



Pillar 3 Disclosures 2017

Driving commerce
and prosperity through
our unique diversity



Contents

1. Introduction	1
1.1 Purpose and basis of preparation	1
1.2 Highlights	1
1.3 Regulatory disclosure framework	2
1.4 Risk management	3
1.5 Enhancements and future developments of Pillar 3	4
1.6 Accounting and regulatory consolidation	4
1.7 Significant subsidiaries	6
1.8 Comparison of accounting balance sheet and exposure at default	6
2. Capital	11
2.1 Capital management	11
2.2 Capital resources	11
2.3 Countercyclical capital buffer	14
2.4 Capital requirements	16
2.5 Leverage ratio	19
3. Credit risk	23
3.1 Internal Ratings Based Approach to credit risk	23
3.2 Standardised Approach to credit risk	23
3.3 Internal Ratings Based models	23
3.4 Exposure values	33
3.5 Regulatory expected loss vs. impairment charge	44
3.6 Risk grade profile	44
3.7 Credit risk mitigation	57
3.8 Standardised risk weight profile	60
3.9 Counterparty credit risk	63
3.10 Securitisation	72
4. Market risk	76
5. Interest rate risk in the banking book	82
6. Liquidity risk	83
6.1 Encumbered and unencumbered assets	86
7. Forward looking statements	88
Annex 1 Standard Chartered Significant Subsidiaries	89
Acronyms	95
Glossary	96
Prudential disclosure reference table	101
Summary of differences between the Pillar 3 Disclosures and the Risk and capital review sections of the Annual Report	109

Tables

1. Key metrics for Group (KM1)	2	33. Exposure at default by industry (CRB-D)	37
2. Regulatory consolidation	5	34. Exposure at default by maturity (CRB-E)	39
3. Outline of the differences in the scopes of consolidation (L13)	5	35. Credit quality of exposures by exposure class and instrument (CR1-A)	41
4. Differences between accounting and regulatory scopes of consolidation and the mapping of financial statement categories with regulatory risk categories (L11)	7	36. Credit quality of exposures by industry or counterparty types (CR1-B)	42
5. Main sources of differences between regulatory exposure amounts and carrying values in financial statements (L12)	9	37. Credit quality of exposures by geography (CR1-C)	42
6. Prudent valuation adjustments (PVA) (PV1)	10	38. Ageing of past-due exposures (CR1-D)	42
7. Reconciliation between financial total equity and regulatory CET1 before regulatory adjustments	11	39. Non-performing and forborne exposures (CR1-E)	43
8. Capital base	12	40. Changes in the stock of general and specific credit risk adjustments (CR2-A)	43
9. Capital ratios and buffers	13	41. Changes in the stock of defaulted and impaired loans and debt securities (CR2-B)	43
10. Geographical distribution of credit exposures relevant for the calculation of the countercyclical capital buffer	14	42. Regulatory expected loss	44
11. Amount of institution specific countercyclical capital buffer	16	43. Exposure weighted average PD% and LGD% by geography	45
12. Overview of RWA (OV1)	17	44. IRB – Credit risk exposures by exposure class	46
13. Movement analysis for RWA	18	45. Internal ratings mapping to external ratings	48
14. RWA flow statements of credit risk exposures under IRB (CR8)	18	46. IRB credit exposure by internal PD grade for central governments or central banks (CR6)	49
15. RWA flow statements of market risk exposures under an IMA (MR2-B)	19	47. IRB credit exposure by internal PD grade for institutions (CR6)	50
16. UK Leverage and CRR Leverage Ratio	20	48. IRB credit exposure by internal PD grade for Corporates (CR6)	51
17. Summary reconciliation of accounting assets and leverage ratio exposures	20	49. IRB credit exposure by internal PD grade for corporates specialised lending (CR6)	52
18. Leverage ratio common disclosure	21	50. IRB credit risk exposure by internal PD grade for corporates SME (CR6)	53
19. Leverage ratio: Split-up of on-balance sheet exposures (excluding derivatives, SFTs and exempted exposures)	22	51. IRB credit exposure by internal PD grade for retail (CR6)	54
20. CIC model results	25	52. IRB credit exposure by internal PD grade for retail - secured by real estate property (CR6)	55
21. Retail model results	25	53. IRB credit exposure by internal PD grade for retail - qualifying revolving (CR6)	56
22. IRB – Backtesting of probability of default (PD) for central governments or central banks (CR9)	25	54. IRB credit exposure by internal PD grade for retail - SME (CR6)	57
23. IRB – Backtesting of probability of default (PD) for institutions (CR9)	26	55. CRM techniques – Overview (CR3)	58
24. IRB – Backtesting of probability of default (PD) for corporates (CR9)	27	56. Effect of guarantees and collateral	58
25. IRB – Backtesting of probability of default (PD) for corporates – specialised lending (CR9)	28	57. Standardised approach – credit risk exposure and Credit Risk Mitigation (CRM) effects (CR4)	59
26. IRB – Backtesting of probability of default (PD) for corporates – SME (CR9)	29	58. Standardised approach – exposures by asset classes and risk weights (pre CRM pre CCF) (CR5)	60
27. IRB – Backtesting of probability of default (PD) for retail (CR9)	30	59. Standardised approach – exposures by asset classes and risk weights (post CRM post CCF) (CR5)	62
28. IRB – Backtesting of probability of default (PD) for retail SME (CR9)	31	60. Impact of netting and collateral held on exposure values (CCR5-A)	64
29. IRB – Backtesting of probability of default (PD) for retail – Secured by real estate property (CR9)	32	61. Analysis of CCR exposure by approach (CCR1)	64
30. IRB – Backtesting of probability of default (PD) for retail – qualifying revolving (CR9)	33	62. Exposures to central counterparties (CCPs) (CCR8)	65
31. Total and average exposure at default (CRB-B)	34	63. Credit derivatives exposures (CCR6)	65
32. Exposure at default by geography (CRB-C)	35	64. Credit valuation adjustment (CVA) capital charge (CCR2)	65

65. Standardised approach – CCR exposures by regulatory portfolio and risk (CCR3)	66
66. IRB – CCR exposures by exposure class	67
67. IRB – CCR exposures by PD scale for central governments or central banks (CCR4)	67
68. IRB – CCR exposures by PD scale for institutions (CCR4)	68
69. IRB – CCR exposures by PD scale for corporates (CCR4)	69
70. IRB – CCR exposures by PD scale for corporates - specialised lending (CCR4)	70
71. IRB – CCR exposures by PD scale for corporates - SME (CCR4)	71
72. Securitisation: ABS purchased or retained	72
73. Securitisation programmes (as originator)	74
74. Securitisation positions by risk-weight category	74
75. Securitisation positions by region	75
76. Daily value at risk (VaR at 97.5%, one day)	78
77. Daily value at risk (VaR at 97.5%, one day) by products	78
78. Market risk regulatory capital requirements	79
79. Market risk under standardised approach (MR1)	79
80. IMA values for trading portfolios (MR3)	80
81. Market risk under internal models approach (MR2-A)	80
82. 2017 Backtesting chart for Internal Model Approach regulatory trading book at Group level with hypothetical profit and loss (P&L) versus VaR (99%, one day) (MR4)	81
83. 2017 Backtesting chart for Internal Model Approach regulatory trading book at Group level with actual profit and loss (P&L) versus VaR (99%, one day) (MR4)	81
84. Treasury Markets PV01 by currency	82
85. Liquidity Coverage Ratio (LCR) (LIQ1)	84
86. Total eligible high-quality liquid assets (HQLA)	85
87. Encumbered and unencumbered assets	86
88. Encumbered assets/collateral received and associate liabilities	86
89. Median value versus annual disclosure comparative	87

Standard Chartered PLC (SC PLC) is headquartered in London where it is authorised by the UK's Prudential Regulation Authority (PRA), and Standard Chartered PLC Group and Standard Chartered Bank are regulated by the Financial Conduct Authority (FCA) and the PRA. Within this document 'the Group' refers to Standard Chartered PLC together with its subsidiary undertakings. The regions of Greater China, North East (NE) Asia, South Asia, ASEAN, MENAP, are defined in the Glossary on pages 96 to 100. Throughout this document unless specified the disclosures are at Group level. Throughout this document, unless another currency is specified, the word 'dollar' or symbol \$ means United States dollar. Throughout this document IRB refers to internal ratings based models. The Group does not use the Foundation IRB approach.

1. Introduction

1.1 Purpose and basis of preparation

The Pillar 3 Disclosures comprise detailed information on the underlying drivers of risk-weighted assets (RWA), capital, leverage and liquidity ratios as at 31 December 2017 in accordance with the European Union's (EU) Capital Requirements Regulation (CRR) and the Prudential Regulation Authority's (PRA) Rulebook.

The disclosures have been prepared in line with the disclosure templates introduced by the European Banking Authority's (EBA) guidelines on disclosure requirements (EBA/GL/2016/11) published in December 2016.

This report presents the annual Pillar 3 disclosures of Standard Chartered PLC ('the Group') as at 31 December 2017 and should be read in conjunction with the Group's Annual Report and Accounts.

The information presented in this Pillar 3 report is not required to be, and has not been, subjected to external audit.

1.2 Highlights

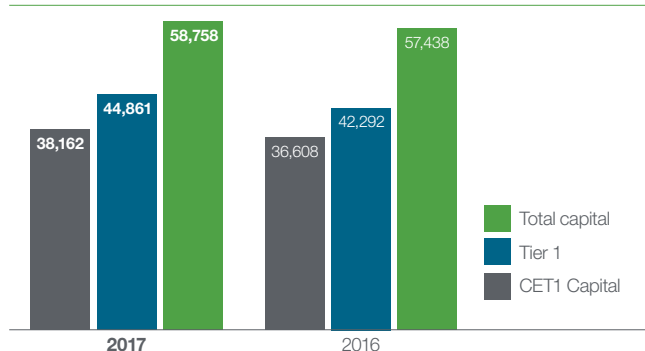
→ The Group's capital and leverage position is managed within the Board-approved Risk Appetite. The Group is well capitalised with low leverage and high levels of loss-absorbing capacity

→ The Group is well capitalised with an end point Common Equity Tier 1 (CET1) ratio of 13.6 per cent that is well ahead of the current requirement of 8.1 per cent and the currently expected 2019 minimum requirement of 10.0 per cent

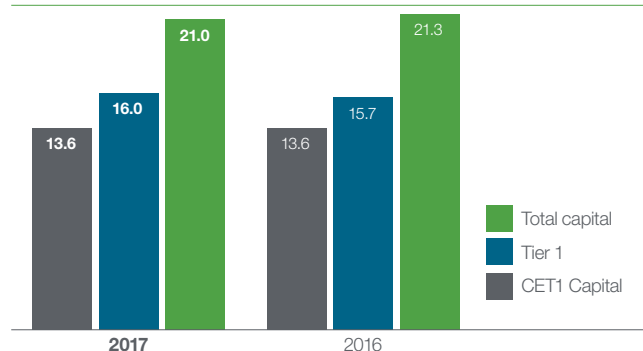
→ The Group is not highly leveraged and its leverage ratio of 6.0 per cent is well ahead of the currently expected 2019 leverage requirement of 3.7 per cent

→ The Group continues to manage its balance sheet proactively, with a particular focus on the efficient management of RWA

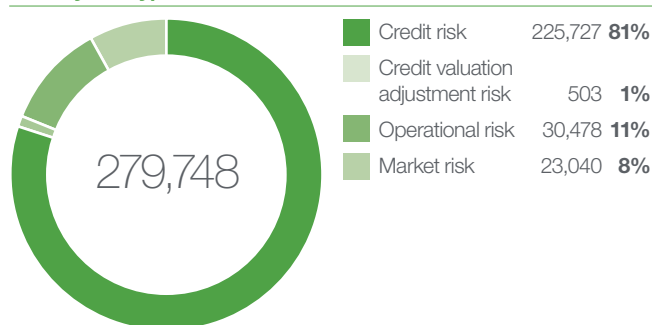
Capital base \$million



Capital ratios transitional %



RWA by risk type 2017 \$million



RWA by risk type 2016 \$million



Table 1: Key metrics for the Group (KM1)

	2017 \$million	2016 \$million
Available capital amounts¹		
Common Equity Tier 1 (CET1)	38,162	36,608
Tier 1	44,861	42,292
Total capital	58,758	57,438
Risk-weighted asset amounts		
Total risk-weighted assets (RWA)	279,748	269,445
Risk-based capital ratios as a percentage of RWA¹		
Common Equity Tier 1 ratio (%)	13.6%	13.6%
Tier 1 ratio (%)	16.0%	15.7%
Total capital ratio (%)	21.0%	21.3%
Additional CET1 buffer requirements as a percentage of RWA¹		
Capital conservation buffer requirement (2.5% from 2019) (%)	1.25%	0.63%
Countercyclical buffer requirement (%)	0.2%	0.1%
Bank G-SIB and/or D-SIB additional requirements (%)	0.5%	0.3%
Total of bank CET1 specific buffer requirements (%)	1.9%	1.0%
CET1 available after meeting the bank's minimum capital requirements (%)	7.5%	7.5%
UK leverage ratio		
Total UK leverage ratio exposure measure	717,344	674,327
UK leverage ratio (%)	6.0%	6.0%
Liquidity Coverage Ratio²		
Total HQLA	144,280	N/A
Total net cash outflow	97,438	N/A
LCR ratio (%)	148.2%	N/A

1 Capital requirements are presented using transitional positions

2 In line with the EBA guidelines (EBA/GL/2016/11) requirements on new disclosures, there are no comparatives provided for LCR

1.3 Regulatory disclosure framework

The Group complies with the Basel III framework as implemented in the United Kingdom (UK). The Basel III framework is built on the three pillars of the Basel II framework.

Pillar 1: Sets the minimum capital requirements for credit risk, market risk and operational risk.

Pillar 2: Considers through the Supervisory Review and Evaluation Process whether further capital is required in addition to Pillar 1 calculations.

Pillar 3: Aims to provide a consistent and comprehensive disclosure framework that enhances comparability between banks and further promotes improvements in risk management. Pillar 3 requires all material risks to be disclosed, enabling a comprehensive view of the bank's risk profile.

The Pillar 3 Disclosures 2017 comprise all information required to be included in the UK and are prepared at the Group consolidated level. Where disclosure has been withheld as proprietary or non-material, as permitted by the rules, appropriate comment has been

included. It is the Group's intention that the Pillar 3 Disclosures be viewed as an integral, albeit separately reported, element of the Annual Report and Accounts. The Group considers a number of factors in determining where disclosure is made between the Annual Report and Accounts and Pillar 3, including International Financial Reporting Standards (IFRS), regulatory requirements and industry best practice. Pages 109 to 110 of this document provide a summary of differences and cross references between the Annual Report and Accounts and the Pillar 3 Disclosures.

Remuneration

The qualitative and quantitative Pillar 3 remuneration disclosures for the 2017 performance year are set out on pages 83 to 102 of the Directors' remuneration report in the 2017 Annual Report and Accounts. Information is provided on the key components of our remuneration approach and how we develop our approach. The disclosures follow the requirements set out in Part 8 of the Capital Requirements Regulation and the Basel Committee on Banking Supervision standards issued in March 2017.

G-SIB

The Group has been identified as a Global Systemically Important Bank (G-SIB) by the Financial Stability Board (FSB) since November 2012. The Group's score from the Basel Committee on Banking Supervision's methodology for assessing and identifying G-SIBs has resulted in an additional loss-absorbency requirement of 1 per cent of CET1. This requirement is being phased in over the period 1 January 2016 to 2019. The EU's Capital Requirements Directive (CRD IV) mandates that globally Systemically Important Institution (G-SII) publicly disclose the value of its global Systemically Important Institution (G-SII) indicators on an annual basis. The terms 'G-SIB' and 'G-SII' are interchangeable – 'G-SIB' is used by the FSB and the Basel Committee, whereas CRD IV requires The Standard Chartered PLC to disclose this information. The Standard Chartered PLC 2017 disclosure is published on investors.sc.com/fullyearresults

Frequency

In accordance with Group policy, the Pillar 3 Disclosures are made quarterly as at 31 March, 30 June, 30 September and 31 December in line with the EBA guidelines on materiality, proprietary and confidentiality and on disclosure frequency, and the guidelines on disclosure requirements (EBA/GL/2014/14 and EBA/GL/2016/11). Disclosures are published on the Standard Chartered PLC website aligning with the publication date of the Group's Interim, Half Year and Annual Report and Accounts.

Verification

Whilst the Pillar 3 Disclosures 2017 are not required to be externally audited, the document has been verified internally in accordance with the Group's policies on disclosure and its financial reporting and governance processes. Controls comparable to those for the 2017 Annual Report and Accounts have been applied to confirm compliance with PRA regulations.

- Items excluded on the grounds of materiality:
 - Quantitative disclosures of specialised lending exposures where the simple risk-weight approach is used, non-deducted participations in insurance undertakings, composition of collateral for exposures to derivatives and securities financing transactions, and off-balance sheet collateral received
 - Qualitative and quantitative disclosures on exposures to equities not included in the trading book
- Comparatives: The EBA guidelines do not require comparatives to be presented on implementation, therefore comparatives have not been presented for all tables

1.4 Risk management

The management of risk is a key component of the Group's business. One of the main risks we incur arises from extending credit to customers through our trading and lending operations. Beyond credit risk, we are also exposed to a range of other risk types such as country, market, capital and liquidity, operational, reputational, compliance, conduct, information and cyber security and financial crime risks that are inherent in our strategy, product range and geographical coverage.

In the Risk management approach section of the 2017 Annual Report and Accounts we describe our approach and strategy for managing risk. We discuss our risk management objectives, scope and main content of risk reporting, and policies in relation to our main activities and significant risks.

The Group is exposed to ten key risks:

- Credit risk (refer to section Credit risk in pages 165 to 167 of the 2017 Annual Report and Accounts)
- Country risk (refer to section Country risk on page 168 of the 2017 Annual Report and Accounts)
- Market risk (refer to section Market risk on pages 169 to 170 of the 2017 Annual Report and Accounts)
- Capital and liquidity risk (refer to section Capital and liquidity risk on pages 171 to 172 of the 2017 Annual Report and Accounts)
- Operational risk (refer to section Operational risk on page 173 of the 2017 Annual Report and Accounts)
- Reputational risk (refer to section Reputational risk on page 174 of the 2017 Annual Report and Accounts)
- Compliance risk (refer to section Compliance risk on page 175 of the 2017 Annual Report and Accounts)
- Conduct risk (refer to section Conduct risk on page 176 of the 2017 Annual Report and Accounts)
- Information and cyber security risk (refer to section Information and cyber security risk on page 177 of the 2017 Annual Report and Accounts)
- Financial crime risk (refer to section Financial crime risk on page 178 of the 2017 Annual Report and Accounts)

Credit risk

Credit risk is the potential for loss due to the failure of a counterparty to meet its obligations to pay the Group. Credit exposures arise from both the banking and trading books.

Credit risk is managed through a framework that sets out policies and procedures covering the measurement and management of credit risk. The Credit Risk Function, as a second line control function, performs independent challenge, monitoring and oversight of the credit risk management practices of the Business and Functions engaged in or supporting revenue generating activities which constitute the First Line of defence. Risk appetite is defined by the Group and approved by the Board. It is the maximum amount and type of risk that the Group is willing to assume in pursuit of its strategies. Credit exposure limits are approved within a defined credit approval authority framework.

The Group manages its credit exposures following the principle of diversification across products, geographies, client segments and industry sectors.

The Group uses the Advanced Internal Ratings Based (IRB) approach to calculate credit risk capital requirements with the approval of our relevant regulators. This approach builds on the Group's risk management practices and is the result of a continuing investment in data warehouses and risk models.

For portfolios where the Group does not have IRB approval, or where the exposures are permanently exempt from the IRB approach, the Standardised Approach is used.

Refer to Credit risk (pages 165 to 167) in the 2017 Annual Report and Accounts where we describe the main components of credit risk management, including our credit risk profile, credit risk measurement and policies set in line with risk appetite. For the scope and main content of reporting to senior management, refer to page 166 in the 2017 Annual Report and Accounts.

Market risk

Market risk is the potential for loss of economic value due to adverse changes in financial market rates or prices. The Group's exposure to market risk arises predominantly from these sources:

- Trading book:
 - The Group provides clients access to financial markets, facilitation of which entails the Group taking moderate market risk positions. All trading teams support client activity; there are no proprietary trading teams. Income earned from market risk-related activities is primarily driven by the volume of client activity rather than risk-taking
- Non-trading book:
 - The Treasury Markets (TM) desk is required to hold a liquid assets buffer, much of which is held in high-quality marketable debt securities
 - The Group has capital invested and related income streams denominated in currencies other than US dollars. To the extent that these are not hedged, the Group is subject to structural FX risk, the impact of which is reflected in reserves

The primary categories of market risk for the Group are interest rate risk, currency exchange rate risk, commodity price risk and credit valuation adjustment (CVA) credit spread risk.

We use a value at risk (VaR) model for the measurement of the market risk capital requirements for part of the trading book exposures where permission to use such models has been granted by the PRA. Where our market risk exposures are not approved for inclusion in VaR models, the capital requirements are determined using standard rules set by the regulatory framework.

Operational risk

We define operational risk as the potential for loss resulting from inadequate or failed internal processes, and systems, human error, or from the impact of external events (including legal risk). Operational risk exposures are managed through a set of management processes that drive risk identification, assessment, control and monitoring consistently across the Group. The Group aims to control operational risks to ensure that operational losses (financial or reputational), do not cause material damage to the Group's franchise. The Group applies the Standardised Approach for measuring the capital requirements for operational risk. For risk-weighted assets and capital requirements resultant from operational risk, refer to Table 12 on page 17 and to pages 187 of the 2017 Annual Report and Accounts.

1.5 Enhancements and future developments of Pillar 3

The Basel Committee on Banking Supervision (BCBS), EU and UK authorities release Pillar 3 disclosure standards and guidelines. We refine our disclosures to meet the requirements under the regulatory and accounting standards as they evolve.

In January 2015, the BCBS issued the requirements for the first phase of the Committee's review of the Pillar 3 disclosure framework. The focus of the first phase was on disclosure requirements in the areas of credit, market, counterparty credit, equity and securitisation risks. The revised BCBS Pillar 3 framework has been implemented in the EU by Guidelines issued by the European Banking Authority (EBA) that were finalised in December 2016 and have come into effect from 31 December 2017.

In March 2017, the BCBS issued the final standard for the second phase of its review of the Pillar 3 disclosure framework. The

standard consolidates existing Basel Committee disclosure requirements into the Pillar 3 framework, covering the composition of capital and TLAC, the leverage ratio, the liquidity ratios, the indicators for determining global systemically important banks, the countercyclical capital buffer, interest rate risk in the banking book and remuneration. The disclosure requirements as set out in the standard are being phased in from year-end 2017. Although the additional disclosure requirements arising from the BCBS standards have yet to be implemented in the EU, our 2017 year-end disclosure document incorporates various templates as summarised below.

The Basel Committee has commenced the third phase of its Pillar 3 review covering disclosure requirements for hypothetical risk-weighted assets calculated based on the standardised approaches, asset encumbrance, operational risk and any amendments resulting from the finalisation of the regulatory framework. The Basel Committee has not yet concluded the third phase of the review. Final standards are expected for later in 2018. The Pillar 3 Disclosures 2017 do not reflect any of the proposed additional requirements arising from the third phase of the review.

The principal changes to our Pillar 3 Disclosures 2017 compared with the prior year are:

- Full implementation of EBA Guidelines (EBA/GL/2016/11)
- Early adoption of parts of BCBS Phase 2 Standards (BCBS 400), the key metrics (KM1), Prudential valuation adjustments (PV1), Liquidity risk management (LIQA) and IRRBB risk management objectives and policies (IRRBB) templates
- Implementation of EBA Guidelines on LCR disclosures issued in March 2017 (EBA/GL/2017/01)

1.6 Accounting and regulatory consolidation

The Pillar 3 Disclosures are prepared at the Group consolidated level. The accounting policy for financial consolidation is provided in the notes to the financial statements in the 2017 Annual Report and Accounts. All banking subsidiaries are fully consolidated for both regulatory and accounting purposes. For associates and joint ventures, the regulatory treatment may differ from the accounting policy, which applies the equity accounting method.

The regulatory consolidation approaches used by the Group are shown in the following table, which identifies the principal undertakings, including investments, associates and joint ventures, which are all principally engaged in the business of banking and provision of other financial services.

The primary difference between financial consolidation and regulatory consolidation is PT Bank Permata Tbk, which is equity accounted for financial and fully consolidated for regulatory purposes. PT Bank Permata Tbk's Annual Report and Accounts in compliance with their local regulations is published on their website <https://www.permatabank.com/en/About/Investor-Relations/>

Table 2: Regulatory consolidation

Type	Description	Regulatory consolidation	Principal undertakings within each category
Investment (non significant)	The Group holds no more than 10% of the issued share capital	The Group risk-weights the investment subject to the CRD IV threshold calculation	–
Associate	The Group holds more than 10% and less than 20% of the issued share capital	The Group risk-weights the investment subject to the CRD IV threshold calculation	China Bohai Bank
Joint Venture	The Group enters into a contractual arrangement to exercise joint control over an undertaking	Where the Group's liability to the joint venture is greater than the capital held, full consolidation is undertaken. Otherwise joint ventures are proportionately consolidated	PT Bank Permata Tbk Canas Leasing Limited ¹ Elviria Leasing Limited ¹
Subsidiary	The Group holds more than 50% of the issued share capital of a financial entity	The Group fully consolidates the undertaking	Standard Chartered Bank Standard Chartered Bank Korea Limited Standard Chartered Bank Malaysia Berhad Standard Chartered Bank (Pakistan) Limited Standard Chartered Bank (Taiwan) Limited Standard Chartered Bank (Hong Kong) Limited Standard Chartered Bank (China) Limited Standard Chartered Bank (Singapore) Limited Standard Chartered Bank (Thai) Public Company Limited Standard Chartered Bank Nigeria Limited Standard Chartered Bank Kenya Limited Standard Chartered Private Equity Limited, Hong Kong
Excluded entities	Insurance or industrial entities excluded from the scope of banking prudential consolidation	The Group risk-weights the investment subject to the CRD IV threshold calculation	Standard Chartered Assurance Ltd Standard Chartered Insurance Ltd

¹ Aircraft leasing company

Table 3: Outline of the differences in the scopes of consolidation (LI3)

Name of the entity	Description of the entity	Method of accounting consolidation	2017			
			Method of regulatory consolidation			
			Full consolidation	Proportional consolidation	Neither consolidated nor deducted	Deducted
PT Bank Permata Tbk	Joint venture credit institution	Equity accounting	√			
Canas Leasing Limited	Leasing joint venture	Equity accounting		√		
Elviria Leasing Limited	Leasing joint venture	Equity accounting		√		
Standard Chartered Assurance Ltd	Insurance entity	Full consolidation			√	
Standard Chartered Insurance Ltd	Insurance entity	Full consolidation			√	

1.7 Significant subsidiaries

CRR Article 13 requires the application of disclosure requirements to significant subsidiaries of EU parent institutions and subsidiaries which are of material significance to their local market.

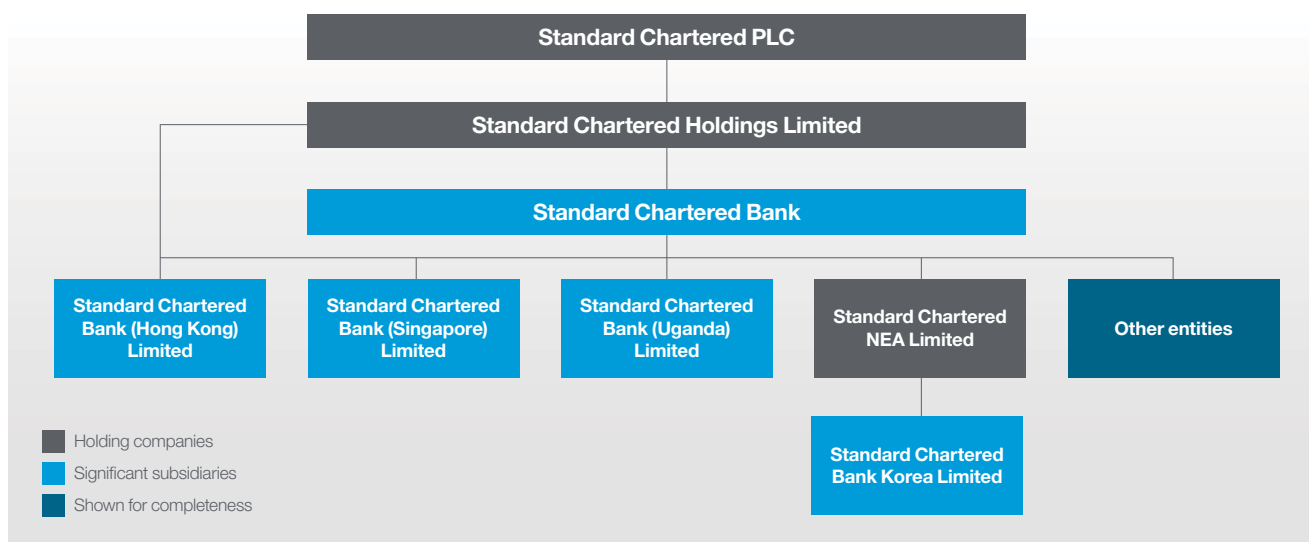
Standard Chartered Bank is the main operating subsidiary of the Group. The Group has two other significant subsidiaries,

Standard Chartered Bank (Hong Kong) Limited (regulated by the Hong Kong Monetary Authority) and Standard Chartered Bank Korea Limited (regulated by the Financial Supervisory Service (FSS) in Korea). Standard Chartered Bank Singapore Limited (regulated by the Monetary Authority of Singapore) and Standard Chartered Bank Uganda Limited (regulated by the Bank of Uganda) are subsidiaries that are of material

significance to their local market. Standard Chartered Bank (Hong Kong) Limited and Standard Chartered Bank Korea Limited disclose separate Pillar 3 reports in compliance with their local regulations. Annex 1 provides a summary of the disclosure for the significant subsidiaries.

The chart below represents a simplified regulatory structure of the Group, including the subsidiaries covered by CRR Article 13e.

Simplified structure of the Group



1.8 Comparison of accounting balance sheet and exposure at default

The differences between the financial and prudential consolidated balance sheets arise primarily from differences in the basis of consolidation and the requirement to fully consolidate for prudential purposes PT Bank Permata Tbk, a joint venture credit institution which is equity accounted for financial purposes. The more significant difference

between the two bases is the treatment of capital, which is presented in Table 4 based on the Group regulatory balance sheet and not the financial accounting balance sheet.

The following table splits the regulatory balance sheet measured under IFRS into each regulatory risk category. The regulatory risk category drives the approach applied in the calculation of regulatory exposures and RWAs.

Table 4: Differences between accounting and regulatory scopes of consolidation and the mapping of financial statement categories with regulatory risk categories (L1)

	2017						
	Carrying values as reported in published financial statements \$million	Carrying values under the scope of regulatory consolidation \$million	Subject to credit risk framework \$million	Subject to counterparty credit risk framework \$million	Subject to securitisation framework \$million	Subject to market risk framework \$million	Not subject to capital requirements or subject to deduction from capital \$million
Assets							
Cash and balances at central banks	58,864	59,651	59,651	–	–	–	–
Financial assets held at fair value through profit or loss	27,564	27,633	3,649	2,995	885	20,279	–
Derivative financial instruments	47,031	47,045	–	47,045	–	47,045	–
Loans and advances to banks	57,494	58,003	53,946	–	–	19,305	–
Loans and advances to customers	248,707	255,954	241,858	–	14,979	33,707	–
Reverse repurchase agreements and other similar lending	54,275	54,275	–	54,274	–	–	–
Investment securities	117,025	118,644	113,101	–	5,543	–	–
Other assets	33,490	33,874	8,516	9,513	–	15,845	–
Current tax assets	491	491	491	–	–	–	–
Prepayments and accrued income	2,307	2,392	2,392	–	–	–	–
Interests in associates and joint ventures	2,307	1,524	1,524	–	–	–	–
Goodwill and intangible assets	5,013	5,158	–	–	–	–	5,158
Property, plant and equipment	7,211	7,268	7,268	–	–	–	–
Deferred tax assets	1,177	1,357	1,232	–	–	–	125
Asset classified as held for sale	545	545	545	–	–	–	–
Total assets	663,501	673,814	494,173	113,827	21,407	136,181	5,283
Liabilities							
Deposits by banks	30,945	31,107	–	–	–	–	31,107
Customer accounts	370,509	378,914	–	–	–	–	378,914
Repurchase agreements and other similar secured borrowing	39,783	39,783	–	39,783	–	–	–
Financial liabilities held at fair value through profit or loss	16,633	16,633	–	–	–	3,637	12,996
Derivative financial instruments	48,101	48,102	–	48,102	–	48,102	–
Debt securities in issue	46,379	46,609	–	–	–	–	46,609
Other liabilities	35,257	35,573	1,063	9,825	–	13,713	20,798
Current tax liabilities	376	372	–	–	–	–	372
Accruals and deferred income	5,493	5,569	–	–	–	–	5,569
Subordinated liabilities and other borrowed funds	17,176	17,596	–	–	–	–	17,595
of which: considered as Additional Tier 1 capital	–	264	–	–	–	–	264
of which: considered as Tier 2 capital	–	14,280	–	–	–	–	14,280
Deferred tax liabilities	404	400	–	–	–	–	400
Provisions for liabilities and charges	183	186	–	–	–	–	186
Retirement benefit obligation	455	467	–	–	–	–	467
Liabilities included in disposal groups held for sale	–	–	–	–	–	–	–
Total liabilities	611,694	621,311	1,063	97,710	–	65,452	515,013
Equity							
Share capital and share premium account	7,097	7,097	–	–	–	–	–
Other reserves	12,767	12,767	–	–	–	–	–
Retained earnings	26,641	26,541	–	–	–	–	–
Other equity instruments	4,961	4,961	–	–	–	–	–
Non-controlling interest	341	1,137	–	–	–	–	–
Total equity	51,807	52,503	–	–	–	–	–
Total equity and liabilities	663,501	673,814	1,063	97,710	–	65,451	515,013

Table 4: Differences between accounting and regulatory scopes of consolidation and the mapping of financial statement categories with regulatory risk categories (L1) continued

	2016						
	Carrying values as reported in published financial statements \$million	Carrying values under the scope of regulatory consolidation \$million	Subject to credit risk framework \$million	Subject to counterparty credit risk framework \$million	Subject to securitisation framework \$million	Subject to market risk framework \$million	Not subject to capital requirements or subject to deduction from capital \$million
Assets							
Cash and balances at central banks	70,706	71,658	71,658	–	–	–	–
Financial assets held at fair value through profit or loss	20,077	20,201	3,388	1,902	172	15,062	–
Derivative financial instruments	65,509	65,525	–	65,526	–	65,164	–
Loans and advances to banks	54,538	55,209	51,495	–	–	17,885	–
Loans and advances to customers	226,693	234,536	213,821	–	16,373	28,289	–
Reverse repurchase agreements and other similar lending	44,097	44,097	–	44,097	–	–	–
Investment securities	108,972	110,945	103,678	1,447	5,820	–	–
Other assets	36,940	37,475	20,527	–	–	21,430	49
Current tax assets	474	474	474	–	–	–	–
Prepayments and accrued income	2,238	2,302	2,302	–	–	–	–
Interests in associates and joint ventures	1,929	1,216	1,216	–	–	–	–
Goodwill and intangible assets	4,719	4,930	–	–	–	–	4,930
Property, plant and equipment	7,252	7,329	7,329	–	–	–	–
Deferred tax assets	1,294	1,491	1,294	–	–	–	197
Asset classified as held for sale	1,254	1,254	1,254	–	–	–	–
Total assets	646,692	658,642	478,436	112,972	22,365	147,830	5,176
Liabilities							
Deposits by banks	32,872	32,997	–	–	–	–	32,997
Customer accounts	338,185	348,056	–	–	–	–	348,054
Repurchase agreements and other similar secured borrowing	37,692	37,692	–	37,692	–	–	–
Financial liabilities held at fair value through profit or loss	16,598	16,599	–	–	–	3,763	12,836
Derivative financial instruments	65,712	65,715	–	65,715	–	65,259	–
Debt securities in issue	46,700	46,974	–	–	–	–	46,974
Other liabilities	33,146	33,569	713	–	–	12,162	20,694
Current tax liabilities	327	329	–	–	–	–	329
Accruals and deferred income	5,223	5,329	–	–	–	–	5,329
Subordinated liabilities and other borrowed funds	19,523	19,945	–	–	–	–	19,945
of which: considered as Additional Tier 1 capital	–	241	–	–	–	–	241
of which: considered as Tier 2 capital	–	15,774	–	–	–	–	15,774
Deferred tax liabilities	353	354	–	–	–	–	354
Provisions for liabilities and charges	213	220	–	–	–	–	220
Retirement benefit obligation	525	521	–	–	–	–	521
Liabilities included in disposal groups held for sale	965	965	–	–	–	965	–
Total liabilities	598,034	609,265	713	103,407	–	82,149	488,253
Equity							
Share capital and share premium account	7,091	7,091	–	–	–	–	–
Other reserves	11,524	11,524	–	–	–	–	–
Retained earnings	25,753	25,753	–	–	–	–	–
Other equity instruments	3,969	3,969	–	–	–	–	–
Non-controlling interest	321	1,040	–	–	–	–	–
Total equity	48,658	49,377	–	–	–	–	–
Total equity and liabilities	646,692	658,642	713	103,407	–	82,149	488,253

The table below shows the effect of regulatory adjustments required to derive the Group's exposure at default (EAD) for the purposes of calculating its credit risk capital requirements. The differences between the carrying values under regulatory scope of consolidation and amounts considered for regulatory purposes shown in Table 5 are mainly due to derivatives netting benefits,

provisions, collateral and off-balance sheet exposures. The total EAD for credit and counterparty credit risk is further split by geography, industry and maturity in Tables 32 to 34; standardised credit risk before and after the effect of CRM is presented in Table 57; standardised credit and counterparty credit risk by risk weight is presented in Tables 58 to 59 and IRB credit and

counterparty credit risk before and after the effect of Credit Risk Mitigation (CRM) is presented in Table 44. Information on the standardised and IRB counterparty credit risk exposures can be found in section 3.9. Further detail on the EAD under the securitisation framework can be found in Table 72.

