15%	5	49,01%	1,137	1,074	49,90%	2	-1
0,25 a <0,50	BBB+ to BBB-	43,197	-	-	610	0,40%	3	38,97%	401	258	42,29%	1	-0,17
0,50 a <0,75	BBB- to BB+	794,298	43,249	21,47%	48,491	0,58%	3	32,96%	1,800	39,104	80,64%	92	-59
0,75 a <2,50	BB+ to BB-	581,245	2,709	15,81%	5,664	2,14%	5	82,64%	1,120	13,779	243,30%	101	-65
2,50 a <10,00	BB- to B-	333,166	5,436	12,80%	11,017	7,79%	5	49,64%	1,642	25,775	234,00%	425	-273
TOTAL 2016		1,971,085	284,518	42,25%	1,144,694	0,15%	29	45,43%	1,707	410,020	35,82%	814	-523
TOTAL 2015		1,805,839	1,035,824	32,27%	3,219,243	0,11%	69	44,43%	1,463	845,345	26,26%	1,418	-

94% of the portfolio has ratings above A-. The average LGD is 45.43% and RWA capital consumption is 35.8%. Exposure fell by 64% against 2015, mainly due to reclassifications from AIRB to STD as the result of consideration of exposures of certain ECAs as sovereign in local currency. In accordance with Article 150 of the CRR, Grupo Santander uses the standardised approach on a permanent basis for sovereign exposures denominated and funded in the Member State's local currency, applying a 0% risk weight.

Table 15. AIRB approach. Institutions
Thousands of Euros

PD scale	S&P Levels	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RWA density	EL	Value adjustments and provisions
0,00 a <0,15	AAA to A-	24,711,874	8,127,572	36.53%	24,984,781	0.06%	977	43.79%	629	4,970,412	19.89%	6,241	-6,702
0,15 a <0,25	A- to BBB+	1,409,280	402,512	30.52%	1,073,804	0.17%	79	42.53%	747	434,017	40.42%	787	-844
0,25 a <0,50	BBB+ to BBB-	11,338,205	313,383	45.98%	2,312,315	0.34%	530	47.50%	610	1,153,226	49.87%	3,014	-3,237
0,50 a <0,75	BBB- to BB+	915,070	87,833	25.39%	254,606	0.65%	135	44.78%	1,048	225,930	88.74%	741	-796
0,75 a <2,50	BB+ to BB-	3,511,776	29,321	29.19%	453,595	1.97%	129	22.31%	1,340	273,983	60.40%	1,767	-1,897
2,50 a <10,00	BB- to B-	850,368	18,588	80.67%	631,728	4.20%	30	12.66%	1,669	302,415	47.87%	3,626	-3,892
10,00 a <100,00	B- to C	145,807	2,099	46.02%	4,526	28.30%	12	9.89%	1,547	13,240	292.50%	553	-594
100,00 (default)	D	47,420	2,186	53.41%	1,527	100.00%	5	44.98%	258	11	0.72%	686	-716
TOTAL 2016		42,929,801	8,983,495	36.56%	29,716,882	0.22%	1,897	43.05%	668	7,373,235	24.81%	17,416	-18,678
TOTAL 2015		51,231,669	8,789,037	39.30%	38,018,970	0.17%	2,136	43.00%	574	8,533,548	22.45%	21,247	-8,428

84% of the portfolio is concentrated in rating grades above A- and RWA consumption as a percentage of total portfolio EAD is 24.8%. EAD decreased by 21.8% compared to 2015, and RWA consumption increased (24.81% in 2015, and 22.45% in 2016). A slight increase of 5 bp was observed in the portfolio's average PD.

Table 16. AIRB approach. Corporates
Thousands of Euros

PD scale	S&P Levels	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Numbers of obligors	Average LGD	Average maturity	RWA	RWA density	EL	Value adjustments and provision
0,00 a <0,15	AAA to A-	58,694,029	32,011,736	41.32%	37,344,864	0.06%	1,197	34.87%	1,034	6,797,843	18.20%	9,076	-29,115
0,15 a <0,25	A- to BBB+	29,714,947	13,240,829	35.76%	22,298,077	0.18%	5,593	45.05%	758	8,665,986	38.86%	18,185	-55,006
0,25 a <0,50	BBB+ to BBB-	36,035,956	13,582,118	33.90%	27,001,507	0.33%	11,742	43.97%	808	14,214,342	52.64%	40,002	-110,964
0,50 a <0,75	BBB- to BB+	21,949,403	9,566,586	34.02%	16,056,891	0.52%	2,074	42.83%	654	10,178,950	63.39%	37,152	-118,212
0,75 a <2,50	BB+ to BB-	46,564,810	11,197,665	34.15%	29,977,174	1.15%	30,639	42.64%	687	23,875,027	79.64%	149,759	-359,493
2,50 a <10,00	BB- to B-	14,117,581	2,683,193	47.25%	10,489,100	4.78%	14,012	38.04%	875	11,895,343	113.40%	188,574	-454,275
10,00 a <100,00	B- to C	4,618,999	701,639	37.74%	3,248,300	18.92%	4,320	37.05%	1,064	5,455,516	167.90%	255,359	-616,366
100,00 (default)	D	11,289,665	1,541,636	33.71%	10,269,405	100.00%	7,853	39.18%	1,029	1,184,357	11.53%	4,014,262	-4,152,570
TOTAL 2016		222,985,390	84,525,403	37.50%	156,685,318	7.64%	77,430	40.73%	840	82,267,362	52.50%	4,712,368	-5,896,003
TOTAL 2015		222,667,526	86,518,108	40.43%	159,576,509	9.21%	77,015	40.17%	889	81,947,521	51.36%	5,953,872	-7,144,895

41% of non-defaulted exposure is concentrated in rating grades above BBB+ and 26% has a credit rating above A-.

Exposure fell in 2016 (-2%), while an increase was observed in RWA consumption over EAD from 51.35% to 52.5%.

Table 17. AIRB approach. Retail portfolios
Thousands of Euros

PD scale	S&P Levels	Original on-balance sheet gross exposures	Off-balance sheet exposures pre-CF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	RWA	RWA density	EL	Value adjustments and provision
Residential mortgages												
0,00 a <0,15	AAA to A-	33,790,774	1,121,220	95.38%	33,786,811	0.07%	496,088	12.61%	840,029	2.49%	3,248	-1,439
0,15 a <0,25	A- to BBB+	31,165,452	2,914,366	64.38%	30,319,806	0.18%	286,041	11.32%	1,352,342	4.46%	6,313	-2,815
0,25 a <0,50	BBB+ to BBB-	58,745,100	5,119,517	64.73%	57,363,251	0.36%	444,605	10.50%	3,884,290	6.77%	21,693	-9,612
0,50 a <0,75	BBB- to BB+	23,252,498	614,906	66.36%	23,248,551	0.64%	148,348	10.00%	2,228,850	9.59%	14,577	-6,487
0,75 a <2,50	BB+ to BB-	68,340,293	2,548,563	67.26%	68,069,412	1.31%	502,398	11.24%	11,831,035	17.38%	100,982	-63,957
2,50 a <10,00	BB- to B-	29,517,622	392,372	70.06%	29,632,446	4.69%	234,176	14.05%	13,502,489	45.57%	197,578	-87,946
10,00 a <100,00	B- to C	12,480,043	45,366	39.57%	12,524,397	30.08%	121,128	13.70%	8,869,293	70.82%	516,194	-182,726
100,00 (Default)	D	6,577,750	17,220	1.20%	6,560,737	100.00%	65,231	29.55%	461,747	7.04%	1,925,319	-1,840,432
TOTAL 2016		263,869,533	12,773,532	67.91%	261,505,411	4.99%	2,298,015	12.05%	42,970,074	16.43%	2,785,905	-2,195,416
TOTAL 2015		298,112,695	16,200,606	69.59%	295,159,965	5.29%	2,365,016	11.47%	47,636,288	16.14%	3,021,693	-4,821,076
Qualifying revolving retail exposure												
0,00 a <0,15	AAA to A-	3,877,007	3,596,883	49.22%	2,050,470	0.07%	1,757,261	54.33%	48,322	2.36%	734	-282
0,15 a <0,25	A- to BBB+	5,833,206	5,683,232	72.29%	4,258,283	0.17%	5,953,700	67.74%	285,374	6.70%	4,915	-1,890
0,25 a <0,50	BBB+ to BBB-	2,707,699	2,627,633	34.31%	981,694	0.37%	1,591,374	43.98%	77,381	7.88%	1,583	-610
0,50 a <0,75	BBB- to BB+	814,721	726,818	57.97%	509,339	0.64%	680,745	63.00%	91,674	18.00%	2,064	-794
0,75 a <2,50	BB+ to BB-	3,051,124	2,612,387	60.70%	2,025,621	1.33%	2,399,743	59.27%	592,508	29.25%	16,006	-6,160
2,50 a <10,00	BB- to B-	2,313,439	1,439,166	60.72%	1,753,427	5.05%	1,971,442	61.20%	1,346,527	76.79%	54,442	-20,951
10,00 a <100,00	B- to C	826,388	345,029	70.18%	747,807	24.39%	781,018	61.27%	1,139,090	152.30%	109,696	-42,211
100,00 (Default)	D	102,229	16,947	16.77%	88,260	100.00%	101,134	69.55%	11,151	12.63%	60,635	-59,139
TOTAL 2016		19,525,814	17,048,095	58.11%	12,414,901	3.24%	15,236,417	60.77%	3,592,026	28.93%	250,073	-132,036
TOTAL 2015		19,955,049	17,332,683	61.34%	13,294,807	3.46%	14,941,241	65.78%	4,319,292	32.49%	303,917	-95,935
Other retail												
0,00 a <0,15	AAA to A-	1,225,181	657,323	85.01%	1,126,643	0.06%	231,848	47.23%	83,514	7.41%	297	-217
0,15 a <0,25	A- to BBB+	1,061,799	28,631	45.69%	1,047,454	0.19%	189,401	45.09%	192,665	18.39%	919	-670
0,25 a <0,50	BBB+ to BBB-	4,210,197	230,223	38.81%	4,088,632	0.33%	558,771	42.54%	1,031,582	25.23%	5,830	-4,266
0,50 a <0,75	BBB- to BB+	7,347,629	2,371,54	52.40%	7,225,590	0.56%	1,127,958	43.19%	2,490,470	34.47%	17,394	-12,704
0,75 a <2,50	BB+ to BB-	19,972,001	1,226,398	51.62%	19,340,359	1.26%	2,969,772	49.16%	10,571,186	54.66%	120,011	-87,272
2,50 a <10,00	BB- to B-	10,847,937	898,315	56.87%	10,254,626	4.19%	1,197,749	49.79%	7,126,182	69.49%	213,752	-152,644
10,00 a <100,00	B- to C	2,421,882	130,118	40.20%	2,334,192	27.35%	466,123	45.93%	2,282,359	97.78%	296,757	-213,398
100,00 (Default)	D	1,250,314	114,011	44.01%	1,186,719	100.00%	258,381	68.42%	106,412	8.97%	809,267	-793,323
TOTAL 2016		48,336,941	3,522,172	57.69%	46,604,215	5.48%	7,000,003	47.98%	23,884,372	51.25%	1,464,228	-1,264,494
TOTAL 2015		47,594,465	3,251,400	67.27%	46,292,645	6.10%	7,505,170	49.22%	24,174,619	52.22%	1,667,037	-1,339,026

Retail portfolios. Property mortgages

48% of non-defaulted exposure is rated above BBB-. EAD is down by 11% compared to 2015.

Average PD on the portfolio has decreased, leading to a drop in expected loss.

Retail portfolios. Eligible renewables

63% of non-defaulted exposure is in rating grades above BB+. Exposure fell by 7% compared to 2015. A decrease was observed in the portfolio's average parameters as a consequence of the adjustments made in UK and, to a lesser extent the Credit Cards model recalibration in Portugal.

Other retail

30% of the portfolio's non-defaulted exposure is concentrated in rating grades above BB+. Exposure barely changed in 2016 (+0.7%). With respect to risk parameters, average PD improved compared to 2015 (from 6.10% to 5.48%), while LGD fell from 49.22% to 47.98% in 2016. As a result, RWA consumption is down from 52.22% to 51.25%.

Table 18. FIRB approach. Institutions
Thousands of Euros

PD scale	S&P Levels	Original on-balance-sheet gross exposures		Off-balance-sheet exposures pre-CF		Average CCF		EAD post CRM and post CCF		Average PD		Number of obligors		Average LGD		Average maturity		RWA		RWA density		EL		Value adjustments and provisions	
		Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RWA density	EL	Value adjustments and provisions												
[0%-0,15%]	AAA to A-	2,972,110	659,027	20.0%	2,445,005	0.05%	175	44.20%	402	401,215	16.41%	575	-617												
[0,15%-0,25%]	A- to BBB+	-	-	-	-	-	-	-	-	-	-	-	-												
[0,25%-0,50%]	BBB+ to BBB-	139,210	55,949	20.0%	94,451	0.26%	30	44.40%	774	49,005	51.88%	110	-119												
[0,50%-0,75%]	BBB- to BB+	18,843	15,167	20.0%	6,710	0.72%	5	45.00%	618	6,588	98.18%	22	-23												
[0,75%-2,50%]	BB+ to BB-	864	864	20.0%	173	1.22%	2	45.00%	218	173	100.30%	1	-1												
[2,50%-10,00%]	BB- to B-	29,612	19,329	20.0%	14,149	6.22%	4	45.00%	13	22,499	159.00%	396	-426												
TOTAL 2016		3,160,640	750,335	20.0%	2,560,487	0.09%	216	44.21%	414	479,481	18.73%	1,104	-1,186												
TOTAL 2015		2,347,851	467,425	27.51%	2,046,344	0.07%	137	44.99%	813	589,268	28.80%	675	-												

The 95% of the EAD of the portfolio has a credit quality higher than A-. The average PD has increased in 2 basis points during 2016.

Table 19. FIRB approach. Corporates
Thousands of Euros

		31 Dec. 2016												
PD scale	S&P Levels	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RWA density	EL	Value adjustments and provisions	
0.00 TO <0.15	AAA to A-	4,018,716	1,219,253	66.17%	3,619,714	0.07%	49	44.97%	843	877,924	24.25%	1,153	-3,580	
0.15 TO <0.25	A- to BBB+	1,741,505	795,877	65.93%	1,471,924	0.19%	300	44.76%	889	648,261	44.04%	1,249	-3,810	
0.25 TO <0.50	BBB+ to BBB-	4,546,132	1,161,833	70.45%	4,204,870	0.37%	568	42.66%	879	2,400,675	57.09%	6,602	-16,890	
0.50 TO <0.75	BBB- to BB+	1,122,891	61,833	51.87%	1,093,129	0.62%	359	44.61%	875	823,307	75.32%	3,001	-7,258	
0.75 TO <2.50	BB+ to BB-	3,718,704	388,526	71.46%	3,600,121	1.15%	1819	41.63%	884	2,984,320	82.89%	17,356	-33,907	
2.50 TO <10.00	BB- to B-	1,165,863	78,641	70.97%	1,134,398	4.06%	1228	42.45%	903	1,389,603	122.50%	19,771	-38,663	
10.00 TO <100.00	B- to C	29,268	4,442	93.06%	28,959	20.11%	105	43.48%	908	57,184	197.50%	2,465	-4,134	
100.00 (Default)	D	375,629	7,326	70.72%	373,485	100.00%	135	41.03%	879	-	-	153,230	-158,563	
TOTAL 2016		16,718,707	3,717,731	67.91%	15,526,600	3.18%	4,563	43.24%	874	9,181,274	59.13%	204,826	-266,805	
TOTAL 2015		17,292,890	2,460,333	64.40%	16,737,258	4.52%	5,312	42.42%	905	9,669,222	57.77%	314,856	-174,743	

61% of the exposure without default has a rating higher than BBB-
There is a improvement of the average PD in the portfolio.

2. Capital

The distribution of Exposures and average parameters by segments and geographical areas is shown below.

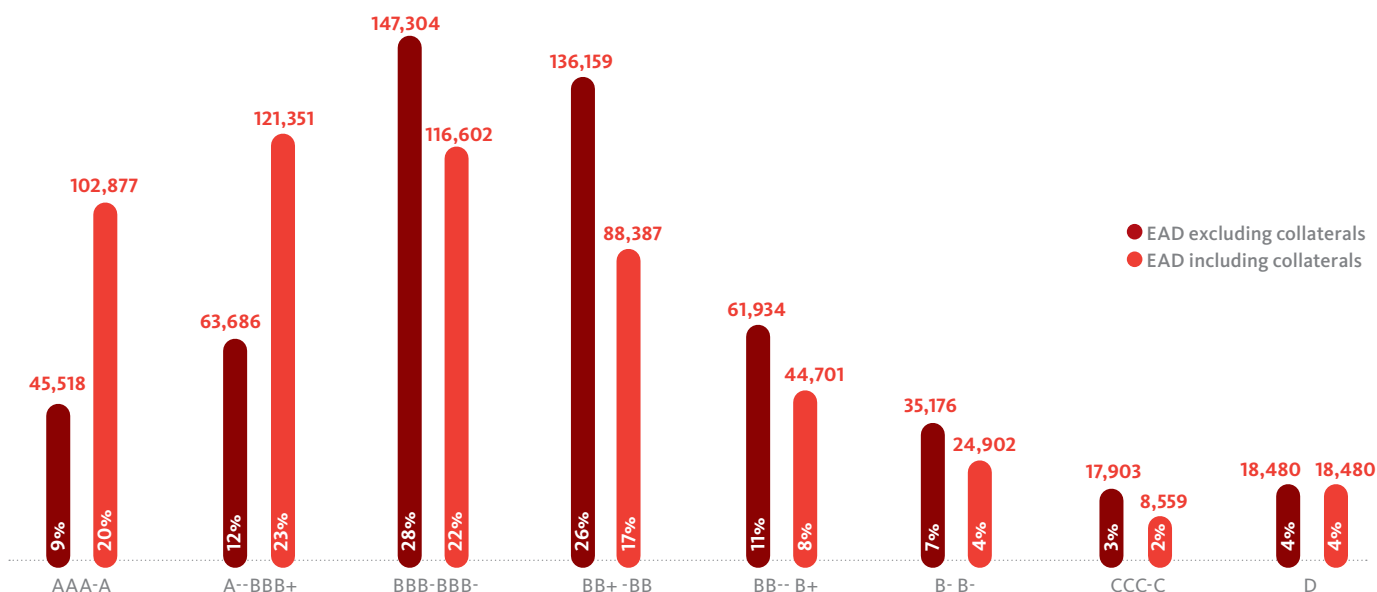
Table 20. Exposures and parameters by segment and geography
Thousands of Euros

	Central governments and central banks	Institutions	Corporates	Retail Mortgages	Retail SME	Retail other	Retail Qualifying Revolving	TOTAL
Grupo Santander								
EAD net	1,145	32,277	172,212	261,505	6,756	39,848	12,415	526,159
Average LGD in %	45.4%	42.3%	41.00%	11.6%	42.0%	48.6%	60.70%	27.4%
Average PD in %	0.1%	0.2%	1.1%	2.5%	4.9%	2.8%	2.5%	2.0%
Continental Europe								
EAD net	1,145	22,898	102,405	70,706	6,756	37,260	5,743	246,912
Average LGD in %	45.4%	42.7%	43.4%	16.2%	42.1%	45.8%	51.5%	35.9%
Average PD in %	0.1%	0.1%	1.4%	2.2%	1.9%	2.8%	2.3%	1.8%
UK								
EAD net	-	5,935	23,863	190,800	-	2,588	6,673	229,858
Average LGD in %	-	44.4%	28.0%	9.9%	-	88.0%	68.6%	16.1%
Average PD in %	-	0.1%	0.3%	2.7%	-	2.5%	2.7%	2.3%
Latin America								
EAD net	-	3,445	38,753	-	-	-	-	42,198
Average LGD in %	-	35.9%	42.6%	-	-	-	-	43.7%
Average PD in %	-	1.0%	1.0%	-	-	-	-	1.0%
Rest of world								
EAD net	-	-	7,191	-	-	-	-	7,191
Average LGD in %	-	-	44.8%	-	-	-	-	44.8%
Average PD in %	-	-	0.7%	-	-	-	-	0.7%

*Parameters without default

The following chart shows the distribution at December 2016 of IRB method approved exposures (excluding Specialised Lending) according to internal credit quality related to its external rating.

IRB Exposures distribution related to its external rating
Millions of Euros



For the distribution of the EAD including guarantees, the expected loss has been allocated to the different tranches of PD by taking a LGD of 45% in each of the buckets. It can be seen that the risk profile of the total portfolio improves significantly when the guarantees, mainly mortgages loans, are taken into account.

Table 21. Slotting Criteria. Specialised lending (CR10)

Thousands of Euros

31 Dec. 2016							
Regulatory categories	Remaining maturity	On-balance-sheet amount	Off-balance-sheet amount	RW	EAD	RWA	Expected loss
Category 1	< 2.5 años	308,754	455,840	50%	295,674	147,837	-
	>= 2.5 años	3,440,774	1,754,270	70%	3,493,581	2,445,507	13,974
Category 2	< 2.5 años	3,931,707	2,078,371	70%	3,537,128	2,450,891	14,105
	>= 2.5 años	11,351,339	6,401,559	90%	12,140,672	10,877,370	97,266
Category 3	< 2.5 años	128,592	98,606	115%	133,323	142,770	3,278
	>= 2.5 años	1,115,763	869,516	115%	1,315,205	1,503,619	36,558
Category 4	< 2.5 años	24,384	23,774	250%	42,782	103,028	3,423
	>= 2.5 años	186,882	309,155	250%	263,602	654,319	21,088
Category 5	< 2.5 años	143,024	4,572	-	144,662	-	72,331
	>= 2.5 años	673,844	315,686	-	787,056	-	393,528
TOTAL	< 2.5 años	4,536,460	2,661,163		4,153,569	2,844,526	93,137
	>= 2.5 años	16,768,602	9,650,186		18,000,117	15,480,814	562,414

Exposure decrease in 3% regarding 2015. A decrease of 504 million of exposure in default is observed (35% compared to that reported in 2015).

Table 22. Equities (CR10)

Thousands of Euros

31 Dec. 2016								
PD/LGD Approach		Weighted average PD	Original exposure	EAD	EAD-weighted average LGD	RWA	PE/EAD	RWA/EAD
PD/RW tranches								
	1	0.10%	38,516	38,516	65%	28,046	0.06%	72.82%
	2	0.15%	1,471,283	1,471,283	86%	1,727,588	0.13%	117.42%
	3	0.18%	1,073,234	1,073,234	65%	1,061,121	0.12%	98.87%
	4	0.34%	457,491	457,491	67%	593,408	0.23%	129.71%
	5	1.31%	1,415,822	1,415,822	82%	3,613,026	1.07%	255.19%
	6	6.41%	913,218	913,218	67%	2,532,296	5.02%	277.29%
	Default	100.00%	10,248	10,248	90%	-	89.93%	
TOTAL 2016		1.73%	5,379,812	5,379,812	75.73%	9,555,485	1.38%	177.62%
TOTAL 2015		1.38%	1,932,511	1,932,511	90.00%	4,781,612	1.24%	247.43%
Simple risk-weighted approach								
	190%		465,400	465,400	-	15.20%	-	884,260
	290%		-	-	-	-	-	-
	370%		1,147,619	1,147,619	-	29.60%	-	4,246,190
TOTAL Dec 16			1,613,019	1,613,019	-	5,130,450	1.94%	318.07%
Internal models approach 2016			656,530	656,530	-	1,660,539	-	252.93%
Internal models approach 2015			2,108,654	2,108,654	-	5,348,378	-	253.64%
TOTAL Dec. 16			-	7,649,361	7,649,361	-	16,346,474	-
TOTAL Dec. 15			-	4,041,165	4,041,165	-	10,129,990	-

Note: for equities, EAD equals original exposures and off-balance sheet balance equals zero

2. Capital

The main change produced in the course of 2016 was a change in calculation methodology following the approval of a new internal procedure for Equities. The new approved procedure entails a new method of calculation for all the subsidiaries of the group, including the application of the simplified method in some cases, as well as a general formula to calculate the diversification of the group through the 'Helfindahl index'.

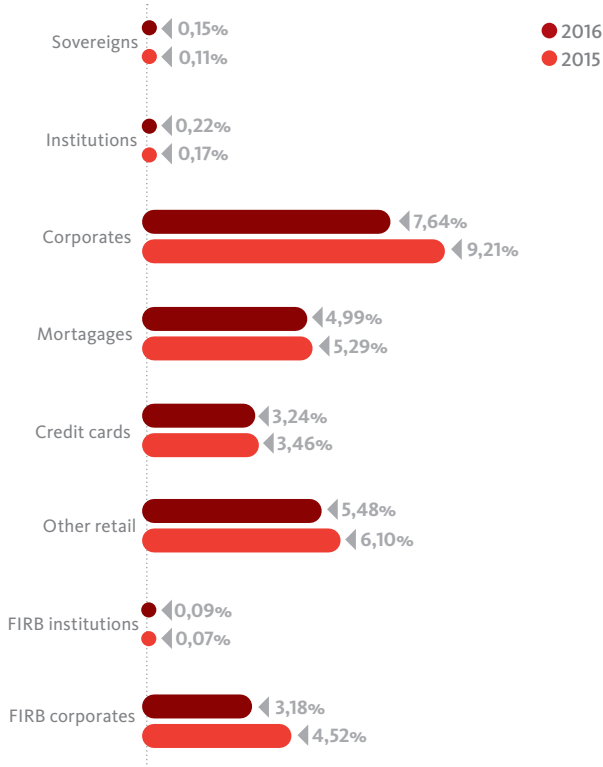
As for the shares that were already within the RV calculated by PD-LGD in 2015, the change in the Metrovacesa portfolio is outstanding. The former holding of Metrovacesa, which at 31 December 2015 had an exposure of € 2,556m and consumption of € 7,137m RWA, as of December 31, 2016 has the following composition:

- Merlin properties: exposure of € 1,074 million and consumption of € 1,061 million RWA.
- Testa Residencial, Socimi: € 288 million EAD consuming € 328 million RWA.
- Metrovacesa Promoción y Arrendamiento: with an EAD of € 229 million and a consumption of € 462.6 million RWA.
- Metrovacesa Suelo y Promoción: exposure of € 825 million and consumption of € 2.051 million RWA.

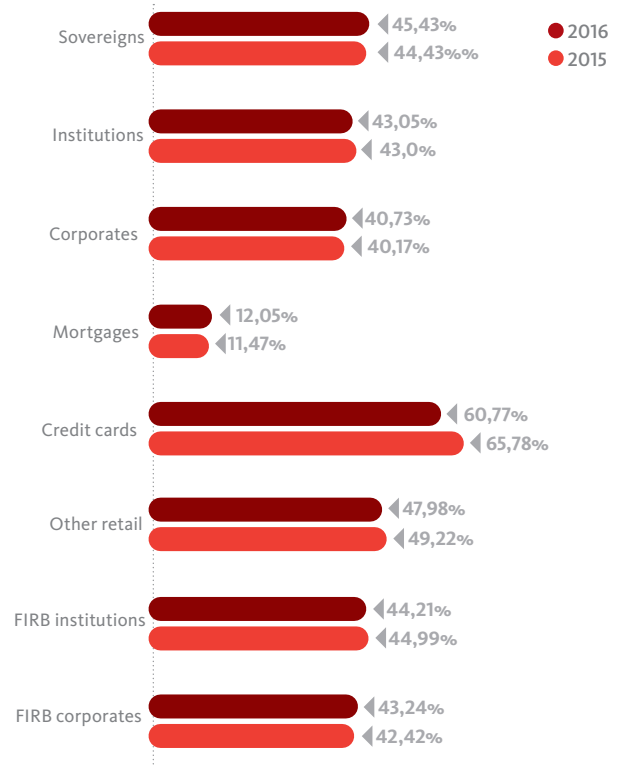
In total there is an exposure of € 2,416 million consuming € 3,092.9 million RWA. This decrease in the consumption ratio is mainly due to:

- Diversification of the equity portfolio so that LGD drops from 90% to 65%, reducing the ratio.
- Change in PD floor of 0.09% compared to 1.25% - being shares that provide regular and periodic cash flows.

EAD-weighted average PD

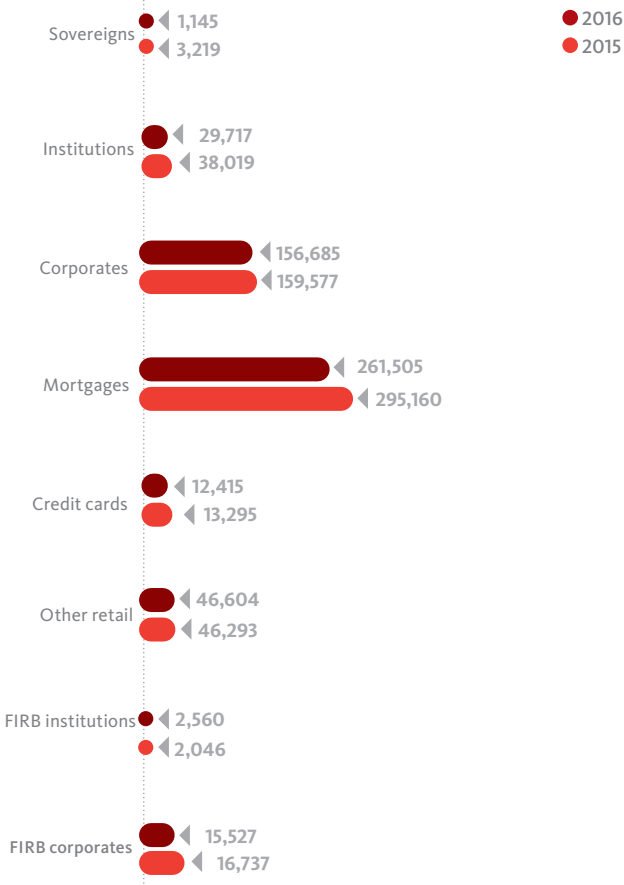


EAD-weighted average LGD

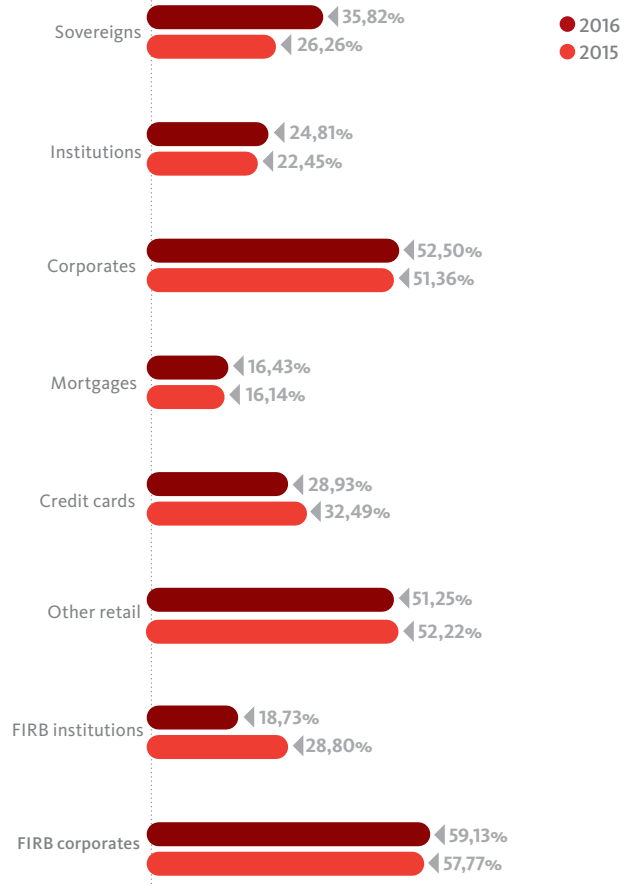


Exposure

Millions of Euros



RWA as percentage of EAD



2. Capital

2.2.2.1.2. Deployment of advanced approaches and supervisory approval

Grupo Santander continues with its proposal to adopt, progressively over the next few years, Basel II advanced internal ratings-based (AIRB) approach for substantially all its banks until more than 90% of net exposure in the loan book is covered by this approach. The commitment assumed with the regulatory authorities implies adapting the advanced models in the ten key markets in which Grupo Santander operates.

Grupo Santander continued to pursue this objective during 2016, through its plan to gradually implement the necessary technology platforms and methodological improvements to enable the progressive application of AIRB models for calculating regulatory capital in the rest of the Group's units.

Grupo Santander counts with supervisory approval for the use of advanced approaches for calculating regulatory capital for credit

risk in eight of its ten main markets: Spain, the United Kingdom, Portugal, Germany and Mexico, as well as for the global corporates portfolio of Brazil, Chile and the United States.

Regulatory approvals obtained in 2016

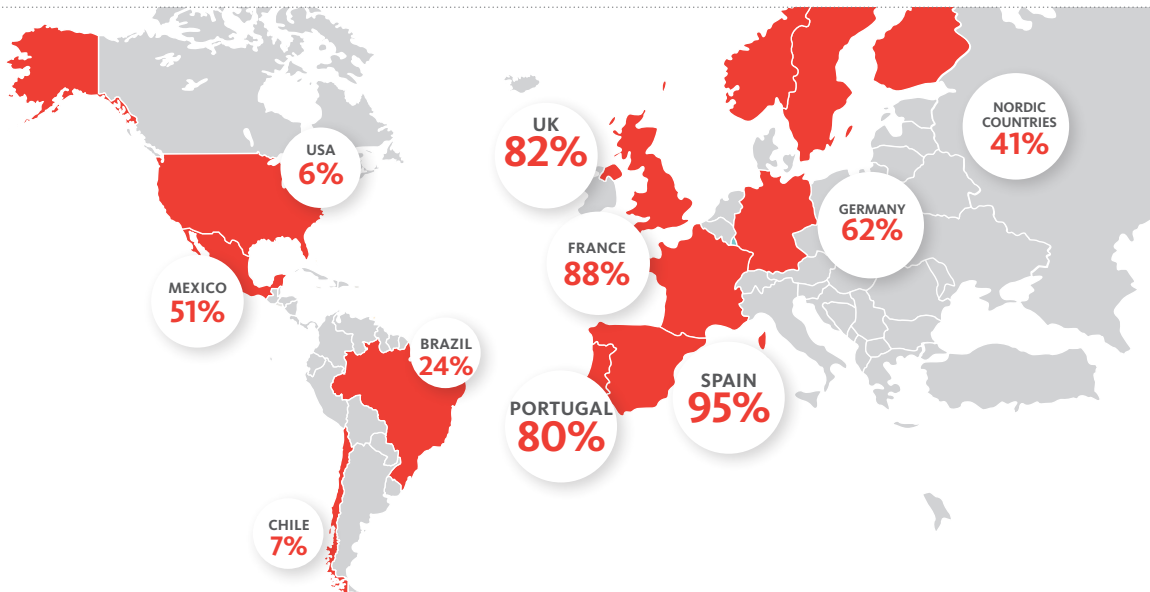
The strategy to implement Basel regulations in the Group focuses on the use of advanced approaches at major American and European banks.

In 2016 the authorisation for the IFIC portfolios in Santander Totta Portugal was obtained, and the regulatory validation process is awaiting completion for Chile's Institutions and Sovereign portfolios, Santander Consumer Germany's Mortgages and most Revolving portfolios, and most of PSA UK's portfolios.

The following chart shows the percent IRB coverage by geography:

IRB coverage by geography

%



Note: Country perimeter details in table 8

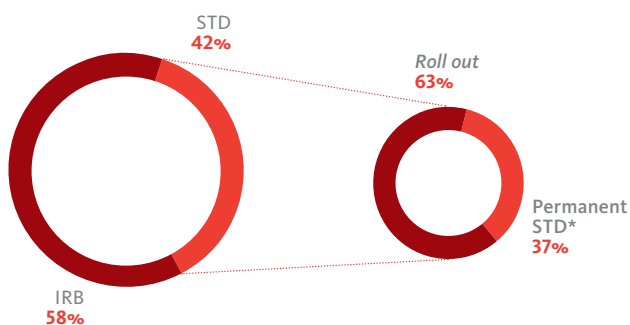


Isolating sovereign bonds in local currency and non-financial assets, which are not subject to the internal model deployment plan, as of December 2016 Grupo Santander reports 58% of the EAD in IRB.

In terms of geographical area, the main contributors are the United Kingdom (25%), Spain (21%), the global portfolio of companies in Chile, Brazil and the USA (3%), Portugal (3%), Germany (2%), Nordic countries (1%) and France (1%).

Of the remaining exposure, which is currently calculated using the standard method, 63% is subject to advanced model implementation plans, with the objective of obtaining supervisory approval, in order to calculate requirements of capital per IRB model for 90% of total exposure.

The remaining portfolios not included in the advanced model deployment plan are subject to analysis in order to assess the appropriateness of their integration into the plan; additionally, included in these other portfolios are the portfolios authorised by the supervisor to remain in permanent standard. The distribution of exposure to credit risk and counterpart according to the capital requirements calculation method is shown graphically below.



*To simplify: the 37% permanent STD includes both the permanent std portfolios authorised by the regulator and those pending approval (candidates for permanent std or roll out)

The medium-term objective of achieving a high degree of IRB model coverage in the main markets in which the Group operates is conditioned by the acquisition of new business as it has been during 2016 with the integration of the various established PSA units in the agreement signed in 2015.

In addition, the combination of declining business in some portfolios under advanced models, especially in the United States, United Kingdom and Spain, coupled with an increase in business in some standard portfolios in Brazil and Chile has contributed significantly to a decline in Degree of IRB coverage at a consolidated level. In 2016, exchange rate developments have had a particularly negative impact on UK and Mexican exposure, where local currencies have fallen sharply due to the political environment.

The following table shows the internal models scope (AIRB or FIRB) of the different portfolios distributed by geographies

Table 23. Internal models (IRB) usage by legal entity

Country	Company	IRB portfolio (AIRB or FIRB)
UK	Santander UK PLC	Institutions, Corporates, Corporates SMEs, Corporates Project Finance, Mortgages, Qualifying Revolving, Other Retail.
	Abbey National Treasury Services	Institutions, Corporates, Corporates SMEs, Corporates Project Finance.
	Abbey Covered Bonds LLP	Institutions
Spain	Banco Santander, S.A.	Sovereigns, Institutions, Corporates, Corporates SMEs, Corporates Project Finance, Mortgages, Qualifying Revolving, Retail SMEs, Other Retail
	Santander Factoring y Confirming, S.A.	Institutions, Corporates, Corporates SMEs, Corporates Project Finance, Mortgages, Retail SMEs, Other Retail
	Santander Lease, S.A. E.F.C.	Institutions, Corporates Corporates SMEs, Mortgages, Retail SMEs, Other Retail
	Santander Consumer, EFC, S.A.	Corporates, Corporates SMEs, Qualifying Revolving, Other Retail.
	Santander Consumer Finance, S.A.	Corporates, Corporates SMEs, Qualifying Revolving, Other Retail.
Portugal	Banco Santander Totta	Institutions, Corporates, Corporates SMEs, Corporates Project Finance, Mortgages, Qualifying Revolving, Retail SMEs, Other Retail.
Brazil	Banco Santander Brasil	Corporates
	Santander Brasil, EFC	Corporates
Germany	Santander Consumer Bank AG	Corporates, Corporates SMEs, Other Retail
Mexico	Banco Santander México	Institutions, Corporates, Corporates SMEs, Corporates Project Finance
USA	Santander Bank, National Association	Corporates
France	Société Financière de Banque - SOFIB	Corporates, Corporates SMEs, Retail SMEs, Other Retail
Nordic countries	Santander Consumer Bank A.S.	Other Retail
	Santander Consumer Finance OY	Other Retail
Chile	Banco Santander - Chile	Corporates

2. Capital

Table 24. Internal models (IMA) usage by legal entity

Country	Legal entity	IMA Portfolio Product
Spain	Banco Santander, S.A.	Trading book
	Banco Santander - Chile	Trading book
Chile	Santander Agente de Valores Limitada	Trading book
	Santander Investment Chile Limitada	Trading book
	Santander Corredores de Bolsa Limitada	Trading book
Mexico	Banco Santander México	Trading book
	Casa de Bolsa Santander, S.A. de C.V.	Trading book
Portugal	Banco Santander Totta	Trading book
UK	Santander UK PLC	Trading book less FX and specific interest rate risk
	Abbey National Treasury Services	Trading book less FX and specific interest rate risk

As additional information, the chart below shows, for each of the unit portfolios, the scope of the supervisory approval for the method, covered by the Standardised approach, FIRB and AIRB, and the portion of portfolios that form part of the roll-out plan.

Table 25. Exposure classification by capital calculation method*

TOTAL GRUPO SANTANDER Thousands of Euros	31 Dec. 2016				Of which: EAD ROLL OUT
	EAD*	EAD AIRB	EAD FIRB	EAD STD	
	1,179,776,816	518,662,951	40,240,773	620,873,092	259,886,797

*Including: credit risk + counterparty risk + securitisation risk (including sovereign local currency and ANF). Excluding: equity + DTAs + reconciliation adjustments + provisions + loans for acquisition of own stocks + financial participations.

Country	Portfolio	% EAD/Total Group	% AIRB	% FIRB	% STD	Of which: ROLL OUT
UK	Central governments and central banks	3.03%	-	-	3.03%	-
	Institutions	1.06%	0.50%	-	0.56%	0.00%
	Corporates	4.48%	1.50%	1.22%	1.75%	1.25%
	Mortgages	15.98%	15.97%	-	0.01%	-
	Retail	1.57%	0.78%	-	0.79%	0.31%
	Other exposures	1.23%	-	-	1.23%	0.00%
	Default	0.28%	0.22%	0.03%	0.03%	0.00%
	Securitisation positions	0.39%	0.31%	-	0.08%	-
	Non-financial assets	0.18%	-	-	0.18%	-
TOTAL UK		28.20%	19.29%	1.25%	7.66%	1.57%

UK Unit + SC UK + PSA UK

Country	Portfolio	% EAD/Total Group	% AIRB	% FIRB	% STD	Of which: ROLL OUT
Spain	Central governments and central banks	0.35%	0.10%	-	0.25%	-
	Institutions	1.90%	1.83%	-	0.07%	0.00%
	Corporates	7.65%	6.72%	0.82%	0.10%	0.00%
	Mortgages	4.65%	4.44%	-	0.21%	-
	Retail	1.80%	1.45%	-	0.34%	0.01%
	Other exposures	0.08%	-	-	0.08%	0.00%
	Default	1.18%	1.11%	0.06%	0.01%	0.00%
	Securitisation positions	0.41%	0.41%	-	-	-
	Non-financial assets	0.02%	-	-	0.02%	-
TOTAL SPAIN		18.04%	16.06%	0.88%	1.10%	0.01%

Spain SAN + Factoring and leasing + SC Spain + PSA Spain + FECl + Insurance Spain

Country	Portfolio	% EAD/Total Group	% AIRB	% FIRB	% STD	Of which: ROLL OUT
Brazil	Central governments and central banks	4.42%	-	-	4.42%	0.17%
	Institutions	0.43%	-	-	0.43%	0.28%
	Corporates	3.55%	1.98%	-	1.57%	1.42%
	Mortgages	0.68%	-	-	0.68%	0.66%
	Retail	2.45%	-	-	2.45%	2.25%
	Other exposures	0.82%	-	-	0.82%	-
	Default	0.21%	0.04%	-	0.16%	0.16%
	Securitisation positions	-	-	-	-	-
	Non-financial assets	0.19%	-	-	0.19%	-
TOTAL BRAZIL		12.75%	2.03%	-	10.72%	4.94%

Country	Portfolio	% EAD/Total Group	% AIRB	% FIRB	% STD	Of which: ROLL OUT
USA	Central governments and central banks	1.01%	-	-	1.01%	0.00%
	Institutions	2.05%	-	-	2.05%	1.76%
	Corporates	2.57%	0.61%	-	1.96%	1.82%
	Mortgages	1.69%	-	-	1.69%	1.69%
	Retail	2.73%	-	-	2.73%	2.51%
	Other exposures	0.31%	-	-	0.31%	0.03%
	Default	0.07%	-	-	0.07%	0.07%
	Securitisation positions	0.07%	-	-	0.07%	-
	Non-financial assets	0.49%	-	-	0.49%	-
TOTAL USA		10.99%	0.61%	-	10.38%	7.89%

SBNA + SC USA + N.Y. + Miami

2. Capital

Country	Portfolio	% EAD/Total Group	% AIRB	% FIRB	% STD	Of which: ROLL OUT
Chile	Central governments and central banks	0.51%	-	-	0.51%	-
	Institutions	0.33%	-	-	0.33%	0.32%
	Corporates	1.08%	0.24%	-	0.84%	0.67%
	Mortgages	1.32%	-	-	1.32%	1.32%
	Retail	0.83%	-	-	0.83%	0.80%
	Other exposures	0.03%	-	-	0.03%	-
	Default	0.12%	0.01%	-	0.11%	0.11%
	Securitisation positions	-	-	-	-	-
	Non-financial assets	0.03%	-	-	0.03%	-
TOTAL CHILE		4.25%	0.25%	-	4.00%	3.23%

Chile + SC Chile

Country	Portfolio	% EAD/Total Group	% AIRB	% FIRB	% STD	Of which: ROLL OUT
Mexico	Central governments and central banks	1.27%	-	-	1.27%	-
	Institutions	0.35%	0.07%	0.22%	0.06%	-
	Corporates	1.18%	0.50%	0.63%	0.04%	0.00%
	Mortgages	0.48%	-	-	0.48%	0.44%
	Retail	0.65%	-	-	0.65%	0.65%
	Other exposures	0.01%	-	-	0.01%	-
	Default	0.05%	0.01%	0.01%	0.03%	0.03%
	Securitisation positions	0.02%	-	-	0.02%	-
	Non-financial assets	0.02%	-	-	0.02%	-
TOTAL MEXICO		4.03%	0.59%	0.86%	2.58%	1.12%

Country	Portfolio	% EAD/Total Group	% AIRB	% FIRB	% STD	Of which: ROLL OUT
Portugal	Central governments and central banks	0.73%	-	-	0.73%	-
	Institutions	0.15%	0.11%	-	0.04%	0.02%
	Corporates	0.90%	0.68%	0.10%	0.13%	0.06%
	Mortgages	1.41%	1.21%	-	0.20%	0.20%
	Retail	0.38%	0.23%	-	0.15%	0.05%
	Other exposures	0.06%	-	-	0.06%	0.00%
	Default	0.14%	0.09%	0.00%	0.05%	0.05%
	Securitisation positions	0.01%	0.01%	-	-	-
	Non-financial assets	0.07%	-	-	0.07%	-
TOTAL PORTUGAL		3.85%	2.32%	0.10%	1.42%	0.38%

Portugal + SC Portugal

Country	Portfolio	% EAD/Total Group	% AIRB	% FIRB	% STD	Of which: ROLL OUT
Poland	Central governments and central banks	1.17%	-	-	1.17%	-
	Institutions	0.06%	-	-	0.06%	0.05%
	Corporates	0.74%	-	-	0.74%	0.59%
	Mortgages	0.64%	-	-	0.64%	0.57%
	Retail	0.63%	-	-	0.63%	0.37%
	Other exposures	0.06%	-	-	0.06%	0.00%
	Default	0.06%	-	-	0.06%	0.05%
	Securitisation positions	0.00%	-	-	0.00%	-
	Non-financial assets	0.02%	-	-	0.02%	-
TOTAL POLAND		3.38%	-	-	3.38%	1.62%

Poland + SC Poland + PSA Poland

Country	Portfolio	% EAD/Total Group	% AIRB	% FIRB	% STD	Of which: ROLL OUT
Germany	Central governments and central banks	0.16%	-	-	0.16%	-
	Institutions	0.04%	-	-	0.04%	-
	Corporates	0.45%	0.16%	-	0.29%	0.07%
	Mortgages	0.43%	-	-	0.43%	0.43%
	Retail	1.85%	1.48%	-	0.36%	0.15%
	Other exposures	0.02%	-	-	0.02%	-
	Default	0.05%	0.04%	-	0.01%	0.01%
	Securitisation positions	0.17%	0.17%	-	-	-
	Non-financial assets	0.01%	-	-	0.01%	-
TOTAL GERMANY		3.16%	1.85%	-	1.31%	0.66%

SC Germany + PSA Germany

Country	Portfolio	% EAD/Total Group	% AIRB	% FIRB	% STD	Of which: ROLL OUT
Nordic countries	Central governments and central banks	0.04%	-	-	0.04%	-
	Institutions	0.03%	-	-	0.03%	-
	Corporates	0.06%	-	-	0.06%	0.04%
	Mortgages	-	-	-	-	-
	Retail	1.08%	0.51%	-	0.57%	0.57%
	Other exposures	0.10%	-	-	0.10%	-
	Default	0.00%	0.00%	-	0.00%	-
	Securitisation positions	-	-	-	-	-
	Non-financial assets	0.00%	-	-	0.00%	-
TOTAL NORDIC COUNTRIES		1.33%	0.52%	-	0.81%	0.61%

SC Nordics: Sweden + Denmark + Finland + Norway

2. Capital

Country	Portfolio	% EAD/Total Group	% AIRB	% FIRB	% STD	Of which: ROLL OUT
France	Central governments and central banks	0.03%	-	-	0.03%	-
	Institutions	0.04%	-	-	0.04%	-
	Corporates	0.34%	-	0.31%	0.03%	-
	Mortgages	-	-	-	-	-
	Retail	0.45%	0.44%	-	0.01%	-
	Other exposures	0.02%	-	-	0.02%	-
	Default	0.02%	0.01%	0.01%	0.00%	-
	Securitisation positions	-	-	-	-	-
	Non-financial assets	0.00%	-	-	0.00%	-
TOTAL FRANCE		0.89%	0.45%	0.31%	0.13%	-

PSA France

Country	Portfolio	% EAD/Total Group	% AIRB	% FIRB	% STD	Of which: ROLL OUT
Rest of Europe	Central governments and central banks	3.32%	-	-	3.32%	-
	Institutions	0.85%	-	-	0.85%	-
	Corporates	0.36%	-	-	0.36%	-
	Mortgages	0.37%	-	-	0.37%	-
	Retail	0.90%	-	-	0.90%	-
	Other exposures	0.38%	-	-	0.38%	-
	Default	0.07%	-	-	0.07%	-
	Securitisation positions	0.00%	-	-	0.00%	-
	Non-financial assets	0.67%	-	-	0.67%	-
TOTAL REST OF EUROPE		6.92%	-	-	6.92%	-

SC Benelux + SC Italy + SC Hungary + SC Austria + SC Holland + Ireland + GFA Europe + GFA Rest + GFA Spain + PSA Belgium + PSA Netherlands + PSA Switzerland + PSA Italy + UCI

Country	Portfolio	% EAD/Total Group	% AIRB	% FIRB	% STD	Of which: ROLL OUT
Rest of America	Central governments and central banks	0.65%	-	-	0.65%	-
	Institutions	0.18%	-	-	0.18%	-
	Corporates	0.57%	-	-	0.57%	-
	Mortgages	0.13%	-	-	0.13%	-
	Retail	0.53%	-	-	0.53%	-
	Other exposures	0.06%	-	-	0.06%	-
	Default	0.03%	-	-	0.03%	-
	Securitisation positions	-	-	-	-	-
	Non-financial assets	0.06%	-	-	0.06%	-
TOTAL REST OF AMERICA		2.22%	-	-	2.22%	-

Paraguay + Uruguay + Puerto Rico + Peru + Panama + Colombia + Argentina + GFA America + SC Canada

Regulatory approvals obtained in 2016 Other risks

Regarding the other risks explicitly addressed in Basel's Pillar I, in terms of market risk, this year authorisation was obtained for the internal model to be used for cash trading business in the United Kingdom, in addition to the authorisations already secured in Spain, Chile, Portugal and Mexico.

Note: For further information on market risk, see section 2.2.2.3.

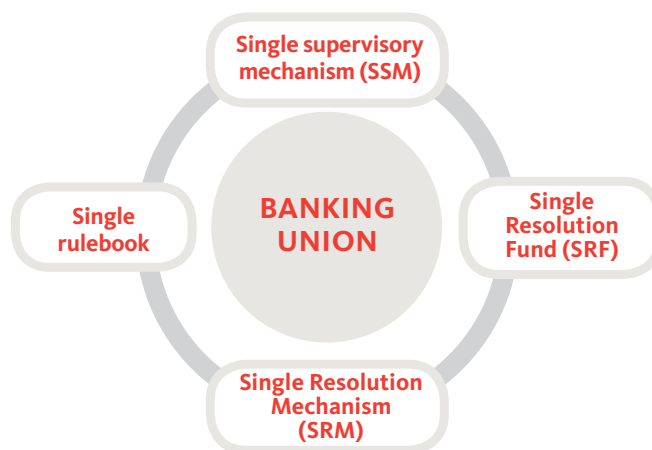
For operational risk, Grupo Santander currently uses the standard approach for calculating regulatory capital, as set out in the CRR Directive. In February 2016 the European Central Bank issued authorisation for the Alternative Standardised Approach to be used to calculate consolidated capital requirements at Banco Santander Brazil.

Note: For further information on operational risk, see section 2.2.2.4.

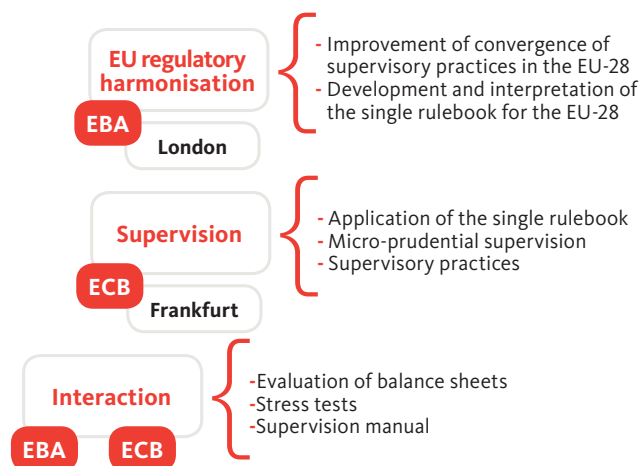
Supervisory validation process

As established by the European Parliament, the key element of the banking union is the Single Supervisory Mechanism (SSM). Under this mechanism, direct banking supervision falls to the European Central Bank, thereby ensuring that the largest European banks are subject to independent and coherent supervision.

The second key element is the Single Resolution Mechanism (SRM), which is tasked with preparing for the worst-case scenario, i.e. bank failure. The aim is to ensure that such situations can be resolved in an orderly fashion, and at a minimum cost for taxpayers. The focus on keeping taxpayers from bearing the cost of future bank resolutions entailed a change in the underlying regulations, namely the Bank Recovery and Resolution Directive (BRRD). Under the BRRD, a bank's shareholders and creditors will bear the brunt of resolution costs. Under certain circumstances, banks may also obtain supplementary financing from the recently-created Single Resolution Fund (SRF), financed by the banking sector. The SSM is fully operational, while the SRM has been effective since first of January 2016. The SRF is expected to meet its target funding level by 2023. Eurozone Member States automatically form part of the banking union, while adherence is voluntary for other Member States.



The European Central Bank has gradually implemented its new structure, assuming its functions and developing into the single European supervisor. The EBA will continue to actively collaborate in adapting regulation. Each body's responsibilities are as follows:



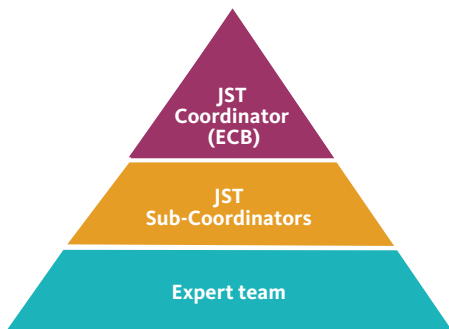
2. Capital

A preparatory 'pre-assessment' stage has now been added to the supervisory validation process. This involves the entity providing the supervisor, in advance, with the documentation it needs to assess whether the minimum requirements for continuing the formal validation process have been met. If the European Central Bank considers the entity to be initially ready, a request is sent and the supervisor begins a formal validation of the internal models. This validation process decides whether or not to authorise the use of advanced models for capital calculation.

- The European supervisor has put in place a new governance process, involving the following steps;
- The Joint Supervisory Team (JST), consisting of a mixed team of experts, analyses the entity's situation and issues a technical report to the ECB's Supervisory Board.
- The Supervisory Board submits its preliminary decisions to the Governing Council.
- The Governing Council then issues its final decision authorizing or not the use of the internal models.



The Joint Supervisory Team (JST) comprises a coordinator, a team of sub-coordinators and a team of experts comprising specialists in the models.



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

The supervisory validation process is conditioned by the presence of multinational institutions in different countries and regions, as is the case of Santander, which implies the participation of supervisors from different jurisdictions, often subject to different legislation, criteria and timeframes, which at times hinders and slows joint decision agreements on the approval of IRB models with a consolidated scope and can affect authorisations at a local level.

With regard to the supervisory validation processes led by the ECB in the Eurozone, both for the modification of previously approved IRB models and for new authorisation requests, the duration of such processes is not subject to a previously established maximum. However, Santander is aware that progress is being made and it expects that requests may be responded to more quickly than is currently the case, especially when the nature of the changes does not require a detailed review of the model, unlike what occurs when formal authorisation is requested for the use of advanced approaches for calculating the regulatory capital with an IRB model for the first time.

Lastly, it would be useful to promote international convergence on a timeframe for reviewing requests for the authorisation of IRB models. This should not exceed a maximum term of six months, bearing in mind also all the governance required to formalize requests.

Santander vision on internal models

One of Santander's main corporate objectives is to enable its subsidiaries to become leading institutions in their markets, adopt the most advanced return- and capital-based management systems currently in existence, and put themselves in the best possible position to succeed in the new competitive environment, which is increasingly complex and demanding.

In this sense, Grupo Santander is convinced that internal models are crucial to achieving this objective, despite recent criticism received in various forums and regions, including a current of opinion that advocated abandoning these models and returning towards standardization. In our view this would be highly inadvisable, representing a backward step after the significant advances made in recent years. Using internal models makes it possible to improve risk management overall and adapt capital requirements more closely to reality.

Further progress at an international level is required to ensure that the criteria are for equal for all competitors and the playing field is even in all jurisdictions. Some adjustment of the mechanisms that support the entire process of the models is also required and continued investment in their improvement is critical, as is the reinforcement of all the processes of supervision and standardisation of criteria by the supervisory agencies.

Targeted Review on Internal Models

In 2016 the European Central Bank (ECB) launched a review of internal capital models known as "TRIM" (Targeted Review of Internal Models) with the main aim of helping restore credibility, regulating any divergences of capital requirements that do not match the risk profile of exposures, and standardizing regulatory practices through better knowledge of the models.