Table 5: Main sources of differences between regulatory exposure amounts and carrying values in financial statements (LI2)

	2017		
	Subject to Credit risk framework \$million	Subject to CCR framework \$million	Subject to Securitisation framework \$million
Total assets amount under regulatory scope of consolidation ¹	494,172	113,827	21,407
Derivatives netting benefit ²	–	(29,830)	–
Differences due to consideration of provisions	5,100	–	–
Differences due to consideration of collateral	–	–	–
Differences due to capital deductions	–	–	–
Differences due to off-balance sheet amounts recognised in regulatory exposures	81,636	94,153	985
Differences due to the impact of the use of own-models in exposures	–	–	–
Other	337	327	41
Regulatory exposure at default pre credit risk mitigation	581,245	178,477	22,433

	2016		
	Subject to Credit risk framework \$million	Subject to CCR framework \$million	Subject to Securitisation framework \$million
Total assets amount under regulatory scope of consolidation ¹	478,436	112,972	22,365
Derivatives netting benefit ²	–	(38,737)	–
Differences due to consideration of provisions	5,800	–	–
Differences due to consideration of collateral	–	(25,979)	–
Differences due to capital deductions	–	–	–
Differences due to off-balance sheet amounts recognised in regulatory exposures	78,433	100,065	1,084
Differences due to the impact of the use of own-models in exposures	–	–	–
Other	107	458	52
Regulatory exposure at default pre credit risk mitigation	562,776	148,780	23,501

1 Regulatory balance sheet primarily includes full consolidation of PT Bank Permata Tbk a joint venture (JV)

2 Reflects the effect of master netting agreements in addition to the netting permitted under International Accounting Standard (IAS) 32

The CRR provisions on prudential valuation require banks to quantify several valuation uncertainties pertaining to the valuation of assets and liabilities recorded at fair value for accounting purposes. The amounts by which the resulting Prudent Valuation Adjustments

exceed any associated Fair Value Adjustments are referred to as the Additional Valuation Adjustments (AVAs) and their aggregate is deducted from CET1 capital. AVAs arise from uncertainties related to market prices, close-out costs, model risk,

unearned credit spreads, investing and funding costs, concentrated positions, future administrative costs, early terminations and operational risks.

Table 6: Prudent valuation adjustment (PVA) (PV1)

	2017						Of which: In the trading book \$million	Of which: In the banking book \$million
	Equity \$million	Interest rates \$million	FX \$million	Credit \$million	Commodities \$million	Total \$million		
Closeout uncertainty	173	127	43	44	9	374	122	252
Of which Mid-market value	85	96	11	42	4	239	81	157
Of which Closeout cost	–	32	8	1	3	45	38	7
Of which Concentration	87	–	1	–	1	90	3	87
Early termination	–	–	–	–	–	–	–	–
Model risk	–	–	–	–	–	–	–	–
Operational risk	10	16	2	7	1	36	15	21
Investing and funding costs	–	–	–	–	–	15	15	–
Unearned credit spreads	–	–	–	–	–	129	129	–
Future administrative costs	–	6	9	3	3	21	8	13
Other	–	–	–	–	–	–	–	–
Total adjustment	183	149	32	54	13	574	288	286

2. Capital

2.1 Capital management

The Group's capital and leverage positions are managed within the Board-approved risk appetite. The Group is well capitalised with low leverage and high levels of loss-absorbing capacity.

The Risk management approach section of the 2017 Annual Report and Accounts sets out our approach to capital management (pages 171 to 172).

2.2 Capital resources

All capital instruments included in the capital base meet the requirements set out in the CRR for their respective tier of capital, except for those that are subject to a grandfathering period. Grandfathered capital instruments will be fully phased out of their respective tier of capital by 1 January 2022.

Table 7 below summarises the consolidated capital position of the Group.

Table 7: Reconciliation between financial total equity and regulatory CET1 before regulatory adjustments

	2017 \$million	2016 \$million
Total equity per balance sheet (financial view)	51,807	48,658
Regulatory adjustments	696	719
Total equity per balance sheet (regulatory view)	52,503	49,377
Foreseeable dividend net of scrip	(399)	(212)
Other equity instruments (included in AT1)	(6,455)	(5,463)
Non-controlling interests	(286)	(231)
Common Equity Tier 1 capital before regulatory adjustments	45,363	43,471

2.2 Capital resources continued

Table 8: Capital base

	2017 Transitional position \$million	2017 End point adjustment \$million	2017 End point position \$million	2016 Transitional position \$million
Common Equity Tier 1 (CET1) capital: instruments and reserves				
Capital instruments and the related share premium accounts	5,603	–	5,603	5,597
Of which: Share premium accounts	3,957	–	3,957	3,957
Retained earnings	25,316	–	25,316	26,000
Accumulated other comprehensive income (and other reserves)	12,766	–	12,766	11,524
Non-controlling interests (amount allowed in consolidated CET1)	850	–	850	809
Independently reviewed interim and year-end profits/(loss) ¹	1,227	–	1,227	(247)
Foreseeable dividends net of scrip ²	(399)	–	(399)	(212)
Common Equity Tier 1 capital before regulatory adjustments³	45,363	–	45,363	43,471
Common Equity Tier 1 capital: regulatory adjustments				
Additional value adjustments	(574)	–	(574)	(660)
Intangible assets	(5,112)	–	(5,112)	(4,856)
Deferred tax assets that rely on future profitability	(125)	–	(125)	(197)
Fair value reserves related to gains or losses on cash flow hedges	45	–	45	85
Negative amounts resulting from the calculation of expected loss amounts	(1,142)	–	(1,142)	(740)
Gains or losses on liabilities at fair value resulting from changes in own credit	(53)	–	(53)	(289)
Defined-benefit pension fund assets	(40)	–	(40)	(18)
Fair value gains and losses from own credit risk related to derivative liabilities	(59)	–	(59)	(20)
Exposure amounts which could qualify for risk weight of 1250%	(141)	–	(141)	(168)
Of which: securitisation positions	(125)	–	(125)	(134)
Of which: free deliveries	(16)	–	(16)	(34)
Total regulatory adjustments to Common Equity Tier 1 capital	(7,201)	–	(7,201)	(6,863)
Common Equity Tier 1 capital	38,162	–	38,162	36,608
Additional Tier 1 (AT1) capital: instruments				
Capital Instruments and the related share premium accounts	6,719	(1,758)	4,961	5,704
Of which: classified as equity under applicable accounting standards	6,455	(1,494)	4,961	5,463
Of which: classified as liabilities under applicable accounting standards	264	(264)	–	241
Additional Tier 1 (AT1) capital before regulatory adjustments	6,719	(1,758)	4,961	5,704
Additional Tier 1 capital: regulatory adjustments				
Direct and indirect holdings by an institution of own Additional Tier 1 (AT1) instruments and subordinated loans	(20)	–	(20)	(20)
Total regulatory adjustments to Additional Tier 1 capital	(20)	–	(20)	(20)
Additional Tier 1 capital	6,699	(1,758)	4,941	5,684
Tier 1 capital (T1 = CET1 + AT1)	44,861	(1,758)	43,103	42,292
Tier 2 (T2) capital: instruments and provisions				
Capital instruments and the related share premium accounts	12,668	–	12,668	13,587
Qualifying items and the related share premium accounts subject to phase out from T2	647	(647)	–	471
Qualifying own funds instruments included in consolidated T2 issued by subsidiaries and held by third parties	612	(91)	521	1,118
Tier 2 capital before regulatory adjustments	13,927	(738)	13,189	15,176
Tier 2 capital: regulatory adjustments				
Direct and indirect holdings by an institution of own Tier 2 instruments and subordinated loans	(30)	–	(30)	(30)
Total regulatory adjustments to Tier 2 capital	(30)	–	(30)	(30)
Tier 2 capital	13,897	(738)	13,159	15,146
Total capital (TC = T1 + T2)	58,758	(2,496)	56,262	57,438
Total risk-weighted assets⁴	279,748	–	279,748	269,445

2.2 Capital resources continued

Table 9: Capital ratios and buffers

	2017 Transitional position \$million	2017 End point adjustment \$million	2017 End point position \$million	2016 Transitional position \$million
Amounts below the thresholds for deduction (before risk weighting)				
Direct and indirect holdings of the capital of financial sector entities where the institution does not have a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	641	–	641	954
Direct and indirect holdings by the institution of the CET1 instruments of financial sector entities where the institution has a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	1,818	–	1,818	1,347
Deferred tax assets arising from temporary differences (amount below 10% threshold, net of related tax liability where the conditions in Article 38 (3) are met)	1,105	–	1,105	1,173
Risk-weighted assets				
Credit risk	225,727	–	225,727	211,585
Credit valuation adjustment risk	503	–	503	2,290
Operational risk	30,478	–	30,478	33,693
Market risk	23,040	–	23,040	21,877
Total risk-weighted assets ⁴	279,748	–	279,748	269,445
Capital ratios				
Common Equity Tier 1 capital	13.6%	0.0%	13.6%	13.6%
Tier 1 capital	16.0%	(0.6)%	15.4%	15.7%
Total capital	21.0%	(0.9)%	20.1%	21.3%
Capital buffers				
Institution specific buffer requirement (CET1 requirement in accordance with article 92 (1) (a) plus capital conservation and countercyclical buffer requirement, plus systematic risk buffer, plus systemically important intuition buffer expressed as a percentage of risk exposure amount)	8.1%	1.9%	10.0%	7.1%
Of which: capital conservation buffer requirement	1.25%	1.25%	2.5%	0.6%
Of which: countercyclical buffer requirement	0.17%	0.13%	0.3%	0.1%
Of which: systemic risk buffer requirement	0.0%	0.0%	0.0%	0.0%
Of which: Global systemically important institution (G-SII) or Other Systematically important institution (O-SII) buffer	0.5%	0.5%	1.0%	0.3%
Common Equity Tier 1 available to meet buffers (as percentage of risk exposure amount)	7.4%	(0.3)%	7.1%	7.5%

1 Independently reviewed year-end profits are in accordance with regulatory consolidation rules

2 Foreseeable dividends as at 2017 year-end represent ordinary dividends and preference dividends

3 CET1 capital before regulatory adjustments is prepared on the regulatory scope of consolidation

4 The risk-weighted assets are not covered by the scope of the Audit

The transitional position of institution specific buffer requirement increased by approximately 100bps due to the impact of transitional rules on G-SII (0.25 per cent), Countercyclical capital buffer (0.1 per cent) and Capital conservation buffer (0.63 per cent).

For regulatory purposes, capital is categorised into two tiers, depending on the degree of permanence and loss absorbency exhibited. These are Tier 1 and Tier 2 capital which are described below.

Tier 1 capital

→ Tier 1 capital is going concern capital and is available for use to cover risks and losses whilst enabling the organisation to continue trading

→ Tier 1 capital comprises permanent share capital, profit and loss account and other eligible reserves, equity non-controlling interests and Additional Tier 1 instruments, after the deduction of certain regulatory adjustments

→ Permanent share capital is an item of capital issued by an organisation to an investor, which is fully paid-up and where the proceeds of issue are immediately and fully available. It can only be redeemed on the winding-up of the organisation. Profit and loss account and other eligible reserves are accumulated resources included in shareholders' funds in an organisation's balance sheet, with certain regulatory adjustments applied

→ Equity non-controlling interests represent the equity stakes held by non-controlling shareholders in the Group's undertakings

→ Additional Tier 1 securities are deeply subordinated instruments which have loss-absorbing qualities such as discretionary coupons, principal write-down or conversion to equity and can therefore be included as Tier 1 capital

2.2 Capital resources continued

Tier 2 capital

Tier 2 capital is gone concern capital to help ensure senior creditors and depositors can be repaid if the organisation fails. Tier 2 capital consists of capital instruments which are normally of medium to long-term maturity with an original maturity of at least five years. For regulatory purposes, it is a requirement that these instruments be amortised on a straight-line basis in their final five years of maturity.

Details of the Group's capital instruments (both Tier 1 and 2 capital) are set out in the Standard Chartered PLC Main Features of

Capital Instruments document available on the Group's website at investors.sc.com/capitalandsecurities

2.3 Countercyclical capital buffer

The Group's countercyclical capital buffer (CCyB) requirement is determined by applying various country-specific CCyB rates to the Group's qualifying credit exposures in the relevant country (based on the jurisdiction of the obligor) on a weighted average basis.

As at 31 December 2017, the Group's CCyB requirement was 0.2 per cent. The majority of this CCyB requirement related to exposures to Hong Kong counterparties, with exposures to other jurisdictions being an immaterial part of the Group's CCyB.

Table 10 represents the disclosure requirement of the Commission delegated regulation (EU) 2015/1555 for own funds, which requires disclosure for countries to which we have exposure. Information is also required for countries where no countercyclical capital buffer rate has yet been implemented.

Countries are included in the table if the relevant own funds requirements of that country are greater than 1 per cent of the Group's total relevant own funds requirements for CCyB calculation.

Table 10: Geographical distribution of credit exposures relevant for the calculation of the countercyclical capital buffer

		2017										
Breakdown by country		Bangla- desh \$million	China \$million	Czech Republic \$million	Hong Kong \$million	Iceland \$million	India \$million	Indo- nesia \$million	Korea \$million	Malaysia \$million	Nether- lands \$million	Nigeria \$million
General credit exposures	Exposure value for SA	1,341	6,328	–	5,038	–	5,931	8,613	1,425	901	2	622
	Exposure value for IRB	3,003	13,038	10	62,985	–	20,086	3,903	41,790	9,468	3,406	3,058
Trading book exposures	Sum of long and short positions of trading book exposures for SA	77	3,174	–	275	–	1,344	243	403	487	22	727
	Value of trading book exposures for internal models	–	–	–	–	–	–	–	–	–	–	–
Securitisation exposures	Exposure value for SA	–	–	–	–	–	–	–	–	–	–	–
	Exposure value for IRB	–	–	–	–	–	–	–	–	–	–	–
Own funds requirements	General credit exposures	243	1,110	–	1,870	–	1,478	871	979	488	172	201
	Trading book exposures	6	80	–	16	–	56	20	14	16	2	82
	Securitisation exposures	–	–	–	–	–	–	–	–	–	–	–
	Total	249	1,190	–	1,886	–	1,534	891	993	504	174	283
Own funds requirements weights		1.7%	8.2%	0.0%	12.9%	0.0%	10.5%	6.1%	6.8%	3.5%	1.2%	1.9%
CCyB rate as at 31 Dec 2017		0.0%	0.0%	0.5%	1.25%	1.25%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
CCyB rate as at 1 Jan 2018		0.0%	0.0%	0.5%	1.875%	1.25%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

2.3 Countercyclical capital buffer continued

Table 10: Geographical distribution of credit exposures relevant for the calculation of the countercyclical capital buffer
continued

		2017										
Breakdown by country		Norway \$million	Pakistan \$million	Singapore \$million	Slovakia \$million	Sweden \$million	Taiwan \$million	United Arab Emirates \$million	United Kingdom \$million	United States \$million	Vietnam \$million	Other countries \$million
General credit exposures	Exposure value for SA	1	704	5,684	–	1	1,962	3,404	1,949	364	757	8,761
	Exposure value for IRB	219	2,108	36,753	4	442	7,799	13,759	24,179	17,813	1,334	67,030
Trading book exposures	Sum of long and short positions of trading book exposures for SA	–	7	296	–	5	302	186	585	280	43	2,851
	Value of trading book exposures for internal models	–	–	–	–	–	–	–	–	–	–	–
Securitisation exposures	Exposure value for SA	–	–	–	–	–	–	–	–	–	–	–
	Exposure value for IRB	–	–	–	–	–	–	–	20,699	–	–	–
Own funds requirements	General credit exposures	6	167	1,290	–	19	241	844	548	479	147	2,625
	Trading book exposures	–	8	17	–	–	3	15	39	4	4	200
	Securitisation exposures	–	–	–	–	–	–	–	215	–	–	–
	Total	6	175	1,307	–	19	244	859	802	483	151	2,825
Own funds requirements weights		0.0%	1.2%	9.0%	0.0%	0.1%	1.7%	5.9%	5.5%	3.3%	1%	19.4%
CCyB rate as at 31 Dec 2017		2%	0.0%	0.0%	0.5%	2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
CCyB rate as at 1 Jan 2018		2%	0.0%	0.0%	0.5%	2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

		2016									
Breakdown by country		Sweden \$million	Norway \$million	United Kingdom \$million	Hong Kong \$million	Czech Republic \$million	Iceland \$million	Slovakia \$million	Germany \$million	India \$million	Indonesia \$million
General credit exposures	Exposure value for SA	4	–	2,498	3,930	–	–	–	29	4,476	8,915
	Exposure value for IRB	440	228	24,963	63,493	6	–	5	7,904	18,744	3,954
Trading book exposures	Sum of long and short positions of trading book exposures for SA	–	–	22	284	–	–	–	2	1,414	264
	Value of trading book exposures for internal models	–	–	–	–	–	–	–	–	–	–
Securitisation exposures	Exposure value for SA	–	–	–	–	–	–	–	–	–	–
	Exposure value for IRB	–	–	22,582	–	–	–	–	–	–	–
Own funds requirements	General credit exposures	15	4	656	1,603	–	–	–	43	1,347	963
	Trading book exposures	–	–	1	12	–	–	–	–	43	23
	Securitisation exposures	–	–	235	–	–	–	–	–	–	–
	Total	15	4	892	1,615	–	–	–	43	1,390	986
Own funds requirements weights		0.1%	0.0%	6.5%	11.7%	0.0%	0.0%	0.0%	0.3%	10.1%	7.1%
CCyB rate as at 31 Dec 2016		1.5%	1.5%	0.0%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
CCyB rate as at 1 Jan 2017		1.5%	1.5%	0.0%	1.3%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%

2.3 Countercyclical capital buffer continued

Table 10: Geographical distribution of credit exposures relevant for the calculation of the countercyclical capital buffer
continued

		2016									
Breakdown by country		Singapore \$million	China \$million	Korea \$million	United Arab Emirates \$million	United States \$million	Malaysia \$million	Pakistan \$million	Bangla- desh \$million	Nigeria \$million	Other countries \$million
General credit exposures	Exposure value for SA	4,788	5,978	1,307	3,267	773	822	609	1,076	542	12,196
	Exposure value for IRB	32,965	10,425	35,031	13,337	20,107	8,662	1,803	2,702	2,852	68,878
Trading book exposures	Sum of long and short positions of trading book exposures for SA	324	1,216	1,148	133	948	1,060	9	73	515	1,983
	Value of trading book exposures for internal models	–	–	–	–	–	–	–	–	–	–
Securitisation exposures	Exposure value for SA	–	–	–	–	–	–	–	–	–	–
	Exposure value for IRB	–	–	–	–	–	–	–	–	–	–
Own funds requirements	General credit exposures	1,197	916	908	826	414	478	136	227	200	3,360
	Trading book exposures	6	38	3	4	–	11	2	7	45	101
	Securitisation exposures	–	–	–	–	–	–	–	–	–	–
	Total	1,203	954	911	830	414	489	138	234	245	3,461
Own funds requirements weights		8.7%	6.9%	6.6%	6.0%	3.0%	3.5%	1.0%	1.7%	1.8%	25.0%
CCyB rate as at 31 Dec 2016		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
CCyB rate as at 1 Jan 2017		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 11: Amount of institution specific countercyclical capital buffer

	2017 \$million	2016 \$million
Total risk exposure amount (see Table 12: Overview of RWA (OV1))	279,748	269,445
Institution specific countercyclical capital buffer rate	0.17%	0.1%
Institution specific countercyclical capital buffer requirement	462	202

2.4 Capital requirements

Based on the Group's understanding of the rules, its current expected CET1 requirement for 2019 is 10.0 per cent, comprising:

- A minimum Pillar 1 CET1 requirement of 4.5 per cent
- A Pillar 2A CET1 requirement of around 1.7 per cent (subject to ongoing PRA assessment) being 56 per cent of the total Pillar 2A requirement
- A capital conservation buffer of 2.5 per cent by 1 January 2019
- A G-SII buffer of 1.0 per cent by 1 January 2019
- A countercyclical capital buffer of around 0.3 per cent, effective from 2018

Any further countercyclical capital buffer applied to the Group would increase the Group's CET1 requirement.

The Combined Buffer comprises the Group's capital conservation buffer, G-SII buffer and the countercyclical capital buffer.

Pillar 1 and Pillar 2A CET1 requirements and the Combined Buffer requirement together represent the Group's Maximum Distributable Amount threshold. The Group will be subject to restrictions on discretionary distributions if the CET1 ratio goes below this threshold. The Group expects to continue to operate with a prudent management buffer above this threshold.

Over time, the Group may also be subject to a PRA buffer. The PRA buffer is intended to ensure the Group remains well capitalised during periods of stress. When setting the Group's PRA buffer, it is understood that the PRA considers results from the Bank of England (BoE) stress test, the biennial exploratory scenario, bank-specific scenarios undertaken as part of Internal

Capital Adequacy Assessment Processes (ICAAPs) as well as other relevant information. The PRA buffer is additional to the existing CRD IV buffer requirements, and is applied if and to the extent that the PRA considers the existing CRD IV buffers do not adequately address the Group risk profile. The PRA buffer is not disclosed.

The table below presents the Group's RWA and capital requirements (calculated as 8 per cent of RWA).

Further information on credit RWAs can be found in Table 44 for credit risk exposures under IRB (which include counterparty credit risk); Table 14 for the RWA flow statements for credit risk exposures under IRB (which includes securitisation balances below); Table 57 for exposures under the standardised approach (which include amounts below the threshold for deduction) and section 3.9 for exposures subject to counterparty credit risk.

2.4 Capital requirements continued

Table 12: Overview of RWA (OV1)

	31.12.17		30.09.17		31.12.16	
	Risk-weighted assets \$million	Regulatory capital requirement ¹ \$million	Risk-weighted assets \$million	Regulatory capital requirement ¹ \$million	Risk-weighted assets \$million	Regulatory capital requirement ¹ \$million
Credit risk (excluding counterparty credit risk)²	200,702	16,056	196,570	15,726	187,275	14,983
Of which advanced IRB approach (Table 44)	156,602	12,528	152,359	12,189	144,317	11,546
Of which standardised approach (Table 57)	44,100	3,528	44,211	3,537	42,958	3,437
Counterparty credit risk³	15,517	1,241	14,088	1,127	17,353	1,388
Of which mark to market method	11,952	956	11,136	891	12,800	1,024
Of which risk exposure amount for contributions to the default fund of a CCP	81	6	192	15	338	27
Of which CVA (Table 64)	503	40	535	43	2,290	183
Settlement risk	18	1	1	–	15	1
Securitisation exposures in the banking book	2,687	215	2,994	240	2,933	235
Of which IRB ratings-based approach	2,205	176	2,482	199	2,406	193
Of which IRB supervisory formula approach	482	39	512	41	527	42
Of which standardised approach	–	–	–	–	–	–
Market risk (Table 78)	23,040	1,843	22,964	1,837	21,877	1,750
Of which internal model approaches	12,776	1,022	11,575	926	13,147	1,052
Of which standardised approach	10,264	821	11,389	911	8,730	698
Large exposures	–	–	–	–	–	–
Operational risk	30,478	2,438	30,478	2,438	33,693	2,695
Of which standardised approach	30,478	2,438	30,478	2,438	33,693	2,695
Amounts below the thresholds for deduction (subject to 250% risk weight)	7,306	584	7,068	565	6,299	504
Floor Adjustment	–	–	–	–	–	–
Total	279,748	22,380	274,163	21,933	269,445	21,556

1 The regulatory capital requirement is calculated as 8 per cent of the risk-weighted assets, and represents the minimum total capital ratio in accordance with CRR Article 92 (1)

2 Credit risk (excluding counterparty credit risk) includes non-credit obligation assets

3 Counterparty credit risk includes assets which are assessed under IRB and Standardised approaches

4 To calculate operational risk standardised risk-weighted assets, a regulatory defined beta co-efficient is applied to average gross income for the previous three years, across each of the eight business lines prescribed in the CRR

RWA increased by \$10.3 billion from 31 December 2016 to \$279.7 billion. This was due to a \$12.4 billion increase in credit risk including counterparty credit risk RWA and a \$1.2 billion increase in market risk partly offset by a \$3.2 billion decrease in operational risk RWA.

→ Credit risk including counterparty credit risk increases were driven by a \$7.6 billion increase due to PRA approved IRB model changes in financial institutions relating to LGD floors and \$5.1 billion increase from foreign currency translation

→ Market risk RWA increased \$1.2 billion with increases in debt security holdings being offset by lower market volatility and methodology and policy changes

→ Operational risk RWA reduced by \$3.2 billion due to a decrease in the average income over a rolling three-year time horizon, as lower 2016 income replaced higher 2013 income

2.4 Capital requirements continued

Table 13 shows the significant drivers of credit risk, market risk and operational risk RWA movements from 1 January 2017.

Table 13: Movement analysis for RWA

	Credit risk IRB \$million	Credit risk SA \$million	Credit risk Total \$million	Counterparty Credit risk \$million	Total Credit & Counterparty Credit risk \$million	Operational risk \$million	Market risk \$million	Total \$million
As at 1 January 2017	147,250	49,272	196,522	17,353	213,875	33,693	21,877	269,445
Asset size	2,448	2,208	4,656	(1,641)	3,015	–	–	3,015
Asset quality	237	–	237	8	245	–	–	245
Model updates	5,632	–	5,632	1,613	7,245	–	–	7,245
Methodology and policy	(185)	–	(185)	(21)	(206)	–	(2,178)	(2,384)
Acquisitions and disposals	–	–	–	–	–	–	–	–
Foreign exchange movements	2,651	647	3,298	295	3,593	–	–	3,593
Other, including non-credit risk movements ¹	–	–	–	(1,898)	(1,898)	(3,215)	3,943	(1,170)
As at 30 September 2017	158,033	52,127	210,160	15,709	225,869	30,478	23,642	279,989
Asset size	(2,527)	52	(2,475)	(306)	(2,781)	–	–	(2,781)
Asset quality	2,997	–	2,997	411	3,408	–	–	3,408
Model updates	(44)	–	(44)	–	(44)	–	–	(44)
Methodology and policy	–	(576)	(576)	–	(576)	–	–	(576)
Acquisitions and disposals	(392)	(318)	(710)	–	(710)	–	–	(710)
Foreign exchange movements	1,222	139	1,361	100	1,461	–	–	1,461
Other, including non-credit risk movements ¹	–	–	–	(397)	(397)	–	(602)	(999)
As at 31 December 2017	159,289	51,424	210,713	15,517	226,230	30,478	23,040	279,748

¹ RWA efficiencies are disclosed against 'Other, including non-credit risk movements'

² See Table 12: Overview of RWA (OV1). To note that 'Securitisation', 'Settlement risk' and 'Amounts below the threshold for deduction (subject to 250% risk-weight)' are included in credit risk

Table 14 below shows the significant drivers of credit risk, IRB RWA movements (excluding counterparty credit risk and standardised credit risk) from 1 January 2017.

Table 14: RWA flow statements of credit risk exposures under IRB (CR8)

	Risk-weighted assets ¹ \$million	Regulatory capital requirement ¹ \$million
As at 1 January 2017	147,250	11,780
Asset size	2,448	196
Asset quality	237	19
Model updates	5,632	451
Methodology and policy	(185)	(15)
Foreign exchange movements	2,651	212
As at 30 September 2017	158,033	12,643
Asset size	(2,527)	(202)
Asset quality	2,997	240
Model updates	(44)	(4)
Methodology and policy	–	–
Disposals	(392)	(32)
Foreign exchange movements	1,222	98
As at 31 December 2017	159,289	12,743

¹ Includes securitisation and non-credit obligation assets, but excludes counterparty credit risk

² See Table 12: Overview of RWA (OV1). Comprises advanced IRB credit risk \$156,602 million and securitisation of \$2,687 million

IRB credit RWAs increased \$12 billion year-on-year driven by

- \$5.6 billion increase includes \$6 billion due to model updates as a result of PRA approved IRB model changes in financial institutions relating to LGD floors
- \$3.9 billion increase from foreign currency translation

2.4 Capital requirements continued

Table 15 below shows the RWA flow statements of market risk RWA exposures under the internal model approach (IMA) from 1 January 2017.

Table 15: RWA flow of market risk exposures under an IMA approach (MR2-B)

	VaR \$million	SVaR \$million	IRC \$million	CRM \$million	Other ¹ \$million	Total RWA \$million	Total capital requirement \$million
At 1 January 2017	3,161	7,931	–	–	2,055	13,147	1,052
Regulatory adjustment	–	–	–	–	–	–	–
RWAs post adjustment at 1 January 2017	3,161	7,931	–	–	2,055	13,147	1,052
Movement in risk levels	(954)	90	–	–	758	(106)	(9)
Model updates/changes	–	–	–	–	–	–	–
Methodology and policy	–	–	–	–	–	–	–
At 30 June 2017	–	–	–	–	–	–	–
Regulatory adjustment	–	–	–	–	–	–	–
At 30 September 2017	(954)	90	–	–	758	(106)	(9)
Regulatory adjustment	–	–	–	–	–	–	–
RWAs post adjustment at 30 September 2017	2,207	8,021	–	–	2,813	13,041	1,043
Movement in risk levels	(229)	62	–	–	(98)	(265)	(21)
Model updates/changes	–	–	–	–	–	–	–
Methodology and policy	–	–	–	–	–	–	–
Acquisitions and disposals	–	–	–	–	–	–	–
Foreign exchange movements	–	–	–	–	–	–	–
Other	–	–	–	–	–	–	–
At 31 December 2017	1,978	8,083	–	–	2,715	12,776	1,022
Regulatory adjustment	–	–	–	–	–	–	–
RWAs post adjustment at 31 December 2017	1,978	8,083	–	–	2,715	12,776	1,022

¹ Other IMA capital add-ons for market risks not fully captured in either VaR or SVaR. More details on Risks not in VaR can be found in the 2017 Annual Report and Accounts on page 148

Market Risk RWAs under an IMA approach decreased \$0.4 billion driven by lower market volatility.

2.5 Leverage ratio

During the period, the PRA adopted the Bank of England's Financial Policy Committee (FPC) proposed changes to the UK leverage ratio framework. UK banks are now subject to a minimum leverage ratio of 3.25 per cent, an increase of 0.25 per cent from the previous 3.0 per cent minimum. In addition, a supplementary leverage ratio buffer is applicable, set at 35 per cent of the corresponding G-SII capital buffer and the countercyclical capital buffer, as those buffers are applicable to individual banks and are phased in.

The FPC also made a recommendation to the PRA to exclude qualifying claims on central bank exposures from the leverage exposure measure in the UK leverage ratio framework and to compensate for the resulting reduction in capital required by increasing the minimum leverage requirement from 3.0 per cent to 3.25 per cent.

Following the waiver granted by the PRA, the Group has been reporting the leverage ratio on a UK basis (excluding qualifying claims on central banks exposures) from March 2017 and does not expect any material impact arising from the proposed increase in minimum requirements.

At 31 December 2017, the Group's current minimum requirement was 3.5 per cent. The Group's expected future requirement of 3.7 per cent from 2019 comprises:

- (i) The minimum 3.25 per cent
- (ii) A 0.35 per cent G-SII leverage ratio buffer
- (iii) A 0.1 per cent countercyclical capital leverage ratio buffer, based on currently known pending countercyclical capital buffer rates and assuming a constant proportion of exposures to the relevant jurisdictions

The Group's current UK leverage ratio of 6.0 per cent is above the current minimum requirement. The leverage ratio in the period remained flat mainly due to an increase in Tier 1 capital offset by an increase in the leverage exposure measure.

2.5 Leverage ratio continued

Table 16 below presents both the Group's UK leverage ratio, and CRR leverage ratio. The UK leverage ratio is approximately 30 basis points higher than on a CRR basis as at 31 December 2017 due to the exclusion of qualifying claims on central banks exposures from the UK exposure measure.

Table 16: UK and CRR leverage ratio

	2017 \$million	2016 \$million
Tier 1 capital (end point) ¹	43,103	40,557
UK leverage exposure	717,344	674,327
UK leverage ratio	6.0%	6.0%
CRR leverage exposure	759,518	717,768
CRR leverage ratio	5.7%	5.7%
UK leverage exposure quarterly average	723,508	N/A
UK leverage ratio quarterly average	6.0%	N/A
Countercyclical leverage ratio buffer	0.1%	0.0%
G-SII additional leverage ratio buffer	0.2%	0.1%

¹ Represented on the UK leverage ratio basis, excluding qualifying claims on central banks exposures from the leverage exposure measure

The UK leverage ratio in the period remained flat as the increase in Tier 1 capital (end point) was offset by an increase in the UK leverage exposure measure.

CRR leverage ratio

Tables 17, 18 and 19 present the leverage ratio based on CRR requirements.

Table 17: Summary reconciliation of accounting assets and leverage exposure

	2017 \$million	2016 \$million
Total assets as per published financial statements	663,501	646,692
Adjustment difference between the accounting scope of consolidation and the regulatory scope of consolidation	10,462	11,950
Adjustments for derivative financial instruments	(16,854)	(5,268)
Adjustments for securities financing transactions (SFTs)	13,238	10,412
Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	96,260	60,535
Other adjustments	(7,089)	(6,553)
Total leverage ratio exposure	759,518	717,768

2.5 Leverage ratio continued

Table 18: Leverage ratio common disclosure

	2017 \$million	2016 \$million
On-balance sheet exposures (excluding derivatives and SFTs)		
On-balance sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral)	571,730	548,201
(Asset amounts deducted in determining Tier 1 capital)	(7,089)	(6,553)
Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets)	564,641	541,648
Derivative exposures		
Replacement cost associated with all derivatives transactions (i.e. net of eligible cash variation margin)	7,391	17,164
Add-on amounts for PFE associated with all derivatives transactions (mark-to-market method)	30,027	49,607
Exposure determined under Original Exposure Method	–	–
Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the applicable accounting framework	–	–
(Deductions of receivables assets for cash variation margin provided in derivatives transactions)	(8,586)	(13,825)
(Exempted CCP leg of client-cleared trade exposures)	–	–
Adjusted effective notional amount of written credit derivatives	12,680	10,184
(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	(11,320)	(2,873)
Total derivative exposures	30,192	60,257
Securities financing transaction exposures		
Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	55,187	44,916
(Netted amounts of cash payables and cash receivables of gross SFT assets)	–	–
Counterparty credit risk exposure for SFT assets	13,238	10,412
Derogation for SFTs: Counterparty credit risk exposure in accordance with Article 429b (4) and 222 of Regulation (EU) No 575/2013	–	–
Agent transaction exposures	–	–
(Exempted CCP leg of client-cleared SFT exposure)	–	–
Total securities financing transaction exposures	68,425	55,328
Other off-balance sheet exposures		
Off-balance sheet exposures at gross notional amount	288,076	216,052
(Adjustments for conversion to credit equivalent amounts)	(191,816)	(155,517)
Other off-balance sheet exposures	96,260	60,535
Exempted exposures in accordance with CRR Article 429 (7) and (14) of Regulation (EU) No. 575/2013 (on and-off balance sheet)		
(Intragroup exposures (solo basis) in accordance with Article 429(7) of Regulation (EU) No 575/2013 (on and off-balance sheet))	–	–
(Exposures exempted in accordance with Article 429 (14) of Regulation (EU) No 575/2013 (on and off-balance sheet))	–	–
Capital and total exposures	–	–
Tier 1 capital (end point)	43,103	40,557
Leverage ratio total exposure measure	759,518	717,768
Leverage ratio	5.7%	5.7%
Choice on transitional arrangements and amount of derecognised fiduciary items		
Choice on transitional arrangements for the definition of the capital measure	Fully phased in	Fully phased in
Amount of derecognised fiduciary items in accordance with Article 429(11) of Regulation (EU) NO 575/2013	–	–

2.5 Leverage ratio continued

Table 19: Leverage ratio: Split-up of on-balance sheet exposures (excluding derivatives, SFTs and exempted exposures)

	2017 \$million	2016 \$million
Total on-balance sheet exposures (excluding derivatives, SFTs, and exempted exposures), of which:	571,730	548,201
Trading book exposures	49,456	39,700
Banking book exposures, of which:	522,275	508,501
Covered bonds	3,428	5,004
Exposures treated as sovereigns	167,012	173,174
Exposures to regional governments, MDB, international organisations and PSE not treated as sovereigns	42	26
Institutions	72,555	64,547
Secured by mortgages of immovable properties	79,259	73,790
Retail exposures	25,577	22,789
Corporates	129,504	123,670
Exposures in default	9,106	10,083
Other exposures (e.g. equity, securitisations, and other non-credit obligation assets)	35,792	35,418

3. Credit risk

Our approach to credit risk can be found in the Risk management approach section in the 2017 Annual Report and Accounts on pages 165 to 167.

3.1. Internal Ratings Based Approach (IRB) to credit risk

The Group uses the Advanced IRB approach to measure credit risk for the majority of its portfolios. This allows the Group to use its own internal estimates of Probability of Default (PD), Loss Given Default (LGD), Residual Maturity, and Exposure at Default (EAD) to determine an asset risk-weighting. The IRB models cover 77 per cent of the Group's credit RWA (2016: 77 per cent).

PD is the likelihood that an obligor will default on an obligation within the next 12 months. Banks utilising the IRB approach must assign an internal PD to all borrowers. EAD is the expected amount of exposure to a particular facility at the point of default; it is modelled based on historical experience to determine the amount that is expected to be further drawn down from the undrawn portion of a facility. LGD is the percentage of EAD that a lender expects to lose in the event of obligor default. EAD and LGD are measured based on expectation in economic downturn periods, if these are more conservative than the long-run average.

All assets under the IRB approach have internal PD, LGD and EAD models developed to support the credit decision making process. RWA under the IRB approach is determined by regulatory specified formulae dependent on the Group's estimates of residual maturity, PD, LGD and EAD. The development, use and governance of Corporate and Institutional Banking (CIB), Commercial Banking (CB) and Retail Banking models under the IRB approach are covered in more detail in Section 3.3 Internal Ratings Based models.

3.2. Standardised Approach to credit risk

The Standardised Approach is applied to portfolios that are classified as permanently exempt from the IRB approach, and those portfolios for which an IRB approach has yet to be developed, for instance due to insufficient data availability.

CRR Article 150 allows IRB banks to elect to permanently exclude certain exposures from the IRB approach and use the Standardised Approach. These are known as permanent exemptions.

The permanent exemptions apply to:

- Africa – all retail portfolios
- Private Banking
- Private Equity
- Development organisations
- Jordan
- Purchased receivables
- Hedge funds

Exposures to, or guaranteed by, central governments and central banks of EEA States, provided they are eligible for a 0 per cent risk weighting under the Standardised Approach.

The Standardised Approach measures credit risk pursuant to fixed risk-weights and is the least sophisticated of the capital requirement calculation methodologies under Basel III. The risk-weight applied under the Standardised Approach is prescribed within the CRR and is based on the asset class to which the exposure is assigned.

3.3 Internal Ratings Based models

Model Governance

All IRB models are developed by Group Risk Measurement (GRM). Both new and existing models, as well as changes to the existing models, are subject to independent validation by Group Model Validation (GMV) and are reviewed and approved by the Credit Model Assessment Committee (CMAC) and the Stress Testing Committee (based on materiality). GRM and GMV are separate departments within Group Risk.

The performance of existing IRB models, including actual against predicted metrics, is monitored regularly by GRM and reported to CMAC on a quarterly basis. In addition, existing models are subject to annual independent validation by GMV. The CMAC sets out internal standards for model development, validation and performance monitoring. The Board Risk Committee is updated on the status and performance of IRB models on an annual basis. Rating overrides are tracked and threshold breaches are escalated to the relevant risk management committees, and model issues are tracked at CMAC. An annual self-assessment of IRB models' regulatory compliance is carried out as part of the Senior Management Function attestation.

Group Internal Audit is responsible for carrying out independent audit reviews of IRB models development, validation, approval and monitoring.

Probability of Default

PDs are estimated based on one of three industry standard approaches, namely the good-bad approach where a sufficient number of internal defaults is available, the shadow-bond approach where there are no sufficient internal defaults but there are external ratings for a large number of obligors, or the constrained expert judgement approach where neither internal defaults nor external ratings are available.

In CIB and CB, the largest portfolios are rated based on the shadow bond approach (Sovereigns, Banks, Large Corporates) or the good-bad approach (Mid Corporates). Central governments and central banks are rated using the sovereign model. Non-bank financial institutions are rated using one of six constrained expert judgement models depending on their line of business, with the largest being Funds, Finance & Leasing, and Broker Dealers. Corporate clients are differentiated by their annual sales turnover and rated using one of the corporate models, unless they are commodity traders (for which a separate model has been developed) or are classified under specialised lending. CIB and CB IRB PD models are subject to the 0.03 per cent regulatory floor.

Within CIB and CB, each client is assigned a credit grade and exposures to each client or client group are aggregated consistently with the regulatory Large Exposures requirements.

CIB and CB PD models are calibrated following a through-the-cycle rating philosophy based on historical data that includes a full economic cycle.

Estimates of PD are computed as of 1 January 2017 and are compared with default observations through 31 December 2017.

Our historical default experience for institutions, central governments or central banks is minimal, so the predicted PD reflects a particularly low number of defaults. We experienced no defaults for central governments or central banks during 2017.

The actual default rates for institutions and corporate exposures in 2017 remained below IRB model predictions as at the beginning of 2017, based on the arithmetic average PD by obligors.

PD models for retail clients under each asset class are developed based on a combination of product and geography following the good-bad approach.

3.3 Internal Ratings Based models continued

The same PD modelling approach is taken across the four key retail client product types: Residential Mortgages, Credit Cards (Qualifying Revolving Retail), Personal Instalment Loans (Other Retail) and Retail SME (Other Retail). The approach is based on using the country and product specific application scores for new to bank clients and behaviour scores for existing clients. The scorecards are built using demographic information, financial information, observed client performance data (for behaviour scores), and where available, credit bureau data. Statistical techniques are used to develop a relationship between this information and the probability of default. The scorecards are used to make credit decisions. In addition, the PD models are segmented by delinquency status. All retail client PD models are built and validated using internal default data and are subject to the 0.03 per cent regulatory floor.

The actual default rates for the 'Residential mortgages', 'Qualifying revolving retail' and 'Other retail' asset classes remained below the model predictions, based on the arithmetic average PD by obligors, but actual default rates were above model predictions for the 'Retail SME' asset class. The higher actual default rate for 'Retail SME' was a result of increased defaults in the Korean and Hong Kong business clients segments.

Loss Given Default

The CIB and CB LGD model is a parameter-based model reflecting the Bank's recovery and workout process, which takes into account risk drivers such as portfolio segment, product, credit grade of the obligor and collateral attached to the exposure. The model is calibrated based on downturn experience, if that is more conservative than the long-run experience. Regulatory floors are applied to unsecured LGD for sovereign and financial institutions exposures, and to fully secured facilities (except if secured by cash). This is in accordance with the PRA's low-default framework which states that where there are insufficient defaults to estimate a parameter at granular level an LGD floor must be applied.

The calculation of realised versus predicted LGD is affected by the fact that it may take a number of years for the workout process to be completed. As such, an observed recovery value cannot be assigned to the majority of the 2017 defaults, making it

meaningless to compare realised versus predicted outcomes in a manner similar to that for PD and EAD.

To address this for corporate and institutions we have adopted an approach based on a four-year rolling period of predicted and realised LGD, which for the current reporting year includes 2014 to 2017 defaults that have completed their workout process as at the end of 2017. This approach compares the four-year rolling predicted LGD, providing the predicted outcome of these resolved defaults one year prior to default, against the realised LGD for the same set of defaults. These two figures are fully comparable, thereby providing a meaningful assessment of the LGD model's performance.

Under this approach, realised LGD values for corporates are lower than the predicted. This is explained by the regulatory guidance to calibrate LGD models to downturn conditions. There were no defaults in the previous four years for central governments and central banks. LGD for institutions reflects one completed workout during the four-year rolling period for which actual loss was significantly below predicted loss.

LGDs for retail portfolios follow two approaches:

- (i) LGDs for unsecured products are based on historical loss experience of defaults during a downturn; these are portfolio-specific LGD estimates segmented by default status (including restructuring).
- (ii) LGDs for secured products are parameter-based estimates mainly driven by how the default is resolved (cure, sale or charge-off). Key LGD parameters are differentiated by segments such as loan-to-value, property type and default status. These parameters are calibrated based on the portfolio's downturn experience.

Retail LGD model development considers defaults from a cohort and the actual recoveries up to the end of the workout window which is typically two to three years. For retail asset classes, the observed LGD from the December 2014 cohort (existing defaults and those defaulted in the next 12 months) was calculated based on actual recoveries observed from January 2015 until December 2017. This is compared to the predicted outcome of the same set of defaults.

Under this approach, realised LGD values for all retail asset classes are lower than predicted, primarily due to the regulatory

guidance to calibrate LGD models to downturn conditions. This is most evident in the mortgage portfolios, where predicted LGD values include a significant assumed reduction in property values.

Exposure at Default

EAD takes into consideration the potential drawdown of a commitment as an obligor moves towards default by estimating the Credit Conversion Factor (CCF) of undrawn commitments.

EAD for corporate and institutional clients is determined on a global basis, while the commercial and retail EAD is dependent on the combination of country and product.

The corporate and institutional EAD model has adopted the momentum approach to estimate the CCF, with the type of facility and the level of utilisation being key drivers of CCF. The model is calibrated based on the Bank's internal downturn experience and floored at 0 per cent.

EAD for retail products differs between revolving products and term products. For revolving products, EAD is computed by estimating the CCF of undrawn commitments, with a floor at 0 per cent. For term products, EAD is set at the outstanding balance plus any undrawn portion. All the retail client EAD models are built and validated using internal default data.

The comparison of realised versus predicted EAD is summarised in the ratio of EAD of assets that defaulted in 2017 to the outstanding amount at time of default. The ratios for all models are larger than one, indicating that the predicted EAD is higher than the realised outstanding amount at default. This is explained by the regulatory guidance to assign conservatism to the CCF of certain exposure types and to calibrate the models to downturn conditions, as well as by the impact of management action leading to a reduction in actual exposure prior to default.

The Group has a strong monitoring and governance framework in place to identify and mitigate model performance issues. While most models are conservative and over predict PD, LGD and EAD, in cases where the models under predict, a post model adjustment may be taken to ensure adequate capitalisation, in addition to having a remediation plan in place.

The estimates provided in the table are before the application of any conservative adjustment.

3.3 Internal Ratings Based models continued

Table 20: CIC model results

	PD Predicted 1 January 2017 %	PD Observed 31 December 2017 %	LGD Predicted (2014-2017) %	LGD Realised (2014-2017) %	EAD Predicted/ Realised %	Proportion of total IRB portfolio %
Corporate, institutions and commercial						
Central governments or central banks	1.09	0.00	N/A	N/A	N/A	23
Institutions	0.46	0.02	41.20	1.60	3.57	21
Corporates	2.10	0.86	38.99	32.60	1.23	38
Corporate SME	3.44	2.33	56.15	39.92	1.19	1

Table 21: Retail model results

	PD Predicted 1 January 2017 %	PD Observed 31 December 2017 %	LGD Predicted (2014-2017) %	LGD Realised (2014-2017) %	EAD Predicted/ Observed %	Proportion of total IRB portfolio %
Retail						
Qualifying revolving retail	3.52	1.40	81.12	70.15	1.23	2
Other retail	2.76	2.36	80.75	72.19	1.15	2
Residential mortgages	0.57	0.32	15.60	3.89	1.02	12
Retail SME	2.15	2.55	60.61	51.14	1.54	–

Table 22: IRB – Backtesting of probability of default (PD) for central governments or central banks (CR9)

2017								
PD Range %	External Rating equivalent (S&P)	Weighted average PD (prior year) %	Arithmetic average PD by obligors (prior year) %	Number of obligors		Defaulted obligors in the year	of which: new defaulted obligors in the year	Average historical annual default rate %
				31 December 2016	31 December 2017			
		0.17	1.09	380	322	–	–	–
0.00 to <0.15	AAA to BBB-			248	180			
0.15 to <0.25	BBB, BBB-			16	17			
0.25 to <0.50	BBB-, BB+, BB			14	13			
0.50 to <0.75	BB+, BB			5	5			
0.75 to <2.50	BB, BB-, B+, B			64	72			
2.50 to <10.00	B, B-, CCC, C			25	22			
10.00 to <100.00	CCC, C			8	12			
100.00 (default)	D			–	1			
2016								
PD Range %	External Rating equivalent (S&P)	Weighted average PD (prior year) %	Arithmetic average PD by obligors (prior year) %	Number of obligors		Defaulted obligors in the year	of which: new defaulted obligors in the year	Average historical annual default rate %
				31 December 2015	31 December 2016			
		0.14	1.04	434	380	–	–	–
0.00 to <0.15	AAA to BBB-			313	248			
0.15 to <0.25	BBB, BBB-			13	16			
0.25 to <0.50	BBB-, BB+, BB			9	14			
0.50 to <0.75	BB+, BB			4	5			
0.75 to <2.50	BB, BB-, B+, B			57	64			
2.50 to <10.00	B, B-, CCC, C			30	25			
10.00 to <100.00	CCC, C			8	8			
100.00 (default)	D			–	–			

3.3 Internal Ratings Based models continued

Table 23: IRB – Backtesting of probability of default (PD) for institutions (CR9)

2017								
PD Range %	External Rating equivalent (S&P)	Weighted average PD (prior year) %	Arithmetic average PD by obligors (prior year) %	Number of obligors		Defaulted obligors in the year	of which: new defaulted obligors in the year	Average historical annual default rate %
				31 December 2016	31 December 2017			
		0.17	0.46	2,047	2,010	1	–	0.03
0.00 to <0.15	AAA to BBB-			991	993			
0.15 to <0.25	BBB, BBB-			177	155			
0.25 to <0.50	BBB-, BB+, BB			241	226			
0.50 to <0.75	BB+, BB			69	67			
0.75 to <2.50	BB, BB-, B+, B			431	462			
2.50 to <10.00	B, B-, CCC, C			78	56			
10.00 to <100.00	CCC, C			53	47			
100.00 (default)	D			7	4			
2016								
PD Range %	External Rating equivalent (S&P)	Weighted average PD (prior year) %	Arithmetic average PD by obligors (prior year) %	Number of obligors		Defaulted obligors in the year	of which: new defaulted obligors in the year	Average historical annual default rate %
				31 December 2015	31 December 2016			
		0.18	0.62	2,130	2,047	3	–	0.05
0.00 to <0.15	AAA to BBB-			1,064	991			
0.15 to <0.25	BBB, BBB-			189	177			
0.25 to <0.50	BBB-, BB+, BB			211	241			
0.50 to <0.75	BB+, BB			70	69			
0.75 to <2.50	BB, BB-, B+, B			413	431			
2.50 to <10.00	B, B-, CCC, C			103	78			
10.00 to <100.00	CCC, C			68	53			
100.00 (default)	D			12	7			

3.3 Internal Ratings Based models continued

Table 24: IRB – Backtesting of probability of default (PD) for corporates (CR9)

2017								
PD Range %	External Rating equivalent (S&P)	Weighted average PD (prior year) %	Arithmetic average PD by obligors (prior year) %	Number of obligors		Defaulted obligors in the year	of which: new defaulted obligors in the year	Average historical annual default rate %
				31 December 2016	31 December 2017			
		1.29	2.51	64,617	56,017	391	19	1.56
0.00 to <0.15	AAA to BBB-			5,450	5,367			
0.15 to <0.25	BBB, BBB-			2,648	2,867			
0.25 to <0.50	BBB-, BB+, BB			5,872	3,236			
0.50 to <0.75	BB+, BB			10,856	1,830			
0.75 to <2.50	BB, BB-, B+, B			25,059	29,302			
2.50 to <10.00	B, B-, CCC, C			7,478	5,968			
10.00 to <100.00	CCC, C			2,293	2,337			
100.00 (default)	D			4,961	5,110			
2016								
PD Range %	External Rating equivalent (S&P)	Weighted average PD (prior year) %	Arithmetic average PD by obligors (prior year) %	Number of obligors		Defaulted obligors in the year	of which: new defaulted obligors in the year	Average historical annual default rate %
				31 December 2015	31 December 2016			
		2.00	2.95	71,892	64,617	489	30	1.55
0.00 to <0.15	AAA to BBB-			5,425	5,450			
0.15 to <0.25	BBB, BBB-			2,475	2,648			
0.25 to <0.50	BBB-, BB+, BB			6,572	5,872			
0.50 to <0.75	BB+, BB			11,110	10,856			
0.75 to <2.50	BB, BB-, B+, B			30,483	25,059			
2.50 to <10.00	B, B-, CCC, C			9,076	7,478			
10.00 to <100.00	CCC, C			3,004	2,293			
100.00 (default)	D			3,747	4,961			

3.3 Internal Ratings Based models continued

Table 25: IRB – Backtesting of probability of default (PD) for corporates – specialised lending (CR9)

2017								
PD Range %	External Rating equivalent (S&P)	Weighted average PD (prior year) %	Arithmetic average PD by obligors (prior year) %	Number of obligors		Defaulted obligors in the year	of which: new defaulted obligors in the year	Average historical annual default rate %
				31 December 2016	31 December 2017			
		1.40	1.40	258	1,108	8	–	1.10
0.00 to <0.15	AAA to BBB-			55	151			
0.15 to <0.25	BBB, BBB-			17	149			
0.25 to <0.50	BBB-, BB+ BB			23	181			
0.50 to <0.75	BB+, BB			12	62			
0.75 to <2.50	BB, BB-, B+, B			109	361			
2.50 to <10.00	B, B-, CCC, C			27	85			
10.00 to <100.00	CCC, C			4	58			
100.00 (default)	D			11	61			
2016								
PD Range %	External Rating equivalent (S&P)	Weighted average PD (prior year) %	Arithmetic average PD by obligors (prior year) %	Number of obligors		Defaulted obligors in the year	of which: new defaulted obligors in the year	Average historical annual default rate %
				31 December 2015	31 December 2016			
		0.99	1.07	221	258	1	–	1.05
0.00 to <0.15	AAA to BBB-			42	55			
0.15 to <0.25	BBB, BBB-			25	17			
0.25 to <0.50	BBB-, BB+ BB			38	23			
0.50 to <0.75	BB+, BB			11	12			
0.75 to <2.50	BB, BB-, B+, B			77	109			
2.50 to <10.00	B, B-, CCC, C			17	27			
10.00 to <100.00	CCC, C			1	4			
100.00 (default)	D			10	11			

3.3 Internal Ratings Based models continued

Table 26: IRB – Backtesting of probability of default (PD) for corporates – SME (CR9)

2017								
PD Range %	External Rating equivalent (S&P)	Weighted average PD (prior year) %	Arithmetic average PD by obligors (prior year) %	Number of obligors		Defaulted obligors in the year	of which: new defaulted obligors in the year	Average historical annual default rate %
				31 December 2016	31 December 2017			
		3.09	3.44	44,575	36,312	238	19	2.84
0.00 to <0.15	AAA to BBB-			78	57			
0.15 to <0.25	BBB, BBB-			197	189			
0.25 to <0.50	BBB-, BB+, BB			2,820	160			
0.50 to <0.75	BB+, BB			9,711	612			
0.75 to <2.50	BB, BB-, B+, B			20,723	25,496			
2.50 to <10.00	B, B-, CCC, C			5,906	4,402			
10.00 to <100.00	CCC, C			1,077	1,127			
100.00 (default)	D			4,063	4,269			
2016								
PD Range %	External Rating equivalent (S&P)	Weighted average PD (prior year) %	Arithmetic average PD by obligors (prior year) %	Number of obligors		Defaulted obligors in the year	of which: new defaulted obligors in the year	Average historical annual default rate %
				31 December 2015	31 December 2016			
		3.66	3.45	50,048	44,575	351	30	3.05
0.00 to <0.15	AAA to BBB-			58	78			
0.15 to <0.25	BBB, BBB-			216	197			
0.25 to <0.50	BBB-, BB+, BB			3,709	2,820			
0.50 to <0.75	BB+, BB			9,958	9,711			
0.75 to <2.50	BB, BB-, B+, B			24,813	20,723			
2.50 to <10.00	B, B-, CCC, C			7,144	5,906			
10.00 to <100.00	CCC, C			1,244	1,077			
100.00 (default)	D			2,906	4,063			

3.3 Internal Ratings Based models continued

Table 27: IRB – Backtesting of probability of default (PD) for retail (CR9)

2017							
PD Range %	Weighted average PD (prior year) %	Arithmetic average PD by obligors (prior year) %	Number of obligors		Defaulted obligors in the year	of which: new defaulted obligors in the year	Average historical annual default rate %
			31 December 2016	31 December 2017			
	0.68	3.11	4,258,796	3,994,453	58,897	2,172	1.95
0.00 to <0.15			1,486,876	1,291,254			
0.15 to <0.25			390,002	345,813			
0.25 to <0.50			368,764	308,761			
0.50 to <0.75			110,405	204,315			
0.75 to <2.50			676,968	657,708			
2.50 to <10.00			838,692	788,593			
10.00 to <100.00			275,682	319,073			
100.00 (default)			111,407	78,936			
2016							
PD Range %	Weighted average PD (prior year) %	Arithmetic average PD by obligors (prior year) %	Number of obligors		Defaulted obligors in the year	of which: new defaulted obligors in the year	Average historical annual default rate %
			31 December 2015	31 December 2016			
	0.81	3.25	4,327,822	4,258,796	93,620	2,065	2.27
0.00 to <0.15			1,316,632	1,486,876			
0.15 to <0.25			417,938	390,002			
0.25 to <0.50			375,644	368,764			
0.50 to <0.75			122,440	110,405			
0.75 to <2.50			701,454	676,968			
2.50 to <10.00			932,977	838,692			
10.00 to <100.00			334,426	275,682			
100.00 (default)			126,311	111,407			

3.3 Internal Ratings Based models continued

Table 28: IRB – Backtesting of probability of default (PD) for retail – SME (CR9)

2017							
PD Range %	Weighted average PD (prior year) %	Arithmetic average PD by obligors (prior year) %	Number of obligors		Defaulted obligors in the year	of which: new defaulted obligors in the year	Average historical annual default rate %
			31 December 2016	31 December 2017			
	1.61	2.15	7,476	9,481	770	44	2.66
0.00 to <0.15			447	424			
0.15 to <0.25			726	724			
0.25 to <0.50			73	83			
0.50 to <0.75			189	47			
0.75 to <2.50			3,803	3,700			
2.50 to <10.00			1,297	3,293			
10.00 to <100.00			766	910			
100.00 (default)			175	300			
2016							
PD Range %	Weighted average PD (prior year) %	Arithmetic average PD by obligors (prior year) %	Number of obligors		Defaulted obligors in the year	of which: new defaulted obligors in the year	Average historical annual default rate %
			31 December 2015	31 December 2016			
	1.90	2.20	10,561	7,476	1,323	64	3.01
0.00 to <0.15			492	447			
0.15 to <0.25			720	726			
0.25 to <0.50			110	73			
0.50 to <0.75			191	189			
0.75 to <2.50			5,098	3,803			
2.50 to <10.00			2,718	1,297			
10.00 to <100.00			1,035	766			
100.00 (default)			197	175			

3.3 Internal Ratings Based models continued

Table 29: IRB – Backtesting of probability of default (PD) for retail – secured by real estate property (CR9)

2017							
PD Range %	Weighted average PD (prior year) %	Arithmetic average PD by obligors (prior year) %	Number of obligors		Defaulted obligors in the year	of which: new defaulted obligors in the year	Average historical annual default rate %
			31 December 2016	31 December 2017			
	0.30	0.57	363,674	363,906	1,289	37	0.47
0.00 to <0.15			262,558	251,864			
0.15 to <0.25			32,569	43,108			
0.25 to <0.50			24,946	25,386			
0.50 to <0.75			12,418	11,948			
0.75 to <2.50			18,610	19,071			
2.50 to <10.00			5,699	5,860			
10.00 to <100.00			3,034	3,161			
100.00 (default)			3,840	3,508			
2016							
PD Range %	Weighted average PD (prior year) %	Arithmetic average PD by obligors (prior year) %	Number of obligors		Defaulted obligors in the year	of which: new defaulted obligors in the year	Average historical annual default rate %
			31 December 2015	31 December 2016			
	0.34	0.67	305,072	363,674	1,266	16	0.53
0.00 to <0.15			205,072	262,558			
0.15 to <0.25			28,450	32,569			
0.25 to <0.50			23,053	24,946			
0.50 to <0.75			13,057	12,418			
0.75 to <2.50			22,342	18,610			
2.50 to <10.00			6,289	5,699			
10.00 to <100.00			3,276	3,034			
100.00 (default)			3,533	3,840			

3.3 Internal Ratings Based models continued

Table 30: IRB – Backtesting of probability of default (PD) for retail – qualifying revolving (CR9)

2017							
PD Range %	Weighted average PD (prior year) %	Arithmetic average PD by obligors (prior year) %	Number of obligors		Defaulted obligors in the year	of which: new defaulted obligors in the year	Average historical annual default rate %
			31 December 2016	31 December 2017			
	1.29	3.52	3,300,089	3,099,167	43,869	1,789	1.87
0.00 to <0.15			1,203,817	1,017,822			
0.15 to <0.25			280,363	248,526			
0.25 to <0.50			261,669	195,125			
0.50 to <0.75			70,845	168,530			
0.75 to <2.50			508,372	467,513			
2.50 to <10.00			671,114	655,029			
10.00 to <100.00			241,615	304,563			
100.00 (default)			62,294	42,059			

2016							
PD Range %	Weighted average PD (prior year) %	Arithmetic average PD by obligors (prior year) %	Number of obligors		Defaulted obligors in the year	of which: new defaulted obligors in the year	Average historical annual default rate %
			31 December 2015	31 December 2016			
	1.44	3.40	3,366,313	3,300,089	59,977	1,555	1.97
0.00 to <0.15			1,097,553	1,203,817			
0.15 to <0.25			326,418	280,363			
0.25 to <0.50			266,916	261,669			
0.50 to <0.75			76,571	70,845			
0.75 to <2.50			520,894	508,372			
2.50 to <10.00			721,772	671,114			
10.00 to <100.00			287,002	241,615			
100.00 (default)			69,187	62,294			

3.4 Exposure values

The following tables detail the Group's EAD (including counterparty risk) before the effect of collateral but after the effect of substitution, broken down by exposure class and further split by geography, industry and maturity. For credit risk exposures, EAD is based on the current outstanding exposure and accrued interest and fees, which are recognised in the Group's balance sheet in accordance with IFRS, and a proportion of the undrawn component of the facility. The amount of the undrawn facility included is dependent on the product type and for IRB exposure classes this amount is modelled internally.

Exposure classes are presented in accordance with the CRR rules and are based on counterparty type. This differs from the product-based approach applied in the Annual Report and Accounts.

Geographical analysis is based on the residency of the counterparty. Maturity analysis is based on the residual maturity of the exposure in line with the maturity analysis in the 2017 Annual Report and Accounts on pages 142 to 143.

EAD increased by \$48.2 billion (Tables 31 to 34) mainly due to:

- IRB central governments and central banks EAD increased \$13.6 billion driven by an increase in repo exposures mainly in ASEAN and GCNA regions
- IRB institutions EAD increased \$5.9 billion due to \$11 billion of exposure increases in GCNA partially offset by decreases in exposures in Europe and Americas

→ IRB corporates EAD increased \$9.8 billion across multiple product lines, principally in GCNA and ASEAN offset by reductions in exposures in Europe and Americas

→ IRB retail exposures EAD increased \$5.3 billion mainly due to increases in residential mortgages within ASEAN and GCNA

→ Standardised institutions EAD increased \$18 billion mainly in SFTs, with consequentially small impacts on EAD post CRM and RWAs

Offset by:

→ Standardised central governments and central banks EAD decreased \$7.2 billion mainly due to reduced nostro balances in Europe and Americas

3.4 Exposure values continued

Table 31: Total and average exposure at default (CRB-B)

	2017		2016	
	EAD before the effect of CRM ¹ \$million	Average EAD before the effect of CRM ² \$million	EAD before the effect of CRM ¹ \$million	Average EAD before the effect of CRM ² \$million
IRB Exposure Class				
Central governments or central banks	139,258	133,292	125,654	133,003
Institutions	125,044	123,999	119,128	123,421
Corporates	231,617	221,639	221,817	222,438
Of which specialised lending	17,798	9,211	6,411	6,640
Of which SME	6,822	7,561	7,819	9,220
Retail	99,269	97,380	93,895	94,713
Secured by real estate collateral	71,476	69,361	66,639	66,954
Of which SME	262	257	252	281
Of which Non SME	71,214	69,104	66,387	66,673
Qualifying revolving retail	14,276	15,715	15,866	16,303
Other retail	13,517	12,304	11,390	11,456
Of which SME	1,493	1,038	875	881
Of which Non SME	12,024	11,266	10,515	10,575
Non-credit obligation assets ³	1,300	1,571	–	–
Total IRB⁴	596,488	577,881	560,495	573,574
Standardised Exposure Class				
Central governments or central banks	37,155	46,183	44,311	33,646
Multilateral development banks	13,951	14,175	14,922	16,139
Institutions	39,461	33,709	21,414	15,486
Corporates	34,611	36,324	35,352	33,314
Of which SME	14,995	14,670	13,146	14,435
Retail	13,053	12,459	11,974	12,328
Of which SME	3,093	3,071	3,049	3,179
Secured on real estate property	10,419	10,456	9,986	11,530
Of which SME	3,750	3,521	3,233	3,646
Past due items	398	363	334	317
Items belonging to regulatory high risk categories	2,044	2,454	2,614	3,021
Equity ⁵	1,818	1,557	–	–
Other items ⁶	10,324	9,921	10,157	10,181
Total Standardised	163,234	167,601	151,064	135,962
Total	759,722	745,482	711,559	709,537

1 EAD before the effect of collateral but after substitution

2 Averages are calculated using past five quarters

3 Non-credit obligation assets are excluded for 2016

4 Excludes securitisation exposures

5 Equity holdings are included under other items in 2016

6 Other items include cash, fixed assets, prepayments and accrued income

3.4 Exposure values continued

Table 32: Exposure at default by geography (CRB-C)

	2017				Period End Total \$million
	Greater China & North Asia \$million	ASEAN & South Asia \$million	Africa & Middle East \$million	Europe & Americas \$million	
IRB Exposure Class					
Central governments or central banks	71,538	24,073	15,349	28,298	139,258
Institutions	49,931	19,944	14,284	40,885	125,044
Corporates	61,161	51,809	39,045	79,602	231,617
Of which specialised lending	4,060	6,440	4,033	3,265	17,798
Of which SME	3,638	1,536	1,190	458	6,822
Retail	72,622	25,701	923	23	99,269
Secured by real estate collateral	52,204	19,272	–	–	71,476
Of which SME	22	240	–	–	262
Of which Non SME	52,182	19,032	–	–	71,214
Qualifying revolving retail	9,814	4,090	358	14	14,276
Other retail	10,604	2,339	565	9	13,517
Of which SME	738	755	–	–	1,493
Of which Non SME	9,866	1,584	565	9	12,024
Non-credit obligation assets ¹	395	352	233	320	1,300
Total IRB²	255,647	121,879	69,834	149,128	596,488
Standardised Exposure Class					
Central governments or central banks	406	3,390	643	32,716	37,155
Multilateral development banks	–	1,693	1,791	10,467	13,951
Institutions	828	3,055	75	35,503	39,461
Corporates	6,172	11,726	2,974	13,739	34,611
Of which SME	3,083	5,713	2,112	4,087	14,995
Retail	3,211	6,776	3,039	27	13,053
Of which SME	645	2,328	119	1	3,093
Secured on real estate property	3,113	3,657	2,563	1,086	10,419
Of which SME	426	1,863	406	1,055	3,750
Past due items	61	242	93	2	398
Items belonging to regulatory high risk categories	1,041	627	314	62	2,044
Equity ³	1,489	277	–	52	1,818
Other items ⁴	3,470	4,109	1,340	1,405	10,324
Total Standardised	19,791	35,552	12,832	95,059	163,234
Total⁵	275,438	157,431	82,666	244,187	759,722

1 Non-credit obligation assets are excluded for 2016

2 Excludes Securitisation exposures

3 Equity holdings are included under other items in 2016

4 Other items include cash, fixed assets, prepayments and accrued income

5 Refer to Table 31 (CRB-B) for EAD before the effect of CRM

3.4 Exposure values continued

Table 32: Exposure at default by geography (CRB-C) continued

	2016 ¹				
	Greater China & North Asia \$million	ASEAN & South Asia \$million	Africa & Middle East \$million	Europe & Americas \$million	Period End Total \$million
IRB Exposure Class					
Central governments or central banks	64,233	20,165	12,334	28,922	125,654
Institutions	36,986	20,966	15,534	45,642	119,128
Corporates	48,018	46,917	37,806	89,076	221,817
Of which specialised lending	1,044	2,114	2,454	799	6,411
Of which SME	4,042	1,601	1,102	1,074	7,819
Retail	69,497	23,239	1,153	7	93,896
Secured by real estate collateral	49,414	17,225	–	–	66,639
Of which SME	21	231	–	–	252
Of which Non SME	49,393	16,994	–	–	66,387
Qualifying revolving retail	11,050	4,239	578	–	15,867
Other retail	9,033	1,775	575	7	11,390
Of which SME	610	265	–	–	875
Of which Non SME	8,423	1,510	575	7	10,515
Total IRB²	218,734	111,287	66,827	163,647	560,495
Standardised Exposure Class					
Central governments or central banks	295	4,111	460	39,445	44,311
Multilateral development banks	–	1,967	1,671	11,284	14,922
Institutions	424	1,445	66	19,479	21,414
Corporates	5,404	11,418	2,686	15,844	35,352
Of which SME	2,251	5,108	1,755	4,032	13,146
Retail	2,833	6,230	2,880	31	11,974
Of which SME	689	2,244	116	–	3,049
Secured on real estate property	3,042	3,858	2,320	766	9,986
Of which SME	486	1,775	334	638	3,233
Past due items	78	129	65	62	334
Items belonging to regulatory high risk categories	1,040	1,130	363	81	2,614
Other items ³	4,467	2,910	1,242	1,538	10,157
Total Standardised	17,583	33,198	11,753	88,530	151,064
Total	236,317	144,485	78,580	252,177	711,559

1 The 2016 comparatives were re-presented to use the residency of the counterparty (previously booking location) to align with the requirements of the EBA guidelines (EBA/GL/2016/11)

2 Excludes Securitisation exposures and Non-credit obligation assets

3 Other items include cash, fixed assets, prepayments and accrued income and equity

3.4 Exposure values continued

Table 33: Exposure at default by industry (CRB-D)

	2017										
	Loans to Individuals Mortgage \$million	Loans to Individuals Other \$million	SME \$million	Comm- erce \$million	Manufac- turing \$million	Commer- cial Real Estate \$million	Govern- ment \$million	Financing Insurance & Business Services \$million	Transport & Storage & Communi- cation \$million	Other \$million	Total \$million
IRB Exposure Class											
Central governments or central banks	–	–	–	–	102	348	132,407	6,307	94	–	139,258
Institutions	–	–	–	152	–	9	2,924	121,884	75	–	125,044
Corporates	–	14	7,517	30,686	50,836	12,475	1,094	82,900	13,828	32,267	231,617
Of which specialised lending	–	–	694	7,105	823	1,503	–	528	2,914	4,231	17,798
Of which SME	–	–	6,822	–	–	–	–	–	–	–	6,822
Retail	71,214	26,300	1,755	–	–	–	–	–	–	–	99,269
Secured by real estate collateral	71,214	–	262	–	–	–	–	–	–	–	71,476
Of which SME	–	–	262	–	–	–	–	–	–	–	262
Of which Non SME	71,214	–	–	–	–	–	–	–	–	–	71,214
Qualifying revolving retail	–	14,276	–	–	–	–	–	–	–	–	14,276
Other retail	–	12,024	1,493	–	–	–	–	–	–	–	13,517
Of which SME	–	–	1,493	–	–	–	–	–	–	–	1,493
Of which Non SME	–	12,024	–	–	–	–	–	–	–	–	12,024
Non-credit obligation assets ¹	–	–	–	6	–	–	–	–	1,275	19	1,300
Total IRB²	71,214	26,314	9,272	30,844	50,938	12,832	136,425	211,091	15,272	32,286	596,488
Standardised Exposure Class											
Central governments or central banks	–	–	–	–	–	–	28,551	1,965	–	6,639	37,155
Multilateral development banks	–	–	–	–	–	–	568	4,512	–	8,871	13,951
Institutions	–	–	–	–	–	–	–	38,032	–	1,429	39,461
Corporates	–	2	14,995	914	1,413	469	9	12,326	324	4,159	34,611
Of which SME	–	–	14,995	–	–	–	–	–	–	–	14,995
Retail	–	9,960	3,093	–	–	–	–	–	–	–	13,053
Of which SME	–	–	3,093	–	–	–	–	–	–	–	3,093
Secured on real estate property	5,910	–	3,750	77	50	76	–	29	3	524	10,419
Of which SME	–	–	3,750	–	–	–	–	–	–	–	3,750
Past due items	46	104	203	8	9	–	–	2	1	25	398
Items belonging to regulatory high risk categories	6	150	163	156	136	456	–	282	161	534	2,044
Equity ³	–	–	–	–	–	–	–	–	–	1,818	1,818
Other items ⁴	–	1	–	–	–	32	–	107	–	10,184	10,324
Total Standardised	5,962	10,217	22,204	1,155	1,608	1,033	29,128	57,255	489	34,183	163,234
Total⁵	77,176	36,531	31,476	31,999	52,546	13,865	165,553	268,346	15,761	66,469	759,722

1 Non-credit obligation assets are excluded for 2016

2 Excludes Securitisation exposures

3 Equity holdings are included in other items in 2016

4 Other items include cash, fixed assets, prepayments and accrued income

5 Refer to Table 31 (CRB-B) for EAD before the effect of CRM

3.4 Exposure values continued

Table 33: Exposure at default by industry (CRB-D) continued

	2016										
	Loans to Individuals Mortgage \$million	Loans to Individuals Other \$million	SME \$million	Comm- erce \$million	Manu- facturing \$million	Commer- cial Real Estate \$million	Govern- ment \$million	Financing Insurance & Business Services \$million	Transport & Storage & Communi- cation \$million	Other \$million	Total \$million
IRB Exposure Class											
Central governments or central banks	–	–	–	–	–	–	121,219	3,988	83	364	125,654
Institutions	–	–	–	–	21	–	204	118,903	–	–	119,128
Corporates	–	15	8,281	28,177	46,160	8,776	576	75,043	13,161	41,628	221,817
Of which specialised lending	–	–	462	320	424	684	–	21	839	3,661	6,411
Of which SME	–	–	7,819	–	–	–	–	–	–	–	7,819
Retail	66,387	26,382	1,127	–	–	–	–	–	–	–	93,896
Secured by real estate collateral	66,387	–	252	–	–	–	–	–	–	–	66,639
Of which SME	–	–	252	–	–	–	–	–	–	–	252
Of which Non SME	66,387	–	–	–	–	–	–	–	–	–	66,387
Qualifying revolving retail	–	15,867	–	–	–	–	–	–	–	–	15,867
Other retail	–	10,515	875	–	–	–	–	–	–	–	11,390
Of which SME	–	–	875	–	–	–	–	–	–	–	875
Of which Non SME	–	10,515	–	–	–	–	–	–	–	–	10,515
Total IRB¹	66,387	26,397	9,408	28,177	46,181	8,776	121,999	197,934	13,244	41,992	560,495
Standardised Exposure Class											
Central governments or central banks	–	–	–	36	–	–	36,490	1,691	–	6,094	44,311
Multilateral development banks	–	–	–	–	–	–	390	4,301	–	10,231	14,922
Institutions	–	–	–	–	–	–	–	20,758	–	656	21,414
Corporates	–	3	13,146	1,292	1,154	725	4	13,115	1,192	4,721	35,352
Of which SME	–	–	13,146	–	–	–	–	–	–	–	13,146
Retail	–	8,925	3,049	–	–	–	–	–	–	–	11,974
Of which SME	–	–	3,049	–	–	–	–	–	–	–	3,049
Secured on real estate property	6,333	1	3,233	79	28	66	–	7	2	237	9,986
Of which SME	–	–	3,233	–	–	–	–	–	–	–	3,233
Past due items	65	105	73	9	11	2	–	2	–	67	334
Items belonging to regulatory high risk categories	9	145	469	260	156	407	–	313	190	665	2,614
Other items ²	–	–	45	–	11	56	–	38	–	10,007	10,157
Total Standardised	6,407	9,179	20,015	1,676	1,360	1,256	36,884	40,225	1,384	32,678	151,064
Total	72,794	35,576	29,423	29,853	47,541	10,032	158,883	238,159	14,628	74,670	711,559

1 Excludes Securitisation exposures and Non-credit obligation assets

2 Other items include cash, fixed assets, prepayments and accrued income and equity

3.4 Exposure values continued

Maturity analysis

The table below shows the Group's exposure on a residual maturity basis. This is consistent with the maturity analysis in the Annual Report and Accounts on page 142 which is based on accounting balances. Approximately 67 per cent (2016: 65 per cent) of the Group's exposure is short term, having residual maturity of one year or less. The portfolio of central government or central banks, institutions and corporates is predominantly short term with 76 per cent (2016: 75 per cent) of EAD having a residual maturity of one year or less. In Retail, the longer maturity profile of the IRB portfolio is driven by the mortgage book which makes up 72 per cent (2016: 71 per cent) of the portfolio and is traditionally longer term in nature and well secured. Whilst the Other and SME loans in Retail have short contractual maturities, typically they can be renewed and repaid over longer terms in the normal course of business.