This year the Supervisor will assess the reliability and comparability of internal models and proper compliance of the models with regulatory standards, define directives for supervision and compliance by issuing recommendations and guidelines, help improve the supervisory process by making it more efficient and homogeneous, and will ensure that risks are properly modelled and capital requirements are properly calculated.

The process will at least be carried out in 2016, 2017 and 2018, with an initial scope of approximately 2,400 models covering credit risk, market risk and counterparty risk. It is based on an inventory of the internal models authorised, quantitative and qualitative questionnaires furnished during the second and third quarters of this year, and a number of on-site inspections in 2017 (for high default portfolios) and 2018 (low default portfolios) of all the models selected by the ECB, addressing materiality and criticality criteria.

2.2.2.1.3. Standardised approach

For the calculation of regulatory capital under the Standardised approach, Grupo Santander uses the external rating agencies designated as eligible by the Bank of Spain. The agencies used for the capital calculation at 31 December 2016 are Fitch, Moody's, DBRS and Standard & Poor's.

Also, for the central government and central banks category, if the requirements of article 137 of the CRR are met, Grupo Santander uses the OECD's Country Risk Classification of the Participants to the Arrangement on Officially Supported Export Credits.

Pursuant to Part III, Title II, Chapter II of the CRR, different risk weights are applied to credit exposures, depending on the rating assigned by the credit rating agencies (e.g. Fitch, Moody's and Standard & Poor's for the corporates segment) or the minimum export insurance premium rating (e.g. OECD for the central government and central bank segment).

At present, the Group has no process in place for assigning the credit ratings of publicly traded securities to comparable assets that are not included in the trading book.

The tables below show the value of the net exposure after impairment loss allowances after risk mitigation, by segment and credit quality grade. Guarantees are applied by reallocating exposures to the corresponding asset categories and risk weightings.

In accordance with art. 150 of the CRR, Grupo Santander permanently uses the Standardised approach for sovereign exposures denominated and funded in the Member State's local currency, applying a 0% risk weight.

Table 26. Standardised approach (including a breakdown of exposures post conversion factor and post mitigation techniques) (CR5)
Thousands of Euros

	31 Dec. 2016													Risk weight		
	-%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%		1250%	Deduc.
Central governments or central banks	178,799,936	-	-	-	1,433,343	-	-	4,469,679	-	-	-	-	-	-	-	184,702,959
Regional government or local authorities	22,459,145	-	-	-	961,610	-	154	273,024	-	-	-	-	-	-	-	23,693,933
Public sector entities	9,306,934	-	-	-	778,252	-	5,315	128,536	-	-	-	-	-	-	-	10,219,038
Multilateral development banks	2,006,039	-	-	-	4,390	-	-	-	-	-	-	-	-	-	-	2,010,429
International organisations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Institutions	-	6,422,223	-	-	23,741,964	-	1,708,865	-	-	1,299,175	2,406	-	-	-	-	33,174,634
Corporates	-	-	-	-	1,093,788	-	848,282	-	-	74,318,002	247,475	-	-	-	-	76,507,546
Retail	-	-	-	-	-	-	-	127,712,952	-	-	-	-	-	-	-	127,712,952
Exposures covered by residential mortgages	-	-	-	-	12,203	68,188,988	11,929,592	-	4,336,723	6,556,818	-	-	-	-	-	91,024,324
Exposures in default	-	-	-	-	-	-	-	-	-	5,761,884	1,456,035	-	-	-	-	7,217,919
Higher-risk categories	-	-	-	-	-	-	-	-	-	1,329,821	-	-	-	-	-	1,329,821
Covered bonds	-	-	-	4,289,552	-	-	-	-	-	-	-	-	-	-	-	4,289,552
Institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	649,482	-	-	979	-	-	-	-	-	650,461
Collective investment undertakings (CIU)	-	-	-	-	362,631	-	-	-	-	-	-	-	-	-	-	362,631
Equity	357	-	-	-	268,912	-	-	-	-	257,611	-	1,936,213	-	-	-	2,463,094
Other items	26,020,096	1,094,510	-	-	11,189,014	-	56,913	-	101,248	39,846,780	-	5,176,468	-	-	-	83,485,029
TOTAL	238,592,509	7,516,734	-	4,289,552	38,412,765	68,188,988	16,631,947	-	132,150,923	132,912,488	3,035,737	7,112,681	-	-	-	648,844,323

The following tables detail the counterparty credit risk exposures breakdown calculated using the standardised approach by portfolio (counterparty type) and risk weights (by risk grade attributed to the standardised approach):

Table 27. Standardised approach – CCR exposures by regulatory portfolio and risk (CCR3)
Thousands of Euros

	-%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	Deduc.	Risk weight Total
Central governments or central banks	8,902,827	-	-	-	30,941	-	8,000	-	-	-	-	-	8,941,768
Regional government or local authorities	-	-	-	-	519	-	-	-	-	560	-	-	1,079
Public sector entities	-	-	-	-	-	-	-	-	-	-	-	-	-
Multilateral development banks	15,738	-	-	-	-	-	-	-	-	-	-	-	15,738
International organisations	-	-	-	-	-	-	-	-	-	-	-	-	-
Institutions	-	5,162,986	-	1,403,240	-	406,301	-	-	-	18,493	-	-	6,991,019
Corporates	-	-	-	-	706,750	-	45,442	-	-	2,677,782	116,351	-	3,546,325
Retail	-	-	-	-	-	-	-	-	40,590	-	-	-	40,590
Collective investment undertakings (CIU)	-	-	-	-	-	-	-	-	-	33,259	-	-	33,259
Other items	-	-	-	-	-	-	-	-	-	26,529	-	-	26,529
TOTAL	8,918,565	5,162,986	-	2,141,450	-	459,743	-	40,590	2,756,623	116,351	-	-	19,596,308

2.2.2.2. Credit risk – Securitisations

2.2.2.2.1. Methodology for calculating risk-weighted exposures in securitisation activities

Grupo Santander only computes regulatory capital using securitization methodology (chapter 5 CRR), for securitization positions originated by Grupo Santander if they comply with the regulatory requirements that determine the transfer of a significant risk as stated in the CRR. Where the originator institution has not transferred significant credit risk, it shall continue to include the securitised exposures in its calculation of risk weighted exposure amounts as if they had not been securitised. Additionally, the group also computes capital for investment positions in third parties.

Capital requirements for securitisation positions are calculated by applying the appropriate risk weight to the exposure value of each position, depending on the approach (Standardised or IRB) used by the entity to calculate the risk-weighted exposure amounts of the securitized portfolio. If the entity uses both approaches for the various securitized exposures that make up the underlying portfolio, the method that applies to the predominant proportion of exposures in the portfolio is used.

Entities that use the Standardised approach to calculate capital requirements apply certain risk weights, as stipulated in the CRR (see table 24), based on the credit quality level assigned to the external credit ratings issued by eligible External Credit Assessment Institutions (ECAIs) for each securitisation or re-securitisation position. The risk weights are the following:

Table 28. RWs of securitisations for the standardised approach

3e Dec. 2016				
Credit quality levels	Short-term ratings	Long-term ratings	Securitisation positions	Resecuritisation positions
1	A-1+, A-1	AAA A AA-	20%	40%
2	A-2	A+ A A-	50%	100%
3	A-3	BBB+ A BBB-	100%	225%
4	N/A	BB+ a BB-	350%	650%
Other levels			1250%	1250%

Where no external credit rating is available, the entity assigns the weighted-average risk weight applied to securitised exposures, multiplied by the concentration ratio (lookthrough method). If the institution has insufficient information on the underlying portfolio, a risk weight of 1.250% is assigned.

Entities that adopt the IRB approach for the calculation of capital requirements currently use the external-ratings-based approach, applying the risk weights, as stipulated in the CRR (see Tables 25 and 26). These weights are set depending on whether it is a securitisation or a re-securitisation, whether it is the most senior position in the securitisation or not, the effective number of exposures (granularity of the underlying) and the credit quality level assigned to the external credit ratings issued by eligible ECAIs or the ratings inferred from each securitisation position. These risk weights are multiplied by 1.06 to calculate the risk-weighted exposure amounts, except for the tranches weighted at 1,250%.

If there is no external rating in place and there are estimations of PD and LGD, the supervisory formula will be used. The inputs of this method are: the thickness of the tranche, average capital consumption and expected loss of the underlying assets (KIRB), average LGD of the underlying and the effective number of exposures.

For securitisation positions with long-term external ratings the relationship is as follows:

■ Table 29. RWs of securitisations with a long-term rating (RBA-IRB approach)

Credit quality levels	Long-term ratings	Securitisation positions			Resecuritisation positions	
		Senior tranche and effective no. of positions >6	Effective no. of positions >6 and junior tranche	Effective no. of positions <6	Senior tranche	Junior tranche
1	AAA	7%	12%	20%	20%	30%
2	AA+, AA, AA-	8%	15%	25%	25%	40%
3	A+	10%	18%	35%	35%	50%
4	A	12%	20%	35%	40%	65%
5	A-	20%	35%	35%	60%	100%
6	BBB+	35%	50%	50%	100%	150%
7	BBB	60%	75%	75%	150%	225%
8	BBB-	100%	100%	100%	200%	350%
9	BB+	250%	250%	250%	300%	500%
10	BB	425%	425%	425%	500%	650%
11	BB-	650%	650%	650%	750%	850%
Other levels and positions without a rating		1250%	1250%	1250%	1250%	1250%

And for securitisation positions with short-term external ratings the relationship is as follows:

■ Table 30. RWs of securitisations with a short-term rating (RBA-IRB approach)

Credit quality levels	Short-term ratings	Securitisation positions			Resecuritisation positions	
		Senior tranche and effective no. of positions >6	Effective no. of positions >6 and junior tranche	Effective no. of positions <6	Senior tranche	Junior tranche
1	A-1+, A-1	7%	12%	20%	20%	30%
2	A-2	12%	20%	35%	40%	65%
3	A-3	60%	75%	75%	150%	225%
Other levels and positions without a rating		1250%	1250%	1250%	1250%	1250%

The table below shows the breakdown of securitization positions with risk transfer for the investment portfolio distributed by function (originator, investor or sponsor) and the approach used for the computation of regulatory capital:

2. Capital

Table 31. Breakdown of repurchased positions in securitisation with credit risk transfer, distributed by function and approach used
Thousands of Euros

	31 Dec. 16					31 Dec. 15				
	Onbalance sheet amount	Offbalance sheet amount	EAD	EAD after capital deductions	RWA	Onbalance sheet amount	Offbalance sheet amount	EAD	EAD after capital deductions	RWA
Originator – standardised approach	958,314	-	939,697	939,697	325,883	48,326	-	29,709	29,709	12,413
Originator – RBA approach	3,718,197	-	3,718,197	3,718,197	571,005	2,178,057	-	2,178,057	2,178,057	1,531,876
Originator – SFA approach	1,277,818	-	1,277,818	1,277,818	176,677	1,685,427	-	1,685,427	1,685,427	237,679
Total originator	5,954,330	-	5,935,713	5,935,713	1,073,565	3,911,810	-	3,893,193	3,893,193	1,781,968
Investor – standardised approach	981,220	-	981,220	981,220	572,219	1,325,206	-	1,300,998	1,300,998	687,149
Investor – RBA approach	5,113,395	441,876	5,555,271	5,555,271	705,172	2,744,132	225,241	2,969,373	2,969,373	439,507
Total investor	6,094,615	441,876	6,536,491	6,536,491	1,277,391	4,069,338	225,241	4,270,371	4,270,371	1,126,656
Sponsor – standardised approach	-	-	-	-	-	-	-	-	-	-
Sponsor – RBA approach	-	40,253	40,253	40,253	26,244	1,705	40,551	42,256	42,256	32,614
Total sponsor	-	40,253	40,253	40,253	26,244	1,705	40,551	42,256	42,256	32,614
TOTAL	12,048,945	482,129	12,512,456	12,512,456	2,377,200	7,982,853	265,792	8,205,819	8,205,819	2,941,238
Of which: traditional securitisations	10,118,065	304,860	10,404,307	10,404,307	2,059,421	6,297,426	265,792	6,520,393	6,520,393	2,703,559
Of which: synthetic securitisations	1,930,880	177,269	2,108,149	2,108,149	317,779	1,685,427	-	1,685,427	1,685,427	237,679
TOTAL	12,048,945	482,129	12,512,456	12,512,456	2,377,200	7,982,853	265,792	8,205,819	8,205,819	2,941,238

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

EAD IRB: exposures net of collateral, before provisions and deductions and after outflows to other regulatory reports

EAD STD: exposures net of collateral, before deductions and after provisions and outflows to other regulatory reports

RWA IRB: before provisions, after deductions and outflows to other regulatory reports and before application of the limit

RWA STD: after provisions, deductions and outflows to other regulatory reports and before application of the limit.

It should be noted that for all securitisations with a risk weight of 1,250% is applicable, the bank calculates its risk-weighted exposure instead of deducting equity exposure. Accordingly, the EAD before and after the deductions is the same.

Table 27 shows a 35% rise in exposure due both to the increase in exposures in securitizations originated by the Group with risk transfer and in investment positions in third parties. In 2016, four new securitisations with risk transfer were originated and a significant risk transfer was obtained for an existing one, with the main goal of optimizing capital consumption. This compares to previous years when securitisations were originated by the Group fundamentally to improve liquidity levels.

On the other hand, securitisation positions in the trading book are eliminated from the regulatory capital calculation based on an

internal market risk model and are included in the capital calculation for specific risk, in accordance with Article 335 of the CRR. Among these positions, the correlation trading portfolio is also included. This portfolio consists of securitisation positions and nth-to-default derivatives that meet all the criteria stated in Article 338.1 of the CRR. Therefore, none of these securitisation positions are taken into consideration in the VaR spread and IRC calculation, although they are included in the interest rate VaR calculation (general risk). Capital requirements for these securitisation positions are calculated as if the positions were in the banking book, distinguishing between:

- Securitisation positions rated by an external rating agency, for which capital requirements are calculated using the external-ratings-based approach described above and
- Unrated securitisation positions, to which the risk weighting resulting from the supervisory formula method is applied

2.2.2.2.2. Securitisation with risk transfer

Grupo Santander, as an originator institution, retains positions of securitisations with risk transfer issued by Group entities. The Group also acquires positions of securitisation originated by non-Group entities and is the sponsor of one securitisation.

The tables below contain information on the balances of securitisation positions purchased from third parties and held in securitisation originated by the group with risk transfer, both in the investment portfolio and the trading portfolio.

Table 32. Aggregate amount of securitisation positions purchased and retained with risk transfer. Investment portfolio. IRB approach

Thousands of Euros

											31 Dec. 16	
											EAD	RWA
IRB approach. Distribution by exposure type and risk weight	Securitisations		Resecuritisations		Total EAD	Securitisations		Resecuritisations		Total RWA		
	On-balance sheet exposures	Off-balance sheet and derivative exposures	On-balance sheet exposures	Off-balance sheet and derivative exposures	Total	On-balance sheet exposures	Off-balance sheet and derivative exposures	On-balance sheet exposures	Off-balance sheet and derivative exposures	Total		
Investor positions												
7-10%	4,067,309	124,898	-	-	4,192,206	302,426	9,710	-	-	311,773		
12-18%	676,542	202,893	-	-	879,436	84,176	28,028	-	-	112,204		
20-35%	187,651	43,585	3,005	-	234,240	55,992	10,204	955	-	67,151		
40-75%	152,405	70,500	17,215	-	240,120	148,144	48,410	7,299	-	203,853		
100%	9,237	-	-	-	9,237	9,791	-	-	-	9,791		
1250%	32	-	-	-	32	400	-	-	-	400		
TOTAL	5,093,176	441,876	20,220	-	5,555,271	600,929	96,351	8,255	-	705,172		
Originator positions												
7-10%	3,926,344	-	-	-	3,926,344	314,150				314,150		
12-18%	703,000	-	-	-	703,000	89,422				89,422		
20-35%	205,450	-	-	-	205,450	51,505				51,505		
40-75%	94,800	-	-	-	94,800	64,978				64,978		
100%	50,000					53,000				53,000		
250%	2,300	-	-	-	2,300	6,095				6,095		
425%	600				600	2,703				2,703		
650% - 850%	732	-	-	-	732	5,967				5,967		
1250%	12,789				12,789	16,913				16,913		
TOTAL	4,996,016	-	-	-	4,996,016	604,732	-	-	-	604,732		
Sponsor positions												
40-75%	-	-	-	40,000	40,000				25,440	25,440		
300%	-	-	-	253	253				804	804		
TOTAL	-	-	-	40,253	40,253	-	-	-	26,244	26,244		
TOTAL IRB APPROACH	10,089,191	441,876	20,220	40,253	10,591,540	1,205,661	96,351	8,255	26,244	1,336,148		

EAD IRB: before provisions and after deductions from own funds

EAD STD: after provisions and deductions from own funds

RWA IRB: after provisions, after deductions and before application of the limit

RWA STD: after deductions, after provisions and before application of the limit

Note: Under the standardised method the investment position with no rating, which use capital based on the average RW of the underlying multiplied by the concentration coefficient, are kept in the balance sheet.

2. Capital

With the IRB approach, more than 75% of the exposures have a risk weight lower than 10%. This portfolio distribution reflects the good quality of the investments made by the Group.

Table 33. Aggregate amount of securitisation positions purchased and retained with risk transfer. Investment portfolio. Standardised approach
Thousands of Euros

Standardised approach. Distribution by exposure type and risk weight	31 Dec. 16									
	EAD					RWA				
	Securitisations		Resecuritisations		Total EAD	Securitisations		Resecuritisations		Total EAD
	On-balance sheet exposures	Off-balance sheet and derivative exposures	On-balance sheet exposures	Off-balance sheet and derivative exposures	Total	On-balance sheet exposures	Off-balance sheet and derivative exposures	On-balance sheet exposures	Off-balance sheet and derivative exposures	Total
Investor positions										
40-75%	818,316	-	-	-	818,316	409,158	-	-	-	409,158
100%	162,890	-	-	-	162,890	162,890	-	-	-	162,890
1250%	14	-	-	-	14	171	-	-	-	171
TOTAL	981,220	-	-	-	981,220	572,219	-	-	-	572,219
Originator positions										
20-35%	925,800	-	-	-	925,800	185,160	-	-	-	185,160
350%	3,666	-	-	-	3,666	12,830	-	-	-	12,830
1250%	10,231	-	-	-	10,231	127,893	-	-	-	127,893
TOTAL	939,697	-	-	-	939,697	325,883	-	-	-	325,883
TOTAL	1,920,917	-	-	-	1,920,917	898,102	-	-	-	898,102

EEAD IRB: before provisions and after deductions from own funds

EAD STD: after provisions and deductions from own funds

RWA IRB: after provisions, after deductions and before application of the limit

RWA STD: after deductions, after provisions and before application of the limit

Note: Under the standardised method the investment position with no rating, which use capital based on the average RW of the underlying multiplied by the concentration coefficient, are kept in the balance sheet.

With the standardised approach, we can see that 48% of the exposures have a risk weight equal to or less than 35% (rating between AAA and AA-).

Table 34. Aggregate amount of securitisation positions purchased and retained. Trading portfolio
Thousands of Euros

31 Dec. 16						
ABS portfolio	Investor positions		Originator positions		Sponsor positions	
	Mark to market	RWA	Mark to market	RWA	Mark to market	RWA
RBA approach						
20-35%	36,098	451,220	7,596	94,956	-	-
50-75%	13,099	134,100	-	-	-	-
100%	-	-	316	3,950	-	-
250%	-	-	-	-	17,474	218,431
Total ABS portfolio	49,196	585,319	7,913	98,906	17,474	218,431
Correlation portfolio						
RBA approach						
100%	35,859	448,232	-	-	-	-
Supervisory formula method						
FS	-	-	-	-	-	-
Total correlation portfolio	35,859	448,232	-	-	-	-
TOTAL	82,601	1,032,511	7,913	98,906	17,474	218,431

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

In the trading portfolio more than 43% of the Mark to Market have risk weight equal or less than 35% (rating above A-).

2. Capital

The table below details the securitisation positions purchased or retained, broken down by type of securitised asset and the function of the entity.

Table 35. Securitisation positions purchased and retained with risk transfer by class of underlying asset and activity of the entity
Thousands of Euros

	31 Dec. 16						31 Dec. 15					
	Exposure			RWA			Exposure			RWA		
	Originator	Investor	Sponsor	Originator	Investor	Sponsor	Originator	Investor	Sponsor	Originator	Investor	Sponsor
Traditional securitisations	4,140,257	6,222,195	-	789,637	1,235,286	-	2,207,766	4,173,052	-	1,544,289	1,100,550	-
Residential mortgages	61,038	1,667,278	-	20,581	181,229	-	29,709	1,740,913	-	12,413	229,778	-
Commercial mortgages	-	-	-	-	-	-	-	100	-	-	1,255	-
Credit cards	-	400,364	-	-	89,976	-	-	317,390	-	-	89,230	-
Leasing	-	96,588	-	-	39,918	-	-	8,919	-	-	3,359	-
Loans to corporates or to SMEs treated as corporates	-	3,261,722	-	-	772,781	-	112,791	1,199,553	-	884,883	550,293	-
Consumer loans	4,079,219	184,681	-	769,056	17,279	-	2,038,400	251,422	-	311,176	56,979	-
Mortgage covered bonds	-	93,383	-	-	46,692	-	-	230,576	-	-	115,288	-
Securitisation positions	-	61,067	-	-	23,044	-	-	-	-	-	-	-
Others	-	457,112	-	-	64,367	-	26,865	424,178	-	335,816	54,368	-
Resecuritisations	-	20,220	40,253	-	8,255	26,244	-	97,319	42,256	-	26,106	32,614
Residential mortgages	-	20,220	40,253	-	8,255	26,244	-	97,319	42,256	-	26,106	32,614
Synthetic securitisations	1,814,072	294,077	-	283,928	33,851	-	1,685,427	-	-	237,679	-	-
Loans to corporates or to SMEs treated as corporates	1,277,818	-	-	176,677	-	-	1,685,427	-	-	237,679	-	-
Consumer loans	536,254	-	-	107,251	-	-	-	-	-	-	-	-
Others	-	294,077	-	-	33,851	-	-	-	-	-	-	-
TOTAL	5,954,330	6,536,491	40,253	1,073,565	1,277,391	26,244	3,893,193	4,270,371	42,256	1,781,968	1,126,656	32,614

RBA EAD before provisions and after deductions and outflows to other regulatory reports
 STD EAD after provisions, deductions and outflows to other regulatory reports
 RBA RWA: after deductions and before provisions and application of the limit
 STD RWA: after deductions and provisions and before application of the limit

The table shows that more than 99% of the retained positions are in securitisations (not resecuritizations). Compared to last year, the increased exposure both in originated and investment positions is outstanding.

This increase is mainly due to four new securitisations with risk transfer originated in 2016 (one synthetic and three traditional) and a

significant risk transfer obtained for an existing one, all with the aim of optimizing capital.

Focusing on the analysis of securitizations originated with risk transfer, in the following table we can observe the situation of the underlying portfolio and its development compared to 2015.

● **Table 36. Securitisation structures with risk transfer**
Thousands of Euros

	31 Dec. 2016				31 Dec. 2015			
	with risk transfer	of which in default	Value adjustments in the period	RWA	Outstanding balance	of which in default	Value adjustments in the period	RWA
Securitisation structures								
Residential mortgages	310,988	-	-	20,581	331,536	-	-	12,413
Commercial mortgages	-	-	-	-	52,019	-	-	-
Loans to corporates or to SMEs treated as corporates	-	-	-	-	134,742	13,138	-7,214	794,704
Consumer loans	4,718,008	33,219	-78,090	690,966	2,087,101	2,732	-3,000	273,676
Other	-	-	-	-	446,043	-	-	335,816
Resecuritisations								
Securitisation positions	32,741	17,277	-	26,244	145,774	-	-	32,614
Total traditional SPVS	5,061,737	50,496	-78,090	737,791	3,197,216	15,870	-10,214	1,449,223
Synthetic securitisation SPVs								
Loans to corporates or to SMEs treated as corporates	1,305,889	4,067	-64,860	111,817	1,821,039	-	-	237,679
Others	1,165,769	-	-	107,251	-	-	-	-
Total synthetic SPVS	2,471,658	4,067	-64,860	219,068	1,821,039	-	-	237,679
TOTAL	7,533,395	54,563	-142,949	956,859	5,018,255	15,870	-10,214	1,686,903

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

2.2.2.2.3. Securitisations without risk transfer

The Group holds most of the positions of the originated securitisations and, as a result, they do not meet the regulatory conditions for significant risk transfer. Capital for the securitised exposures is calculated as if the exposures had not been securitised.

The following table gives a breakdown, by type of underlying asset, of the outstanding balance of the securitised exposures in SPVs without risk transfer as of 31st December 2016:

2. Capital

Table 37. Securitisation structures without risk transfer

Thousands of Euros

	31 Dec. 2016				31 Dec. 2015			
	Outstanding				Outstanding			
	Traditional securitisations	Revolving structures	Resecuritisations	Synthetic securitisations	Traditional securitisations	Revolving structures	Resecuritisations	Synthetic securitisations
Residential mortgages	45,621,860	-	20,844	382,728	55,236,016	-	-	470,417
Commercial mortgages	-	-	-	-	-	-	-	-
Leasing	1,183,840	-	-	-	1,276,006	-	-	-
Loans to corporates or to SMEs treated as corporates	5,641,520	-	-	-	8,483,155	-	-	-
Consumer loans	40,212,168	-	242,170	-	36,689,055	-	163,082	-
Mortgage covered bonds	124,953	-	-	-	450,000	-	127,478	-
Collection right	926,643	926,643	-	-	1,158,258	1,158,258	-	-
Securitisation positions	-	-	-	926,878	-	-	-	-
Other	-	-	-	-	213,068	-	-	978,270
Total	93,710,984	926,643	263,014	1,309,606	103,505,558	1,158,258	290,560	1,448,686

The underlying securitised assets in the SPVs originated by the Group continue to consist mainly of residential mortgages and consumer loans. As observable in the previous table, the securitisation exposure with no risk transfer suffers a slight reduction with regard to 2015.

2.2.2.3. Market Risk

In order to comply with one of the disclosure recommendations of the Basel Committee, this chapter provides more detailed information about changes in capital requirements under internal models by component, and a more detailed breakdown of capital requirements for market risk under the standardised approach. The Group's consumption of regulatory capital for market risk by the end of December 2016 breaks down as follows:

Table 38. Regulatory capital for market risk

Millions of Euros

	31 Dec. 2016	31 Dec. 2015
Position risk - Trading book - Standardised approach	310	982
Commodity Risk - Standardised approach	30	19
Specific risk in the correlation trading risk portfolio	3	17
Currency risk - standardised approach	606	443
Position and currency risk - Tradingbook - Internal models	1.137	734
Spain*	611	521
United Kingdom	291	-
Chile	80	37
Portugal	-	-
Mexico	155	176
Total	2,086	2,195

*Includes structural equity considered as business

At year-end 2016 Grupo Santander had authorisation from the Bank of Spain for the use of the internal market risk model for the calculation of regulatory capital in the trading books of the units in Spain, Chile, Mexico and Portugal. The Group aims to gradually extend this approval to the rest of the units.

Consolidated regulatory capital under the internal market risk model for Grupo Santander is computed by summing the regulatory capital of the units that have the necessary approval from Bank of Spain. This is a conservative criterion when consolidating the Group's capital, as it takes no account of the capital savings arising from the geographical diversification effect

As a result of this approval, regulatory capital of the trading activity for the perimeter concerned is calculated with advanced approaches, using VaR, Stressed VaR and IRC (incremental risk

charge) as the fundamental metrics, in line with the new bank capital requirements under the Basel Accords and, specifically, the CRR.

The Group works closely with the Bank of Spain to extend the perimeter of authorisation of internal models (at geographical and operational level) and to analyse the impact of new requirements, in line with the documents published by the Basel Committee to strengthen the capital of financial institutions.

A breakdown of capital requirements in the units that use the internal model is shown below, by geography and component, at year-end:

Table 39. Capital requirements for market risk. Internal model
Thousands of Euros

	31 Dec. 2016					
	CR (VaR)	CR (SVaR)	IRC	Risk Not in VaR	Add-on	TOTAL
Spain*	76	222	313	-	-	611
United Kingdom**	33	192	-	8	58	291
Chile	28	46	6	-	-	80
Portugal	-	-	-	-	-	-
Mexico	53	80	22	-	-	155
TOTAL	190	540	341	8	58	1.137

* Includes Banesto and structural equity considered as business.

** UK counts with internal model approval since the last quarter of 2016.

The changes in capital requirements and RWAs for market risk under internal models from 2014 to 2015 are shown below:

Table 40. Market risk under IMA approach (MR2-A)
Millions of Euros

	RWA	Capital requirements
VaR (higher of values a and b)	2,613	209
a. Previous day's VaR (Article 365(1) of the CRR (VaRt-1))	334	27
b. Average of the daily VaR (Article 365(1)) of the CRR on each of the preceding 60 business days (VaRavg) x multiplication factor (mc) in accordance with Article 366 of the CRR	2,613	209
SVaR (higher of values a and b)	7,099	568
a. Latest SVaR (Article 365(2) of the CRR (SVaRt-1))	1,032	83
b. Average of the SVaR (Article 365(2) of the CRR) during the preceding 60 business days (SVaRavg) x multiplication factor (ms) (Article 366 of the CRR)	7,099	568
IRC (higher of values a and b)	4,503	360
a. Most recent IRC value (incremental default and migration risks calculated in accordance with Article 370 and Article 371 of the CRR)	4,172	334
b. Average of the IRC number over the preceding 12 weeks	4,503	360
Comprehensive risk measure (higher of values a, b and c)	-	-
a. Most recent risk number for the correlation trading portfolio (Article 377 of the CRR)	-	-
b. Average of the risk number for the correlation trading portfolio over the preceding 12 weeks	-	-
c. 8% of the own funds requirement in the standardised approach on the most recent risk number for the correlation trading portfolio (Article 338(4) of the CRR)	-	-
Other	-	-
TOTAL	14,215	1,137

2. Capital

Table 41. Flow statement. RWA for IMA market risk exposures (MR2-B)

Millions of Euros

	VaR	SVaR	IRC	CRM	Other	Total RWAs	Total capital requirements
RWAs Dec. 2015	2,104	4,327	2,738	-	-	9,169	734
Regulatory adjustment	-	-	-	-	-	-	-
RWAs at the previous quarter end (end of the day)	2,104	4,327	2,738	-	-	9,169	734
Movement in risk levels	-	-	-	-	-	-	-
Model updates/changes	266	2,424	1,521	-	835	5,046	403
Methodology and policy	-	-	-	-	-	-	-
Acquisitions and disposals	-	-	-	-	-	-	-
Foreign exchange movements	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-
RWAs at the end of the reporting period (end of the day)	2,370	6,751	4,259	-	835	14,215	1,137
Regulatory adjustment	-	-	-	-	-	-	-
RWA Dec. 2016	2.370	6.751	4.259	-	835	14.215	1.137

Table 42. Market risk with the standardised approach (MR1)

Millions of Euros

	RWA	Capital requirements
Outright products		
Interest rate risk (general and specific)	3,162	253
Equity risk (general and specific)	650	52
Foreign exchange risk	7,578	606
Commodity risk	372	30
Options		
Simplified approach	-	-
Delta-plus method	38	3
Scenario approach	-	-
Securitisation (specific risk)	63	5
TOTAL	11,863	949

The evolution of the capital requirements and RWA with standard model approval since 2015 to 2016 for market risk is shown below:

Table 43. Capital requirements evolution for market risk. Standardised approach*

Millions of Euros

	Capital	RWAs
Starting Capital (31/12/2015)	1,461	18,263
Changes in business and inclusion of new entities	-675	-8,437
New regulations	163	2,037
Ending Capital (31/12/2016)	949	11,863

The capital increase under the internal model is due, mainly, to the inclusion in the perimeter of most part of the Santander UK trading operative.

2.2.2.4. Operational risk

Grupo Santander applies the standardised approach to calculate capital requirements for operational risk, in accordance with the

CRR. The resolution was adopted by the Board of Directors on 22nd June 2007 and reported to the Bank of Spain's Banking Supervision department by the second vice-chairman and CEO on 29th June 2007.

In 2016 Grupo Santander stepped up its transformation process towards an advanced operational risk management approach thanks to the AORM (Advanced Operational Risk Program) project. The programme aims to consolidate the current operational risk management framework, implement the market best-practices and rely on monitoring an integrated consolidated operational risk profile for proactive administration of business strategy and tactical decisions. By the end of 2016 the Group achieved the objectives set out in the project.

The AORM programme will help deploy internal capital estimate models in the main regions for the purposes of economic capital and stress testing, and also its application in metrics of expected loss and stressed for the risk appetite.

Under the standardised approach, capital requirements are calculated based on relevant income, which is defined as the sum of the following components of the profit and loss account:

The following table shows the construction criteria of public and business areas:

- Interest and similar income
- Interest expense and similar charges
- Return on equity instruments
- Fee and commission income
- Fee and commission expense
- Operating income (net)
- Exchange differences (net)
- Other operating income

For this method the CRR also defines the following segmentation of activities / lines of business:

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

Relevant income

Under the standardised approach, capital requirements are calculated as the simple average over the last three years of the summation, for each year, between zero and the sum of the relevant income across each of the business lines, multiplied by the weight assigned to each business line.

The mathematical expression of these requirements will be as follows:

$$\{\sum_{\text{years 1-3}} \text{Max} [\sum(\text{RI}_{1-8} \times \beta_{1-8}), 0]\} / 3$$

Where:

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

β₁₋₈ = Weight applicable to each business line, in accordance with the CRR

Obtaining data on relevant income, allocating it to the various business lines and calculating capital requirements is the responsibility of the Controller and Management Control Division.

Grupo Santander obtains the figure for relevant income from the consolidated management information by business area. This information is generated from accounting data, the quality of which is assured by the SOX procedure, "Income statements and balance sheet preparation by business area"

Consolidated management information is published quarterly in aggregate form and is the basis on which the businesses' budgetary compliance is measured. It is prepared by the Business Management Control area, which regulates the business areas of all of the Group's units, based on certain corporate criteria, which all units must apply when preparing their management information.

1) Primary or geographical level:

- a) Continental Europe: all the commercial banking businesses and Santander Global Corporate. It includes Spain, Santander Consumer Finance, Poland, Portugal and Asia.
- b) UK
- c) Latin America: all the Group's activities through subsidiary banks and companies. This also includes Chile, Uruguay, Peru, Mexico, Colombia, Argentina, Bolivia and Paraguay.
- d) United States

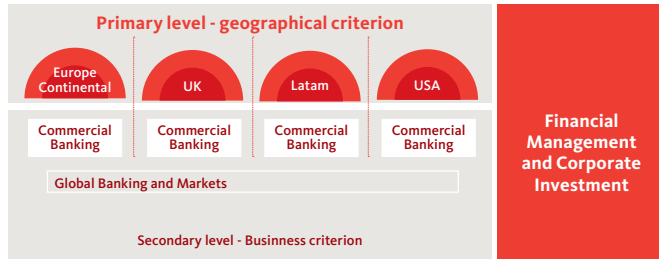
2) Secondary or business level: the activity of each operating unit is segmented by type of business, with segment reporting:

- a) Commercial Banking: Contains the customer banking businesses (except for the corporate banking businesses, which are managed through global relationship models). In Latin America, Commercial Banking includes Financial Management.
- b) Global Banking & Markets: includes the Global Corporate Banking businesses; the Investment Banking and Markets businesses worldwide, including all the treasury departments that have global management responsibilities for trading and distribution to customers; and the equities business.

2. Capital

In addition to the operating businesses, the Financial Management area includes the businesses of the financial and industrial holdings, the financial management of the parent company's currency and interest rate risk structural position, and the management of liquidity and capital through issues and securitisations.

The following textbox shows the construction criterion for the public areas of the business areas:

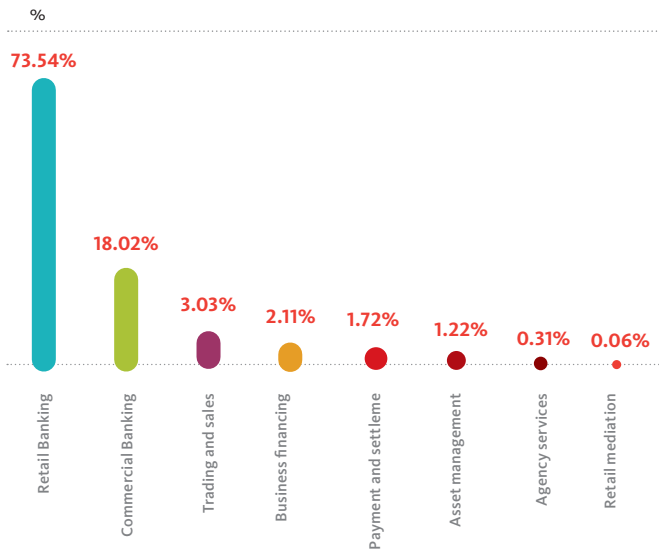


As a supplement to the Management Control area's aggregated information by business unit, Grupo Santander also uses business area information broken down by segment, product, etc. to distribute relevant income among the business lines defined by the CRR.

Any differences in the total figure for relevant income in relation to the Group's published consolidated information are allocated to the business line with the highest regulatory capital consumption.

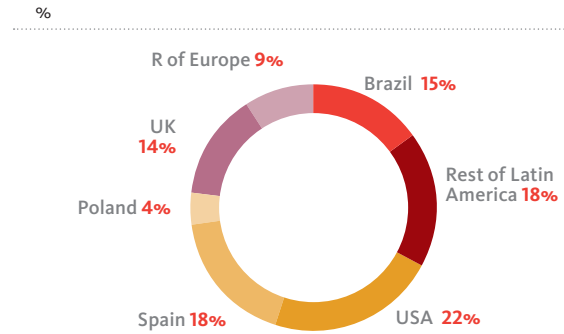
The following chart shows the distribution of capital by business line as of 31st December 2015:

■ Distribution of capital by business line



Shown below is the geographical distribution of capital for operational risk:

■ Capital distribution by operational risk



The chart below shows the 2016-2017 evolution breakdown in capital requirements and RWA for operational risk:

■ **Table 44. Capital requirements for operational risk**
Millions of Euros

	Capital	RWAs
Starting figure (31/12/2015)	5,270	65,875
Application of ASA approach in Brazil	-627	-7,832
Acquisition of business PSA Germany and PSA Austria	12	144
Acquisition of business PSA Netherlands and PSA Benelux	8	96
Acquisition of business PSA Italy	4	52
Acquisition of business PSA Poland	1	12
Exchange rate effect	13	163
Change in business	206	2,574
END FIGURE (31/12/2016)	4,887	61,084

The standardised approach imposes higher capital requirements for financial institutions operating in jurisdictions with high net interest margins, which are often linked to a high sovereign credit spread but not necessarily with increased operational risk. To avoid this undesired effect, EU legislation (Regulation 575/2013/EU) provides for the use of the alternative standardised approach by businesses that meet certain conditions, subject to approval by the European Central Bank. This method uses a normalised indicator which is calculated by multiplying certain balances by 3.5% and thereby providing an average which is more in line with the bank's operational risk.

On 3 February, the European Central Bank authorised the use of the Alternative Standardised Approach for calculation of consolidated capital requirements for operational risk in Banco Santander (Brazil) S.A., constituting the main change in capital requirements during the year.

2.2.3. Other requirements

This chapter incorporates information on the capital buffer requirements and the systemic importance and leverage ratio indicators that apply to Grupo Santander.

2.2.3.1. Total Loss Absorbing Capacity (TLAC) y Minimum Required Eligible Liability (MREL)

In November 2015, the Financial Stability Board (FSB) released the TLAC (Total Loss-Absorbing Capacity) final Term Sheet, which is mandatory for Global Systemically Important Financial Institutions (G-SIIs), in a regulatory milestone of major importance. It requires that banks have sufficient buffer for their eligible liabilities (with the capacity to absorb losses). The goal is that when facing the risk of bankruptcy, the bank is able to recover its solvency without the intervention of public authorities. The FSB established that it will enter into force in 2019 with an implementation timeline of three years. For January 2019, the minimum requirement will be 16% of risk-weighted assets, and for January 2022, 18% of risk-weighted assets and 6.75 % of the leverage exposure. In November 2016, the European Commission released its proposal for a new CRR, which introduces the TLAC framework for systematically important institutions in the capital framework, with the requirement established as falling under Pillar 1.

The standard also requires that this requirement is met at the level of each resolution group, depending on the institution's resolution strategy and in compliance with the viability plans (Living Wills).

Directive 2014/59/EU, known as ("BRRD"), aims at the implementation of the MREL in Europe, with objectives that are similar to the TLAC.

This directive also includes the concept of absorption losses and Minimum Required Eligible Liability (MREL). However, there are differences in the scope of application and with regard to liabilities considered eligible. The MREL applies to all institutions operating in Europe and is not just limited to global systemically important institutions. Unlike TLAC, whose requirement is the same for all global systemically important institutions, the MREL is set by the resolution authority on the basis of a "case-by-case" calibration.

In 2016, the EBA released a report of recommendations on the implementation of the MREL. At year-end 2016, the European Commission released its BRRD proposal, along with the CRR and CRD IV, which details eligible liabilities and other modifications of the MREL, including the introduction of a requirement based on RWA instead of total liabilities as proposed initially, and of a requirement also linked to leverage exposure.

2.2.3.2. Leverage ratios

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

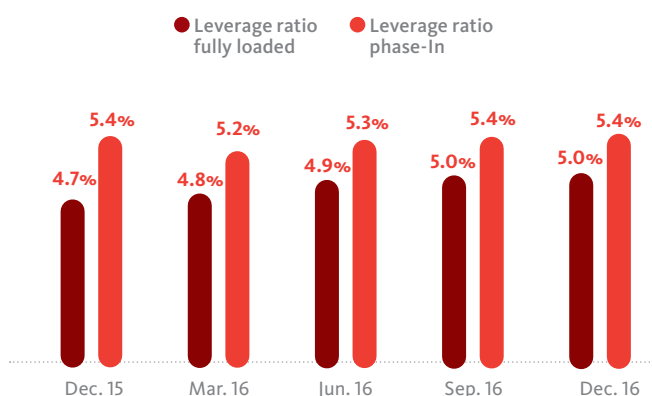
A key novelty of the Basel III agreement is the introduction of a regulatory financial leverage ratio.

The ratio is calculated as the coefficient between Tier1 divided by the leverage exposure. This exposure is calculated as the sum of the following components:

- Asset value, without derivatives and without elements considered as deduction in Tier 1 (for example, the loan balance is included but not goodwill).
- Off balance sheet accounts (primarily, guarantees, non-used credit limits, letters of credit) weighted by the conversion factors of the standard credit risk method.
- Inclusion of the net value of derivatives (gains and losses against a single counterparty are netted, less collateral - provided criteria are met) plus a surcharge for potential future exposure.
- A surcharge for the potential risk of security financing transactions.
- Finally, a surcharge is included for the risk of credit derivatives (CDS) in the uncovered part.

The following tables illustrate the ratios published by the Group since December 2015. They show that the bank's ratio is stable, and with an upward trend.

Phase-in and fully loaded leverage ratio



The leverage ratio is in its final phase of calibration. At the moment, the reference level of 3% has been set, which the Bank exceeds. During this period, there is only the obligation to disclose it to the market.

The requirement that will become mandatory from 1 January 2018 is expected to be established in 2017. Recent publications by the Basel Committee and the EBA coincide in recommending a minimum of 3%.

The leverage ratio of the Group at 31 December 2016 is as follows (figures in millions of euros):

Table 45. Leverage ratio

Millions of Euros

	Fully loaded 31 Dec. 2016	Phase-in 31 Dec. 2016
Tier 1 capital (phase-in)	67,834	73,709
Exposure	1,361,192	1,364,779
Leverage ratio	4.98%	5.40%

2. Capital

The following table describes how the ratio is calculated:

Table 46. Leverage ratio. Breakdown

Millions of Euros

Item	Amounts Consol. Balance Sheet	To be eliminated	To be included	Leverage exposure	Comment
Derivatives	82,498	82,498	30,761	30,761	Replace book value with EAD
Securities financing transactions	51,529		6,713	58,242	A surcharge is added to this operations
Assets deducted in Tier 1	30,632	30,632		-	Eliminated to avoid duplication
Rest of Assets	1,164,093			1,164,093	Included in full
Total Assets	1,328,753	113,131	37,474	1,253,096	
Total Off-Balance-Sheet items	276,934	165,250		111,684	Balances are weighted according to their risk
Total Exposure (denominator)				1,364,779	
Tier 1 (numerator)				73,709	
Leverage Ratio				5,4%	Minimum recommended 3%

The leverage ratio is calculated by the Group every month and presented to the Capital Committee and other governance bodies, thus ensuring adequate monitoring of the risk of excessive leverage at its most restrictive measurement: fully loaded. In addition, estimations are made of the leverage ratio at a three year time horizon under different macroeconomic scenarios, including scenarios of recession.

No significant change occurred in the ratio in 2016. Tier 1 is stable, and leverage exposure is affected by the movement in balance sheet figures caused by business and by fluctuations in exchange rates.

Templates LRSum, LRCom, LRSpl and LRQua are available in the file 4Q16 report available on Grupo Santander's website.



Access file
Q16 report
available on Grupo Santander's website

2.3. Pillar II Economic capital

Economic capital is the necessary capital, in accordance with an internally developed model, to support all the risks of business with a certain level of solvency. In the case of Santander, the solvency level is determined by the long term rating objective of AA-/A+, which means a confidence level of 99.95% (above the regulatory 99.90%) to calculate the necessary capital.

Complementing the regulatory focus, Santander's economic capital model includes in its measurement all the significant risks incurred by the Group in its operations (risk of concentration, structural interest, business, pensions and others beyond the sphere of Pillar 1 regulatory capital). Moreover, economic capital incorporates the diversification impact, which in the case of Grupo Santander is vital, because of its multinational nature and many businesses, in order to determine the global risk and solvency profile.

Economic capital is a key tool for the internal management and development of the Group's strategy, both from the standpoint of assessing solvency, as well as risk management of portfolios and businesses.

From the solvency standpoint, the Group uses, in the context of Basel Pillar II, its economic model for the capital self-assessment process (ICAAP). For this, the business evolution and capital needs are planned under a central scenario and alternative stress scenarios.

The Group is assured in this planning of maintaining its solvency objectives even in adverse scenarios.

The economic capital metrics also enable risk-return objectives to be assessed, setting the prices of operations on a risk basis, evaluating the economic viability of projects, units or lines of business, with the overriding objective of maximising value generation for the shareholder.

As a homogeneous measurement of risk, economic capital can explain the risk distribution throughout the Group, putting in a comparable metric different activities and types of risk.

The economic capital requirement at December 2016 was EUR 72,632 million, which means that the available economic capital of EUR 95,831 million contains capital surplus of EUR 23,199 million.

The table below sets out the available economic capital:

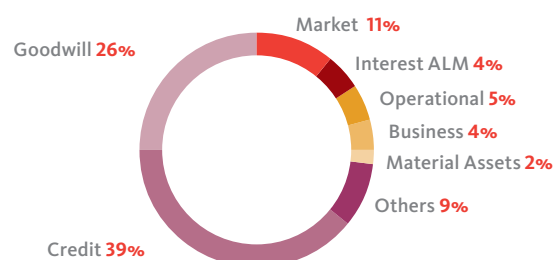
Table 47. Available economic capital

	31 Dec. 2016	31 Dec. 2015
Net capital and issue premium	52,196	52,004
Reserves and Retained earnings	52,967	49,673
Valuation adjustments	(16,116)	(15,448)
Minority interests	6,784	6,148
Available economic capital	95,831	92,377
Economic Capital required	72,632	71,444
Capital surplus	23,199	20,933

The main difference in the regulatory CET₁ comes from the treatment of goodwill and other intangibles and DTAs, which we consider as another capital requirement instead of a deduction from available capital.

The distribution of economic capital by main business areas in December 2016 is reflected as follows

Distribution of economic capital needs



The table below sets out Grupo Santander's distribution of economic capital needs by geographic areas, and types of risk in these areas, at the end of 2016:

Figures in millions of Euros		Grupo Santander Total requirements: 72,632				
Corporate centre 26,561	Continental Europe 18,129	UK 7,524	Latin America 13,121	USA 7,297		
Total risks:	Total risks:	Total risks:	Total risks:	Total risks:	Total risks:	
Goodwill: 71%	Credit: 58%	Credit: 59%	Credit: 61%	Credit: 66%	Credit: 66%	
Market: 18%	Market: 11%	Structural (pensions): 22%	Structural (interest): 11%	Operational: 8%	Operational: 8%	
DTAs: 9%	Interest: 8%	Operational: 8%	Business: 9%	Material asset: 8%	Material asset: 8%	
Other: 2%	Operacional: 7%	Business: 5%	DTAs: 7%	Intangible assets: 7%	Intangible assets: 7%	
	Other: 16%	Other: 6%	Other: 12%	Business: 5%	Business: 5%	
				Other: 6%	Other: 6%	

2. Capital

The distribution of economic capital among the main business areas reflects the diversified nature of the Group's business and risk. Continental Europe represents 39% of the capital, Latin America including Brazil 28%, the UK 17% and the US 16%.

Outside the operating areas, the corporate centre assumes, principally, the risk from goodwill and that arising from exposure to structural exchange rate risk (risk arising from maintaining stakes in subsidiaries abroad denominated in currencies other than the Euro).

The benefit of diversification contemplated in the economic capital model, including both the intra-risk diversification (equivalent to geographic) as well as inter-risks, amounted to approximately 30%.

2.3.1. Rorac and value creation

Grupo Santander has been using Rorac methodology in its credit risk management since 1993 in order to:

- Calculate the consumption of economic capital and its returns for the Group's business units, as well as segments, portfolios and customers, in order to facilitate optimum assignment of economic capital.
- Budgeting of the capital consumption and Rorac of the Group's business units.
- Analysis and price fixing in the decision-taking process for operations (admission) and clients (monitoring).

Rorac methodology compares, on a like-for-like basis, the return on operations, customers, portfolios and businesses, identifying those that obtain a risk-adjusted return higher than the cost of the Group's capital. This aligns risk and business management and maximises the creation of value, the ultimate aim of the Group's senior management.

The Group regularly assesses the level and evolution of value creation (VC) and the risk-adjusted return (Rorac) of the Group and its main business units. The VC is the profit generated above the economic capital (EC) cost employed, and is calculated as follows:

VC = profit – (average EC x cost of capital)

The profit used is obtained by making the necessary adjustments to the accounting profit so as to extract just the recurrent profit that each unit generates in the exercise of its activity.

The minimum return on capital that an operation must attain is determined by the cost of capital, which is the minimum compensation required by shareholders. It is calculated objectively by adding the premium that shareholders demand for investing in the Group to the risk-free return. This premium depends essentially on the degree of volatility in the price of Grupo Santander's share in relation to the market's performance. The cost of capital in 2015 applied to the Group's various units was XX%. As well as reviewing every year the cost of the Group's capital, in a parallel way and for the purposes of internal management, the cost of capital for each business unit is also estimated, taking into account the specific features of each market. Thus, in accordance with the philosophy of subsidiaries autonomous in capital and liquidity, an appraisal is conducted to ascertain whether each business is capable of generating value individually. The cost of capital for the Group in 2016 was 9.37% (against 9.31% of the previous year).

In the internal management of the Group, in addition to the annual revision of the cost of capital, a cost of capital is estimated for each unit, taking into consideration specific characteristics of each market, under the philosophy of autonomous subsidiaries in capital and liquid, to assess if each business is able to generate value individually.

A positive return from an operation or portfolio means it is contributing to the Group's profits, but it is only creating value for the shareholder when that return exceeds the cost of capital.

The creation of value and the Rorac for the Group's main business areas are shown below:

Table 48. Rorac and value creation

Thousands of Euros

Main segments	31 Dec. 2016		31 Dec. 2015	
	Rorac	Value creation	Rorac	Value creation
Continental Europe	17.3%	1,426	13.9%	883
UK	20.2%	825	22.5%	1,065
Latin America	33.1%	2,879	33.8%	2,746
USA	9.2%	-13	13.4%	308
TOTAL BUSINESS UNITS	20.7%	5,117	20.2%	5,001

2.3.2. Capital planning and stress tests

Capital stress tests have become particularly important as a tool for dynamic assessment of the risks and solvency of banks.

It is a forward-looking assessment, based on macroeconomic and idiosyncratic scenarios, which have low probability but are plausible. It is therefore necessary to have robust planning models, capable of conveying the impact defined in projected scenarios to the items that influence a bank's solvency.

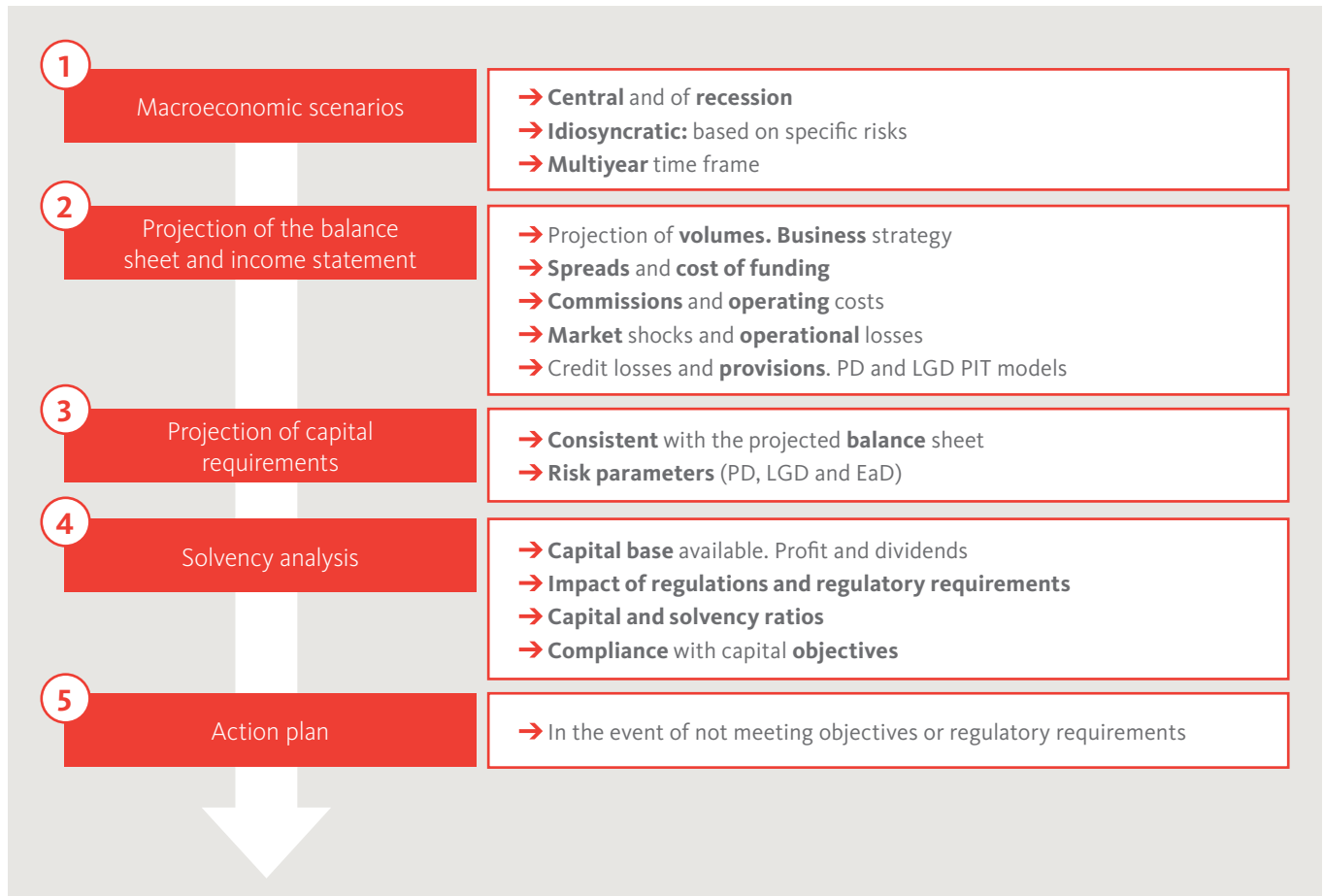
The ultimate objective of the stress exercises is to carry out a full assessment of the risks and solvency of banks, which enables possible capital requirements to be calculated in the event they are needed because of banks' failure to meet the capital objectives set, both regulatory and internally.

Internally, Grupo Santander has defined a process of capital stress and planning, not only to respond to the various regulatory exercises, but also as a key tool of the bank's management and strategy.

The goal of the internal stress and capital planning process is to ensure sufficient current and future capital, even in the event of adverse though plausible economic scenarios. Starting from the Group's initial situation (defined by its financial statements, capital base, risk parameters and regulatory ratios), the envisaged results are estimated for different business environments (including severe recessions and "normal" macroeconomic situations) and the Group's solvency ratios are obtained for a period which is usually three years.

This process provides a comprehensive view of the Group for the time frame analysed and in each of the scenarios defined. It incorporates the metrics of regulatory capital, economic capital and available capital.

The structure of the process is shown below:



The structure helps achieve the ultimate objective of capital planning, by making it an element of strategic importance for the Group that:

- Ensures the solvency of current and future capital, even in adverse economic scenarios.
- Enables comprehensive management of capital and incorporates an analysis of the specific impacts, facilitating their integration into the Group's strategic planning.
- Enables capital to be used more efficiently.
- Supports the design of the Group's capital management strategy.
- Facilitates communication with the market and supervisors.

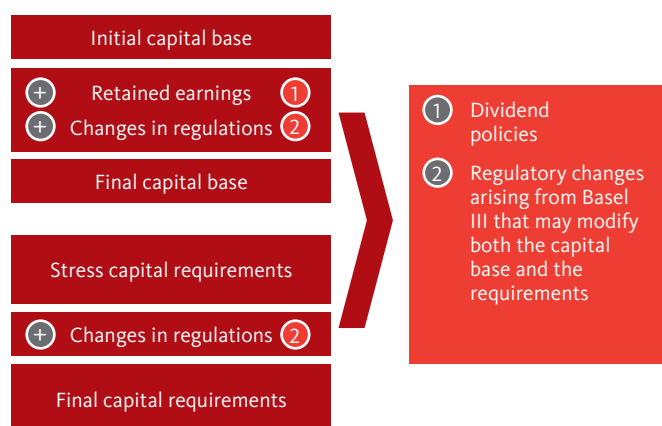
In addition, the whole process is carried out with the maximum involvement of senior management and close supervision, within a framework that ensures that governance is appropriate and that all its components are subject to adequate levels of challenge, review and analysis.