Table 34: Exposure at default by maturity (CRB-E)

	2017			
	On demand and one year or less \$million	One to five years \$million	Over five years \$million	Total \$million
IRB Exposure Class				
Central governments or central banks	109,420	28,547	1,291	139,258
Institutions	105,701	16,826	2,517	125,044
Corporates	160,738	55,558	15,321	231,617
Of which specialised lending	7,308	4,807	5,683	17,798
Of which SME	4,745	1,249	828	6,822
Retail	9,620	19,509	70,140	99,269
Secured by real estate collateral	1,319	1,033	69,124	71,476
Of which SME	27	9	226	262
Of which Non SME	1,292	1,024	68,898	71,214
Qualifying revolving retail	1,910	12,028	338	14,276
Other retail	6,391	6,448	678	13,517
Of which SME	788	579	126	1,493
Of which Non SME	5,603	5,869	552	12,024
Non-credit obligation assets ¹	531	481	288	1,300
Total IRB²	386,010	120,921	89,557	596,488
Standardised Exposure Class				
Central governments or central banks	30,167	4,433	2,555	37,155
Multilateral development banks	3,092	9,307	1,552	13,951
Institutions	34,778	3,062	1,621	39,461
Corporates	30,841	2,093	1,677	34,611
Of which SME	13,428	672	895	14,995
Retail	5,807	4,289	2,957	13,053
Of which SME	876	1,089	1,128	3,093
Secured on real estate property	2,661	721	7,037	10,419
Of which SME	2,369	321	1,060	3,750
Past due items	215	41	142	398
Items belonging to regulatory high risk categories	1,827	116	101	2,044
Equity ³	–	–	1,818	1,818
Other items ⁴	10,221	77	26	10,324
Total Standardised	119,609	24,139	19,486	163,234
Total⁵	505,619	145,060	109,043	759,722

1 Non-credit obligation assets are excluded for 2016

2 Excludes Securitisation exposures

3 Equity holdings are included under other items in 2016

4 Other items include cash, fixed assets, prepayments and accrued income

5 Refer to Table 31 (CRB-B) EAD before the effect of CRM

3.4 Exposure values continued

Table 34: Exposure at default by maturity (CRB-E) continued

	2016			
	On demand and one year or less \$million	One to five years \$million	Over five years \$million	Total \$million
IRB Exposure Class				
Central governments or central banks	93,577	28,752	3,325	125,654
Institutions	99,771	16,491	2,866	119,128
Corporates	156,302	51,666	13,849	221,817
Of which specialised lending	525	2,414	3,472	6,411
Of which SME	4,961	1,895	963	7,819
Retail	8,392	20,247	65,258	93,896
Secured by real estate collateral	1,593	995	64,052	66,639
Of which SME	24	9	219	252
Of which Non SME	1,569	986	63,832	66,387
Qualifying revolving retail	2,132	13,117	618	15,867
Other retail	4,667	6,135	588	11,390
Of which SME	275	492	108	875
Of which Non SME	4,392	5,643	480	10,515
Total IRB¹	358,042	117,156	85,299	560,495
Standardised Exposure Class				
Central governments or central banks	38,163	3,588	2,560	44,311
Multilateral development banks	3,312	10,575	1,035	14,922
Institutions	18,163	1,729	1,522	21,414
Corporates	30,067	2,117	3,168	35,352
Of which SME	11,004	568	1,574	13,146
Retail	4,787	4,401	2,786	11,974
Of which SME	820	1,155	1,074	3,049
Secured on real estate property	1,776	665	7,545	9,986
Of which SME	1,537	313	1,383	3,233
Past due items	43	142	149	334
Items belonging to regulatory high risk categories	2,366	103	145	2,614
Other items ²	8,745	28	1,384	10,157
Total Standardised	107,422	23,348	20,294	151,064
Total	465,464	140,504	105,592	711,559

1 Excludes Securitisation exposures and Non-credit obligation assets

2 Other items include cash, fixed assets, prepayments and accrued income and equity

3.4 Exposure values continued

Credit quality of exposures

Tables 35 to 37 break down defaulted and non-defaulted exposures by exposure class, as defined in the CRR, and by industry and geography. Exposure values presented in the tables are before the impact of Credit Conversion Factors (CCF) and funded Credit Risk Mitigation (CRM) but after substitution.

All Standard Chartered accounting provisions are categorised as specific credit risk adjustments according to the EBA RTS on specification of the calculation of specific and general credit risk adjustments (EBA/RTS/2013/04). The column for general credit risk adjustments as included in the prescribed templates of the EBA disclosure guidelines has therefore been removed. Net values equate to EAD after deduction of specific credit risk adjustments.

Values in Tables 38 to 41 are gross carrying values in accordance with IFRS. Tables 38 to 41 depict past-due exposures, broken down by past-due bands and provide further information on non-performing and forborne exposures.

The 2017 Annual Report and Accounts pages 125 to 137 provide additional information on credit quality analysis.

Table 35: Credit quality of exposures by exposure class and instruments (CR1-A)

	2017				
	EAD before the effect of CCF & CRM ¹		Specific credit risk adjustment \$million	Of which Credit risk adjustment changes in the period \$million	Net values \$million
	Defaulted exposures \$million	Non-defaulted exposures \$million			
IRB Exposure Class					
Central governments or central banks	–	310,851	–	–	310,851
Institutions	51	256,889	3	2	256,937
Corporates	10,579	403,087	4,616	1,142	409,050
Of which specialised lending	1,080	30,022	585	25	30,517
Of which SME	706	9,363	241	180	9,828
Retail	630	114,915	73	49	115,472
Secured by real estate collateral	205	71,289	34	21	71,460
Of which SME	3	263	–	–	266
Of which Non SME	202	71,026	34	21	71,194
Qualifying revolving retail	154	27,845	1	1	27,998
Other retail	271	15,781	38	27	16,014
Of which SME	76	2,223	20	16	2,279
Of which Non SME	195	13,558	18	11	13,735
Non-credit obligation assets	48	1,252	–	–	1,300
Total IRB²	11,308	1,086,994	4,692	1,193	1,093,610
Standardised Exposure Class					
Central governments or central banks	–	112,244	–	–	112,244
Multilateral development banks	–	21,122	–	–	21,122
Institutions	–	40,747	–	–	40,747
Corporates	828	60,440	1,126	467	60,142
Of which SME	364	36,506	189	125	36,681
Retail	272	21,045	163	113	21,154
Of which SME	79	4,537	56	36	4,560
Secured on real estate property	105	10,840	53	32	10,892
Of which SME	17	3,949	8	3	3,958
Items belonging to regulatory high risk categories	693	1,658	22	9	2,329
Equity	–	1,818	–	–	1,818
Other items ³	–	10,422	–	–	10,422
Total Standardised	1,898	280,336	1,364	621	280,870
Of which past due items	1,898	–	821	602	1,077
Total⁴	13,206	1,367,330	6,056	1,814	1,374,480
Of which Loans	9,401	292,542	5,674	1,815	296,269
Of which Debt securities	450	107,983	201	19	108,232
Of which Off-balance-sheet exposures	2,777	697,489	110	(23)	700,156

1 EAD before the effect of credit conversion factor and collateral but after substitution

2 Excludes Securitisation exposures

3 Other items include cash, fixed assets, prepayments and accrued income

4 Amount written off during the year is \$2,247 million

3.4 Exposure values continued

Table 36: Credit quality of exposures by industry types (CR1-B)

	2017				
	EAD before the effect of CCF & CRM ¹			Of which Credit risk adjustment changes in the period \$million	Net values \$million
	Defaulted exposures \$million	Non-defaulted exposures \$million	Specific credit risk adjustment \$million		
Loans to individuals mortgage	290	77,129	75	48	77,344
Loans to individuals other	746	58,069	137	88	58,678
SME	1,607	57,656	532	414	58,731
Commerce	1,540	67,522	1,014	183	68,048
Manufacturing	3,159	105,610	1,846	327	106,923
Commercial real estate	544	18,260	12	7	18,792
Government	4	412,307	–	–	412,311
Financing Insurance and business services	1,055	448,638	208	88	449,485
Transport, storage and communication	980	27,739	450	200	28,269
Other	3,281	94,400	1,782	459	95,899
Total^{2,3}	13,206	1,367,330	6,056	1,814	1,374,480

1 EAD before the effect of credit conversion factor and collateral but after substitution

2 Refer to Table 35 (CR1-A) for Total Net Values

3 Amount written off during the year is \$2,247 million

Table 37: Credit quality of exposures by geography (CR1-C)

	2017				
	EAD before the effect of CCF & CRM ¹			Of which Credit risk adjustment changes in the period \$million	Net values \$million
	Defaulted exposures \$million	Non-defaulted exposures \$million	Specific credit risk adjustment \$million		
Greater China and North Asia	1,467	466,838	415	140	467,890
ASEAN and South Asia	5,699	270,746	3,168	1,051	273,277
Africa and Middle East	4,744	142,822	1,970	395	145,596
Europe and Americas	1,296	486,924	503	228	487,717
Total^{2,3}	13,206	1,367,330	6,056	1,814	1,374,480

1 EAD before the effect of credit conversion factor and collateral but after substitution

2 Refer to Table 35 (CR1-A) for Total Net Values

3 Amount written off during the year is \$2,247 million

Table 38: Aging of past-due exposures (CR1-D)

	2017					
	Gross carrying values					
	≤ 30 days \$million	> 30 days ≤ 60 days \$million	> 60 days ≤ 90 days \$million	> 90 days ≤ 180 days \$million	> 180 days ≤ 1 year \$million	> 1 year \$million
Loans	3,414	424	4,243	851	5,921	151
Debt securities	–	–	459	–	2	–
Total	3,414	424	4,702	851	5,923	151

3.4 Exposure values continued

Table 39: Non-performing and forborne exposures (CR1-E)

	2017												
	Gross carrying values 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 defaulted	Of which impaired	Of which forborne	Of which forborne	Of which forborne	Of which forborne	Of which forborne				
\$million	\$million	\$million	\$million	\$million	\$million	\$million	\$million	\$million	\$million	\$million	\$million		
Loans and advances	379,578	722	1,013	10,867	10,867	10,670	3,468	(467)	(9)	(5,868)	(1,789)	2,763	916
Debt securities	119,167	–	–	461	461	354	2	–	–	(378)	–	–	–
Off-balance sheet exposures	225,344	N/A	–	514	482	N/A	–	–	–	83	–	–	–

Table 40: Changes in the stock of general and specific credit risk adjustments (CR2-A)

	2017	
	Accumulated specific credit risk adjustment \$million	Accumulated general credit risk adjustment \$million
Opening balance	7,043	737
Increases due to amounts set aside for estimated loan losses during the period	2,338	64
Decreases due to amounts reversed for estimated loan losses during the period	(950)	(9)
Decreases due to amounts taken against accumulated credit risk adjustments	(1,756)	(296)
Transfers between credit risk adjustments	(189)	–
Impact of exchange rate differences	–	–
Business combinations, including acquisitions and disposals of subsidiaries	–	–
Other adjustments	(287)	18
Closing balance	6,199	514
Recoveries on credit risk adjustments recorded directly to the statement of profit or loss	(652)	(296)
Specific credit risk adjustments directly recorded to the statement of profit or loss	2,257	57

Table 41: Changes in the stock of defaulted and impaired loans and debt securities (CR2-B)

	2017
	Gross carrying value of defaulted exposures \$million
Opening balance	11,342
Loans and debt securities that have defaulted or impaired since the last reporting period	3,181
Returned to non-defaulted status	(55)
Amounts written off	(2,247)
Other changes	(1,933)
Closing balance	10,288

3.5 Regulatory expected loss vs. impairment charge

Details of impaired exposures, individual impairment provision and portfolio impairment provision are set out in the Risk profile section of the 2017 Annual Report and Accounts on pages 133 to 137.

The table below compares the regulatory expected loss at 1 January 2017 against the net impairment charge in the 2017 Annual Report and Account, for the IRB portfolio.

Regulatory expected loss is based on a through-the-cycle methodology using risk parameters and observations over a period of time. It is a conservative and appropriately prudent calculation underpinning regulatory capital requirements, but does not take account of any benefit from management actions to reduce exposures to riskier customers, clients or segments as conditions deteriorate.

Regulatory expected loss therefore bears little resemblance to impairment as defined for

accounting purposes. This is illustrated by the table below which shows expected loss consistently higher than impairment.

The net individual impairment charge is a point in time actual charge raised in accordance with accounting standards that require the Group to either provide for or write-off debts when certain conditions are met as described in the problem credit management and provisioning section of the Risk profile section of the 2017 Annual Report and Accounts on pages 133 to 137.

Table 42: Regulatory expected loss

	1 January 2017	31 December 2017	1 January 2016	31 December 2016
	Regulatory expected loss \$million	Net impairment charge ¹ \$million	Regulatory expected loss \$million	Net impairment charge ¹ \$million
IRB Exposure Class				
Central governments or central banks	90	–	93	–
Institutions	236	2	228	79
Corporates	5,647	1,142	5,929	2,298
Retail, of which	785	49	971	89
Secured by real estate collateral	51	21	49	21
Qualifying revolving retail	292	1	335	18
Retail SME	27	16	34	9
Other retail	415	11	553	41
Total IRB	6,758	1,193	7,221	2,467

¹ Net impairment charge includes individual impairment charge

Expected loss reduced by \$0.5 billion reflecting the changes to the Group's risk profile. Impairment charges reduced by \$1.3 billion, or 53 per cent, as a result of actions taken by the Group to meet the target risk profile.

3.6 Risk grade profile

Exposures by internal credit grading

For CIB and CB IRB portfolios an alphanumeric credit risk-grading system is used. The grading is based on the Group's internal estimate of probability of default over a one-year horizon, with customers or portfolios assessed against a range of quantitative and qualitative factors. The numeric grades run from 1 to 14 and some of the grades are further sub-classified. Numerically lower credit grades are indicative of a lower likelihood of default. Credit grades 1 to 12 are assigned to performing customers and credit grades 13 and 14 are assigned to non-performing or defaulted customers. The Group's credit grades in CIB and CB are not intended to replicate external credit grades, and ratings assigned by external credit assessment institutions (ECAI) are not used in determining internal credit grades.

Nonetheless, as the factors used to grade a borrower may be similar, a borrower rated poorly by an ECAI is typically expected to be assigned a weak internal credit grade.

For Retail exposures, models generate individual PDs which are used to estimate RWA and an alphanumeric credit risk-grading system is used only for reporting purposes.

IRB models cover a substantial majority of the Group's exposures and are used extensively in assessing risks at customer and portfolio level, setting strategy and optimising the Group's risk-return decisions.

The Group makes use of internal risk estimates of PD, LGD and EAD in the areas of:

→ Credit Approval and Decision – The level of authority required for the sanctioning of credit requests and the decision made is based on a combination of PD, LGD and EAD of the obligor with reference to the nominal exposure

→ Pricing – In CIB and CB, a pre-deal pricing calculator, which takes into consideration PD, LGD and EAD in the calculation of expected loss and risk-weighted assets, is used for the proposed transactions to ensure appropriate returns. In Retail, a standard approach to risk-return assessment is used to assess the risk using PD, LGD and EAD against the expected income for pricing and risk decisions

→ Limit Setting – In CIB and CB, single name concentration limits are determined by PD, LGD and EAD. The limits operate on a sliding scale to ensure that the Group does not have an excessive concentration of low credit quality assets. In Retail, the estimates of PD, LGD and EAD are used in the credit underwriting and portfolio management actions such as credit line increase/decrease and top-up for instalment loans

→ Provisioning – Portfolio Impairment Provisions (PIP) are raised at the portfolio level and are set with reference to expected loss which is based on PD, LGD and EAD

3.6 Risk grade profile continued

Table 43: Exposure weighted average PD% and LGD% by geography

	2017				Total %
	Greater China & North Asia ¹ %	ASEAN & South Asia ¹ %	Africa & Middle East ¹ %	Europe & America ¹ %	
Exposure weighted average PD%					
Central governments or central banks	0.02	0.13	1.42	–	0.19
Institutions	0.06	0.29	0.60	0.14	0.18
Corporates	1.97	8.66	8.69	1.31	4.36
Of which Specialised lending	5.14	7.31	14.02	1.08	7.24
Of which SME	5.97	14.68	20.82	0.58	10.16
Retail	0.85	2.71	7.69	2.27	1.40
Of which secured by real estate property	0.32	1.46	–	–	0.62
Of which qualifying revolving retail	1.08	5.83	7.66	0.81	2.60
Of which SME	4.67	9.83	–	–	7.28
Total IRB	0.73	4.30	5.41	0.74	2.00
Exposure weighted average LGD%					
Central governments or central banks	42	43	43	46	43
Institutions	41	35	36	28	35
Corporates	38	39	36	32	36
Of which Specialised lending	27	37	32	36	34
Of which SME	24	41	46	63	34
Retail	32	29	91	92	32
Of which secured by real estate property	11	14	–	–	12
Of which qualifying revolving retail	88	75	85	90	84
Of which SME	78	46	36	–	62
Total IRB	38	37	38	34	37
	2016				Total %
	Greater China & North Asia ¹ %	ASEAN & South Asia ¹ %	Africa & Middle East ¹ %	Europe & America ¹ %	
Exposure weighted average PD%					
Central governments or central banks	0.02	0.13	1.11	0.03	0.16
Institutions	0.08	1.12	1.38	0.25	0.39
Corporates	2.80	8.46	12.26	2.89	4.90
Of which Specialised lending	0.67	23.49	0.90	5.17	7.52
Of which SME	5.47	12.88	30.20	5.02	9.87
Retail	0.95	2.75	6.88	–	1.47
Of which secured by real estate property	0.35	1.36	–	–	0.61
Of which qualifying revolving retail	1.10	5.59	7.54	–	2.53
Of which SME	4.47	6.87	–	–	5.20
Total IRB	0.94	4.18	7.15	1.70	2.30
Exposure weighted average LGD%					
Central governments or central banks	45	46	46	42	45
Institutions	25	26	31	19	23
Corporates	37	40	43	32	36
Of which Specialised lending	19	33	25	28	27
Of which SME	25	42	41	61	36
Retail	33	31	97	–	34
Of which secured by real estate property	12	15	–	–	12
Of which qualifying revolving retail	90	77	100	–	87
Of which SME	80	66	–	–	76
Total IRB	36	37	44	30	35

¹ The regional split is based on the residence of the counterparty

Institutions exposure weighted LGD increased to 35 per cent in 2017 due to PRA approved IRB model changes in relating to LGD floors.

3.6 Risk grade profile continued

Table 44 sets out credit and counterparty risk EAD within the IRB portfolios by regulatory exposure classes. EAD has been calculated after taking into account the impact of credit risk mitigation. Where an exposure is guaranteed or covered by credit derivatives, it is shown against the exposure class of the guarantor or derivative issuer. A further split of the major exposure classes by credit grade can be seen in Tables 46 to 54.

IRB credit risk excluding counterparty credit risk EAD increased by \$21.5 billion and RWAs increased by \$12.3 billion (Tables 44 to 54):

- Central governments and central banks EAD increased \$3.1 billion and RWA increased by \$2 billion driven by an increase in bills exposures mainly in GCNA
- Institutions EAD increased \$4.9 billion due to increase in bond and trade exposures in GCNA partially offset by decreases in exposures in Europe and Americas. RWAs increased \$6 billion due to PRA approved IRB model changes relating to LGD floors

- IRB corporates EAD increased \$7.5 billion and RWA increased \$2.8 billion across multiple product lines, principally in GCNA and ASEAN offset by reductions in exposures in Europe and Americas
- IRB retail exposures EAD increased \$5.4 billion and RWA increased \$1.8 billion mainly due to increases in residential mortgages within ASEAN and GCNA

Table 44: IRB – Credit risk exposure by exposure class

2017												
IRB Exposure Class	Original on-balance sheet gross exposure \$million	Off-balance sheet exposure pre CCF \$million	Average CCF %	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ² thousands	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %	EL \$million	Value adjustments and provisions \$million
Central governments or central banks	118,102	172,582	1	122,098	0.21	–	47	497	20,655	17	117	–
Institutions	71,836	138,296	5	78,420	0.23	2	44	318	19,309	25	74	3
Corporates	116,510	235,187	22	167,640	5.90	51	42	548	94,348	56	5,005	4,726
Of which specialised lending ³	16,150	16,679	18	16,119	7.89	1	33	837	9,823	61	638	585
Of which SME	5,983	4,312	24	6,276	11.01	36	31	541	3,858	61	275	241
Retail	82,621	32,934	51	99,269	1.40	3,994	32		20,990	21	714	73
Of which secured by real estate	69,334	2,162	99	71,476	0.62	364	12		4,953	7	57	34
– SME	259	10	59	262	3.38	1	–		–	–	–	–
– Non SME	69,075	2,152	99	71,214	0.61	363	12		4,953	7	57	34
Of which qualifying revolving retail	3,210	24,788	45	14,276	2.60	3,099	84		4,339	30	254	1
Of which other retail	10,077	5,984	58	13,517	4.21	531	80		11,698	87	403	38
– SME	1,457	851	5	1,493	7.28	9	62		1,020	68	47	20
– Non SME	8,620	5,133	66	12,024	3.83	522	82		10,678	89	356	18
Non-credit obligation assets	1,300	–	–	1,300	–				1,300	100		–
Total IRB⁴	390,369	578,999	13	468,727	2.49	4,047	41	382	156,602	33	5,910	4,802

¹ Weighted averages are based on exposure at default

² Number of obligors is based on number of counterparties for central governments or central banks, institutions and corporates and on individual pools of clients for retail

³ Includes exposures for specialised lending subject to supervisory slotting criteria

⁴ Refer to Table 12 (OV1) for RWA

3.6 Risk grade profile continued

Table 44: IRB – Credit risk exposure by exposure class continued

2016												
	Original on-balance sheet gross exposure \$million	Off-balance sheet exposure pre CCF \$million	Average CCF %	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ² thousands	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %	EL \$million	Value adjustments and provisions \$million
IRB Exposure Class												
Central governments or central banks	113,047	176,993	1	118,962	0.16	–	46	515	18,577	16	89	–
Institutions	66,688	197,754	3	73,447	0.56	2	28	330	14,177	19	228	169
Corporates	112,797	235,285	21	160,129	11.03	61	33	574	91,573	57	5,576	5,221
Of which specialised lending ³	6,304	2,644	27	5,272	9.18	–	28	1,326	3,815	72	195	152
Of which SME	6,358	4,947	25	6,968	11.03	45	33	574	4,499	65	304	288
Retail	75,734	31,205	58	93,895	1.47	4,257	34		19,202	20	785	64
Of which secured by real estate	64,220	2,450	99	66,639	0.61	365	12		4,467	7	51	29
– SME	250	6	64	252	2.86	1	–		–	–	–	–
– Non SME	63,970	2,444	99	66,387	0.60	364	13		4,467	7	51	29
Of which qualifying revolving retail	3,242	23,589	54	15,866	2.53	3,301	87		4,907	31	292	3
Of which other retail	8,272	5,166	60	11,390	5.05	591	83		9,828	86	442	32
– SME	855	404	6	875	5.20	5	76		593	68	27	15
– Non SME	7,417	4,762	65	10,515	5.03	568	84		9,235	88	415	17
Non-credit obligation assets	788	–	–	788	–				788	100		–
Total IRB	369,054	641,237	12	447,221	2.84	4,320	39	379	144,317	32	6,678	5,454

1 Weighted averages are based on exposure at default

2 Number of obligors is based on number of counterparties for central governments or central banks, institutions and corporates and on individual pools of clients for retail

3 Includes exposures for specialised lending subject to supervisory slotting criteria

3.6 Risk grade profile continued

The table below demonstrates Standard Chartered's internal ratings and its approximate relation to external credit ratings.

Tables 46 to 54 and tables 67 to 71 provide further detail on the exposure classes subject to credit and counterparty credit risk, in particular for central governments or central banks, institutions, corporates and retail. These have been split by internal credit grade which relate to the PD ranges presented. These exposure classes represent 79 per cent (2016: 79 per cent) of the Group's total credit risk exposure before collateral.

Table 45: Internal default grade probabilities and mapping to external ratings

Internal ratings	PD range (%)	Standard & Poor's external rating equivalent for sovereigns and institutions	Standard & Poor's external rating equivalent for corporates
1A	0.000 – 0.015	AAA/AA+	AAA/AA+
1B	0.016 – 0.025	AA	AA
2A	0.026 – 0.035	AA-	AA/AA-
2B	0.036 – 0.045	A+	AA-
3A	0.046 – 0.060	A	A+
3B	0.061 – 0.083	A-/BBB+	A
4A	0.084 – 0.110	BBB	A-
4B	0.111 – 0.170	BBB/BBB-	BBB+
5A	0.171 – 0.300	BBB-	BBB
5B	0.301 – 0.425	BB+	BBB-/BB+
6A	0.426 – 0.585	BB+/BB	BB+/BB
6B	0.586 – 0.770	BB	BB
7A	0.771 – 1.020	BB/BB-	BB/BB-
7B	1.021 – 1.350	BB-	BB-
8A	1.351 – 1.750	BB-/B+	BB-/B+
8B	1.751 – 2.350	B+	B+
9A	2.351 – 3.050	B	B+
9B	3.051 – 4.000	B/B-	B+/B
10A	4.001 – 5.300	B-	B
10B	5.301 – 7.000	B-	B/B-
11A/B/C	7.001 – 15.750	B-/CCC/C	B-/CCC/C
12A/B/C	15.751 – 99.999	CCC/C	CCC/C
13	100	N/A	N/A
14	100	N/A	N/A
Unrated		N/A	N/A

3.6 Risk grade profile continued

Table 46: IRB credit risk exposure by internal PD grade for central governments or central banks (CR6)

2017												
PD range %	Original on-balance sheet exposure \$million	Off-balance sheet exposure pre CCF \$million	Average CCF %	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ² thousands	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %	Expected Loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	101,220	146,058	2	105,471	0.02	147	47	495	7,600	7	9	
0.15 to <0.25	6,104	8,076	–	6,133	0.22	14	46	657	2,680	44	6	
0.25 to <0.50	246	2,572	–	396	0.39	11	46	786	251	63	1	
0.50 to <0.75	1,030	–	–	1,030	0.67	5	46	416	712	69	3	
0.75 to <2.50	8,501	14,460	1	8,061	1.45	65	47	402	7,575	94	54	
2.50 to <10.00	482	819	1	485	4.89	21	46	393	693	143	11	
10.00 to <100.00	519	597	–	522	13.77	11	46	395	1,144	219	33	
100.00 (default)	–	–	–	–	–	–	–	–	–	–	–	
Total	118,102	172,582	1	122,098	0.21	274	47	497	20,655	17	117	–
2016												
PD range %	Original on-balance sheet exposure \$million	Off-balance sheet exposure pre CCF \$million	Average CCF %	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ² thousands	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %	Expected Loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	98,605	155,656	1	104,112	0.02	239	46	511	7,640	7	9	
0.15 to <0.25	5,864	5,158	1	6,211	0.22	16	46	757	2,869	46	6	
0.25 to <0.50	350	4,866	–	350	0.39	14	46	370	175	50	1	
0.50 to <0.75	1,026	–	–	1,026	0.67	5	46	451	718	70	3	
0.75 to <2.50	6,599	10,041	1	6,645	1.48	63	46	384	6,092	92	45	
2.50 to <10.00	342	909	1	356	5.16	25	46	363	511	143	8	
10.00 to <100.00	261	363	–	262	13.77	8	46	373	572	218	17	
100.00 (default)	–	–	–	–	–	–	–	–	–	–	–	
Total	113,047	176,993	1	118,962	0.16	370	46	515	18,577	16	89	–

1 Weighted averages are based on exposure at default

2 Number of obligors is based on the number of counterparties within each PD grade

3.6 Risk grade profile continued

Table 47: IRB credit risk exposure by internal PD grade for institutions (CR6)

2017												
PD range %	Original on-balance sheet exposure \$million	Off-balance sheet exposure pre CCF \$million	Average CCF %	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ² thousands	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %	Expected Loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	53,259	102,704	4	61,592	0.04	730	45	340	8,015	13	12	
0.15 to <0.25	3,740	9,376	4	4,103	0.22	130	43	362	1,792	44	4	
0.25 to <0.50	8,078	11,747	3	6,496	0.42	187	42	222	3,651	56	12	
0.50 to <0.75	1,395	2,072	4	1,253	0.69	52	31	227	650	52	3	
0.75 to <2.50	4,890	11,444	12	4,554	1.58	430	44	147	4,753	104	32	
2.50 to <10.00	402	680	7	365	3.94	56	24	246	295	81	4	
10.00 to <100.00	69	268	5	53	28.79	46	42	286	153	287	4	
100.00 (default)	3	5	8	4	100.00	4	46	1	–	–	3	
Total	71,836	138,296	5	78,420	0.23	1,635	44	318	19,309	25	74	3
2016												
PD range %	Original on-balance sheet exposure \$million	Off-balance sheet exposure pre CCF \$million	Average CCF %	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ² thousands	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %	Expected Loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	47,326	158,138	2	55,604	0.05	786	25	359	4,386	8	8	
0.15 to <0.25	4,611	10,590	3	4,512	0.22	160	33	315	1,348	30	3	
0.25 to <0.50	9,476	14,790	2	7,725	0.41	216	35	240	3,621	47	11	
0.50 to <0.75	1,415	2,353	3	1,320	0.68	67	32	202	710	54	3	
0.75 to <2.50	3,287	10,685	14	3,608	1.60	420	39	128	3,303	92	23	
2.50 to <10.00	287	1,047	11	362	4.76	78	24	475	326	90	4	
10.00 to <100.00	117	150	31	145	61.05	51	38	192	483	333	7	
100.00 (default)	169	1	100	171	100.00	7	41	354	–	–	169	
Total	66,688	197,754	3	73,447	0.56	1,785	28	330	14,177	19	228	169

1 Weighted averages are based on exposure at default

2 Number of obligors is based on the number of counterparties within each PD grade

3.6 Risk grade profile continued

Table 48: IRB credit risk exposure by internal PD grade for corporates (CR6)

2017												
PD range %	Original on-balance sheet exposure \$million	Off-balance sheet exposure pre CCF \$million	Average CCF %	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ² thousands	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %	Expected Loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	28,989	91,479	21	58,216	0.08	2,729	46	543	12,897	22	21	
0.15 to <0.25	13,364	38,568	22	20,561	0.22	2,006	45	530	8,122	39	20	
0.25 to <0.50	17,815	39,553	22	24,877	0.44	2,398	40	600	13,297	53	46	
0.50 to <0.75	6,545	13,142	25	9,653	0.68	1,581	41	513	6,250	65	27	
0.75 to <2.50	26,843	37,982	25	32,399	1.50	28,910	35	596	24,663	76	177	
2.50 to <10.00	9,381	8,671	24	9,115	5.29	5,906	36	438	10,482	115	172	
10.00 to <100.00	5,022	3,141	34	4,478	46.03	2,092	37	528	11,819	264	310	
100.00 (default)	6,797	2,110	9	6,494	100.00	5,097	53	427	5,314	82	4,217	
Total	114,756	234,646	22	165,793	5.90	50,719	42	548	92,844	56	4,990	4,726
2016												
PD range %	Original on-balance sheet exposure \$million	Off-balance sheet exposure pre CCF \$million	Average CCF %	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ² thousands	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %	Expected Loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	27,651	101,843	19	54,685	0.08	3,329	42	491	10,510	19	20	
0.15 to <0.25	9,728	29,228	22	16,228	0.22	2,078	44	532	5,874	36	16	
0.25 to <0.50	14,933	36,930	19	21,302	0.44	5,350	38	539	10,107	47	35	
0.50 to <0.75	7,576	13,413	23	10,488	0.68	10,735	39	562	6,191	59	27	
0.75 to <2.50	26,708	39,395	24	32,340	1.54	24,856	38	554	24,456	76	176	
2.50 to <10.00	12,083	9,601	25	11,459	5.20	7,453	41	430	13,863	121	228	
10.00 to <100.00	5,589	2,668	19	4,759	35.10	2,030	41	701	10,326	217	357	
100.00 (default)	7,439	1,707	–	7,631	100.00	4,960	56	469	9,261	121	4,698	
Total	111,707	234,785	21	158,892	6.69	60,791	41	520	90,588	57	5,557	5,221

1 Weighted averages are based on exposure at default

2 Number of obligors is based on the number of counterparties within each PD grade

3.6 Risk grade profile continued

Table 49: IRB credit risk exposure by internal PD grade for corporates – specialised lending (CR6)

2017												
PD range %	Original on-balance sheet exposure \$million	Off-balance sheet exposure pre CCF \$million	Average CCF %	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ² thousands	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %	Expected Loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	1,247	1,746	30	1,684	0.10	140	23	868	242	14	–	
0.15 to <0.25	1,952	2,952	16	2,233	0.22	142	35	892	697	31	2	
0.25 to <0.50	3,019	3,305	23	2,848	0.44	154	32	989	1,471	52	5	
0.50 to <0.75	870	843	18	984	0.67	51	35	1,012	644	65	3	
0.75 to <2.50	5,344	5,487	14	4,680	1.46	337	33	781	3,517	75	29	
2.50 to <10.00	656	1,384	12	649	5.45	81	26	603	623	96	12	
10.00 to <100.00	504	243	22	356	43.93	58	39	649	1,004	282	32	
100.00 (default)	805	177	21	841	100.00	60	43	478	123	15	540	
Total	14,397	16,137	18	14,275	7.89	1,023	33	837	8,321	58	623	585
2016												
PD range %	Original on-balance sheet exposure \$million	Off-balance sheet exposure pre CCF \$million	Average CCF %	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ² thousands	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %	Expected Loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	659	190	2	645	0.10	55	25	1,456	253	39	3	
0.15 to <0.25	394	456	26	380	0.22	17	26	1,720	191	50	1	
0.25 to <0.50	995	453	3	475	0.45	23	31	1,573	363	77	2	
0.50 to <0.75	493	130	36	500	0.67	12	32	1,734	464	93	2	
0.75 to <2.50	1,371	635	39	1,280	1.70	108	25	1,118	991	77	8	
2.50 to <10.00	988	250	54	431	6.11	26	28	1,009	509	118	8	
10.00 to <100.00	24	3	92	27	67.52	4	24	1,587	50	183	1	
100.00 (default)	290	27	26	297	100.00	11	35	788	9	3	151	
Total	5,214	2,144	26	4,035	9.18	256	28	1,326	2,830	70	176	152

1 Weighted averages are based on exposure at default

2 Number of obligors is based on the number of counterparties within each PD grade

3.6 Risk grade profile continued

Table 50: IRB credit risk exposure by internal PD grade for corporates – SME (CR6)

2017												
PD range %	Original on-balance sheet exposure \$million	Off-balance sheet exposure pre CCF \$million	Average CCF %	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ² thousands	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %	Expected Loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	348	734	14	447	0.10	43	45	547	96	21	–	
0.15 to <0.25	281	385	25	416	0.23	183	33	803	115	28	–	
0.25 to <0.50	268	581	23	353	0.48	154	41	631	167	47	1	
0.50 to <0.75	168	177	24	221	0.70	612	41	532	106	48	1	
0.75 to <2.50	2,931	1,620	29	2,971	1.68	25,492	27	544	1,510	51	13	
2.50 to <10.00	1,169	479	26	1,084	5.34	4,401	27	424	749	69	16	
10.00 to <100.00	354	169	29	313	34.32	1,124	29	483	545	174	14	
100.00 (default)	464	167	14	471	100.00	4,262	43	531	570	121	230	
Total	5,983	4,312	24	6,276	11.01	36,271	31	541	3,858	61	275	241
2016												
PD range %	Original on-balance sheet exposure \$million	Off-balance sheet exposure pre CCF \$million	Average CCF %	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ² thousands	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %	Expected Loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	382	1,068	31	790	0.08	64	51	682	170	21	–	
0.15 to <0.25	154	276	29	428	0.23	196	31	736	103	24	–	
0.25 to <0.50	262	509	17	354	0.47	2,813	33	741	135	38	1	
0.50 to <0.75	138	329	26	232	0.68	9,708	48	886	179	77	1	
0.75 to <2.50	3,243	1,636	23	3,021	1.78	20,719	24	563	1,350	45	13	
2.50 to <10.00	1,413	769	24	1,370	5.20	5,906	32	462	1,048	76	22	
10.00 to <100.00	284	160	28	247	45.47	1,077	31	466	512	208	16	
100.00 (default)	482	200	31	526	100.00	4,062	50	431	1,002	190	251	
Total	6,358	4,947	25	6,968	11.03	44,545	33	574	4,499	65	304	288

1 Weighted averages are based on exposure at default

2 Number of obligors is based on the number of counterparties within each PD grade

3.6 Risk grade profile continued

Table 51: IRB credit risk exposure by internal PD grade for retail (CR6)

2017												
PD range %	Original on-balance sheet exposure \$million	Off-balance sheet exposure pre CCF \$million	Average CCF %	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ² thousands	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %	Expected Loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	51,977	13,878	52	59,245	0.06	1,290	20		2,190	4	9	
0.15 to <0.25	7,733	4,847	57	10,475	0.22	346	32		1,182	11	8	
0.25 to <0.50	6,444	3,236	59	8,368	0.42	309	43		2,102	25	15	
0.50 to <0.75	2,687	2,921	51	4,187	0.67	204	54		1,287	31	15	
0.75 to <2.50	8,466	5,131	47	10,864	1.62	658	57		6,865	63	105	
2.50 to <10.00	3,981	2,288	29	4,639	5.14	789	67		4,830	104	161	
10.00 to <100.00	744	617	26	901	29.20	319	66		1,534	170	162	
100.00 (default)	589	16	9	590	100.00	79	53		1,000	169	239	
Total	82,621	32,934	51	99,269	1.40	3,994	32		20,990	21	714	73
2016												
PD range %	Original on-balance sheet exposure \$million	Off-balance sheet exposure pre CCF \$million	Average CCF %	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ² thousands	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %	Expected Loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	50,121	15,091	58	58,885	0.06	1,485	22		2,312	4	10	
0.15 to <0.25	6,429	5,140	66	9,826	0.22	390	42		1,340	14	9	
0.25 to <0.50	5,485	3,379	68	7,778	0.43	369	49		1,957	25	16	
0.50 to <0.75	2,241	881	68	2,839	0.67	110	44		902	32	8	
0.75 to <2.50	6,478	4,241	50	8,584	1.56	677	56		5,025	59	78	
2.50 to <10.00	3,598	2,006	44	4,473	5.39	839	74		5,136	115	182	
10.00 to <100.00	762	444	28	888	30.94	276	71		1,585	178	191	
100.00 (default)	620	23	10	622	100.00	111	58		945	152	291	
Total	75,734	31,205	58	93,895	1.47	4,257	34		19,202	20	785	64