One of the key factors in capital planning and stress analysis exercises, due to their particular importance in forecasting the income statement under defined stress scenarios, consists of calculating the provisions needed in these scenarios, mainly those to cover losses in the credit portfolio. Specifically, Grupo Santander uses a methodology that ensures that there are provisions at all times to cover all the projected credit losses for its internal models of expected loss, based on the parameters of exposure at default (EAD), probability of default (PD) and loss given default (LGD).

This methodology is widely accepted and is similar to that used in the EBA stress exercises in 2016, its previous exercises in 2011 and 2014, and the Spanish banks' stress test in 2012.

Lastly, the process of capital planning and stress analysis culminates with the analysis of solvency in the various scenarios designed, over a defined timeframe. The objective is to assess the sufficiency of capital and ensure the Group fulfils both the capital objectives defined internally in addition to all the regulatory requirements.

Quantification of capital sufficiency



In the event the capital objectives are not met, an action plan will be defined with the measures required to attain the minimum capital required. These measures are analysed and quantified as part of the internal exercises, although it is not necessary to implement them because Santander exceeds the minimum capital thresholds.

This internal process of capital stress and planning is conducted transversally throughout Grupo Santander, not only at the consolidated level, but also locally in the Group's units. These units use the capital stress and planning process as an internal management tool and to meet their local regulatory requirements.

Throughout the economic crisis of 2008 Grupo Santander was subjected to six stress tests, which demonstrated its strength and solvency in the most extreme and severe macroeconomic scenarios. All the tests demonstrated that, mainly thanks to the Group's business model and geographic diversification, Banco Santander would continue to generate profits for its shareholders and comply with the most demanding regulatory requirements.

In the first (CEBS 2010), the Group showed the lowest impact on its solvency ratio, with the exception of banks that benefited from not distributing a dividend. In the second test, carried out by the EBA in 2011, Santander was not only one of the small group of banks that improved their solvency in the stress scenario, but it also earned the highest profits.

In the stress exercises conducted by Oliver Wyman on Spanish banks in 2012 (top-down and subsequently bottom-up), Banco Santander again showed its strength to by braving the most extreme economic scenarios with full solvency. It was the only bank that improved its core capital ratio, with a surplus of more than EUR 25,000 million over the minimum requirement.

Lastly, in the recent stress test carried out in 2014 by the European Central Bank, in conjunction with the European Banking Authority, Grupo Santander was the bank with the smallest impact on the adverse scenario among its international peers, with a capital surplus of approximately EUR 20,000 million over the minimum requirement.

In July the EBA published the results of stress tests on the EU's 51 major banks. Unlike 2014, a minimum level of capital was not established, and the results were simply used as another variable to enable the European Central Bank to determine the minimum capital requirements for each bank (under the SREP Supervisory Review and Evaluation Process). Even though the initial adverse scenario was more stringent than in previous years, and assumptions entailed a higher degree of penalisation in terms of operational, conduct and market risk, it was Grupo Santander that destroyed the least capital among its peers. The fully loaded CET1 capital ratio fell by 199 basis points (as opposed to the average of -335 bp). The results of the exercises proved that Grupo Santander's business model based on retail and commercial banking and geographic diversification renders it sturdier in terms of addressing worst-case international crisis scenarios.

As already mentioned, in addition to regulatory stress exercises, since 2008 Grupo Santander has conducted annual internal stress tests within its capital self-assessment process (Pillar II). All of them showed, in the same way, Grupo Santander's capacity to meet the most difficult scenarios, both globally and in the main regions in which it operates.

2016 EBA transparency exercise

In 2016 the European Banking Authority carried out its transparency exercise, publishing information on risk-weighted assets, capital positions, solvency and details of sovereign positions in December 2015 and June 2016, for 131 banks in 24 European countries. The purpose of the exercise was to promote transparency and a greater understanding of capital positions and solvency of European banks, thereby fostering market discipline and financial stability in the Union. The results determine the comfortable capital position and solvency of Grupo Santander, which leads its peers in many of the key metrics.

For the first time, this report was issued alongside the December 2016 report on European Union banking risks and vulnerabilities. The overall conclusion of the report was that banks have shored up their capital positions and that, in general terms, the two major challenges facing the sector are high default rates and low returns. Operational risk is also moving increasingly to the fore, and finance markets are still showing high volatility.

2.3.3. 2016 EBA/ ECB stress test

As mentioned above, in July the EBA published the results of stress tests on the EU's 51 major banks.

On this occasion, no minimum capital threshold was established for the year, and the final results were simply used as another variable to enable the European Central Bank to determine the minimum capital requirements for each bank (under the SREP Supervisory Review and Evaluation Process).

The stress test assumed two macroeconomic scenarios (baseline scenario and adverse scenario), starting with the banks' balance sheet positions at year-end 2015, and finishing three years later in 2018. The results are not comparable to the 2014 test, since the exercise operates a more stringent scenario with different assumptions (greater penalisation for market risk and conduct risk, restrictions on income statement projections etc.).

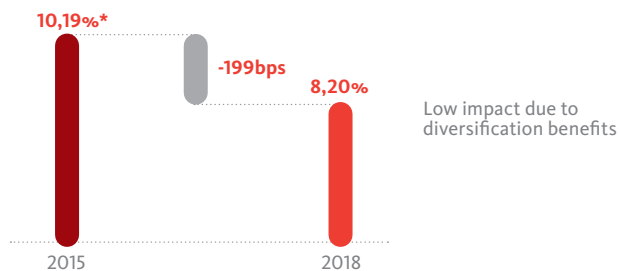
The adverse scenario, with a very low likelihood of occurrence, projects a severe downturn in the macroeconomic situation and the situation of finance markets in Europe and also in other countries in

Note 1. Competitors: BBVA, BNP, Soc Gen, C. Agricole, Deutsche Bank, Commerzbank, Unicredit, Intensa Sanpaolo, ING, Nordea, Lloyds, HSBC, Barclays and RBS.

which Grupo Santander operates. For example, a cumulative 3% fall in GDP is assumed for the entire Eurozone, along with plunges on securities markets (-30%), falling house prices (-11%) and rising public debt spreads.

In the adverse scenario, Grupo Santander is the bank that destroys the least capital among its peers. The fully loaded CET1 capital ratio fell by 199 basis points (as opposed to the average of -335 bp) from 10.2% in 2015 to 8.2% in 2018.

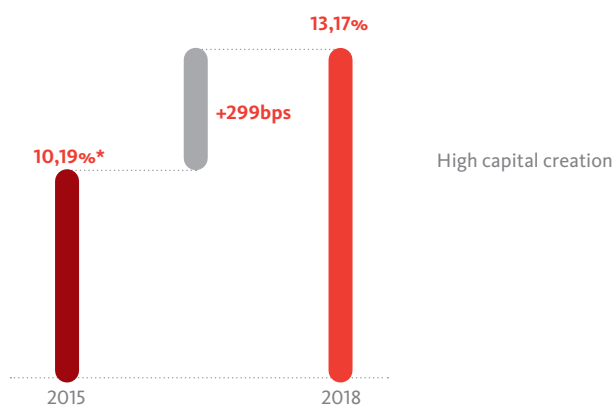
Adverse scenario fully loaded ratio



* Considering alternative standard method in operational risk approved in Santander Brazil.

In the baseline scenario, Grupo Santander is the most capital generating entity among its peers.

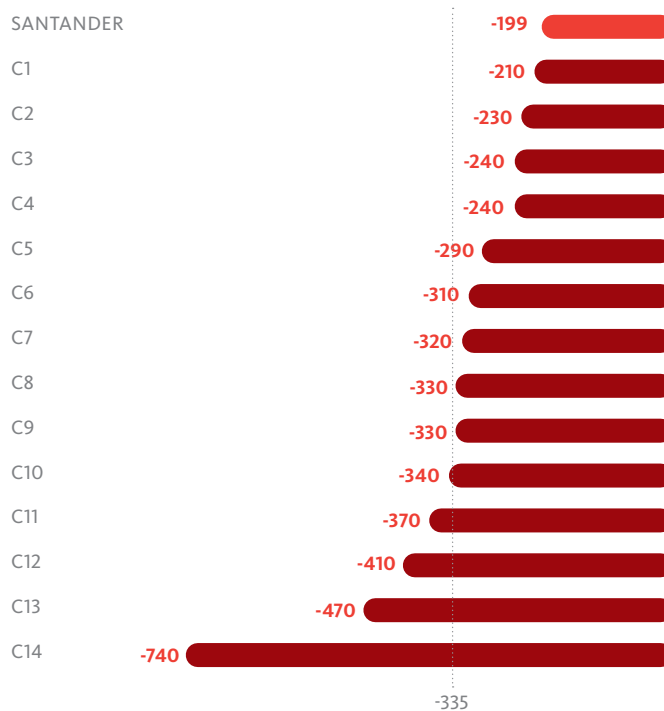
Baseline scenario fully loaded ratio



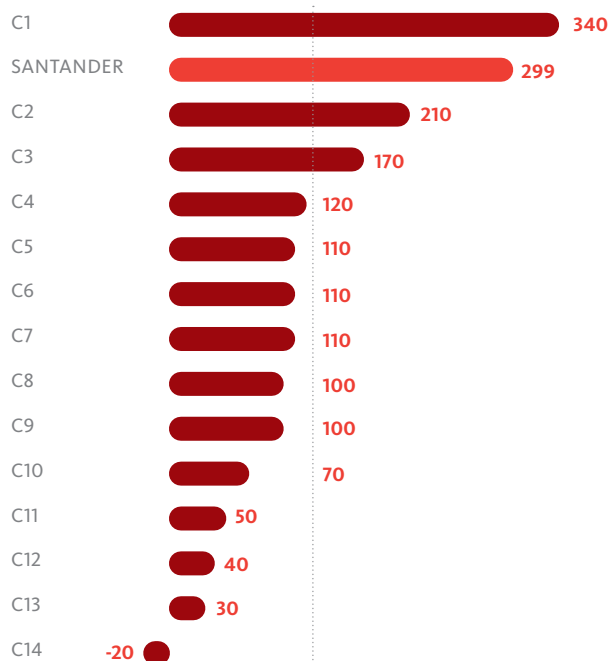
* Considering alternative standard method in operational risk approved in Santander Brazil.

In short, Grupo Santander shows greater resilience than its competitors with strong recurring generation of income and profits, thanks to its retail and commercial banking model and unique geographic diversification.

CET1 2015 vs. adverse scenario variation (b.p.)



CET1 2015 vs. baseline scenario variation (b.p.)



2.4. Recovery & resolution plans

2016 saw the seventh version of the corporate viability plan, the major portion of which addresses measures in place to enable the Bank to resolve a situation of extreme crisis unassisted. The plan was drawn up in accordance with the regulations applicable in the European Union². The plan also contemplates the non-binding recommendations in this area issued by international bodies such as the Financial Stability Board - FSB³.

Like previous versions of the plan between 2010 and 2015, this version was presented to the competent authorities (to the ECB for the second time in September, although in previous years it had only been submitted to the Bank of Spain) for assessment during the last quarter of 2016.

It is composed of the corporate plan (for Banco Santander, S.A.) and individual plans for the largest local units (the United Kingdom, Brazil, Mexico, the United States, Germany, Argentina, Chile, Poland and Portugal), thereby fulfilling the commitment undertaken by the Bank vis-à-vis the competent authorities in 2010. Some mention should be made of the EU Member States in this list where, irrespective of their obligation to form part of the corporate plan, full implementation is also the result of regulatory requirements arising from the transposition into national law of Directive 2014/59/EU ("EU Crisis Management Directive").

The plan's two primary objectives are firstly to ascertain the feasibility, effectiveness and credibility of the recovery measures it contains, and secondly the suitability of specific indicators and the defined limits they must attain for possible activation of the governance process stipulated in the plan for various stress scenarios.

To this end a number of different macroeconomic and/or financial stress scenarios were drawn up in the corporate plan, contemplating a range of scenarios of severe macroeconomic and financial stress relevant to the institution, as per Article 5(6) of Directive 2014/59/EU. The scenarios, which are contemplated in the regulations applicable, refer to severe stress scenarios that could affect Group viability. The plan was also drawn up on the premise that, once deployed, it would not assume any extraordinary public financial support, as per Article 5(3) of Directive 2014/59/EU.

It should also be pointed out that the plan must not be interpreted as an instrument in isolation from the other structural mechanisms established to measure, manage and supervise the risk undertaken by the Group.

The Group's recovery plan consists, among others, of the following tools: the risk appetite framework ("RAF"), the risk appetite statement ("RAS"), the risk identification assessment process ("RIA"), the business continuity management system ("BCMS") and the internal capital adequacy assessment process and the internal

liquidity adequacy assessment process ("ICAAP" and "ILAAP" respectively).

Work continued in 2016 to adapt the structure and contents of the plan to international directives. A number of improvements were also made, as follows: (i) in the governance section (chiefly a more detailed description of the framework for management of special situations, subsequently explained, and also of the structure of viability indicators), (ii) in the section addressing scenarios a stress scenario was added to introduce a collapse of liquidity indicators and a multi-local systemic crisis affecting the Group's two largest units, and finally (iii) greater granularity and details were added to the section addressing strategic analysis and measurements.

The Group's senior management is directly involved in regular planning and monitoring of the contents of plans through specific technical committee meetings, and monitoring at institutional level, to ensure that the contents and structure of the documents adapt to local and international crisis management regulations, where there have been continuous developments in recent years.

The Board of Directors of Banco Santander S.A. is responsible for approving the corporate plan, although its contents and relevant data may first be presented and discussed on the Bank's primary management and control committees (risk supervision committee, regulation and compliance committee, global ALCO committee and capital committee). The individual plans are also approved by local bodies, at all times in coordination with the Group, since these plans must form part of the corporate plan.

The main conclusions drawn from examination of the contents of the 2016 corporate plan confirm that:

- There are no material interdependences between the Group's regions.
- The measures in place guarantee a broad recovery capacity for all the scenarios contemplated in the plan. The Group's geographic diversification model has proved to be an advantage from the point of view of viability.
- Each subsidiary has sufficient recovery capacity to exit a recovery situation unassisted, and this boosts the resilience of the Group model based on subsidiaries that are independent in terms of capital and liquidity.
- If any of the subsidiaries were to fail, none of these events could be considered sufficiently important to constitute a breach of the worst-case scenarios established for viability indicators which would lead to deployment of the corporate viability plan.

Thus it may be inferred that the Group's model and strategy of geographic diversification, based on a model of subsidiaries that are independent in terms of capital and liquidity, is still resilient from the

Note 2. Directive 2014/59/EU ("EU crisis management directive"); current EBA regulation on recovery plans (EBA/RTS/2014/11; EBA/GL/2014/06; EBA/GL/2015/02); EBA recommendations to the Commission on key lines of business and critical functions (EBA/op/2015/05); EBA regulation pending approval (EBA/CP/2015/01 on ITS templates for resolution plans); EBA regulation not directly related to recovery, but with significant implications in this field (EBA/GL/2015/03 on triggers for use of early intervention measures) and local Spanish regulations: Law 11/2015 on recovery and resolution for credit institutions and investment services companies, and Royal Decree 1012/2015 implementing this Law.

Note 3. FSB Key attributes of effective resolution regimes for financial institutions (15 October 2014, update of the first publication in October 2011), "Guidelines on the identification of critical functions and critical shared services (15 July 2013) and "Guidance on recovery triggers and stress scenarios (15 July 2013).

point of view of viability. In 2017 the Group intends to move its plans forward in keeping with the recommendations of regulators, and also with the best practices observed in the industry in terms of viability plans.

In connection with governance during stress scenarios in the Group's viability plans, as part of the initiatives in the Advanced Risk Management programme (ARM), the framework for management of special situations was officially approved and implemented in the corporation and the Group's main regions in 2016. The framework and the documents implementing it i) establish common principles for the identification, escalation and management of any events which could entail a serious risk for Grupo Santander or its companies and which, if they materialised, could affect its sturdiness, reputation, business activities, liquidity, solvency and even its present or future viability, (ii) define basic roles and responsibilities in this regard and identify the necessary components of planning and key processes and (iii) lay down the essential details of governance, striving in any case to guarantee coordinated action by Group companies and, where necessary, support from the Corporation in its capacity as parent of Grupo Santander.

This is a holistic framework applicable to any type of special events or situations (e.g. financial and non-financial, systemic or idiosyncratic, with slow or rapid development) entailing exceptional situations, situations that differ from what is expected or what ought to emerge from ordinary management of business, and could compromise activities or give rise to a serious downturn in the financial position of the company or of the Group because they entail a major deviation from risk appetite and the limits defined.

With regard to so-called resolution plans, the competent authorities forming part of the Crisis Management Group (CMG) reached consensus on the strategy to be deployed for a Group resolution which, in due consideration of the legal and business structure operated by Santander, corresponds to the so-called "Multiple Point of Entry (MPE)"; they signed the resolution Cooperation Agreement or COAG; and they drew up the first resolution plans. The 2016 corporate resolution plan was analysed at a meeting of the CMG on 7 November 2016.

By way of an exception to the above, resolution plans in the United States are drawn up by the companies individually. In December 2015 the Group submitted its third version of local resolution plans, although the FRB and the FDIC announced that plans were not to be submitted for 2016, as they were attaching remarks to the previous plans and starting work on guidelines for plans to be submitted in December 2017.

The Group continues to work alongside the competent authorities to draw up its resolution plans, supplying all the detailed information required by the authorities, which are generally responsible for producing the plans. The Group has also made further progress on projects to boost resolvability. The measures include schemes to guarantee operational continuity in resolution situations. In this regard: i) in November 2016 Banco Santander S.A. joined the ISDA protocol for the settlement of derivatives in resolution situations, ii) an analysis was performed of the market infrastructures to which the Group is connected, with an assessment of their criticality and continuity in terms of providing these services in the event of resolution, iii) operational continuity clauses in contracts with internal suppliers were reinforced and iv) further progress was made to automate the information required by the supervising authority.

- 81. 3.1. General aspects
- 81. 3.2. Distribution of exposures
- 91. 3.3. Internal rating systems
- 92. 3.4. Rating assignment and parameter estimation process
- 104. 3.5. Uses of the internal parameter estimates
- 104. 3.6. Recognition of credit risk mitigation
- 104. 3.7. Control of internal rating systems
 - 105 3.7.1. Model Risk
 - 107 3.7.2. Internal Audit
- 109. 3.8. Impairment losses: influencing factors and comparative analysis
- 111. 3.9. Backtesting of IRB parameters
 - 111 3.9.1. PD backtest
 - 128 3.9.2. EAD Backtest
 - 132 3.9.3. Backtest of Expected Loss and LGD (Santander Spain)
- 134. 3.10. Counterparty risk
- 141. 3.11. Credit risk mitigation techniques
 - 141 3.11.1. Netting policies and processes
 - 141 3.11.2. Collateral management and valuation policies and processes
 - 143 3.11.3. Personal guarantees and credit derivatives
 - 144 3.11.4. Hedged exposure by type of guarantee
 - 144 3.11.5. Central counterparty exposure



3. Credit risk

Grupo Santander applies on forward-looking management of all risks in a robust control environment, based on pillars aligned with Grupo Santander's strategy and business model, thus ensuring maintenance of the risk profile within the levels set by risk appetite and other limits.

For further details on policies and objectives of risk management (CRR article 435) see chapters 3 and 5, sections A and B of the Annual Report.



For further details regarding credit risk, please refer to **chapters 3 and 5, sections A and B, from the Annual Report.**

3.1. General aspects

Credit risk arises from the possibility of losses stemming from the failure of clients or counterparties to meet their financial obligations with Grupo Santander.

At Grupo Santander, credit risk management is based on identifying, analysing, controlling and deciding on the risks incurred by Grupo Santander in its operations, ensuring the conjunction of the business plan, the credit policy on the basis of the risk appetite and of the necessary resources to achieve it. The business areas, senior management and the risk areas are all involved in the credit risk cycle.

Grupo Santander's profile is mainly retail, with credit risk diversified among the principal geographical areas in which it operates.



For further details regarding general aspects of credit risk, please refer to **chapter 5 section D1 of the Annual Report.**

3.2. Distribution of exposures

This section contains information on Grupo Santander's exposures to credit and dilution risk, broken down as follows:

- Regulatory capital calculation approach
- Exposure category
- Geographical area
- Business sector
- Residual maturity

It also contains information on defaulted exposures, impairment loss allowances, and provisions for contingent liabilities and commitments. The amounts shown in the tables in this section include the amounts for counterparty credit risk.

3. Credit risk

Table 49. Exposures after value adjustments and impairments (CR1-A)
Thousands of Euros

	Gross carrying values of						Net values
	Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period	
IRB approach							
Central governments or central banks	-	1,971,086	-	523	-	-351	1,970,563
Institutions	47,420	46,043,021	716	19,150	44	-694	46,070,531
Corporates	12,597,888	250,070,333	4,779,274	1,935,186	2,438,257	-3,135,443	253,515,505
Of Which: Specialised Lending	933,294	22,096,748	468,141	83,514	166,918	-292,577	22,311,469
Of Which: SME	1,915,423	26,895,008	732,737	156,576	562,093	-1,582,545	27,359,025
Retail	7,909,477	323,822,811	2,692,895	899,053	1,134,240	-791,026	327,006,101
Secured by real estate property	6,577,750	257,291,784	1,840,434	354,990	308,324	-391,406	261,365,786
SME	506,463	1,732,889	166,411	14,265	38,033	-81,465	2,020,642
Non-SME	6,071,287	255,558,895	1,674,022	340,725	270,291	-309,941	259,345,144
Qualifying Revolving	102,230	19,423,584	59,139	72,899	82,217	-50,811	19,311,559
Other Retail	1,229,497	47,107,443	793,322	471,164	743,699	-348,808	46,328,755
SME	347,741	7,523,822	193,937	85,353	238,166	-65,521	7,354,107
Non-SME	881,756	39,583,621	599,386	385,811	505,533	-283,287	38,974,648
Equity	3,943	7,645,419	85,309	-	-	44,583	7,564,053
Total IRB approach	20,558,729	629,552,670	7,558,194	2,853,912	3,572,541	-3,882,931	636,126,752
Central governments or central banks							
Regional governments or local authorities	3,585	180,217,028	2,770	-	-	-	180,214,258
Public sector entities	452	9,122,630	5,811	-	1	-	9,116,819
Multilateral Development Banks	2	11,083,969	-	-	72	-	11,083,969
International Organisations	-	1,606,773	-	-	-	-	1,606,773
Institutions	-	-	-	-	-	-	-
Corporates	17,608	46,470,255	-	147,382	1,409	4,849	46,470,255
of which: SME	4,285,663	104,526,895	16,015	1,049,712	2,066,817	487,504	104,510,880
Retail	1,208,643	13,817,599	976	154,986	431,568	65,765	13,816,624
of which: SME	7,571,738	204,017,535	6,602	3,807,679	7,837,996	1,812,493	204,010,933
Secured by mortgages on immovable property	1,857,868	27,320,357	1,350	220,788	637,536	144,624	27,319,007
of which: SME	3,908,136	99,432,091	140	534,341	298,763	80,568	99,431,951
Items associated with particularly high risk	394,718	14,296,549	1	-	11,483	12,309	14,296,547
Covered bonds	-	1,338,867	9,046	-	-	-	1,329,821
Claims on institutions and corporates with a short-term credit assessment	-	4,289,552	-	-	-	-	4,289,552
Collective investments undertakings (CIU)	-	979	-	-	-	-	979
Equity exposures	-	451,691	-	-	-	-	451,691
Other exposures	-	2,463,094	-	-	-	-	2,463,094
Total Exposures in default (STD Approach only)	236,042	104,729,959	10,142,683	1,065,468	26,453	26,453	94,587,276
Total Standardised approach	16,023,225*	-	8,766,354	-	-	-	7,256,871
Total	16,023,225	769,751,318	18,949,421	6,604,583	10,231,512	2,411,867	766,825,122
TOTAL	36,581,955	1,399,303,988	26,507,614	9,458,495	13,804,053	-1,471,063	1,402,951,874

Notes:

Net values calculation: **IRB Net Values** = Defaulted exposures + Non-defaulted exposures - Specific credit risk adjustment - General credit risk adjustment - Accumulated write-offs

STD Net Values = Non-defaulted exposures - Specific credit risk adjustment

STD Total Net Values for defaulted exposures = Defaulted exposures - Specific credit risk adjustment.

* The row of Total Exposures in default (STD approach only) is the sumatory of all the defaulted exposures and is included to show the defaulted exposures' Specific credit risk adjustment.

Table 50. Credit risk exposure and CRM effects (Standardised approach) (CR4)

Thousands of Euros

	31 Dec. 2016					
	Exposures before CCF and CRM		Exposures post CCF and CRM		Exposures post CCF and CRM	
	On-balance-sheet amount	Off-balance-sheet amount	On-balance-sheet amount	Off-balance-sheet amount	RWAs	RWA density
Central governments or central banks	169,576,081	10,638,177	184,469,309	9,175,418	5,196,539	3%
Regional governments or local authorities	9,087,251	29,568	23,689,698	5,314	466,087	2%
Public sector entities	11,020,737	63,232	10,197,752	21,286	286,844	3%
Multilateral Development Banks	1,591,035	15,738	2,010,429	15,738	878	-%
International Organisations	-	-	-	-	-	-%
Institutions	26,607,822	19,862,433	25,454,169	14,711,485	7,639,605	19%
Corporates	70,313,460	34,197,420	66,414,701	13,639,171	77,356,553	97%
Retail	130,154,688	73,856,245	125,608,856	2,144,687	91,883,602	72%
Secured by mortgages on immovable property	90,154,788	9,277,163	89,922,193	1,102,130	39,190,746	43%
Exposures in default	7,037,951	218,920	6,999,146	218,773	7,945,936	110%
Items associated with particularly high risk	1,329,821	-	1,329,821	-	1,994,731	150%
Covered bonds	4,289,552	-	4,289,552	-	428,955	10%
Claims on institutions and corporates with a short-term credit assessment	979	-	650,461	-	325,720	50%
Collective investments undertakings (CIU)	-	451,691	328,531	67,359	105,785	27%
Equity exposures	2,463,094	-	2,463,094	-	5,151,927	209%
Other exposures	80,111,711	14,475,565	80,854,206	2,657,353	55,178,564	66%
TOTAL STANDARDISED APPROACH	603,738,970	163,086,152	624,681,918	43,758,713	293,152,474	44%

Table 50. Credit risk exposure and CRM effects (IRB approach)

Thousands of Euros

	31 Dec. 2016					
	Exposures before CCF and CRM		Exposures post CCF and CRM		Exposures post CCF and CRM	
	On-balance-sheet amount	Off-balance-sheet amount	On-balance-sheet amount	Off-balance-sheet amount	RWAs	RWA density
Central governments or central banks	1,820,244	150,842	1,024,477	120,217	410,020	36%
Institutions	41,676,420	4,414,020	28,843,443	3,433,928	7,852,716	24%
Corporates	166,557,525	96,110,697	159,071,425	35,294,175	109,773,976	56%
Of Which: Specialised Lending	20,539,933	2,424,193	21,080,371	1,073,313	18,325,341	83%
Of Which: SME	23,634,599	5,175,832	23,586,371	1,983,881	15,462,258	60%
Retail	298,377,054	33,355,233	299,912,180	20,612,347	70,446,471	22%
Secured by real estate property	251,095,996	12,773,537	252,830,575	8,674,836	42,970,074	16%
SME	2,219,218	20,134	2,212,016	6,130	732,324	33%
Non-SME	248,876,778	12,753,403	250,618,559	8,668,706	42,237,750	16%
Qualifying Revolving	2,477,719	17,048,094	2,509,237	9,905,664	3,592,026	29%
Other Retail	44,803,339	3,533,603	44,572,368	2,031,848	23,884,371	51%
SME	6,023,030	1,848,533	5,801,178	948,632	2,903,528	43%
Non-SME	38,780,309	1,685,070	38,771,190	1,083,216	20,980,843	53%
Equity	7,649,362	-	7,649,362	-	16,346,474	214%
TOTAL IRB APPROACH	516,080,606	134,030,793	496,500,888	59,460,667	204,829,657	37%

3. Credit risk

Table 51. Average exposure value (CRB-B)
Thousands of Euros

	Net exposure at the end of the period	Average net exposure over the period
Central governments or central banks	1,970,563	2,275,219
Institutions	46,070,531	48,757,923
Corporates	253,515,505	247,588,730
Of Which: Specialised Lending	22,311,469	23,264,852
Of Which: SME	27,359,025	29,542,767
Retail	327,006,101	333,895,053
Secured by real estate property	261,365,786	268,259,540
SME	2,020,642	2,154,160
Non-SME	259,345,144	266,105,380
Qualifying Revolving	19,311,559	18,946,255
Other Retail	46,328,755	46,689,258
SME	7,354,107	7,146,257
Non-SME	38,974,648	39,543,001
Equity	7,564,053	6,685,357
Total IRB approach	636,126,752	639,202,281
Central governments or central banks	180,214,258	166,672,942
Regional governments or local authorities	9,116,819	3,239,960
Public sector entities	11,083,969	9,672,632
Multilateral Development Banks	1,606,773	1,680,942
International Organisations	-	75
Institutions	46,470,255	47,596,369
Corporates	104,510,880	98,979,161
of which: SME	13,816,624	13,305,495
Retail	204,010,933	194,080,910
of which: SME	27,319,007	24,511,261
Secured by mortgages on immovable property	99,431,951	97,516,471
of which: SME	14,296,547	13,466,779
Exposures in default	7,256,871	7,210,476
Items associated with particularly high risk	1,329,821	394,657
Covered bonds	4,289,552	4,204,353
Claims on institutions and corporates with a short-term credit assessment	979	23,003
Collective investments undertakings (CIU)	451,691	860,040
Equity exposures	2,463,094	3,233,459
Other exposures	94,587,276	88,640,614
Total Standardised approach	766,825,122	724,006,065
TOTAL	1,402,951,874	1,363,208,346

The Group's average EAD increased by 14.6%, mainly due to the growth of exposure in the categories of institutions, retailers, companies and other exposures under the standard method and to the increase of the EAD in the corporate segments under the IRB method. The following graph shows the distribution, by geographical area, of Grupo Santander's exposure to credit and dilution risk.

The chart illustrates Grupo Santander's diversification and strong presence in three markets: Spain, United Kingdom and Brazil. Grupo Santander also has a significant presence in other areas, including Continental Europe (excluding Spain), Latin America (not including Brazil) and the United States.

Table 52. Exposures by geographical area (CRB-C)
Thousands of Euros

	Net carrying values							
	Spain	UK	Continental Europe	Brazil	LatAm exBrazil	EEUU	Rest of world	Total
Central governments or central banks	1,693,309		6,650			271,127		1,971,086
Institutions	25,098,663	9,269,620	4,284,892		2,588,989	4,673,408	174,869	46,090,441
Corporates	117,593,741	43,576,928	32,415,246	26,367,310	20,205,220	22,378,125	131,651	262,668,221
Retail	80,591,889	203,247,112	47,857,090			36,198		331,732,288
Equity	6,447,881	180,378		973,179	47,924			7,649,362
Total IRB approach	231,425,483	256,274,038	84,563,877	27,340,489	22,842,133	27,358,858	306,520	650,111,399
Central governments or central banks	42,709,442	32,283,235	23,590,054	50,216,238	22,111,915	8,965,357	340,787	180,217,028
Regional governments or local authorities	7,896,996	228,467	427,128	181,145	369,981	18,739	175	9,122,630
Public sector entities	-	-	1,553,924	929,627	329,192	8,271,226	-	11,083,969
Multilateral Development Banks	4,207	1,582,437	15,738	-	4,390	-	-	1,606,773
International Organisations	-	-	-	-	-	-	-	-
Institutions	8,593,410	7,260,467	3,712,302	4,926,312	7,043,531	14,865,806	68,427	46,470,255
Corporates	7,195,821	23,333,544	19,353,598	18,183,690	17,011,881	19,230,292	218,070	104,526,895
Retail	15,658,462	19,597,239	36,005,836	52,770,094	39,621,901	39,323,917	1,040,085	204,017,535
Secured by mortgages on immovable property	6,753,909	1,409,118	18,972,103	10,633,557	24,829,864	36,833,539	-	99,432,091
Exposures in default	1,157,031	629,470	4,058,851	5,461,893	2,984,647	1,713,913	17,420	16,023,225
Items associated with particularly high risk	-	-	51,345	-	1,107,770	179,752	-	1,338,867
Covered bonds	-	3,473,531	816,021	-	-	-	-	4,289,552
Claims on institutions and corporates with a short-term credit assessment	685	-	-	-	-	294	-	979
Collective investments undertakings (CIU)	-	-	-	33,193	418,498	-	-	451,691
Equity exposures	1,655,236	5,210	402,564	22,835	110,069	267,180	-	2,463,094
Other exposures	40,453,748	15,092,548	5,813,231	19,370,357	13,563,198	10,423,146	13,732	104,729,959
Total SA approach	132,078,948	104,895,265	114,772,695	162,728,940	129,506,837	140,093,162	1,698,696	785,774,544
TOTAL	363,504,431	361,169,304	199,336,572	190,069,429	152,348,971	167,452,020	2,005,216	1,435,885,943

Note: figures reflect the original exposure (CR-IRB column 20, CRSA column 10). The Standard exposure is the exposure after applying credit risk mitigation techniques and distributing the exposure by conversion factors to off-balance sheet exposures. Does not include securitization positions or exposures.

The geographical distribution of standard portfolios is concentrated mainly in Brazil, the United States and Spain. The most important segments remain central administrations (with strong presence in Spain, the United Kingdom and Brazil), retailers and exposures secured with real estate, which have a prominent presence in the United States, Latin America (excluding Brazil) and Continental Europe (excluding Spain).

In terms of IRB portfolios, most of the exposure is concentrated in the Spanish business segment and UK retailers.

Exposures by geography

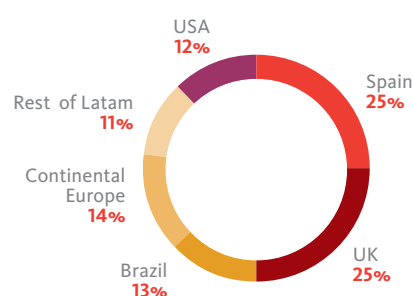


Table 53. Exposures by business sector (CRB-D)
Thousands of Euros

	Real estate activities	Accommodation and food service activities	Construction	Manufacturing	Other services	Other Retail (Individuals)	Primary Sector	Public Sector	Professional Services	Utilities	Transport and storage	Total
IRB approach												
Central governments or central banks	-	-	-	-	-	-	-	1,720,724	21,336	222,910	6,116	1,971,086
Institutions	278,763	103,101	112,200	1,128,377	9,831,812	266	8,200	14,683,758	19,886,093	46,442	11,429	46,090,441
Corporates	45,018,454	48,506,279	26,403,566	32,738,349	17,048,487	366,439	14,912,048	12,126,846	14,457,008	28,037,687	23,053,058	262,668,221
Retail	192,682,791	1,049,451	563,775	725,523	552,460	134,684,542	279,367	664,430	377,674	17,864	134,410	331,732,288
Equity	2,468,351	23,392	634,071	41,818	3,461,350	-	26,218	424,520	273,758	172,994	122,891	7,649,362
Total IRB approach	240,448,359	49,682,222	27,713,612	34,634,068	30,894,109	135,051,247	15,225,833	29,620,278	35,015,869	28,497,897	23,327,904	650,111,399
Estandar approach												
Central governments or central banks	1,969	-	-	-	-	582,177	-	179,629,805	-	-	3,077	180,217,028
Regional governments or local authorities	-	-	-	-	239,852	-	-	8,882,778	-	-	-	9,122,630
Public sector entities	-	191	60	8	463,233	38	21	10,619,523	858	1	37	11,083,969
Multilateral Development Banks	-	-	-	-	1,606,773	-	-	-	-	-	-	1,606,773
International Organisations	-	-	-	-	-	-	-	-	-	-	-	-
Institutions	-	-	1	813	46,199,404	32,340	113	61,825	116,425	-	59,334	46,470,255
Corporates	13,225,305	16,071,281	4,250,790	13,586,719	30,520,279	2,778,758	6,524,310	4,095,715	4,901,213	5,248,585	3,323,941	104,526,895
Retail	677,945	9,370,840	1,442,950	2,597,853	6,294,871	171,945,083	2,407,586	7,293,801	683,181	103,683	1,199,741	204,017,535
Secured by mortgages on immovable property	24,154,571	2,520,085	3,597,805	1,194,402	15,843,494	42,686,413	503,920	7,512,353	926,405	61,870	430,771	99,432,091
Exposures in default	807,806	1,139,937	579,692	926,912	718,591	9,959,433	474,872	797,459	279,947	185,573	153,004	16,023,225
Items associated with particularly high risk	1,299,646	-	-	-	-	39,221	-	-	-	-	-	1,338,867
Covered bonds	-	-	-	-	3,473,531	-	816,021	-	-	-	-	4,289,552
Claims on institutions and corporates with a short-term credit assessment	-	-	-	30	933	-	16	-	-	-	-	979
Collective investments undertakings (CIU)	53,173	37,014	62,668	7,917	255,345	-	14,301	17,240	-	1,712	2,321	451,691
Equity exposures	-	-	-	-	2,172,148	-	-	290,946	-	-	-	2,463,094
Other exposures	7,317	2,515,008	21,455	2,182,032	69,612,813	16,197,969	74,278	10,976,936	687,841	1,321,685	1,132,625	104,729,959
Total SA approach	40,227,731	31,654,356	9,955,421	20,496,686	177,401,269	244,221,432	10,815,439	230,178,380	7,595,871	6,923,108	6,304,850	785,774,544
TOTAL	280,676,091	81,336,579	37,669,033	55,130,754	208,295,378	379,272,679	26,041,272	259,798,658	42,611,740	35,421,005	29,632,754	1,435,885,943

In order to simplify the exposures analysis, some sectors have been grouped (from 19 to 11) based on its representability:

- Primary sector: Agriculture, forestry and fishing; Mining and quarrying
- Utilities: Electricity, gas, steam and air conditioning supply; Water supply
- Trade, Accommodation and Accommodation: Accommodation and food service activities; Wholesale and retail trade

- Professional Services: Professional, scientific and technical activities; Administrative and support service activities

- Other services Information and communication; education; arts, entertainment and recreation

- Public sector: Public administration and defense, compulsory social security; human health services and social work activities

For the Standard Approach the business sectors with greater exposure are: individuals, public sector and services. As for IRB, the sectors with the highest exposure are: real estate activities; individuals and commerce, catering and lodging.

● **Table 54. Exposures by residual maturity (CRB-E)**
Thousands of Euros

						Net exposures value	
	On demand	<= 1 year	r > 1 year <= 5 years	> 5 years	No stated maturity	Total	
IRB approach							
Central governments or central banks	-	2,788	1,968,298	-	-	1,971,086	
Institutions	2,337	19,710,109	24,776,917	1,601,078	-	46,090,441	
Corporates	58,375	83,390,037	153,957,425	25,262,385	-	262,668,221	
Retail	10,046,915	21,168,392	110,370,387	190,146,594	-	331,732,288	
Equity	-	-	7,649,362	-	-	7,649,362	
Total IRB approach	10,107,626	124,271,326	298,722,390	217,010,057	-	650,111,399	
Standardised approach							
Central governments or central banks	22,762,980	75,312,990	12,681,165	34,418,439	35,041,454	180,217,028	
Regional governments or local authorities	-	4,419,625	2,461,986	2,164,510	76,510	9,122,630	
Public sector entities	1,184	1,550,464	550,092	8,981,371	858	11,083,969	
Multilateral Development Banks	-	4,249	791,555	810,969	-	1,606,773	
International Organisations	-	-	-	-	-	-	
Institutions	4,948,353	21,391,370	6,099,739	13,520,285	510,508	46,470,255	
Corporates	498,898	44,172,502	43,183,994	16,393,767	277,734	104,526,895	
Retail	14,106,059	66,838,358	93,983,618	24,684,572	4,404,927	204,017,535	
Secured by mortgages on immovable property	590,714	20,085,956	14,675,124	63,970,885	109,412	99,432,091	
Exposures in default	184,476	7,817,188	3,414,730	4,400,885	205,946	16,023,225	
Items associated with particularly high risk	35,376	395,996	348,577	558,918	-	1,338,867	
Covered bonds	816,021	311,417	1,194,864	1,967,250	-	4,289,552	
Claims on institutions and corporates with a short-term credit assessment	685	294	-	-	-	979	
Collective investments undertakings (CIU)	-	300,463	143,365	7,863	-	451,691	
Equity exposures	-	-	-	-	2,463,094	2,463,094	
Other exposures	2,520,233	69,445,324	17,215,455	11,642,240	3,906,707	104,729,959	
Total standardised approach	46,464,979	312,046,198	196,744,264	183,521,952	46,997,151	785,774,544	
TOTAL	56,572,605	436,317,524	495,466,653	400,532,009	46,997,151	1,435,885,943	

Note: original exposure is shown (CR-IRB column 20, CRSA column 10)

In the distribution of standard exposure maturities, the terms of less than one year and between one and five have the highest degree of exposure.

3. Credit risk

In the distribution of exposure maturities in IRB models the terms between one year and five and over five are those with the highest percentage of exposure.

In the next five tables all exposures details are shown by counterparty and geography, considering the corresponding losses by impairment and provisions.

Table 55. Credit quality of exposures by industry or counterparty types (CR1-B)

Thousands of Euros

	Gross carrying values of ¹			Net value ⁴
	Non-performing exposures ³	Performing exposures	General credit risk adjustment ³	
Agriculture, forestry and fishing	329,638	6,334,493	225,713	6,438,418
Mining and quarrying	382,001	6,701,573	251,890	6,831,684
Manufacturing	1,905,392	35,940,791	1,350,494	36,495,689
Electricity, gas, steam and air conditioning supply	497,277	16,336,078	393,420	16,439,935
Water supply	29,962	1,124,130	27,096	1,126,996
Construction	4,906,730	29,431,679	3,061,494	31,276,915
Wholesale and retail trade	2,341,127	48,369,505	1,780,038	48,930,594
Transport and storage	539,269	13,955,674	402,284	14,092,659
Accommodation and food service activities	821,878	6,601,755	235,601	7,188,032
Information and communication	126,931	7,684,085	113,867	7,697,149
Real estate activities	2,258,799	22,976,856	1,072,284	24,163,371
Professional, scientific and technical activities	799,370	10,412,232	468,283	10,743,319
Administrative and support service activities	740,628	10,725,833	724,763	10,741,698
Public administration and defence, compulsory social security	2,166	110,644	1,489	111,321
Education	110,873	3,492,208	103,844	3,499,237
Human health services and social work activities	398,235	7,373,416	211,399	7,560,252
Arts, entertainment and recreation	49,136	1,038,141	32,419	1,054,858
Other services	563,182	15,289,956	946,324	14,906,814
TOTAL²	16,802,594	243,899,049	11,402,702	249,298,941

Notes:

1) Only on balance.

2) Only loans to non-financial companies.

3) Includes: All provisions + accumulated fair value changes due to credit risk.

4) Net values = Non-performing exposures + Performing exposures - Credit risk adjustments charges of the period.

Table 56. Credit quality of exposures by geography (CR1-C)
Thousands of Euros

	Gross carrying values of			Net values ²
	Non-performing exposures ³	Performing exposures	Credit risk adjustment charges of the period ¹	
Spain	14,207,743	280,310,462	6,870,895	287,647,310
European Union ex Spain	9,491,324	563,637,393	5,847,281	567,281,436
USA and Puerto Rico	2,227,389	174,888,352	4,410,542	172,705,199
Rest of OECD	3,150,759	137,557,032	2,295,651	138,412,140
LatAm (no OECD)	6,114,746	208,493,815	5,587,702	209,020,859
Rest of world	170,129	19,765,238	113,130	19,822,237
TOTAL	35,362,090	1,384,652,292	25,125,201	1,394,889,181

Note:

Table includes: loans, fixed income and on demand balances in central banks and credit institutions

1) Includes: All provisions + accumulated fair value changes due to credit risk (all figures are on balance sheet exposure).

2) Net Values = Non-performing Exposures + Performing Exposures - Credit risk adjustment charges of the period. Off balance adjustments (not included) amount to €459 Mn.

The following table gives an overview of the forborne exposures:

Table 57. Non-performing and forborne exposures (CR1-E)
Millions of Euros

	Gross carrying values of											
	Gross carrying amount of performing and non-performing exposures						Accumulated impairment and provisions and negative fair value adjustments due to credit risk				Collaterals and financial guarantees received	
	Of which: performing but past due >30 days and ≤90 days		of which: performing forborne	Of which non-performing			On performing exposures		On non-performing exposures		On non-performing exposures	of which: forborne exposures
				of which: impaired	of which: forborne	of which: forborne	of which: forborne	of which: forborne				
Debt securities	128,214	-	-	773	754	90	-48	-	-490	-27	49	49
Loans and advances	953,595	10,308	31,516	33,512	30,735	19,221	-9,369	-2,292	-15,404	-8,921	14,387	26,229
Off-balance sheet exposures	276,934	-	148	1,078	-	1	-189	-	-270	-	28	-
TOTAL	1,358,743	10,308	31,664	35,363	31,489	19,313	-9,606	-2,292	-16,164	-8,948	14,464	26,278

3. Credit risk

The following table shows year-to-year changes in stock of general and specific credit risks:

● **Table 58. Changes in stock of general and specific credit risk adjustments (CR2-A)**

Thousands of Euros

	Accumulated Specific credit risk adjustment	Accumulated General credit risk adjustment
Opening balance	17,603,334	9,327,577
Increases due to amounts set aside for estimated loan losses during the period	15,965,004	1,703,940
Decreases due to amounts reversed for estimated loan losses during the period	-4,806,267	-1,623,826
Decreases due to amounts taken against accumulated credit risk adjustments	-12,819,493	-
Transfers between credit risk adjustments	153,961	-279,726
Impact of exchange rate differences	-595,451	-214,483
Business combinations, including acquisitions and disposals of subsidiaries	-54,632	-37,365
Other adjustments	448,295	302,642
Closing balance	15,894,751	9,178,759
Recoveries on credit risk adjustments recorded directly to the statement of profit or loss	1,586,509	-
Specific credit risk adjustments recorded directly to the statement of profit or loss	-	-

Previously written-off assets recovered in 2016 amounted to EUR 1,587 million.

The evolution of the non-performing stock loan and debt securities between the current and the previous fiscal year/year-end is presented below.

● **Table 59. Changes in stock of defaulted and non-performing loans and debt securities (CR2-B)**

Thousands of Euros

	Gross carrying value defaulted exposures
Opening balance	37,151,895
Loans and debt securities that have defaulted or impaired since the last reporting period ¹	7,849,834
Returned to non-defaulted status	-
Amounts written off	-12,819,493
Other changes	2,102,258
Closing balance	34,284,494

Note: 1) Figures are referred to net new defaults

The following table gives an overview and details of the past-due exposures in terms of product type and time frame.

Table 60. Ageing of past-due exposures (CR1-D)

Thousands of Euros

	Gross carrying values					
	≤ 30 days	> 30 days ≤ 60 days	> 60 days ≤ 90 days	> 90 days ≤ 180 days	> 180 days ≤ 1year	> 1year
Loans	18,285,241	6,874,799	3,433,022	4,515,648	4,695,339	12,618,975
Debt Securities	-	-	-	-	150	192
TOTAL EXPOSURES	18,285,241	6,874,799	3,433,022	4,515,648	4,695,489	12,619,167

Notes: Figures are not considering: the trading portfolio; non-performing or loans considered unlikely to pay with past-due amounts <90.

3.3. Internal rating systems

Since 1993 Grupo Santander has been using its own internal rating and scoring models to measure the credit quality of customers and transactions. Each rating or score indicates a probability of default, measured on the basis of Grupo Santander's historical default experience (except in the case of low default portfolios). More than 400 internal rating models are used in Grupo Santander's credit approval and risk monitoring process.

Exposures in the Global Wholesale Banking segments, i.e. Global Corporates, sovereigns, and financial institutions, which are managed centrally at Grupo Santander level in terms of rating assignment and risk monitoring, are rated using global rating tools. The rating these tools assign to each client, is obtained using an expert judgment model, based on an analyst's opinion, supported by a quantitative or automatic module based on balance sheet ratios or macroeconomic variables.

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

The analyst takes this information as a reference but will revise and adjust it to obtain the final rating, which therefore is decisively based on expert judgment. Occasionally, as in the case of Global Corporates, the rating is also adjusted where the company belongs to a group from which it receives explicit support.

In the case of non-standardised corporates and institutions (including high turnover standardised companies), Santander parent Bank has established a single methodology for constructing a rating in each country. In this case the rating is determined by an automatic module which uses initial analyst input and which may or may not be supplemented at a later stage. The automatic module determines the rating in two phases: a quantitative phase and a qualitative phase. The qualitative phase is based on a corrective questionnaire, which allows the analyst to modify the automatic score by a limited number of rating points. Grupo Santander is moving towards a new rating methodology that aims to incorporate all available information (internal behaviour, external sources, etc.) in a more structured manner, being able to statistically assign a weight to the objective score (automatic) and the subjective one (expert) in accordance with the customer's characteristics and analyst's capacity to add value, in order to simplify and improve rating assignment.

Customer ratings are reviewed at periodic intervals to take account of new financial information. Ratings are reviewed more frequently when certain automatic alerts are triggered, and in the case of customers placed on special watch. The rating tools themselves are also reviewed in order to fine-tune the ratings they generate.

For retail portfolios (Individuals and standardised companies), Grupo Santander has scoring tools which automatically assign a score to transactions submitted for approval.

These credit approval systems are supplemented by behavioural rating models, which provide greater predictability of the risk assumed and are used both for monitoring risk and for setting limits.

The Models Committee has approved the following mapping between internal ratings and probabilities of default for the global portfolios.

Table 61. Mapping of internal ratings to PD

Global Corporate Banking		Banks		Financial institutions non banks	
Rating	PD	Rating	PD	Rating	PD
9.3	0.01%	9.3	0.01%	9.3	0.01%
9.2	0.01%	9.2	0.01%	9.2	0.01%
9.0	0.01%	9.0	0.01%	9.0	0.01%
8.5	0.02%	8.5	0.02%	8.5	0.02%
8.0	0.03%	8.0	0.03%	8.0	0.03%
7.5	0.05%	7.5	0.05%	7.5	0.05%
7.0	0.10%	7.0	0.08%	7.0	0.08%
6.5	0.17%	6.5	0.14%	6.5	0.13%
6.0	0.29%	6.0	0.24%	6.0	0.22%
5.5	0.51%	5.5	0.41%	5.5	0.37%
5.0	0.89%	5.0	0.70%	5.0	0.61%
4.5	1.55%	4.5	1.19%	4.5	1.01%
4.0	2.67%	4.0	2.02%	4.0	1.69%
3.5	4.58%	3.5	3.40%	3.5	2.81%
3.0	7.75%	3.0	5.68%	3.0	4.68%
2.5	12.81%	2.5	9.33%	2.5	7.80%
2.0	20.44%	2.0	14.96%	2.0	12.99%
1.5	31.00%	1.5	23.11%	1.5	21.64%
1.0	44.00%	1.0	33.94%	1.0	36.04%

These PD are applied consistently across Grupo Santander, in line with the global management of these portfolios. As can be seen, the PD assigned to any given internal rating is not exactly the same in different portfolios. Regulatory requirements demand differentiated PD calibration.

3.4 Rating assignment and parameter estimation process

Measuring the credit risk of a transaction involves calculating both the expected and the unexpected loss of the transaction. The unexpected loss is the basis for the calculation of both regulatory and economic capital and refers to a very high, albeit improbable, level of loss that is not considered a recurring cost but must be absorbed by capital. Measuring risk involves two separate steps: estimating the risk, and then assigning the credit risk parameters: PD, LGD and EAD.

PD or probability of default estimates the likelihood that a client or a contract will default within 12 months. The PD used for regulatory capital is long-term, or 'through-the-cycle' PD, which is not conditioned to a specific point in the cycle.

Modelling default events are based on the definition contained in Article 178 of the Capital Requirements Regulation¹, which considers that default is defined for a client/contract when at least one of the following circumstances arises:

- The institution considers there is a reasonable doubt that the obligor will pay their credit obligations in full.
- The client/contract is past due more than 90 days on any material credit obligation.

The event to be modelled in corporate portfolios is client default, whereas PD is estimated on the basis of the contract in retail portfolios.

Calculations of PD are based on the entity's own internal experience, i.e. on past observations of defaults in ratings or scorings.

LGD or Loss Given Default is defined as the mathematical expectation of the percentage of economic loss in the event of a default event. Calculations of LGD are based on internal data concerning income and expense incurred by the institution during the recovery process once the default event has arisen, discounted at the date of commencement of default.

Note: 1) Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012.

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

In addition to the downturn LGD that will be used for normal operations, a specific loss estimate is made for operations in default, known as ELBE (Expected Loss Best Estimate). This estimate attempts to provide, at any given time, the best estimate of economic loss chiefly based on the time during which the operation has been in default, considering the current economic situation.

Lastly, EAD, or exposure at default, the value of the debt at the time of default, is also calculated. For lending products or any product with no off-balance sheet amount, EAD equals the balance of the operation plus any interest accrued and not paid. For line products, however, it is necessary to estimate any future drawdowns that will arise between the present time and any future default event. It is for this reason that the CCF or Credit Conversion Factor is calculated this produces the percentage of the balance not currently drawn down (off-balance sheet amount) that would be drawn down at the time of default.

As mentioned in the preceding paragraphs, past information on portfolios is essential for estimating regulatory parameters. The EU Regulation (UE NO 575/2013) stipulates that the minimum period of data to be used in estimates is five or seven years. For this reason the institution has an internal data model containing past-information on portfolios, which is subject to review by the internal supervisory divisions (Validation and Audit) and by the supervisory authorities.

As already mentioned, for regulatory purposes observations of frequency of default and the associated losses must be averaged out over an entire economic cycle, in the case of PD, or represent a downturn situation in the case of LGD or EAD.

It is for this reason that recent observations are not directly comparable to regulatory parameters, and backtesting exercises should be treated with due caution. It will be observed in section 3.9 that the default frequencies recently observed are below regulatory PD in regions with growth rates above the average for the cycle. Conversely, in regions where economic growth falls short of the average, default observations may exceed regulatory PD.

Low default portfolios: Global Corporates; Banks; Nonbank Financial Institutions; and Central Governments.

In some portfolios (so-called low default portfolios) there is so little default experience that alternative approaches to parameter estimation must be adopted.

Estimates of PD and LGD in low default portfolios chiefly rely on studies performed by external rating agencies, which reflect the pooled experience of the large numbers of entities and countries rated by the agencies. These databases contain in-depth historical information to help identify complete economic cycles and analyse downturn situations.

The default definition employed by the agencies is subjected to a detailed comparison against regulatory requirements and, even if this does not produce a perfect match, the process has sufficient items in common to enable it to be used.

For PD, the agencies do not directly report TTC estimates, but rather annual default observations. The observations are averaged out over an economic cycle by external ratings in order to obtain the TTC estimate. This TTC PD is associated with all counterparties with external ratings, and is used to calibrate the internal rating subsequently. Finally, the PD will not depend on the counterparty's external rating, but on the internal rating, and may also be applicable to clients with an external rating.

The parameters estimated for global portfolios are the same for all the Santander Grupo Santander's units. Thus, a financial institution with a rating of 8.5 will have the same PD, regardless of the unit in which the exposure is booked.

Corporates (including SMEs, specialised lending and receivables)

For portfolios of customers that have an account manager assigned to them and sufficient experience of internal defaults, the estimation is based on the entity's own internal experience. The PD is calculated for customers by observing new defaults in the portfolio and relating these defaults to the ratings assigned to the customers concerned. To this end, long-run observed default frequencies are calculated for a rating or a group of ratings, and are adjusted to the average PD observed for each portfolio over a complete economic cycle.

In contrast to low default portfolios, Corporates portfolios have specific rating systems in each Grupo Santander unit, requiring specific PD calibrations in each case.

In Corporates portfolios, LGD is calculated based on observed recoveries of defaulted transactions. This calculation takes into account not only the cash inflows and outflows associated with the recovery process but also the timing of these flows, so as to calculate their present value, as well as the direct and indirect costs of recovery.

The LGD estimates used for regulatory purposes must be downturn LGD estimates. The existence of major variables (known as 'drivers') is modelled to explain the emergence of different LGD for different groups of operations. The main drivers employed are the age of operations, whether or not collateral has been furnished, type of collateral, its loan-to-value etc. These explanatory variables must be of statistical significance and make good business sense. Estimated ELBE and LGD are also calculated for operations in default.

Lastly, EAD, or exposure at default, is estimated by comparing the percent utilization of committed facilities at the time of default and in normal circumstances, in order to estimate the extent to which customers make more use of their credit facilities as they approach default. To estimate the CCF, information on past defaults is gathered from databases and the balance situation (on and off the balance sheet) is compared between the time of default and previous occasions when the downturn in customers' credit quality had not yet been observed.

Note: 2) Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012.

Retail portfolios

In portfolios where customers do not have an account manager assigned to them but are treated on a pooled or standardised basis, PD are also estimated based on the entity's internal experience.

Although the data unit for assigning PD is the transaction, not the customer.

PD are calculated by observing new defaults and relating each new default to the score assigned to the transaction at the time of approval or, for transactions beyond a certain age, to the customer rating. As for Corporates portfolios, LGD is calculated based on observed recovery rates, adjusted to downturn conditions. The EAD estimation is also similar to that of Corporates.

The risk parameters for retail portfolios must be estimated separately for each entity, country and segment, and need to be updated at least once a year.

The parameters are then assigned to the transactions recorded on each unit's balance sheet, so as to calculate the expected losses and capital requirements associated with the unit's exposure.