1 Weighted averages are based on exposure at default

2 Number of obligors is based on the number of counterparties within each PD grade

3.6 Risk grade profile continued

Table 52: IRB credit risk exposure by internal PD grade for retail – secured by real estate property (CR6)

2017												
PD range %	Original on-balance sheet exposure \$million	Off-balance sheet exposure pre CCF \$million	Average CCF %	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ² thousands	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %	Expected Loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	51,121	827	100	51,948	0.05	252	11		1,764	3	2	
0.15 to <0.25	7,075	841	99	7,910	0.21	43	16		606	8	3	
0.25 to <0.50	4,612	88	96	4,697	0.43	25	14		536	11	3	
0.50 to <0.75	1,760	32	98	1,791	0.66	12	14		258	14	2	
0.75 to <2.50	3,558	325	99	3,876	1.48	19	14		904	23	8	
2.50 to <10.00	804	46	99	848	4.72	6	14		390	46	6	
10.00 to <100.00	202	2	98	204	34.33	3	15		181	89	10	
100.00 (default)	202	1	84	202	100.00	4	22		314	155	23	
Total	69,334	2,162	99	71,476	0.62	364	12		4,953	7	57	34
2016												
PD range %	Original on-balance sheet exposure \$million	Off-balance sheet exposure pre CCF \$million	Average CCF %	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ² thousands	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %	Expected Loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	49,306	1,413	99	50,705	0.06	263	12		1,781	4	4	
0.15 to <0.25	5,486	608	99	6,087	0.22	33	15		503	8	2	
0.25 to <0.50	3,855	98	95	3,948	0.43	25	15		450	11	2	
0.50 to <0.75	1,543	36	96	1,579	0.66	12	14		228	14	1	
0.75 to <2.50	3,017	255	99	3,265	1.45	19	13		740	23	6	
2.50 to <10.00	652	40	98	692	4.84	6	14		340	49	5	
10.00 to <100.00	161	1	100	163	34.02	3	15		139	86	9	
100.00 (default)	200	–	87	200	100.00	4	21		286	143	22	
Total	64,220	2,451	99	66,639	0.61	365	12		4,467	7	51	29

1 Weighted averages are based on exposure at default

2 Number of obligors is based on the number of counterparties within each PD grade

3.6 Risk grade profile continued

Table 53: IRB credit risk exposure by internal PD grade for retail – qualifying revolving (CR6)

2017												
PD range %	Original on-balance sheet exposure \$million	Off-balance sheet exposure pre CCF \$million	Average CCF %	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ² thousands	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %	Expected Loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	644	12,188	49	6,567	0.07	1,018	87		282	4	4	
0.15 to <0.25	262	2,944	38	1,382	0.25	249	82		153	11	3	
0.25 to <0.50	245	1,759	52	1,163	0.42	195	78		184	16	4	
0.50 to <0.75	274	2,423	50	1,489	0.68	169	87		391	26	9	
0.75 to <2.50	659	3,260	38	1,900	1.55	468	81		854	45	24	
2.50 to <10.00	715	1,700	31	1,244	6.04	653	80		1,411	113	60	
10.00 to <100.00	264	507	24	384	25.30	305	81		813	212	79	
100.00 (default)	147	7	–	147	100.00	42	62		251	171	71	
Total	3,210	24,788	45	14,276	2.60	3,099	84		4,339	30	254	1
2016												
PD range %	Original on-balance sheet exposure \$million	Off-balance sheet exposure pre CCF \$million	Average CCF %	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ² thousands	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %	Expected Loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	564	12,787	53	7,400	0.09	1,205	89		367	5	6	
0.15 to <0.25	327	3,184	56	2,125	0.22	280	87		227	11	4	
0.25 to <0.50	322	2,070	67	1,713	0.43	262	85		300	18	6	
0.50 to <0.75	117	506	71	475	0.68	71	84		119	25	3	
0.75 to <2.50	610	3,044	45	1,984	1.46	508	82		869	44	24	
2.50 to <10.00	893	1,638	47	1,656	5.85	671	87		1,978	119	83	
10.00 to <100.00	253	350	30	357	27.45	242	83		772	216	82	
100.00 (default)	156	10	–	156	100.00	62	68		275	176	84	
Total	3,242	23,589	54	15,866	2.53	3,301	87		4,907	31	292	3

1 Weighted averages are based on exposure at default

2 Number of obligors is based on the number of counterparties within each PD grade

3.6 Risk grade profile continued

Table 54: IRB credit risk exposure by internal PD grade for retail – SME (CR6)

2017												
PD range %	Original on-balance sheet exposure \$million	Off-balance sheet exposure pre CCF \$million	Average CCF %	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ² thousands	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %	Expected Loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	25	31	3	26	0.12	–	78		4	17	–	
0.15 to <0.25	96	52	13	104	0.26	1	68		28	27	–	
0.25 to <0.50	86	32	9	89	0.45	–	72		35	39	–	
0.50 to <0.75	75	39	6	77	0.68	–	72		39	50	–	
0.75 to <2.50	643	311	5	655	1.67	4	68		436	66	8	
2.50 to <10.00	434	346	4	442	5.21	3	49		265	60	11	
10.00 to <100.00	47	37	7	48	46.19	1	61		62	131	13	
100.00 (default)	51	3	4	52	100.00	–	48		151	292	15	
Total	1,457	851	5	1,493	7.28	9	62		1,020	68	47	20
2016												
PD range %	Original on-balance sheet exposure \$million	Off-balance sheet exposure pre CCF \$million	Average CCF %	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ² thousands	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %	Expected Loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	23	19	7	24	0.12	–	78		4	18	–	
0.15 to <0.25	126	46	11	131	0.21	1	71		32	25	–	
0.25 to <0.50	138	36	8	141	0.46	–	75		59	42	–	
0.50 to <0.75	110	26	8	113	0.67	–	76		59	52	1	
0.75 to <2.50	339	120	5	344	1.62	2	79		272	79	5	
2.50 to <10.00	76	126	2	76	5.38	1	76		70	93	3	
10.00 to <100.00	26	25	93	28	57.51	1	72		58	208	8	
100.00 (default)	17	6	–	18	100.00	–	59		39	218	10	
Total	855	404	6	875	5.20	5	76		593	68	27	15

¹ Weighted averages are based on exposure at default

² Number of obligors is based on the number of counterparties within each PD grade

3.7 Credit risk mitigation

Potential credit losses from any given account, customer or portfolio are mitigated using a range of tools such as collateral, netting agreements, credit insurance, credit derivatives and guarantees. The reliance that can be placed on these mitigants is carefully assessed in light of issues such as legal certainty and enforceability, market valuation, correlation and counterparty risk of the guarantor. The presence of credit risk mitigation is not a substitute for the ability to pay, which is the primary consideration for any credit limit decision, but may influence credit limit sizing, for example eligible financial

collateral taken under eligible master netting agreements supported by a legal opinion may be netted against exposures. Where appropriate, credit derivatives are used to reduce credit risks in the portfolio. Due to their potential impact on income volatility, such derivatives are used in a controlled manner with reference to their expected volatility. Collateral is held to mitigate credit risk exposures and risk mitigation policies determine the eligibility of collateral types. Collateral concentrations are monitored and reported to the relevant risk committees. The Group uses credit limits to record guarantees taken against individual guarantors where a capital benefit is taken. The Group uses

netting in the case of financial market's transactions under master netting agreements supported by a legal opinion but otherwise the Group makes very limited use of on and off-balance sheet netting.

Our approach to credit risk mitigation can be found in the Risk management approach section of the 2017 Annual Report and Accounts on pages 138 to 141.

The table below shows the unfunded credit protection held by the Group, consisting of credit derivatives and guarantees, and funded credit protection, including financial collateral. Exposure class has been defined based on the guarantor of the exposure.

3.7 Credit risk mitigation continued

Table 55: CRM techniques – overview (CR3)

	2017				
	Exposures unsecured \$million	Exposures secured \$million	Exposures secured by collateral \$million	Exposures secured by financial guarantees \$million	Exposures secured by credit derivatives \$million
IRB Exposure Class					
Total loans	165,465	135,251	114,187	21,064	–
Total debt securities	105,276	3,157	2,495	662	–
Total exposures	270,741	138,408	116,682	21,726	–
Of which defaulted	7,062	2,361	2,361	–	–

Table 56: Effect of guarantees and collateral

	2017		2016	
	Exposures covered by unfunded credit protection \$million	Exposures covered by funded credit protection \$million	Exposures covered by unfunded credit protection \$million	Exposures covered by funded credit protection \$million
IRB Exposure Class				
Central governments or central banks	3,761	11,377	4,839	4,664
Institutions	5,582	32,164	5,414	30,472
Corporates	17,442	69,866	13,790	62,647
Retail ¹	4	70,107	4	65,106
Securitisation positions	–	973	–	611
Total IRB	26,789	184,487	24,047	163,500
Standardised Exposure Class				
Central governments or central banks	1,037	567	1,377	135
Multilateral development banks	1,482	530	706	178
Institutions	1,125	27,845	314	13,812
Corporates	86	21,016	12	20,515
Retail ¹	3	412	2	561
Secured on real estate property	–	1	–	35
Exposures in default	–	2	–	159
Items belonging to regulatory high risk categories	–	25	–	9
Other items ²	83	3	27	14
Total Standardised	3,816	50,401	2,438	35,418
Total Exposure	30,605	234,888	26,485	198,918

1 The combined retail IRB exposure class includes both retail mortgages secured by real estate collateral and other types of retail exposures. The standardised retail exposure class excludes mortgages which are included in separate class under the heading secured on real estate property

2 Other items include public sector entities

Funded credit protection for institutions and central governments and central banks increased in both the IRB and Standardised approaches due to the expansion of the reverse repo business in response to client demand and an increase in repo, improving the quality of our funding base. There was an increase of \$7 billion in funded credit protection for corporates across multiple product lines and a \$5.9 billion increase in mortgage products for retail.

3.7 Credit risk mitigation continued

Table 57 presents the EAD before and after the effect of CRM, including credit substitution and financial collateral, with a further split into on-balance sheet and off-balance sheet exposures. Off-balance sheet exposures are presented before and after the application of standardised CCFs.

Table 57: Standardised approach – credit risk exposure and Credit Risk Mitigation (CRM) effects (CR4)

Standardised Exposure Class	2017					
	Exposures before CCF and CRM ¹		Exposures post CCF and CRM		RWA and RWA density	
	On-balance sheet \$million	Off-balance sheet \$million	On-balance sheet \$million	Off-balance sheet \$million	RWA \$million	RWA density %
Central governments or central banks	35,160	75,115	35,955	247	4,675	13
Multilateral development banks	10,123	7,155	11,441	30	–	–
Institutions	3,899	2,007	3,885	63	808	20
Corporates	24,497	27,327	13,843	1,121	14,678	98
Retail	12,740	8,329	12,401	304	9,072	71
Secured on real estate property	10,131	704	10,130	290	5,838	56
Exposures in default	393	12	390	6	396	100
Items belonging to regulatory high risk categories	2,058	322	1,986	35	3,032	150
Equity	1,818	–	1,818	–	4,544	250
Other items ²	10,041	288	10,120	192	8,363	81
Total Standardised³	110,860	121,259	101,969	2,288	51,406	49

Standardised Exposure Class	2016					
	Exposures before CCF and CRM ¹		Exposures post CCF and CRM		RWA and RWA density	
	On-balance sheet \$million	Off-balance sheet \$million	On-balance sheet \$million	Off-balance sheet \$million	RWA \$million	RWA density %
Central governments or central banks	42,499	49,958	43,695	112	5,143	12
Multilateral development banks	11,885	11,474	12,493	26	–	–
Institutions	3,537	1,862	2,398	33	355	15
Corporates	23,680	30,059	14,240	1,379	15,435	99
Retail	11,734	5,832	11,229	215	8,140	71
Secured on real estate property	9,773	491	9,738	212	5,515	55
Exposures in default	448	13	323	8	330	100
Items belonging to regulatory high risk categories	2,578	466	2,430	50	3,720	150
Equity	1,347	–	1,347	–	3,367	250
Other items ²	8,742	86	8,766	27	7,252	82
Total Standardised	116,223	100,241	106,659	2,062	49,257	45

1 EAD before the effect of collateral and substitution

2 Other items include public sector entities

3 Refer to table 12 (OV1): Standardised approach \$44,100 million and amount below threshold for deduction \$7,306 million RWA

3.8 Standardised risk weight profile

External ratings, where available, are used to assign risk weights for standardised approach (SA) exposures. These external ratings must come from EU approved rating agencies, known as External Credit Assessment Institutions (ECAI), which currently include Moody's, Standard & Poor's and Fitch. The Group uses the ECAI ratings from these agencies in its day-to-day business, which are tracked and kept updated. Assessments provided by approved ECAI are mapped to credit quality steps as prescribed by the CRR.

The Group currently does not use assessments provided by export credit agencies for the purpose of evaluating RWA in the standardised approach.

The following tables set out EAD and EAD after CRM associated with each risk weight as prescribed in Part Three, Title II, Chapter 2 of the CRR, including credit and counterparty credit risk regulatory risk weights based on the exposure classes applied to unrated exposures.

Standardised EAD pre CRM and pre CCF increased \$15.7 billion:

→ Central governments and central banks EAD increased by \$17.8 billion mainly due to an increase in interbank and marketable securities by \$23.4 billion offset by a decrease in nostro balances by \$6.5 billion, all of which are 0 per cent risk weight

→ Retail EAD increased by \$3.5 billion due to increasing revolving overdraft by \$1.4 billion and non-interest bearing current accounts by \$0.7 billion. The movement was noted mostly within Greater China and North Asia

Offset by:

→ MDB EAD decreased \$6.1 billion driven by a reduction in facility products mainly within Europe and Americas region

Table 58: Standardised approach – exposures by asset classes and risk weights (pre CRM pre CCF) (CR5)

Standardised Exposure Class	2017													Of which unrated
	Risk Weight													
	0%	2%	4%	20%	35%	50%	75%	100%	150%	250%	Others	Deducted	Total	
Central governments or central banks	105,644	–	–	4	–	2,872	–	641	8	1,106	–	–	110,275	–
Multilateral development banks	17,278	–	–	–	–	–	–	–	–	–	–	–	17,278	–
Institutions	–	1,826	40	1,017	–	2,811	–	212	–	–	–	–	5,906	3,110
Corporates	–	–	–	697	–	186	–	50,941	–	–	–	–	51,824	49,933
Retail	–	–	–	–	–	–	21,069	–	–	–	–	–	21,069	21,023
Secured on real estate property	–	–	–	–	3,453	4,226	–	2,324	–	–	832	–	10,835	10,835
Exposures in default	–	–	–	–	–	–	–	405	–	–	–	–	405	405
Items belonging to regulatory high risk categories	–	–	–	–	–	–	–	–	2,380	–	–	–	2,380	2,364
Equity	–	–	–	–	–	–	–	–	–	1,818	–	–	1,818	1,818
Other items ¹	1,524	–	–	–	–	–	–	7,360	–	–	1,445	–	10,329	10,329
Total Standardised	124,446	1,826	40	1,718	3,453	10,095	21,069	61,883	2,388	2,924	2,277	–	232,119	99,817

¹ Other items include cash, equity holdings, fixed assets, prepayments and accrued income

3.8 Standardised risk weight profile continued

Table 58: Standardised approach – exposures by asset classes and risk weights (pre CRM pre CCF) (CR5) continued

Standardised Exposure Class	2016													Total	Of which unrated
	Risk Weight														
	0%	2%	4%	20%	35%	50%	75%	100%	150%	250%	Others	Deducted			
Central governments or central banks	87,040	–	–	16	–	3,693	–	509	–	1,173	27	–	92,458	–	
Multilateral development banks	23,359	–	–	–	–	–	–	–	–	–	–	–	23,359	–	
Institutions	–	1,459	–	1,649	–	2,140	–	151	–	–	–	–	5,399	3,113	
Corporates	–	–	–	543	–	32	–	53,165	–	–	–	–	53,740	52,560	
Retail	–	–	–	–	–	–	17,566	–	–	–	–	–	17,566	17,566	
Secured on real estate property	–	–	–	–	3,732	3,577	–	2,163	–	–	792	–	10,264	10,264	
Exposures in default	–	–	–	–	–	–	–	461	–	–	–	–	461	276	
Items belonging to regulatory high risk categories	–	–	–	–	–	–	–	–	3,044	–	–	–	3,044	3,044	
Equity	–	–	–	–	–	–	–	–	–	1,347	–	–	1,347	1,347	
Other items ¹	1,368	–	–	47	–	–	–	5,860	–	–	1,552	–	8,827	8,827	
Total Standardised	111,767	1,459	–	2,255	3,732	9,442	17,566	62,309	3,044	2,520	2,371	–	216,465	96,997	

1 Other items include cash, equity holdings, fixed assets, prepayments and accrued income

3.8 Standardised risk weight profile continued

Table 59: Standardised approach – exposures by asset classes and risk weights (post CRM post CCF) (CR5)

	2017													Of which unrated
	Risk Weight													
	0%	2%	4%	20%	35%	50%	75%	100%	150%	250%	Others	Deducted	Total	
Standardised Exposure Class														
Central governments or central banks	31,731	–	–	4	–	2,907	–	446	8	1,106	–	–	36,202	–
Multilateral development banks	11,471	–	–	–	–	–	–	–	–	–	–	–	11,471	–
Institutions	–	1,826	40	801	830	264	–	187	–	–	–	–	3,948	2,001
Corporates	–	–	–	203	48	29	–	14,684	–	–	–	–	14,964	14,682
Retail	–	–	–	–	–	–	12,705	–	–	–	–	–	12,705	12,705
Secured on real estate property	–	–	–	–	3,422	4,073	–	2,221	–	–	704	–	10,420	10,420
Exposures in default	–	–	–	–	–	–	–	396	–	–	–	–	396	396
Items belonging to regulatory high risk categories	–	–	–	–	–	–	–	–	2,021	–	–	–	2,021	2,007
Equity	–	–	–	–	–	–	–	–	–	1,818	–	–	1,818	1,818
Other items¹	1,524	–	–	42	–	–	–	7,301	–	–	1,445	–	10,312	10,270
Total Standardised	44,726	1,826	40	1,050	4,300	7,273	12,705	25,235	2,029	2,924	2,149	–	104,257	54,299
	2016													
	Risk Weight													
	0%	2%	20%	35%	50%	75%	100%	150%	250%	Others	Deducted	Total	Of which unrated	
Standardised Exposure Class														
Central governments or central banks	38,541	–	16	–	3,764	–	285	–	1,173	27	–	43,806	–	
Multilateral development banks	12,519	–	–	–	–	–	–	–	–	–	–	12,519	–	
Institutions	–	1,459	752	–	89	–	131	–	–	–	–	2,431	1,680	
Corporates	–	–	133	–	14	–	15,472	–	–	–	–	15,619	15,441	
Retail	–	–	–	–	–	11,444	–	–	–	–	–	11,444	11,444	
Secured on real estate property	–	–	–	3,694	3,454	–	2,069	–	–	733	–	9,950	9,950	
Exposures in default	–	–	–	–	–	–	331	–	–	–	–	331	324	
Items belonging to regulatory high risk categories	–	–	–	–	–	–	–	2,480	–	–	–	2,480	2,480	
Equity	–	–	–	–	–	–	–	–	1,347	–	–	1,347	1,347	
Other items¹	1,368	–	74	–	–	–	5,800	–	–	1,551	–	8,793	8,768	
Total Standardised	52,428	1,459	975	3,694	7,321	11,444	24,088	2,480	2,520	2,311	–	108,720	51,434	

¹ Other items include cash, fixed assets, prepayments and accrued income

Standardised EAD post CRM and post CCF decreased \$4.5 billion:

→ Central governments and central banks EAD decreased by \$7.6 billion mainly due to decreases in nostro balances within Europe and Americas

Offset by:

→ Institutions EAD increased by \$1.5 billion across multiple product lines

3.9 Counterparty credit risk

Counterparty credit risk (CCR) is the risk that the Group's counterparty in foreign exchange, interest rate, commodity, equity or credit derivative or repo contract defaults prior to the maturity date of the contract and that the Group at the time has a claim on the counterparty. CCR arises predominantly in the trading book, but also arises in the non-trading book due to hedging of external funding.

CCR is managed within the overall credit risk appetite for corporate and financial institutions and CCR limits are set for individual counterparties, including central clearing counterparties, and specific portfolio concentrations. Such limits take into account the credit quality and nature of the counterparty and are set in exposure value terms.

The Group reduces its credit exposures to counterparties by entering into contractual netting agreements which result in a single amount owed by or to the counterparty. The amount is calculated by netting the Mark-To-Market (MTM) owed by the counterparty to the Group and the MTM owed by the Group to the counterparty on the transactions covered by the netting agreement. Following International Accounting Standard (IAS) 32 (Financial Instruments: Presentation) requirements the Group is permitted to offset assets and liabilities and present these net on the Group's balance sheet, only if there is a legally enforceable right of set off and the Group intends to settle on a net basis or realise the asset and liability simultaneously.

Wrong-way risk

Wrong-way risk occurs when an exposure increase is coupled with a decrease in the credit quality of the obligor. Specifically, as the MTM on a derivative or repo contract increases in favour of the Group, the driver of this MTM change also reduces the ability of the counterparty to meet its payment, margin call or collateral posting requirements. The Group employs various policies and procedures to ensure that wrong-way risk exposures are recognised upfront, monitored, and where required, contained by limits on tenor, collateral type, collateral

concentration, and markets-based collateral top-up mechanisms. The majority of the wrong-way risk transactions are with investment grade counterparties.

Exposure value calculation

Exposure values for regulatory capital requirement purposes on over-the-counter traded products are calculated according to the Current Exposure Method. Exposure values are the sum of the current replacement cost and the potential future credit exposure. The current replacement cost is the US dollar equivalent amount owed by the counterparty to the Group for various financial derivative transactions. The potential future credit exposure is an add-on based on a percentage of the notional principal of each transaction. Such percentages are prescribed by CRR articles and vary according to the underlying asset class and tenor of each trade. The benefit from master netting agreements is derived from the Net to Gross Ratio rules provided in the CRR articles.

The Group has credit policies and procedures setting out the criteria for collateral to be recognised as a credit risk mitigant, including requirements concerning legal certainty, priority, concentration, correlation, liquidity and valuation parameters such as frequency of review and independence. In particular, the Group seeks to negotiate Credit Support Annexes (CSAs) with counterparties on a case by case basis, where collateral is deemed a necessary or desirable mitigant to the exposure. The credit terms of a CSA are specific to each legal document and determined by the credit risk approval unit responsible for the counterparty. The nature of the collateral is specified in the legal document and is typically cash or highly liquid securities.

The MTM of all trades captured under CSAs is calculated daily. Additional collateral will be called from the counterparty if total uncollateralised MTM exposure exceeds the threshold and minimum transfer amount specified in the CSA. Additional collateral may be required from the counterparty to provide an extra buffer to the daily variation margin process.

In line with market convention, the Group negotiates CSA terms for certain counterparties where the thresholds related to each party are dependent on their ECAI long-term rating. Such clauses are typically mutual in nature. As a result, a downgrade in the Group's rating would result in some counterparties seeking additional collateral calls to cover negative MTM portfolios where thresholds are lowered. The amount of collateral that the Group would be required to provide given a one-notch credit rating downgrade is approximately \$258 million.

The Group also has policies and procedures in place setting out the criteria for guarantees to be recognised as a credit risk mitigant. Where guarantees meet regulatory criteria, the Group treats the exposure as guarantor risk for the purpose of counterparty credit risk capital.

Derivatives valuation adjustments

The Group makes credit valuation adjustments (CVA) to the fair value of derivative contracts to reflect the creditworthiness of the counterparties. Details on CVA are provided in note 13 of the 2017 Annual Report and Accounts on page 236.

Table 60 shows the credit exposure on derivative transactions after taking into account the benefits from legally enforceable netting agreements and collateral held, including transactions cleared through recognised trading exchanges.

Table 61 specifies the methods used by the Group to calculate counterparty credit risk regulatory requirements, followed by Table 62 which demonstrates the risk-weighted exposure amounts to central counterparties by derivative types.

Table 63 indicates the notional amounts of credit derivative transactions segregated between protection bought and sold within each product type, and Table 64 describes the exposure value and related RWA for the regulatory credit valuation adjustment charge.

3.9 Counterparty credit risk continued

Table 60: Impact of netting and collateral held on exposure values (CCR5-A)

	2017				
	EAD before netting benefit \$million	Netting benefits \$million	Netted current credit exposure \$million	Collateral held \$million	Net derivatives credit exposure \$million
Derivative contracts	84,294	(36,723)	47,571	(8,222)	39,349
Repo style transactions	130,098	–	130,098	(109,276)	20,822
Total	214,392	(36,723)	177,669	(117,498)	60,171

	2016				
	EAD before netting benefit \$million	Netting benefits \$million	Netted current credit exposure \$million	Collateral held \$million	Net derivatives credit exposure \$million
Derivative contracts	101,289	(48,704)	52,586	(9,088)	43,498
Repo style transactions	95,646	–	95,646	(79,011)	16,635
Total	196,935	(48,704)	148,232	(88,099)	60,133

The netting benefit decreased by \$11.9 billion as a result of decreased derivative mark to market due to lower valuations, depreciating US dollars and maturing trades. The net exposure for repo style transactions increased by \$4.1 billion due to the expansion of the reverse repo business in response to client demand and an increase in repo, improving the quality of our funding base.

Table 61: Analysis of CCR exposures by approach (CCR1)

	2017						
	Notional \$million	Replacement cost/current market value \$million	Potential future exposure \$million	EEPE \$million	Multiplier \$million	EAD post CRM \$million	RWA \$million
Mark to market		17,561	21,869			32,450	11,811
Original exposure	N/A					N/A	N/A
Standardised approach				N/A	N/A	N/A	N/A
IMM (for derivatives and SFTs)				N/A	N/A	N/A	N/A
Of which securities financing transactions				N/A	N/A	N/A	N/A
Of which derivatives and long settlement transactions				N/A	N/A	N/A	N/A
Financial collateral simple method (for SFTs)						N/A	N/A
Financial collateral comprehensive method (for SFTs)						18,832	2,941
VaR for SFTs						N/A	N/A
Total							14,752

3.9 Counterparty credit risk continued

Table 62: Exposures to central counterparties (CCPs) (CCR8)

	2017		2016	
	EAD post CRM \$million	RWA \$million	EAD post CRM \$million	RWA \$million
Exposures to QCCPs				
Trade exposure	8,889	181	5,793	116
Of which OTC derivatives	4,827	100	3,197	64
Of which exchange-traded derivatives	2,072	41	1,794	36
Of which SFTs	1,990	40	802	16
Collateral posted	1,867	38	1,460	29
Prefunded default fund contributions	387	81	178	338
Total	11,143	300	7,431	483

The exposures to OTC derivatives increased by \$1.6 billion which is across multiple product lines and an increase of \$1.1 billion in SFT exposures due to growth in repo business.

Table 63: Credit derivatives exposures (CCR6)

	2017			2016		
	Bought \$million	Sold \$million	Total ¹ \$million	Bought \$million	Sold \$million	Total ¹ \$million
Notionals						
Credit default swaps	19,409	12,459	31,869	13,960	9,708	23,668
Total return swaps	2,549	246	2,795	886	408	1,294
Credit options	–	–	–	–	–	–
Other Credit derivatives	108	–	108	72	68	140
Total notionals	22,067	12,705	34,772	14,918	10,184	25,101
Fair values						
Positive fair value (asset)	33	215	249	82	90	171
Negative fair value (liability)	873	–	873	301	170	472

¹ Principally related to intermediary activity for Trading

Table 64: Credit valuation adjustment (CVA) capital charge (CCR2)

	2017		2016	
	Exposure Value \$million	RWA \$million	Exposure Value \$million	RWA \$million
Total portfolios subject to the Advanced Method	–	–	–	–
(i) VaR component (including the 3x multiplier)	–	–	–	–
(ii) Stressed VaR component (including the 3x multiplier)	–	–	–	–
All portfolios subject to the Standardised Method	19,322	503	24,900	2,290
Based on Original Exposure Method	–	–	–	–
Total subject to the CVA capital charge	19,322	503	24,900	2,290

Risk weighted assets for CVA decreased by \$1.7 billion mostly driven by reduction in mark-to-market assets, and increased relief from hedges and RWA optimisation.

3.9 Counterparty credit risk continued

Table 65 depicts EAD after the effect of collateral associated with each risk weight prescribed in Part Three, Title II, Chapter 2 of the CRR for counterparty credit risk.

Table 65: Standardised approach – CCR exposures by regulatory portfolio and risk (CCR3)

Standardised Exposure Class	2017												Of which unrated
	Risk Weight												
	0%	2%	4%	10%	20%	50%	70%	75%	100%	150%	Others	Total	
Central governments or central banks	406	–	–	–	4	2	–	–	–	–	–	412	–
Multilateral development banks	1,978	–	–	–	–	–	–	–	–	–	–	1,978	–
Institutions	–	8,870	–	–	5	4	–	–	–	–	–	8,879	–
Corporates	–	–	–	–	1,004	1	–	–	194	–	–	1,199	443
Retail	–	–	–	–	–	–	–	–	–	–	–	–	–
Secured on real estate property	–	–	–	–	–	–	–	–	–	–	–	–	–
Exposures in default	–	–	–	–	–	–	–	–	–	–	–	–	–
Items belonging to regulatory high risk categories	–	–	–	–	–	–	–	–	–	–	–	–	–
Other items	–	–	–	–	–	–	–	–	10	–	–	10	10
Total Standardised	2,384	8,870	–	–	1,013	7	–	–	204	–	–	12,478	453

Standardised Exposure Class	2016												Of which unrated
	Risk Weight												
	0%	2%	4%	10%	20%	50%	70%	75%	100%	150%	Others	Total	
Central governments or central banks	374	–	–	–	4	–	–	–	–	–	–	378	–
Multilateral development banks	2,232	–	–	–	–	–	–	–	–	–	–	2,232	–
Institutions	–	5,792	–	–	–	17	–	–	–	–	–	5,809	–
Corporates	–	–	–	–	858	1	–	–	420	–	–	1,279	542
Retail	–	–	–	–	–	–	–	–	–	–	–	–	–
Secured on real estate property	–	–	–	–	–	–	–	–	–	–	–	–	–
Exposures in default	–	–	–	–	–	–	–	–	–	–	–	–	–
Items belonging to regulatory high risk categories	–	–	–	–	–	–	–	–	–	3	–	3	1
Other items	–	–	–	–	–	–	–	–	4	–	–	4	4
Total Standardised	2,606	5,792	–	–	862	18	–	–	424	3	–	9,705	547

The exposures to institutions increased by more than \$3 billion mainly to repos cleared through QCCPs within Europe and Americas region.

The following tables provide further detail on the exposure classes subject to counterparty credit risk, in particular for central governments or central banks, institutions, corporates and retail. These have been split by internal credit grades which relate to the PD ranges presented.

- Central government and central bank exposures increased by \$3.4 billion due to an increase in repo exposures mainly in ASEAN and GCNA regions
- Institutions RWA increased by \$1 billion mainly due to PRA approved IRB model changes relating to LGD floors

3.9 Counterparty credit risk continued

Table 66: IRB – CCR exposures by exposure class

	2017						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %
IRB exposure class							
Central governments or central banks	6,132	0.06	122	18	86	664	11
Institutions	19,001	0.11	1,433	21	227	4,398	23
Corporates	22,559	0.34	11,566	20	184	9,283	41
Of which specialised lending	1,538	1.48	475	42	1,005	1,041	68
Of which SME	519	0.30	389	66	1,141	382	73
Total IRB	47,692	0.22	13,121	20	186	14,345	30

	2016						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %
IRB exposure class							
Central governments or central banks	2,648	0.07	128	20	201	360	14
Institutions	20,789	0.11	1,429	15	267	3,369	16
Corporates	26,991	0.28	11,883	22	239	10,270	38
Of which specialised lending	1,136	1.53	130	26	1,679	479	42
Of which SME	807	0.41	547	64	1,172	535	63
Total IRB	50,427	0.20	13,440	19	248	13,999	28

1 Weighted averages are based on exposure at default

2 Number of obligors is based on number of counterparties

Table 67: IRB – CCR exposures by PD scale for central governments or central banks (CCR4)

PD range %	2017						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %
0.00 to < 0.15	5,461	0.03	67	17	81	340	6
0.15 to < 0.25	453	0.22	8	46	11	112	25
0.25 to < 0.50	11	0.51	6	46	365	6	57
0.50 to < 0.75	–	–	–	–	–	–	–
0.75 to < 2.50	207	1.91	32	47	634	206	99
2.50 to < 10.00	–	3.51	9	46	365	–	124
10.00 to < 100.00	–	–	–	–	–	–	–
100.00 (default)	–	–	–	–	–	–	–
Total	6,132	0.06	122	18	86	664	11

PD range %	2016						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %
0.00 to < 0.15	2,433	0.02	83	19	200	210	9
0.15 to < 0.25	9	0.22	4	46	365	3	35
0.25 to < 0.50	14	0.42	7	46	365	7	52
0.50 to < 0.75	–	–	–	–	–	–	–
0.75 to < 2.50	172	1.28	22	46	123	123	72
2.50 to < 10.00	20	3.51	12	46	1,204	17	88
10.00 to < 100.00	–	–	–	–	–	–	–
100.00 (default)	–	–	–	–	–	–	–
Total	2,648	0.07	128	20	201	360	14

1 Weighted averages are based on exposure at default

2 Number of obligors is based on number of counterparties within each PD grade

3.9 Counterparty credit risk continued

Table 68: IRB – CCR exposures by PD scale for institutions (CCR4)

PD range %	2017						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %
0.00 to < 0.15	16,976	0.05	704	22	234	2,884	17
0.15 to < 0.25	921	0.22	115	13	176	489	53
0.25 to < 0.50	633	0.41	192	12	173	480	76
0.50 to < 0.75	85	0.67	54	27	587	78	93
0.75 to < 2.50	385	1.26	347	20	264	467	122
2.50 to < 10.00	–	3.51	14	46	365	–	75
10.00 to < 100.00	–	13.77	7	46	365	–	250
100.00 (default)	–	–	–	–	–	–	–
Total	19,000	0.11	1,433	21	227	4,398	23

PD range %	2016						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %
0.00 to < 0.15	18,152	0.05	686	15	258	1,923	11
0.15 to < 0.25	1,289	0.22	126	15	301	484	38
0.25 to < 0.50	901	0.40	200	13	210	501	56
0.50 to < 0.75	175	0.67	52	15	558	143	82
0.75 to < 2.50	272	1.89	328	25	819	317	117
2.50 to < 10.00	–	4.22	32	35	365	1	143
10.00 to < 100.00	–	13.77	5	41	365	–	223
100.00 (default)	–	–	–	–	–	–	–
Total	20,789	0.11	1,429	15	267	3,369	16

1 Weighted averages are based on exposure at default

2 Number of obligors is based on number of counterparties within each PD grade

3.9 Counterparty credit risk continued

Table 69: IRB – CCR exposures by PD scale for corporates (CCR4)

PD range %	2017						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %
0.00 to < 0.15	14,168	0.05	3,773	16	142	2,848	20
0.15 to < 0.25	2,600	0.22	1,795	37	286	1,095	42
0.25 to < 0.50	3,238	0.43	1,978	28	263	2,304	71
0.50 to < 0.75	521	0.68	725	35	407	431	83
0.75 to < 2.50	1,638	1.37	2,011	45	511	1,824	111
2.50 to < 10.00	199	4.62	582	66	722	345	173
10.00 to < 100.00	129	15.81	392	14	133	384	298
100.00 (default)	17	100.00	286	57	517	18	105
Total	22,510	0.34	11,542	20	183	9,249	41

PD range %	2016						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ Days	RWA \$million	RWA density ¹ %
0.00 to < 0.15	18,003	0.06	3,750	17	198	3,296	18
0.15 to < 0.25	1,909	0.22	1,717	37	373	958	50
0.25 to < 0.50	3,862	0.42	2,032	31	260	2,079	54
0.50 to < 0.75	855	0.67	724	52	697	912	107
0.75 to < 2.50	1,805	1.49	2,236	53	670	1,934	107
2.50 to < 10.00	411	4.86	689	62	487	719	175
10.00 to < 100.00	105	24.95	438	59	512	323	309
100.00 (default)	23	100.00	271	59	631	36	156
Total	26,973	0.28	11,857	22	239	10,257	38

1 Weighted averages are based on exposure at default

2 Number of obligors is based on number of counterparties within each PD grade

3.9 Counterparty credit risk continued

Table 70: IRB – CCR exposures by PD scale for corporates – specialised lending (CCR4)

PD range %	2017						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ \$million	RWA \$million	RWA density ¹ %
0.00 to < 0.15	416	0.10	59	30	1,425	107	26
0.15 to < 0.25	308	0.22	42	57	759	150	49
0.25 to < 0.50	248	0.47	97	44	1,017	163	66
0.50 to < 0.75	76	0.67	31	33	744	67	88
0.75 to < 2.50	393	1.38	148	47	801	445	113
2.50 to < 10.00	30	4.21	33	27	1,394	29	97
10.00 to < 100.00	18	71.90	15	44	1,802	43	246
100.00 (default)	1	100.00	26	21	1,228	2	188
Total	1,490	1.50	451	42	1,015	1,006	67

PD range %	2016						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ \$million	RWA \$million	RWA density ¹ %
0.00 to < 0.15	658	0.10	27	24	1,694	149	23
0.15 to < 0.25	60	0.22	7	26	1,732	23	38
0.25 to < 0.50	161	0.45	13	35	1,703	106	66
0.50 to < 0.75	20	0.67	5	44	1,826	20	100
0.75 to < 2.50	186	1.77	38	27	1,624	132	71
2.50 to < 10.00	24	5.80	9	27	1,245	25	107
10.00 to < 100.00	10	99.90	1	16	1,826	11	115
100.00 (default)	1	100.00	4	18	1,704	–	–
Total	1,119	1.53	104	26	1,679	467	42

1 Weighted averages are based on exposure at default

2 Number of obligors is based on number of counterparties within each PD grade

3.9 Counterparty credit risk continued

Table 71: IRB – CCR exposures by PD scale for corporates – SME (CCR4)

PD range %	2017						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ \$million	RWA \$million	RWA density ¹ %
0.00 to < 0.15	229	0.12	29	66	783	93	41
0.15 to < 0.25	154	0.22	35	60	1,823	130	84
0.25 to < 0.50	111	0.46	41	71	771	98	89
0.50 to < 0.75	–	0.67	24	60	365	–	71
0.75 to < 2.50	24	1.56	134	96	1,169	60	248
2.50 to < 10.00	1	4.96	58	53	510	1	161
10.00 to < 100.00	–	37.65	14	25	525	–	445
100.00 (default)	–	100.00	54	38	365	–	335
Total	519	0.30	389	66	1,141	382	73

PD range %	2016						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ \$million	RWA \$million	RWA density ¹ %
0.00 to < 0.15	523	0.07	38	61	1,228	171	33
0.15 to < 0.25	1	0.22	28	74	373	–	47
0.25 to < 0.50	2	0.47	52	44	401	2	83
0.50 to < 0.75	249	0.67	28	70	1,138	301	121
0.75 to < 2.50	24	2.27	166	69	864	45	183
2.50 to < 10.00	8	5.11	72	40	410	15	180
10.00 to < 100.00	–	19.01	16	63	767	1	274
100.00 (default)	–	100.00	57	70	365	–	75
Total	807	0.41	457	64	1,172	535	66

1 Weighted averages are based on exposure at default

2 Number of obligors is based on number of counterparties within each PD grade

3.10 Securitisation

Securitisation is defined as a structure where the cash flow from a pool of assets is used to service obligations to at least two different tranches or classes of creditors.