The following tables show a summary of the parameter models used in different countries:

Table 62. Parameters of IRB models by geographical area

Global models

31 Dec. 2016

Component	Portfolio	No. of significant models		Portfolio RWA Thousands of Euros	Description of model and methodology	No. of years of loss data	Basel category	Regulatory floors applied
		N°	Description					
PD	Corporates	1	- PD Corporates	48,305,643	Model which uses the equivalent agency rating and relates the internal rating with the ODF (S&P) through a regression model	>10	Corporates	PD > 0.03%
	IFIs	2	- PD Banks - PD Non-Bank IFIs	7,507,281	Model which uses the equivalent agency rating and relates the internal rating with the ODF (S&P) through a regression model		Corporates, Financial Institutions	PD > 0.03%
	Sovereign	1	PD Soberanos	410,020	Model which uses the equivalent agency rating and relates the internal rating with the ODF (S&P) through a regression model		Sovereign	No
LGD	Corporates	1	LGD Corporates	48,305,643	Models based on reports published by Moody's and S&P	>10	Corporates	45%
	IFIs	2	- LGD Banks - LGD Non-Bank IFIs	7,507,281	Models based on reports published by Moody's and S&P		Corporates, Financial Institutions	45%
	Sovereign	1	LGD Sovereign	410,020	Models based on reports published by Moody's and S&P		Sovereign	No
EAD	Corporates, Non-Bank IFIs	1	EAD Corporates and non-bank IFIs	50,617,928	Models based on: internal cases of default and default proxies	1-5	Corporates, Financial Institutions	EAD must be at least equal to the current utilisation of the balance at account level
	Project Finance	1	EAD Project Finance	17,118,757	Models based on: internal cases of default and default proxies		Specialised Lending, Sovereign	EAD must be at least equal to the current utilisation of the balance at account level

Spanish portfolios

31 Dec. 2016

Component	Portfolio	No. of significant models		Portfolio RWA Thousands of Euros	Description of model and methodology	No. of years of loss data	Basel category	Regulatory floors applied
		Nº	Description					
	Non-standardised corporates	3	PD Local Corporations	26,680,970	Statistical models, based on internal default experience. Adjusted to the economic cycle	6-10	Corporates	PD > 0.03%
			PD Non-standardised corporates			>10		
			PD Commercial real estate					
	Standardised corporates / Micro-enterprises	1	PD Standardised Legal Entities (Micro-enterprises)	787,677	Statistical models, based on internal default experience. Adjusted to the economic cycle	> 10	Retail Others	
			Retail mortgage	1	PD Mortgages	9,726,115	Statistical models, based on internal default experience. Adjusted to the economic cycle	
Retail non-mortgage		8	PD Loans	5,255,958	Statistical models, based on internal default experience. Adjusted to the economic cycle	>10	Retail Others	
			PD Loans, ING and Other					
			PD Auto Consultant and Other					
			PD Overdrafts					
			PD Credit cards				Retail revolving	
LGD	Non-standardised corporates	3	PD Local Corporations	26,680,970	Model based on internal recovery information. Downturn due to selection of worst years of cycle	6-10	Corporates	No
			PD Non-standardised corporates			>10		
			PD Commercial real estate					
	Standardised corporates / Micro-enterprises	1	LGD Standardised Legal Entities (Micro-enterprises)	787,677	Model based on internal recovery information. Downturn due to selection of worst years of cycle	>10	Retail Others	No
	Retail mortgage	1	LGD Mortgages	9,726,115	Model based on internal recovery information. Downturn due to selection of worst years of cycle	>10	Retail Mortgages	Floor of 10% at portfolio level if applicable
Retail non-mortgage		7	LGD Loans	5,255,958	Model based on internal recovery information. Downturn due to selection of worst years of cycle	>10	Retail Others	No
LGD Loans, ING and Other								
LGD Auto Consultant and Other								
LGD Overdrafts								
LGD Credit cards								

Note: since 2015 autonomic communities are guaranteed by sovereigns in local currency.

Spanish portfolios (contd.)

31 Dec. 2016

Component	Portfolio	No. of significant models		Portfolio RWA Thousands of Euros	Description of model and methodology	No. of years of loss data	Basel category	Regulatory floors applied
		Nº	Description					
EAD	Non-standardised corporates	3	EAD Local Corporations	26,680,970	Statistical model, in which the internal balance information observed in default is used to obtain a CCF	>10	Corporates	EAD must be at least equal to the current utilisation of the balance at account level
			EAD Non-standardised corporates					
			EAD Commercial real estate					
	Standardised corporates / Micro-enterprises	1	EAD Standardised Legal Entities (Micro-enterprises)	787,677	Statistical model, in which the internal balance information observed in default is used to obtain a CCF		Retail Others	EAD must be at least equal to the current utilisation of the balance at account level
	Retail mortgage	2	EAD Loans	14,982,074	Statistical model, in which the internal balance information observed in default is used to obtain a CCF		Retail Others	EAD must be at least equal to the current utilisation of the balance at account level
			EAD Credit Cards				Retail revolving	

UK portfolios

31 Dec. 2016

Component	Portfolio	No. of significant models		Portfolio RWA Thousands of Euros	Description of model and methodology	No. of years of loss data	Basel category	Regulatory floors applied
		Nº	Description					
PD	Mortgages	1	Mortgages	29,868,675	Statistical model which produces a PD that is scaled to a cycle average	>10	Retail Mortgages	PD > 0.03%
	Consumer	1	Consumer	2,805,492	Statistical model which produces a PD that is scaled to a cycle average	6 - 10	Retail Other	PD > 0.03%
	Overdrafts	1	Overdrafts	2,246,372	Observed default rates segmented in statistical score bands, scaled to a long-term average	6 - 10	Retail revolving	PD > 0.03%
	Social Housing	1	Social Housing	892,917	Expert judgment rating model	NA Low default portfolio	Corporates	PD > 0.03%
	A&L Models (FIRB)	2	- MRA - Credit Edge	3,770,390	Statistical rating model for Corporates	>10	Corporates	PD > 0.03%
	A&L Modelos (Slotting)	3	- IPRE - Object Finance - Project Finance	1,206,585	Slotting criteria	NA	Corporates	NA
LGD	Mortgages	1	Mortgages	29,868,675	Loss estimates and writeoff probability based on internal data, stressed to a downturn situation	1 - 5	Retail Mortgages	LGD > 10% at portfolio level
	Consumer	1	Consumer	2,805,492	Loss estimates and writeoff probability based on a regression, with expert judgment where appropriate	1 - 5	Retail Others	No
	Overdrafts	1	Overdrafts	2,246,372	Loss estimates and writeoff probability based on internal data, using a long-term average	1 - 5	Retail Revolving	No
	Social Housing	1	Social Housing	892,917	Estimate based on data on the realisable value of the collateral	NA Low default portfolio	Corporates	No
	A&L Models (FIRB)	2	- MRA - Credit Edge	3,770,390	Foundation IRB	>10 years (only Corporates)	Corporates	No
	A&L Modelos (Slotting)	3	- IPRE - Object Finance - Project Finance	1,206,585	Slotting criteria	NA	Corporates	NA

UK portfolios (contd.)

31 Dec. 2016

Component	Portfolio	No. of significant models		Portfolio RWA Thousands of Euros	Description of model and methodology	No. of years of loss data	Basel category	Regulatory floors applied
		Nº	Description					
EAD	Mortgages	1	Mortgages	29,868,675	Long-term CCD estimates applied to on- and off-balance sheet totals	6 - 10	Retail - Mortgages	EAD must be at least equal to the current utilisation of the balance at account level
	Consumer	1	Consumer	2,805,492	Regression model	6 - 10	Retail - Other	
	Overdrafts	1	Overdrafts	2,246,372	Long-term CCD estimates applied to on- and off-balance sheet totals	6 - 10	Retail - revolving	
	Social Housing	1	Social Housing	892,917	Estimate based on data	NA Low default portfolio	Corporates	
	A&L Models (FIRB)	2	- MRA - Credit Edge	3,770,390	Foundation IRB	>10 years (only Corporates)	Corporates	
	A&L Modelos (Slotting)	3	- IPRE - Object Finance - Project Finance	1,206,585	Slotting criteria	>10 years (only Corporates)	Corporates	

Portuguese portfolios

31 Dec. 2016

Component	Portfolio	No. of significant models		Portfolio RWA Thousands of Euros	Description of model and methodology	No. of years of loss data	Basel category	Regulatory floors applied
		N°	Description					
PD	Non-standardised corporates	3	- Corporates - Chambers - Real estate developers	3,032,002	Statistical model, based on internal data which calibrates the scoring model, performing a cyclical adjustment.	>10	Corporates	PD > 0.03%
	Standardised corporates	2	- Private individual - Legal entity	331,439	Statistical model, based on internal data which calibrates the scoring model, performing a cyclical adjustment.		Retail Other	PD > 0.03%
	Retail mortgage	1	Retail mortgage	3,375,279	Statistical model, based on internal data which calibrates the scoring model, performing a cyclical adjustment.		Retail Mortgages	PD > 0.03%
	Retail non-mortgage	3	- Credit Cards - Consumer - Other Retail	560,511	Statistical model, based on internal data which calibrates the scoring model, performing a cyclical adjustment.		Retail revolving and others	PD > 0.03%
LGD	Non-standardised corporates	3	- Corporates - Chambers - Real estate developers	3,032,002	Statistical model, based on internal recovery data. Downturn period based on the cycle's worst years.	6 - 10	Corporates	No
	Standardised corporates	2	- Private individuals - Legal entities	331,439	Statistical model, based on internal recovery data. Downturn period based on the cycle's worst years.		Retail Other	No
	Retail mortgage	1	Retail mortgage	3,375,279	Statistical model, based on internal recovery data. Downturn period based on the cycle's worst years.		Retail Mortgages	No
	Retail non-mortgage	1	Retail non-mortgage	560,511	Statistical model, based on internal recovery data. Downturn period based on the cycle's worst years.		Retail revolving and others	No
EAD	Non-standardised corporates	3	- Corporates - Chambers - Real estate developers	3,032,002	Statistical model, in which the internal balance information observed in default is used to obtain a CCF	6 - 10	Corporates	EAD must be at least equal to the current utilisation of the balance at account level
	Standardised corporates	2	- Private individuals - Legal entities	331,439	Statistical model, in which the internal balance information observed in default is used to obtain a CCF		Retail Other	EAD must be at least equal to the current utilisation of the balance at account level
	Retail	1	Retail	3,935,789	Statistical model, in which the internal balance information observed in default is used to obtain a CCF		Retail revolving and others	EAD must be at least equal to the current utilisation of the balance at account level

Mexican portfolios

31 Dec. 2016

Component	Portfolio	No. of significant models	Portfolio RWA Thousands of Euros	Description of model and methodology	No. of years of loss data	Basel category	Regulatory floors applied
		Nº					
PD	Non-standardised corporates	1	3,018,640	Statistical model, based on internal default experience. Adjusted to the economic cycle	6-10	Corporates	PD > 0.03%
	State and municipal governments and public bodies	1	345,436	Statistical model, based on internal default techniques	NA (For this portfolio default observations are not used)	Institutions	PD > 0.03%
	Commercial real estate	1	556,613	(For this portfolio default observations are not used)"	6-10	Corporates	PD > 0.03%
LGD	Non-standardised corporates	1	3,018,640	Statistical model, based on internal recovery data.	6-10	Corporates	No
	State and municipal governments and public bodies	1	345,436	In accordance with Appendix 18 of the current General Provisions Applicable to Credit Institutions (Single Banking Circular)	NA (For this portfolio default observations are not used)	Institutions	
	Commercial real estate	1	556,613	Statistical model, based on internal recovery data.	6-10	Corporates	
EAD	State and municipal governments and public bodies, non-standardised corporates and commercial real estate	1	3,920,689	A prudential proxy has been used because the available balance in these lending operations is not recorded. Specific CCF for technical and financial guarantees and letters of credit	6-10	Corporates/ Institutions	No

Santander Consumer Spain portfolios

31 Dec. 2016

Componente	Portfolio	No. of significant models	Portfolio RWA Thousands of Euros	Description of model and methodology	No. of years of loss data	Basel category	Regulatory floors applied
		Nº					
PD	New cars	1	1,206,617	Statistical models, based on internal default experience. Adjusted to the economic cycle	6-10	Retail Others	PD > 0.03%
	Secondhand cars	1	388,598	Statistical models, based on internal default experience. Adjusted to the economic cycle		Retail Others	PD > 0.03%
	Consumer	1	181,341	Statistical models, based on internal default experience. Adjusted to the economic cycle		Retail Others	PD > 0.03%
	Credit cards	1	628,180	Statistical models, based on internal default experience. Adjusted to the economic cycle		Retail revolving	PD > 0.03%
	Non-standardised corporates	1	311,815	Statistical models, based on internal default experience. Adjusted to the economic cycle		Corporates	PD > 0.03%
LGD	New cars	1	1,206,617	Loss estimates based on internal data, stressed to a downturn situation	6-10	Retail Others	No
	Secondhand cars	1	388,598	Loss estimates based on internal data, stressed to a downturn situation		Retail Others	
	Consumer	1	181,341	Loss estimates based on internal data, stressed to a downturn situation		Retail Others	
	Credit cards	1	628,180	Loss estimates based on internal data, stressed to a downturn situation		Retail revolving	
	Non-standardised corporates	1	311,815	Loss estimates based on internal data, stressed to a downturn situation		Corporates	
EAD	Credit cards	1	628,180	CCF estimates in a downturn period applied to on- and off-balance sheet totals	6-10	Retail revolving	EAD must be at least equal to the current utilisation of the balance at account level
	Non-standardised corporates	1	311,815	CCF estimates in a downturn period applied to on- and off-balance sheet totals		Corporates	

Santander Consumer Germany portfolios

31 Dec. 2016

Component	Portfolio	No. of significant models		Portfolio RWA Thousands of Euros	Description of model and methodology	No. of years of loss data	Basel category	Regulatory floors applied
		N°	Description					
PD	Auto	4	2 Rating Systems (Auto and Motorbikes) -1 PD model for Cars admission / Cars behaviour -1 PD model for Motorbikes Admission/ Motorbikes Behaviour	4,671,683	Statistical model which produces a PD that is scaled to a cycle average	6-10	Retail Other	PD > 0.03%
	Direct	6	- Rating Systems (New Faces/TopUp/Repeater) -1 Admission model for each Rating System -1 Behaviour model for each Rating System	2,409,314	Statistical model which produces a PD that is scaled to a cycle average		Retail Other	PD > 0.03%
	Consumer	2	-1 Admission model -1 Behaviour model	1,536,832	Statistical model which produces a PD that is scaled to a cycle average		Retail Other	PD > 0.03%
	Non-standardised corporates	1	Non-standardised corporates	943,553	Statistical model + rating with expert judgement		Corporates	PD > 0.03%
LGD	Auto	4	4 different LGD Segments are approved	4,671,683	Loss estimates based on internal data, stressed to a downturn situation	6-10	Retail Other	No
	Direct	4	4 different LGD Segments are approved	2,409,314	Loss estimates based on internal data, stressed to a downturn situation		Retail Other	
	Consumer	2	2 different LGD Segments are approved	1,536,832	Loss estimates based on internal data, stressed to a downturn situation		Retail Other	
	Non-standardised corporates	3	3 different LGD Segments are approved, depending on collateral	943,553	Loss estimates based on internal data, stressed to a downturn situation		Corporates	
EAD	Non-standardised corporates	1	Non-standardised corporates	943,553	CCF estimates in a downturn period	6-10	Corporates	No

Nordic countries portfolios

31 Dec. 2016

Componente	Portfolio	No. of significant models		Portfolio RWA Thousands of Euros	Description of model and methodology	No. of years of loss data	Basel category	Regulatory floors applied
		N°						
PD	Auto PP Norway	1		1,266,449	Statistical model which produces a PD that is scaled to a cycle average	1-5	Other Retail	PD > 0.03%
	Auto PP Sweden	1		793,365	Statistical model which produces a PD that is scaled to a cycle average		Other Retail	
	Auto PP Finland	1		712,335	Statistical model which produces a PD that is scaled to a cycle average		Other Retail	
LGD	Auto PP Norway	1		1,266,449	Loss estimates based on internal data, stressed to a downturn situation	1-5	Other Retail	No
	Auto PP Sweden	1		793,365	Loss estimates based on internal data, stressed to a downturn situation		Other Retail	
	Auto PP Finland	1		712,335	Loss estimates based on internal data, stressed to a downturn situation		Other Retail	

PSA France portfolios

31 Dec. 2016

Component	Portfolio	No. of significant models		Portfolio RWA Thousands of Euros	Description of model and methodology	No. of years of loss data	Basel category	Regulatory floors applied
		N°	Description					
PD	Individuals	1	Individuals	2,511,084	Statistical model generating a PD long-run based on 5 years of losses	1 - 5	Retail Other	PD > 0.03%
	Companies with balance sheet	1	Companies with balance sheet		Statistical model generating a PD long-run based on 5 years of losses		Retail Other	
	Companies without balance sheet	1	Companies without balance sheet		Statistical model generating a PD long-run based on 5 years of losses		Retail Other	
	Corporate Dealers	1	Corporate Dealers	2,306,827	Statistical model generating a PD long-run based on 5 years of losses		Corporates	
	Corporates Fleet	1	Wholesale Fleet	812,419	Statistical model generating a PD long-run based on 5 years of losses		Corporates	
LGD	Retail	1	Retail	2,511,084	Model based on internal recovery information, stressed to a downturn situation	> 10	Retail Other	No
	Corporate Dealers	1	Consumer	2,306,827	Foundation IRB	NA	Corporates	
	Corporates Fleet	1	Overdraft	812,419	Foundation IRB	NA	Corporates	
EAD	Retail	1	Retail	2,511,084	Long-term CCF estimations applied to both On/Off Balance sheet balances	6 - 10	Retail Other	EAD must be at least equal to the current utilisation of the balance at account level
	Corporate Dealers	1	Consumer	2,306,827	Foundation IRB	NA	Corporates	
	Corporates Fleet	1	Overdraft	812,419	Foundation IRB	NA	Corporates	

3.5 Uses of the internal parameter estimates

One major application of the PD, LGD and EAD credit risk parameters is to determine minimum capital requirements within the CRR framework.

The CRR also states that these parameters and their associated metrics, including expected and unexpected loss, are to be used not only for regulatory purposes but also for internal credit risk management.

In Grupo Santander, the internal credit risk parameter estimates are used in a variety of management tools, including pre-classifications, economic capital allocation, Rorac (return on risk-adjusted capital) calculation, stress testing, and scenario analyses, the results of which are reported to senior management through various internal committees.

The pre-classification tool is used to assign limits to customers based on their risk characteristics. Limits are set not only in terms of exposure but also in terms of economic capital, which is calculated using the credit risk parameters.

Under the pre-classification policy every approved transaction 'uses' a certain amount of the assigned maximum exposure, depending on the transaction's risk characteristics such as term and collateral. This system ensures that the credit approval policy remains flexible yet rigorous in terms of risk control.

Through the calculation and allocation of economic capital, all the different types of risks arising from the lending business are integrated in a single measurement, combining credit risk measurement with the measurement of other risks, including market, operational, business and on-balance sheet interest rate risk. The economic capital allocation at the business unit level provides a view of the distribution of risk by business activity and geographical area, taking the benefits of diversification into account. By relating economic capital to financial results, it is possible to calculate the risk-adjusted return (Rorac), which can be compared with the cost of capital to get an idea of how each unit contributes to Grupo Santander's value creation.

The credit risk parameters are needed for these calculations, and although the parameter values used for economic capital purposes do not coincide exactly with those used for regulatory purposes, the estimation and allocation methodology is comparable and the same databases are used in both cases.

The use of economic capital figures in determining management compensation and setting capital and Rorac-related targets for the business units further reinforces the integration of economic capital in management.

A relationship can be established between the credit risk parameters and variables reflecting the economic situation, such as unemployment, GDP growth, interest rates, and so on. This relationship can then be used to estimate credit risk in different macroeconomic scenarios, especially in stress situations.

3.6. Recognition of credit risk mitigation

In the calculation of regulatory capital, credit risk mitigation techniques affect the value of the risk parameters used. The identification and valuation of the guarantees associated with the contracts is fundamental, distinguishing by type of guarantee between collateral and personal guarantees. This process of mitigation is undertaken provided that the validity of the guarantee has been checked and they are considered applicable. The process of mitigation is described in the following section.

Firstly, in portfolios where the PD is assigned at client level, personal guarantees are taken into account. Personal guarantees affect the PD value through substitution, in that the PD of the counterparty of the operation is replaced by the PD of the guarantor. To do this, the two Risk Weights (RWs) of the operation—that obtained from applying the PD of the client-holder and that of the guarantor—are compared. The final PD is that which generates a lower RW value.

Secondly, for all types of operation (retail and non-retail), any collateral associated with the operation is then reviewed. Under the IRB method, the presence of collateral impacts on the final value of the LGD used in the calculation of capital. Other potentially significant factors are also taken into account during this process such as product type, transaction balance, etc. In the case of mortgage collateral, the LGD of the transaction will depend on the loan-to-value (LTV) ratio, in addition to the age of the loan.

Mitigation with collateral is undertaken as a function of the part of the EAD that is covered by one or various guarantees. This means that the final LGD of the operation will be an average LGD resulting from, on the one hand, the sum of the LGD of each guarantee multiplied by the amount covered by the relevant guarantee, and the on other, the original LGD multiplied by the uncovered part of the exposure. The sum of these two products is divided by the total original exposure, resulting in the final adjusted LGD.

$$\overline{LGD}_{final} = \frac{\sum LGD_{garantia_i} * EAD_{garantia_i} + LGD_{original} * (EAD_{original} - \sum EAD_{garantia_i})}{EAD_{original}}$$

$$EAD_{garantia} = Valor\ Garantia * (1 - Haircut)$$

3.7. Control of internal rating systems

A fundamental part of the process carried out by Grupo Santander to implement advanced models entails establishing robust control and review mechanisms by the Internal Validation and Internal Audit Areas so as to effectively monitor and validate the valuation models and their integration in risk management, risk parameters, integrity and quality of information, documentation of the capital calculation process, governance, risk model, etc.

The functional segregation model applicable to Grupo Santander involves a model with different levels of control structured around three lines of defence with an organizational structure and independent, clearly defined functions:

- 1st line (Model Owner and Methodology),
- 2nd line (Model Risk, Internal Validation and Risk Control and Supervision Units) and
- 3rd line (Internal Audit).

This separate organizational and functional structure ensures the compliance with the regulatory requirements established in the IRB models:

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

3.7.1. Model Risk

Grupo Santander has extensive experience in the use of models to help make all kinds of decisions, and risk management decisions in particular.

A model is defined as a system, approach or quantitative method that applies theories, techniques and statistical, economic, financial and mathematical facts to transform input data into quantitative estimates. Models are simplified representations of real-world relationships between characteristics, values and observed facts. This simplification allows for focusing attention on concrete aspects considered to be the most important for the application of a given model.

The use of models entails the emergence of model risk, which is defined as the potential adverse consequences of decisions based on incorrect, inadequate or improperly used models.

According to this definition, the sources of Model Risk are as follows:

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

Materialisation of Model Risk may result in financial losses, inappropriate commercial or strategic decision making or damage to the reputation of Grupo Santander.

Grupo Santander has been working on the definition, management and control of Model Risk in recent years, and in 2015 a specific area was created within its Risk Division to control this risk.

The function is performed at both the corporation and at each of the main entities in which Grupo Santander has a presence. The function is governed by the Model Risk Framework, a control framework common to the entire Grupo Santander, detailing aspects related to organisation, governance, management and model validation, among other matters.

Senior management at Grupo Santander, in the various units and also at the corporation itself, regularly monitors model risk through a set of reports that provide a consolidated view and enable decisions to be taken in this regard.

The Model Risk Management Framework stipulates that the Models Committee is responsible for authorising the models to be used.

Management and control of Model Risk is based on the life cycle of a model as defined by Grupo Santander, shown below:



1.- Identification

As soon as a model is identified, it must be included in the model risk's control scope.

One key feature of proper management of Model Risk is a complete exhaustive inventory of the models used.

Grupo Santander has a centralized inventory, created on the basis of a uniform taxonomy for all models used at the various business units. The inventory contains all relevant information on each of the models, enabling all of them to be properly monitored according to their relevance. The inventory enables transversal analyses to be conducted on the information (by geographical area, types of model, importance etc.), thereby easing the task of strategic decision-making in connection with models.

2.- Planning

This phase involves all those affected by the life cycle of models (owners and users, developers, validators, data providers, IT etc.) and draws up and establishes priorities for the models to be developed, reviewed and implemented throughout the year.

Models are planned on an annual basis at each of Grupo Santander's largest entities, approved by local governance bodies, and validated by the corporation.

3.- Development

This is the model's construction phase, based on the needs laid down in the Models Plan and the information furnished to this end by the specialists.

Most of the models used by Grupo Santander are developed by internal methodology teams, though some models are also outsourced from external providers. Development must meet the standards established in either case.

Grupo Santander has defined a set of standards for the development of its models. Any models used by Grupo Santander must meet these standards, regardless of whether they are developed internally or are acquired from third parties. This guarantees the quality of the models used by Grupo Santander for decision-making.

4.- Independent validation

Internal validation of models is not only a regulatory requirement in certain cases, but it is also a key feature for proper management and control of Grupo Santander Model Risk.

Thus a specialist unit of the Institution, reporting to the Model Risk area totally independently of both developers and users, draws up a technical opinion of the suitability of internal models to their purposes, and sets out conclusions concerning their robustness, utility and effectiveness. The opinion of the Validation team takes the form of a score that summarises the model risk of the model.

Internal validation encompasses the entire model within the control of model risk, from the models used in the risk function (models of credit risk, market risk, structural or operational risk, economic or regulatory capital risk, models for provisions, stress test models, etc.), to other types of models used in different functions that support decision making.

The scope of validation includes not only the more theoretical and methodological aspects, but also IT systems and the data quality they permit, which determines their effectiveness, and all relevant

aspects of management in general: controls, reporting, uses, senior management involvement, etc.

It is important to highlight that this corporate internal validation framework at Grupo Santander is fully aligned with the internal validation criteria of advanced models produced by the financial supervisors to which Grupo Santander is subject. In this sense, the criterion of function separation among units is maintained, developing and using the models (first line of defence), internal validation units (second line of defence) and internal audit (third line of defence), who, as the ultimate layer of control, review the effectiveness of the function and its compliance with internal and external policies and procedures, commenting on its level of effective independence.

5.- Approval

Before being implemented and therefore used, a model must be submitted for approval to the relevant bodies, in accordance with internal regulations in effect, and with the approved delegation processes.

6.- Implementation and use

This is the phase during which the newly developed model is implemented in the system in which it will be used. As already mentioned, the implementation phase is another possible source of Model Risk, and it is therefore essential that implementation tests be conducted by technical units and the owners of the model to certify that it has been implemented pursuant to the methodological definition and it works as expected.

7.- Monitoring and control

Models must be regularly reviewed to ensure that they continue to function correctly, and that they are still suitable for the purpose assigned to them. If they are not, they are adapted or redesigned.

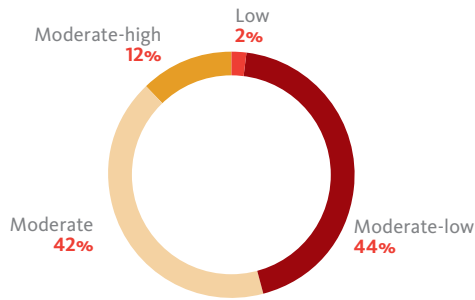
In addition, control teams must ensure that model risk management is being carried out in accordance with the principles and standards laid down in the Model Risk Framework and the related internal rules and regulations.

Governance

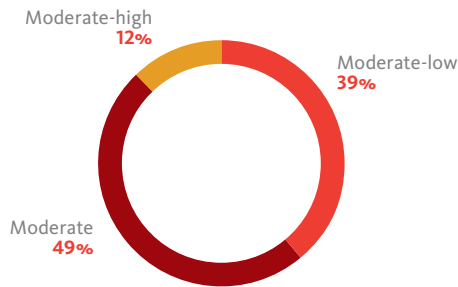
The Model Risk Management Framework stipulates that the body taking responsibility for authorizing risk management models to be used is the Models Committee. Each business unit has a Models Committee which takes responsibility for decisions concerning approval of the local usage of these models when the approval of the Corporate Models Committee has been secured. Under the current policy, all models submitted to a Models Committee must have an internal validation report.

The following table summarizes the scores assigned to the credit risk models as a result of Internal Validation's review of credit risk parameters and rating models during 2015.

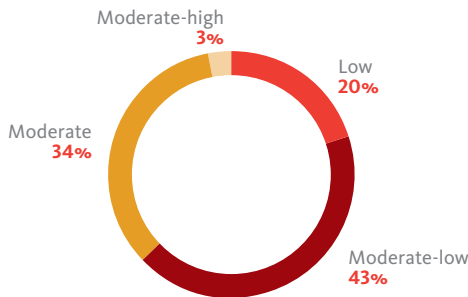
PD



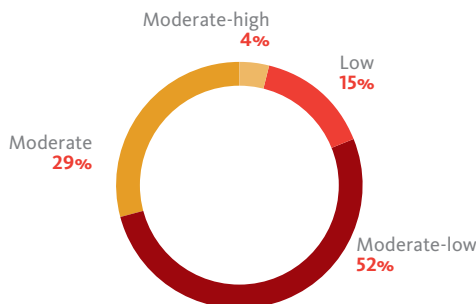
LGD



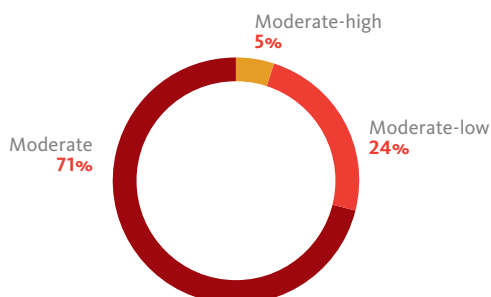
EAD



Scoring



Rating



The quality of the model is summed up in a final rating, which indicates the model's risk on the following scale:

- 1) Low: the model's performance and use are appropriate. The quality of the data used in developing the model is good. The methodology used complies with the set standards and best practices. The documentation, processes and rules in relation to the model are clear and complete. Any deficiency is immaterial and does not affect the model's performance.
- 2) Moderate-low: the model's performance and use are appropriate. The assumptions used in developing the model are reasonable. There are aspects that need to be improved but they are not crucial or material. It is not thought that there are any problems concerning the implementation and use of the model. The benefits of any changes to the model must be considered in relation to the costs of the changes.
- 3) Moderate: the model's performance and use are appropriate. The assumptions used in developing the model are reasonable. There are aspects of the model that need to be improved. Any deficiencies should be made good in the medium term or based on a cost-benefit analysis.
- 4) Moderate-high: there are deficiencies in the model's performance or use. The model's assumptions, the quality of the data in the development sample or the model's predictions are questionable. It is highly advisable that certain shortcomings be remedied or plans be made to remedy them in the short term, before the model is implemented or used. Other alternatives in the development to mitigate model risk should be considered.
- 5) High: the model's performance is inadequate, the model is not being used for the purpose for which it was developed, or the model's assumptions are incorrect. Some aspects must be corrected immediately. It is inadvisable to implement or use the model as presented.

3.7.2. Internal Audit

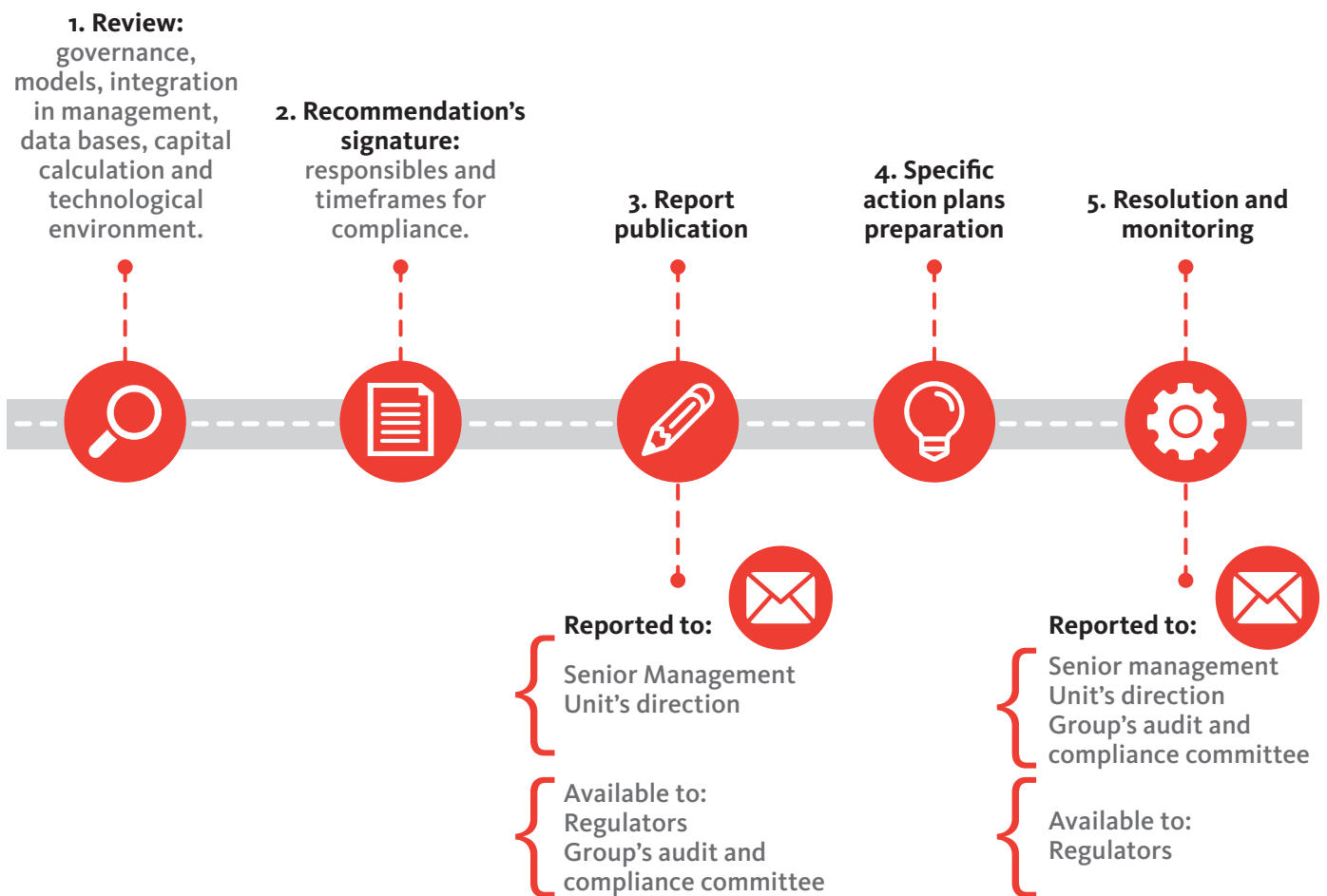
Internal Audit is part of the third line of defence. The analysis carried out by this independent team covers five main areas of activity:

- 1) Review of compliance with both Grupo Santander and regulator's internal governance model.
- 2) Management and adequacy and integration degree of the models. Analysis of compliance with models' life cycle management requirements and adequate integration in models' management and use.
- 3) Coherence and integrity of the databases and models construction. Review of the information control environment and the correct quality and integrity of the data in Basel databases (corporate datamart).
- 4) Review of the capital calculation process and reporting.
- 5) Analysis of the technical aspects and IT environment applications. Examine the robustness, reliability and security of the infrastructure and the processes that support the parameters estimation and the capital calculation within the "BDR-Corporate Capital Calculation Engine".

3. Credit risk

Once the review is finished, Internal Audit issues a report containing recommendations and observations arising from its review process, signed by the Unit and/or Areas involved, which in turn have a stipulated deadline to submit their action and resolution plans. The auditors and the areas affected will regularly monitor the fulfilment of the improvements detected. We would note that the IRB models review reports are submitted directly to Grupo Santander's senior management and are available to supervisors (European Central Bank, Bank of Spain and local supervisors).

Internal Audit also reports independently to Grupo Santander's Audit Committee, a totally independent body. Finally, the Internal Audit Division is in direct contact with the supervisors, totally aside from its Risk Control and Supervision functions.



3.8. Impairment losses: influencing factors and comparative analysis

In addition to the advanced approaches described above (details of which are given in the section on economic capital), other standard metrics are used to facilitate prudent and effective credit risk management based on historical loss experience.

The cost of credit risk in Grupo Santander is measured using various approaches: net flows into default (closing doubtful assets – opening doubtful assets + write-offs – recovered write-offs); net loan loss provisions (net specific provisions – recovered write-offs) and net write-offs (write-offs – recovered write-offs).

The three approaches measure the same concept and so converge in the long run, although they represent successive moments in the measurement of the cost of credit: flows into default (VMG), coverage of doubtful assets (net LLPs) and transfer to write-off status (net write-offs). In the longer term, there will be times in the economic cycle when the three approaches give different results, especially at the turn of a cycle. This is because of differences in the timing of the loss calculations, mainly due to accounting rules (mortgage loans, for example, have a longer coverage schedule and the transfer to write-off status is 'slower' than for consumer loans). The analysis may be further complicated by changes in coverage and write-off policy, portfolio composition, doubtful loans of acquired entities, changes in accounting rules, portfolio sales, etc.

The main figures for credit risk arising from business with customers are shown below:

Table 63. Key figures of credit risk arising from activity with customers

	Credit risk with customers ² (million euros)			Non-performing loans (million euros)			Non-performing loans rate (%)		
	2016	2015	2014	2016	2015	2014	2016	2015	2014
Continental Europe	331,706	321,395	310,008	19,638	23,355	27,526	5.92	7.27	8.88
Spain	172,974	173,032	182,974	9,361	11,293	13,512	5.41	6.53	7.38
Santander Consumer Finance ¹	88,061	76,688	63,654	2,357	2,625	3,067	2.68	3.42	4.82
Portugal ⁵	30,540	31,922	25,588	2,691	2,380	2,275	8.81	7.46	8.89
Poland	21,902	20,951	18,920	1,187	1,319	1,405	5.42	6.30	7.42
UK	255,049	282,182	256,337	3,585	4,292	4,590	1.41	1.52	1.79
Latin America	173,150	151,302	161,974	8,333	7,512	7,767	4.81	4.96	4.79
Brazil	89,572	72,173	90,572	5,286	4,319	4,572	5.90	5.98	5.05
Mexico	29,682	32,463	27,893	819	1,096	1,071	2.76	3.38	3.84
Chile	40,864	35,213	33,514	2,064	1,980	1,999	5.05	5.62	5.97
Argentina	7,318	6,328	5,703	109	73	92	1.49	1.15	1.61
USA	91,709	90,727	76,014	2,088	1,935	1,838	2.28	2.13	2.42
Puerto Rico	3,843	3,924	3,871	274	273	288	7.13	6.96	7.45
Santander Bank	54,040	54,089	45,817	717	627	647	1.33	1.16	1.41
SC USA	28,590	28,280	22,782	1,097	1,034	903	3.84	3.66	3.97
GROUP TOTAL	855,510	850,909	804,084	33,643	37,094	41,709	3.93	4.36	5.19

1. SCF includes PSA in figures for 2015 and 2016.

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

3. Recovered Written-Off Assets (EUR 1,587 million).

4. Cost of credit = loan-loss provisions twelve months / average lending

5. Portugal includes Banif in figures for 2015 and 2016

NOTE: The figures for 2014 have been recalculated because of the transfer of the Banco Santander International units and the New York branch to USA.

3. Credit risk

Table 63. Key figures of credit risk arising from activity with customers (contd.)

	Coverage ratio (%)			Net ASR provision ³ (million euros)			Cost of credit (%/risk) ⁴		
	2016	2015	2014	2016	2015	2014	2016	2015	2014
Continental Europe	60.0	64.2	57.2	1,342	1,975	2,880	0.44	0.68	1.01
Spain	48.3	48.1	45.5	585	992	1,745	0.37	0.62	1.06
Santander Consumer Finance ¹	109.1	109.1	100.1	387	537	544	0.47	0.77	0.90
Portugal ⁵	63.7	99.0	51.8	54	72	124	0.18	0.29	0.50
Poland	61.0	64.0	60.3	145	167	186	0.70	0.87	1.04
UK	32.9	38.2	41.9	58	107	332	0.02	0.03	0.14
Latin America	87.3	79.0	84.5	4,911	4,950	5,119	3.37	3.36	3.70
Brazil	93.1	83.7	95.4	3,377	3,297	3,682	4.89	4.50	4.91
Mexico	103.8	90.6	86.1	832	877	756	2.86	2.91	2.98
Chile	59.1	53.9	52.4	514	567	521	1.43	1.65	1.75
Argentina	142.3	194.2	143.3	107	148	121	1.72	2.15	2.54
USA	214.4	225.0	193.6	3,208	3,103	2,233	3.68	3.66	3.31
Puerto Rico	54.4	48.5	55.6	96	85	55	2.58	2.12	1.43
Santander Bank	99.6	114.5	109.4	120	64	26	0.23	0.13	0.06
SC USA	328.0	337.1	296.2	2,992	2,954	2,152	10.72	10.97	10.76
GROUP TOTAL	73.8	73.1	67.2	9,518	10,108	10,562	1.18	1.25	1.43

1. SCF includes PSA in figures for 2015 and 2016.

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

3. Recovered Written-Off Assets (EUR 1,587 million).

4. Cost of credit = loan-loss provisions twelve months / average lending

5. Portugal includes Banif in figures for 2015 and 2016

NOTE: The figures for 2014 have been recalculated because of the transfer of the Banco Santander International units and the New York branch to USA.

In 2016, credit risk with customers rose slightly by 0.6%, largely due to the increases in Brazil, SCF and Chile, which offset the fall in the United Kingdom, mainly due to the exchange rate effect. There is growth across the board in local currency, with the UK standing out.

These levels of lending, together with lower non-performing loans (NPLs) of EUR 33,643 million (-9% vs. 2015) reduced the Group's NPL ratio to 3.93% (-43 bp vs. 2015).

For coverage of these NPLs, the Group recorded net credit losses of EUR 9,518 million (-6% vs. 2015), after deducting write-off recoveries. This fall is reflected in a fall in the cost of credit to 1.18% (7 bp less than the previous year).

Total loan-loss provisions were EUR 24,835 million, bringing the Group's coverage ratio to 74%. It is important to bear in mind that this ratio is affected downwards by the weight of mortgage portfolios (particularly in the UK and Spain), which require fewer provisions as they have collateral.

3.9. Backtesting of IRB parameters

3.9.1 Backtest de PD

The aim of the PD Backtest is to assess the suitability of the regulatory PD by comparing them with the Observed Default Frequency (ODF).

The most important of Commercial Banking's IRB portfolios were selected:

- Santander Spain: Corporates, Mortgages, Consumer, Cards and Business Credits to Individuals.
- Santander Totta: Corporates and Mortgages
- Santander UK: Personal mortgages
- Santander Consumer Spain: Corporates, Cards, Consumer and Auto New
- Santander Consumer Germany: Dealers, Direct, Durables and Autos
- Santander Consumer Nordics: Finland, Norway and Sweden auto private persons
- Santander Mexico: Corporates

For each portfolio, regulatory PD buckets are established and for each of these the average PD assigned³ for regulatory capital purposes is compared with the Observed Default Frequency (ODF). To observe defaults, a sample of transactions and customers that were not in default at a reference date is selected, and the rate of new defaults among this sample over the subsequent 12-month period is observed.

The regulatory PD is a through-the-cycle (TTC) PD, i.e. a long-term average that is not tied on any particular point in the cycle. However, the default frequency is observed at a given point in time (2016). Given their different characteristics, the comparison between the two figures does not constitute a precise check on the regulatory PD, but it does serve to assess the size of the cyclical adjustment used in the calculation of TTC PD.

To complete the analysis, the observed default frequency is also compared with the point-in-time (PIT) PD, which is influenced by the cyclical situation of the observation period. This allows the slope of the PD curve to be compared with the delinquency observed in each rating category.

In some of the following charts do not show the first PD bucket. This bucket includes very high values due to the inclusion of transactions in special situations: recovery process, irregular, etc. Including these would distort the scale of the graphs, hindering a proper assessment of the most-populated PD buckets.

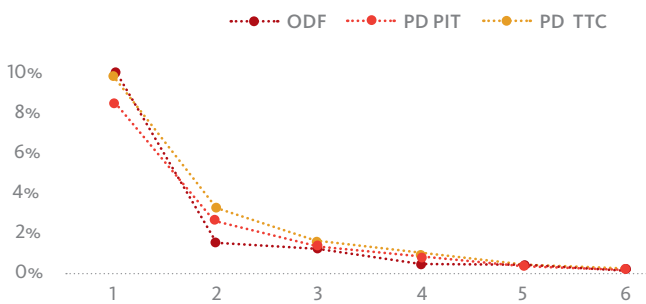
The charts below summarise the information in the portfolios that were analysed:

Note 3. Simple average of the PD assigned to the customer (Portfolio Companies) or transaction (all other segments) in the same regulatory PD bucket.

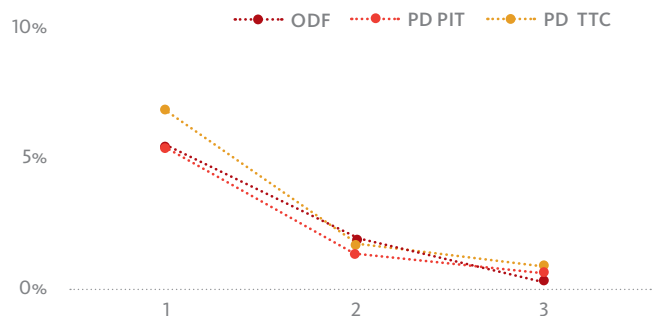
Corporates ODF vs PD

Corporate portfolios are showing volatile behaviour due to the low number of defaults. Nevertheless, a significant pattern can be seen in all geographies. These portfolios present, to a greater or lesser extent, PD TTC levels that are higher than the default frequencies observed in 2016. This is a reflection of the currently favourable economic situation, as new defaults are either below or quite near average levels of the cycle.

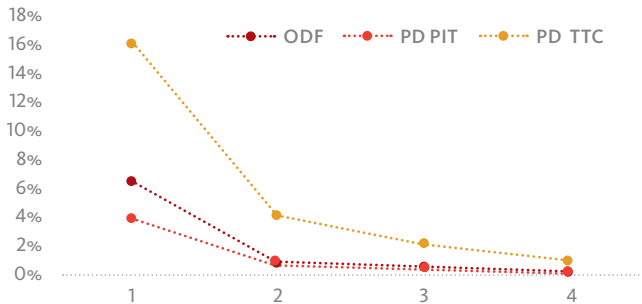
Spain corporates



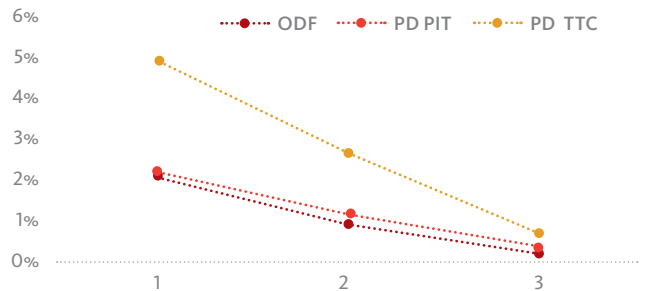
Mexico corporates



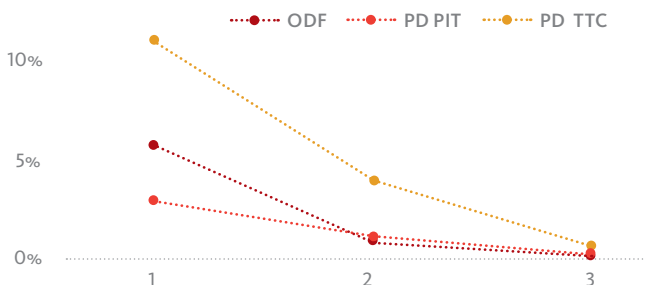
SC Germany dealers



Santander Totta corporates



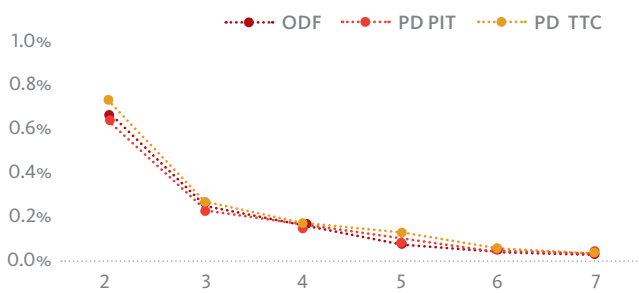
SC Spain non-standardised



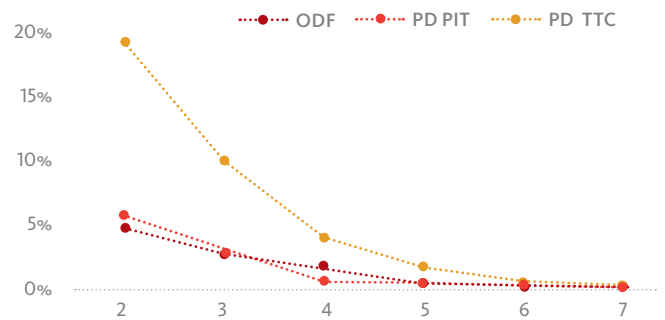
■ Mortgages ODF vs. PD:

In United Kingdom and Santander Totta mortgages, similar behaviour can be seen: new defaults are clearly lower than the cycle average. Although this effect is more significant in the case of the United Kingdom, it should be recalled that average levels are clearly higher than in other units. Against the current backdrop of recovery in Spain, it can be seen how the ODF series converges at average levels that represent long-term PD.

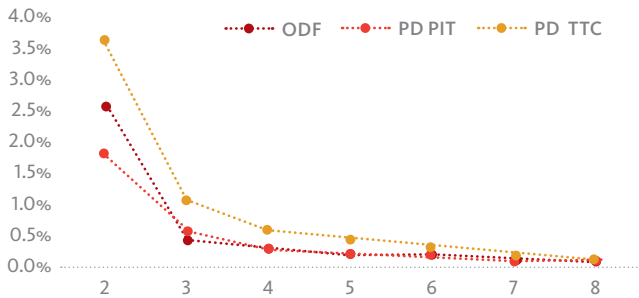
■ Spain retail mortgages



■ UK retail mortgages



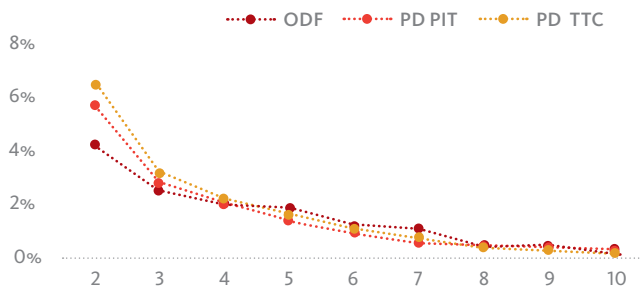
■ Santander Totta mortgages



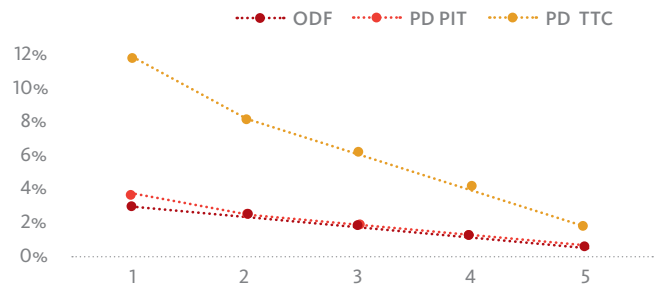
Retail ODF vs. PD

In consumer finance and cards portfolios, the situation is quite similar to that seen in Corporates and Mortgages. In Spain, these portfolios show the same convergence seen between the ODF series and the average PD levels of the cycle. In Santander Consumer (Germany, Spain and Nordics), PD TTCs remain above observed defaults, particularly in the highest PD tranches. The backtesting result in these units would appear to suggest that the cyclical adjustment should be revised downwards in the coming years.

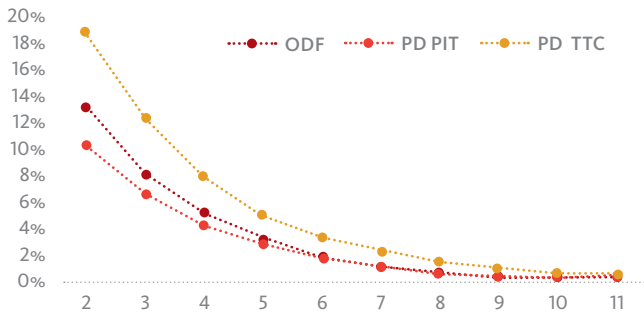
SC Spain other retail



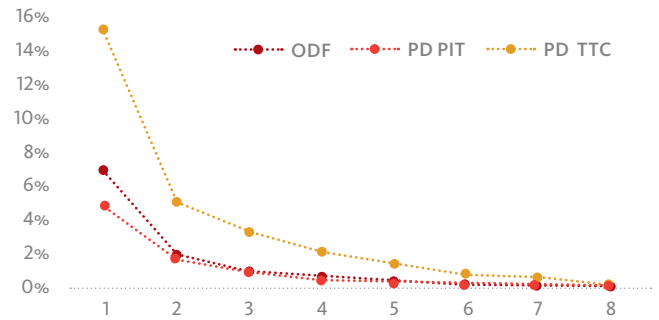
Spain consumer loans



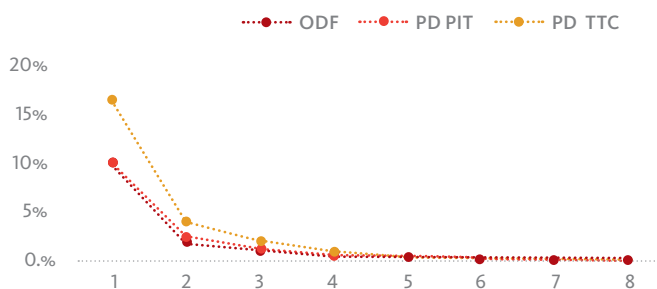
SC Germany durables



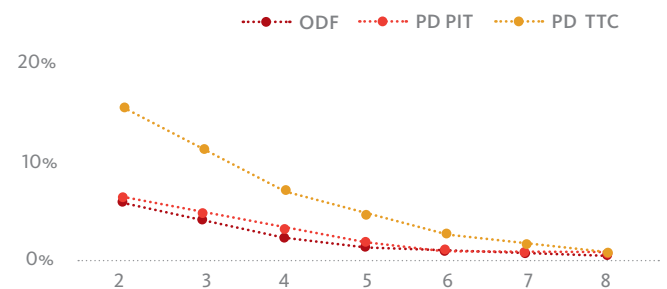
SC Germany direct



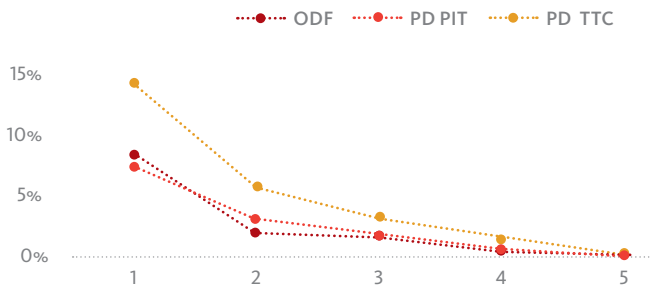
Spain credit cards



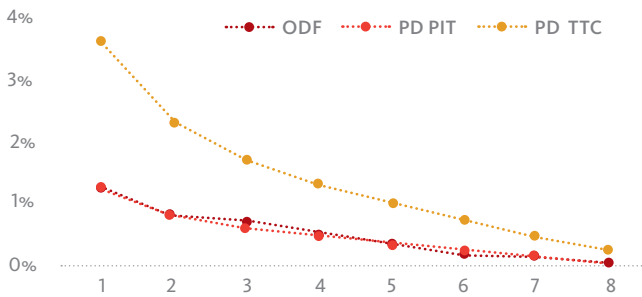
SC Spain credit cards



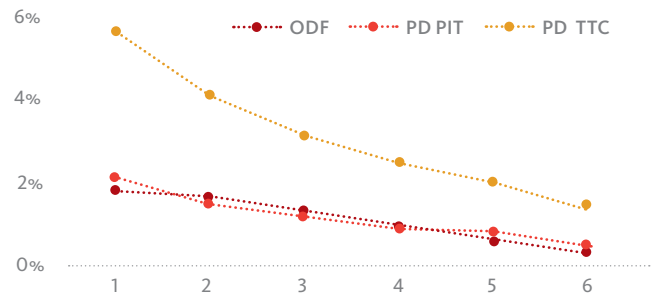
Spain credits



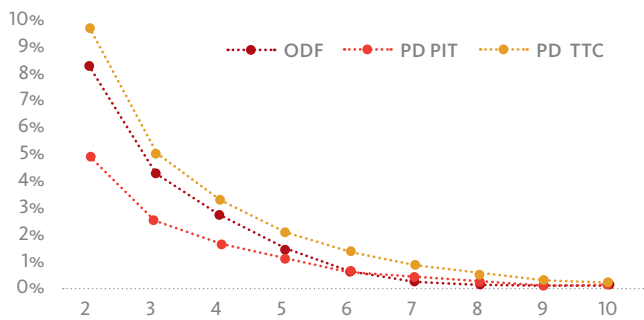
SC Spain auto new



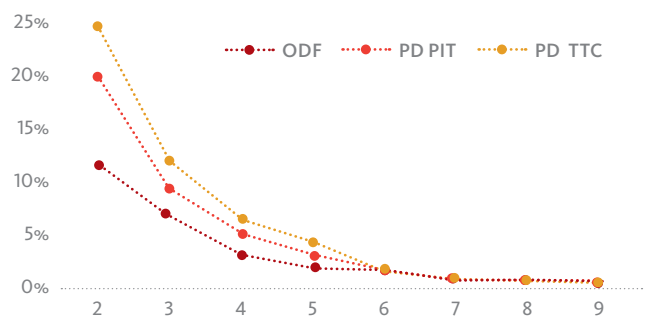
SC Spain auto used



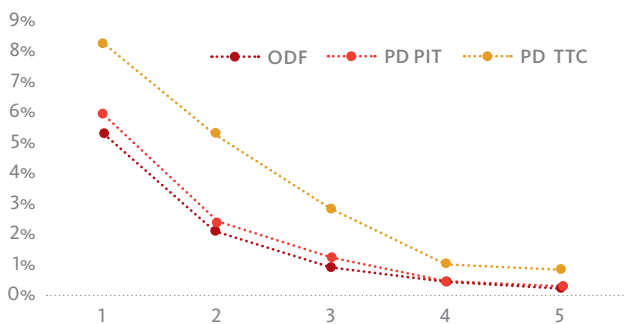
SC Germany auto



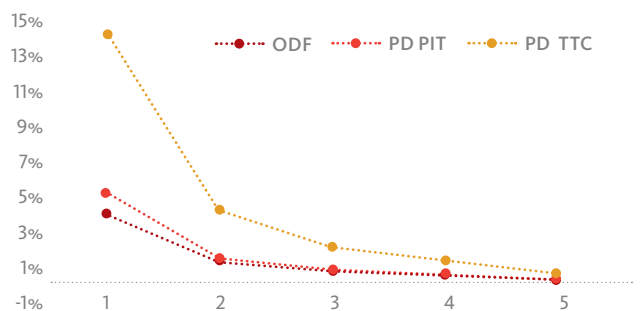
SC Norway auto private persons



SC Sweden auto private persons



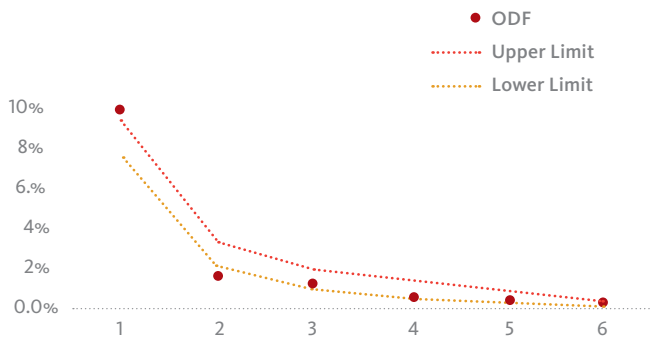
SC Finland auto private persons



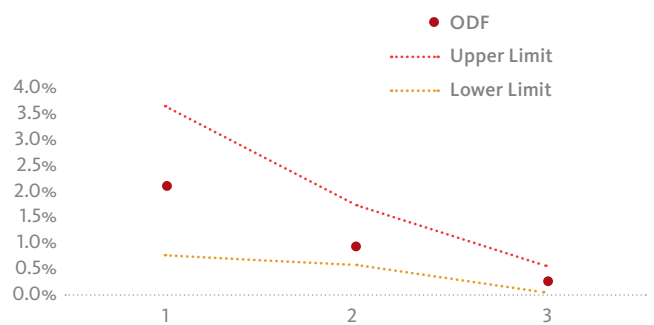
Corporates ODF vs limit

Complementary to the above analyses, confidence intervals have been calculated for the PIT PD and the upper and lower limits of the forecasts have been compared with the defaults actually observed. The larger the number of transactions included, the narrower the intervals, reflecting the greater precision of the estimates.