Securitisations may be categorised as either:

- Traditional securitisation: assets are sold to a Special Purpose Entity (SPE), which finances the purchase by issuing notes in different tranches with different risk and return profiles. Cash flow arising from those assets is used by the SPE to service its debt obligations
- Synthetic transaction: a securitisation whereby only the credit risk, or part of the credit risk of a pool of assets is transferred to a third party via credit derivatives. The pool of assets remains on the Group's balance sheet

Securitisation activities are undertaken by the Group for a variety of purposes, by various businesses acting in a different capacity:

- Risk mitigation, funding and capital management (as originator)
- Fee generation (as arranger/ lead manager)
- Risk taking (as investor)

The Group has \$22.4 billion (2016: \$23.5 billion) of EAD classified as securitisation positions, as shown in Table 74 on page 74. These transactions meet the criteria to qualify as securitisation positions under the PRA's securitisation framework and the particulars of these transactions are discussed below.

Asset backed securities

The carrying value of asset backed securities (ABS) of \$6.4 billion (2016: \$6 billion), held either as investments or arranged for clients, represents 1 per cent of the Group's total assets (2016: 1 per cent).

The portfolio comprises of a mix of client-based trades, market making and a portfolio of liquid ABS investments for the Treasury Markets (TM) book. These purchases by TM are governed by a set of portfolio limits and standards which include an aggregate portfolio limit besides sub limits on the underlying collateral types, jurisdictions, originators, issue size, seniority, rating and tenor.

The credit quality of the ABS portfolio remains strong, with over 99 per cent of the overall portfolio rated Investment Grade, and 68 per cent of the overall portfolio is rated as AAA. The portfolio is broadly diversified across asset classes and geographies, with an average credit grade of AA. Residential mortgage-backed securities (RMBS) make up 43 per cent of the overall portfolio and have a weighted averaged credit rating of AAA (AAA in 2016).

Other ABS include Auto ABS, comprising 30 per cent of the overall portfolio, and credit card ABS (14 per cent) both maintain a weighted average credit rating of AAA. The balance of Other ABS mainly includes securities backed by diversified payment rights, and receivables ABS.

The notional and carrying values of the ABS purchased or retained by the Group are shown in the table below analysed by underlying asset type. ABS are accounted for as financial assets. For further details regarding recognition and impairment, refer to the note 24 to the financial statements of the 2017 Annual Report and Accounts, page 258. The ABS portfolio is assessed frequently for objective evidence of impairment. In 2017, there were no additional impairments in the portfolio.

Valuation of retained interest is initially and subsequently determined using market price quotations where available or internal pricing models that utilise variables such as yield curves, prepayment speeds, default rates, loss severity, interest rate volatilities and spreads. The assumptions used for valuation are based on observable transactions in similar securities and are verified by external pricing sources, where available.

The ABS portfolio is closely managed by a centralised dedicated team. The team has developed a detailed analysis and reporting framework of the underlying portfolio to allow senior management to make an informed holding decision with regards to specific assets, asset classes or parts of an asset class. These ABS portfolio reports are closely monitored by the Risk function in the Group.

The notional and carrying values of the ABS purchased or retained by the Group are shown below in the table analysed by underlying asset type.

Table 72: Securitisation – ABS purchased or retained

	2017			2016		
	Carrying value of asset backed securities \$million	Traditional securitisation programmes \$million	Synthetic securitisation programmes \$million	Carrying value of asset backed securities \$million	Traditional securitisation programmes \$million	Synthetic securitisation programmes \$million
Residential Mortgage Backed Securities (RMBS)	2,812	2,814	–	2,248	2,248	–
Collateralised Debt Obligations (CDOs)	70	74	1	8	28	–
Commercial Mortgage Backed Securities (CMBS)	29	63	–	19	50	–
Auto asset backed securities	1,952	1,953	–	1,381	1,382	–
Credit cards asset backed securities	845	845	–	1,639	1,638	–
Other asset backed securities	720	720	–	696	694	3
	6,428	6,469	1	5,991	6,040	3
Of which included within:	–	–	–			
Financial assets held at fair value through profit or loss	885	886	1	172	169	3
Investment securities – available-for-sale	4,106	4,145	–	4,330	4,380	–
Investment securities – loans and receivables	1,437	1,438	–	1,489	1,491	–
	6,428	6,469	1	5,991	6,040	3

3.10 Securitisation continued

Capital Structuring & Distribution Group Securitisation

The Group via its Capital Structuring & Distribution Group (CSDG) Securitisation unit buys synthetic protection for its banking book credit portfolio. Securitisation provides capacity for client-focused growth and improves efficiency of economic and regulatory capital. The Group as the originator performs multiple roles, including protection buyer, calculation agent and credit event monitor agent. The protection buyer executes and maintains securitisation transactions. The calculation agent computes periodic coupon payments and loss payouts. The credit event monitor agent validates and provides notifications of credit events.

Treasury Markets unit performs a different role, acting as deposit taker for funds collected from the credit protection providers. Deposits collected eliminate counterparty risk for transactions where the Group is the protection buyer.

The securitised assets consist of commercial loans and trade finance facilities extended by the Group's branches and subsidiaries to borrowers mainly from the emerging markets in Asia, Africa and Middle East. The securitised assets are subject to changes in general economic conditions, performance of relevant financial markets, political events and developments or trends in a particular industry. Historically, the trading volume of loans in these emerging markets has been small relative to other more developed debt markets due to limited liquidity in the secondary loan market.

The securitised assets are originated by the Group in its ordinary course of business. Given the synthetic nature of securitisations originated by CSDG Securitisation unit, the securitised assets remain on the Group's balance sheet and continue to be subject to the Group's credit review and monitoring process and risk methodology. Accordingly retained positions are not hedged.

In its role as credit event monitor agent, CSDG Securitisation unit monitors the credit risk of the underlying securitised assets by leveraging on the Group's client and risk management system.

As of 31 December 2017, \$42 million of Trade Finance (2016: \$37 million) and \$31 million of Commercial Loans (2016: \$45 million) totalling \$73 million (2016: \$82 million) of securitised exposures were classified as impaired and past due. The year-on-year increase in Trade

Finance is driven by continued seasoning of the securitisation programme. The year-on-year decrease in Commercial Loans is mainly attributable to one securitisation transaction maturing in 2017 and hence the impaired and past due referenced have dropped off.

The Group has five synthetic securitisation transactions originated and managed by CSDG Securitisation unit, with an aggregate hedge capacity of \$16.0 billion (2016: \$17.5 billion). Of the five transactions, three are private transactions with bilateral investors and two are public transactions distributed to a broad spectrum of investors. All five transactions are structured as non-disclosed pools for reason of client confidentiality. No new securitisation transaction was originated in 2017 to replace matured transactions.

CSDG Securitisation unit as the originator has not acted as sponsor to securitise third-party exposures and does not manage or advise any third-party entity that invests in the securitisation positions. Table 73 provides details of current securitisation programmes originated and managed by the Group.

The Group has engaged in structures, such as the ones outlined in Table 73, in order to transfer credit risk of a pool of assets to a third party via credit derivatives.

Typically, these synthetic securitisation transactions are facilitated through entities which are considered to be SPEs for accounting purposes.

In these transactions, the underlying assets are not sold into the relevant SPE. Instead, the credit risk of the underlying assets is transferred to the SPEs synthetically via credit default swaps whereby the SPEs act as sellers of credit protection and receive premiums paid by the Group in return. The SPEs in turn issue credit-linked notes to third-party investors who fund the credit protection in exchange for coupon on the notes purchased. The premium received by the SPEs and interest earned on the funded amount of the purchased notes are passed through to the third-party investors as coupon on the purchased notes. Payment to the third-party investors is made in accordance with the priority of payments stipulated in the transaction documents.

Governance of securitisation activities

Securitisation transactions proposed for funding and capital management must obtain support from the Operational Balance Sheet Committee (OBSC), which manages the capital requirements of the business. For a securitisation transaction that will lead to

reduction in regulatory capital, it must be submitted to UK PRA for review and only upon receipt of a non-objection letter will the transaction be executed.

Execution of each securitisation transaction must either be under a Product Programme Framework or an individual Transaction Programme Authorisation; such that all relevant support, control and risk functions are involved in the transaction. Specifically, Compliance covers issues like confidentiality of clients' information and insider information, Group Tax provides an opinion on taxation, Group Risk advises on the regulatory treatment and Finance advises on the accounting treatment and facilitates communication with the regulator.

Basel III for securitisation positions

The calculation of risk-weighted exposure amounts for securitisation positions is based on the following two calculation methods advised by the PRA:

- IRB method for third-party senior securitisation positions bought and securitisation positions originated and retained by the Group (including haircuts due to currency and collateral mismatch)
- Standardised Approach for the residual risk-weighted exposure amounts for all other securitisation positions originated by the Group and sold. For instance, risk-weight substitution under the Standardised Approach is adopted in unfunded transactions where cash collateral is with a third party

All existing securitisation transactions originated by the Group, in Table 73, meet the credit risk transfer requirement to be accounted for as securitisations under the CRR.

Accounting

The Group's approach to accounting for SPEs can be found in the notes to the financial statements in the 2017 Annual Report and Accounts.

All programmes listed in the tables below are rated by an external credit assessment institution, namely Moody's.

3.10 Securitisation continued

Table 73: Securitisation programmes (as originator)

2017									
	Underlying facilities hedged	Public/Private	Start date	Scheduled maturity	Maximum notional \$million	Retained exposures \$million	Outstanding exposures \$million	Capital requirement before securitisation \$million	Capital requirement after securitisation \$million
Sumeru II	Commercial Loan	Private	Dec-14	Jun-18	3,492	3,255	2,822	150	68
Shangren III	Trade Finance	Private	Jun-15	Sep-18	3,987	3,760	3,597	217	63
Sealane III	Trade Finance	Public	Jun-15	Dec-18	2,992	2,835	2,628	154	52
Start X	Commercial Loan	Public	Sep-15	Mar-19	3,496	3,264	3,195	171	74
Baruntse	Commercial Loan	Private	Nov-15	May-19	1,997	1,865	1,834	103	42
Total					15,964	14,979	14,076	795	299
2016									
	Underlying facilities hedged	Public/Private	Start date	Scheduled maturity	Maximum notional \$million	Retained exposures \$million	Outstanding exposures \$million	Capital requirement before securitisation \$million	Capital requirement after securitisation \$million
Start IX	Commercial Loan	Public	Apr-14	Oct-17	1,485	1,395	1,335	82	19
Sumeru II	Commercial Loan	Private	Dec-14	Jun-18	3,495	3,255	3,097	162	71
Shangren III	Trade Finance	Private	Jun-15	Sep-18	3,990	3,760	3,766	214	65
Sealane III	Trade Finance	Public	Jun-15	Dec-18	2,994	2,835	2,812	157	54
Start X	Commercial Loan	Public	Sep-15	Mar-19	3,497	3,264	3,184	189	76
Baruntse	Commercial Loan	Private	Nov-15	May-19	1,997	1,865	1,789	109	42
Total					17,458	16,374	15,983	913	327

The following tables show the distribution of the Group's securitisation exposures across risk-weights and how these relate to external credit ratings. The vast majority of the Group's exposure to securitisation programmes is to the higher-rated tranches. The External Ratings Based Method is used to calculate risk-weights for all the rated tranches. Those exposures where the Group uses the supervisory formula approach to determine credit risk capital requirements relates to certain originated securitisations.

Table 74: Securitisation positions by risk-weight category

2017											
		Originated									
		Senior		Non Senior		Non Granular Pools		ABS		Total	
Credit Assessments Moody's	Risk weight %	Exposure \$ million	Capital requirement \$ million	Exposure \$ million	Capital requirement \$ million	Exposure \$ million	Capital requirement \$ million	Exposure \$ million	Capital requirement \$ million	Exposure \$ million	Capital requirement \$ million
Aaa	7% to 20%	12,049	72	385	4	–	–	4,414	26	16,848	102
Aa	8% to 25%	–	–	–	–	–	–	873	6	873	6
A1	10% to 35%	–	–	1,445	22	–	–	52	1	1,497	23
A2	12% to 35%	–	–	–	–	–	–	59	1	59	1
A3	20% to 35%	–	–	445	13	–	–	340	6	785	19
Baa1	35% to 50%	–	–	374	16	–	–	276	8	650	24
Baa2	60% to 75%	–	–	–	–	–	–	304	15	304	15
Baa3	100%	–	–	120	10	–	–	108	9	228	19
Ba1	250%	–	–	–	–	–	–	–	–	–	–
Ba2	425%	–	–	–	–	–	–	1	1	1	1
Ba3	650%	–	–	–	–	–	–	–	–	–	–
Supervisory formula		–	–	1,021	39	–	–	–	–	1,021	39
Deductions		–	–	125	–	–	–	42	1	167	1
Total¹		12,049	72	3,915	104	–	–	6,469	74	22,433	250

¹ See Table 12: Overview of RWA (OV1)

3.10 Securitisation continued

Table 74: Securitisation positions by risk-weight category continued

2016											
Credit Assessments Moody's	Risk weight %	Originated									
		Senior		Non Senior		Non Granular Pools		ABS		Total	
		Exposure \$ million	Capital require- ment \$ million	Exposure \$ million	Capital require- ment \$ million	Exposure \$ million	Capital require- ment \$ million	Exposure \$ million	Capital require- ment \$ million	Exposure \$ million	Capital require- ment \$ million
Aaa	7% to 20%	13,100	78	430	4	–	–	5,206	30	18,736	113
Aa	8% to 25%	–	–	–	–	–	–	102	1	102	1
A1	10% to 35%	–	–	1,625	25	–	–	69	1	1,694	26
A2	12% to 35%	–	–	–	–	–	–	34	–	34	–
A3	20% to 35%	–	–	475	14	–	–	555	9	1,030	23
Baa1	35% to 50%	–	–	434	18	–	–	–	–	434	18
Baa2	60% to 75%	–	–	–	–	–	–	25	1	25	1
Baa3	100%	–	–	135	11	–	–	–	–	135	11
Ba1	250%	–	–	–	–	–	–	–	–	–	–
Ba2	425%	–	–	–	–	–	–	–	–	–	–
Ba3	650%	–	–	–	–	–	–	–	–	–	–
Supervisory formula		–	–	1,126	42	–	–	–	–	1,126	42
Deductions		–	–	133	–	–	–	52	–	184	–
Total¹		13,100	78	4,358	115	–	–	6,043	42	23,501	235

¹ See Table 12: Overview of RWA (OV1)

In the following table, securitisation programmes present the maximum notional of the securitised exposures by geography.

Table 75: Securitisation positions by region

	2017			2016		
	Securitisation programmes \$million	ABS \$million	Total \$million	Securitisation programmes \$million	ABS \$million	Total \$million
Greater China & North Asia	6,022	959	6,981	5,902	514	6,416
ASEAN & South Asia	5,247	1,534	6,781	5,909	899	6,808
Africa & Middle East	2,818	586	3,404	3,272	579	3,851
Europe & Americas	1,877	3,390	5,266	2,375	4,051	6,426
Total	15,964	6,469	22,433	17,458	6,043	23,501

4. Market risk

The primary categories of market risk for the Group are:

- Interest rate risk: arising from changes in yield curves, credit spreads and implied volatilities on interest rate options
- Currency exchange rate risk: arising from changes in exchange rates and implied volatilities on foreign exchange options
- Commodity price risk: arising from changes in commodity prices and implied volatilities on commodity options; covering energy, precious metals, base metals and agriculture
- Credit spread risk: arising from changes in the credit spread of its derivatives' counterparties through CVA accounting

Interest rate risk from non-trading book portfolios is transferred to local Treasury Markets (TM) desks under the supervision of local Asset and Liability Committees. TM deals in the market in approved financial instruments in order to manage the net interest rate risk, subject to approved value-at-risk (VaR) and risk limits.

Trading book

The Trading book contains positions held with trading intent or hedges for such

positions. The Trading Book Policy Statement identifies the policies and procedures determining the positions included in the Trading book and their risk management and valuation. The Market Risk Framework sets out the Group's standard systematic approach to managing market risk. All trading book desks are subject to market risk limits. Market and Traded Credit Risk, an independent risk control function, monitors the limits and reports daily to senior management.

Valuation framework

Valuation of financial assets and liabilities held at fair value is subject to an independent review by Valuation Control within the Finance function. For those financial assets and liabilities whose fair value is determined by reference to externally quoted prices or market observable pricing inputs or to a valuation model, an assessment is made by Valuation Control against external market data and consensus services. Valuation Control also ensures adherence to the valuation adjustment policies to incorporate bid/ask spreads, model risk and other reserves, and, where appropriate, to mark all positions in accordance with prevailing accounting and regulatory guidelines.

The Valuation and Benchmarks Committee (VBC), a sub-committee of the Corporate and Institutional Banking Risk Committee, provides oversight and governance of all financial markets valuation adjustments and price testing policies and reviews the results of the valuation control process on a monthly basis. In addition, the VBC also provides governance over the Group's benchmark rates review process.

Our approach to market risk can be found in the Risk management approach section in the 2017 Annual Report and Accounts on pages 169 to 170.

Management VaR

Management VaR is one of the tools used by management to monitor the total market risk within the trading and banking books.

Regulatory VaR

Regulatory VaR is used to estimate the potential loss, from market movements, across trading book positions for which the Bank has received permission to apply the internal model approach (IMA). Regulatory VaR, including Stressed VaR and Risk Not in VaR (RNIV) measures, is used to calculate market risk RWAs for positions falling under the IMA permission.

Regulatory VaR vs Management VaR

Variable	Regulatory VaR	Management VaR
Confidence level	99%	97.5%
Historical Observation	260 business days unweighted	260 business days unweighted
Liquidity Horizon	1 day Scaled to 10-day VaR by multiplying by the square root of 10	1 day
Updating Frequency	1 day	1 day
Scope	As approved by the PRA, under Internal Model Approval (IMA)	All non-structural market risk exposures across the trading and non-trading books

The VaR simulation applies full revaluation to all products, except for the simpler products where appropriate sensitivity-based or cash flow-based approaches are applied:

- FX and simple cash flow products: first order sensitivities are applied

- Bonds: cash flows discounted with a single benchmark yield curve adjusted by the IR VaR shocks

Both management and regulatory VaR simulations apply the same valuation approaches.

The VaR simulations currently generally apply relative returns to most market risk factors except interest rates where absolute changes in zero coupon yields are applied.

The PRA has granted the Group permission to apply IMA for the following entities:

Standard Chartered Bank	Solo and consolidated
Standard Chartered Bank (Singapore) Ltd	Consolidated
Standard Chartered Bank (Hong Kong) Ltd	Consolidated
Standard Chartered Securities (India) Ltd	Consolidated
Standard Chartered Bank (Brasil) S.A. – Banco de Investimento	Consolidated
Standard Chartered Bank (China) Ltd	Consolidated
Standard Chartered Investments and Loans (India) Ltd	Consolidated
PT Standard Chartered Securities Indonesia	Consolidated
Standard Chartered Bank Korea Ltd	Consolidated
Standard Chartered Bank Malaysia Berhad	Consolidated
Standard Chartered Bank (Taiwan) Ltd	Consolidated
Standard Chartered Bank (Thai) PCL	Consolidated
Standard Chartered Bank (Vietnam) Ltd	Consolidated

Backtesting

Backtesting is performed to ensure that the VaR model is fit for purpose. It measures the ability of the model to correctly reflect the potential level of losses under normal trading conditions, for a certain confidence level.

A backtesting breach is recorded when the net trading P&L loss in one day is greater than the estimated VaR for the same day. Prudential regulation specifies that a model with fewer than five backtesting exceptions in a 12-month period is deemed to be in the 'green zone'. During 2017, the Group remained in the 'green zone'.

Stressed VaR

Stressed VaR applies the same model as for regulatory VaR but using a one-year historical observation period from a stressed period relevant to the trading book portfolio. In 2017, the stressed period applied was the 260 business days ending 30 June 2009 reflecting the Global Financial Crisis.

Stress testing

Group-wide stress testing is performed to measure the potential loss on a portfolio of financial positions due to low probability market events or risk to the Group posed by a breakdown of risk model assumptions.

So stress testing supplements the use of VaR as the primary measure of risk. The roles and responsibilities of the various business functions are set out in the Market Risk Stress Testing Policy.

Market risk changes

The average level of Total Trading and Non-trading VaR in 2017 was lower than in 2016 by 19 per cent and the actual level of Total VaR as at end December was 25 per cent lower than in 2016. These declines were both primarily due to reduced market volatility in the historical time series. In 2016, the VaR had been elevated by events such as the devaluation of Chinese Renminbi in August 2015 and uncertainty about the timing of anticipated US interest rate rises.

Trading book interest rate VaR and trading book total VaR results are not comparable year-on-year as the 2017 figures include XVA desk VaR but the 2016 figures do not.

Table 76: Daily value at risk (VaR at 97.5%, one day)

	2017				2016			
	Average \$million	High ¹ \$million	Low ¹ \$million	Actual ² \$million	Average \$million	High ¹ \$million	Low ¹ \$million	Actual ² \$million
Trading and Non-trading								
Interest rate risk ^{3,6}	22.6	28.5	18.1	18.7	27.7	32.7	24.1	25.3
Foreign exchange risk	5.5	12.3	3.0	6.0	6.3	12.2	3.7	9.4
Commodity risk	1.2	2.0	0.6	1.0	1.9	3.1	1.0	1.4
Equity risk	7.7	8.4	6.4	6.7	10.0	13.1	6.9	8.1
Total^{4,6}	25.7	32.4	20.3	22.3	31.6	38.8	26.4	29.9
Trading⁵								
Interest rate risk ^{3,6}	10.1	13.1	7.7	8.5	6.7	10.3	4.7	6.8
Foreign exchange risk	5.5	12.3	3.0	6.0	6.3	12.2	3.7	9.4
Commodity risk	1.2	2.0	0.6	1.0	1.9	3.1	1.0	1.4
Equity risk	0.1	0.4	0.1	0.1	0.4	1.3	0.1	0.1
Total^{4,6}	12.1	15.7	8.3	10.9	10.6	18.7	7.5	11.6
Non-trading								
Interest rate risk ³	19.5	23.1	14.4	14.4	26.3	31.4	21.5	22.8
Equity risk	7.6	8.1	6.2	6.6	9.8	12.5	6.9	8.1
Total⁴	21.7	27.6	16.3	16.3	30.7	35.1	24.6	27.3

1 Highest and lowest VaR for each risk factor are independent and usually occur on different days

2 Actual one day VaR at year end date

3 Interest rate risk VaR includes credit spread risk arising from securities held for trading or available-for-sale

4 The total VaR shown in the table above is not a sum of the component risks due to offsets between them

5 Trading book for market risk is defined in accordance with the EU Capital Requirements Regulation (CRDIV/CRR) Part 3 Title I Chapter 3 which restricts the positions permitted in the trading book. This regulatory definition is narrower than the accounting definition of the trading book within IAS39 'Financial Instruments: Recognition and Measurement'

6 XVA (Credit and Funding Valuation Adjustment): In 2016 the XVA desk VaR was incompletely reflected in the related total VaR lines as follows:

- Total trading and non-trading VaR and Total trading and non-trading interest rate VaR reflected XVA desk VaR but only from 1 August 2016 onwards
- Total trading VaR and trading interest rate VaR figures did not reflect XVA VaR at all in 2016

The following table sets out how trading and non-trading VaR is distributed across the Group's products.

Table 77: Daily value at risk (VaR at 97.5%, one day) by products

	2017				2016			
	Average \$million	High ¹ \$million	Low ¹ \$million	Actual ² \$million	Average \$million	High ¹ \$million	Low ¹ \$million	Actual ² \$million
Trading and Non-trading	25.7	32.4	20.3	22.3	31.6	38.8	26.4	29.9
Trading⁴								
Rates	5.9	8.6	4.4	5.1	5.2	8.6	3.3	5.8
Global Foreign Exchange	5.5	12.3	3.0	6.0	6.3	12.2	3.7	9.4
Credit Trading & Capital Markets	4.6	6.9	2.6	4.9	3.0	5.3	2.2	3.2
Commodities	1.2	2.0	0.6	1.0	1.9	3.1	1.0	1.4
Equities	0.1	0.4	0.1	0.1	0.4	1.3	0.1	0.1
XVA⁵	5.5	8.3	3.0	3.0	9.8	12.0	6.6	6.6
Total³	12.1	15.7	8.3	10.9	10.6	18.7	7.5	11.6
Non-trading								
Asset & Liability Management	19.5	23.1	14.4	14.4	26.3	31.4	21.5	22.8
Listed private equity	7.6	8.1	6.2	6.6	9.8	12.5	6.9	8.1
Total³	21.7	27.6	16.3	16.3	30.7	35.1	24.6	27.3

1 Highest and lowest VaR for each risk factor are independent and usually occur on different days

2 Actual one day VaR at year end date

3 The total VaR shown in the table above is not a sum of the component risks due to offsets between them

4 Trading book for market risk is defined in accordance with the EU Capital Requirements Regulation (CRDIV/CRR) Part 3 Title I Chapter 3 which restricts the positions permitted in the trading book. This regulatory definition is narrower than the accounting definition of the trading book within IAS39 'Financial Instruments: Recognition and Measurement'

5 XVA (Credit and Funding Valuation Adjustment): In 2016 the XVA desk VaR reflects a period from 1 August 2016 to 30 December 2016

Market risk regulatory capital requirements

The CRR specifies minimum capital requirements against market risk in the trading book. Interest rate risk in the non-trading book is covered separately under the Pillar 2 framework.

The PRA has granted the Group permission to use the internal model approach (IMA) covering the majority of interest rate, foreign exchange, precious metals, base metals, energy and agriculture market risk in the trading book. Positions outside the IMA scope are assessed according to standard PRA rules.

The minimum regulatory market risk capital requirements for the trading book are presented below for the Group.

Table 78: Market risk regulatory capital requirements

	2017		2016	
	Risk Weighted Assets \$million	Regulatory capital requirement \$million	Risk Weighted Assets \$million	Regulatory capital requirement \$million
Market risk capital requirements for trading book				
Interest rate ¹	8,156	652	3,918	314
Equity	13	1	17	1
Options	1,089	87	877	70
Commodity ²	231	19	217	17
Foreign exchange ²	775	62	3,701	296
Internal Models Approach ³	12,776	1,022	13,147	1,052
Total	23,040	1,843	21,877	1,750

1 Securitisation positions contributed \$11.9 million to the interest rate position risk requirement (PRR) and \$149.1 million to interest rate RWA as at 31 December 2017 (securitised positions contributed \$5.1million to the interest rate PRR and \$63.3 million to interest rate RWA as at 31 December 2016)

2 Commodity and foreign exchange cover non-trading book as well as trading book

3 Where the risks are not within the approved scope of the internal models approach, they are captured in the relevant category above based on the Standardised Approach

Table 79: Market risk under standardised approach (MR1)

	2017		2016	
	Risk Weighted Assets \$million	Regulatory capital requirement \$million	Risk Weighted Assets \$million	Regulatory capital requirement \$million
Outright products				
Interest rate risk	8,365	669	3,918	314
Equity risk	4	–	17	1
Foreign exchange risk	997	80	3,701	296
Commodity risk	192	15	217	17
Options	706	56	877	70
Simplified approach	–	–	–	–
Delta-plus method	12	1	–	–
Scenario approach	694	56	877	70
Securitisation (specific risk) ¹	149	12	63	5
Total	10,264	820	8,730	698

1 Securitisation (specific risk) is included in the interest rate risk RWA number

Internal models approach

The table below shows the average, high and low Stressed VaR for the period January 2017 to December 2017 and the actual position on 31 December 2017. The Stressed VaR results reflect only the Group portfolio covered by the internal model approach and are calculated at a 99 per cent confidence level.

Table 80: IMA values for trading portfolios (MR3)

	2017				2016			
	Average \$million	High ¹ \$million	Low ¹ \$million	Actual ² \$million	Average \$million	High ¹ \$million	Low ¹ \$million	Actual ² \$million
VaR (10 day 99%)	42	99	26	44	67	92	32	63
Stressed VaR (10 day 99%)	152	259	103	129	189	274	97	123
Incremental Risk Charge (99.99%)	–	–	–	–	–	–	–	–
Comprehensive Risk capital charge (99.9%)	–	–	–	–	–	–	–	–

1 Highest and lowest VaR for each risk factor are independent and usually occur on different days

2 Actual one day VaR as at period end date

Table 81: Market risk under internal models approach (MR2-A)

	2017		2016	
	Risk Weighted Assets \$million	Regulatory capital requirement \$million	Risk Weighted Assets \$million	Regulatory capital requirement \$million
VaR (higher of values a and b)	1,978	158	3,161	253
(a) Previous day's VaR	905	72	905	72
(b) Average of the daily VaR	1,978	158	3,161	253
SVaR (higher of values a and b)	8,083	647	7,931	634
(a) Latest SVaR	2,000	160	2,000	160
(b) Average of the SVaR	8,084	647	7,931	634
Other ¹	2,715	217	2,055	164
Total²	12,776	1,022	13,147	1,051

1 Other IMA capital add-ons for market risks not fully captured in either VaR or SVaR. More details on Risks not in VaR can be found in the 2017 Annual Reports and Accounts on page 148

2 There are zero IRC and CRM as the Group has not received model permission for specific interest rate risk comprehensive risk measure

Backtesting

Regulatory backtesting is applied at both Group and Solo levels. In 2017, there has been one negative exception at both Group level and Solo level (in 2016 there was one exception at Group level and two at Solo level).

This exception occurred on 18 December due to yield curve moves in Nigeria. The Central Bank of Nigeria restarted their liquidity management open market operations

unexpectedly, filling Nigerian treasury bill auctions below the lowest bid yields. This move caused the market to sell off and Nigerian Naira yields to rise sharply.

One exception in a year due to market events is within the 'green zone' applied internationally to internal models by bank supervisors (Basel Committee on Banking Supervision: 'Supervisory framework for the use of "backtesting" in conjunction with the internal models approach to market risk capital requirements', January 1996).

The graphs below illustrate the performance of the VaR model used in the Group capital calculations. They compare the 99 percentile loss confidence level given by the VaR model with the Hypothetical and Actual P&L of each day given the real market movements. Actual backtesting P&L excludes from trading P&L: brokerage expense, fees & commissions, non-market-related accounting valuation adjustments and accounting debit valuation adjustments. Hypothetical backtesting P&L further excludes P&L from new deals and market operations.

Table 82: 2017 Backtesting chart for internal model approach regulatory trading book at Group level with hypothetical profit and loss (P&L) versus VaR (99%, one day) (MR4)

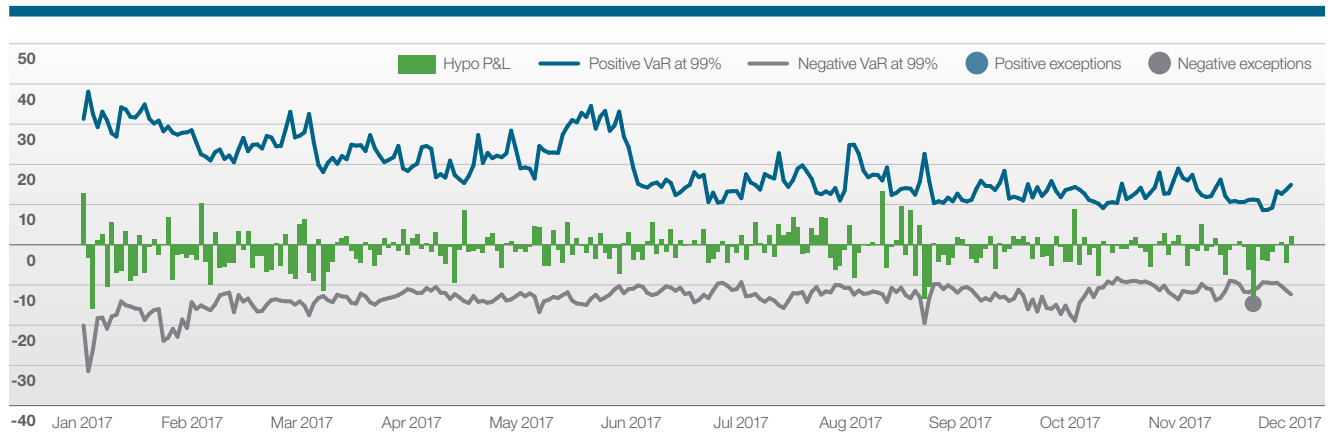
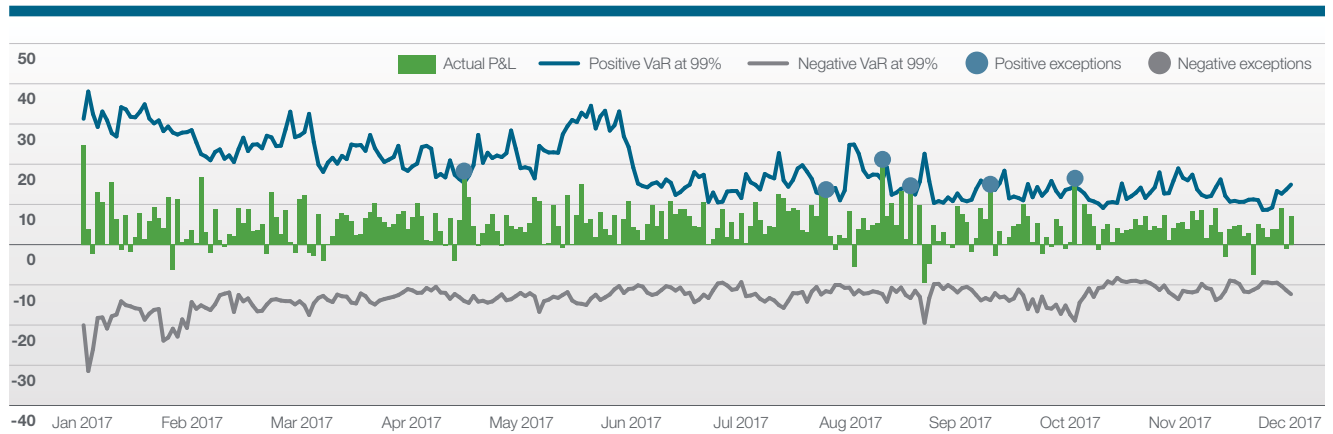


Table 83: 2017 Backtesting chart for internal model approach regulatory trading book at Group level with actual profit and loss (P&L) versus VaR (99%, one day) (MR4)



The 2017 IMA Group level backtesting chart outliers are all positive, reflecting the additional elements of actual P&L (compared to hypothetical). There were six such positive actual outliers in 2017.

5. Interest rate risk in the banking book

The Group defines Earnings Risk (also referred to as Interest Rate Risk in the Banking Book or IRRBB) as the potential for loss of earnings or economic value, following adverse movements in interest rates, which arises from a mismatch in the re-pricing profile of assets, liabilities, and off-balance sheet items in the banking book. This risk is incorporated in the Group's Enterprise Risk Management Framework (ERMF), approved by the Board, as a risk sub-type of Capital and Liquidity Risk.

The Board delegates the management of Earnings Risk to the Group Asset & Liability Committee (GALCO), which in turn mandates the Country ALCOs and the Group's Operational Balance Sheet Committee (OBSC) to monitor Earnings Risk as per the risk type framework.

Earnings Risk is managed at a country level by the Country ALCO, chaired by the Country CEO, and is independently monitored by Treasury Risk.

Earnings Risk models and methodologies are defined for the Group by the Treasury Liquidity function, independently validated and approved by a designated model approval body. Country modelling assumptions are derived locally using the Group's methodologies, and are reviewed by Treasury Risk and Country ALCO.

The Group uses Funds Transfer Pricing (FTP) to transfer re-pricing risk from the business to Treasury Markets, including that arising from structural positions such as the investment of equity and non-maturity deposit balances. For non-maturity deposits, the assumed duration is dependent on the portion that can be considered stable and the degree to which these balances are considered price sensitive. The re-pricing risk transferred to Treasury Markets is managed on an integrated basis with a securities portfolio maintained for liquidity and investment management purposes. Any basis risk that is

not transferred and cannot be hedged by Treasury Markets is reported and overseen at local ALCOs.

Re-pricing risk arising within Treasury Markets is managed using a combination of on-balance sheet and derivative hedges; derivative hedges are subject to Fair Value and Cash flow Hedge accounting treatment where available. Treasury Markets' interest rate risk positions and limits are independently monitored by the Market and Traded Credit Risk (MTCR) function.

Table 84 below reflects Treasury Markets interest rate risk profile (at year end) and is a measure of the economic value sensitivity that would result from increasing interest rates by 1 basis point (instantaneous parallel shift). The PV01 is controlled and monitored at country and currency level.

Table 84: Treasury Markets PV01 by currency

By currency	2017 Actual ¹ \$million	2016 Actual ¹ \$million
HKD	0.4	–
INR	(0.2)	(0.5)
KRW	(0.5)	(0.4)
RMB ²	(0.2)	(0.3)
SGD	0.1	–
USD	(0.4)	(0.8)
Other	(1.0)	(1.3)
Total Treasury Markets	(1.8)	(3.3)

1 Actual PV01 at period end date

2 RMB includes onshore CNY and CNH

The changes during 2017 reflect active interest rate risk management as Treasury-Markets reduced their open interest rate risk exposures mainly on the securities portfolio.

6. Liquidity risk

Liquidity & Funding Risk Management

For information on the Group's Liquidity & Funding risk management practices and risk profile we refer to the Principal Risks and Risk Profile sections of the 2017 Annual Report and Accounts on pages 150 to 157 and 171 to 172 respectively.