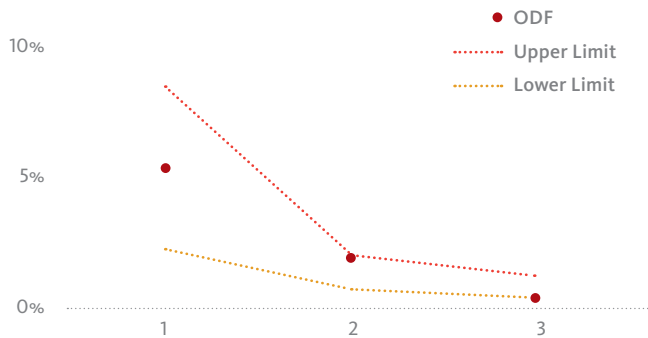
Spain corporates



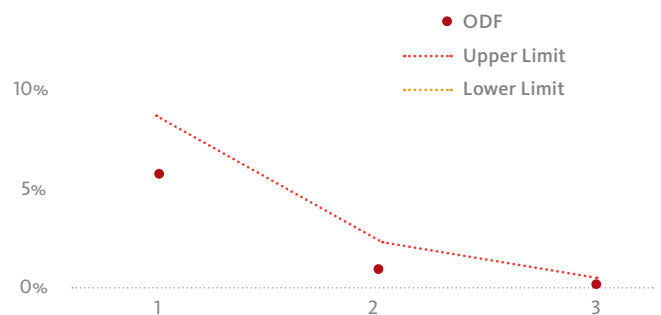
Santander Totta corporates



Mexico corporates

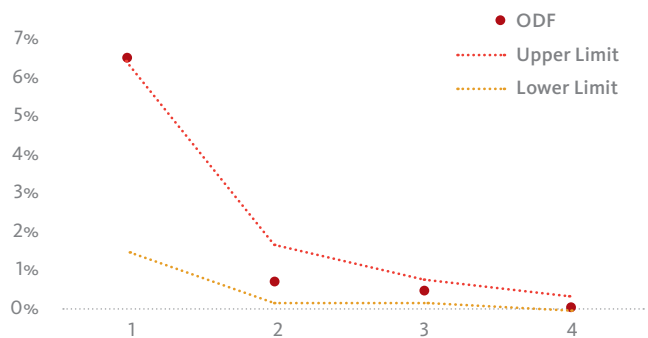


SC Spain non-standardised



Note: lower limit is at 0% for all buckets.

SC Germany dealers



As noted, corporate portfolios are showing the highest degree of volatility due to relatively low number of defaults. This is reflected in the very wide confidence intervals in all cases except Spain. However, for Santander Consumer Spain, Santander Consumer Germany, Totta and Mexico, ODF levels are very centrally located within confidence intervals.

In Spain, narrower intervals are generated, but with greater volatility of the ODFs around those intervals, though in general they are found close to the lower limit, especially in buckets with better credit quality.

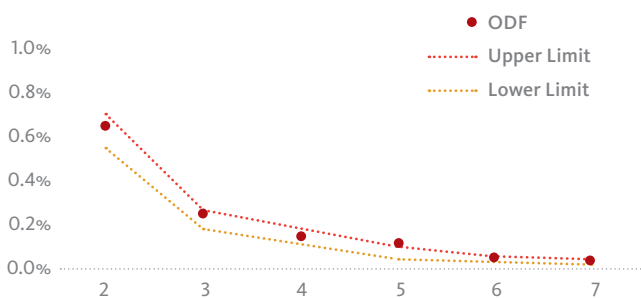
■ Mortgages ODF vs. limit

In mortgages, the intervals are very narrow due to the high number of transactions (close to 1.3 million in the case of Santander UK). In Spain, the ODFs tend to be found at the upper limit of the confidence intervals, while in the Portugal they are close to the lower limit.

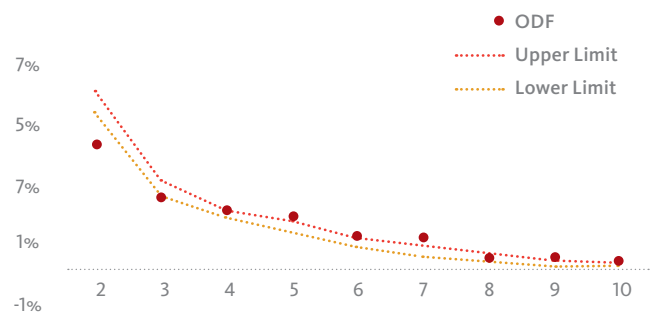
■ Retail ODF vs. limit

In other retail portfolios, confidence intervals are generally narrower. In Santander Consumer Germany, ODFs are somewhat above the upper limit in the high tranches of PD, although they fall back within the interval in the lower PDs. However, ODFs of the portfolios of Santander Consumer Nordics tend to align with the lower limit, and even below it in some cases. In Santander Consumer Spain and the credits of Santander Spain the intervals are wider, where ODFs generally appear more centred, although in credits there is an alignment of ODFs at the upper limit of intervals corresponding to the tranches with the best credit quality.

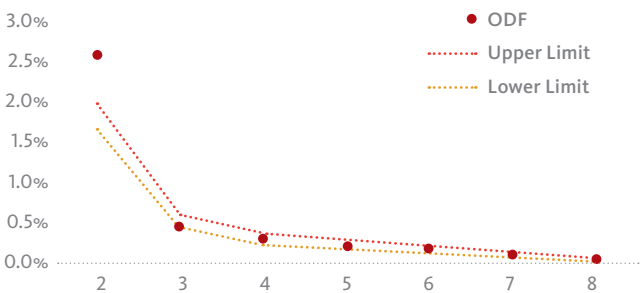
■ Spain retail mortgages



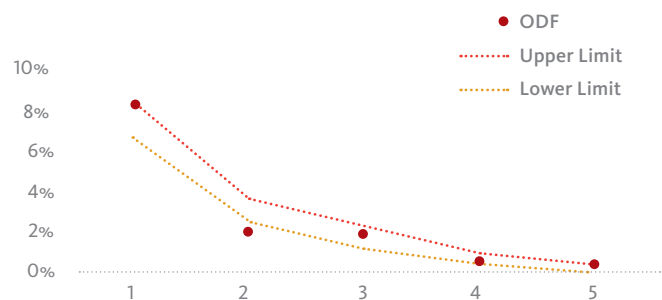
■ Spain consumer loans



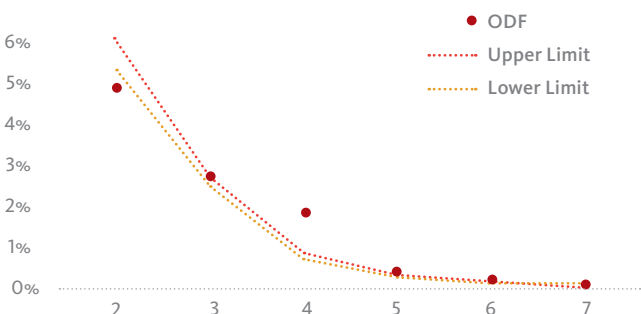
■ Santander Totta mortgages



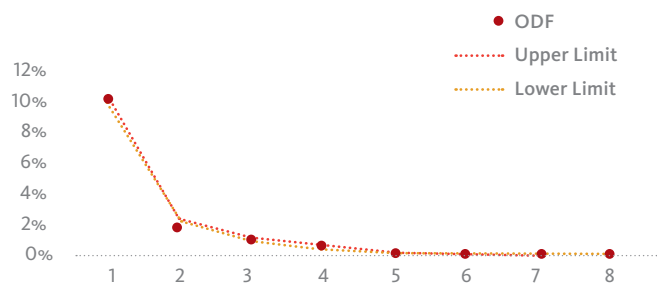
■ Spain credit physical persons



■ UK retail mortgages



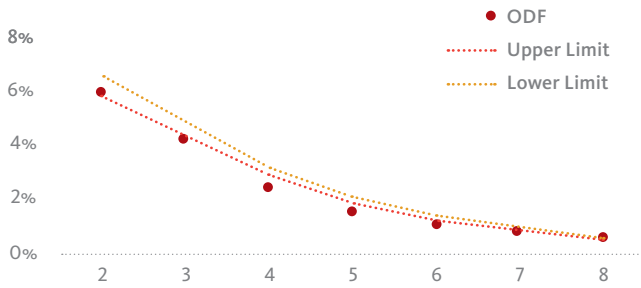
■ Spain credit cards



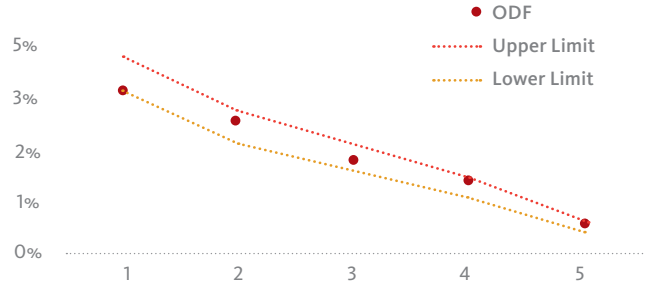
3. Credit risk

■ Retail ODF vs. limit (contd.)

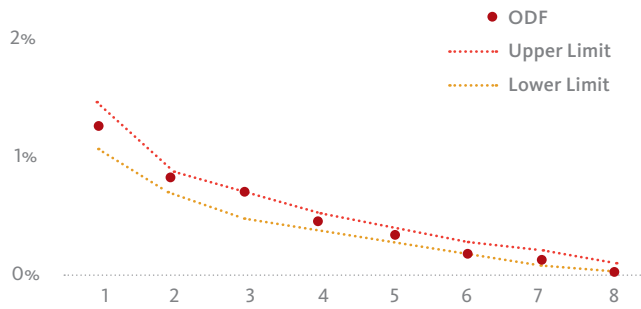
■ SC Spain credit cards



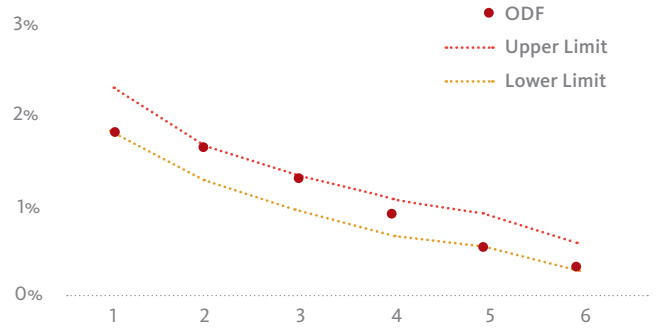
■ SC Spain consumer loans



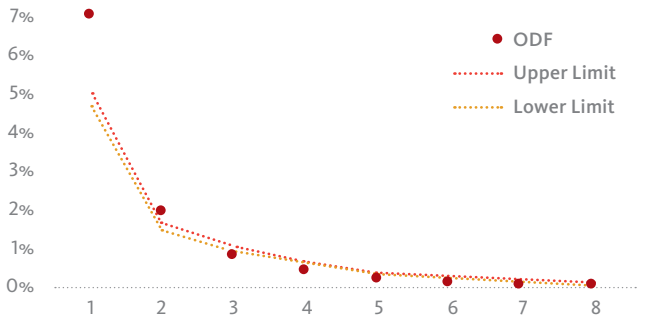
■ SC Spain auto new



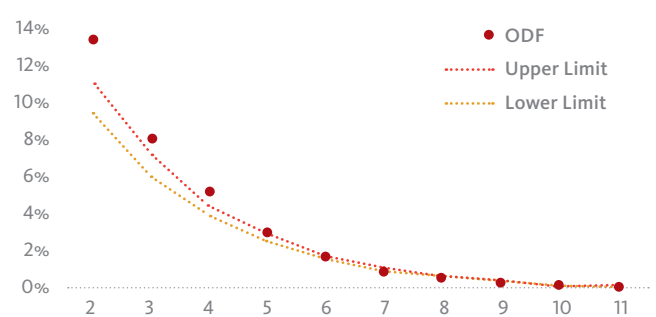
■ SC Spain auto used



■ SC Germany durables

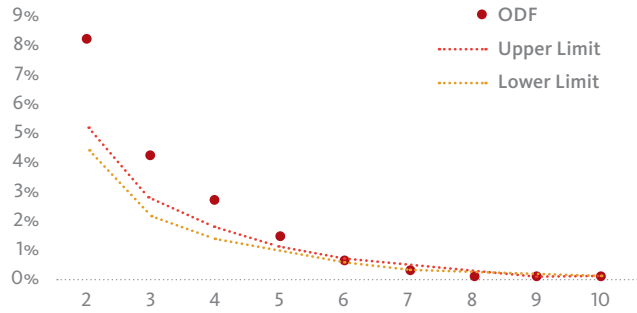


■ SC Germany direct

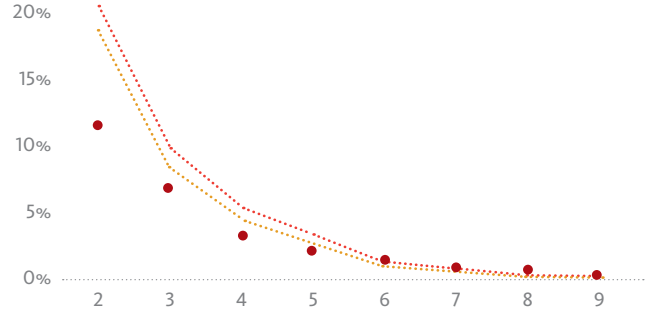


■ Retail ODF vs. limit (contd.)

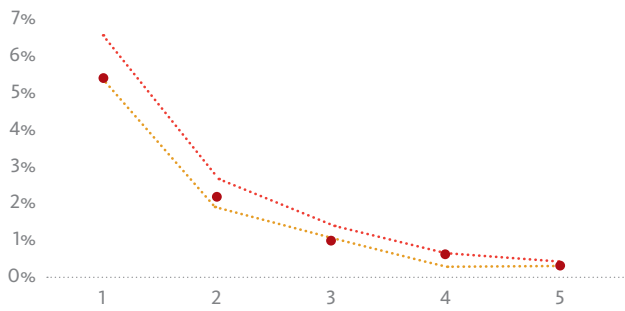
■ SC Germany auto



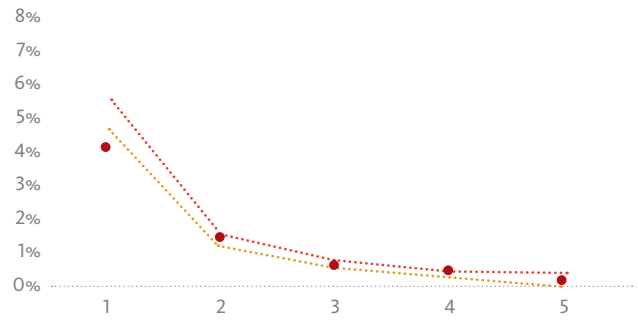
■ SC Norway auto private persons



■ SC Sweden auto private persons



■ SC Finland auto private persons



3. Credit risk

Transparency improvement from the Basel Committee (CR9)

The above analysis may be complemented by the quantitative study suggested by the Basel Committee on Banking Supervision (BCBS) in the document entitled Revised Pillar 3 disclosure requirements, of January 2015. In December 2016, in the guidelines released by the EBA, the EBA ratified this improvement without modifying it.

This proposes that information for PD backtesting should be reported in the table CR9 format, shown below:

Table 64. Backtest PD by geography and portfolio (CR9)

Country	PD Range	External rating equivalent	Weighted average PD ¹	Arithmetic average PD by obligors ¹	Number of obligors		Defaulted obligors in the year	Of which: new defaulted obligors in the year	Average historical annual default rate
					End of previous year	End of the year			
Portfolio	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-

The original EBA table may be interpreted with certain flexibility and the main decisions adopted in our case have been:

PD buckets. In line with the BCBS document mentioned above, in particular table CR6, the following PD intervals have been proposed¹.

PD intervals	Equivalent external rating
0 < 0.15%	AAA to A-
0.15 < 0.25%	A- to BBB+
0.25 < 0.50%	BBB+ to BBB-
0.50 < 0.75%	BBB- to BB+
0.75 < 2.50%	BB+ to BB-
2.50 < 10.0%	BB- to B-
10.0 < 100%	B- to C
100% (Default)	D

For the completion of column c, an equivalence between PD and external ratings was established. On an annual basis, Grupo Santander uses data from S&P² to estimate the TTC PD associated with the external ratings. First, an economic cycle is defined and for each category of rating a long-term average (covering the whole cycle) of the annual default frequencies contained in the S&P² report is calculated. This allows a long-term PD to be associated to each external rating.

Columns c and d contain the average regulatory PD at the date in question (December 2016), calculated by weighting by exposure (column c) and unweighted (column d). By way of example, the figures for UK mortgages are shown below.

Note 1. The PD figures are shown as percentages, i.e. 0.15 is actually 0.15%

Note 2. Specifically the document entitled '2014 Annual Global Corporate Default Study and Rating Transitions'.

Table 64. Backtest PD by geography and portfolio (CR9)

UK	PD Range	External rating equivalent	Weighted average PD	Arithmetic average PD by obligors
Retail - Residential mortgage exposures	0 < 0.15%	AAA to A-	0.08%	0.08%
	0.15 < 0.25%	A- to BBB+	0.18%	0.17%
	0.25 < 0.50%	BBB+ to BBB-	0.37%	0.37%
	0.50 < 0.75%	BBB- to BB+	0.64%	0.63%
	0.75 < 2.50%	BB+ to BB-	1.32%	1.27%
	2.50 < 10.0%	BB- to B-	4.75%	4.88%
	10.0 < 100%	B- to C	31.44%	31.41%
	100% (Default)	D	100.00%	100.00%

It can be seen that there is no major difference between the average exposure-weighted PD and the simple average in each bucket, indicating that the different transactions are fairly uniform with regard to exposure. This result is quite typical of retail portfolios, but may be less so in the case of corporate portfolios, where certain borrowers may have significant exposures. Nevertheless, as can be seen in the results shown further down, neither do the corporate portfolios (of SAN Spain, Mexico and Santander Consumer) reveal appreciable differences.

The following column (number of obligors) is divided into two (column e and f), which contain the number of borrowers (or transactions in the case of retail) at two different dates: December 2015 (column e) and December 2016 (column f). The intention is to detect customers/transactions migrating between PD buckets, though sometimes the migration is due more to a recalibration of regulatory models than to the dynamics of the rating system.

Table 64. Backtest PD by geography and portfolio (CR9)

UK	PD Range	External rating equivalent	Number of obligors	
			End of previous year	End of the year
Retail - Residential mortgage exposures	0 < 0.15%	AAA to A-	81,935	70,141
	0.15 < 0.25%	A- to BBB+	155,984	156,309
	0.25 < 0.50%	BBB+ to BBB-	365,739	312,756
	0.50 < 0.75%	BBB- to BB+	174,695	122,106
	0.75 < 2.50%	BB+ to BB-	288,405	388,731
	2.50 < 10.0%	BB- to B-	189,082	169,174
	10.0 < 100%	B- to C	81,166	74,360
	100% (Default)	D	23,220	20,908

Continuing with the example of UK mortgages, no significant migrations are seen between tranches, just a slight decline in the portfolio volumes. However, the average PD remains stable in all buckets.

3. Credit risk

The original BCBS table proposes two columns (g and h), which we preferred to merge into one, to report information on those transactions or customers which went into default in 2016 from the different regulatory PD buckets. New defaults would be considered all costumers divided into buckets but the ones already in default (from the previous year). For this, in line with the calculation of column i, we took the borrowers at the end of the previous FY (see the first column f) and observed which of these went into default during 2016. In fact, if we divide the new defaults by the initial customers for each rating category, we obtain the first of the five values for the annual default rate required for column i.

Table 64. Backtest PD by geography and portfolio (CR9)

UK	PD Range	External rating equivalent	Defaulted obligors in the year	New defaulted obligors in the year
	0 < 0.15%	AAA to A-	184	0.21%
	0.15 < 0.25%	A- to BBB+	324	0.22%
	0.25 < 0.50%	BBB+ to BBB-	970	0.28%
Retail - Residential mortgage exposures	0.50 < 0.75%	BBB- to BB+	491	0.33%
	0.75 < 2.50%	BB+ to BB-	1,242	0.50%
	2.50 < 10.0%	BB- to B-	1,966	1.44%
	10.0 < 100%	B- to C	9,325	15.04%
	100% (Default)	D		

From the backtesting point of view, column i is very important, as it averages the default rates experienced in each of the past five years for each PD bucket. Comparing this column with columns b and c gives us an idea of how well our regulatory PD match actual experience over the medium term.

As will be seen in the following tables, which reproduce table CR9 for a series of Grupo Santander's significant portfolios, in general the regulatory PD are fairly similar to the actual default rates, though the following divergences should be highlighted:

In general, the regulatory PD are on average higher than actual default rates. Nevertheless, there are some exceptions to the rule. As an example, Mortgages and Corporates in Spain. This is due to the fact that the adjustment applied to obtain regulatory TTC PD covers a longer period than the last 5 years and, in particular, includes very high default rates which occurred in the crises of the early 1990s.

In the case of Mortgages and Corporates in Spain, the situation of the last years reflects the severe economic crisis, which takes the actual default rates above their cyclical averages. In retail, however, the situation is similar to the German or UK portfolios, with actuals below the cyclical averages. These are portfolios with a higher rotation which, together with stricter credit policies, means that actual delinquency has been brought down.

The following tables contain all the information on a significant number of Grupo Santander's portfolios.

Table 64. Backtest PD by geography and portfolio (CR9)

UK	PD Range	External rating equivalent	Weighted average PD	Arithmetic average PD by obligors	Number of obligors		Defaulted obligors in the year	Average historical annual default rate
					End of previous year	End of the year		
Residential mortgage exposures	0 < 0.15%	AAA to A-	0.08%	0.08%	81,935	70,141	184	0.21%
	0.15 < 0.25%	A- to BBB+	0.18%	0.17%	155,984	156,309	324	0.22%
	0.25 < 0.50%	BBB+ to BBB-	0.37%	0.37%	365,739	312,756	970	0.28%
	0.50 < 0.75%	BBB- to BB+	0.64%	0.63%	174,695	122,106	491	0.33%
	0.75 < 2.50%	BB+ to BB-	1.32%	1.27%	288,405	388,731	1,242	0.50%
	2.50 < 10.0%	BB- to B-	4.75%	4.88%	189,082	169,174	1,966	1.44%
	10.0 < 100%	B- to C	31.44%	31.41%	81,166	74,360	9,325	15.04%
	100% (Default)	D	100.00%	100.00%	23,220	20,908		
Retail - Bank Accounts	0 < 0.15%	AAA to A-	0.05%	0.05%	988,299	752,815	102	0.02%
	0.15 < 0.25%	A- to BBB+	0.18%	0.18%	4,325,014	4,647,343	1,493	0.05%
	0.25 < 0.50%	BBB+ to BBB-	0.33%	0.33%	310,390	315,013	166	0.14%
	0.50 < 0.75%	BBB- to BB+	0.69%	0.68%	532,089	538,818	924	0.23%
	0.75 < 2.50%	BB+ to BB-	1.48%	1.43%	1,482,616	1,506,520	5,737	0.55%
	2.50 < 10.0%	BB- to B-	5.50%	5.46%	1,307,303	1,418,672	17,211	2.13%
	10.0 < 100%	B- to C	24.82%	24.80%	564,824	577,536	40,894	13.39%
	100% (Default)	D	100.00%	100.00%	57,740	57,470		
Unsecured Personal Loans	0 < 0.15%	AAA to A-	0.12%	0.12%	62	52	-	0.00%
	0.15 < 0.25%	A- to BBB+	0.24%	0.24%	533	569	-	0.04%
	0.25 < 0.50%	BBB+ to BBB-	0.32%	0.32%	2,581	3,039	3	0.19%
	0.50 < 0.75%	BBB- to BB+	0.55%	0.55%	31,896	33,860	78	0.36%
	0.75 < 2.50%	BB+ to BB-	1.23%	1.19%	222,697	225,251	1,386	0.93%
	2.50 < 10.0%	BB- to B-	4.29%	4.28%	100,240	89,858	2,915	3.16%
	10.0 < 100%	B- to C	31.22%	30.74%	8,506	7,129	2,586	28.53%
	100% (Default)	D	100.00%	100.00%	3,691	3,489	-	-

Table 64. Backtest PD by geography and portfolio (CR9)

SC SPAIN	PD Range	External rating equivalent	Weighted average PD	Arithmetic average PD by obligors	Number of obligors		Defaulted obligors in the year	Average historical annual default rate
					End of previous year	End of the year		
Retail	0 < 0.15%	AAA to A-	0.10%	0.09%	71,089	69,707	89	0.16%
	0.15 < 0.25%	A- to BBB+	0.19%	0.19%	1,044,263	1,098,889	860	0.09%
	0.25 < 0.50%	BBB+ to BBB-	0.38%	0.39%	788,323	1,081,688	613	0.08%
	0.50 < 0.75%	BBB- to BB+	0.54%	0.54%	541,512	167,432	342	0.11%
	0.75 < 2.50%	BB+ to BB-	1.42%	1.35%	406,837	429,466	1,101	0.35%
	2.50 < 10.0%	BB- to B-	5.18%	4.97%	308,355	259,595	5,656	2.23%
	10.0 < 100%	B- to C	24.38%	27.81%	73,796	111,707	8,951	16.41%
	100% (Default)	D	100.00%	100.00%	18,519	17,378	-	-
Other retail	0 < 0.15%	AAA to A-	0.14%	0.14%	-	1315	-	-
	0.15 < 0.25%	A- to BBB+	0.16%	0.17%	8,735	6,823	2	0.10%
	0.25 < 0.50%	BBB+ to BBB-	0.34%	0.34%	32,561	24,976	27	0.20%
	0.50 < 0.75%	BBB- to BB+	0.60%	0.60%	15,609	28,043	15	0.37%
	0.75 < 2.50%	BB+ to BB-	1.53%	1.53%	141,566	162,459	733	0.92%
	2.50 < 10.0%	BB- to B-	4.12%	4.65%	137,603	137,988	2,231	2.57%
	100% (Default)	D	100.00%	100.00%	12,119	11,350	-	-
Corporates	0.50 < 0.75%	BBB- to BB+	0.62%	0.62%	367	380	-	0.91%
	2.50 < 10.0%	BB- to B-	4.15%	4.32%	332	324	3	7.07%
	10.0 < 100%	B- to C	25.64%	31.21%	27	12	1	20.44%
	100% (Default)	D	100.00%	100.00%	60	19	-	-

Table 64. Backtest PD by geography and portfolio (CR9)

SPAIN	PD Range	External rating equivalent	Weighted average PD	Arithmetic average PD by obligors	Number of obligors		Defaulted obligors in the year	Average historical annual default rate
					End of previous year	End of the year		
Retail - Mortgages	0 < 0.15%	AAA to A-	0.06%	0.06%	305,750	313,587	209	0.08%
	0.15 < 0.25%	A- to BBB+	0.19%	0.18%	112,403	80,007	246	0.22%
	0.25 < 0.50%	BBB+ to BBB-	0.32%	0.32%	61,752	67,442	279	0.43%
	0.50 < 0.75%	BBB- to BB+	0.64%	0.65%	15,651	28,444	228	1.20%
	0.75 < 2.50%	BB+ to BB-	1.49%	1.44%	61,956	60,233	1,085	1.68%
	2.50 < 10.0%	BB- to B-	4.68%	4.74%	21,034	27,516	1,056	6.58%
	10.0 < 100%	B- to C	26.08%	25.66%	30,866	27,202	6,281	25.46%
	100% (Default)	D	100.00%	100.00%	31,918	29,318		
Retail - Other Retail	0 < 0.15%	AAA to A-	0.12%	0.12%	173,882	119,314	64	0.14%
	0.15 < 0.25%	A- to BBB+	0.18%	0.18%	52,786	69,497	95	0.19%
	0.25 < 0.50%	BBB+ to BBB-	0.36%	0.36%	102,923	107,385	180	0.21%
	0.50 < 0.75%	BBB- to BB+	0.65%	0.65%	66,486	85,563	261	0.53%
	0.75 < 2.50%	BB+ to BB-	1.52%	1.43%	262,711	215,450	2,133	1.80%
	2.50 < 10.0%	BB- to B-	4.81%	4.80%	213,560	205,515	5,196	2.83%
	10.0 < 100%	B- to C	25.17%	33.30%	247,713	197,005	38,696	16.80%
	100% (Default)	D	100.00%	100.00%	135,805	84,325		
Corporates	0 < 0.15%	AAA to A-	0.07%	0.07%	160	105	-	0.14%
	0.15 < 0.25%	A- to BBB+	0.18%	0.18%	1,488	1,704	1	0.20%
	0.25 < 0.50%	BBB+ to BBB-	0.32%	0.33%	6,229	3,362	7	0.25%
	0.50 < 0.75%	BBB- to BB+	0.51%	0.51%	184	3,452	2	1.66%
	0.75 < 2.50%	BB+ to BB-	1.50%	1.54%	15,128	15,744	138	1.69%
	2.50 < 10.0%	BB- to B-	5.45%	5.47%	6,012	5,402	268	6.32%
	10.0 < 100%	B- to C	19.16%	18.70%	1,848	1,785	333	24.04%
	100% (Default)	D	100.00%	100.00%	3,807	2,642		
Cards	0 < 0.15%	AAA to A-	0.07%	0.07%	638,511	836,215	307	0.03%
	0.15 < 0.25%	A- to BBB+	0.18%	0.18%	244,511	161,044	283	0.09%
	0.25 < 0.50%	BBB+ to BBB-	0.36%	0.36%	229,166	115,892	475	0.18%
	0.50 < 0.75%	BBB- to BB+	0.59%	0.59%	105,795	59,179	206	0.32%
	0.75 < 2.50%	BB+ to BB-	1.31%	1.30%	190,629	199,533	1,150	0.76%
	2.50 < 10.0%	BB- to B-	4.59%	4.69%	240,066	185,564	5,048	2.90%
	10.0 < 100%	B- to C	28.71%	29.34%	53,636	36,747	7,864	19.68%
	100% (Default)	D	100.00%	100.00%	17,415	10,669		

Table 64. Backtest PD by geography and portfolio (CR9)

SANTANDER TOTTA	PD Range	External rating equivalent	Weighted average PD	Arithmetic average PD by obligors	Number of obligors		Defaulted obligors in the year	Average historical annual default rate
					End of previous year	End of the year		
Retail - Mortgages	0 < 0.15%	AAA to A-	0.06%	0.08%	134,001	135,064	182	0.16%
	0.15 < 0.25%	A- to BBB+	0.19%	0.19%	31,113	34,637	33	0.23%
	0.25 < 0.50%	BBB+ to BBB-	0.41%	0.38%	33,566	40,323	104	0.49%
	0.50 < 0.75%	BBB- to BB+	0.67%	0.66%	6,126	12,380	21	0.53%
	0.75 < 2.50%	BB+ to BB-	1.35%	1.40%	81,959	85,286	588	1.40%
	2.50 < 10.0%	BB- to B-	4.84%	4.99%	78,863	99,223	1,979	3.80%
	10.0 < 100%	B- to C	24.84%	24.38%	19,623	21,464	2,785	18.93%
	100% (Default)	D	100.00%	100.00%	20,363	7,840		
Retail - Other Retail	0 < 0.15%	AAA to A-	0.08%	0.08%	-	58	-	0.00%
	0.15 < 0.25%	A- to BBB+	0.16%	0.16%	-	17	-	0.50%
	0.25 < 0.50%	BBB+ to BBB-	0.35%	0.35%	814	620	2	1.70%
	0.50 < 0.75%	BBB- to BB+	0.62%	0.63%	66	62	-	0.62%
	0.75 < 2.50%	BB+ to BB-	1.42%	1.42%	1,077	2,512	3	1.00%
	2.50 < 10.0%	BB- to B-	5.81%	5.85%	1,710	1,275	106	4.50%
	10.0 < 100%	B- to C	26.09%	26.03%	405	232	71	21.33%
	100% (Default)	D	100.00%	100.00%	622	507		
Corporates	0 < 0.15%	AAA to A-	0.12%	0.14%	8,817,00	7,829	6	0.09%
	0.15 < 0.25%	A- to BBB+	0.18%	0.19%	7,217,00	7,136	5	0.14%
	0.25 < 0.50%	BBB+ to BBB-	0.39%	0.39%	17,864	16,997	27	0.37%
	0.50 < 0.75%	BBB- to BB+	0.60%	0.57%	31,254	28,394	57	0.57%
	0.75 < 2.50%	BB+ to BB-	1.51%	1.96%	233,118	225,165	886	1.16%
	2.50 < 10.0%	BB- to B-	5.56%	5.74%	101,011	96,573	2,802	3.08%
	10.0 < 100%	B- to C	34.78%	39.61%	73,511	69,669	11,764	19.54%
	100% (Default)	D	100.00%	100.00%	76,176	43,225		
Retail and SMEs	0 < 0.15%	AAA to A-	0.09%	0.09%	115,780	103,356	94	0.16%
	0.15 < 0.25%	A- to BBB+	0.21%	0.21%	49,935	40,259	92	0.40%
	0.25 < 0.50%	BBB+ to BBB-	0.37%	0.37%	43,064	44,588	107	0.61%
	0.50 < 0.75%	BBB- to BB+	0.60%	0.60%	394	19,725	1	0.57%
	0.75 < 2.50%	BB+ to BB-	1.27%	1.30%	40,519	33,391	299	1.58%
	2.50 < 10.0%	BB- to B-	5.17%	5.26%	26,897	29,039	1,189	4.72%
	10.0 < 100%	B- to C	30.49%	30.48%	12,261	18,628	2,458	22.18%
	100% (Default)	D	100.00%	100.00%	15,201	11,586		
Cards	0 < 0.15%	AAA to A-	0.03%	0.03%	33	14	-	0.05%
	0.15 < 0.25%	A- to BBB+	0.21%	0.21%	-	217	-	0.34%
	0.25 < 0.50%	BBB+ to BBB-	0.31%	0.31%	4,918	1,727	23	0.57%
	0.50 < 0.75%	BBB- to BB+	0.63%	0.63%	10,084	40	49	0.75%
	0.75 < 2.50%	BB+ to BB-	1.27%	1.42%	8,136	19,571	101	1.32%
	2.50 < 10.0%	BB- to B-	4.88%	4.71%	10,489	10,022	327	3.03%
	10.0 < 100%	B- to C	24.00%	27.58%	14,033	18,226	1,950	13.38%
	100% (Default)	D	100.00%	100.00%	17,361	8,536		

Table 64. Backtest PD by geography and portfolio (CR9)

MEXICO	PD Range	External rating equivalent	Weighted average PD	Arithmetic average PD by obligors	Number of obligors		Defaulted obligors in the year	Average historical annual default rate
					End of previous year	End of the year		
Corporates	0 < 0.15%	AAA to A-	0.00%	0.00%	-	-	-	0.00%
	0.15 < 0.25%	A- to BBB+	0.00%	0.00%	-	-	-	0.00%
	0.25 < 0.50%	BBB+ to BBB-	0.38%	0.38%	35	42	2	0.39%
	0.50 < 0.75%	BBB- to BB+	0.00%	0.00%	-	-	-	0.00%
	0.75 < 2.50%	BB+ to BB-	1.27%	1.27%	2,509	3,026	28	1.25%
	2.50 < 10.0%	BB- to B-	4.25%	4.25%	398	252	34	6.51%
	10.0 < 100%	B- to C	24.20%	24.20%	24	21	5	27.14%
	100% (Default)	D	100.00%	100.00%	102	79	-	-
SC GERMANY	PD Range	External rating equivalent	Weighted average PD	Arithmetic average PD by obligors	Number of obligors		Defaulted obligors in the year	Average historical annual default rate
					End of previous year	End of the year		
Autos	0 < 0.15%	AAA to A-	0.10%	0.10%	34,579	35,391	8	0.03%
	0.15 < 0.25%	A- to BBB+	0.23%	0.23%	68,936	70,325	46	0.14%
	0.25 < 0.50%	BBB+ to BBB-	0.35%	0.35%	281,449	280,645	238	0.27%
	0.50 < 0.75%	BBB- to BB+	0.55%	0.55%	423,919	418,060	613	0.42%
	0.75 < 2.50%	BB+ to BB-	1.19%	1.19%	344,352	340,471	1,971	1.13%
	2.50 < 10.0%	BB- to B-	4.33%	4.33%	56,150	56,454	2,104	5.63%
	10.0 < 100%	B- to C	31.25%	31.25%	19,458	17,987	3,640	29.36%
	100% (Default)	D	100.00%	100.00%	25,471	24,411	-	-
Direct	0 < 0.15%	AAA to A-	-	-	-	-	-	-
	0.15 < 0.25%	A- to BBB+	-	-	-	-	-	-
	0.25 < 0.50%	BBB+ to BBB-	0.35%	0.35%	519	383	-	0.24%
	0.50 < 0.75%	BBB- to BB+	0.55%	0.55%	6,854	6,864	5	0.23%
	0.75 < 2.50%	BB+ to BB-	1.49%	1.49%	352,446	364,656	2,085	1.12%
	2.50 < 10.0%	BB- to B-	4.03%	4.03%	153,779	164,441	4,379	5.11%
	10.0 < 100%	B- to C	30.36%	30.36%	20,926	23,632	5,075	38.40%
	100% (Default)	D	100.00%	100.00%	40,110	31,838	-	-
Durables	0 < 0.15%	AAA to A-	-	-	-	-	-	-
	0.15 < 0.25%	A- to BBB+	-	-	-	-	-	-
	0.25 < 0.50%	BBB+ to BBB-	0.35%	0.35%	85,038	78,821	70	0.14%
	0.50 < 0.75%	BBB- to BB+	0.55%	0.55%	353,185	348,264	264	0.13%
	0.75 < 2.50%	BB+ to BB-	1.31%	1.31%	1,155,708	1,102,486	2,930	0.48%
	2.50 < 10.0%	BB- to B-	4.08%	4.08%	246,824	256,225	3,644	2.11%
	10.0 < 100%	B- to C	21.42%	21.42%	36,194	36,957	3,754	12.27%
	100% (Default)	D	100.00%	100.00%	35,483	29,966	-	-
Dealers	0 < 0.15%	AAA to A-	-	-	-	-	-	-
	0.15 < 0.25%	A- to BBB+	-	-	-	-	-	-
	0.25 < 0.50%	BBB+ to BBB-	0.35%	0.35%	431	415	-	0.05%
	0.50 < 0.75%	BBB- to BB+	0.55%	0.55%	423	375	-	0.14%
	0.75 < 2.50%	BB+ to BB-	1.63%	1.63%	3,442	3,094	10	0.50%
	2.50 < 10.0%	BB- to B-	4.45%	4.45%	1,432	1,126	28	2.10%
	10.0 < 100%	B- to C	33.92%	33.92%	819	242	14	4.74%
	100% (Default)	D	100.00%	100.00%	181	155	-	-

Table 64. Backtest PD by geography and portfolio (CR9)

SC NORDICS	PD Range	External rating equivalent	Weighted average PD	Arithmetic average PD by obligors	Number of obligors		Defaulted obligors in the year	Average historical annual default rate
					End of previous year	End of the year		
Nordics - Norway Auto Individuals	0 < 0.15%	AAA to A-	-	-	-	-	-	-
	0.15 < 0.25%	A- to BBB+	-	-	-	-	-	-
	0.25 < 0.50%	BBB+ to BBB-	0.26%	0.26%	46,263	52,364	84	0.21%
	0.50 < 0.75%	BBB- to BB+	0.63%	0.63%	37,658	42,433	199	0.52%
	0.75 < 2.50%	BB+ to BB-	1.38%	1.41%	56,994	59,474	517	1.04%
	2.50 < 10.0%	BB- to B-	5.45%	5.59%	18,752	19,202	463	2.85%
	10.0 < 100%	B- to C	22.67%	23.24%	14,061	15,035	1,478	15.61%
	100% (Default)	D	100.00%	100.00%	3,708	3,856	-	-
Nordics - Sweden Auto Individuals	0 < 0.15%	AAA to A-	-	-	-	-	-	-
	0.15 < 0.25%	A- to BBB+	-	-	-	-	-	-
	0.25 < 0.50%	BBB+ to BBB-	-	-	-	-	-	-
	0.50 < 0.75%	BBB- to BB+	-	-	-	-	-	-
	0.75 < 2.50%	BB+ to BB-	0.86%	0.86%	78,997	92,405	218	0.36%
	2.50 < 10.0%	BB- to B-	3.34%	3.36%	27,539	28,363	295	1.46%
	10.0 < 100%	B- to C	66.60%	66.50%	355	339	121	55.85%
	100% (Default)	D	100.00%	100.00%	336	308	-	-
Nordics - Finland Auto Individuals	0 < 0.15%	AAA to A-	-	-	-	-	-	-
	0.15 < 0.25%	A- to BBB+	-	-	-	-	-	-
	0.25 < 0.50%	BBB+ to BBB-	-	-	-	-	-	-
	0.50 < 0.75%	BBB- to BB+	0.62%	0.62%	12,871	14,019	21	0.18%
	0.75 < 2.50%	BB+ to BB-	1.35%	1.39%	58,220	71,760	200	0.44%
	2.50 < 10.0%	BB- to B-	4.94%	4.95%	14,166	12,924	205	1.83%
	10.0 < 100%	B- to C	26.82%	27.18%	9,035	9,719	601	10.51%
	100% (Default)	D	100.00%	100.00%	468	490	-	-

3.9.2. EAD Backtest

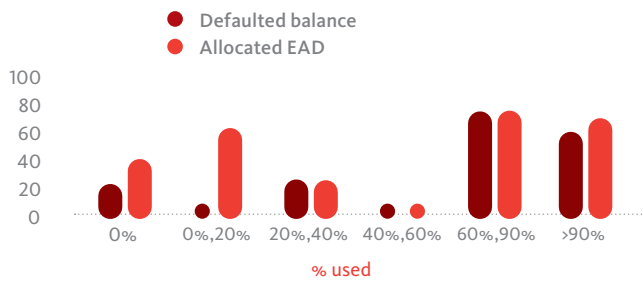
To assess the Credit Conversion Factors (CCF), the actual balance of the transaction when they went into default was compared with the regulatory EAD 12 months prior to the default.

The ratio of estimated EAD to actual EAD is called the 'Coverage Ratio' and gives an idea of the degree of precision in the estimation of this parameter.

The following tables and graphs illustrate the comparison between the estimated EAD and actual EAD for Santander Spain's main portfolios with committed limits. Personal Cards and Credits and Corporate Credits. The data are broken down by the percentage utilization of the facility, as this is the main driver used in estimating CCF and, therefore, in assigning EAD.

Spain. Non standardised corporates credit cards

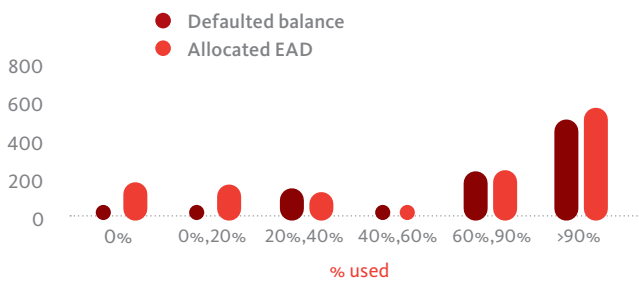
Thousands of Euros



% Used	Defaulted balance	Allocated EAD	Coverage ratio
0%	21.6	38.9	180%
(0%,20%]	20.1	64.3	319%
(20%,40%]	25.6	25.6	100%
(40%,60%]	15.8	14.8	94%
(60%,90%]	75.8	76.3	101%
>90%	60.1	70.6	118%
TOTAL	219.1	290.5	133%

Spain. Standardised corporates credit cards

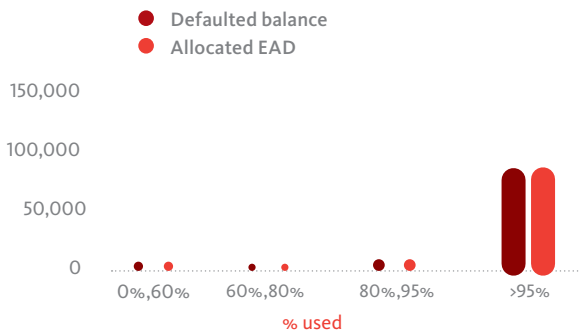
Thousands of Euros



% Used	Defaulted balance	Allocated EAD	Coverage ratio
0%	46.8	184.9	395%
(0%,20%]	85.3	171.5	201%
(20%,40%]	151.5	132.7	88%
(40%,60%]	78.4	73.1	93%
(60%,90%]	243.3	257.1	106%
>90%	522.9	587.6	112%
TOTAL	1,128.3	1.406,7	125%

Spain. Non standardised corporates credits

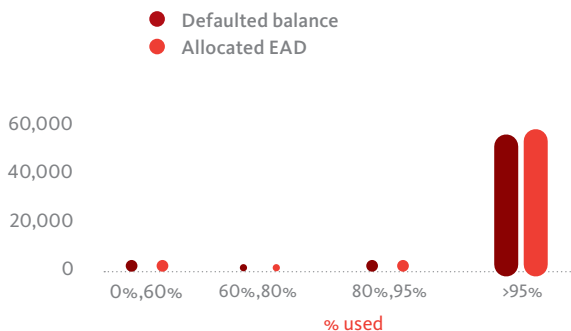
Thousands of Euros



% Used	Defaulted balance	Allocated EAD	Coverage ratio
[0%,60%]	5,364.1	5,123.5	96%
(60%,80%]	616.5	465.0	75%
(80%,95%]	3,142.0	3,014.3	96%
>95%	111,472.4	111,569.4	100%
TOTAL	120,595.0	120,172.2	100%

Spain. Standardised corporates credits

Thousands of Euros

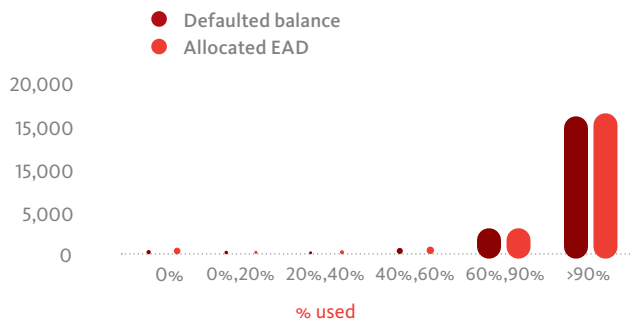


% Used	Defaulted balance	Allocated EAD	Coverage ratio
[0%,60%]	1,112.3	1,244.8	112%
(60%,80%]	593.5	539.1	91%
(80%,95%]	1,937.9	1,952.7	101%
>95%	53,779.2	55,452.6	103%
TOTAL	57,422.9	59,189,2	103%

3. Credit risk

Spain. Retail credit cards

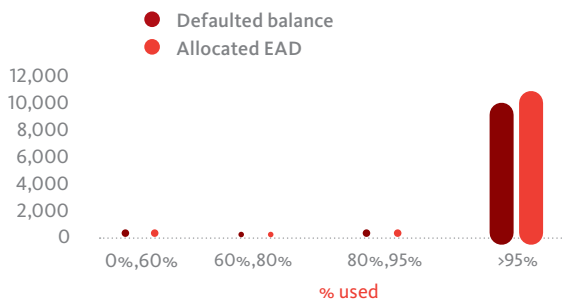
Thousands of Euros



% Used	Defaulted balance	Allocated EAD	Coverage ratio
0%	473.0	812.7	172%
(0%,20%]	468.5	364.9	78%
(20%,40%]	450.7	494.7	110%
(40%,60%]	831.3	904.9	109%
(60%,90%]	3,356.7	3,309.3	99%
>90%	16,448.7	16,733.3	102%
TOTAL	22,029.0	22,619.8	103%

Spain. Retail credits

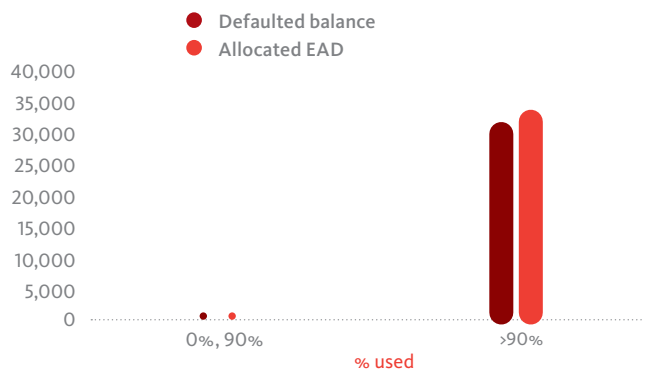
Thousands of Euros



% Used	Defaulted balance	Allocated EAD	Coverage ratio
[0%,60%]	422.2	449.8	107%
(60%,80%]	135.5	145.2	107%
(80%,95%]	431.2	438.9	102%
>95%	10,114.7	10,756.3	106%
TOTAL	11,103.7	11,790.2	106%

Santander Totta. Standardised corporates lines of credit

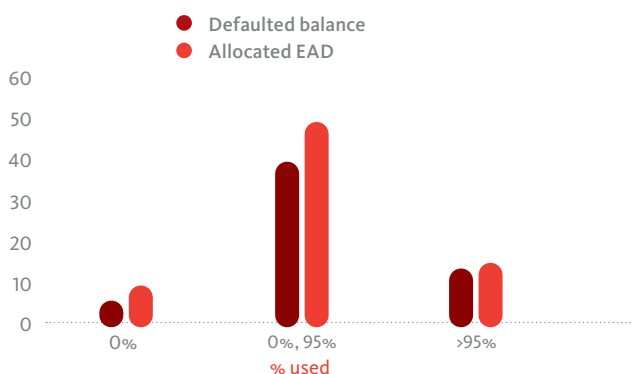
Thousands of Euros



% Used	Defaulted balance	Allocated EAD	Coverage ratio
[0%,90%]	695	678	97%
>90%	32,334	33,952	105%
TOTAL	33,029	34,629	105%

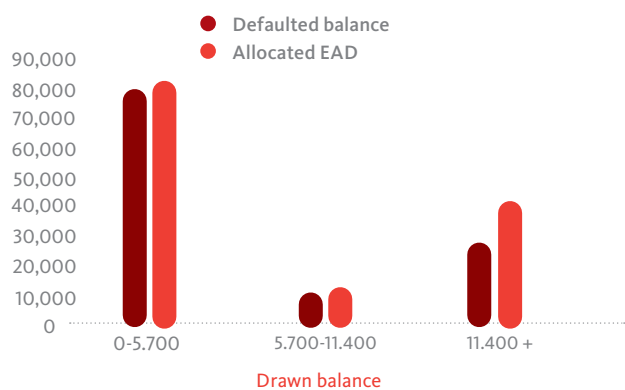
Santander Totta. Standardised corporates credit cards

Thousands of Euros



% Used	Defaulted balance	Allocated EAD	Coverage ratio
0%	3	9	255%
(0%,95%]	40	49	122%
>95%	13	15	111%
TOTAL	57	72	127%

UK. Mortgages
Thousands of Euros



Drawn balance	Defaulted balance	Allocated EAD	Coverage ratio
0 - 5,700	83,000	80,000	104%
5,700 - 11,400	13,000	11,000	118%
11,400 +	42,000	28,000	150%
TOTAL	138,000	119,000	116%

Note: not included mortgages without undrawn balance.

The coverage ratios are in general only slightly above 100%, indicating slight conservatism in the EAD estimates. The highest ratios are found in the Personal and SME Credits portfolio, but they are concentrated in the buckets with less utilization, which are those with less exposure.

3.9.3 Loss due to impairment of assets: Backtest of Expected Loss and LGD (Santander Spain)

To check the regulatory Expected Loss against the actual losses, it is proposed to compare the variation in managed NPLs (VMG)⁵ for the 2008-2016 period with the Expected Loss figure that would result from applying the regulatory parameters.

To assess the LGD figures, the VMG is also used as a proxy for Expected Loss. Dividing observed VMG by regulatory PD gives an implied or observed LGD, which is then compared with the average regulatory LGD of each portfolio.

It should be noted that since 2013 the data have undergone certain changes that make the comparison with previous years more difficult. The two most notable factors in this regard are the integration of Banesto and a Bank of Spain regulation on the classification of certain mortgage restructurings as defaults.

Meanwhile, the increased prudence in the concession of credits in the context of a slow recovery in lending has slowed the number of transactions going into default, while at the same time defaults from previous years have improved due to recoveries and borrowers emerging from default. This generated negative VMGs in 2015 and 2016, which hinders the comparison with the regulatory parameters even further.

For all the above reasons, and considering moreover that the VMG and Expected Loss can only be compared from a long-term point of view we present a comparison based on the VMG observed over the last five years, in addition to the directly observed results.

The following tables and graphs refer to Santander Spain's most important portfolios: Personal Mortgages and Non-standardised Corporates.

Table 65. Retail mortgages

	VMG ⁵ (%)	Regulatory Expected loss	Regulatory PD	Implicit LGD	Regulatory LGD
2008	1.6%	1.2%	5.6%	28.1%	14.5%
2009	0.8%	1.3%	6.3%	13.2%	14.3%
2010	0.3%	1.2%	5.9%	5.0%	13.9%
2011	0.8%	1.3%	6.9%	11.4%	11.4%
2012	0.9%	1.4%	6.8%	12.8%	11.1%
2013	3.9%	1.8%	7.7%	50.0%	14.2%
2014	0.2%	2.8%	9.5%	1.6%	14.9%
2015	-0.3%	2.7%	9.2%	-	14.6%
2016	-0.2%	3.0%	8.5%	-	16.8%
	0.9%	1.9%	7.4%	17.5%	14.0%

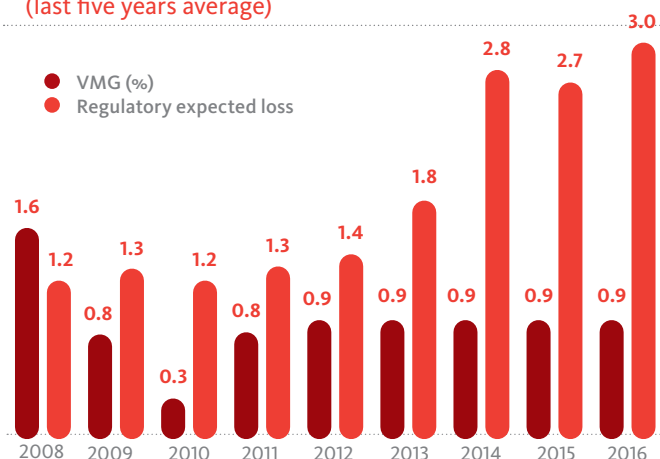
The table above shows a significant increase in the VMG in 2013, due to the factors mentioned above: the integration of Banesto and the Bank of Spain Note on the classification of certain restructurings as defaults. This one-off increase had a counter-effect in subsequent years, particularly in the most recent years, when a negative VMG was recorded. VMG was decreasing due to a gradual recovery in the economy and, above all, the prudent policies pursued by the Bank. The increase in debtors emerging from default is partly attributable to the high starting levels in 2013 and 2014.

In order to neutralize these effects and show a longer-term view of VMG, allowing a better comparison with Expected Loss, we have decided to average the values for the last five years, as shown in the following table and graphs.

Table 66. Retail mortgages (last five years average)

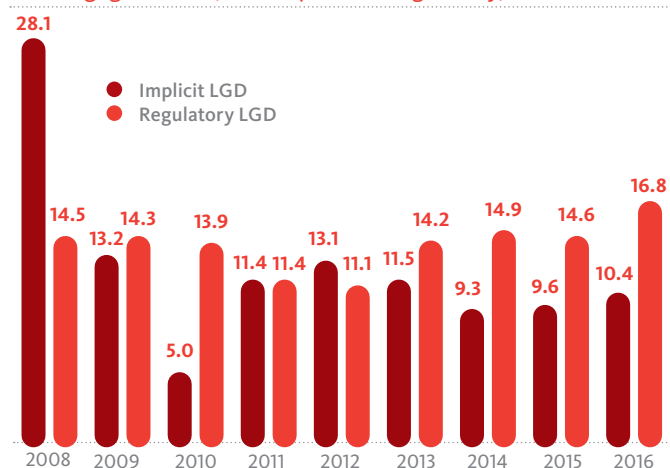
	VMG (%)	Regulatory Expected loss	Regulatory PD	Implicit LGD	Regulatory LGD
2008	1.6%	1.2%	5.6%	28.1%	14.5%
2009	0.8%	1.3%	6.3%	13.2%	14.3%
2010	0.3%	1.2%	5.9%	5.0%	13.9%
2011	0.8%	1.3%	6.9%	11.4%	11.4%
2012	0.9%	1.4%	6.8%	13.1%	11.1%
2013	0.9%	1.8%	7.7%	11.5%	14.2%
2014	0.9%	2.8%	9.5%	9.3%	14.9%
2015	0.9%	2.7%	9.2%	9.6%	14.6%
2016	0.9%	3.0%	8.5%	10.4%	16.8%
	0.9%	1.9%	7.4%	12.4%	14.0%

Mortgages retail (VMG vs. Expected Loss) (last five years average)



Note 5. VMG is defined as net new defaults during the year, plus write-offs and less income from recovery of write-offs for the same year. The VMG divided by the balance at risk is regarded as a measurement of the 'risk premium' of a portfolio and a proxy for Expected Loss, though it is subject to greater volatility and cyclicality.

■ Mortgages retail (LGD Implicit vs Regulatory)



The average implied LGD of (12.4%) is very close to the regulatory figure (14.0%). This similarity should be giving way to greater divergence, as seen with corporates, with a gradual decline in implied LGD to long-run LGD levels. As it will be shown below, this tendency has been observed previously in the enterprises portfolio.

■ Table 67. Non-standardised corporates

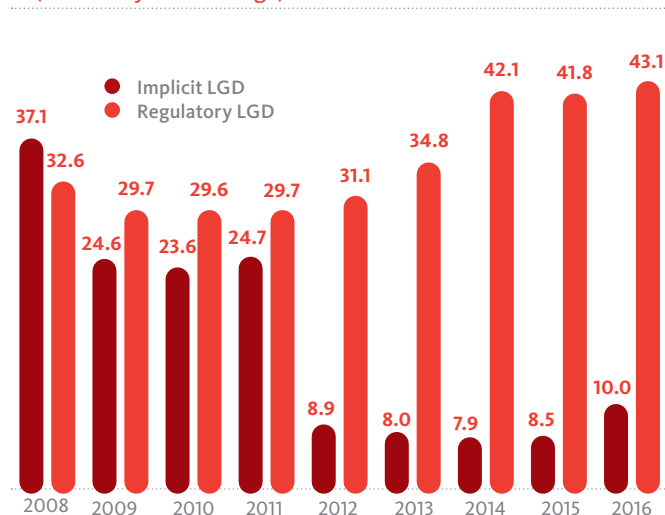
	VMG (%)	Regulatory Expected loss	Regulatory PD	Implicit LGD	Regulatory LGD
2008	2.4%	2.0%	6.3%	37.1%	32.6%
2011	3.0%	3.6%	12.1%	24.6%	29.7%
2010	3.7%	4.3%	15.7%	23.6%	29.6%
2011	5.6%	6.2%	22.5%	24.7%	29.7%
2012	6.2%	7.5%	25.8%	23.9%	31.1%
2013	6.1%	9.6%	28.6%	21.1%	34.8%
2014	2.7%	12.5%	29.3%	9.3%	42.1%
2015	-1.8%	10.8%	27.3%	-	41.8%
2016	-1.6%	8.9%	23.0%	-	43.1%
	2.9%	7.3%	21.2%	23.5%	34.9%

In non-standardised corporates, VMG was also negative in 2015 and 2016 which, together with the volatility of previous years, is a reason for taking the average of the last five years, as in the case of mortgages.

■ Table 68. Non-standardised corporates (last five years average)

	VMG (%)	Regulatory Expected loss	Regulatory PD	Implicit LGD	Regulatory LGD
2008	2.4%	2.0%	6.3%	37.1%	32.6%
2009	3.0%	3.6%	12.1%	24.6%	29.7%
2010	3.7%	4.3%	15.7%	23.6%	29.6%
2011	5.6%	6.2%	22.5%	24.7%	29.7%
2012	2.3%	7.5%	25.8%	8.9%	31.1%
2013	2.3%	9.6%	28.6%	8.0%	34.8%
2014	2.3%	12.5%	29.3%	7.9%	42.1%
2015	2.3%	10.8%	27.3%	8.5%	41.8%
2016	2.3%	8.9%	23.0%	10.0%	43.1%
	2.9%	7.3%	21.2%	17.0%	34.9%

■ Non-standardised corporates (LGD implicit vs. regulatory) (Last five years average)



This gives rise to very low implied LGD values in the last three years and an average since 2008 which is closer to the long-run LGD than to the regulatory values, which correspond to down-turn situations.

Leaving aside the exactitude of the final results, the trends run in the right direction: the observed LGDs are declining drastically due to the large volumes of defaults accumulated in recent years, which are now giving rise to debtors emerging from default and bad debt recoveries on a scale which exceeds that of new defaults.

The regulatory LGD, in turn, appears to show a certain rising tendency, when it might be expected to remain constant at its maximum levels, which correspond to a down-turn situation. This tendency is simply the result of updating the estimates, which are gradually reflecting the final results of the recovery proceedings initiated during the crisis. If the recovery in the Spanish economy is consolidated, the regulatory LGD will tend to stabilise.

3. Credit risk

Despite its down-turn nature, there is no reason to suppose that the regulatory LGD must remain constant. If the LGDs assigned are sufficiently granular, it will be possible to reflect changes in the portfolio mix towards transactions with lower severity, with better collateral for example, which will allow the average portfolio LGD to be reduced.

3.10. Counterparty risk

Chapter 6 of CRR (Regulation (EU) No 575/2013) describes counterparty credit risk as the risk that a counterparty in a transaction may fail to meet payments prior to final settlement of the cash flows in the transaction. It includes the following transactions: derivative instruments, repurchase agreements, securities or commodities lending, long settlement transactions and margin lending transactions.

Counterparty risk in Grupo Santander is controlled using an integrated system that provides real-time information on exposures to any counterparty, product or maturity and in any Group unit as a percentage of the agreed limits.

For the measurement of exposure (ECR or equivalent credit risk), there are two methodologies, a MtM methodology (replacement cost in the case of derivatives and drawn amount in the case of committed facilities), plus an add-on for potential future exposure, and another methodology introduced in mid-2014 for certain regions and some products, which includes a calculation of exposure using Monte Carlo simulation.

The capital at risk or unexpected loss, i.e. the loss which, once the expected loss is subtracted, constitutes the economic capital, net of guarantees and recoveries, is also calculated.

The exposures are recalculated at market closure, adjusting all transactions to their new time horizon. The potential future exposure is adjusted and mitigation measures (netting, collateral etc.) are applied, so that the exposures can be checked on a daily basis against the limits approved by senior management. Risk control is performed using an integrated system that provides real-time information about the unused exposure limit with respect to any counterparty, product or maturity at any Group unit.

As regards collateral management, derivative transactions subject to collateral agreements are marked to market daily and the parameters agreed in the collateral agreement are applied, giving an amount of collateral to be called from, or returned to the counterparty.

Margin calls are issued by one of the counterparties, usually daily, as stipulated in the collateral agreement. The counterparty that receives the margin call checks the valuation, at which point discrepancies may arise.

A weekly monitoring committee (Discrepancies Committee) has been established to analyse transactions in which significant discrepancies have been detected. The committee includes representatives from Collateral Management, Market Risk, Wholesale Risk, Credit Institution Risk Approval, Structured Product Risk and Wholesale Banking Risk.

Currently, most collateral is posted and received in cash. However, the current market trend shows that the use of non-cash collateral is increasing. Grupo Santander is taking this trend into account in its active collateral management.

Furthermore, any correlation there may be between the increase in exposure to a customer and the customer's solvency is controlled by ensuring that the related derivative transactions are for hedging and not speculative purposes.

In derivatives, where most collateral is in cash, there is practically no risk of adverse effects arising from correlations between the collateral and the collateral provider. Any adverse effects arising from correlations in non-cash collateral are immaterial.

In regard to wrong way risk (WWR), the criterion used by Santander for calculating the credit exposure to derivatives with specific WWR (i.e. the deterioration in counterparty credit quality is directly correlated to the decline in market value of the underlying) is very conservative, given that the exposure to the derivatives with WWR resembles the exposure to a basic financing. In very specific exceptions, with the aim of providing incentives for short-term transactions, with customers with a good rating, liquid underlying and which include collateralisation mechanisms in the derivatives, a decision may be taken to calculate a stressed credit exposure of the derivative.

Corporation envisages implementing an action plan during 2017 to identify, measure, control and report on wrong way risk.

The impact of a downgrade of the Group's credit rating and the resulting increase in margin requirements is expected to be quite low. This is because the Group's credit rating affects only a small percentage of its current collateral agreements. If SAN Spain's (parent company) credit rating were to fall to the next one down, it is estimated that it would have to provide extra collateral of EUR 228 million.

The information in the tables below relates exclusively to exposures subject to counterparty risk. All of the exposure is marked to market.

Table 69. Total EAD Counterparty Risk

Thousands of Euros

	31 Dec. 2016	31 Dec. 2015
Total	39,875,252	40,631,817
Of which: Derivative	26,874,935	30,255,222

The above table does not include exposures with central counterparty entities to a sum of 9,757 million Euros.

The following table contains information on the gross positive fair value of the derivative contracts, the potential future exposure, the effect of netting and collateral agreements, and the final exposure value.

Table 70. Derivatives exposure

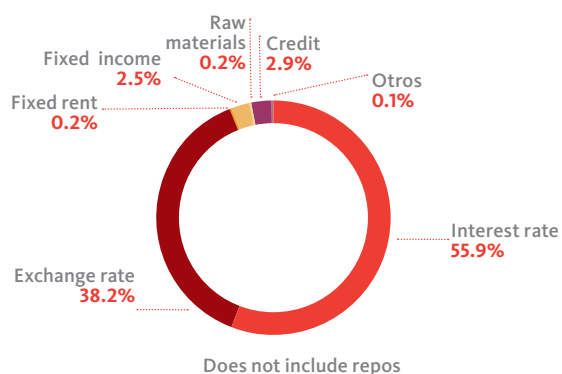
Thousands of Euros

	31 Dec. 2016	31 Dec. 2015
Gross positive fair value of contracts (public balance sheet scope)	82,420,269	84,451,221
Gross positive fair value of contracts (non-public balance sheet scope)	82,498,394	84,900,988
Netting benefits	61,343,245	62,181,439
Netted fair value after netting effect	21,155,149	22,719,549
Collateral held	11,483,448	10,352,111
Netted fair value after netting effect and collateral held	9,671,700	12,367,438
Regulatory net add-on	17,203,234	17,887,784
EAD	26,874,935	30,255,222

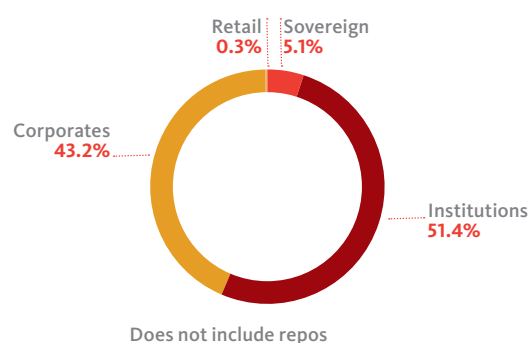
The net positions of the 10 largest counterparties, after discounting received collateral, account for 24.8% of the Group's total derivatives exposure.

A breakdown is shown below of the derivative exposure by product type, category, counterparty region and counterparty credit rating

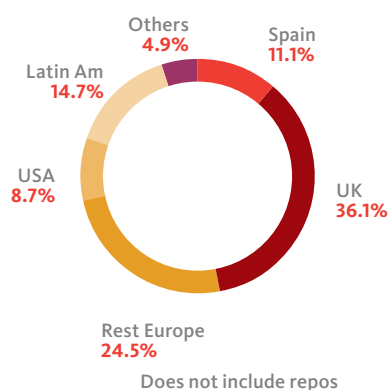
Derivatives exposure by product



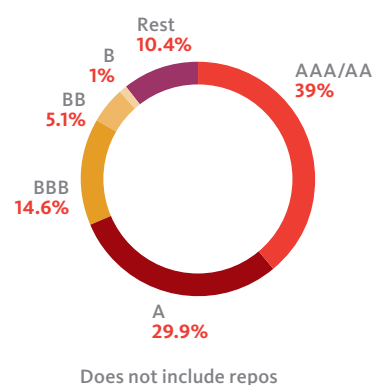
Derivatives exposure by category



Derivatives exposure by geography



Derivatives exposure by rating



3. Credit risk

In 2016 derivative transactions were concentrated in counterparties with high credit quality, so that 69% of the exposure was to counterparties rated A or better.

The distribution by type of counterparty was 51% institutions and 43% corporates.

As regards the geographic distribution, 36% of the exposure was accounted for by UK counterparties (mainly Santander UK's operations) and, among the other country groupings, mostly by Spain (11%), rest of Europe (25%), the US (9%) and Latin America (15%).

The table below shows the breakdown of counterparty credit risk exposures by geography, category and rating of the counterparty, including more details:

Table 71. IRB approach. CCR exposures by portfolio and PD scales (CCR4)

Thousands of Euros

		31 Dec. 2016						
		a	b	c	d	e	f	g
Brazil	PD Scale	EAD post CRM	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RWA density
AIRB. Corporates								
	0.00 to < 0.15%	196,817	0.07%	37	45%	1.06	29,418	14.95%
	0.15 to < 0.25%	359,590	0.17%	24	45%	2.37	149,579	41.60%
	0.25 to < 0.50%	178,526	0.30%	49	45%	1.68	86,751	48.59%
	0.50 to < 0.75%	167,535	0.52%	56	45%	1.23	99,705	59.51%
	0.75 to < 2.50%	151,250	1.15%	68	37%	1.44	109,666	72.51%
	2.50 to < 10.00%	8,388	2.74%	4	45%	1.00	9,471	112.90%
	10.00 to < 100.00%	56,775	20.76%	2	45%	1.04	135,625	238.88%
	100.00% (default)	9,612	100.00%	4	45%	3.25	0	0.00%
SUB-TOTAL		1,128,493	2.26%	244	44%	1.67	620,214	54.96%
TOTAL		1,128,493	2.26%	244	44%	1.67	620,214	54.96%
		a	b	c	d	e	f	g
Chile	PD Scale	EAD post CRM	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RWA density
AIRB. Corporates								
	0.00 to < 0.15%	119,448	0.06%	127	45%	0.41	10,289	8.61%
	0.15 to < 0.25%	94,805	0.17%	51	45%	1.14	21,456	22.63%
	0.25 to < 0.50%	207,364	0.29%	244	45%	0.57	47,813	23.06%
	0.50 to < 0.75%	43,331	0.52%	243	45%	0.34	7,555	17.43%
	0.75 to < 2.50%	23,244	1.15%	151	45%	3.03	41,122	176.92%
	2.50 to < 10.00%	1,943	2.96%	4	45%	3.44	3,152	162.17%
	10.00 to < 100.00%	-	-	-	-	-	-	-
	100.00% (default)	-	-	-	-	-	-	-
SUB-TOTAL		490,134	0.28%	820	45%	0.75	131,386	26.81%
TOTAL		490,134	0.28%	820	45%	0.75	131,386	26.81%

Table 71. IRB approach. CCR exposures by portfolio and PD scales (CCR4) (contd.)

Thousands of Euros

		31 Dec. 2016						
		a	b	c	d	e	f	g
Mexico	PD Scale	EAD post CRM	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RWA density
FIRB. Institutions								
	0.00 to < 0.15%	917,079	0.07%	35	45%	2.50	266,291	29.04%
	0.15 to < 0.25%	74,091	0.25%	7	45%	2.49	38,538	52.02%
	0.25 to < 0.50%	500	0.42%	4	45%	2.50	341	68.10%
	0.50 to < 0.75%	2	0.72%	1	45%	2.50	2	86.17%
	0.75 to < 2.50%	-	-	-	-	-	-	-
	2.50 to < 10.00%	-	-	-	-	-	-	-
	10.00 to < 100.00%	-	-	-	-	-	-	-
	100.00% (default)	-	-	-	-	-	-	-
SUB-TOTAL		991,672	0.08%	47	45%	2.50	305,172	30.77%
FIRB. Corporates								
	0.00 to < 0.15%	116,080	0.06%	15	45%	2.50	27,485	23.68%
	0.15 to < 0.25%	150,377	0.17%	14	45%	2.50	64,357	42.80%
	0.25 to < 0.50%	24,221	0.30%	12	45%	2.50	13,964	57.65%
	0.50 to < 0.75%	31,767	0.52%	8	45%	2.50	23,933	75.34%
	0.75 to < 2.50%	3,923	0.91%	18	45%	2.50	3,711	94.61%
	2.50 to < 10.00%	-	-	-	-	-	-	-
	10.00 to < 100.00%	-	-	-	-	-	-	-
	100.00% (default)	-	-	-	-	-	-	-
SUB-TOTAL		326,367	0.19%	67	45%	2.50	133,450	40.89%
TOTAL		1,318,039	0.11%	114	45%	2.50	438,622	33.28%
AIRB. Institutions								
	0.00 to < 0.15%	-	-	-	-	-	-	-
	0.15 to < 0.25%	-	-	-	-	-	-	-
	0.25 to < 0.50%	-	-	-	-	-	-	-
	0.50 to < 0.75%	-	-	-	-	-	-	-
	0.75 to < 2.50%	434	2.18%	2	45%	5.00	687	158.30%
	2.50 to < 10.00%	1,648	5.67%	4	45%	4.79	3,202	194.32%
	10.00 to < 100.00%	-	-	-	-	-	-	-
	100.00% (default)	-	-	-	-	-	-	-
SUB-TOTAL		2,082	4.94%	6	45%	4.83	3,889	186.81%
AIRB. Corporates								
	0.00 to < 0.15%	-	-	-	-	-	-	-
	0.15 to < 0.25%	-	-	-	-	-	-	-
	0.25 to < 0.50%	11,494	0.27%	82	41%	3.67	6,509	56.63%
	0.50 to < 0.75%	-	-	-	-	-	-	-
	0.75 to < 2.50%	14,000	1.18%	1,503	41%	2.72	12,245	87.46%
	2.50 to < 10.00%	821	4.55%	146	41%	3.64	1,089	132.60%
	10.00 to < 100.00%	586	24.20%	14	41%	4.73	1,068	182.27%
	100.00% (default)	27	100.00%	13	41%	2.72	0	1.66%
SUB-TOTAL		26,927	1.49%	1,758	41%	3.20	20,912	77.66%
TOTAL		29,009	1.74%	1,764	41%	3.31	24,801	85.49%

3. Credit risk

Table 71. IRB approach. CCR exposures by portfolio and PD scales (CCR4) (contd.)

Thousands of Euros

		31 Dec. 2016						
		a	b	c	d	e	f	g
Portugal	PD Scale	EAD post CRM	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RWA density
AIRB. Institutions								
	0.00 to < 0.15%	60	0.03%	1	45%	2.49	13	20.75%
	0.15 to < 0.25%	-	-	-	-	-	-	-
	0.25 to < 0.50%	249	0.27%	1	45%	2.01	162	65.11%
	0.50 to < 0.75%	-	-	-	-	-	-	-
	0.75 to < 2.50%	-	-	-	-	-	-	-
	2.50 to < 10.00%	-	-	-	-	-	-	-
	10.00 to < 100.00%	-	-	-	-	-	-	-
	100.00% (default)	-	-	-	-	-	-	-
SUB-TOTAL		310	0.22%	2	45%	2.10	175	56.47%
AIRB. Corporates								
	0.00 to < 0.15%	1,870	0.06%	3.00	45%	4.99	733	39.18%
	0.15 to < 0.25%	2,563	0.17%	2.00	45%	2.20	1,001	39.08%
	0.25 to < 0.50%	22,354	0.32%	41.00	45%	4.09	17,054	76.29%
	0.50 to < 0.75%	1,655	0.52%	5.00	45%	2.09	1,163	70.29%
	0.75 to < 2.50%	240,429	1.50%	88.00	45%	4.74	315,699	131.31%
	2.50 to < 10.00%	734	4.96%	44.00	45%	3.81	1,086	147.85%
	10.00 to < 100.00%	-	33.30%	2.00	45%	1.00	1	263.92%
	100.00% (default)	7	100.00%	30.00	45%	1.00	624	8380.28%
SUB-TOTAL		269,612	1.39%	215.00	45%	4.64	337,360	125.13%
TOTAL		269,922	1.39%	217	45 %	4.64	337,535	125.05%
UK								
	PD Scale	EAD post CRM	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RWA density
AIRB. Institutions								
	0.00 to < 0.15%	4,397,751	0.05%	74	36%	3.50	1,381,949	31.42%
	0.15 to < 0.25%	309,423	0.16%	9	46%	3.77	223,303	72.17%
	0.25 to < 0.50%	1,796,897	0.30%	24	46%	3.98	1,062,878	59.15%
	0.50 to < 0.75%	-	-	-	-	-	-	-
	0.75 to < 2.50%	380	0.75%	1	48%	1.83	323	84.86%
	2.50 to < 10.00%	-	-	-	-	-	-	-
	10.00 to < 100.00%	-	-	-	-	-	-	-
	100.00% (default)	-	-	-	-	-	-	-
SUB-TOTAL		6,504,450.95	0.12%	108	39%	3.64	2,668,452.74	41.00%
AIRB. Corporates								
	0.00 to < 0.15%	5,598,134	0.05%	32	43%	3.43	1,923,157	34.35%
	0.15 to < 0.25%	631,175	0.17%	18	45%	4.59	409,329	64.85%
	0.25 to < 0.50%	144,983	0.29%	11	46%	4.32	115,248	79.49%
	0.50 to < 0.75%	179,063	0.52%	12	47%	4.86	195,499	109.18%
	0.75 to < 2.50%	17,089	0.93%	9	47%	2.00	15,863	92.82%
	2.50 to < 10.00%	-	-	-	-	-	-	-
	10.00 to < 100.00%	-	-	-	-	-	-	-
	100.00% (default)	-	-	-	-	-	-	-
SUB-TOTAL		6,570,443.98	0.08%	82	44%	3.60	2,659,095.58	40.00%
TOTAL		13,074,894.93	0.10%	190.00	41%	3.62	5,327,548.33	40.75%

Table 71. IRB approach. CCR exposures by portfolio and PD scales (CCR4) (contd.)

Thousands of Euros

		31 Dec. 2016						
		a	b	c	d	e	f	g
SAN Spain	PD Scale	EAD post CRM	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RWA density
AIRB. Sovereigns								
	0.00 to < 0.15%	9,803	0.03%	3	40%	4.37	1,875	19.13%
	0.15 to < 0.25%	212	0.15%	1	40%	5.00	117	55.25%
	0.25 to < 0.50%	178	0.47%	1	12%	1.00	26	14.49%
	0.50 to < 0.75%	-	-	-	-	-	-	-
	0.75 to < 2.50%	-	-	-	-	-	-	-
	2.50 to < 10.00%	-	-	-	-	-	-	-
	10.00 to < 100.00%	-	-	-	-	-	-	-
	100.00% (default)	-	-	-	-	-	-	-
SUB-TOTAL		10,193	0.04%	5	40%	4.32	2,018	19.80%
AIRB. Institutions								
	0.00 to < 0.15%	7,710,774	0.07%	340	45%	0.15	884,827	11.48%
	0.15 to < 0.25%	185,973	0.24%	40	44%	0.14	59,424	31.95%
	0.25 to < 0.50%	125,291	0.37%	86	43%	0.78	62,929	50.23%
	0.50 to < 0.75%	21,623	0.72%	15	45%	0.60	15,065	69.67%
	0.75 to < 2.50%	24,996	1.32%	7	45%	0.03	18,360	73.45%
	2.50 to < 10.00%	-	-	-	-	-	-	-
	10.00 to < 100.00%	3,548	28.78%	2	43%	4.98	10,746	302.86%
	100.00% (default)	109	100.00%	1	45%	0.14	2	1.80%
SUB-TOTAL		8,072,314	0.10%	491	45%	0.16	1,051,352	13.02%
AIRB. Corporates								
	0.00 to < 0.15%	3,825,111	0.03%	465	25%	3.18	1,907,241	49.86%
	0.15 to < 0.25%	350,463	0.18%	278	31%	2.23	203,361	58.03%
	0.25 to < 0.50%	274,289	0.34%	501	30%	3.74	228,520	83.31%
	0.50 to < 0.75%	246,775	0.52%	66	45%	3.45	215,165	87.19%
	0.75 to < 2.50%	330,954	1.07%	712	33%	3.23	367,775	111.13%
	2.50 to < 10.00%	222,003	4.37%	245	40%	4.23	373,394	168.19%
	10.00 to < 100.00%	47,655	10.98%	60	1%	4.71	52,156	109.44%
	100.00% (default)	12,383	100.00%	47	55%	3.27	1,126	9.10%
SUB-TOTAL		5,309,634	0.66%	2,374	27%	3.22	3,348,738	63.07%
TOTAL		13,392,140	0.32%	2,870	38%	1.38	4,402,108	32.87%
USA								
	PD Scale	EAD post CRM	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RWA density
AIRB. Corporates								
	0.00 to < 0.15%	18,158.48	0.09%	7	45%	0.28	3,477.19	19.15%
	0.15 to < 0.25%	21.57	0.17%	1	45%	0.03	6.21	28.78%
	0.25 to < 0.50%	2,866.02	0.30%	3	45%	0.07	1,179.61	41.16%
	0.50 to < 0.75%	630.26	0.52%	2	45%	0.56	363.36	57.65%
	0.75 to < 2.50%	6,331.00	1.33%	8	45%	3.96	7,236.65	114.31%
	2.50 to < 10.00%	2,023.22	2.74%	1	45%	0.86	2,284.25	112.90%
	10.00 to < 100.00%	-	-	-	-	-	-	-
	100.00% (default)	-	-	-	-	-	-	-
SUB-TOTAL		30,030.55	0.56%	22	45%	1.08	14,547.28	48.44%
TOTAL		30,030.55	0.56%	22	45%	1.08	14,547.28	48.44%

3. Credit risk

The following table shows the value adjustment for counterparty credit risk (Credit Value Adjustment or CVA), while differentiating between the standard method and the advanced method.

Table 72. Credit valuation adjustment (CVA) capital charge (CCR2)

Thousands of Euros

	31 Dec. 2016	
	Exposure value	RWA
Total portfolios subject to the Advanced Method	-	-
(i) VaR component (including the 3×multiplier)	-	-
(ii) Stressed VaR component (including the 3×multiplier)	-	-
All portfolios subject to the Standardised Method	16,513,709	395,122
Based on original exposure method	-	-
Total subject to the CVA capital charge	16,513,709	395,122

Credit derivatives activity

Grupo Santander uses credit derivatives to hedge lending transactions, as an agent for customers trading in financial markets, and in its own trading operations. The Group's credit derivatives activity is small compared to that of its peers and is conducted within a sound environment of internal controls and operational risk minimization.

Credit derivatives risk is controlled through a broad set of limits, including value at risk (VaR), nominal value per rating grade, credit spread sensitivity per rating grade and name, recovery rate sensitivity and correlation sensitivity. Jump-to-default risk limits are set by individual name, geographical area, sector and liquidity.

The following table shows the notional amount of the perfectly hedged credit derivatives that are used for risk mitigation in the capital calculation and the exposure of the hedged transactions, broken down by exposure category.

Table 73. Credit derivative hedges

Thousands of Euros. At 31 Dec. 2016

	EAD of hedged transactions	Notional amount of credit derivative hedges
Institutions	1,857,921	1,890,671
Corporates	1,934,821	2,611,395
Securitisation positions or exposures	-	-
TOTAL	3,797,972	4,768,103

The following table show the notional amounts of credit derivatives used for hedging, divided between bought and sold protection and by accounting classification.

Table 74. Counterparty risk. Credit derivative classification. Bought protection

Thousands of Euros

Portfolio type	Bought protection. 31 Dec. 2016		Bought protection. 31 Dec. 2015	
	CDS	TRS	CDS	TRS
Banking book	156,207	615,165	415,000	727,846
Trading book	19,828,417	-	27,920,000	-
TOTAL	19,984,625	615,165	28,335,000	727,846

Table 75. Counterparty risk. Credit derivative classification. Sold protection

Thousands of Euros

Portfolio type	Sold protection . 31 Dec. 2016		Sold protection. 31 Dec. 2015	
	CDS	CDS	CDS	CDS
Banking book	30,000	-	55,000	-
Trading book	18,999,277	-	26,135,000	-
TOTAL	19,029,277	-	26,190,000	-

3.11. Credit risk mitigation techniques

Grupo Santander applies various forms of credit risk mitigation based on client type and product type, among other factors. As we will later see, some are inherent in specific operations (e.g., real estate collateral) while others apply to a series of transactions (e.g., netting and collateral).

The various mitigation techniques can be grouped into the following categories:

3.11.1. Netting policies and processes

Netting involves offsetting gains and losses on multiple transactions of the same type under the umbrella of a master agreement such as ISDA or similar.

Market gains and losses on derivative transactions entered into with a given counterparty are offset against one another, so that if the counterparty defaults, the settlement figure is a single net amount, rather than a large number of positive and negative amounts relating to the individual transactions entered into with that counterparty.

An important feature of a master netting agreement is that it entails a single legal obligation, encompassing all the transactions covered by the agreement. This is what makes it possible to offset the risks of all the transactions covered by the agreement with a given counterparty.

3.11.2. Collateral management and valuation policies and processes

Collateral is property pledged by a customer or third party to secure the guaranteed obligation. Collateral assets may be:

- Financial: cash, security deposits, gold etc.
- Non-financial: real estate (residential or commercial), movable property etc.

For risk approval purposes, the highest possible level of collateral is required. Only collateral that meets the minimum qualitative requirements specified in the Basel agreements is taken into account for regulatory capital calculation purposes.

A very important type of collateral is financial collateral. Financial collateral consists of instruments with economic value and high liquidity that are deposited or transferred by one party in favor of another in order to guarantee or reduce any counterparty credit risk arising from portfolios of risk-bearing transactions between the two.

There are many different types of collateral arrangement, but whatever form the collateral may take, the ultimate aim, as in netting, is to reduce counterparty risk.

Transactions backed by collateral are marked to market periodically (usually daily) and the parameters defined in the collateral agreement are applied to the net result, so as to obtain an amount of collateral (usually cash) to be called from, or returned to, the counterparty. Real estate collateral is subject to periodic re-appraisal processes, based on actual market values for the different types of property, which meet all the requirements established by the regulator.

The table below shows the reasonable value of collaterals applied in counterparty risk mitigation:

Table 76. IRB approach. Collateral composition for exposures (CCR5)

Thousands of Euros

	Collateral value in derivative transactions				Collateral used in SFTs	
	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received	Fair value of posted collateral
	Segregated	Unsegregated	Segregated	Unsegregated		
	Segregated	Unsegregated	Segregated	Unsegregated	Fair value of collateral received	Fair value of posted collateral
Cash - domestic currency	595	6,931,682	-1,201	-9,027,583	1,542,250	-668,039
Cash - other currencies	-	4,801,884	-350	3,192,823	28,406	-12,619
Domestic sovereign debt	-	641,565	-	-527,163	12,600,088	23,068,723
Other sovereign debt	209,185	-	-	-900,286	797,646	-1,438,519
Government agency debt	-	-	-	-	-	-
Corporate bonds	-	379,674	-	-172,337	2,205,611	2,195,931
Shares	-	-	-	-35,063	9,949,387	1,458,256
Other collateral	-	693,204	-	67,866	-	-
TOTAL	209,780	13,448,010	-1,551	-7,401,743	27,123,388	24,603,732

Note: This information only includes Spain (parent company), Brazil, Mexico and the UK as this kind of operative is exclusive from these geographies.

3. Credit risk

Real estate collateral is subject to periodic re-appraisal processes, based on actual market values for the different types of property, which meet all the requirements established by the regulator.

In applying mitigation techniques, Santander adheres to the minimum requirements established by European regulation and the Group's Credit and Capital frameworks and implementing regulation, especially the Policy of Management of Guarantees. Briefly, these consist of monitoring:

- Legal certainty. The legal enforceability and ability to realise guarantees should be studied and verified.
- There must be no substantial positive correlation between the counterparty and the value of the collateral.
- All collateral and guarantees must be properly documented.
- The methodologies used for each mitigation technique must be documented.
- The methodologies must be monitored and controlled at regular intervals.

The table below shows the reasonable value of collaterals applied in counterparty risk mitigation:

Table 77. Credit derivative exposures (CCR6)
Thousands of Euros

	31 Dec. 2016	
	Protection bought	Protection sold
Notionals		
Single name credit default swap	52,312	7,162
Index credit default swaps	11,966	11,837
Total return swap	1,968	-
Credit options	-	-
Other credit derivatives	-	-
TOTAL NOTIONALS	66,246	19,000
Fair values		
Positive fair value (asset)	6,994	338
Negative fair value (liability)	-405	-33

Note: This information only includes Spain (parent company), Chile and the UK as this kind of operation is exclusive to these countries.

3.11.3. Personal guarantees and credit derivatives

A personal guarantee is an agreement that makes one person liable for another person's obligations to the Group. Examples include sureties, guarantees, stand-by letters of credit etc. Only personal guarantees provided by persons who meet the minimum requirements established by the supervisor can be recognised for capital calculation purposes. Credit derivatives are financial instruments that are used mainly to hedge credit risk. By buying protection from a third party, the Bank transfers the risk of the underlying instrument issuer. Credit derivatives are over-the-counter (OTC) instruments, i.e. not traded on an exchange.

Credit derivatives for hedging (mainly credit default swaps) are entered into with top-tier financial institutions. Specifically, approximately 98.5% of operations were accounted for by 15 credit institutions, all of them with a BBB+ rating or better (78% with an A- rating or better) and one entity with BBB on the Standard & Poor's scale.

In compliance with one of the transparency recommendations originally issued by the Basel Committee, the distribution of personal guarantees and credit derivatives for the corporates, banks, non-financial institutions and sovereigns segments by rating grade is shown below.

Table 78. External rating guarantees

Thousands of Euros

	31 Dec. 2016	
	a	b
	Exposures in default	Exposures not in default
Corporates		
AAA/AA	-	265
A	-	7,466
BBB	-	12,213
BB	64	3,092
B	198	721
Rest	71	240
Unrated	-	20
TOTAL	333	24,017

	a	b
	Exposures in default	Exposures not in default
Ban ks		
AAA/AA	-	654
A	-	1,089
BBB	-	104
BB	-	19
B	-	-
Rest	-	-
Unrated	-	-
TOTAL	-	1,867

	a	b
	Exposures in default	Exposures not in default
Other financial institutions		
AAA/AA	-	2,185
A	-	996
BBB	-	110
BB	-	-
B	-	-
Rest	-	-
Unrated	-	6
TOTAL	-	3,297

	a	b
	Exposures in default	Exposures not in default
Sovereign		
AAA/AA	-	5,902
A	-	4,911
BBB	-	52
BB	-	2,091
B	-	33
Rest	-	-
Unrated	-	-
TOTAL	-	12,989

3. Credit risk

3.11.4. Hedged exposure by type of guarantee

The tables below show the original hedged exposure by collateral type and exposure category for cases where the collateral could be used to reduce capital requirements.

Table 79. Standardised and IRB approach. Credit risk mitigation techniques (CR3)

Thousands of Euros

	31 Dec. 2016				
	Exposures unsecured – Carrying amount	Exposures to be secured	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
Total IRB exposures (after CCFs)	251,991,300	296,320,892	291,119,922	5,200,970	-
of which: default	18,257,484	222,649	102,319	120,330	-
Total STD exposures	744,405,050	22,420,073	19,459,784	2,960,288	-
of which: default	7,254,602	2,269	321	1,948	-

Nota: IRB exposure has been calculated after the application of CCFs. STD exposure is original exposure, to which guarantees are applied. The STD method also mitigates directly through personal guarantees, with EUR 7,143 million of EAD covered, of which EUR 37 million is in default.

Table 80. IRB approach. Credit risk mitigation techniques: financial and personal guarantee

Thousands of Euros

Original exposures covered by different guarantee types and risk categories	31 Dec. 2016		31 Dec. 2015	
	Financial guarantees	Personal guarantees	Financial guarantees	Personal guarantees
IRB Method				
Central administrations and banks	-	1,894,268	-	459,118
Institutions	151,457	9,596,378	-	15,943,726
Corporates	4,582,026	21,038,085	6,746,405	17,936,087
Retail	-	270,257	62,305	199,907
TOTAL	4,733,483	32,798,988	6,808,710	34,538.838

3.11.5. Central counterparty exposure

The following tables show central counterparty entities' exposure following risk mitigation techniques.

Grupo Santander does not have a specific policy on treating limits and collaterals at central counterparty entities. For more information on both management policies please consult the relevant sections in this document (3.10 Counterparty risk) and the Annual Report.



For further details regarding credit risk, please refer to **chapter 5.d.1.5.3 in the Annual Report.**

Table 81. Exposures to central counterparties (CCR8)
Thousands of Euros

	31 Dec. 2016	
	EAD (post CRM)	RWA
Exposures to QCCPs (total)	11,946,238	549,611
Exposures for trades at QCCPs* (excluding initial margin and default and contributions); of which	9,756,526	200,121
(i) OTC derivatives	6,676,961	133,539
(ii) Exchange-traded derivatives	-	-
(iii) Securities financing transactions	-	-
(iv) Nettings sets where cross-product netting has been approved	1,020,273	25,396
Segregated initial margin	-	-
Non-segregated initial margin	3,900,269	77,998
Pre-funded default fund contribution	348,735	312,678
Unfunded default fund contributions	-	-
Exposures to Non-QCCPs (total)	-	-

*For standard information, the exposure for trades at QCCPs includes the non-segregated initial margin.

4

Securitisations

- 147 4.1. Basic theoretical considerations on securitisation
- 148 4.2. Securitisation accounting policies
- 148 4.3. Management of Grupo Santander's securitisation activities
 - 148 4.3.1. Grupo Santander's securitisation objectives and management
 - 149 4.3.2. Role of Grupo Santander in the securitisation activity
 - 150 4.3.3. Inherent risks of Grupo Santander's securitisation activity
 - 150 4.3.4. Securitisation activity in Grupo Santander



4. Securitisations



This chapter describes the basic concepts relating to securitisations, summarises the goals and functions of the securitisation management activity in Grupo Santander.

4.1. Basic theoretical considerations on securitisation

At Grupo Santander, securitisation is given the treatment stipulated in chapter five of CRR. In assessing the characteristics of a transaction to determine whether it involves securitisation and must therefore be treated as per said chapter, both the legal form and the economic substance of the transaction are taken into consideration.

In accordance with the CRR, the following concepts will be interpreted having regard to the regulatory definitions given below:

Securitisation: a financial transaction or mechanism that takes the credit risk associated with an exposure or pool of exposures and divides it up into tranches with the following characteristics:

- a) Payments in the transaction or mechanism are dependent upon the performance of the securitised exposure or pool of exposures.
- b) The subordination of tranches determines the distribution of losses during the life of the transaction or mechanisms.

Securitisation position: an exposure to a securitisation. For these purposes, the providers of credit risk protection with respect to positions of a specific securitisation are considered to hold positions in the securitisation.

Tranche: a contractually established segment of the credit risk associated with an exposure or pool of exposures such that each position in the segment entails a risk of credit loss greater or lesser than a position of the same amount in each other such segment, without taking into account credit protection provided by third parties directly to the holders of positions in the segment or in the other segments. For these purposes, all securitisation positions either form a part of a tranche or constitute a tranche themselves. Accordingly, the following types of tranches can be defined:

First-loss tranche: this tranche is given a weighting of 1.250%.

- **Mezzanine tranche:** this is the tranche, other than the first-loss tranche, that ranks below the most senior position in the securitisation and below any position in the securitisation assigned a credit rating of 1 in the case of securitisations under the standardised approach or a rating of 1 or 2 in the case of securitisations under the IRB approach.
- **Senior tranche:** any tranche that is neither a first-loss nor a mezzanine tranche. Within the senior tranche, the preferred senior tranche is the top tranche in the priority of payments, without taking into account for these purposes any amounts owed under interest rate or currency derivatives, brokerage charges or similar payments.
- **Traditional securitisation:** a securitisation involving the economic transfer of the securitised exposures to a securitisation special purpose vehicle (SPV), which issues securities. This can be accomplished by the transfer of ownership of the securitised exposures from the originator or through sub-participation, which, for these purposes, includes the subscription of mortgage participation certificates, mortgage transfer certificates and similar securities by the SPVs. The securities issued by the SPV do not represent payment obligations of the originator.

Synthetic securitisation: a securitisation where the transfer of risk is achieved by using credit derivatives or guarantees and the securitised exposures continue to be exposures of the originator.

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

Asset-backed commercial paper (ABCP): a programme of securitisations in which the securities issued predominantly take the form of commercial paper maturing within one year or less.

Investor: any entity or party other than the originator or sponsor who maintains a securitisation position.

Originator entity an entity which:

- a) directly or through related entities participated directly or indirectly in the initial agreement that created the obligations or potential obligations of the debtor or potential debtor and gave rise to the securitisation of the exposure; or
- b) which acquires the exposures from a third party, includes them on its balance sheet and then securitises them.

Sponsor entity: entity other than the originator that establishes and manages a programme of securitisation notes, or other system of securitisation, whereby exposures are acquired from third parties and to which liquidity or credit facilities or other credit enhancements are generally granted.

4.2. Securitisation accounting policies

The rule for derecognising securitised assets from the balance sheet is the one established in the regulation for the derecognizing of financial assets. The accounting treatment of transfers of financial assets depends on the extent to which the risks and rewards associated with the transferred assets are transferred to third parties:

1. Where substantially all the risks and rewards are transferred to third parties, e.g. in asset securitisations in which the transferor neither retains subordinated debt nor grants any credit enhancement to the new holders, the transferred financial assets are derecognised and any rights or obligations retained or created in the transfer are recognised simultaneously.
2. Where substantially all the risks and rewards associated with the transferred financial asset are retained (as in securitisations in which subordinated debt or some other type of credit enhancements are retained that absorb substantially all of the expected losses on the transferred asset or the probable variation of its net cash flows), the transferred financial asset is not derecognised and continues to be measured by the same criteria as before the transfer. On the contrary, the following are considered for accounting purposes:
 - a. An associated financial liability amounting to the consideration received, thereafter measured at amortised cost, unless the requirements for classification as other liabilities at fair value through profit or loss are met.
 - b. The income from the transferred but not derecognised financial asset and any expense incurred on the new financial liability, without netting.
3. Where substantially all the risks and rewards associated with the transferred financial asset are neither transferred nor retained, e.g. securitisations in which the transferor takes on subordinated debt or some other type of credit enhancement for a portion of the transferred asset and thus significantly but not substantially reduces its exposure to the variation in the present value of future net cash flows, the following distinction is made:

- a. Where the transferor does not retain control, the transferred financial asset is derecognised and any right or obligation retained or created in the transfer is recognised.
- b. Where the transferor retains control of the transferred financial asset, it continues to recognise the transferred financial asset on its balance sheet for an amount equal to its exposure to possible changes in value and recognises a financial liability associated with the transferred financial asset. The net amount of the transferred asset and associated liability is the amortised cost of the rights and obligations retained, if the transferred asset is measured at amortised cost, or the fair value of the rights and obligations retained, if the transferred asset is measured at fair value.

Accordingly, financial assets are only removed from the balance sheet when the rights on the cash flows they generate are cancelled or when substantially all the inherent risks and rewards have been transferred to third parties. There is no specific accounting treatment for synthetic securitisations.

4.3. Management of Grupo Santander's securitisation activity

4.3.1. Grupo Santander's securitisation objectives and management

Through its securitisation activity Grupo Santander aims to:

- Manage and diversify its credit risk: securitisation transactions and the subsequent sale of the securitisation bonds in the market serve to reduce the credit risk concentrations that can arise naturally from Grupo Santander commercial activity. The effective transfer of risks achieved through these transactions enables Grupo Santander to optimise its credit risk exposure and contributes to value creation.
- Obtain liquidity: securitisation enables Grupo Santander to mobilise its balance sheet by transforming illiquid assets into liquid assets and obtain wholesale funding by selling or collateralising those transformed assets. Also, the retained securitisation positions can be used as collateral for discounting at the ECB.
- Diversify funding sources: the liquidity obtained from securitisation allows Grupo Santander to diversify its funding sources in terms of duration and product.
- Optimisation of capital consumption: In 2016 four new securitisations were originated and a significant risk transfer was obtained for an existing one.

Each year, based on the liquidity plan and taking into account certain prudential limits on raising short-term market funding, Grupo Santander establishes an issuance and securitisation plan for the year at unit global business level, a task carried out by financial management.

4.3.2. Role of Grupo Santander in securitisation activity

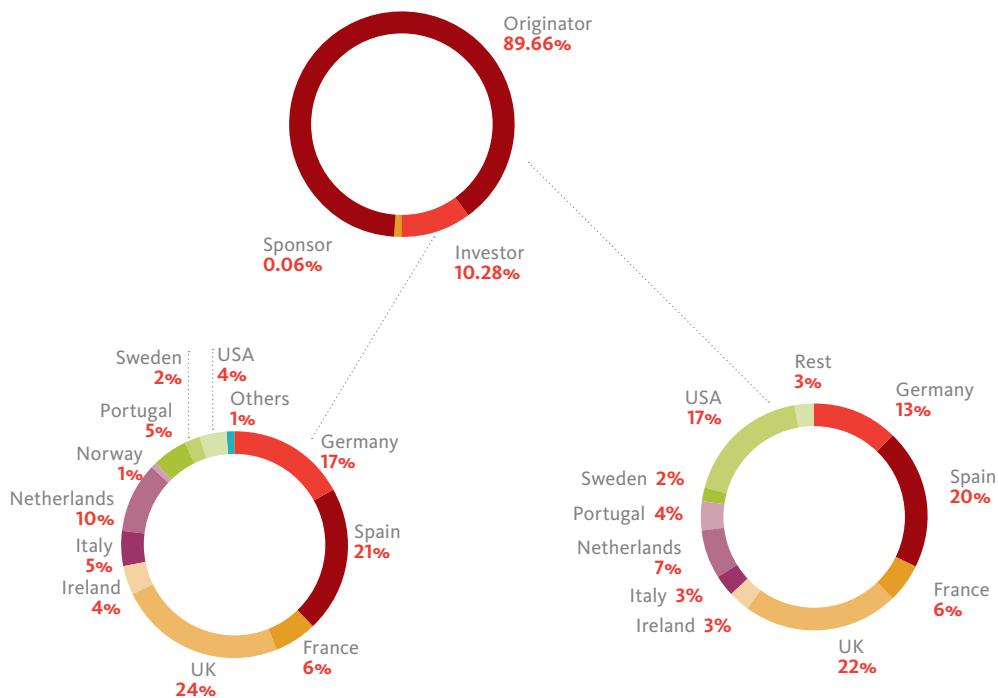
Grupo Santander's role in the securitisation process is mainly that of originator of the underlying assets that have been securitised. Nevertheless, in addition to originating underlying payments, Grupo Santander also plays a role in servicing the loans and granting subordinated loans and acts as the interest rate swap counterparty of the SPV that acquires the loans.

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

The Group sponsors a securitization whose underlying consists of loans granted by different financial entities to mortgage-backed securitization.

The Group also acts as a structuring and settling agent for its own securitisations, as well as for third parties, leading and promoting new structures in different jurisdictions with the objectives of both funding and risk transfer. This activity is included in the context of reactivation of securitization as a tool for channeling credit to the real economy, with special attention to SMEs.

Breakdown of securitisations function and distribution by country of origination or investment position



Note: The information on the securitization positions of the investment and trading portfolio of Grupo Santander is included. In originator activity, Rest includes Austria (0.45%), Poland (0.37%), Finland (0.93%) and Norway (0.99%).

4. Securitisations

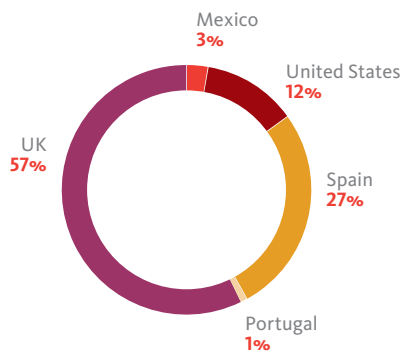
As indicated in the graph, originator activity accounts for more than 89% of the Group's securitization activity, with investment activity accounting for 10.28% and sponsoring accounting for 0.06% (the latter being concentrated in Spain).

70% of the volume of securitizations originated by the Group is concentrated in Spain, the UK, the US and Germany.

On the investment side, 96% of acquisitions of investment positions are concentrated in the United Kingdom (57%), Spain (27%) and the United States (12%).

Furthermore, regarding the distribution of positions by country from the debtor, it can be seen that 24% of the final risk is in the United Kingdom (because the positions that are invested from the United Kingdom are located in the same) and the rest are essentially distributed throughout Europe as can be seen in the following graph:

Geographical distribution of investment activity by country of the end debtor in the transaction



4.3.3. Inherent risks of Grupo Santander's securitisation activity

Securitisation offers advantages in terms of lower funding costs and better risk management. Nevertheless, it also involves certain inherent risks both for the originator and for investors. Grupo Santander is the originator and acts as investor in various SPVs and is therefore exposed to the following risks:

- **Credit risk:** the risk that borrowers will fail to meet their obligations in due time and form, with consequent impairment of the underlying assets backing the securitisation positions. Credit risk is assessed by external credit rating agencies, which assign ratings to the securitisation positions. In Banco Santander, the maximum exposure in the banking book is limited by rating (AAA, AA, A, BBB, BB) and by type of underlying. In addition, published data on default of the underlying, credit quality of the originator and mandatory minimum ratios and ratings in the structure, as well as data on granularity, geographical distribution and type of underlying, are monitored continuously.
- **Prepayment risk:** this is the risk of early repayment of all or part of the assets underlying the securitisation, so that the securitisation positions mature before the contractual maturity date of the underlyings. Calculation of the average life, return and duration of the securitisation positions is subject, among other things, to assumptions about the rate at which the underlying loans will be prepaid, which may vary. In Grupo Santander this risk is practically nil, as the contractual maturity of the securities issued is usually longer than that of any underlying.

- **Basis risk:** this risk arises when there is a mismatch between the interest rates or maturities of the securitised assets and those of the securitisation positions. In Grupo Santander this risk is usually hedged with swaps.

- **Exchange rate risk:** exists in securitisations in which the securitised assets are denominated in a different currency than the securitisation positions. In Grupo Santander, the risk arising from the currency mismatch between the underlying and the issue is usually hedged in the structure with a swap. The risk to PnL assumed in non-Euro bonds is managed at level of the Active Credit Portfolio Management (ACPM) area level.

- **Liquidity risk:** is diminished by securitisation, through which naturally illiquid assets are transformed into debt securities that can be traded on exchanges. In some securitisations, however, such as those which issue commercial paper, liquidity risk is still significant and is manifested in the need to cover potential timing mismatches between interest payments on the underlying assets and payments of interest on the securities. In Grupo Santander this risk tends to be very small and is mitigated by liquidity lines included in the structure. The liquidity risk of bond positions is also managed by establishing maximum holding periods.

4.3.4. Securitizations activity of Grupo Santander

In 2016 four new securitisations were originated with risk transfer and a significant risk transfer was obtained for an existing one.

Separately, Grupo Santander originates and holds positions in traditional securitisation funds whose underlying portfolios are composed mainly of mortgages, consumer and corporate loans. Grupo Santander also has an ABCP programme, the underlying portfolio of which consists of commercial bills of exchange.

The Group is also the originator of five synthetic securitisation funds whose underlying assets in two cases comprise project finance loans, while the third comprises residential mortgages, the fourth loans to SMEs and the fifth, closed in 2016, consumer loans.

For each of these traditional structures, irrespective of the underlying product, Grupo Santander obtains a rating assigned by some of the following external rating agencies: Standard & Pooors, Moody's, Fitch and DBRS. Where a securitisation is placed on the market, Grupo Santander obtains ratings from at least two of those agencies. In the case of the synthetic securitisation an external rating has not been requested.

As for investment activity, Grupo Santander maintains positions in securitisation funds originated by entities outside Grupo Santander whose underlying assets mainly comprise corporate loans, car loans, SME loans and mortgages. Regarding the investment portfolio, in Banco Santander the maximum exposure is limited by rating (AAA, AA, A, BBB, BB), therefore It is not common practice to use hedges to mitigate this risk.

The following tables detail this underlying asset class distribution of the securitisation positions issued and repurchased by Grupo Santander as originator, investor and sponsor as of December 31, 2016, both in the banking and trading books. Firstly, data disaggregation is shown according to the type of the securitisation and the class of the underlying securitised.

In the following table, data disaggregation is shown according to the type of the securitisation and the class of the underlying securitised.

Table 82. Securitisation positions purchased or retained. Banking book
Thousands of Euros

	31 Dec. 2016				31 Dec. 2015			
	Originator		Investor	Sponsor	Originator		Investor	Sponsor
	Issued positions	Retained positions	Purchased positions	Purchased positions	Issued positions	Retained positions	Purchased positions	Purchased positions
Traditional securitisations	89,944,660	46,618,393	6,222,195	-	104,535,923	63,148,220	4,197,259	-
Residential mortgages	37,551,674	23,284,602	1,667,278	-	51,300,004	35,002,521	1,740,913	-
Commercial mortgages	-	-	-	-	52,019	-	100	-
Credit cards	-	-	400,364	-	-	-	317,390	-
Finance leases	1,223,546	391,500	96,588	-	1,305,707	517,900	8,918	-
Loans to corporates or to SMEs treated as corporates	7,197,509	6,181,023	3,261,722	-	10,826,195	9,636,329	1,223,762	-
Consumer loans	41,706,507	14,605,629	184,681	-	37,280,435	15,796,685	251,422	-
Receivables	2,155,649	2,155,640	93,383	-	2,168,284	2,167,920	230,576	-
Mortgage covered bonds	109,775	-	-	-	450,000	-	-	-
Others	-	-	518,179	-	1,153,279	26,865	424,178	-
Resecuritisations	137,155	-	20,220	40,253	279,686	40,378	97,319	42,256
Residential mortgages	13,751	-	-	-	-	-	906	-
Commercial mortgages	-	-	-	-	-	-	-	-
Others	123,404	-	20,220	40,253	279,686	40,378	96,413	42,256
Synthetic securitisations	3,007,364	2,469,366	294,077	-	3,264,159	2,988,852	-	-
Residential mortgages	4,310	-	-	-	-	-	-	-
Commercial mortgages	-	-	-	-	464,850	452,416	-	-
Loans to corporates or corporates-SMEs	1,380,663	1,277,818	-	-	1,821,039	1,685,427	-	-
Others	1,622,391	1,191,548	294,077	-	978,270	851,009	-	-
TOTAL	93,089,179	49,087,760	6,536,491	40,253	108,079,768	66,177,450	4,294,578	42,256

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

4. Securitisations

Table 83. Securitisation exposures on the banking book (SEC1)

Thousands of Euros

	31 Dec. 2016			31 Dec. 2016			31 Dec. 2016		
	Bank acting as originator			Bank acting as sponsor			Bank acting as investor		
	Traditional	Synthetic	Subtotal	Traditional	Synthetic	Subtotal	Traditional	Synthetic	Subtotal
1 Retail (total)	37,890,231	536,254	38,426,485	-	40,253	40,253	2,252,322	-	2,252,322
2 Residential mortgages	23,284,602	-	23,284,602	-	-	-	1,667,278	-	1,667,278
3 Credit card	-	-	-	-	-	-	400,364	-	400,364
4 Other retail exposures	14,605,629	536,254	15,141,882	-	-	-	184,681	-	184,681
5 Resecuritisation	-	-	-	-	40,253	40,253	-	-	-
6 Wholesales (total)	8,728,162	1,933,113	10,661,275	-	-	-	3,990,092	294,077	4,284,169
7 Corporate loans	6,181,023	1,277,818	7,458,841	-	-	-	3,261,722	-	3,261,722
8 Commercial mortgage	-	-	-	-	-	-	-	-	-
9 Finance leases and receivables	391,500	-	391,500	-	-	-	189,972	-	189,972
10 Other wholesale exposures	2,155,640	655,294	2,810,934	-	-	-	518,179	294,077	812,256
11 Resecuritisation	-	-	-	-	-	-	20,220	-	20,220
12 TOTAL	46,618,393	2,469,366	49,087,760	-	40,253	40,253	6,242,414	294,077	6,536,491

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

It can be seen that regardless of the role played by the Bank, the securitisation portfolio is predominantly focused on retail.

On the other hand, the following table shows the distribution of the trading portfolio according to the class of the underlying asset.

Table 84. Securitisation positions purchased or retained. Trading book

Thousands of Euros

	31 Dec. 2016			31 Dec. 2015		
	Originator	Investor	Sponsor	Originator	Investor	Sponsor
	Retained positions	Purchased positions	Purchased positions	Retained positions	Purchased positions	Purchased positions
ABS portfolio						
Traditional securitisations	7,913	46,742	17,474	18,718	118,717	36,792
Residential mortgages	6,906	39,287	-	2,909	100,967	-
Loans to corporates or to SMEs treated as corporates	-	1,090	-	-	8,111	-
Consumer loans	1,007	6,365	-	15,809	5,889	-
Others	-	582	17,474	-	3,750	36,792
Resecuritisations	-	1,872	-	-	19,021	-
Securitisation positions	-	1,872	-	-	19,021	-
Correlation portfolio	-	-	-	-	35,552	-
Synthetic baskets	-	-	-	-	35,552	-
Total	7,913	49,196	17,474	18,718	173,290	36,792

Note: The mark to market of the positions has been included in the trading book

Investment positions in the trading portfolio are continuously monitored to identify any significant changes.

Additionally, the table below details the exposure of all securitisations in the trading book, but on this occasion, distinguishing between wholesale and retail underlyings:

Table 85. Securitisation exposures on the trading book (SEC2)

Thousands of Euros

	31 Dec. 2016			31 Dec. 2016			31 Dec. 2016		
	Bank acting as originator			Bank acting as sponsor			Bank acting as investor		
	Traditional	Synthetic	Subtotal	Traditional	Synthetic	Subtotal	Synthetic	Sintética	Subtotal
1 Retail (total)	-	7,913	7,913	-	-	-	46,742	-	46,742
2 Residential mortgages	-	6,906	6,906	-	-	-	39,287	-	39,287
3 Credit card	-	-	-	-	-	-	-	-	-
4 Other retail exposures	-	1,007	1,007	-	-	-	7,455	-	7,455
5 Resecuritisation	-	-	-	-	-	-	-	-	-
6 Wholesale (total)	-	-	-	17,474	-	17,474	2,454	-	2,454
7 Corporate loans	-	-	-	-	-	-	-	-	-
8 Commercial mortgage	-	-	-	-	-	-	-	-	-
9 Finance leases and receivables	-	-	-	-	-	-	-	-	-
10 Other wholesale exposures	-	-	-	17,474	-	17,474	582	-	582
11 Resecuritisation	-	-	-	-	-	-	1,872	-	1,872
12 Correlation portfolios	-	7,913	7,912	17,474	-	17,474	49,196	-	49,196

4. Securitisations

Furthermore, the following table details securitisation originated by Grupo Santander with the highest outstanding balance at December 31, 2016:

Table 86. Inventory of originated securitisation with largest outstanding balance

Thousands of Euros

Securitisation fund	TYPE	Balance issued 31 Dec. 2016			Repurchased balance 31 Dec. 2016			
		Senior tranches	Mezzanine tranches	First-loss tranches	On-balance sheet exposures			Off-balance-sheet exposures
					Senior tranches	Mezzanine tranches	First-loss tranches	
RMBS Santander 3	Residential mortgages	3,997,669	-	1,882,311	3,997,669	-	1,882,311	-
Pool 5	Residential mortgages	3,887,687	161,552	679,764	-	-	679,764	552,469
Fosse Master Issuer	Residential mortgages	3,432,222	-	161,449	-	-	161,449	424,374
SC Germany Auto 2014-2	Consumer loans	2,895,000	-	135,000	2,895,000	-	135,000	-
Langton	Residential mortgages	2,037,410	-	754,514	1,996,150	-	754,514	41,260
RMBS Santander 4	Residential mortgages	2,015,643	-	737,883	1,460,487	-	737,883	-
RMBS Santander 2	Residential mortgages	1,875,697	-	797,822	1,875,697	-	797,822	-
FTA Santander 2	Receivables	1,040,000	-	1,115,649	1,039,991	-	1,115,649	-
Pymes Santander 10	Corporate loans	277,238	893,000	787,939	220,970	893,000	787,939	-
Pymes Santander12	Corporate loans	702,458	-	875,564	535,206	-	875,564	-
FTA UCI 18	Residential mortgages	-	704,345	814,092	-	352,172	773,693	-
SC Germany Auto 2016-2	Consumer loans	1,440,000	-	75,000	1,440,000	-	75,000	-
SC Germany Consumer 2015-1	Consumer loans	1,155,000	193,200	58,800	1,155,000	150,000	2,997	-
VICTORIA	Corporate loans	1,270,544	103,577	6,542	1,270,544	732	6,542	-
Santander Drive Auto Receivables Trust 2016-3	Consumer loans	836,092	360,696	-	835,786	305,510	-	-
Drive Auto Receivables Trust 2016-C	Consumer loans	705,000	447,216	-	-	283,713	-	-
Golden Bar Stand Alone 2016-1	Consumer loans	902,000	142,890	96,397	902,000	142,890	96,397	-

Below is a breakdown of securitisation in the banking book with its corresponding capital consumption opened by RW level when Grupo Santander acts as originator or sponsor.