Liquidity Coverage Ratio Disclosure

The Liquidity Coverage Ratio (LCR) is a regulatory stress ratio measuring the proportion of high-quality liquid assets (HQLA) against net outflows over 30 calendar days. An essential component of the Basel III reforms, the LCR was introduced in October 2015 with the goal of promoting the short-term resilience of a firm's liquidity risk profile.

The Group monitors and reports its LCR under European Commission Delegated Regulation 2015/61 (LCR Delegated Act rules) and is also subject to local prudential LCR requirements across our footprint, where applicable. The Prudential Regulation Authority (PRA), as the Group's competent authority, accelerated LCR implementation by setting an initial industry-wide minimum threshold of 80 per cent on 1 October 2015 before increasing to 90 per cent on 1 January 2017 ahead of full implementation (100 per cent) from 1 January 2018.

The LCR is a Pillar 1 regulatory requirement calculated by applying standardised haircuts, outflow and inflow factors to HQLA, liabilities

and assets respectively. Risks not captured, or not fully captured, under the standardised Pillar 1 ratio (e.g. Intra-day risk or other risks specific to each firm) are known as Pillar 2 risks and are captured under a separate Pillar 2 regulatory framework. These Pillar 2 requirements are set in the form of fixed or variable add-ons to LCR Pillar 1 requirements. Therefore, it should be noted that the HQLA reported in the table below is held to meet Pillar 1 and Pillar 2 risks along with internal Board approved risk appetite.

HQLA

HQLA eligible securities, as defined under LCR Delegated Act rules, fall into three categories: Level 1, Level 2A, and Level 2B liquid assets. Level 1 liquid assets, which are of the highest quality and deemed the most liquid (e.g. central bank reserves or securities issued by the U.S. Treasury Department), are subject to no or little discount (or haircuts) to their market value and may be largely used without limit in the liquidity buffer, with the exception of Level 1 covered bonds.

Level 2A and 2B securities are recognised as being relatively stable and reliable sources of liquidity, but not to the same extent as Level 1 assets. LCR rules therefore set a 40 per cent composition cap on the combined amount of Level 2A and Level 2B that firms may hold in their total eligible liquidity buffer. Level 2B liquid assets, which are considered less liquid and more volatile than Level 2A liquid assets, are subject to large and varying haircuts and may not exceed 15 per cent of the total eligible HQLA.

To be recognised as HQLA eligible, securities must also meet various operational and general requirements designed to ensure that such assets have robust liquidity characteristics and can be freely converted into cash within a short timeframe, without significant loss in value.

Outflows

Expected outflows are generally calculated as a percentage outflow on-balance sheet items such as funding received and off-balance sheet commitments (e.g. credit and liquidity lines) made by firms. This outflow varies typically by counterparty. For example, the outflow expected on retail deposits is lower than the outflow expected on deposits provided by corporates or financial institutions.

Inflows

Expected inflows are also generally calculated as a percentage inflow on-balance sheet items and include inflows (e.g. from retail or corporate loans) that will be repaid within 30 days. To ensure a minimum level of liquid asset holdings, and to prevent firms from relying solely on anticipated inflows to meet their liquidity coverage ratio, the prescribed amount of inflows that can offset outflows is capped at 75 per cent of total expected outflows.

Calculated pursuant to LCR Delegated Act rules, the following table sets forth simple averages of month-end Group LCR observations over the 12 months preceding each quarter. For a period end Group LCR disclosure, refer to page 151 of the 2017 Annual Report and Accounts.

Table 85: Liquidity Coverage Ratio (LCR) (LIQ1)

	2017							
	Total unweighted value (average)				Total weighted value (average)			
	31.03.17 \$million	30.06.17 \$million	30.09.17 \$million	31.12.17 \$million	31.03.17 \$million	30.06.17 \$million	30.09.17 \$million	31.12.17 \$million
Number of data points used in the calculation of averages	12	12	12	12	12	12	12	12
High-quality liquid assets								
Total high-quality liquid assets (HQLA)					138,629	143,755	145,380	144,280
Cash outflows								
Retail deposits and deposits from small business customers, of which:	116,466	119,086	121,565	123,393	11,551	11,770	12,008	12,175
Stable deposits	28,201	27,564	27,708	28,112	1,410	1,378	1,385	1,406
Less stable deposits	88,265	91,522	93,857	95,281	10,141	10,392	10,623	10,769
Unsecured wholesale funding, of which:	196,040	199,935	203,370	206,446	109,304	109,877	110,236	110,254
Operational deposits (all counterparties) and deposits in networks of cooperative banks	52,838	54,783	56,166	58,446	13,045	13,539	13,891	14,466
Non-operational deposits (all counterparties)	136,373	139,128	141,293	142,287	89,430	90,314	90,434	90,075
Unsecured debt	6,829	6,024	5,911	5,713	6,829	6,024	5,911	5,713
Secured wholesale funding					3,367	2,695	2,386	2,241
Additional requirements	75,007	76,551	78,717	80,259	18,552	19,653	21,128	21,456
Outflows related to derivative exposures and other collateral requirements	6,576	7,341	8,822	9,130	6,254	7,129	8,607	8,912
Outflows related to loss of funding on debt products	80	53	26	27	80	53	26	27
Credit and liquidity facilities	68,351	69,157	69,869	71,102	12,218	12,471	12,495	12,517
Other contractual funding obligations	9,736	10,639	12,104	12,478	8,869	9,773	11,238	11,611
Other contingent funding obligations	246,536	242,346	231,092	221,741	2,222	2,176	2,158	2,166
Total cash outflows					153,865	155,944	159,154	159,903
Cash inflows								
Secured lending (e.g. reverse repos)	23,834	24,563	26,044	28,819	6,629	7,461	8,492	9,118
Inflows from fully performing exposures	49,748	51,371	54,292	56,412	36,719	37,937	39,589	41,739
Other cash inflows	26,052	26,690	28,791	22,609	8,098	9,375	11,408	11,608
(Difference between total weighted inflows and total weighted outflows arising from transactions in third countries where there are transfer restrictions or which are denominated in non-convertible currencies)					–	–	–	–
(Excess inflows from a related specialised credit institutions)					–	–	–	–
Total cash inflows	99,634	102,624	109,127	107,840	51,446	54,773	59,489	62,465
Fully exempt inflows	–	–	–	–	–	–	–	–
Inflows subject to 90% cap	–	–	–	–	–	–	–	–
Inflows subject to 75% cap	99,634	102,624	109,127	107,840	51,446	54,773	59,489	62,465
Total adjusted value								
Liquidity buffer					138,629	143,755	145,380	144,280
Total net cash outflows					102,419	101,171	99,665	97,438
Liquidity coverage ratio (%)					136%	142%	146%	148%

The ratios reported in the above table are simple averages of month-end Group LCR ratios over the 12 months preceding each quarter. Therefore, these ratios may not be equal to the implied LCR calculated when using the average component amounts reported under 'Liquidity buffer' and 'Total net cash outflows' in the above table.

Main drivers and changes in LCR

The Group continued to maintain a strong average LCR position over the reporting period with a prudent surplus to both Board approved risk appetite and regulatory requirements.

The Group's average LCR increased to 148 per cent in the fourth quarter (first quarter: 136 per cent) driven by higher average HQLA holdings and lower net cash outflows, reflecting the Group's focus on high quality liquidity across our businesses.

Aligned with overall growth in the Group's balance sheet, total cash outflows and total cash inflows increased over the period. Most of our deposit growth in 2017 (increase in total cash outflows) came in the form of Retail and Transaction banking customer deposits with high liquidity and regulatory value, thereby having a positive impact on our LCR position.

HQLA composition

Figures reported in this section are simple averages of the 21 data points over the reporting period April 2016 to Dec 2017.

Our average weighted HQLA over the reporting period was approximately \$141 billion. Of this amount, 96 per cent consisted of Level 1 assets in the form of unencumbered central bank reserves (average 47 per cent) and high quality level 1 securities (49 per cent). Level 1 securities were mainly composed of central bank and government assets as well as securities issued by multilateral development banks and international organisations. In addition, 3 per cent of average weighted HQLA over the period consisted of Level 2A assets (mainly third country central/regional governments and public sector entities). The remaining average weighted HQLA was made up of Asset-backed securities recognised as Level 2B under LCR rules.

The Group's combined Level 2A and Level 2B securities (4 per cent) was well below the 40 per cent composition cap for such assets as required under LCR Delegated Act rules with Level 2B securities (1 per cent) falling below the required 15 per cent of total HQLA limit.

HQLA presented herein excludes excess liquidity held at certain subsidiaries that is not transferable within the Group.

Our liquidity management function in Treasury actively manages the size and composition of our eligible HQLA to ensure it is well diversified and reflects the Group's Board approved risk appetite and supporting risk measures, regulatory and internal stress testing requirements, the currency denomination of outflows, amongst other relevant considerations.

+ For a regional view of our HQLA liquidity pool, refer to page 152 of the 2017 Annual Report and Accounts.

Table 86: Total eligible high-quality liquid assets (HQLA)

	Average unweighted	Average weighted
Level 1 reserves	46%	47%
Level 1 liquid securities	49%	49%
Level 2A liquid assets	4%	3%
Level 2B liquid assets	1%	1%

Concentration of funding and liquidity sources

The Group's funding strategy is largely driven by its policy to maintain adequate liquidity at all times, in all geographic locations and in all currencies, and hence to be in a position to meet all obligations as they fall due.

With a sufficiently flexible funding strategy we are able to reduce liquidity risk by diversifying our liquidity resources. Our high degree of geographic diversification constitutes a material risk offset because of our ability to raise a variety of funding across a number of markets in which we operate.

The Group has established internal measures to closely monitor and highlight any build up in counterparty and tenor concentrations to ensure it can meet liquidity needs under different stress scenarios and different time horizons.

Our funding profile over the reporting period was well diversified across different sources by product, business and tenor. Consistent with the Group's funding strategy, customer

assets were largely funded out of customer deposits, which are considered a stable source of funding. Customer deposits are primarily sourced from Current Account Saving Account balances along with time deposits and these are further diversified across different customer segments, currencies, tenors and markets.

+ For further details on the Group's funding profile, refer to pages 150 to 151 of the 2017 Annual Report and Accounts.

Derivative exposures and potential collateral calls

In the normal course of business, the Group deals in the Over-the-counter (OTC) and exchange traded derivative markets with both collateralised and uncollateralised derivative counterparties. Trades are taken primarily to facilitate client activity or for hedging our own risk exposures; as such, derivatives are not generally held for position-taking.

The LCR Delegated Act requires HQLA to be held against net contractual and contingent outflows relating to derivative transactions.

These include:

- Net Contractual outflows over a 30-day calendar period, if subject to either legally enforceable master netting agreements and/or covered by collateral agreements (e.g. CSA), these cash flows can be netted at a counterparty level
- The impact of an adverse market scenario on the collateral requirements of the Group's derivatives portfolio
- Incremental collateral required to be posted in the event of a deterioration in the Group's own credit quality (e.g. a three-notch downgrade in the firm's long-term external credit rating)
- The counterparties' contractual right to substitute higher quality collateral with lower quality collateral
- The devaluation of existing collateral posted to counterparties
- Callable/due excess collateral that a firm may be contractually required to return to a counterparty

The Group employs various measures to reduce the risk of potential collateral calls on our derivative positions including the modelling of potential outflows in our liquidity stress testing framework to ensure we hold sufficient HQLA to cover unexpected and adverse outflows, posting mostly cash or high quality collateral to avoid the need for further collateral calls, entering into transactions that have narrow collateral eligibility requirements and/or do not allow counterparties to unilaterally substitute collateral in the event of a stress, amongst other measures.

On average over the reporting period, weighted 'Outflows related to derivative exposures and other collateral requirements' made up only 5 per cent of the Group's total weighted outflows.

Currency mismatch in the LCR

The Group LCR is calculated and reported on a consolidated basis and in its reporting currency, US dollars. Although not required to meet minimum LCR requirements in other currencies, we report other significant currency LCRs to the PRA as part of the monthly LCR submission as well as to senior stakeholders in the form of internal monthly MI.

To minimise currency mismatch risk, the Group seeks to fund assets in the same currency, however, due to our global footprint, cross currency funding is utilised to appropriately manage currency gaps when it makes economic sense to do so.

To the extent mismatches arise, these are managed via the Group's currency convertibility framework. The framework identifies currencies that are expected to have limited convertibility during a stress, and sets thresholds on the amount of currency surplus that can be used to meet outflows in other currencies. HQLA amounts reported in the above table therefore exclude surplus liquidity across the Group considered non-convertible in stress.

The implementation of liquidity metrics (such as ADR) at country level ensures that a large portion of assets is funded out of liabilities raised in the same currency. We also monitor closely, against set limits, the amount of foreign currency that can be swapped to local currency, and vice versa, in addition to currency mismatches by different tenor buckets.

6.1 Encumbered and unencumbered assets

The following disclosures of encumbered and unencumbered assets are based on the requirements in Part Eight of the CRR and the related guidelines issued by the EBA on 27 June 2014 (EBA/GL/2014/03), as implemented by the PRA through Supervisory Statement SS11/14.

Standard Chartered's primary funding source is its customer deposit base. The Group's advances-to-deposits ratio remained broadly flat at 69.4 per cent in 2017. Given this structural unsecured funding position we have little requirement to fund ourselves in secured markets, and therefore our overall low level of encumbrance reflects this position. However, we do provide collateralised financing services to clients and these result in off-balance sheet encumbrance. The Group monitors the mix of secured and unsecured funding sources within the Group's funding plan and seeks to efficiently utilise available collateral to raise secured funding and meet other collateral requirements.

Table 87: Encumbered and unencumbered assets

	2017				2016			
	Carrying amount of encumbered assets \$million	Fair value of encumbered assets \$million	Carrying amount of unencumbered assets \$million	Fair value of unencumbered assets \$million	Carrying amount of encumbered assets \$million	Fair value of encumbered assets \$million	Carrying amount of unencumbered assets \$million	Fair value of unencumbered assets \$million
Assets of Reporting Institution	22,857	–	654,824	–	23,529	–	634,650	–
Equity Instruments	–	–	2,650	2,650	–	–	2,856	2,856
Debt Securities	5,918	5,918	124,857	123,505	4,331	4,331	121,267	121,267
Other Assets ¹	16,827	–	526,385	–	19,564	–	510,368	–

¹ All remaining regulatory balance sheet assets

Table 88: Encumbered assets/collateral received and associated liabilities

	2017		2016	
	Matching liabilities contingent liabilities or securities lent \$million	Assets, collateral received and own debt securities issued other than covered bonds and ABSs encumbered \$million	Matching liabilities contingent liabilities or securities lent \$million	Assets, collateral received and own debt securities issued other than covered bonds and ABSs encumbered \$million
Carrying amount of selected financial liabilities	48,963	51,326	47,978	51,709

Table 89: Median values versus annual disclosure comparative

	Group Median Value		Group ARA value	
	2017 \$billion	2016 \$billion	2017 \$billion	2016 \$billion
Encumbered Assets	23	24	23	26
Unencumbered Assets	655	635	640	621

In accordance to the threshold criteria set out by the Supervisory Standards issued by the PRA (SS11/14), the Group is not required to report the fair value of encumbered collateral received.

The median value of the Group's encumbered and unencumbered assets, as at 31 December 2017, differs from the Group's disclosures in the 2017 Annual Report and Accounts. The difference is due to the basis of calculation with the EBA Guidelines requiring disclosure of median values of 2017 monthly data. The table above compares the different values.

The Group's median asset encumbrance for 2017 was \$23 billion, which primarily related to cash collateral pledged against derivatives,

Hong Kong government certificates of indebtedness which are both included within other assets, and other securities.

Encumbered assets represent on-balance sheet assets pledged or subject to any form of arrangement to secure, collateralise or credit enhance any transaction from which it cannot be freely withdrawn. Debt securities are predominantly related to repurchase agreements. Taken together, these encumbered assets represent 3.4 per cent (2016: 3.6 per cent) of total assets, continuing the Group's historical low level of encumbrance. Furthermore, the unencumbered assets that cannot be encumbered also remain at low level and include goodwill, property and plant, unsettled trades, non-group acceptance and

tax assets. Derivatives and Reverse Repos are not generally deemed available for encumbrance.

The Group provides collateralised security financing services to its clients, which is also used to manage the Group's own short-term cash and collateral needs. For securities accepted as collateral, mandates are credit rating driven with appropriate notional limits per rating, asset and individual bond concentration. The majority of collateral the Group uses in repo/reverse repo and stock lending/stock borrowing transactions is investment grade government issued. Information on over-collateralisation can be found in the Credit risk mitigation section of the 2017 Annual Report and Accounts on pages 138 to 141.

7. Forward-looking statements

This document may contain 'forward-looking statements' that are based on current expectations or beliefs, as well as assumptions about future events. These forward-looking statements can be identified by the fact that they do not relate only to historical or current facts. Forward-looking statements often use words such as 'may', 'could', 'will', 'expect', 'intend', 'estimate', 'anticipate', 'believe', 'plan', 'seek', 'continue' or other words of similar meaning. By their very nature, such statements are subject to known and unknown risks and uncertainties and can be affected by other factors that could cause actual results, and the Group's plans and objectives, to differ materially from those expressed or implied in the forward-looking statements. Recipients should not place reliance on, and are cautioned about relying on, any forward-looking statements.

There are several factors which could cause actual results to differ materially from those expressed or implied in forward-looking statements. The factors that could cause actual results to differ materially from those described in the forward-looking statements include (but are not limited to) changes in global, political, economic, business, competitive, market and regulatory forces or conditions, future exchange and interest rates, changes in tax rates, future business combinations or dispositions and other factors specific to the Group. Any forward-looking statement contained in this document is based on past or current trends and/or activities of the Group and should not be taken as a representation that such trends or activities will continue in the future. No statement in this document is intended to be a profit forecast or to imply that the earnings

of the Group for the current year or future years will necessarily match or exceed the historical or published earnings of the Group. Each forward-looking statement speaks only as of the date of the particular statement. Except as required by any applicable laws or regulations, the Group expressly disclaims any obligation to revise or update any forward-looking statement contained within this document, regardless of whether those statements are affected as a result of new information, future events or otherwise. Nothing in this document shall constitute, in any jurisdiction, an offer or solicitation to sell or purchase any securities or other financial instruments, nor shall it constitute a recommendation or advice in respect of any securities or other financial instruments or any other matter.

Annex 1

Standard Chartered Significant Subsidiaries

Capital resources of significant subsidiaries

For local capital adequacy purposes, a range of approaches are applied in accordance with the regulatory requirements in force in each jurisdiction. Wherever possible, the approaches adopted at the Group level are applied locally.

CRR Article 13 requires the application of disclosure requirements of significant subsidiaries of EU parent institutions and those subsidiaries which are of material significance to their local market.

The capital resources of the Group's significant subsidiaries under CRR Article 13 are presented below. These subsidiaries are Standard Chartered Bank, a UK incorporated banking entity including overseas branches, and subsidiaries, Standard Chartered Bank Hong Kong Limited and Standard Chartered Bank Korea Limited.

The capital resources of these subsidiaries are calculated in accordance with the regulatory requirements applicable in the countries in which they are incorporated, and therefore cannot be aggregated, but are presented to align with the Group format.

Standard Chartered Bank Singapore Limited and Standard Chartered Bank Uganda Limited qualify as the Group's subsidiaries which are Domestically Important Institutions (D-SIs). Standard Chartered Bank Uganda Limited follows Basel I rules, see Table A for their information presented to align with Group format.

The table below provides a summary view of the significant subsidiaries. The significant subsidiary data is subject to change due to local timing and local regulatory requirements.

Table A: Capital resources of significant subsidiaries

	2017					2016				
	Standard Chartered Bank ¹ \$million	Standard Chartered Bank (HK) Ltd \$million	Standard Chartered Bank Korea Ltd \$million	Standard Chartered Bank Singapore Ltd \$million	Standard Chartered Bank Uganda Ltd \$million	Standard Chartered Bank ¹ \$million	Standard Chartered Bank (HK) Ltd ² \$million	Standard Chartered Bank Korea Ltd ² \$million	Standard Chartered Bank Singapore Ltd \$million	Standard Chartered Bank Uganda Ltd ² \$million
Local Regulator	PRA	HKMA	FSS	MAS	BOU	PRA	HKMA	FSS	MAS	BOU
Common Equity Tier 1 capital before regulatory adjustments	46,508	7,588	4,484	1,478	118	44,019	7,202	3,825	1,388	111
Regulatory adjustments	(6,777)	(956)	(132)	(184)	(1)	(6,451)	(1,011)	(95)	(120)	(3)
Common Equity Tier 1 capital	39,731	6,632	4,352	1,294	117	37,568	6,191	3,730	1,268	108
Additional Tier 1 (AT1) capital: instruments	6,480	746	–	178	–	5,480	500	–	127	–
Tier 1 capital (T1 = CET1 + AT1)	46,211	7,378	4,352	1,472	117	43,048	6,691	3,730	1,395	108
Tier 2 capital	13,676	1,604	1	608	4	17,144	1,764	16	571	4
Total capital (TC = T1 + T2)	59,887	8,982	4,353	2,080	121	60,192	8,455	3,746	1,966	112
Total risk-weighted assets	282,038	49,266	26,758	11,429	594	268,199	46,422	23,911	9,864	638
Capital Ratios										
Common Equity Tier 1	14.1%	13.5%	16.3%	11.3%	19.7%	14.0%	13.3%	15.6%	12.8%	16.9%
Tier 1 Capital	16.4%	15.0%	16.3%	12.9%	19.7%	16.1%	14.4%	15.6%	14.1%	16.9%
Total Capital	21.2%	18.2%	16.3%	18.2%	20.3%	22.4%	18.2%	15.7%	19.9%	17.5%

1 Standard Chartered Bank disclosed in the table above aligns with the capital section of the 2017 Standard Chartered Bank Accounts

2 2016 Capital resources have been re-presented to align with final local regulatory returns for Standard Chartered Bank Hong Kong Ltd, Korea Ltd and Uganda Ltd respectively.

Capital management – Standard Chartered Bank

The Risk management approach section of the 2017 Standard Chartered Bank Director Report and Financial Statements sets out our approach to capital management (pages 122 to 123). Tables B and C below summarise the consolidated capital position of Standard Chartered Bank.

Further disclosures of the legal entity Standard Chartered Bank may be found in the 2017 Standard Chartered Bank Accounts.

Table B: Capital base

	2017 Transitional position \$million	2017 End point adjustment \$million	2017 End point position \$million	2016 Transitional position \$million
Standard Chartered Bank				
Common Equity Tier 1 (CET1) capital: instruments and reserves				
Capital instruments and the related share premium accounts	26,820	–	26,820	26,820
Of which: Share premium accounts	296	–	296	296
Retained earnings ¹	19,533	–	19,533	20,549
Accumulated other comprehensive income (and other reserves)	(4,258)	–	(4,258)	(5,481)
Non-controlling interests (amount allowed in consolidated CET1)	3,805	–	3,805	2,797
Independently reviewed interim and year-end profits/(loss) ²	1,007	–	1,007	(503)
Foreseeable dividends net of scrip	(399)	–	(399)	(163)
Common Equity Tier 1 capital before regulatory adjustments	46,508	–	46,508	44,019
Common Equity Tier 1 capital: regulatory adjustments				
Additional value adjustments	(574)	–	(574)	(660)
Intangible assets	(4,687)	–	(4,687)	(4,432)
Deferred tax assets that rely on future profitability	(125)	–	(125)	(197)
Fair value reserves related to gains or losses on cash flow hedges	46	–	46	73
Negative amounts resulting from the calculation of expected loss	(1,142)	–	(1,142)	(740)
Gains or losses on liabilities at fair value resulting from changes in own credit	(55)	–	(55)	(289)
Defined-benefit pension fund assets	(40)	–	(40)	(18)
Fair value gains and losses from own credit risk related to derivative liabilities	(59)	–	(59)	(20)
Exposure amounts which could qualify for risk weighting	(141)	–	(141)	(168)
Of which: securitisation positions	(125)	–	(125)	(134)
Of which: free deliveries	(16)	–	(16)	(34)
Total regulatory adjustments to Common Equity Tier 1	(6,777)	–	(6,777)	(6,451)
Common Equity Tier 1 capital	39,731	–	39,731	37,568
Additional Tier 1 (AT1) capital: instruments				
Capital Instruments and the related share premium accounts	6,500	(1,500)	5,000	5,500
Additional Tier 1 (AT1) capital before regulatory adjustments	6,500	(1,500)	5,000	5,500
AT1 regulatory adjustments				
Direct and indirect holdings by an institution of own AT1 instruments and subordinated loans	(20)	–	(20)	(20)
Total regulatory adjustments to AT1	(20)	–	(20)	(20)
Additional Tier 1 capital	6,480	(1,500)	4,980	5,480
Tier 1 capital (T1 = CET1 + AT1)	46,211	(1,500)	44,711	43,048
Tier 2 (T2) capital: instruments and provisions				
Capital instruments and the related share premium accounts	12,466	–	12,466	15,930
Qualifying items and the related share premium accounts subject to phase out from T2	899	(899)	–	865
Qualifying own funds instruments included in T2 issued by subsidiaries and held by third parties	341	(11)	330	379
Tier 2 capital before regulatory adjustments	13,706	(910)	12,796	17,174
Tier 2 capital: regulatory adjustments				
Direct and indirect holdings by an institution of own Tier 2 instruments and subordinated loans	(30)	–	(30)	(30)
Total regulatory adjustments to Tier 2 capital	(30)	–	(30)	(30)
Tier 2 capital	13,676	(910)	12,766	17,144
Total capital (TC = T1 + T2)	59,887	(2,410)	57,477	60,192

Table C: Capital ratios and risk-weighted assets

	2017 Transitional position \$million	2017 End point adjustment \$million	2017 End point position \$million	2016 Transitional position \$million
Amounts below the thresholds for deduction (before risk weighting)				
Direct and indirect holdings of the capital of financial sector entities where the institution does not have a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	597	–	597	954
Direct and indirect holdings by the institution of the CET1 instruments of financial sector entities where the institution has a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	1,818	–	1,818	1,347
Deferred tax assets arising from temporary differences (amount below 10% threshold, net of related tax liability where the conditions in Article 38 (3) are met)	1,105	–	1,105	1,493
Risk-weighted assets				
Credit risk	224,645	–	224,645	210,303
Credit valuation adjustment	503	–	503	2,290
Operational risk	33,850	–	33,850	33,729
Market risk	23,040	–	23,040	21,877
Total Risk Weighted Assets³	282,038	–	282,038	268,199
Capital ratios and buffers				
CET1 capital	14.1%	–	14.1%	14.0%
Tier 1 capital	16.4%	(0.5)%	15.9%	16.1%
Total capital	21.2%	(0.8)%	20.4%	22.4%
Capital buffers				
Institution specific buffer requirement (CET1 requirement in accordance with article 92 (1) (a) plus capital conservation and countercyclical buffer requirement, plus systematic risk buffer, plus systematically important intuition buffer expressed as a percentage of risk exposure amount)	N/A	N/A	N/A	N/A
Of which: capital conservation buffer requirement	N/A	N/A	N/A	N/A
Of which: countercyclical buffer requirement	N/A	N/A	N/A	N/A
Of which: systematic risk buffer requirement	N/A	N/A	N/A	N/A
Of which: Global systematically important institution (G-SII) or Other Systematically important institution (O-SII) buffer	N/A	N/A	N/A	N/A
Common Equity Tier 1 available to meet buffers (as percentage of risk exposure amount)	N/A	N/A	N/A	N/A

1 Retained earnings under CRD IV include the effect of regulatory consolidation adjustments

2 Independently reviewed interim and year-end profits/(loss) for CRD IV are in accordance with the regulatory consolidation

3 The risk-weighted assets are not covered by the scope of the Audit

Table D: Overview of RWA

	2017							
	Standard Chartered Bank		Standard Chartered Bank (HK)Ltd ¹		Standard Chartered Bank Korea Ltd		Standard Chartered Bank Singapore Ltd	
	Risk weighted assets \$million	Regulatory capital requirement \$million	Risk weighted assets \$million	Regulatory capital requirement \$million	Risk weighted assets \$million	Regulatory capital requirement \$million	Risk weighted assets \$million	Regulatory capital requirement \$million
Credit risk (excluding counterparty credit risk)²	199,620	15,970	36,942	3,116	20,610	1,649	10,260	1,026
Of which advanced IRB approach	156,177	12,495	33,503	2,841	15,240	1,219	–	–
Of which standardised approach	43,443	3,475	3,439	275	5,370	430	10,260	1,026
Counterparty credit risk³	15,517	1,241	1,054	87	1,996	159	109	11
Of which mark to market method	11,952	956	651	55	1,106	88	58	6
Of which risk exposure amount for contributions to the default fund of a CCP	81	6	–	–	3	–	–	–
Of which CVA	503	40	404	32	887	71	43	4
Settlement risk	18	1	1	–	–	–	–	–
Securitisation exposures in the banking book	2,687	215	152	13	–	–	105	10
Of which IRB ratings based approach	2,205	176	152	13	–	–	–	–
Of which IRB supervisory formula approach	482	39	–	–	–	–	–	–
Of which standardised approach	–	–	–	–	–	–	105	10
Market risk	23,040	1,843	2,387	191	2,236	179	3	–
Of which internal model approaches	12,776	1,022	85	7	1,700	136	–	–
Of which standardised approach	10,264	821	2,302	184	536	43	3	–
Large exposures	–	–	–	–	–	–	–	–
Operational risk	33,850	2,708	5,274	422	1,916	153	952	95
Of which standardised approach	33,850	2,708	5,274	422	1,916	153	952	95
Amounts below the thresholds for deduction (subject to 250% risk weight)	7,306	585	1,469	118	–	–	–	–
Floor Adjustment	–	–	–	–	–	–	–	–
Total	282,038	22,563	47,279	3,947	26,758	2,140	11,429	1,143

1 Standard Chartered Bank Hong Kong Ltd follows local disclosure rules for the OV1 table above, the net impact is \$1,987 million. Total RWA: \$49,266 million (\$47,279 million + \$1,987 million)

2 Credit risk (including counterparty credit risk) includes Non-credit obligation assets

3 Counterparty credit risk includes assets which are assessed under IRB and Standardised approaches

Table D: Overview of RWA continued

	2016							
	Standard Chartered Bank		Standard Chartered Bank (HK) Ltd ¹		Standard Chartered Bank Korea Ltd		Standard Chartered Bank Singapore Ltd	
	Risk weighted assets \$million	Regulatory capital requirement \$million	Risk weighted assets \$million	Regulatory capital requirement \$million	Risk weighted assets \$million	Regulatory capital requirement \$million	Risk weighted assets \$million	Regulatory capital requirement \$million
Credit risk (excluding counterparty credit risk)²	185,988	14,879	34,928	2,948	18,101	1,448	8,843	884
Of which advanced IRB approach	143,793	11,503	32,098	2,722	13,720	1,098	–	–
Of which standardised approach	42,195	3,376	2,830	226	4,381	350	8,843	884
Counterparty credit risk³	17,358	1,389	574	47	2,945	236	6	1
Of which mark to market method	12,800	1,024	329	28	1,982	159	3	–
Of which risk exposure amount for contributions to the default fund of a CCP	338	27	–	–	3	–	–	–
Of which CVA	2,290	183	245	20	961	77	2	–
Settlement risk	15	1	1	–	–	–	–	–
Securitisation exposures in the banking book	2,933	234	177	15	–	–	100	10
Of which IRB ratings based approach	2,406	192	177	15	–	–	–	–
Of which IRB supervisory formula approach	527	42	–	–	–	–	–	–
Of which standardised approach	–	–	–	–	–	–	100	10
Market risk	21,877	1,750	1,781	143	1,055	84	24	2
Of which internal model approaches	13,147	1,052	86	7	746	60	–	–
Of which standardised approach	8,730	698	1,695	136	309	24	24	2
Large exposures	–	–	–	–	–	–	–	–
Operational risk	33,729	2,698	5,610	449	1,810	145	891	89
Of which standardised approach	33,729	2,698	5,610	449	1,810	145	891	89
Amounts below the thresholds for deduction (subject to 250% risk weight)	6,299	504	1,482	119	–	–	–	–
Floor Adjustment	–	–	–	–	–	–	–	–
Total	268,199	21,455	44,553	3,720	23,911	1,913	9,864	986

1 Standard Chartered Bank Hong Kong Ltd follows local disclosure rules for table OV1 above. The net impact is \$1,869 million. Total RWA \$46,422 million (\$44,553 million + \$1,869 million).

2 Credit risk (including counterparty credit risk) includes Non-credit obligation assets

3 Counterparty credit risk includes assets which are assessed under both IRB and Standardised approaches

Table E. Leverage ratio common disclosure – Significant Subsidiaries

	2017				2016			
	Standard Chartered Bank \$million	Standard Chartered Bank (HK) Ltd \$million	Standard Chartered Bank Korea Ltd \$million	Standard Chartered Bank Singapore Ltd \$million	Standard Chartered Bank \$million	Standard Chartered Bank (HK) Ltd \$million	Standard Chartered Bank Korea Ltd \$million	Standard Chartered Bank Singapore Ltd \$million
Capital and total exposures								
Tier 1 capital	44,711	7,378	4	1,472	41,548	6,692	3	1,377
Total leverage ratio exposures	760,298	137,841	61	26,023	717,874	128,986	52	24,422
Leverage ratio	5.9%	5.4%	6.6%	5.7%	5.8%	5.2%	6.6%	5.6%

Table F: Market risk regulatory capital requirements for significant subsidiaries

	2017					2016				
	Standard Chartered Bank ¹ \$million	Standard Chartered Bank (HK) Ltd \$million	Standard Chartered Bank Korea Ltd \$million	Standard Chartered Bank Singapore Ltd \$million	Standard Chartered Bank Uganda Ltd \$million	Standard Chartered Bank ¹ \$million	Standard Chartered Bank (HK) Ltd ² \$million	Standard Chartered Bank Korea Ltd \$million	Standard Chartered Bank Singapore Ltd \$million	Standard Chartered Bank Uganda Ltd \$million
Market Risk regulatory capital Requirements for Trading Book										
Local Regulators	PRA	HKMA	FSS	MAS	BOU	PRA	HKMA	FSS	MAS	BOU
Interest rate	652	167	38	–	–	313	124	17	–	–
Equity	1	–	5	–	–	1	–	7	–	–
Options	87	–	–	–	–	70	–	–	–	–
Commodity	19	13	–	–	–	17	–	–	–	–
Foreign exchange	62	4	–	–	–	296	12	–	2	–
Internal Models Approach	1,022	7	136	–	–	1,052	7	60	–	–
Total	1,843	191	179	–	–	1,750	143	84	2	–
Market Risk – RWA	23,040	2,387	2,236	3	–	21,877	1,781	1,055	24	–

1 Standard Chartered Bank disclosed in the table above aligns with the Capital section of the Standard Chartered Bank Accounts

2 2016 Market Risk for Standard Chartered Bank Hong Kong Ltd has been re-presented to align with local regulatory returns

Acronyms

ABS	Asset Backed Securities	IIP	Individually assessed loan Impairment Provisions
AIRB	Advanced Internal Rating Based approach	IMA	Internal Model Approach
ALCO	Asset and Liability Committee	IRB	Internal Ratings Based
ALM	Asset and Liability Management	IRC	Incremental Risk Charge
AT1	Additional Tier 1	IRR	Interest Rate Risk
BCBS	Basel Committee on Banking Supervision	LCR	Liquidity Coverage Ratio
BOU	Bank of Uganda	LGD	Loss Given Default
BRC	Board Risk Committee	MAC	Model Assessment Committee
CB	Commercial Banking	MAS	Monetary Authority of Singapore
CCF	Credit Conversion Factor	MDB	Multilateral Development Banks
CCP	Central Counterparty	MR	Market Risk
CCR	Counterparty Credit Risk	MTM	Mark-To-Market
CCyB	Countercyclical capital Buffer	NII	Net Interest Income
CDOs	Collateralised Debt Obligations	NSFR	Net Stable Funding Ratio
CDS	Credit Default Swap	O-SII	Other Systemically Important Institution
CET1	Common Equity Tier 1	OBSC	Operational Balance Sheet Committee
CIB	Corporate and Institutional Banking	OTC	Over the Counter
CMBS	Commercial Mortgage Backed Securities	PD	Probability of Default
CQS	Credit Quality Step	PFE	Potential Future Exposure
CPM	Credit & Portfolio Management	PIP	Portfolio Impairment Provision
CRD	Capital Requirements Directive	PIT	Point in Time
CRM	Credit Risk Mitigation	PM	Portfolio Management
CRO	Chief Risk Officer	PRA	Prudential Regulation Authority
CRR	Capital Requirements Regulation	PV01	Present Value 01
CSA	Credit Support Annex	PVA	Prudent Valuation Adjustment
CSDG	Capital Structuring & Distribution Group	QCCP	Qualifying Central Counterparty
CVA	Credit Valuation Adjustment	QRRE	Qualifying Revolving Retail Exposure
D-SIB	Domestic Systemically Important Bank	RMB	Renminbi
DVA	Debit Valuation Adjustment	RMBS	Residential Mortgage Backed Securities
EAD	Exposure at Default	RNIV	Risk not in VaR
EBA	European Banking Authority	RTS	Regulatory Technical Standards
ECAI	External Credit Assessment Institutions	RWAs	Risk-Weighted Assets
EL	Expected Loss	SA	Standardised Approach
FCA	Financial Conduct Authority	SFT	Securities Financing Transactions
FIRB	Foundation Internal Ratings Based approach	SIF	Significant Influence Function
FPC	Financial Policy Committee	SME	Small and Medium-sized Enterprise
FSB	Financial Stability Board	SPE	Special Purpose Entity
FSS	Financial Supervisory Service (South Korea)	SVaR	Stressed VaR
FVA	Funding Valuation Adjustments	T1	Tier 1 capital
GCRO	Group Chief Risk Officer	T2	Tier 2 capital
G-SIB	Global Systemically Important Bank	TC	Total Capital
G-SII	Global Systemically Important Institutions	TLAC	Total loss-absorbing capacity
HKMA	Hong Kong Monetary Authority	TM	Treasury Markets
HQLA	High Quality Liquid Asset	TRS	Total Return Swap
IAS	International Accounting Standard	TTC	Through the Cycle
ICAAP	Internal Capital Adequacy Assessment Process	VaR	Value at Risk
ILAAP	Internal Liquidity Adequacy Assessment Process	VBC	Valuation and Benchmarks Committee
IFRS	International Financial Reporting Standards	XVA	Credit and Funding Valuation Adjustment

Glossary

Additional Tier 1 (AT1) capital	Additional Tier 1 capital consists of instruments issued by the bank and related share premium other than Common Equity Tier 1 that meet the Capital Requirement Regulation (CRR) criteria for inclusion in Tier 1 capital.
Advanced Internal Rating Based (AIRB) approach	The AIRB approach under the Basel framework is used to calculate credit risk capital based on the Group's own estimates of prudential parameters.
Arrears	A debt or other financial obligation is considered to be in a state of arrears when payments are overdue. Loans and advances are considered to be delinquent when consecutive payments are missed. Also known as 'delinquency'.
Available-for-Sale	Non-derivative financial assets that are designated as available-for-sale or are not classified as loans and receivables; held to maturity investments, or financial assets at fair value through profit or loss.
ASEAN	Association of South East Asian Nations (ASEAN) which includes the Group's operation in Brunei, Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam.
Asset Backed Securities (ABS)	Securities that represent an interest in an underlying pool of referenced assets. The referenced pool can comprise any assets which attract a set of associated cashflows but are commonly pools of residential or commercial mortgages and in the case of Collateralised Debt Obligations (CDOs), the reference pool may be ABS.
Attributable profit to ordinary shareholders	Profit for the year after non-controlling interests and the declaration of dividends on preference shares classified as equity.
Backtesting	A statistical technique used to monitor and assess the accuracy of a model, and how that model would have performed had it been applied in the past.
Basel II	The capital adequacy framework issued by the Basel Committee on Banking Supervision (BCBS) in June 2006 in the form of the 'International Convergence of Capital Measurement and Capital Standards'.
Basel III	In December 2010, the BCBS issued the Basel III rules text, which were updated in June 2011, and represents the details of strengthened global regulatory standards on bank capital adequacy and liquidity. The new requirements have been phased in and will be fully implemented by 1 January 2019. In December 2017, the BCBS published a document setting out the finalisation of the Basel III framework. The new requirements issued in December 2017 will be implemented from 2022.
Basis point (bps)	One hundredth of a per cent (0.01 per cent); 100 basis points is 1 per cent. Used in quoting movements e.g. in interest rates or yields on securities.
Capital conservation buffer	A capital buffer prescribed by regulators under Basel III and designed to ensure banks build up capital buffers outside periods of stress which can be drawn down as losses are incurred. Should a bank's CET1 capital fall within the capital conservation buffer range, capital distributions will be constrained by the regulators.
Capital Requirements Directive (CRD)	A capital adequacy legislative package adopted by EU member states. CRD IV comprises the recast Capital Requirements Directive and the Capital Requirements Regulation (CRR). The package implements the Basel III framework together with transitional arrangements for some of its requirements. CRD IV came into force on 1 January 2014.
Central Counterparty (CCP)	A CCP is a clearing house that acts as an intermediary between counterparties for certain products that are traded in one or more financial markets.
Common Equity Tier 1 (CET1) capital	Common Equity Tier 1 capital consists of the common shares issued by the bank and related share premium, retained earnings, accumulated other comprehensive income and other disclosed reserves, eligible non-controlling interests and regulatory adjustments required in the calculation of Common Equity Tier 1.
Common Equity Tier 1 ratio	Common Equity Tier 1 capital as a percentage of risk-weighted assets.
Countercyclical capital buffer (CCyB)	The countercyclical capital buffer is part of a set of macroprudential instruments, designed to help counter pro-cyclicality in the financial system. CCyB as defined in the Basel III standard provides for an additional capital requirement of up to 2.5 per cent of risk-weighted assets in a given jurisdiction. The Bank of England's Financial Policy Committee has the power to set CCyB rate for the United Kingdom. Each bank must calculate its 'institution-specific' CCyB rate, defined as the weighted average of the CCyB rates in effect across the jurisdictions in which it has credit exposures. The institution-specific CCyB rate is then applied to a bank's total risk weighted assets.
Counterparty credit risk (CCR)	The risk that a counterparty defaults before satisfying its obligations under a derivative, a securities financing transaction (SFT) or a similar contract.
CRD IV	Represents the Capital Requirements Directive (CRD) and Capital Requirements Regulation (CRR) that implement the Basel III proposals in Europe.
Credit Conversion Factor (CCF)	Either prescribed by CRR or modelled by the bank, an estimate of the amount the Group expects a customer to have drawn further on a facility limit at the point of default.
Credit Default Swap (CDS)	A derivative contract where a buyer pays a fee to a seller in return for receiving a payment in the event of a credit event (for example bankruptcy, payment default on a reference asset or assets, or downgrades by an rating agency) on an underlying obligation.
Credit quality step (CQS)	Credit Quality Steps (CQS) are used to derive the risk-weight to be applied to exposures treated under the Standardised approach to credit risk.
Credit risk	Credit risk is the potential for loss due to the failure of a counterparty to meet its obligations to pay the Group in accordance with agreed terms.