Table 87. Securitisation exposures on the banking book and associated regulatory capital requirements (Bank acting as originator or sponsor) (SEC3)

	31 Dec. 2016				31 Dec. 2016				31 Dec. 2016				31 Dec. 2016				
	Value of the exposure (by RW interval)				Value of the exposure (by regulator method)				RWA (by regulator method)				Capital requirement after ceiling				
	<= 20% RW	> 20% to 50% RW	> 50% to 100% RW	> 100% to 1250% RW	1250% RW	IRB RBA (including IAA)	IRB SFA	SA	1250%	IRB RBA (including IAA)	IRB SFA	SA	1250%	IRB RBA (including IAA)	IRB SFA	SA	1250%
1 Total exposure	5,710,594	89,200	145,600	14,093	16,479	3,758,450	1,277,818	939,697	-	597,248	176,677	325,883	-	47,780	14,134	26,071	-
2 Traditional securitisation	3,903,796	89,200	145,600	6,819	16,479	3,758,450	-	403,443	-	597,248	-	218,632	-	47,780	-	17,491	-
3 Of which, securitisation	3,903,796	89,200	105,600	6,566	16,479	3,718,197	-	403,443	-	571,005	-	218,632	-	45,680	-	17,491	-
4 Of which, retail underlying	3,903,796	89,200	105,600	6,566	16,479	3,718,197	-	403,443	-	571,005	-	218,632	-	45,680	-	17,491	-
5 Of which, wholesale underlying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 Of which, resecritisation	-	-	40,000	253	-	40,253	-	-	26,244	-	-	-	2,100	-	-	-	-
7 Of which, preference	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8 Of which, non-preference	-	40,000	253	-	-	40,253	-	-	26,244	-	-	-	2,100	-	-	-	-
9 Synthetic securitisation	1,806,798	-	-	7,274	-	-	1,277,818	536,254	-	-	176,677	107,251	-	-	14,134	8,580	-
10 Of which, securitisation	1,806,798	-	-	7,274	-	-	1,277,818	536,254	-	-	176,677	107,251	-	-	14,134	8,580	-
11 Of which, retail underlying	1,806,798	-	-	7,274	-	-	1,277,818	536,254	-	-	176,677	107,251	-	-	14,134	8,580	-
12 Of which, wholesale underlying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13 Of which, resecritisation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14 Of which, preference	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Of which, non-preference	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 88. Securitisation Exposures in the banking book and associated regulatory capital requirements (Bank acts as an investor) (SEC4)

	31 Dec. 2016				31 Dec. 2016				31 Dec. 2016								
	Value of the exposure (by RW interval)				Value of the exposure (by regulator method)				RWA (by regulator method)				Capital requirement after ceiling				
	<= 20% RW	> 20% to 50% RW	> 50% to 100% RW	> 100% to 1250% RW	1250% RW	IRB RBA (including IAA)	IRB SFA	SA	1250%	IRB RBA (including IAA)	IRB SFA	SA	1250%	IRB RBA (including IAA)	IRB SFA	SA	1250%
Total exposure	5,208,177	933,250	395,032	-	32	5,555,239	-	981,220	32	704,772	-	572,219	400	56,382	-	45,778	32
Traditional securitisation	4,916,084	933,250	393,048	-	32	5,261,162	-	981,220	32	670,921	-	572,219	400	53,674	-	45,778	32
Of which, securitisation	4,916,084	913,030	393,048	-	32	5,240,943	-	981,220	32	662,666	-	572,219	400	53,013	-	45,778	32
Of which, resecuritisations	-	20,220	-	-	-	20,220	-	-	-	8,255	-	-	-	660	-	-	-
Of which, preference	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Of which, non-preference	-	20,220	-	-	-	20,220	-	-	-	8,255	-	-	-	660	-	-	-
Synthetic securitisations	292,093	-	1,984	-	-	294,077	-	-	-	33,851	-	-	-	2,708	-	-	-
Of which, securitisations	292,093	-	1,984	-	-	294,077	-	-	-	33,851	-	-	-	2,708	-	-	-
Of which, retail underline	292,093	-	1,984	-	-	294,077	-	-	-	33,851	-	-	-	2,708	-	-	-
Of which, wholesale underline	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Of which, resecuritisations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Of which, preference	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Of which, non-preference	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

The previous table reflects that nearly 85% of the securitisations in which the Bank invests belong to entities where capital requirements are calculated under the advanced IRB models. This is mainly the case of Santander Spain and Santander UK. On the other hand, the standardised approach is relevant in US.

Finally, in its securitisation activity, both as originator and as investor, Grupo Santander complies with the economic interest retention required under chapter five of CRR and with the control policy and procedure requirements for all SPVs created after 1 January 2011. Accordingly, for all securitisations originated since 1 January 2011, Grupo Santander:

- constantly retains a net economic interest of no less than 5%.
- makes available to investors all the necessary information to ensure the risks of the investment are fully known before purchase and to allow the performance of the investment to be monitored on a regular basis. This information includes details of the risk criteria applied to the securitised exposures, which in all cases are the same as for the non-securitised exposures on the originator's balance sheet.

Similarly, for investor positions in securitisations originated since 1 January 2011, Grupo Santander:

- carries out due diligence to ensure that the investment risks are known before purchase and to be able to monitor the performance of the investment on a regular basis.
- checks that the originator of the securitisations retains a net economic interest of no less than 5%.

As Grupo Santander complies with these requirements, no capital surcharge is applied.

Grupo Santander's securitisation activity during 2016

Of the total issues carried out in 2016, the Group retains 42% of the securitisation positions. Four of the securitization originated in 2016 achieve significant transfer of risk.

The accompanying table gives a breakdown of initial balance of the securitisation positions issued and retained by the Grupo Santander in 2016 on their date of origination.

Table 89. Initial balance, by type of securitised asset, of the positions of securitisation originated in 2016

Thousands of Euros

Type of underlying asset	31 Dec. 2016		31 Dec. 2015	
	Securitized exposures at the origination date	Repurchased balance	Securitized exposures at the origination date	Repurchased balance
Traditional securitisations				
Residential mortgages	960,000	295,964	4,886,200	4,603,558
Loans to corporates or to SMEs treated as corporates	640,000	230,000	-	-
Consumer loans	-	-	6,693,800	6,693,800
Others	18,156,421	7,708,293	16,282,784	3,843,903
Synthetic securitisations				
Loans to corporates or SMEs	1,165,769	536,254	1,884,090	1,884,090
Others				
TOTAL	20,922,190	8,770,511	29,798,311	17,025,350

This originator activity was concentrated in Spain (19.57%), the United States (43%) and Germany (13.6%). The new securitisations originated during 2016 are summarised in the accompanying table. See Appendix IV with the list of specialised management companies within the scope of regulatory consolidation.

In 2016, the Group originated 24 securitization whose underlying portfolios comprised consumer loans, (81% of total issues), loans to companies or SMEs (14.5%) and residential mortgages, which represent 4.5% of the issuances realized. For further information, see the list of specialised management companies within the scope of regulatory consolidation.

Note: See Appendix VIII for list of regulatory consolidation specialized/management companies (SPVs)



Access file
2016 Pillar III Appendices
available on the Grupo Santander website

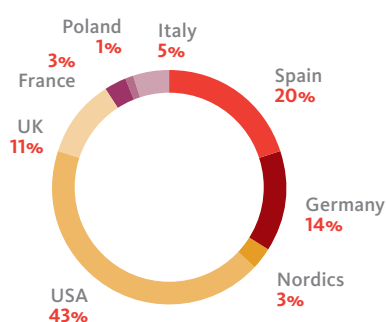
4. Securitisations

Table 90. List of new securitisations originated during 2016, organised by country and originator institution and ordered by initial issue volume

Name of securitisation	Type of underlying asset	Originator	Initial issue	
FT Consumo Santander 2	Loans to corporates or SMEs	Santander	1,000,000	
FTA Santander Consumer Spain 2016-1	Loans to corporates or SMEs	Consumer Spain	784,050	
FTA Auto ABS2 016-1	Consumer loans	PSA Financial Service	720,000	Spain
FTA Santander Consumer Spain 2016-2	Loans to corporates or SMEs	Consumer Spain	667,375	
FTA RMBS Prado 2	Residential mortgages	UCI	540,000	
FTA RMBS Prado 3	Residential mortgages	UCI	420,000	
				19.57%
SC Germany Auto 2016-2	Consumer loans	Consumer Germany	1,500,000	
SC Germany Consumer 2016-1	Consumer loans	Consumer Germany	750,000	Germany
SC Germany Auto 2016-1	Consumer loans	Consumer Germany	600,000	
				13.62%
SCF Rahoituspalvelut II DAC	Loans to corporates or SMEs	Consumer Nordics	607,200	Nordics
				2.90%
Auto ABS French Leases Master Compartment 2016	Consumer loans	PSA France	640,000	France
				3.06%
Phaeton	Consumer loans	PSA Finance UK Limited	1,165,769	
Motor 2016-1 plc	Consumer loans	SC UK	700,799	UK
HC UK Auto Funding 2016 Ltd	Consumer loans	Hyundai Capital UK LTD	500,576	
				11.31%
Drive Auto Receivables Trust 2016-B	Consumer loans	SCUSA	1,503,641	
Santander Drive Auto Receivables Trust 2016-3	Consumer loans	SCUSA	1,419,477	
Santander Drive Auto Receivables Trust 2016-2	Consumer loans	SCUSA	1,279,121	
Drive Auto Receivables Trust 2016-C	Consumer loans	SCUSA	1,185,846	USA
Santander Drive Auto Receivables Trust 2016-1	Consumer loans	SCUSA	1,116,815	
Chrysler Capital Auto Receivables Trust 2016-A	Consumer loans	SCUSA	968,791	
Chrysler Capital Auto Receivables Trust 2016-B	Consumer loans	SCUSA	797,628	
Drive Auto Receivables Trust 2016-A	Consumer loans	SCUSA	713,680	
				42.94%
Golden Bar Stand Alone 2016-1	Consumer loans	SC Italy	1,100,088	Rest of Europe
SC Poland Consumer 16-1Sp.zo.o.	Consumer loans	SC Poland	277,759	
				6.59%
TOTAL			20,958,615	

Geographical distribution of origination activity

%



5

Market risk

- 161 5.1. Activities subject to market risk
- 161 5.2. Trading
 - 162 5.2.1. Value at Risk
 - 164 5.2.2. Stressed VaR
 - 164 5.2.3. Incremental Risk Charge
 - 164 5.2.4. Stress testing
 - 166 5.2.5. Backtesting (MR4)
 - 169 5.2.6. Internal validation of the models
- 171 5.3. Structural market risk

5. Market risk



This chapter provides information about activities subject to market risk and the evolution of market risks and results in 2016, distinguishing between trading activity and structural risks. It also describes the methodologies and metrics used by Grupo Santander.

5.1. Activities subject to market risk

The measurement, control and monitoring of market risk extends to all operations exposed to capital losses. This risk arises from changes in the risk factors (interest rate, exchange rate, equities, credit spread, commodity prices and the volatility of each of these factors) and from the liquidity risk of the various products and markets in which the Group operates.

The activities are segmented according to the purpose of the risk taken:

- a) **Trading:** this includes financial services for customers and trading and the taking of positions, mainly in fixed-income, equity and currency products.
- b) **Structural risks:** these are composed of the market risks inherent in the balance sheet, not including the trading book, namely:
 - Structural interest rate risk: this risk arises from mismatches in the maturities and repricing of all the balance sheet assets and liabilities.
 - Structural foreign currency risk (hedges of results): foreign currency risk arising from the currency in which investments in the consolidated and non-consolidated companies are made (structural exchange rate). This category also includes the positions taken to hedge the foreign currency risk on future results generated in currencies other than the Euro (hedges of results).
 - Structural equity risk: this includes equity investments in non-consolidated, financial and non-financial companies, and the available-for-sale portfolios of equity positions.

5.2. Trading

The basic metric used to control Market Risk in trading operations by Grupo Santander during 2016 was the value at risk (**VaR**). VaR measures the maximum expected loss for a given confidence level and time horizon.

VaR is used because it is easy to calculate and because it provides a good reference for the level of risk incurred. In addition, other measures are used to give greater control over the risks in the markets in which the Group operates.

One of these other measures is scenario analysis, which consists of defining alternative behaviours for various financial variables and determining the impact on results when these scenarios are applied to the Group's activities. The scenarios may replicate past events (such as crises) or, conversely, they may describe plausible scenarios unrelated to past events. At least three types of scenarios are defined: plausible, severe and extreme. Together with VaR, these three types of scenarios provide a much more complete understanding of the risk profile.

In line with the principle of business unit independence, the Market Risk area monitors positions daily, both at the level of the individual unit and globally, exhaustively controlling changes in portfolios so as to detect any incidents and correct them immediately. The preparation of a daily income statement is an excellent risk indicator, insofar as it helps to identify the impact that changes in financial variables have had on the portfolios.

Lastly, derivatives and credit management activities, being atypical, are controlled daily using specific measures. In the case of derivatives, controls are conducted of sensitivity to fluctuations in the price of the underlying (delta and gamma), volatility (vega) and time (theta). For credit management activities, measures such as spread sensitivity, jump-to-default, exposure concentrations by rating level etc. are subjected to systematic review.

5.2.1. Value at Risk

Grupo Santander's VaR calculation methodology consists of historical simulation with a 99% confidence level and a one-day horizon for internal risk management, and a ten-day horizon for the calculation of equity market risk. Statistical adjustments are made to enable swift and efficient incorporation of the most recent events affecting the levels of risk undertaken. Currently, all units use historical simulation with full revaluation, except for market risk Spain, which, though it uses this methodology for certain portfolios, applies historical simulation using a Taylor series approximation for the bulk of its portfolios. The Group uses a two-year window, or 520 daily readings, backwards in time from the VaR calculation reference date. Two figures are calculated each day, one by applying an exponential decline factor that gives a smaller weighting to the earliest readings, and another with uniform weightings for all observations. The reported VaR is the higher of these two figures.

At the end of December 2016 Grupo Santander had authorisation from the Bank of Spain for the use of the internal market risk model for the calculation of regulatory capital in the trading books of the Spain, Chile, Portugal, United Kingdom and Mexico units.

The Group's aim is to gradually extend this approval to the other units that have a trading portfolio, in line with the gradual implementation plan submitted to the Bank of Spain. The total regulatory capital figure using the internal model is calculated as the linear sum of the individual regulatory capital figures of the units that have Bank of Spain approval, that is, without considering diversification between units.

At year-end 2016, VaR by geography was as follows:

Table 91. VaR, Stressed VaR and IRC by geography (MR3)
Millions of Euros

Spain		2016	2015	Variation
VaR (10 days - 99%)				
1	Maximum	62.3	104.9	-40.60%
2	Average	24.6	43.3	-43.19%
3	Minimum	15.4	22.2	-30.38%
4	End of period	23.5	34.4	-31.80%
Stressed VaR (10 days - 99%)				
5	Maximum	104.6	174.5	-40.08%
6	Average	69.4	108.5	-36.06%
7	Minimum	46.5	62.0	-24.88%
8	End of period	65.2	67.8	-3.81%
Incremental Risk Charge (99.9%)				
9	Maximum	413.2	293.3	40.86%
10	Average	253.3	204.9	23.60%
11	Minimum	139.7	119.3	17.06%
12	End of period	301.4	149.9	101.03%
United Kingdom				
VaR (10 days - 99%)				
1	Maximum	10.1	-	-
2	Average	6.4	-	-
3	Minimum	4.1	-	-
4	End of period	8.0	-	-
Stressed VaR (10 days - 99%)				
5	Maximum	50.5	-	-
6	Average	33.4	-	-
7	Minimum	17.4	-	-
8	End of period	37.8	-	-
Incremental Risk Charge (99.9%)				
9	Maximum	-	-	-
10	Average	-	-	-
11	Minimum	-	-	-
12	End of period	-	-	-

Chile		2016	2015	Variation
VaR (10 days - 99%)				
1	Maximum	11.7	10.2	14.71%
2	Average	6.3	3.9	61.83%
3	Minimum	2.2	1.8	21.84%
4	End of period	6.8	3.9	77.52%
Stressed VaR (10 days - 99%)				
5	Maximum	21.6	20.7	4.20%
6	Average	11.5	8.9	29.61%
7	Minimum	4.7	3.5	35.97%
8	End of period	11.9	8.7	36.52%
Incremental Risk Charge (99.9%)				
9	Maximum	9.7	16.4	-40.91%
10	Average	6.2	9.8	-36.42%
11	Minimum	3.4	5.2	-35.26%
12	End of period	0.7	6.6	-88.76%

Mexico		2016	2015	Variation
VaR (10 days - 99%)				
1	Maximum	27.4	27.2	0.88%
2	Average	11.6	12.7	-8.62%
3	Minimum	7.1	8.1	-12.73%
4	End of period	18.2	11.8	55.16%
Stressed VaR (10 days - 99%)				
5	Maximum	36.9	54.0	-31.62%
6	Average	22.5	25.2	-10.87%
7	Minimum	15.7	13.1	19.94%
8	End of period	21.4	22.1	-3.22%
Incremental Risk Charge (99.9%)				
9	Maximum	61.8	67.7	-8.82%
10	Average	42.1	60.8	-30.72%
11	Minimum	17.9	57.2	-68.74%
12	End of period	19.8	61.1	-67.55%

Portugal		2016	2015	Variation
VaR (10 days - 99%)				
1	Maximum	0.09	0.16	-46.17%
2	Average	0.03	0.03	-4.08%
3	Minimum	0.01	0.01	56.20%
4	End of period	0.02	0.08	-69.36%
Stressed VaR (10 days - 99%)				
5	Maximum	0.06	0.10	-41.67%
6	Average	0.03	0.03	-18.50%
7	Minimum	0.01	0.01	-8.35%
8	End of period	0.02	0.01	183.94%
Incremental Risk Charge (99.9%)				
9	Maximum	-	-	-
10	Average	-	-	-
11	Minimum	-	-	-
12	End of period	-	-	-

Note: There are no capital requirements due to incremental risk (99.9%).

By way of a summary, the Group's average VaR for trading business in 2016 was EUR 18,3 million, despite the continued high volatility caused by Europe's sovereign debt crisis. Also, it could be said that Grupo Santander's trading risk profile was low in comparison to other similar financial groups. Dynamic management of risk enables Grupo Santander to adopt changes in strategy to take up opportunities in an uncertain environment.



For further details on VaR's historical distribution and developments and on structured instruments, see **chapter 5, section D.2** of the Risk Management section in the **2016 Annual Report** on Grupo Santander's website.

5.2.2. Stressed VaR

The methodology for calculating stressed VaR is the same as that used for calculating VaR, with two differences:

- Historical window of observations of the factors: in the stressed VaR calculation a window of 260 data readings is used, instead of the 520 used for computing the ordinary VaR measurement.
- Unlike the method used for the ordinary VaR calculation, stressed VaR is not obtained as the higher of the percentile with uniform weighting and the percentile with an exponential decline factor; instead, the uniform weighting percentile is used directly.

All other aspects of the methodology and inputs for calculating stressed VaR are the same as for the VaR.

With respect to determining the period of observations, Methodology has analysed the history of a subset of market risk factors selected on the basis of an expert analysis of the most significant positions in the books. The scope considered was the treasury departments for which there was Bank of Spain approval for the use of the internal model at 31 December 2015: Spain, United Kingdom, Chile, Portugal and Mexico.

The current windows determined to calculate stressed VaR are::

Table 92 Stress Window

	Stress window
Spain	25/03/2008 - 25/03/2009
United Kingdom	07/04/2008 - 24/03/2009
Chile	08/05/2008 - 22/05/2009
Brazil	29/08/2008 - 31/08/2009
Mexico	29/08/2008 - 31/08/2009
Portugal	17/03/2008 - 18/03/2009

These stress windows are regularly revised, and a daily check is run on the validity of the window to compare both VaR and stressed VaR. This check may determine that an analysis is required of the loss and gain vectors used to calculate the VaR values in order to determine the positions and market movement that made VaR exceed stressed VaR over a continuous period of time.

The aim of the analysis is to identify and attempt to separate the causes of the exceptions into two basic categories:

- Market movements: it could be necessary to revise the window.
- Significant changes in the composition of the portfolio: in this case any analysis would have to be conducted with the Business department to ascertain whether the new positions will be permanent, or if they are one-off operations, and thus decide whether the window should be revised..

If analysis of the exceptions of percentile VaR with respect to stressed VaR concludes that the current window used to calculate daily VaR covers a period with greater market volatility than the stress window used to calculate stressed VaR, the stress window will be revised.

5.2.3. Incremental Risk Charge

Following the recommendations of the Basel Committee on Banking Supervision and applicable rules, an additional metric is calculated in relation to the issuer risk inherent in the trading portfolios: the incremental risk charge (IRC).

The IRC is intended to measure both the rating migration risk and any incremental default risk that is not captured by VaR through changes in credit spreads. The IRC metric is calculated, where applicable, for public and private fixed-income bonds, bond derivatives and credit derivatives.

The IRC calculation method is essentially similar to the credit risk of the non-trading positions and is based on the Merton structural model. This internally developed model comprises direct measurements on the queues of the distribution of losses caused by the different credit events that it contemplates, i.e. risk of default and migration of credit quality and to the appropriate percentile (99.9%). The IRC calculation methodology uses a loss distribution generated by Monte Carlo simulation, assumes the hypothesis of constant positions along the horizon of capital and liquidity of one year, which consists of maintaining the same positions along this horizon independently of the maturity of each of them.

5.2.4. Stress testing

Various types of stressed scenarios are currently applied:

- **VaR scenarios:** market variables simulated within three and six standard deviations either side of the mean. These scenarios help define a portfolio's risk profile.
- **Historical scenarios:** scenarios are constructed on the basis of relevant historical events and are used to forecast maximum losses that would occur if these events were repeated.
- **Severe crisis scenarios:** extreme scenarios based on movements in market variables that do not correspond to a known historical scenario.
- **Plausible scenarios:** another alternative is to perform the stress test using scenarios based on expectations of future market performance. These expectations are based on scenarios that are not as extreme as the stressed scenarios.

When defining the scenarios in which the portfolios are to be tested a distinction is made between several cases:

- **Global scenarios,** which are common to all units. These are defined globally and each unit is responsible for calculating the movements of the variables that apply to them
- **Abrupt crisis:** an ad hoc scenario with sudden jolts to markets. Rise in interest rate curves, steep drops in stock markets, strong dollar appreciation against all other currencies, spike in volatility and in lending spreads.

- **Subprime crisis:** historical scenario of the crisis triggered in the market on the heels of the subprime mortgage crisis in the US. The analysis seeks to capture the impact on results of the liquidity crunch in the markets. The scenarios will have two different time horizons: 1 day and 10 days. Both scenarios posit plunges in stock markets, interest rate declines in the core markets and increases in emerging markets, and dollar appreciation against all other currencies.
- **Adverse scenario:** this reflects the systemic risks currently considered the greatest threats to banking stability in the European Union. Events occurring in this scenario take into account increases in global bond yields along with an incremental fall in the credit-worthiness of countries with low demand; stagnation of political reforms jeopardising the sustainability of public finances and a lack of the adjustments necessary to maintain reasonable market funding.
- **Reverse stress test scenarios:** are those scenarios that can compromise the viability of the institution. To this end, the potential vulnerabilities of the business, hidden risks and interactions among the different risk factors are identified. These inverse scenarios start from a known stress result (the non-compliance with certain capital ratios, liquidity or solvency for example) and from there they identify the extreme scenarios in which the movements of the market variables can cause those events that compromise the viability of the business.

- **Forward looking scenarios:** whose objective is to anticipate possible negative consequences of the evolution of the market variables and to propose alternatives to prevent impacts. They help to recognize signs of change in the positioning of portfolios and provide better support for decision-making.

A consolidated monthly stress test is prepared, under the supervision of the global market risk committee, with explanations of the main variations in the results for the different scenarios and units. An alert mechanism is also in place, so that when a scenario returns a loss that is high by historical standards or in terms of the capital consumed by the portfolio in question, the relevant business head is notified.

The stress test is performed by applying the same methodologies for all sub-portfolios covered by the internal market risk model.

The table below shows the results at 31 December 2016, broken down by risk factor (interest rate, equities, foreign currency, credit spread, commodities and the volatility for each), in a scenario in which volatility equivalent to six standard deviations in a normal distribution is applied. The scenario is defined by taking for each risk factor the change that produces the highest potential loss in the global portfolio.

Table 93. Stress scenario: Maximum volatility (worst case)
Millions of Euros

	2016						2015					
	Interest rate	Equities	Foreign currency	Credit spread	Commodities	Total	Interest rate	Equities	Foreign currency	Credit spread	Commodities	Total
Total trading	-100.5	-3.1	-10.3	-10.0	-0.1	-124.0	-130.1	-3.3	-10.4	-20.2	-0.1	-164.2
Europe	-14.7	-1.2	-2.9	-9.2	-0.1	-28.1	-119.7	-1.5	-0.3	-19.8	-0.1	-141.4
Latin America	-74.8	-1.9	-6.8	-	-	-83.5	-10.2	-1.8	-10.1	-	-	-22.1
United States	-7.5	-	-0.5	-	-	-8.0	-	-	-	-	-	-
Global activities	-0.1	-	-	-0.8	-	-0.9	-0.3	-	-	-0.4	-	-0.7
Asia	-3.4	-	-0.1	-	-	-3.5	-	-	-	-	-	-

The stress test shows that the economic loss suffered by the Group in its trading portfolios, in terms of the mark to market (MtM) result, would be, if the stress movements defined in the scenario materialised in the market, EUR 124 million. This loss would be concentrated in Europe (in the following order: interest rates, credit spread and equities) and Latin America (in the following order: interest rates, exchange rates and equities).

5.2.5. Backtesting (MR4)

The general aim of backtesting is to contrast the accuracy of the Value at Risk (VaR) calculation model. In other words, whether to accept or reject the model used to estimate the maximum loss on a portfolio with a given level of confidence, over a certain period of time.

Backtesting is analysed at local level by the local market risk control units. The market risk consolidation unit is responsible for backtest reporting at consolidated level. It is important to note that the backtesting methodology is applied identically to all the sub-portfolios covered by the internal market risk model.

Backtesting consists of comparing the VaR forecasts, given a certain confidence level and time horizon, with the actual losses incurred over a time horizon equal to the VaR time horizon.

Three types of backtesting have been defined:

- **Clean backtesting:** the daily VaR is compared with the results obtained without taking into account the intraday results or the changes in the portfolio's positions. This method contrasts the effectiveness of the individual models used to assess and measure the risks of the different positions.
- **Backtesting on complete results:** the daily VaR is compared with the day's net results, including the results of the intraday operations and those generated by commissions.
- **Backtesting on complete results without mark-ups or fees:** the daily VaR is compared with the day's net results from intraday operations but excluding those generated by mark-ups and commissions. This method aims to give an idea of the intraday risk assumed by Grupo Santander's treasuries.

In order to calibrate and control the effectiveness of the internal market risk measurement and management-systems, in 2016 Grupo Santander regularly performed the required benchmark tests and analyses, with the conclusion that the model was reliable.

Number of exceptions

An exception occurs whenever the losses or gains observed in a day exceed the VaR estimate. The number (or percentage) of exceptions recorded is one of the most intuitive indicators for establishing a model's accuracy.

The confidence level for the VaR calculation is a measure of the number of exceptions expected to occur in a given time window. For example, if the daily VaR is calculated with a confidence level of 99%, the percentiles of interest are the 1st and the 99th percentiles of the P&L distribution, so we should expect 2% of exceptions during the days studied (1% due to excess profit and 1% due to excess loss).

If there are significantly more, or fewer, exceptions, this may be (but is not necessarily) a sign of problems in the VaR model used. With the observed P&L and estimated VaR data it is possible to construct a hypothesis test to check the validity of the VaR/P&L relationship.

Time between exceptions

The confidence level for the VaR is also a measure of the number of days that can be expected to elapse between successive exceptions. For example, if the daily VaR is calculated at 99% confidence (1st and 99th percentiles), we may expect a mean time of approximately 50 days between exceptions.

Similarly to what was explained in relation to the frequency of exceptions, hypothesis-testing can be done based on the time between exceptions as a means of validating the VaR model.

Breadth between exceptions

Whereas the VaR predicts with a certain probability the risk that is assumed, the average excess (or expected shortfall) is a predictor, for that probability, of the average loss once the VaR has been exceeded. This study should be included when analysing the backtesting report in order to obtain the size of the potential losses that exceed the VaR level.

Daily VaR/P&L relationship

To validate the VaR model, it is not enough to analyse the number and type of exceptions that occur in a given time frame. Other indicators must be observed in order to ensure the model's consistency. One such indicator is the daily VaR/P&L relationship.

This relationship is defined as follows:

- The P&L figure, as a percentage of VaR, on all the days on which there are no exceptions (losses or gains).
- Calculation of the arithmetic mean of these figures.

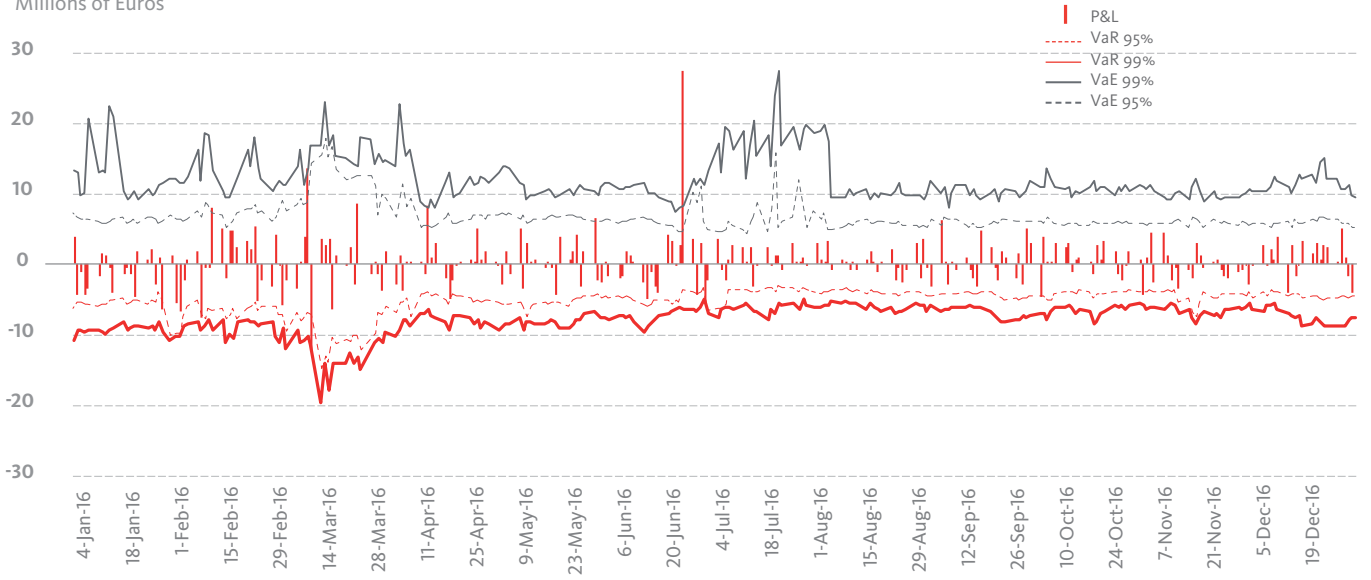
The percentage should be close to a value determined by the VaR confidence level, because the higher the chosen confidence level, the higher the VaR estimate (and the smaller the P&L results as a percentage of that estimate).

If the percentage observed is much higher than expected, the risk is being underestimated, and the model should be reviewed. Conversely, if the percentage is much smaller than expected, the risk is being overestimated and the model should be reviewed. The latter outcome may be desirable, however, if the aim is to maintain conservative risk estimates.

The chart below shows annual backtesting at year-end 2016 for each of the units with intern model regulatory approval.

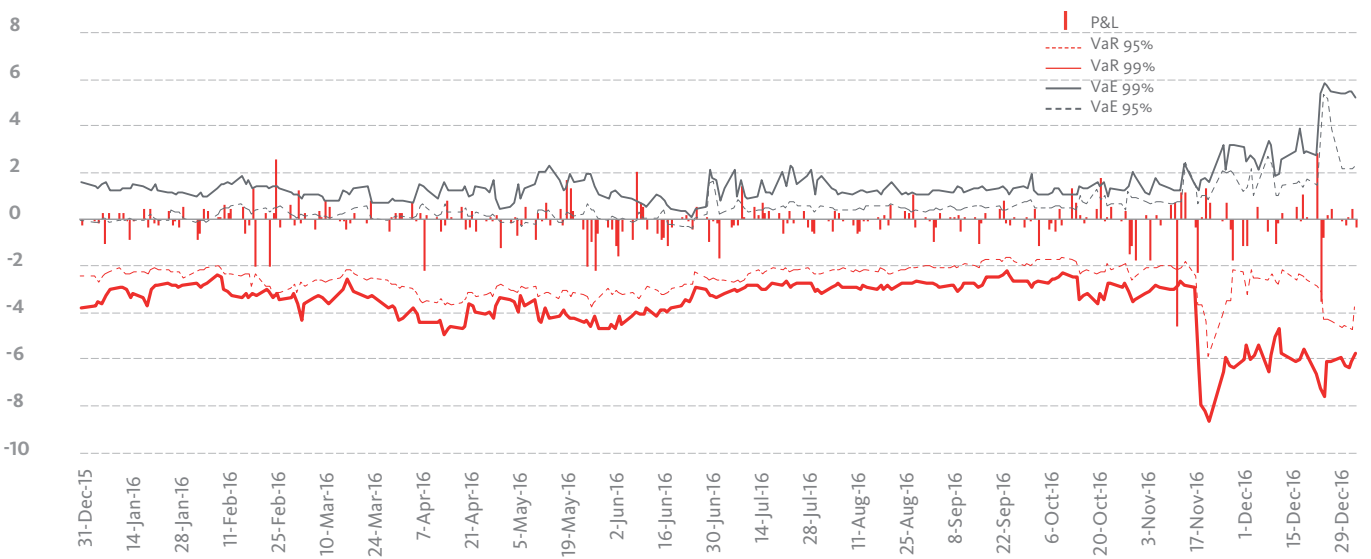
Spain

Millions of Euros



Mexico

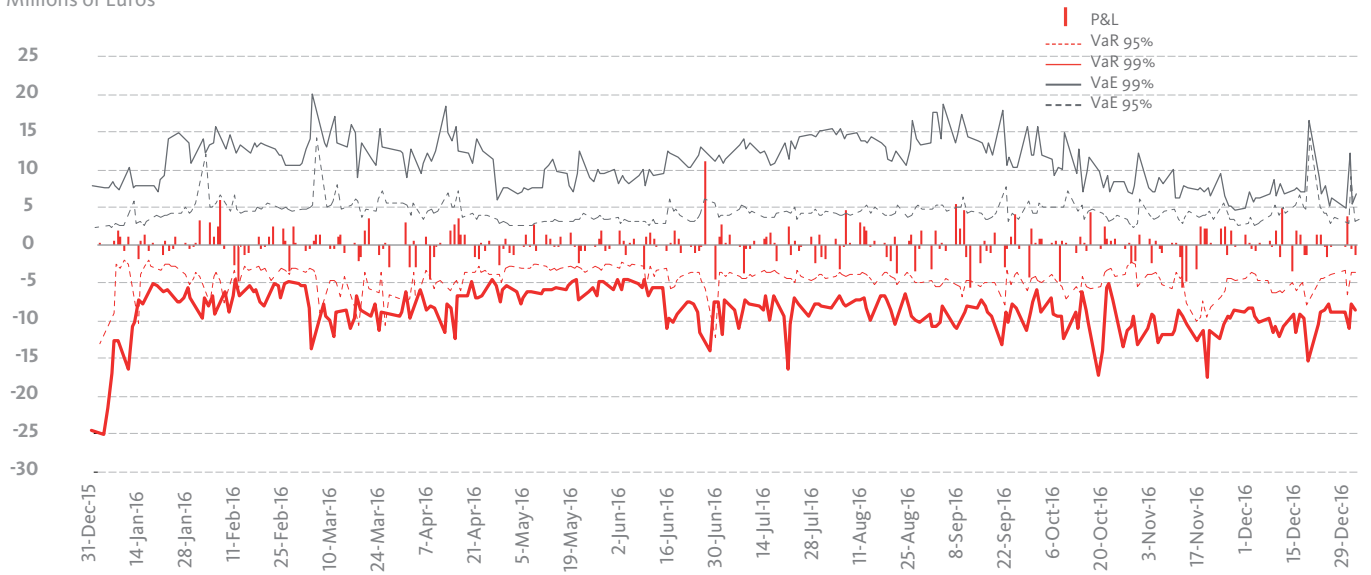
Millions of Euros



5. Market risk

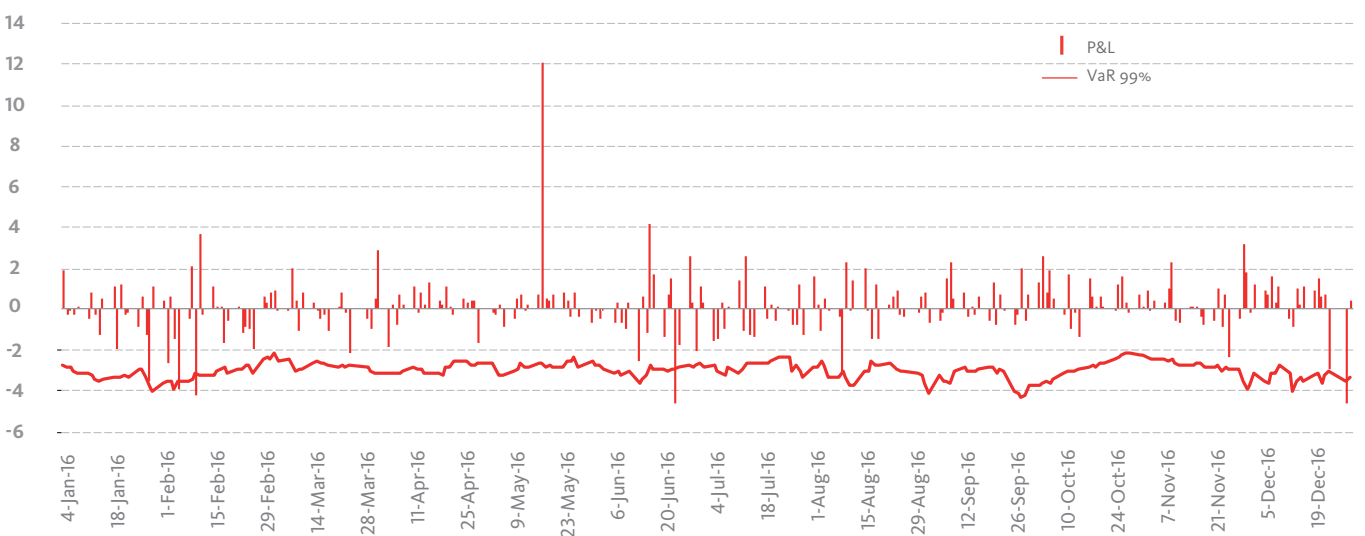
Portugal

Millions of Euros



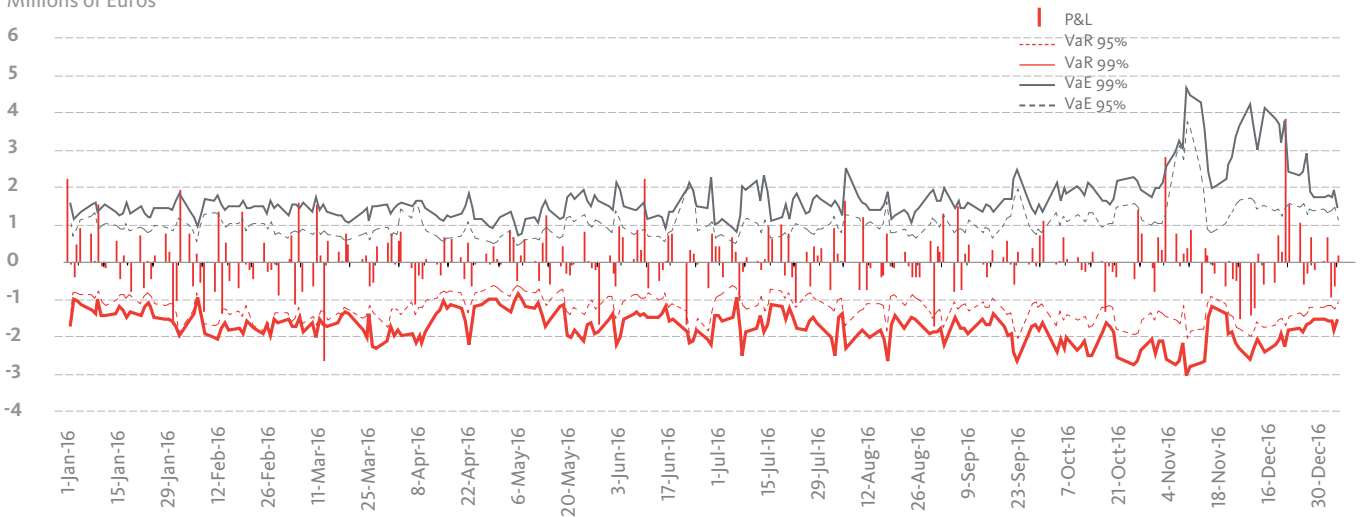
United Kingdom

Millions of Euros



Chile

Millions of Euros



The table below shows the number of exceptions at 31 December 2016 for the units with internal model approval:

Table 94. Exceptions in units with internal model

	Exceptions	Model Status
Spain	2	Valid
United Kingdom	4	Valid
Chile	2	Valid
Portugal	0	Valid
Mexico	1	Valid

The exception in Spain on 8-Feb is caused by movements in the EUR/USD yield curve. The exception on 30-Jun was due to an increase in the spread between Brazil's interest rate curves.

The exceptions in UK on 29-Dec and 11-Feb were due to the variations of the risk factor FX Swap Basis. The exception on 24-Jun was due to movements in the Euro's curve, and the exception on 8-Feb was due to volatility of the 3 months GBP curve.

The exception in Chile on 17-Mar was due to a combined effect of high volatility in the CLP/USD and CLP/EUR exchange rate, and the CLF yield curve on 12-Mar. The exception on 3-Feb was due to movements in the USD/CLP exchange rate.

The exception in Mexico on 9-Nov was due to appreciation of both the Euro and the dollar against the Mexican peso.

Valuation adjustments

The fair value of a financial instrument is calculated using the appropriate valuation model. Valuation adjustments may be needed, however, when no market quotations are available for price comparison purposes.

Sources of risk include uncertain model parameters, illiquid issuers of underlying assets, poor quality market data or unavailable risk factors (sometimes the best alternative is to use limited models with controllable risk). In such situations, calculating and applying adjustments to the valuation is a common practice in the industry. It is done by Santander to take into account the sources of model risk described below:

- For fixed-income markets, examples of model risk include correlation between fixed-income indices, the absence of modelling of stochastic basis spreads, calibration risk and modelling volatility. Other sources of risk arise from the estimation of market data.
- In equity markets, examples of model risk include modelling the forward skew and the impact of stochastic interest rates, correlation and multi-curve modelling. Risk may also derive from managing hedges of digital payments, callables and barriers. Consideration must also be given to risk sources that arise from the estimation of market data such as dividends and correlations for quanto options and composites on baskets.

- For specific financial instruments tied to home mortgage loans guaranteed by financial institutions in the United Kingdom (which are regulated and financed in part by the government) and derivatives over underlying property assets, the Halifax House Price Index (HPI) is the main input. In these cases, the assumptions include estimates regarding the future growth and volatility of the HPI, mortality rate and implicit credit spreads.
- Inflationary markets are exposed to model risk due to uncertainty regarding modelling of the correlation structure between different inflation rates (consumer price indexes). Another source of risk may arise from the bid-offer spread of inflation-linked swaps.
- Currency markets are exposed to model risk in their modelling of forward skew and the impact of modelling stochastic interest rates and correlation for multi-asset instruments. Risk may also arise from market data, due to the existence of specific illiquid foreign exchange pairs.

5.2.6. Internal validation of the models

GLOBAL [PFE (REC), CVA, DVA and IRC]

At present, the Group uses an advanced model based on Monte Carlo simulations and an analytical model for calculation of potential exposure to counterparty credit risk - PFE (REC). In Spain, Mexico, Portugal and the US subsidiary, the two models coexist (mixed model), whereas the other units only use the analytical model.

Validation of the Quantia environment Framework (QeF) engine for the construction of the mark-to-future bucket was completed in October 2016. Accordingly, in December 2016, the engine replaced AIRe Credit for the Monte Carlo simulation of the advanced PFE (REC) model. Implementation of the new engine required resolution of some of the weaknesses previously found by internal validation. Nevertheless, some methodological weaknesses persist, which were presented in the Models Committee in December 2016.

With regard to corporate CVA and DVA models, which take the expected positions of the PFE (REC) models, a resolution is considered to have been attained of the weakness relating to asymmetry in the calculation of positive and negative expected exposures for countries with the mixed model (in Portugal, this will take place in January 2017).

Internal Validation expects to complete the recurring validation of the model for calculation of regulatory capital due to incremental risk charge (IRC) in the first quarter of 2017.

The objectives of Internal Validation for 2017 will be focused on:

- Validation of REC, CVA/DVA metrics.
- Observance of recommendations related to aforementioned methodological weaknesses.

Global [Front XVA Pricing]

In 2016, the Quantia environment Framework (QeF) for the construction of the Mark-to-Future bucket was validated. This model is one of the main inputs when calculating valuation adjustments (XVA).

The objectives of Internal Validation in 2017 will be focused on validation of the XVA models developed by the Front Office.

Global [Fixed Income Front Office Pricing]

In 2016, all models affected by negative interest rates that were approved in July 2015, and/or validated in December of that year, have been documented in accordance with the new standards of Model Risk. In addition, due to market developments, the USD and the GBP have also been affected by this reality. Accordingly, extensions of the 2015 and 2016 validations were made with consideration of the use of models in these markets. Additionally, complete validations were made of the construction models of volatilities of negative interest rate markets.

Another significant event was the approval in the Models Committee (with the recommendation of the Internal Validation) of the calibration of mean reversion parameter in the valuation of the Bermuda options of interest rates. This has allowed for bringing the valuation closer to the market consensus in one of the products with the greatest materiality.

The objectives of Internal Validation for 2017 will be focused on:

- Validation of the adaptation to environments of negative rates of models that value the most exotic products.
- Validation of input models.
- Validation of curve models considering the new Model Risk standards.

Global [FX Front Office Pricing]

In 2016, the new mixed volatility driver for continuous barriers was validated. On the development side, new Monte Carlo drivers are being developed for the local volatility model so that valuations of Asian options and TARKO can be more efficient. Work is also being done to adjust the models to the new Model Risk standards.

The objectives of Internal Validation for 2017 will be focused on:

- Validation of the new payoffs that are evaluated with the new local and mixed volatility drivers.
- Validation of input models.

Global [Equity Front Office Pricing]

In 2016, migration was completed to Mx3 of virtually all equity operations in Santander España. Validation work has concentrated on validating enhancements in models now in production, such as methodologies of softening methodologies for products on baskets, Himalaya and self-cancellables, arbitrage repair, etc.

The objectives of Internal Validation for 2017 will be focused on:

- Validation of the new payoffs that are evaluated with the new local and mixed volatility drivers.
- Validation of input models.
- Validation of more sophisticated models for management and valuation adjustments.

GLOBAL [RISK PRICING]

The new management framework of Model Risk adopted in June 2015 involves complete validation of valuation models of AIRe, in accordance with new standards of Model Risk. This implies a process of regularisation in accordance with such standards. Bearing this in mind, a remedial plan has been proposed based on the materiality of use, and an identification has been carried of models that are duplicate or obsolete. The objectives of Internal Validation for 2017 will be focused on validation of the models included in the plan.

Santander US, with the support of the Corporation, complied with the order of the OCC and the Federal Reserve Bank to locally validate the AIRe valuation models that are currently being used by US subsidiaries.

Dashboard [VaR and SVaR]

In 2016, a quarterly validation report was defined for the Market VaR and SVaR of Spain, UK, Brazil, Mexico, Chile and Portugal. The report is based on a number of key monitoring indicators of the quality of models, which are the SVaR/VaR ratio, the number of backtesting exceptions, the degree of consistency of P&L Front - Risks and the publication use test. These indicators are included in recurring validations, and the early monitoring thereof, constitutes proactive control of models' functioning.

This report is periodically submitted in the Risk Control Committee chaired by the Group's Chief Risk Officer.

SPAIN [VaR and SVaR]

In September 2016, validation of the Displaced Historical Simulation (DHS) for calculation of returns was validated. This hybrid (multiplicative and additive) corrects the problems of consistency that emerged during calculation of returns for VaR and SVaR of interest rate curves with near-zero and negative rates.

Recurring validation of the VaR and SVaR models of Spain began in late 2016 and its completion is scheduled for early 2017.

The objectives of Internal Validation for 2017 will be focused on:

- Validation of the market data models (curves, surfaces, dividends, etc.).
- Validation of improvements deriving from new regulatory requirements.

CHILE [VaR and SVaR]

In June 2016, recurring validation of internal VaR and SVaR models for Chile was completed. The main recommendations consist of implementing the automatic interface of market data conciliation of Asset Control – AIRe and setting a minimum variability threshold for the historical market data series.

Additionally, reconstruction of the historic VaR and SVaR historical series was reviewed and deemed adequate for collateralised and non-collateralised curves done during the implementation of the Multi-Curve valuation framework.

The objectives of Internal Validation for 2017 will be focused on:

- Validation of the market data models (curves, surfaces, dividends, etc.).
- Validation of improvements deriving from new regulatory requirements.

BRAZIL [VaR, SVaR and P&L reserve]

Model Risk reviewed in 2016 the non-linear P&L reserve models and carried out a status monitoring process of the prior recommendations of VaR and P&L reserve. In this period, recommendations pending resolution have been reduced from 20 to 8. Internal Validation verified that the 12 recommendations have been correctly implemented. Recommendations pending resolution are related to conciliation processes, VaR backtesting, to market data proxies, to the process of calculation of past cash flows, to the stress tests and the calculation P&L reserve.

In December 2016, validation of the valuation adjustment models (FVA) for NTN-A and Debentures began. The objectives of Internal Validation for 2017 will be focused on recurring validation of VaR and SVaR models that will begin in January.

UNITED KINGDOM [VaR, SVaR and RNIV]

In April 2016, recurring validation of the Risk Not In VaR (RNIV) models of Santander UK was completed, with no significant deficiencies found. Nevertheless, it was recommended that a formal periodic market review procedure is established by Market Risks to certify that the assumptions and stress levels applied were adequate.

In June 2016, recurring validation of VaR and SVaR models was completed. As a result, an evaluation was recommended of the viability of implementing conciliation of P&L Front – Risks, monitoring of the start and end times of the principal processes, with the aim of assessing the possibility of publishing the VaR earlier, setting a minimum variability threshold for the market data series and reviewing several of them provided directly by Front Office.

The objectives of Internal Validation for 2017 will be focused on:

- Validation of market data models (curves, surfaces, dividends, etc.).
- Validation of improvements deriving from new regulatory requirements.

5.3. Structural market risk

Structural Market risk is defined as risk caused by management of different balance sheet items. This risk includes both losses from price changes affecting available-for-sale and held-to-maturity portfolios (banking book) and losses arising from management of assets and liabilities carried at amortised cost of the Group.

Specifically, structural risk measures the probability of losses in different balance sheet figures deriving from a change in the levels of different market variables and, specifically, of interest rate and exchange rates.

The principles governing the control of structural risk in Grupo Santander are as follows:

- Autonomy in management, under which each bank autonomously manages its balance sheet structure and its capital.
- Control and supervision, which means control and oversight mechanisms of risks must be in place.
- Use of like-for-like and aggregatable metrics.
- Use of like-for-like and aggregatable methodologies.
- Setting and adaptability of limits.
- Consolidation of information for adequate management of Group's structural risks.
- Adjustment to global regulatory environment.



For further details regarding structural market risk, please refer to **chapter 5, section D.2.2** of the **2016 Annual Report**

6

Operational risk



6. Operational risk

6.1 Definition and objectives

The Group's objective in terms of controlling and managing operational risk is to identify, measure/assess, monitor, control, mitigate and communicate this risk. Santander expressly recognises that, although a certain volume of expected operational losses may indeed arise, unexpected severe losses as the result of failures in business controls are unacceptable.

The progress made in 2016 to help us achieve our objectives was as follows: improvements to the operational risk control and management model, moving forward towards advanced models with the rollout of the AORM programme (Advanced Operational Risk Management) and a management technology tool (Heracles), implementation of the new risk and control self-assessment process for better appraisal and management of mitigation of operational risks in the initial lines of defence, generalisation of the scenario analysis programme, better monitoring of the main Group risks using new appetite metrics (e.g. supplier management) and a system cascading down to business units, and improvement of management of cyber-risk and fraud: a new fraud control and management model, creation of a global cyber-risk management function and application of new mitigation measures.



For further information,
see chapter 5 D.4 of the
2016 Annual Report
available on Grupo Santander's website.

7

Other risks and internal control

- 177 7.1. Liquidity risk and funding
- 177 7.2. Compliance and conduct risk
- 178 7.3. Grupo Santander internal control model



7. Other risks and internal control

7.1. Liquidity risk and funding

Liquidity risk entails the potential losses that may be incurred by an entity as a result of its inability to secure funding on the market and/or the higher borrowing costs of new sources of finance.

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

Risk profile:

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

For further details about asset encumbrance (CRR article 443) see chapter 5 D.3.2.2.iv of the 2016 Annual Report.



For further information, see chapter 5 D.3 of the **2016 Annual Report** available on Grupo Santander's website.

7.2. Compliance and conduct risk

According to the configuration of lines of defence in Grupo Santander and, in particular, within the compliance and conduct function, primary responsibility for management of this function's risks lies in the first line of defence, jointly with the business units that directly originate the risks and the compliance and conduct function. The function is managed by allocating compliance activities or tasks to this first line of defence, or directly in certain cases. The compliance and conduct function comprises all matters related to regulatory compliance, prevention of money laundering and the financing of terrorism, governance of products and consumer protection, and reputational risk.

To this end the compliance function fosters adherence by Grupo Santander to the rules, supervisory requirements, principles and values of good conduct, by setting standards, debating, advising and reporting in the interests of employees, customers, shareholders and the wider community.

Formulation of Grupo Santander's risk appetite in this area is characterised by a declaration of zero appetite for risks of this type, with the clear objective of minimising the effect of any economic, regulatory or reputational impact on Grupo Santander. To this end, units are systematically monitored through a common methodology that establishes a number of compliance risk indicators and assessment matrices that are prepared for each local unit. To meet this objective, in July 2016 the compliance and conduct division submitted a risk appetite proposal to the Board via its governing bodies and risk units. The Board approved the proposal, and work is now ongoing to implement the risk appetite scheme in Grupo Santander units



For further information, see chapter 5 D.5 of the **2016 Annual Report** available on Grupo Santander's website.

7.3. Grupo Santander internal control model

7.3.1. Description of Grupo Santander's internal control model

Grupo Santander's internal control model (ICM) comprises processes and procedures by senior management and the rest of the Group's employees to provide reasonable assurance that the goals set by Grupo Santander, including goals regarding control of corporate strategy, effectiveness and efficiency of operations, reliability of financial reporting and compliance with applicable laws and regulations, are actually met.

Grupo Santander's ICM complies with all legal and regulatory requirements and is in accordance with the guidelines set by the Committee of Sponsoring Organisations of the Treadway Commission (COSO) on its last Framework published in 2013 (Internal Control Integrated Framework) and the Framework for Internal Control Systems in Banking Organisations issued by the Bank for International Settlements (BIS) in Basel.

The principles on which Grupo Santander's internal control model are based are as follows:

1. Culture of senior management control and supervision. This culture is manifested in the following aspects:

- The Board of Directors takes ultimate responsibility for ensuring that an adequate and effective internal control system is in place and is kept up to date.
- Senior management is responsible for establishing appropriate internal control policies, and ensuring they are put into effect and monitored.
- The Board of Directors and senior management are responsible for making all levels of the organisation aware of the importance of internal control. All employees of the organisation involved in internal control processes must have clearly defined responsibilities.

2. Identification and assessment of the control environment. Grupo Santander's internal control system ensures that all the necessary controls to achieve objectives are properly identified and assessed, and that new controls are assessed on a continuous basis.

3. Establishment of adequate controls and separation of functions. A clear structure of control and allocation of responsibilities have been established and control functions are an intrinsic part of the organisation's business and support activities, ensuring sufficient separation of functions to avoid any conflict of responsibilities.

4. Reporting and communication. Grupo Santander's procedures and systems ensure accurate and comprehensible reporting and communication.

5. Monitoring of the control system. In addition to the continuous review of business and operations, control activities are subject to regular assessments, the conclusions of which are reported to senior management and the board, along with any matters for special monitoring.

Proper documentation of Grupo Santander's ICM is a vital component for achieving these objectives. To this end, those responsible for the organisational structure use a common homogeneous methodology to describe their processes, through documentation pertaining to tasks and controls.

Controls that must be documented in the ICM are identified on the basis of senior management's knowledge and understanding of the business and operational processes, taking into account both criteria of proportions and also qualitative criteria relating to the nature, complexity or actual structure of the business. In 2016 Grupo Santander also defined a catalogue of theoretical controls in order to guarantee the sufficiency and completeness of the internal controls established by the different functions involved in relation to Grupo Santander's control model.

7.3.2. Documentation and updating

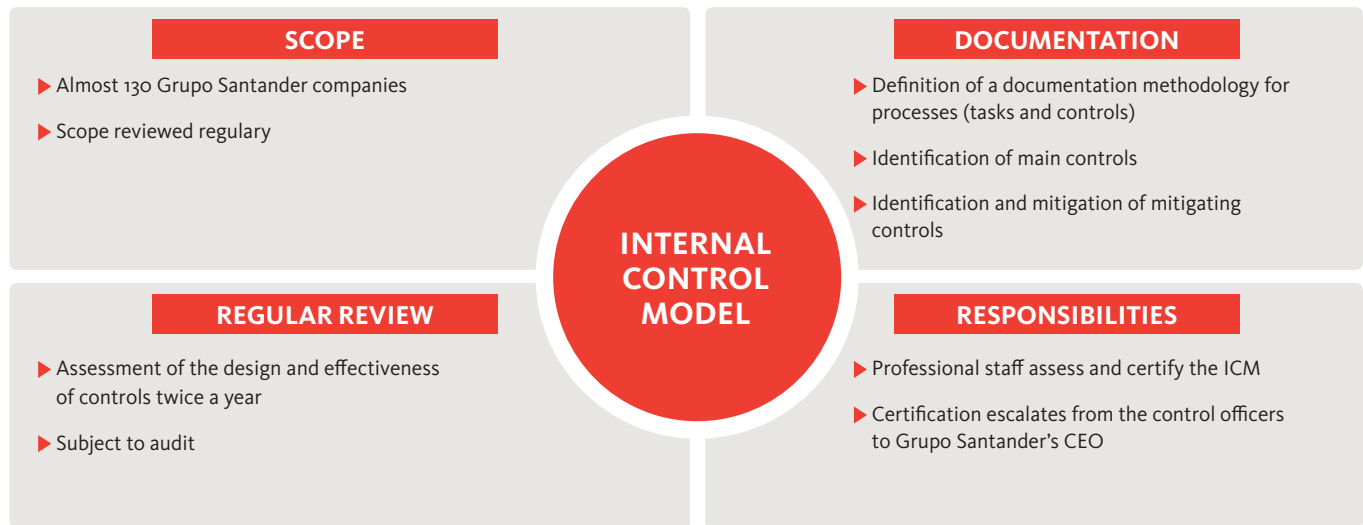
The following are some of the main features of Grupo Santander's ICM documentation:

- The documentation of the corporate model involves every member of the organisation with control responsibilities, through a framework of direct responsibilities that are individually assigned.
- Management of ICM documentation is decentralised among Grupo Santander units. A corporate area also coordinates all Grupo Santander units and provides general criteria and guidelines for standardising documentation of procedures, tests for assessing controls, classification criteria for potential deficiencies and regulatory adaptations.
- The documented model is broad and therefore includes not only activities related to the generation of consolidated financial reporting, which is its main objective, but also any other procedures carried out in the business and support areas of each entity which, although they may have no direct impact on accounting, could nevertheless give rise to losses or risks in the event of incidents, errors, infringements of regulations and/or fraud.
- The ICM is a forward-looking model and evolves by adapting to the reality of Grupo Santander's business and support activities at any given time, clearly identifying any risks that might prevent the achievement of goals and the controls that mitigate such risks.
- It includes detailed descriptions of transactions, criteria for assessing the functioning of controls and the conclusions of an assessment of their functioning.

All the ICM documentation of each Grupo Santander company is stored in a corporate computer application. This application allows processes, risks and controls to be consulted and updated by users in real time, and reviewed by external auditors or supervisory bodies. It also serves as a support tool for the internal control model assessment and certification process, automatically ensuring the model's integrity.

The chart below shows documentation and responsibilities in Grupo Santander's internal control model:

Group's internal control model



Keeping the descriptions of processes (tasks and controls) and identification of the persons responsible for them up to date is a key aspect of Grupo Santander's ICM.

In 2016 Grupo Santander's ICM documentation evolved to meet the new regulatory requirements affecting banks' procedures and to reflect the changes in the organisation, both changes to the businesses and operational processes and changes to Grupo Santander's organisational and corporate structure.

The ICM is not only documented and updated in the business units; it is also key to identifying, documenting and assessing the risks and controls associated with operational processes outsourced to Grupo Santander companies.

ICM documentation and its assessment process support compliance with certain regulatory measures such as SOx, Fatca, the Criminal Liability of Legal Entities, Dodd-Frank or Volcker, among others.

Ultimately, the ICM is examined by Grupo Santander's auditor, who reports to the Audit Committee and issues an opinion on the effectiveness of the internal controls applied to the generation of financial reporting in the consolidated financial statements of Grupo Santander at 31 December 2016.

The corporate scope of Grupo Santander's ICM also imposes an obligation to constantly ensure that those involved in the ICM at all levels of the organisation are kept up to date, coordinated and trained as appropriate. The corporate coordination team organises online and classroom training and keeps the methodology up to date, and sends proper instructions to Grupo Santander entities.

7.3.3 Assessment and integration in management

Grupo Santander has an assessment and certification process for reviewing the performance of the ICM and the effectiveness of the established controls, processes and activities. This process starts with an assessment of the control activities by those responsible for them. Based on the conclusions of this first assessment, the various sub-processes, processes and activities related to the generation of financial information are certified. Once all these certifications have been analysed, the CEO, CFO and Controller certify the effectiveness of the ICM as a whole.

Two assessment processes were carried out at Grupo Santander in 2016: in the first half of the year, an assessment of the effectiveness of controls, for the purposes of proper change management for the new methodology and the new corporate system, and also for the purposes of anticipating incidents to improve the controls before the end of the year; and the annual assessment of the effectiveness of controls and processes.

In addition, in order to add the process for assessment and certification of the internal control model to the risk management process, the new system supporting the documentation and the assessment contains significant information related to operational risk management: risk control self-assessment (RCSA) exercises, loss events, and measurements of the indicators that track the specialised functions of the first and second lines of defence.

Remuneration policies

8



8. Remuneration policies

8.1. Pillar III information included in other documents

The 2016 Remuneration Committee Report, which is published alongside the notice of the 2017 Annual General Meeting, describes:

- The functions of the committee in regard to remuneration of directors, members of senior management and other directors whose activity could have a significant impact on the Group's risk profile.
- The composition of the committee, directors' attendance of meetings, the involvement of board members in other committees, the approximate time dedicated to each function and how they function.
- Director remuneration policy, whether as directors or for executive functions and corporate governance principles on remuneration.
- The 2016 remuneration policy for directors and senior management, with specific focus on variable remuneration and how it was applied in the year.

The Board of Directors is responsible for approving director and senior management remuneration, as well as the essential elements of remuneration of other managers or employees who, while not belonging to senior management, take on risks, carry out control functions (i.e. internal audit, risk management and compliance) or who receive global remuneration that places them in the same remuneration bracket as senior management and employees who take on risk and whose professional activities may have an important impact on the Group's risk profile (all of these together with the senior management and the Company's Board of Directors form the so-called "Material Risk Takers").

Furthermore, the committee report also includes the following Pillar III significant information:

- The decision making process for setting the remuneration policy for directors, senior managers and the essential elements of the remuneration of material risk takers.

- The basic characteristics of the remuneration components.
- Information on the criteria applied for assessing the metrics that determine director and senior management variable remuneration and their adjustment according to risk as the results of director metrics.
- The deferral policy and other conditions linked to the payment of variable remuneration, including the application of malus and clawback provisions.



For further information see the **2016 Report of the Remuneration Committee** available on the Grupo Santander website

8.2. Remuneration policy applicable to categories of staff that may have a significant impact on the risk profile of Grupo Santander

Grupo Santander has specific guidelines in its remuneration policy in regard to these members of staff who are known as material risk takers. These guidelines contain:

- The principles and criteria that determine which persons have a material impact on the Group's risk profile, based on the Commission Delegated Regulation (EU) 604/2014, of 4 March 2014¹, as indicated below.
- The specifics that modify the general remuneration policy for its application to this staff in keeping with applicable rules and European Banking Authority (EBA) guidelines are described below.
- The enforcement mandate of the Group's general remuneration policy with adaptations that are essential for complying with local regulatory requirements or recommendations by supervisory bodies.

Remuneration of material risk takers in 2016 has followed the criteria set out in the Group's remuneration policy.

Note 1. The material risk takers have been defined according to the provisions of Law 10/2014, of 26 June, on the restructuring, supervision and solvency of credit institutions, (Law 10/2014), transposing into Spanish law the text of Directive 2013/36/EU of the European Parliament and Council of 26 June 2013, on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms (Directive CRD IV). Article 32.1 of Law 10/2014 defines this group as consisting of those "staff whose professional activities have significant impact on the risk profile of the institution, of its group, parent company or subsidiaries" (material risk takers). That definition derives from Article 92(2) of Directive CRD IV and has been implemented by Commission Delegated Regulation (EU) 604/2014 supplementing Directive 2013/36/EU of the European Parliament and of the Council with regard to regulatory technical standards with respect to qualitative and appropriate quantitative criteria to identify categories of staff whose professional activities have a material impact on an institution's risk profile (the Delegated Regulation).

8.3. Main characteristics of the criteria for identifying categories of staff that may have a material impact on the risk profile of the Grupo Santander

The Group has developed the quantitative and qualitative criteria provided in the regulation, to determine the material risk takers which are supplemented with additional internal criteria. Based on said criteria, in general, the following are categorised as material risk takers:

- Based on qualitative criteria - staff who work in a material business unit, such as:
 - Members of the management, executive or supervisory committees.
 - The first line of the unit.
 - Heads of material business sub-units in the country or business area.
 - Heads of risk, audit and compliance and their direct superiors.
 - Heads of legal or tax advisory services, audit, budget, human resources and technology and operations.
 - Members of senior risk committee, managers with powers to approve risk proposals and those responsible for making significant risk proposals.
 - Traders authorised to take substantial positions in market risk.
 - Members of the new products committee.
- By quantitative criteria:
 - Managers receiving total remuneration of over 500 thousand euros in 2015.
 - Managers whose remuneration is in the highest 0.3% in the Group and in their country.
 - Managers who in the past year earned more than the person with the lowest remuneration in the material risk takers group, factoring in the business positions identified in the qualitative criteria.

- By internal criteria:
 - Managers exceeding a certain remuneration threshold in 2016.
 - Managers with significant Group representational responsibilities at non-material units.
 - Managers with certain lending or market risk responsibilities in certain non-material units.

According to these criteria, at year-end 2016, this group comprised 1,130 executives across the Group, accounting for approximately 0.59% of total staff.

8.4. Specificities of the remuneration policy applicable to Material Risk Takers

In general:

- Fixed remuneration shall represent a significant proportion of total compensation.
- In no case will variable remuneration exceed the limit of 200% of fixed remuneration.

Variable remuneration will normally comprise:

- An incentive to be received partly in cash and partly in shares or other financial instruments valid for this purpose, collection of the incentive being deferred for a period of three to five years (seven in the United Kingdom).
- Short- and long-term performance measurement elements.
- Reduction (malus) and recovery (clawback) provisions.
- Ban on hedges on deferred or retained instruments and on transferring these instruments in the twelve months following receipt.

8.5. Application of the remuneration policy for Material Risk Takers in 2016

The essential remuneration conditions of individuals belonging to the material risk takers were approved by the Group's Board of Directors at the proposal of the remuneration committee.

With regard to variable remuneration, these essential elements include, among others:

- The metrics for determining variable remuneration for senior management and other top executives, which have also served as basis for determining variable remuneration for other material risk takers. These metrics are described in section 3 of the report of the remuneration committee.
- The applicable percentages and periods of deferral relating to material risk takers according to their category:

	Percentage paid immediately	Deferred percentage	Deferral period (*)
Executive directors and members of the material risk takers group with total variable remuneration of ≥ 2.7 million Euros.	40%	60%	5 years
Executive vice-presidents and country heads of countries accounting for at least 1% of the Group's economic capital and other members of the material risk takers with total variable remuneration of over ≥ 1.7 million Euros (< 2.7 million Euros).	50%	50%	5 years
Other members belonging to the material risk takers	60%	40%	3 years

*Up to 7 years in certain jurisdictions.

- The linking of a part of the differed amounts to fulfilling multiyear objectives for executive directors, senior management and other managers according to their category. These metrics are described in section 2.3 of the report of the remuneration committee.
- The suitability of financial instruments used for the portion of deferred remuneration in instruments: use of shares in Banco Santander S.A. or any of its listed subsidiaries (such as Brazil, Chile, Mexico and Santander Consumer USA) or equivalent instruments (Poland); as well as the ratio between different instruments.
- The definition of events that can result in the application of malus and clawback provisions on 2016 variable remuneration. These events, which apply to all material risk takers, are described in section 2.3 of the report of the remuneration committee.
- No discount is applied to deferred variable remuneration in order to calculate the ratio of variable to fixed components.

In addition to the general scheme of variable remuneration metrics, Global Corporate Banking (GCB) follows a model that is applied generally across all regions where the division operates. The model provides remuneration for achieving results using a partial pay out system, linking variable remuneration to the division's ordinary net profit, including provisions and other assimilated costs, as well as the previously established budgetary objectives. The model includes the same categories of metrics – including capital, risks and customers – as those used by the senior management, without prejudice to their adaptation to the individual business.



For further information see the **2016 Report of the Remuneration Committee** available on the Grupo Santander website

8.6. Total remuneration of Material Risk Takers in 2016

The following table provides detail on the total remuneration of material risk takers in 2016:

Table 95. Total remuneration

Thousands of Euros

Material risk takers	Admin. Executives	Other senior managers ⁵	Rest of staff ⁶	Total
Total fixed remuneration in 2016¹	14,661	32,503	357,112	404,276
Total remuneration in 2016^{2;3}	14,893	31,608	344,890	391,391
Payable immediately				
<i>In cash</i>	3,339	8,126	104,829	116,294
<i>in instruments⁴</i>	3,339	8,126	103,904	115,370
Deferred payment				
<i>In cash</i>	4,107	7,678	68,079	79,864
<i>in instruments⁴</i>	4,107	7,678	68,079	79,864
Payments for new contracts				
Total guaranteed remuneration in 2016	0	0	7,345	7,345
Number of beneficiaries	0	0	10	10

1. Includes fixed salary and supplements, attendance fees and bylaw-stipulated allotments for executive directors, as well as benefits (including pensions classified as fixed in nature).

2. The variable remuneration of the executive directors and the rest of senior management does not include €2,571 million in variable component pensions; the variable remuneration of other employees does not include €2,793 million in buyouts or sign on amounts. The variable remuneration components subject to local regulations amounting to 904 thousand euros are also not included in any of the categories.

3. Variable remuneration is included at its fair value. Fair value has been determined on the date it was awarded, based on an expert assessment report and taking account of different possible scenarios for the performance of the different variables set out in the plan during the measurement periods.

4. The following charts show the distribution of instruments according to the companies of the Grupo Santander to which they correspond.

5. This column includes the remuneration of the members of senior management (excluding executive directors) as of 31 December 2016.

6. This column includes the remuneration of senior management who resigned their duties during 2016.

The distribution of deferred instruments according to Grupo Santander companies to which they correspond is as follows:

The distribution of the deferral instruments according to the company of the Santander Group to which they correspond is the following:



The total amount of severance payments and other benefits associated with contract termination, including single early preretirement payments, awarded during the year to material risk takers has amounted to 48.9 million euros for 46 people with an average time spent in the company of 16 years. No severance payments have been made to executive directors active in 2016. The total amount for a single benefit reached 6.7 million euros.

The breakdown of total remuneration by area of activity is as follows:

Table 96. Remuneration by activity area

Thousands of Euros

	Investment banking	Commercial banking	Other	Total
No. of persons	272	691	167	1,130
Total remuneration	203,598	421,788	170,280	795,667

The investment banking area includes material risk takers, whether senior managers or other staff categories, belonging to businesses related to wholesale banking, integrating the business from global corporate banking, investment banking and the markets, which includes all the globally managed treasury departments and the equities business.

The commercial banking area contains all retail, commercial and consumer banking businesses. It includes all people providing support in the different regions with senior local managers or other categories.

Other activities include employees belonging to the material risk takers group for corporate support areas (such as risks, audit, financial control, human resources, general secretary's office, etc.) in addition to executive directors who are not managers of any division. The number of people carrying out asset management functions is relatively limited in the consolidated Group and they are included in this category.

The sum of the variable components corresponding to each member of the material risk takers group in 2016 did not exceed the limits set for each one (either 100% or 200% in cases authorised at the general shareholders' meeting). Specifically, the ratio of variable components of remuneration to the fixed components for the entire material risk takers was 94%, in all cases complying with the limit applicable to each of them.

Information on the remuneration systems for material risk takers in which the entitlement to receive shares arose in previous years and for which the targets and/or conditions for receiving them were fulfilled in 2016 or are pending fulfilment is as follows:

Table 97. Vested rights

Thousands of Euros

Remuneration entitlement from previous years: Consolidated for 2017, unpaid	Admin. Executives	Other senior managers	Other employees	Total
Cash	2,129	4,412	40,078	46,619
Number of Santander shares	400,871	802,981	5,723,755	6,927,607
Number of Santander Brazil shares	-	-	2,590,399	2,590,399
Number of Santander Chile shares	-	-	26,352,098	26,352,098
Number of Santander Mexico shares	-	-	925,072	925,072
Number of Santander Poland shares*	-	-	5,723	5,723
Number of Santander Consumer USA	-	-	30,873	30,873

Table 98. Unvested rights

Thousands of Euros

Other remuneration entitlement from previous years: Non-consolidated and unpaid (to be consolidated from 2017)	Admin. Executives	Other senior managers	Other employees	Total
Cash	3,685	6,592	54,329	64,606
Number of Santander shares	854,314	1,502,293	8,616,127	10,972,734
Number of Santander Brazil shares	-	-	3,654,296	3,654,296
Number of Santander Chile shares	-	-	34,492,583	34,492,583
Number of Santander Mexico shares	-	-	1,328,889	1,328,889
Number of Santander Poland shares*	-	-	6,121	6,121
Number of Santander Consumer USA	-	-	71,132	71,132

* A Santander Poland instrument (Zachodni WBK) has the same value as a share.

8. Remuneration policies

The following is a breakdown of remuneration by section of salary band for members of material risk takers across the entire Grupo Santander:

Table 99. Remuneration by salary band

Salary band (in Euros)	No. of persons
1,000,000 - 1,500,000	82
1,500,000 - 2,000,000	36
2,000,000 - 2,500,000	13
2,500,000 - 3,000,000	7
3,000,000 - 3,500,000	8
3,500,000 - 4,000,000	6
4,000,000 - 4,500,000	2
4,500,000 - 5,000,000	3
5,000,000 - 6,000,000	6
6,000,000 - 7,000,000	1
7,000,000 - 8,000,000	0
8,000,000 - 9,000,000	1
9,000,000 - 10,000,000	1
10,000,000 - 11,000,000	0
11,000,000 - 12,000,000	1
TOTAL	167

4.5 Remuneration policy in 2017

The 2017 remuneration policy for directors is described in section 2.5 of the remuneration committee report. The main principles of the policy, the fixed and variable compensation components and the variable remuneration policy for material risk takers will follow the procedures for executive directors outlined in the previously mentioned report. In particular, as regards the variable remuneration policy:

- The existence of a single incentive, which will be determined by a set of quantitative and qualitative metrics.
- Short-term metrics, which include customer, capital, risk and profitability elements.
- Long-term metrics for the first reporting line managers: earnings per share, total shareholder return and capital ratio (fully-loaded CET1).
- Partial payment in cash and in shares or other instruments.
- Continued-employment, malus and clawback provisions.
- Other conditions such as the ban on hedges and transfer of shares in the twelve months following receipt.

Deferral periods for material risk takers will be as follows:

	Percentage paid immediately	Deferred percentage	Deferral period (*)
Executive directors and members of the material risk takers group with total target variable remuneration of at least 2.7 million Euros (**)	40%	60%	5 years
Executive vice-presidents and country heads of countries accounting for at least 1% of the Group's economic capital and other members of the material risk takers with total target variable remuneration of between 1.7 million and 2.7 million Euros, inclusive (**).	50%	50%	5 years
Other members belonging to the material risk takers	60%	40%	3 years

* Up to 7 years in certain jurisdictions.

** Variable remuneration not denominated in euros is calculated using the average closing exchange rates in the fifteen trading sessions immediately prior to the Friday, exclusive, of the week before the date on which the board of directors agrees the variable remuneration of the Bank's executive directors for 2016.

9

Appendices

● 187 I. New regulatory requirements 2016

● 190 II. List of tables

● 192 III. Glossary

Appendices available on Grupo Santander's website:

IV. Outline of the differences in the scopes of consolidation – entity by entity

V. Reconciliation public balance sheet / non-public balance sheet

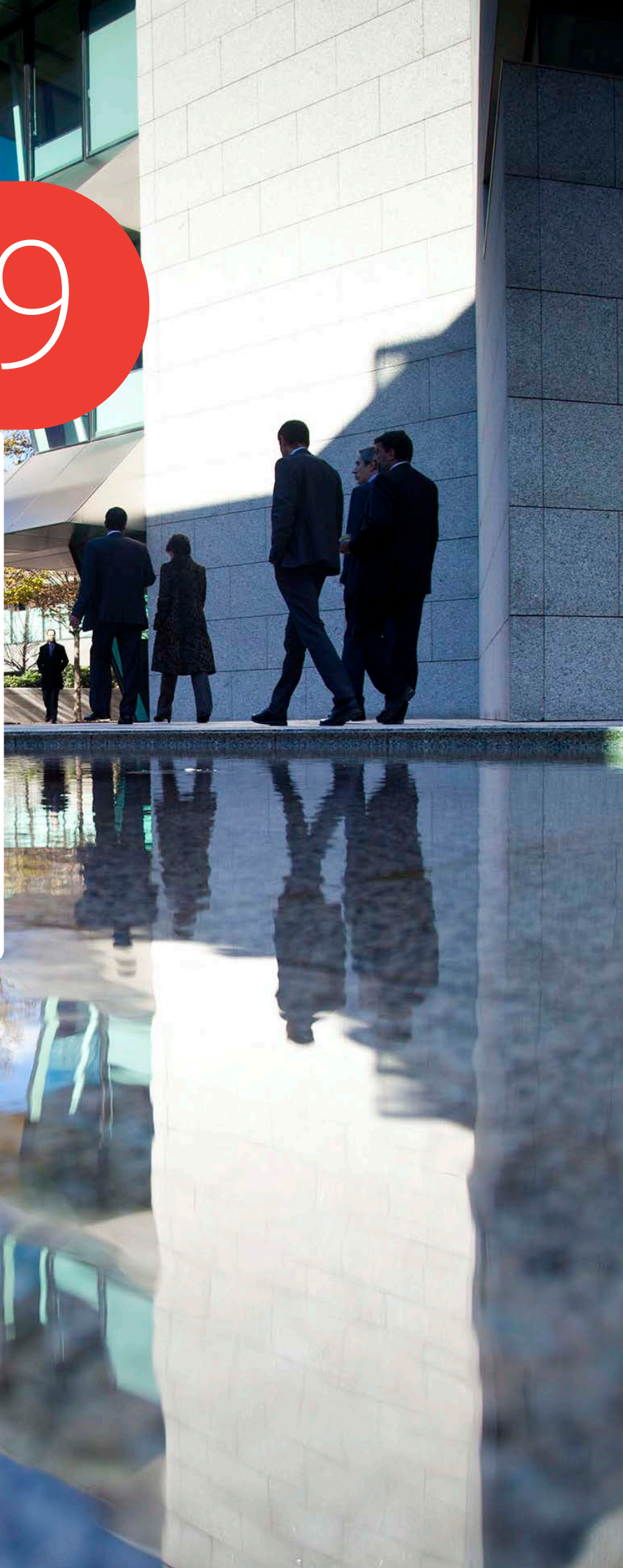
VI. Capital instruments main features template

VII. Transitional own funds disclosure template

VIII. List of specialised management companies (SPVs)



Access file
2016 Pillar III Appendix
available on the Grupo Santander website



Appendix I

New regulatory requirements 2016

New publications by the Basel Committee

Final publications by the Basel Committee of documents for consultation throughout 2016:

- January 2016 saw publication of **“Minimum capital requirements for market risk”**. The revised framework makes the following improvements: a revised method for the internal model approach (IMA), a revised method for the standard approach and a revision of the dividing line between the trading book and the investment book. It also contains an Appendix establishing guidelines on the supervisory review process.
- “Interest rate risk in the banking book” was published in April 2016, with a review of the regulatory treatment of interest rate risk in the banking book (known as IRRBB). This sets out to ensure that banks have the necessary capital to guard against any potential losses incurred by interest rate fluctuations and limit capital arbitration between the trading book and the banking book, and among banking book portfolios with different accounting treatments. The BCBS finally reached the conclusion that, in due consideration of the heterogeneity of IRRBB, it could be better captured in Pillar 2 (the initial intention was also to capture it in Pillar 1).
- July 2016 saw publication of the final version of **“Revisions to the securitisation framework”**, an updated standard which includes treatment of “simple, transparent and comparable securitisations (STC)”. The treatment of capital for STC securitisations is based on the criteria published by the BCBS in 2015. The new standard establishes further criteria to distinguish treatment of the capital of STC securitisations and of other securitisation operations.
- In October the Committee published the **“TLAC holdings standard”** on the regulatory treatment of banks’ TLAC holdings, in a bid to harmonise the current rules whereby equity instrument holdings issued by other banks must be deducted from the Tier 2 of the holding that qualifies for TLAC, above certain thresholds. The standard also reflects the changes to Basel III to specify how G-SIBs must take account of the TLAC requirement when calculating their capital buffers.

EBA changes

The RTS and ITS published by the EBA in 2016 include :

- **“Final draft ITS on G-SII identification”, “Final draft RTS on G-SII identification”** and **“Revised Guidelines on G-SII identification”**, on formats and dates for the disclosure of the indicators used to identify global systemically important insurers (G-SIIs), on the methodology for G-SII identification and on the specification of each of the indicators used to identify G-SIIs, respectively.
- In March the EBA published its **“Final draft ITS amending Regulation on Supervisory Reporting”**. European Commission Implementing Regulation 680/2014 lays down the requisites pursuant to which banks must report relevant information for the purposes of compliance with the stipulations of the CRR (FINREP, COREP etc.). As the regulatory framework established by the CRR is gradually being completed and amended, the Implementing Regulation must be updated as a result. This ITS therefore amends the aforementioned Regulation.
- March saw publication of **“RTS on Risk Mitigation Techniques for OTC contracts”**, which contains risk mitigation techniques in connection with the exchange of collateral to hedge against risk exposures arising from bilateral OTC derivatives, and specifies criteria concerning intragroup exemptions and the definitions of practical and legal impediments to the prompt transfer of funds between counterparties, in order to increase the safety of the OTC derivatives markets in the EU.
- April saw publication of the **“Final Report on Guidelines on the provision of information in summary or collective form for the purposes of Article 84(3) of Directive 2014/59/EU”**, to foster convergent practices of supervision of the resolution with respect to the disclosure of confidential information in summary or collective form such that entities cannot be identified. It is expressly stated that the disclosure of confidential information should be disclosed in an anonymised form by way of a brief summary or globally, and finally three factors for consideration are defined to ensure that the information is disclosed in this manner.

- June saw publication of the “**Final RTS on specialised lending exposures**”, which defines four categories of specialised lending: project finance, real estate, object finance and commodities finance. For each category, a number of assessment criteria are specified for each of the factors stipulated in the CRR (financial strength, political and legal environment, transaction and/or asset characteristics, strength of the sponsor and developer, and security package) which must be taken into account by banks to determine the final category and the risk weight allocated to the specialised lending exposure.
- “**Guidelines on limits on exposures to shadow banking**” were published in June to propose the criteria for setting limits on entities’ exposures to shadow banking entities. It lays down a qualitative approach for institutions to develop their internal policies for monitoring and setting appropriate limits, both at individual and aggregate levels.
- In July the EBA published its “**Final Draft RTS on Assessment Methodology for IRB**”, specifying the assessment methodology that must be used by the authorities to approve banks’ IRB approach, in a bid to harmonise the regulator’s IRB appraisal methodology in all EU Member States.
- In September it published a “**Final Report on Guidelines on default definition**”, containing criteria on the days past due for an exposure to be considered default, various indicators of likely non-payment, treatment of the definition of default in external data (to estimate parameters for entities under the IRB approach), criteria for a return to “non-defaulted” status, criteria for consistency in treatment of the definition of default, criteria for retail exposures, and finally a section on documentation, internal policies and risk management processes.
- September also saw publication of its “**Final draft RTS on the materiality threshold for credit obligations**”, which determines maximum materiality thresholds for credit obligations past due, since these thresholds shall be set by the Competent Authorities. It defines the concept of the debtor’s past-due obligation, and also determines the maximum limits (absolute and relative) of retail and wholesale exposures. The threshold shall be considered to have been breached if both limits are surpassed over 90 consecutive days.
- In September it published its “**Final report on Guidelines on implicit support for securitisation transactions**”. The guidelines stipulated that, in the case of sponsor institutions, a transaction is not structured to provide implicit support if it is not carried out in arm’s length conditions or in conditions more favourable to the sponsor institutions than arm’s length conditions. The guidelines also establish an objective test for definition of arm’s length conditions.
- In November it published its “**Final draft RTS on the IMA assessment methodology & significant shares**” for the Competent Authorities (CAs) to assess the significance of positions included in the scope of market risk internal models, and the methodology they must apply when assessing institutions’ compliance with the requirements to use an internal model approach (IMA) for market risk. In this regard the EBA considers the Fundamental Review of the Trading Book (FRTB).
- December saw publication of the “**Final report on Guidelines on ICAAP / ILAAP**”, to provide a consistent approach to assessment of institutions’ ICAAP and ILAAP for SREP purposes. Specifically, these Directives stipulate the information that ought to be compiled by CAs on banks’ ICAAP and ILAAP, and establish general criteria that CAs may use to organise the information compiled on ICAAP and ILAAP, and the utilisation of this information to assess other aspects of SREP.
- December also saw publication of the “**Final report on the Guidelines on disclosure requirements under Part Eight of Regulation 575/2013**”. This is based on an update of the Pillar 3 requirements published by the Basel Committee in January 2015. These directives form part of the EBA’s task to improve and enhance the consistency and comparability of disclosures by institutions and guarantee discipline within the market. They will apply to G-SIIs and O-SIIs, and some will be applicable in December 2016, and all of them as of December 2017.

New European Union legislation

Finally, the main regulations published in the Official Journal of the European Union in 2016 were as follows

- In January the European Commission published **Delegated Regulation (EU) 2016/101** with regard to regulatory technical standards for prudent valuation, whereby prudent valuation requirements must apply to all fair-valued positions of financial instruments and commodities, regardless of whether or not they are held in the trading book. Specifically, prudent valuation requirements mean that, for the purpose of calculating adjustments to Common Equity Tier 1, when application of the adjustments leads to a lower absolute carrying value for assets or a higher absolute carrying value for liabilities than recognised in accounting, an additional valuation adjustment (AVA) should be calculated. This Regulation aims to establish the rules that must be applied by banks in their calculation of AVAs.
- January saw publication of **Commission Implementing Regulation No 2016/100** of 16 October 2015, which is due to come into force on 17 February 2016 and aims to facilitate the joint decision process that must be carried out by the authorities if a parent company or its subsidiaries submit applications for permission for: utilisation of the IRB method, utilisation of calculation of exposure by means of internal models for counterparty credit risk and utilisation of advanced methods for operational risk and market risk.
- May saw publication of **Delegated Regulation (EU) 2016/861**, correcting Commission Delegated Regulation (EU) No 528/2014 with regard to items reflecting non-delta risks in capital requirements and correcting Commission Delegated Regulation (EU) No 604/2014 on the determination of members of staff whose professional activities have a material impact on an institution’s risk profile. It corrects Article 2 of Commission Delegated Regulation (EU) No 528/2014, removing the obligation on institutions that exclusively purchase options and warrants to use the simplified approach, and amends Article 4(1) (c) of Delegated Regulation (EU) No 604/2014 considering members of staff whose total remuneration lies within the same scale as senior management, and also members of staff undertaking material risks, as “members of staff undertaking material risks”.

- June saw publication of **Commission Implementing Regulation (EU) 2016/911**, on the form and the content of the description of group financial support agreements in accordance with the BRRD (Directive 2014/59/EU), determining the general conditions of the group financial support agreement that must be disclosed, such as the maximum amount of support, the principles for calculation of the consideration for the provision of the support and a general description of the maturity profile and the maximum term of any loans provided as support. Disclosure must, however, comply with mandatory confidentiality of any information that is more specific.
- June also saw publication of Commission Delegated Regulation (EU) 2016/860, on liabilities eligible for bail-ins. Article 44(3) of the BRRD stipulates that, in exceptional circumstances, where the bail-in tool is applied, the resolution authority may exclude or partially exclude certain liabilities from the application of the write-down or conversion powers when a number of requirements have been met. This Delegated Regulation determines the circumstances in which it is necessary to exclude application of the write-down or conversion powers for a bail-in.
- In July the Commission published **Delegated Regulation (EU) 2016/1075** on restructuring and resolution plans, pursuant to the BRRD, specifying: the contents of restructuring plans, resolution plans and group resolution plans, the minimum criteria that the competent authority is to assess as regards recovery plans and group recovery plans, the conditions for group financial support, the requirements for independent valuers, the contractual recognition of write-down and conversion powers, the procedures and contents of notification requirements and of notice of suspension and the operational functioning of the resolution colleges.
- August saw publication of **Commission Delegated Regulation (EU) 2016/1401**, supplementing the BRRD in connection with the valuation of liabilities arising from derivatives. This assists the resolution authorities with the establishment of appropriate methods to determine the value of categories of derivatives, the establishment of the exact time at which the value of a derivatives position must be established, and comparison of the value loss that would arise from settlement and bail-in of derivatives.
- September saw publication of **Commission Implementing Regulation (EU) 2016/1646** on main indices and recognised exchanges. The CRR stipulates that equities or convertible bonds included in a main index may be used by institutions as eligible collateral for repurchases, loans or for taking up securities or commodities, or other operations relating to the capital market. This Implementing Regulation establishes the definition of a main index, a convertible bond index and a recognised exchange. Its annexes also list the indices and recognised exchanges.
- September also saw publication of **Commission Delegated Regulation (EU) 2016/1450** on criteria to establish the Minimum Requirement for Own Funds and Eligible Liabilities (MREL), supplementing the BRRD with respect to the technical regulatory standards specifying the method for setting the minimum requirement for own funds and eligible liabilities. The regulation establishes determination of the amount necessary to guarantee absorption of losses and the amount necessary to continue to meet the conditions for authorisation, carry on business and sustain market confidence in the entity, and also a system to enable the authorities to establish a short transition period to attain the MREL, during which they shall notify each entity of the MREL scheduled for each 12-month period of the transition period.
- October saw publication of the **Commission Implementing Regulations** with regard to the mapping of credit assessments of external credit assessment institutions for credit risk (2016/1799) and for securitisations (2016/1801), to map the ratings of eligible external credit assessment institutions (registered or certified rating agencies) along with their risk categories in the case of entities' securitisation positions.
- In December the Commission published **Implementing Regulation (EU) 2016/2227** on the extension of the transitional periods related to own funds requirements for exposures to CCPs. Article 497 of the CRR establishes a transition period during which all central counterparties (CCPs) with which entities established in the European Union clear their operations may be considered qualified central counterparties (QCCPs) by the entity concerned, in order to prevent any disruptions to global finance markets and to avoid penalising entities by subjecting them to more stringent capital requirements during the processes for authorisation and recognition of the existing central counterparties. This transition period has been extended to 15 June 2017.

Appendix II

List of tables

Num.	Name	Page	Num.	Name	Page
CHAPTER 1. INTRODUCCIÓN					
Table 1	Transparency enhancements - EBA	12	Table 29	RWs of securitisations with a long-term rating (RBA-IRB approach)	59
Table 2	Available-for-sale capital instruments	13	Table 30	RWs of securitisations with a short-term rating (RBA-IRB approach)	59
Table 3	Available-for-sale equity instruments. Consolidated gross valuation adjustments	13	Table 31	Breakdown of repurchased positions in securitisation with credit risk transfer, distributed by function and approach used	60
CHAPTER 2. CAPITAL					
Table 4	Main capital and solvency ratio figures	21	Table 32	Aggregate amount of securitisation positions purchased and retained with risk transfer. Investment portfolio. IRB approach	61
Table 5	Indicators for systemically important institutions	27	Table 33	Aggregate amount of securitisation positions purchased and retained with risk transfer. Investment portfolio. Standardised approach	62
Table 6	Global systemically important financial institutions	28	Table 34	Aggregate amount of securitisation positions purchased and retained. Trading portfolio	63
Table 7	Reconciliation of accounting capital with regulatory capital	29	Table 35	Securitisation positions purchased and retained with risk transfer by class of underlying asset and activity of the entity	64
Table 8	Eligible capital	29	Table 36	Securitisation structures with risk transfer	65
Table 9	Flow statement, Regulatory capital	30	Table 37	Securitisation structures without risk transfer	66
Table 10	RWA Overview (OV1)	32	Table 38	Regulatory capital for market risk	66
Table 11	Credit risk capital requirements	33	Table 39	Capital requirements for market risk. Internal model	67
Table 12	Capital requirements by geographical distribution	34	Table 40	Market risk under IMA approach (MR2-A)	67
Table 13	Flow statement. Capital requirements for credit risk (CR8)	35	Table 41	Flow statement. RWA for IMA market risk exposures (MR2-B)	68
Table 14	AIRB approach. Central banks and central governments	36	Table 42	Market risk with the standardised approach (MR1)	68
Table 15	AIRB approach. Institutions	37	Table 43	Capital requirements evolution for market risk. Standardised approach	68
Table 16	AIRB approach. Corporates	38	Table 44	Capital requirements for operational risk	70
Table 17	AI RB approach, Retail portfolios	39	Table 45	Leverage ratio	71
Table 18	FIRB approach, Institutions	40	Table 46	Leverage ratio. Breakdown	72
Table 19	FIRB approach, Corporates	41	Table 47	Available economic capital	73
Table 20	Exposures and parameters by segment and geograpy	42	Table 48	Rorac and value creation	74
Table 21	Slotting Criteria, Specialised lending (CR10)	43	CHAPTER 3. CREDIT RISK		
Table 22	Equities (CR10)	43	Table 49	Exposures after value adjustments and impairments (CR1-A)	82
Table 23	Internal models (IRB) usage by legal entity	47	Table 50	Credit risk exposure and CRM effects (Stadarised and IRB approach) (CR4)	83
Table 24	Internal models (IMA) usage by legal entity	48	Table 51	Average exposure value (CRB-B)	84
Table 25	Exposure classification by capital calculation method	48	Table 52	Exposures by geographical area (CRB-C)	85
Table 26	Standardised approach (including a breakdown of exposures post conversion factor and post mitigation techniques) (CR5)	56	Table 53	Exposures by business sector (CRB-D)	86
Table 27	Standardised approach – CCR exposures by regulatory portfolio and risk (CCR3)	57	Table 54	Exposures by residual maturity (CRB-E)	87
Table 28	RWs of securitisations for the standardised approach	58			

Num.	Name	Page
Table 55	Credit quality of exposures by industry or counterparty types (CR1-B)	88
Table 56	Credit quality of exposures by geography (CR1-C)	89
Table 57	Non-performing and forborne exposures (CR1-E)	89
Table 58	Changes in stock of general and specific credit risk (CR2-A)	90
Table 59	Changes in stock of defaulted and non-performing loans and debt securities (CR2-B)	90
Table 60	Ageing of past-due exposures (CR1-D)	91
Table 61	Mapping of internal ratings to PD	92
Table 62	Parameters of IRB models by geographical area	94
Table 63	Key figures of credit risk arising from activity with customers	109
Table 64	Backtest PD by geography and portfolio (CR9)	123
Table 65	Backtest LGD & EL. Retail mortgages	132
Table 66	Backtest LGD & EL. Retail mortgages (last five years average)	132
Table 67	Backtest LGD & EL. Non-standardized corporates	133
Table 68	Backtest LGD & EL. Non-standardised corporates (last five years average)	133
Table 69	Total EAD counterparty risk	134
Table 70	Derivatives exposure	135
Table 71	IRB approach. CCR exposures by portfolio and PD scales (CR4)	136
Table 72	Credit valuation adjustment (CVA) capital charge (CCR2)	140
Table 73	Credit derivative hedges	140
Table 74	Counterparty risk. Credit derivative classification. Bought protection	140
Table 75	Counterparty risk. Credit derivative classification. Sold protection	140
Table 76	IRB approach. Collateral composition for counterparty risk exposures (CCR5-B)	141
Table 77	Credit derivative exposures (CCR6)	142
Table 78	External rating guarantees	143
Table 79	Standardised and IRB approach. Credit risk mitigation techniques (CR3)	144
Table 80	IRB approach. Credit risk mitigation techniques: financial and personal guarantee	144
Table 81	Exposures to central counterparties (CCR8)	145

Num.	Name	Page
CHAPTER 4. SECURITISATIONS		
Table 82	Securitisation positions purchased or retained. Banking book	151
Table 83	Securitisation exposures on the banking book (SEC 1)	152
Table 84	Securitisation positions purchased or retained. Trading book	153
Table 85	Securitisation exposures on the trading book (SEC 2)	153
Table 86	Inventory of originated securitisation with largest outstanding balance	154
Table 87	Securitisation exposures on the banking book and associated regulatory capital requirements (Bank acting as originator or sponsor) (SEC 3)	155
Table 88	Securitisation exposures in the banking book and associated regulatory capital requirements (Bank acts as an investor) (SEC 4)	156
Table 89	Initial balance, by type of securitised asset, of the positions of securitisation originated in 2016	157
Table 90	List of new securitisations originated during 2016, organised by country and originator institution and ordered by initial issue volume	158
CHAPTER 5. MARKET RISK		
Table 91	VaR, Stressed VaR and IRC by geography (MR3)	162
Table 92	Stress window	164
Table 93	Stress scenario: Maximum volatility (worst case)	165
Table 94	Exceptions in units with internal model	169
CHAPTER 8. REMUNERATION POLICIES		
Table 95	Total remuneration	182
Table 96	Remuneration by business area	183
Table 97	Vested rights	183
Table 98	Unvested rights	183
Table 99	Remuneration by salary band	184

Appendix III

Glossary

Advanced IRB approach: all the credit risk parameters are estimated internally by the entity, including the CCFs for calculating the EAD.

AQR (Asset Quality Review): asset quality review exercise performed by the European Central Bank.

Asset liability management (ALM): a series of techniques and procedures to ensure correct decision-making on investments and funding at the entity, taking into consideration the interrelation between the various on- balance-sheet and off-balance-sheet items.

Asset securitisation: a financial mechanism that consists of converting certain assets into fixed-income securities that can be traded on a secondary securities market.

ARM: Advanced Risk Management.

AT1 (Additional Tier 1): capital which consists primarily of hybrid instruments.

Back-testing: the use of historical data to monitor the performance of the risk models.

Basel III: a set of amendments to the Basel II regulations published in December 2010, scheduled to take effect in January 2013 and to be gradually implemented until January 2019.

BIS: Bank for International Settlements.

BCBS: Basel Committee on Banking Supervision.

BRRD (Bank Recovery and Resolution Directive): approved in 2014, the BRRD establishes the framework for the recovery and resolution of banks with the objective of minimising the costs for taxpayers.

CBE 3/2008: Bank of Spain Circular of 22 May 2008 on the calculation and control of minimum capital requirements.

CBE 9/2010: Bank of Spain Circular of 22 December 2010 amending Circular 3/2008.

CBE 4/2004: Bank of Spain Circular of 22 December 2004 on public and confidential financial reporting standards and model financial statement forms.

CCoB (Conservation Buffer): a capital buffer equal to 2.5% of risk-weighted assets (and comprised fully of high-quality liquid assets) to absorb losses generated from the business.

CBE 2/2016: Bank of Spain Circular of 2 February 2016 on the supervision and solvency of credit institutions, which completes the adaptation to Spanish law of Directive 2013/36/EU and Regulation (EU) No 575/2013. The new Circular repeals Bank of Spain Circular 3/2008 to credit institutions on the determination and control of minimum own funds (except the parts referred to in Circular 5/2008 regarding the regime established therein) and section 11 of Bank of Spain Circular 2/2014.

CCyB (Counter Cyclical Buffer): a buffer whose objective is to mitigate or prevent cyclical risks arising from excessive credit growth at aggregate level. Accordingly, the CCB is designed to build up capital buffers during expansionary phases with a dual objective: to enhance the solvency of the banking system and to stabilise the credit cycle.

CCAR (Comprehensive Capital Analysis Review): a framework introduced by the Federal Reserve to review the capital planning and adaptation processes of the main US financial institutions.

CCP (Central Counterparty Clearing House): entity defined in article 2.1 of Regulation (EU) no. 648/2012.

CET1 (Common Equity Tier 1): the highest quality capital of a bank.

CoCos (Contingent Convertible Bonds): debt securities that are convertible into capital if a specified event occurs.

Common equity: a capital measure that considers, among other components, ordinary shares, the share premium and retained profits. It does not include preference shares.

Concentration risk: the risk of loss due to large exposures to a small number of debtors to which the entity has lent money.

Confidence level: in the context of value at risk (VaR) and economic capital, this is the level of probability that the actual loss will not exceed the potential loss estimated by value at risk or economic capital.

Counterparty credit risk: the risk that a counterparty will default on a derivatives contract before its maturity. The risk could arise from derivatives transactions in the trading portfolio or the banking portfolio and, as with other credit exposures, it is subject to a credit limit.

CCF (Credit conversion factor): a conversion factor used for converting off-balance-sheet credit risk balances into credit exposure equivalents. Under the AIRB approach Grupo Santander applies the CCFs in order to calculate the EAD value of the items representing contingent liabilities and commitments.

Credit default swap: a derivatives contract that transfers the credit risk of a financial instrument from the buyer (who receives the credit protection) to the seller (who guarantees the solvency of the instrument).

Credit risk: the risk that customers are unable to meet their contractual payment obligations. Credit risk includes default, country and settlement risk.

Credit risk mitigation: a technique for reducing the credit risk of a transaction by applying coverage such as personal guarantees or collateral.

CRM (Comprehensive Risk Measure): the estimate of risk in the correlation trading portfolio.

CRR (Capital Requirements Regulation) and CRD IV (Capital Requirements Directive): directive and regulation transposing the Basel II framework into European Union law.

CVA (Credit Valuation Adjustment): the difference between the value of the risk-free portfolio and the true portfolio value, taking into account counterparty risk.

Default risk: the risk that counterparties will not meet their contractual payment obligations.

Derivatives: financial instruments that derive their value from one or more underlying assets, e.g. bonds or currencies.

DLGD (Downturn LGD): the LGD estimated in adverse economic conditions.

DTA: deferred tax assets.

EBA: European Banking Authority. Created in 2010, it entered into operation in 2011. The EBA acts as a coordinator between the national entities responsible for safeguarding values such as the stability of the financial system, transparency of markets and financial products, and the protection of bank customers and investors.

ECAI: External Credit Assessment Institution, such as Moody's Investors Service, Standard & Poor's Ratings Group and Fitch Group.

ECB Supervisory Board: the body which undertakes the planning and execution of the ECB's supervisory tasks, carrying out preparatory work and making proposals for decisions for approval by the ECB Governing Board.

ECB Governing Council: the main decision-making body of the ECB, consisting of all members of the Executive Board and the governors of the national central banks of the Euro area countries.

Economic capital: the figure that demonstrates to a high degree of certainty the quantity of capital resources that Grupo Santander needs at a given point in time to absorb unexpected losses arising from its current exposure.

EDTF (Enhanced Disclosure Task Force): task force that issues recommendations to enhance the transparency of financial institution disclosures to the market.

ESRB (European Systemic Risk Board): the body that has been charged with macroprudential supervision of the financial system in the European Union in order to contribute to preventing or mitigating systemic risks to financial stability.

EPS (earnings per share): an indicator used to measure a company's profitability over a specified period of time. EPS is calculated by dividing the company's profit for the period by the number of shares comprising its share capital.

ERWM: Enterprise Wide Risk Management.

EL (Expected loss): a regulatory calculation of the average amount expected to be lost on an exposure, using a 12-month time horizon. EL is calculated by multiplying probability of default (a percentage) by exposure at default (an amount) and LGD (a percentage).

Exposure: the gross amount that the entity could lose if the counterparty is unable to meet its contractual payment obligations, without taking into consideration any guarantees, credit enhancements or credit risk mitigation transactions.

EAD (Exposure at Default): the amount that the entity could lose in the event of counterparty default.

FEVE: Spanish acronym for "firmas en vigilancia especial", that is, companies on special watch.

FSB (Financial Stability Board): international institution that monitors and makes recommendations on the global financial system.

Fully-Loaded: denotes full compliance with Basel III solvency requirements (which become mandatory in 2019).

GHOS (Group of Governors and Heads of Supervision): supervisory body of the Basel Committee.

Global rating tools: these assign a rating to each customer using a quantitative or automatic module.

G-SIB (Global Systemically Important Bank) or SIFI (Systemically Important Financial Institution): financial institutions which, because of their size, complexity and systemic interconnectedness, if allowed to fail could cause major disruptions to the financial system and economic activity.

G-SIB: Global Systemically Important Banks.

HQLA: High Quality Liquid Assets.

HVCRE: High Volatility Commercial Real Estate.

ICAAP: internal capital adequacy assessment process.

IFRS: International Financial Reporting Standards.

ILAAP (Internal Liquidity Adequacy Assessment Process): process for the identification, measurement, management and control of liquidity implemented by the entity in compliance with article 86 of Directive 2013/36/EU.

Implicit LGD: this is used to back-test the regulatory LGD estimates. It is based on taking NPLMV as proxy for the Observed Loss, and then dividing the Observed Loss by the PD gives an implicit or observed LGD that can be compared to the regulatory LGD.

Interest rate risk: exposure of the bank's financial position to adverse movements in interest rates. Acceptance of this risk is a normal part of the banking business and can be a source of significant returns and creation of shareholder value.

Internal ratings-based approach (IRB): an approach based on internal ratings for the calculation of risk-weighted exposures.

Internal validation: a pre-requisite for the supervisory validation process. A sufficiently independent specialised unit of the entity obtains an expert opinion on the adequacy of the internal models for the relevant internal and regulatory purposes, and issues a conclusion on their usefulness and effectiveness.

IRRBB: Interest Rate Risk in the Banking Book.

IRC (Incremental Risk Charge): an estimate of the credit risk associated with unsecured positions in the trading book.

IRP: This report, titled Pillar III Disclosures in the English version. (the acronym is for the Spanish Informe de Relevancia Prudencial).

ISDA (International Swaps and Derivatives Association): OTC derivative transactions between financial institutions are usually carried out under a master agreement established by this organisation which details the definitions and general terms and conditions of the contract.

ITS: Implementing Technical Standards.

JST (Joint Supervisory Team): one of the main forms of cooperation between the ECB and the national supervisors.

LCR (Liquidity Coverage Ratio): a ratio that ensures that a bank has an adequate stock of unencumbered high quality liquid assets that can be converted, easily and immediately, into cash in private markets, to meet its liquidity needs for a 30 calendar day liquidity stress scenario.

LDP: low-default portfolio.

Leverage Ratio: a complementary (non-risk based) regulatory capital measure that attempts to guarantee banks' financial resilience. The ratio is calculated by dividing eligible Tier 1 capital by exposure.

Liquidity risk: the risk that Grupo Santander might be unable to meet all its payment obligations when they fall due or might only be able to meet them at an excessive cost.

LGD (Loss Given Default): the portion of EAD not recovered at the end of the loan recovery process. It is equal to 1 minus the recovery rate (i.e.: $LGD = 1 - \text{recovery rate}$). The definition of loss used to estimate LGD must be a definition of economic loss, not an accounting loss.

LTV (Loan to value): amount of credit extended / value of guarantees and collateral.

MDA: Maximum Distributable Amount.

Mark-to-market approach: in regulatory terms, an approach for calculating the value of the credit risk exposure of counterparty derivatives (present market value plus a margin, i.e. the amount that takes into consideration the potential future increase in market value).

Market risk: the risk arising from uncertainty regarding changes in market prices and rates (including interest rates, share prices, exchange rates and commodity prices), the correlations between them and their levels of volatility.

MPE (Multiple Point of Entry): a resolution approach based on multiple points of entry.

Model validation: the process of assessing the effectiveness of a credit risk model using a pre-defined set of criteria, such as the model's discriminatory power, the appropriateness of the inputs and expert opinions.

MREL (Minimum Requirement of Eligible Liabilities): the final loss absorption requirement established in European legislation for institutions based on an assessment of their resolution plans.

Netting: a bank's ability to reduce its credit risk exposure by setting off the value of its rights against its obligations with the same counterparty.

Non-standardised customers: customers who have been assigned a risk analyst due to the risk assumed. This category includes wholesale banking customers, financial institutions and certain enterprises in retail banking.

NSFR (Net Stable Funding Ratio): a ratio designed to ensure a bank has a balanced balance sheet structure, in which stable funding requirements are funded by stable liabilities.

Operational risk: the risk of incurring losses with regard to employees, contractual specifications and documentation, technology, infrastructure failures and disasters, projects, external influences and customer relations. This definition includes legal and regulatory risk but does not include business and reputational risk.

O-SIIs: Other Systemically Important Banks.

Over-the-counter (OTC): off-exchange, that is, trading done between two parties (in derivatives, for example) without the supervision of an organised exchange.

Pillar I Minimum Capital Requirements: the part of the New Basel Capital Accord that establishes the minimum regulatory capital requirements for credit, market and operational risk.

Pillar II: Supervisory Review Process: an internal capital adequacy assessment process reviewed by the supervisor with possible additional capital requirements for risk that are not included in Pillar I and the use of more sophisticated methodologies than Pillar I.

Pillar III: Market Discipline: this pillar is designed to complete the minimum capital requirements and the supervisory review process and, accordingly, enhance market discipline through the regulation of public disclosure by the entities.

Phase-In: refers to compliance with current solvency requirements bearing in mind the transitional period for Basel III implementation.

Point-in-time (PIT) PD: the probability of default at a particular point in time or in particular state of the economic cycle.

Probability of default (PD): this represents the likelihood that a customer or a transaction will fall into default. It is the probability that an event (the default) will occur within a given time horizon.

QIS (Quantitative Impact Study): ad-hoc requests by the EBA for studies analysing and calibrating the impact of new changes in regulation.

Qualifying central counterparty (QCCP): a central counterparty that has either been authorised under article 14 of Regulation (EU) no. 648/2012, or been recognised under article 25 of said Regulation.

Rating: the result of the objective assessment of the counterparties' future economic situation based on current characteristics and assumptions. The methodology for assigning the ratings depends largely on the type of customer and the available data. A wide range of methodologies for assessing credit risk is applied, such as expert systems and econometric methods.

RDL: Royal Decree Law.

Risk appetite: the amount and type of risks considered reasonable to assume in the execution of its business strategy, so that Grupo Santander can maintain its ordinary activity in the event of unexpected circumstances. Severe scenarios are taken into account that could have a negative impact on the levels of capital, liquidity, profitability and/or the share price.

Risk-weighted assets (RWA): calculated by assigning a level of risk, expressed as a percentage (risk weighting), to an exposure in accordance with the relevant rules under the standardised approach or the IRB approach.

Rorac: return on risk-adjusted capital.

Rorwa: Return on risk weighted assets.

RTS: Regulatory Technical Standards.

RWA density: ratio that compares institutions' total weighted assets and their total balance sheet, and can be interpreted as an average relative risk measure -according to regulatory criteria- of a bank's overall operations.

SFT (Securities Financing Transactions): any transaction where securities are used to borrow cash, or vice versa. They mostly include repurchase agreements (repos), securities lending activities and sell/buy-back transactions.

Slotting Criteria: an approach used for calculating risk weights for specialised lending exposures, which consists of mapping the internal ratings to five supervisory categories, each with its own specific risk weight.

SRB (Single Resolution Board): the single resolution authority, which is the second pillar of the Banking Union after the Single Supervisory Mechanism.

SRB: Systemic Risk Buffer applicable to G-SIBs.

SSM: Single Supervisory Mechanism.

Special-purpose vehicle (SPV): a company created for the sole purpose of acquiring certain assets or derivative exposures and of issuing liabilities that are associated solely with these assets or exposures.

SRF: Single Resolution Fund.

SRM: Single Resolution Mechanism.

SREP (Supervisory Review and Evaluation Process): a review of the systems, strategies, processes and mechanisms applied by credit institutions and of their risks.

SSM (Single Supervisory System): the system of banking supervision in Europe. It comprises the ECB and the competent supervisory authorities of the participating EU countries.

Standardised approach: an approach for calculating credit risk capital requirements under Pillar I of Basel II. Under this approach, the risk weightings used in the capital calculation are determined by the regulator.

Standardised customers: customers which have not been expressly assigned a risk analyst. This category generally includes individuals, individual entrepreneurs and retail banking enterprises not classified as non-standardised customers.

Stress testing: used to describe various techniques for measuring the potential vulnerability to exceptional but plausible events.

Stressed VaR: measures the level of risk in stressed historical or simulated market situations.

Synthetic securitisation: transactions that involve a basket of credit swap agreements and bonds serving as collateral. They are called synthetic as rather than containing physical bonds, they carry credit derivatives, also known as synthetic contracts.

Through-the-cycle (TTC) PD: probability of default adjusted to a full economic cycle. It may be taken as a long-term average of the point-in-time PD.

Tier I: core capital less hybrid instruments.

Tier II: supplementary capital instruments, mainly subordinated debt and general loan loss allowances, which contribute to the robustness of financial institutions.

TLAC (Total Loss Absorbency Capacity): an additional requirement to the minimum capital requirements set out in the Basel III framework for the absorption of total losses and effecting a recapitalisation that minimises any impact on financial stability, ensures the continuity of critical functions and avoids exposing taxpayers to losses. This requirement is applicable to all G-SIBs.

TLTRO: Targeted Longer-Term Refinancing Operations.

TRIM: Targeted Review of Internal Models.

TSR (Total Shareholder Return): relative performance of total shareholder returns. An indicator of the returns obtained by owners of a company over a period of one year on capital provided to the company.

Unexpected loss: unexpected losses (not covered by allowances) must be covered by capital.

VaR (Value at Risk): estimate of the potential losses that could arise in risk positions as a result of movements in market risk factors within a given time horizon and for a specific confidence level.