Credit risk mitigation (CRM)	Credit risk mitigation is a process to mitigate potential credit losses from any given account, customer or portfolio by using a range of tools such as collateral, netting agreements, credit insurance, credit derivatives and guarantees.
Credit support annex (CSA)	A legal document that regulates the exchange of collateral between the parties of OTC derivative transactions.
Credit Valuation Adjustment (CVA)	In the context of prudential requirements, additional regulatory capital charge that covers the risk of mark to market losses associated with changes in the credit worthiness of counterparties to derivative transactions.
Debit Valuation Adjustment (DVA)	In the context of prudential requirements, adjustment required to Tier 1 capital to derecognise any unrealised fair value gains and losses associated with fair valued liabilities that are attributable to the market's perception of the Group's credit worthiness.
Domestic systemically important banks (D-SIB)	Domestic systemically important banks are deemed systemically relevant for the domestic financial system in which they operate. The FSB and the BCBS have developed a framework for identifying and dealing with D-SIBs. The D-SIB framework has been implemented in the EU via CRD IV which refers to D-SIBs as Other Systemically Important Institutions (O-SIIs).
Equity price risk	The financial risk involved in holding equity in a particular investment. Arises from changes in the prices of equities, equity indices, equity baskets and implied volatilities on related options.
Expected Loss (EL)	The Group measure of anticipated loss for exposures captured under an internal ratings based credit risk approach for capital adequacy calculations. It is measured as the Group-modelled view of anticipated loss based on Probability of Default (PD), Loss Given Default (LGD) and Exposure at Default (EAD), with a one-year time horizon.
Exposure	Credit exposures represent the amount lent to a customer, together with any undrawn commitment.
Exposure at default (EAD)	The estimation of the extent to which the Group may be exposed to a customer or counterparty in the event of, and at the time of, that counterparty's default. At default, the customer may not have drawn the loan fully or may already have repaid some of the principal, so that exposure is typically less than the approved loan limit.
External Credit Assessment Institutions (ECAI)	For the Standardised Approach to credit risk for sovereigns, corporates and institutions, external ratings are used to assign risk-weights. These external ratings must come from credit rating agencies that are registered or certified in accordance with the credit rating agencies (CRA) regulation or from a central bank issuing credit ratings which is exempt from the application this regulation.
Fair value	The value of an asset or liability when it is transacted on an arm's length basis between knowledgeable and willing parties.
Financial Policy Committee (FPC)	The Financial Policy Committee is an independent committee at the Bank of England that has the primary objective of identifying, monitoring and taking action to remove or reduce systemic risks with a view to protecting and enhancing the resilience of the UK financial system. The FPC's secondary objective is to support the economic policy of the Government.
Foreseeable dividends net of scrip	Includes both ordinary and preference share dividends reasonably expected to be paid out of any future residual interim or year-end profits. In the case of ordinary dividends, the amount of foreseeable dividends deducted from the interim or year-end profits is equal to the amount of interim or year-end profits multiplied by the dividend payout ratio. In the case of preference share dividends, the amount of foreseeable dividends is equal to the amount accrued during the relevant reporting period payable at a future date.
Foundation Internal Ratings Based (FIRB) Approach	A method of calculating credit risk capital requirements using internal PD models but with supervisory estimates of LGD and conversion factors for the calculation of EAD.
Free delivery	When a bank takes receipt of a debt or equity security, a commodity or foreign exchange without making immediate payment, or where a bank delivers a debt or equity security, a commodity or foreign exchange without receiving immediate payment.
Funding valuation adjustments (FVA)	FVA reflects an adjustment to fair value in respect of derivative contracts associated with the funding costs that the market participant would incorporate when determining an exit price.
Greater China	Greater China includes the Group's operation in the People's Republic of China, the Hong Kong Special Administrative Region of the People's Republic of China and Taiwan.
Global Systemically Important Bank (G-SIB)	Global financial institutions whose size, complexity and systemic interconnectedness mean that their distress or failure would cause significant disruption to the wider financial system and economic activity. The Financial Stability Board (FSB) and the Basel Committee on Banking Supervision (BCBS) have established a methodology to identify G-SIBs based on 12 principal indicators. The list of G-SIBs is re-assessed through annual re-scoring of banks and a triennial review of the methodology. The G-SIB framework established by the FSB and the BCBS is implemented in the EU via CRD IV and G-SIBs are referred to as Global Systemically Important Institutions (G-SIIs).
G-SIB buffer	Designation as G-SIB will result in the application of a CET1 capital buffer ('G-SIB buffer'). The G-SIB buffer is between 1 per cent and 3.5 per cent, dependent on the allocation to one of five buckets based on the annual scoring. The G-SIB buffer is being phased in by 1 January 2019. In the EU, the G-SIB buffer is implemented via CRD IV as Global Systemically Important Institutions (G-SII) buffer requirement.
Haircut	A haircut, or volatility adjustment, ensures the value of exposures and collateral are adjusted to account for the volatility caused by foreign exchange or maturity mismatches, when the currency and maturity of an exposure differ materially to the currency and maturity of the associated collateral.
Held-to-maturity	Held-to-maturity assets are non-derivative financial assets with fixed or determinable payments and fixed maturities that the Group's management has the intention and ability to hold to maturity.
Impaired loans	Loans where individually identified impairment provisions have been raised. Also includes loans which are collateralised or where indebtedness has already been written down to the expected realisable value. The impaired loan category may include loans, which, while impaired, are still performing.

Individually assessed loan impairment provisions (IIP)	Impairment is measured for assets that are individually significant to the Group. Typically assets within the Corporate & Institutional Banking segment of the Group are assessed individually.
Individual capital guidance	Guidance given by the PRA to the Group about the amount and quality of capital resources to maintain.
Individual impairment charge	The amount of individually assessed loan impairment provisions that are charged to the income statement in the reporting period.
Individual liquidity guidance	Guidance given by the PRA to the Group about the amount, quality and funding profile of liquidity resources to maintain.
Institution	A credit institution or an investment firm as defined under the Capital Requirement Regulation (CRR).
Internal Capital Adequacy Assessment Process (ICAAP)	A requirement on institutions under Pillar 2 of the Basel framework to undertake a comprehensive assessment of their risks and to determine the appropriate amounts of capital to be held against these risks.
Internal Liquidity Adequacy Assessment Process (ILAAP)	A requirement on institutions under Pillar 2 of the Basel framework to undertake a comprehensive assessment of their risks and to determine the appropriate amounts of liquidity to be held against these risks.
Internal Model Approach (IMA)	The approach used to calculate market risk capital and RWA with an internal market risk model approved by the PRA under the terms of CRD IV/CRR.
Interest Rate Risk (IRR)	Interest rate risk arises due to the investment into rate-sensitive assets, as well as from mismatches between debt issuance and placements.
Internal ratings-based approach ('IRB')	Risk-weighting methodology in accordance with the Basel Capital Accord where capital requirements are based on a firm's own estimates of prudential parameters.
Items belonging to regulatory high-risk categories	In relation to the Standardised Approach to credit risk, items which attract a risk-weight of 150 per cent. This includes exposures arising from venture capital business and certain positions in collective investment schemes.
Leverage ratio	A ratio introduced under Basel III / CRD IV that compares Tier 1 capital to total exposures, including certain exposures held off-balance sheet as adjusted by stipulated credit conversion factors. Intended to be a simple, non-risk based backstop measure.
Liquidity Coverage Ratio (LCR)	The ratio of the stock of high quality liquid assets to expected net cash outflows over the following 30 days. High quality liquid assets should be unencumbered, liquid in markets during a time of stress and, ideally, be central bank eligible.
Loans and advances	This represents lending made under bilateral agreements with customers entered into in the normal course of business and is based on the legal form of the instrument.
Loss Given Default (LGD)	The percentage of an exposure that a lender expects to lose in the event of obligor default.
Mark-to-market approach	One of the approaches available to banks to calculate the exposure value associated with derivative transactions. The approach calculates the current replacement cost of derivative contracts, by determining the market value of the contract and considering any potential future exposure.
Market risk	The potential for loss of earnings or economic value due to adverse changes in financial market rates or prices.
Maturity	The time from the reporting date to the contractual maturity date of an exposure, capped at five years. Maturity is considered as part of the calculation of risk-weights for the Group's exposures treated under the IRB approach to credit risk.
MENAP	Middle East, North Africa and Pakistan (MENAP) includes the Group's operation in Afghanistan, Bahrain, Egypt, Islamic Republic of Iran, Iraq, Jordan, Lebanon, Oman, Pakistan, Occupied Palestinian Territory, Qatar, Saudi Arabia and United Arab Emirates (UAE).
Minimum capital requirement	Minimum capital required to be held for credit, market and operational risk.
Model validation	The process of assessing how well a model performs using a predefined set of criteria including the discriminatory power of the model, the appropriateness of the inputs, and expert opinion.
MREL or minimum requirement for own fund and eligible liabilities	A requirement under the Bank Recovery and Resolution Directive for EU resolution authorities to set a minimum requirement for own funds and eligible liabilities for banks, implementing the FSB's Total Loss Absorbing Capacity (TLAC) standard. MREL is intended to ensure there is sufficient equity and specific types of liabilities to facilitate an orderly resolution that minimises any impact on financial stability and ensures the continuity of critical functions and avoids exposing taxpayers to loss.
Multilateral Development Banks (MDB)	An institution created by a group of countries to provide financing for the purpose of development. Under the Standardised approach to credit risk, eligible multilateral development banks attract a zero per cent risk-weight.
Net stable funding ratio (NSFR)	The ratio of available stable funding to required stable funding over a one year time horizon, assuming a stressed scenario. It is a longer-term liquidity measure designed to restrain the amount of wholesale borrowing and encourage stable funding over a one year time horizon.
North East (NE) Asia	North East (NE) Asia includes the Group's operation in the Republic of Korea and Japan.
Operational risk	The potential for loss arising from the failure of people, process, or technology, or the impact of external events.
Over-the-Counter (OTC) traded products/OTC derivatives	A bilateral transaction that is not exchange traded and is valued using valuation models.
Pillar 1	The first Pillar of the three pillars of Basel framework which provides the approach to the calculation of the minimum capital requirements for credit, market and operational risk. Minimum capital requirements are 8 per cent of the Group's risk-weighted assets.

Pillar 2	The second pillar of the three pillars of Basel framework which requires banks to undertake a comprehensive assessment of their risks and to determine the appropriate amounts of capital to be held against these risks where other suitable mitigants are not available.
Pillar 3	The third pillar of the three pillars of Basel framework which aims to provide a consistent and comprehensive disclosure framework that enhances comparability between banks and further promotes improvements in risk practices.
Point in time (PIT)	Considers the economic conditions at the point in the economic cycle at which default occurs when estimating the probability of default.
Portfolio Impairment Provision (PIP)	The amount of loan impairment provisions assessed on the collective portfolio that are charged to the income statement in the reporting period.
Potential Future Exposure (PFE)	As estimate of the potential increase in exposure that may arise on a derivative contract prior to default, used to derive the exposure amount.
Probability of Default (PD)	PD is an internal estimate for each borrower grade of the likelihood that an obligor will default on an obligation within 12 months.
Present Value 01 (PV01)	This represents the change in present value of an asset or liability for a 1 basis point change in the nominal yield curve.
Prudential Regulatory Authority (PRA)	The Prudential Regulation Authority is the statutory body responsible for the prudential supervision of banks, building societies, credit unions, insurers and a small number of significant investment firms in the UK. The PRA is a part of the Bank of England.
Prudent Valuation Adjustment (PVA)	An adjustment to CET1 capital, to reflect the difference between the accounting fair value and the regulatory prudent value of positions, where the application of prudence results in a lower absolute carrying value than recognised in the financial statements.
Qualifying Central Counterparty (QCCP)	Central counterparty that is either authorised (when established in the EU) or recognised (when established in a third-country) in accordance with the rules laid down in the European Market Infrastructure Regulation (EMIR).
Qualifying Revolving Retail Exposure (QRRE)	Retail IRB exposures that are revolving, unsecured, and, to the extent they are not drawn, immediately and unconditionally cancellable, such as credit cards.
Regulatory capital	Sum of Tier 1 and Tier 2 capital after regulatory adjustments.
Repurchase agreement (repo)/reverse repurchase agreement (reverse repo)	A short term funding agreement which allows a borrower to sell a financial asset, such as ABS or Government bonds as collateral for cash. As part of the agreement the borrower agrees to repurchase the security at some later date, usually less than 30 days, repaying the proceeds of the loan. For the party on the other end of the transaction (buying the security and agreeing to sell in the future) it is a reverse repurchase agreement or reverse repo.
Residential Mortgage-Backed Securities (RMBS)	Securities that represent interests in a group of residential mortgages. Investors in these securities have the right to cash received from future mortgage payments (interest and/or principal).
Residual maturity	The remaining maturity of a facility from the reporting date until either the contractual maturity of the facility or the effective maturity date.
Retail Internal Ratings Based (Retail IRB) Approach	In accordance with the PRA handbook and CRR, the approach to calculating credit risk capital requirements for eligible retail exposures.
Risk Appetite	Risk Appetite is defined by the Group and approved by the Board. It is the maximum amount and type of risk the Group is willing to assume in pursuit of its strategy.
Risk Capacity	The maximum level of risk the Group can assume, given its current capabilities and resources, before breaching constraints determined by capital and liquidity requirements and internal operational capability (including but not limited to technical infrastructure, risk management capabilities, expertise), or otherwise failing to meet the expectations of regulators and law enforcement agencies.
Risk-weighted assets (RWAs)	A measure of a bank's assets adjusted for their associated risks, expressed as a percentage of an exposure value in accordance with the applicable Standardised or IRB approach provisions.
RWA density	The risk-weighted asset as a percentage of exposure at default (EAD).
Scrip dividends	Dividends paid to existing shareholders in securities instead of cash payment.
Securities Financing Transactions (SFT)	Securities Financing Transactions are secured (i.e. collateralised) transactions that involve the temporary exchange of cash against securities, or securities against other securities, e.g. stock lending or stock borrowing or the lending or borrowing of other financial instruments, a repurchase or reverse repurchase transaction, or a buy-sell back or sell-buy back transaction.
Securitisation	Securitisation is a process by which credit exposures are aggregated into a pool, which is used to back new securities. Under traditional securitisation transactions, assets are sold to a special purpose entity (SPE) who then issues new securities to investors at different level of seniority (credit tranching). This allows the credit quality of the assets to be separated from the credit rating of the originating institution and transfers risk to external investors in a way that meets their risk appetite. Under synthetic securitisation transactions, the transfer of risk is achieved by the use of credit derivatives or guarantees, and the exposures being securitized remain exposures of the originating institution.
Securitisation position(s)	The positions assumed by the Group following the purchase of securities issued by Asset-Backed Securitisation programmes or those retained following the origination of a securitisation programme.
South Asia	South Asia includes the Group's operation in Bangladesh, India, Nepal and Sri Lanka.
Specialised lending	Specialised lending exposures are defined as an exposure to an entity which was created specifically to finance and/or operate physical assets, where the contractual arrangements given the lender a substantial degree of control over the assets and the income that they generate and the primary source of repayment of the obligation is the income generated by the assets being financed, rather than the independent capacity of a broader commercial enterprise.

Special Purpose Entities (SPEs)	SPEs are entities that are created to accomplish a narrow and well defined objective. There are often specific restrictions or limits around their ongoing activities. Transactions with SPEs take a number of forms, including: the provision of financing to fund asset purchases, or commitments to provide financing for future purchases; derivative transactions to provide investors in the SPE with a specified exposure; the provision of liquidity or backstop facilities which may be drawn upon if the SPE experiences future funding difficulties; and direct investment in the notes or equity issued by SPEs.
Standardised Approach (SA)	In relation to credit risk, a method for calculating credit risk capital requirements using External Credit Assessment Institutions (ECAI) ratings and supervisory risk-weights. In relation to operational risk, a method of calculating the operational risk capital requirement by the application of a supervisory defined percentage charge to the gross income of eight specified business lines.
Stressed Value at Risk (SVAR)	A regulatory market risk measure based on potential market movements for a continuous one-year period of stress for a trading portfolio.
Through the cycle (TTC)	Reduces the volatility in the estimation of the probability of default by considering the average conditions over the economic cycle at the point of default, versus the point in time (PIT) approach, which considers economic conditions at the point of the economic cycle at which default occurs.
Tier 1 capital	Tier 1 capital comprises Common Equity Tier 1 capital plus Additional Tier 1 securities and related share premium accounts.
Tier 1 capital ratio	Tier 1 capital as a percentage of risk-weighted assets.
Tier 2 capital	Tier 2 capital comprises qualifying subordinated liabilities and related share premium accounts.
Total Loss Absorbing Capacity (TLAC)	An international standard for TLAC issued by the FSB, which requires G-SIBs to have sufficient loss-absorbing and recapitalisation capacity available in resolution, to minimise impacts on financial stability, maintain the continuity of critical functions and avoid exposing public funds to loss.
Total Return Swap (TRS)	A derivative transaction that swaps the total return on a financial instrument, including cashflows and capital gains or losses, for an interest rate return.
Trading book	The trading book consists of all positions in CRD financial instrument and commodities which are fair valued through the profit and loss account for accounting purposes, which are held either with trading intent or in order to hedge other elements of the trading book and which are either free of any restrictive covenants on their tradability or ability to be hedged.
Value at Risk (VAR)	A quantitative measure of market risk estimating the potential loss that will not be exceeded in a set time period at a set statistical confidence level.
Write downs	After an advance has been identified as impaired and is subject to an impairment allowance, the stage may be reached whereby it is concluded that there is no realistic prospect of further recovery. Write downs will occur when and to the extent that, the whole or part of a debt is considered irrecoverable.
Wrong way risk	Wrong way risk occurs when an exposure increase is coupled with a decrease in the credit quality of the obligor.

Prudential disclosure reference

CRR article ref.	Requirement summary	Disclosure
Scope of disclosure requirement		
431	(1) Mandate for institutions to publicly disclose information laid down in Article 432.	The Group publishes Pillar 3 disclosures
	(2) Institutions to disclose operational risk information in accordance with the applicable approaches.	The Group applies the standardised approach, RWAs and capital requirements for operational risk are shown in Table 12: (OV1) on page 17 and in the 2017 Annual Reports and Accounts on page 187
	(3) Institutions must have formal policy in place to comply with the prudential disclosure requirements.	The Group has a dedicated policy governing prudential disclosure requirements in place
	(4) Explanation of ratings decisions to SMEs and corporates when asked.	The Group provides ratings decisions to SMEs and corporates upon request
Non-material, proprietary or confidential information		
432	(1) Information may be omitted from disclosure if not regarded material.	Items omitted from disclosure are listed in section 1.3. Regulatory disclosure – Framework on page 2
	(2) Information may be omitted from disclosure if regarded proprietary or confidential.	See Article 432(1) above
	(3) Disclosure must contain a list of omitted information with reasons clearly stated.	See Article 432(1) above
	(4) All material, non-confidential and non-proprietary information must be disclosed.	All material, non-confidential and non-proprietary information is disclosed by the Group in its 2017 Pillar 3 and 2017 Annual Report and Accounts.
Frequency of disclosure		
433	Disclosures in accordance with the rules laid down must be made at least annually in conjunction with the financial statements. Institutions should consider the need to publish information with increased frequency on own funds, risk exposures and items prone to rapid change.	Section 1.3 Regulatory disclosure – Framework sub-section on Frequency on page 3
	EBA mandate to publish guidelines on the application of more frequent disclosures.	EBA/GL/2014/14 published on 23 December 2014 EBA/GL/2016/11 published on 14 December 2016
Means of disclosure		
434	(1) Institutions may determine the appropriate medium, location and means of verification to comply with the disclosure requirements.	Section 1.3 Regulatory disclosure – Framework, sub-section on Verification on page 3 The 2017 Pillar 3 document is made publicly available on the Group website with the 2017 Annual Report and Accounts and other public disclosures.
	(2) Equivalent disclosures made by institutions under accounting, listings or other requirements may be deemed compliant with Pillar 3.	The Group discharges parts of the prudential disclosure requirements in the 2017 Annual Reports and Accounts, in Main Features and GSIB disclosures, with cross references to exact locations provided in its Pillar 3 document.
Risk management objectives and policies		
435	(1)(a) Description of risk management objectives and policies for each risk category, including strategies and process to manage those risks.	Section 1.4 Risk management on pages 3 to 4 Risk management approach section in the 2017 Annual Report and Accounts on pages 159 to 182
	(1)(b) The structure and organisation of the risk management functions.	See Article 435 (1)(a) above
	(1)(c) The scope and nature of risk reporting and measurement systems.	See Article 435 (1)(a) above
	(1)(d) Policies for hedging and mitigating risk, strategies for monitoring the effectiveness of these risk mitigants.	See Article 435 (1)(a) above
	(1)(e) Declaration approved by management body on the adequacy of risk management arrangements.	See Article 435 (1)(a) above
	(1)(f) Risk statement approved by the management body including key ratios and figures to demonstrate a comprehensive view of the institution.	Key ratios and figures are highlighted in section 1.2 on pages 1 to 2 and in the 2017 Annual Report and Accounts on pages 119
	(2)(a) The disclosure must contain information on the number of directorship held.	2017 Annual Reports and Accounts, Board of Directors, on pages 47 to 49

CRR article ref.	Requirement summary	Disclosure
435	(2)(b) The recruitment policy for the members of management body.	2017 Annual Reports and Accounts, Board of Directors and Management Team on pages 47 to 52 and Governance and Nomination Committee on pages 76 to 79
	(2)(c) Policy on diversity for members of the management body.	2017 Annual Reports and Accounts, Governance and Nomination Committee, on pages 76 to 79. Further information published on the Group website sc.com/boarddiversitypolicy
	(2)(d) Whether the institution has a separate risk committee and the number of times they meet.	2017 Annual Reports and Accounts, Corporate Governance, on pages 69 to 72
	(2)(e) Description of information flow on risk to the management body.	2017 Annual Reports and Accounts, Risk management, on pages 33 to 35
Scope of application		
436	(a) Disclosure to contain the name of the institution.	Name of the Group and the Group logo are displayed on the cover page of the disclosures.
	(b)(i) Clarify the differences between the basis of consolidation for accounting and prudential purposes with short explanation of entities and whether they are fully consolidated.	Table 2: Regulatory Consolidation on page 5 Table 3: Outline of the differences in the scope of consolidation (LI3) on page 5
	(b)(ii) Proportionally consolidated,	See Article 436(b)(i) above
	(b)(iii) Deducted from own funds,	See Article 436(b)(i) above
	(b)(iv) Neither consolidated nor deducted.	See Article 436(b)(i) above
	(c) Explain any current or foreseen impediments to transfer of own funds to between parent and subsidiaries.	Note 32 of the 2017 Annual Report and Accounts on page 276
	(d) The amount of capital deficiency in subsidiaries not included in the consolidation.	Entities not included in the scope of prudential consolidation are appropriately capitalised
	(e) Making use of articles on derogations from a) prudential requirements or b) liquidity requirements for individual subsidiaries/entities.	The Group makes use of the individual consolidation method according to a waiver provided by the PRA
Own funds		
437	(1)(a) Reconciliation of CET1, AT1, T2, filters and deductions to financial accounts.	Table 7. Reconciliation between financial total and regulatory CET1 before regulatory adjustments on page 11
	(1)(b) Main features of the CET1, AT1 and T2 instruments issued by the institution.	Section 2.2 Capital resources on page 12
	(1)(c) Full terms and conditions of CET1, AT1 and T2 capital instruments.	See Article 437(1)(b) above
	(1)(d)(i) The nature and amounts of each prudential filter.	Table 8 Capital base on page 12
	(1)(d)(ii) The nature and amounts of each deduction made.	Table 8 Capital base on page 12
	(1)(d)(iii) The nature and amounts of non-deducted items.	Table 8 Capital base on page 12
	(1)(e) Description of restrictions applied to the calculation of own funds.	There were no restrictions applied to the calculation of own funds
	(1)(f) Description of own funds calculation based on alternative methods.	The Group follows own funds calculation set out in the CRR, in the format set out by the below implementing regulation.
	(2) EBA mandate to develop common disclosure templates.	Implementing Regulation (EU) No 1423/2013
Capital requirements		
438	(a) Summary of approach to assessing capital adequacy.	Section 2.1 Capital management on page 11 Capital planning on page 183 of the 2017 ARA
	(b) On demand from the regulatory the results of capital adequacy assessment.	There was no specific demand for the Group from the PRA. Following industry practice the Group's Pillar 2A results are disclosed in section 2.2 Capital resources on page 12
	(c) 8% risk weight to be assigned to exposures under the standardised approach for each asset class.	Table 12: Overview of RWA (OV1) on page 17 Table 14: RWA flow statements of credit risk exposures under IRB (CR8) on page 18
	(d)(i) 8% risk weight to be assigned to exposures under the IRB approach for each asset class, including all categories of retail and equity exposures.	Table 12: Overview of RWA (OV1) on page 17 Table 14: RWA flow statements of credit risk exposures under IRB (CR8) on page 18
	(d)(ii) 8% risk weight to be assigned to exposures under the IRB approach for exchange traded, private equity and other exposures.	Table 12: Overview of RWA (OV1) on page 17
	(d)(iii) 8% risk weight to be assigned to exposures under the IRB approach for exposures subject to supervisory transition.	The Group has no exposures subject to supervisory transition

CRR article ref.	Requirement summary	Disclosure
438	(d)(iv) 8% risk weight to be assigned to exposures under the IRB approach for exposures subject to grandfathering provisions.	The Group has no exposures subject to grandfathering
	(e) Disclosure of own funds requirements.	Section 2.4 Capital requirements on pages 17 to 19
	(f) Disclosure of own funds requirements calculated for operational risk by approaches used.	Table 12: Overview of RWA (OV1) on page 17
Exposure to counterparty credit risk		
439	(a) Methodology used to assign internal capital and credit limits for counterparty credit risk.	Section 3.9. Counterparty credit risk on page 63
	(b) Discussion of policies for securing collateral and establishing credit reserves.	Section 3.9. Counterparty credit risk on page 63
	(c) Discussion of policies on wrong-way risk exposures.	Section 3.9. Counterparty credit risk on page 63
	(d) The amount of collateral that would need to be provided in the event of downgrade.	Section 3.9. Counterparty credit risk on page 63
	(e) FV of contracts, netting benefits, netted current credit exposure, collateral held and net derivatives credit exposure.	Table 60: Impact of netting and collateral held on exposure values (CCR5-A) on page 64
	(f) Exposure values under the mark to market, original exposure, standardised or internal model methods as applicable.	Table 61: Analysis of CCR exposures by approach (CCR1) on page 64
	(g) The notional value of credit derivative hedges and CRM by types of exposure.	Table 63: Credit derivatives exposures (CCR6) on page 65
	(h) The notional amount of credit derivatives by own portfolio and intermediation activities, by products and by bought and sold.	Table 63: Credit derivatives exposures (CCR6) on page 65
	(i) Estimate of alfa.	The Group does not have Internal Model Method approval
Capital buffers		
440	(1)(a) Amount of credit exposures used in the calculation of countercyclical capital buffer by geography.	Table 10: Geographical distribution of credit exposures relevant for the calculation of the countercyclical capital buffer on page 14
	(1)(b) The amount of institution specific countercyclical capital buffer.	Table 11: Amount of institution specific countercyclical capital buffer on page 16
	(2) EBA mandate to develop implementing technical standards specifying disclosure requirements.	Commission Delegated Regulation (EU) 2015/1555 published on 28 May 2015
Indicators of global systemic importance		
441	(1) Institutions identified as G-SIs to disclose the values of indicators on an annual basis.	Discussed on in Section 1.3. Regulatory disclosure framework on page 2
	(2) EBA mandate to draft ITS for reporting.	Commission Implementing Regulation (EU) 2016/818
Credit risk adjustments		
442	(a) Accounting definition of past due and impaired.	Glossary sections of Pillar 3 and the Annual Report and Accounts on pages 96 to 100 and 335 to 340 respectively Credit risk section of the 2017 Annual Report and Accounts on page 125
	(b) Approaches and methods used for determining specific and general credit risk adjustments.	Section 3.4. Exposure values on page 41 Note 8 of the 2017 Annual Report and Account on pages 218 to 221
	(c) Exposure and average exposure after accounting offsets and pre credit risk mitigations by asset classes.	Table 31: Total and average exposure at default (CRB-B) on page 34
	(d) Exposure by significant geographies and material exposures classes.	Table 32: Exposure at default by geography (CRB-C) on page 35
	(e) Exposures by industry and by exposure classes.	Table 33: Exposure at default by industry (CRB-D) on page 37
	(f) Exposures by residual maturity and by exposure class.	Table 34: Exposure at default by maturity (CRB-E) on page 39
	(g)(i) By industry or counterparty type the amount of impaired and past due exposures.	Table 35: Credit quality of exposures by exposure class and instrument (CR1-A) on page 41 Table 36: Credit quality of exposures by industry or counterparty types (CR1-B) on page 42
	(g)(ii) By industry or counterparty type the amount of specific and general credit risk adjustments.	See Article 442(g)(i) above
	(g)(iii) By industry or counterparty type the amount of specific and general credit risk charges for the period.	See Article 442(g)(i) above
	(h) Impaired and past due exposures by geography.	Table 37: Credit quality of exposures by geography (CR1-C) on page 42 Table 38: Ageing of past due exposures (CR1-D) on page 42

CRR article ref.	Requirement summary	Disclosure
442	(i)(i) Reconciliation of changes in specific and general credit risk adjustments for impaired exposures by type of credit risk adjustments.	Table 39: Non-performing and forborne exposures (CR1-E) on page 43 Table 40: Changes in the stock of general and specific credit risk adjustments (CR2-A) on page 43 Table 41: Changes in the stock of defaulted and impaired loans and debt securities (CR2-B) on page 43
	(i)(ii) Opening balances for reconciliation of changes in specific and general credit risk adjustments.	See Article 442(i)(i) above
	(i)(iii) Credit risk adjustments during the period.	See Article 442(i)(i) above
	(i)(iv) The amount reserved for probable losses during the period and any other adjustments.	See Article 442(i)(i) above
	(i)(v) Closing balance of the reconciliation for changes in specific and general credit risk adjustments.	See Article 442(i)(i) above
Unencumbered assets		
443	EBA mandate to issue guidelines for disclosure of unencumbered assets.	EBA/GL/2014/03 issued in December 2014
Use of ECAs		
444	(a) The names of ECAs used for the calculation of RWA under the standardised approach.	Section 3.8. standardised risk weight profile on page 60
	(b) The exposure classes for which the ECAs are used for the standardised approach.	Section 3.8. standardised risk weight profile on page 60
	(c) Description of the process used to transfer issuer and issue credit assessment onto banking book exposures.	Section 3.8. standardised risk weight profile on page 60
	(d) The relation between ECAs and regulatory credit quality steps used within the standardised approach.	Section 3.8. standardised risk weight profile on page 60
	(e) The exposure values before and after credit risk mitigation for each credit quality step under the standardised approach.	Table 58: Standardised approach – exposures by asset classes and risk weights (pre CRM pre CCF) (CR5) on page 60 Table 59: Standardised approach – exposures by asset classes and risk weights (post CRM post CCF) (CR5) on page 62 Table 65: Standardised approach – CCR exposures by regulatory portfolio and risk (CCR3) on page 66
Exposure to market risk		
445	The amount of market risk requirements calculated for the purposes of own funds requirements for position, FX, commodities risks and for specific interest rate risk of securitisation positions.	Table 12: (OV1) provides RWA and capital requirements for each risk category defined on page 17 Table 78: Market risk regulatory capital requirements on page 79
Operational risk		
446	Description of approaches used for the calculation of own funds requirements.	The Group applies STD approach for measuring capital requirements, described in section 1.4. Risk management under Operational Risk on page 4
Exposures in equities not included in the trading book		
447	(a) Differentiation of exposures based on their objects, and an overview of accounting and valuation methodologies used.	Disclosure is excluded on the basis of materiality
	(b) The balance sheet and fair value of equities in the banking book and comparison of market price for exchange traded equities.	Disclosure is excluded on the basis of materiality
	(c) Description and value of exchange traded exposures.	Disclosure is excluded on the basis of materiality
	(d) The cumulative realised gains and losses on the sales and liquidations in the period.	Disclosure is excluded on the basis of materiality
	(e) Total unrealised gains and losses include in CET1 capital.	Disclosure is excluded on the basis of materiality
Exposure to interest rate risk on positions not included in the trading book		
448	(a) Description of the nature interest rate risk, key assumptions and frequency of measurement.	Section 5 on Interest rate risk in the banking book on page 82
	(b) Measure of upward and downward rate shocks by currency.	Table 84: Treasury Markets PV01 by currency on page 82

CRR article ref.	Requirement summary	Disclosure
Exposure to securitisation position		
449	(a) Description of the institution's objectives in relation to securitisation activity	Section 3.10 Securitisation on page 72
	(b) The nature of other risks including liquidity risk inherent in securitised assets	Section 3.10 Securitisation on page 72
	(c) Description of underlying exposures	Section 3.10 Securitisation on page 72
	(d) The roles played by the institution in the securitisation process	Section 3.10 Securitisation on page 72
	(e) The extent of the institution's involvement in the roles referred in Article 449(d) above	Section 3.10 Securitisation on page 72
	(f) The monitoring of credit and market risk from securitisation exposures	Section 3.10 Securitisation on page 72
	(g) The use of hedging and unfunded protection to mitigate the risks of retained securitisation exposures	Section 3.10 Securitisation on page 72
	(h) The approaches to calculating securitisation risk-weighted assets	Section 3.10 Securitisation on page 72
	(i) The types of SSPE that the institution, as sponsor, uses to securitise third-party exposures	Section 3.10 Securitisation on page 72 including Table 73 that lists securitisation programmes where the Group acts as originator
	(j)(i) A summary of the institution's accounting policies for securitisation activities, including whether the transactions are treated as sales financing	Section 3.10 Securitisation on page 72
	(j)(ii) Gains on sales	Not applicable. The Group originates synthetic transactions where the underlying assets remain on the Group's balance sheet, therefore the issue of gain on sales does not arise
	(j)(iii) Securitisation valuation methodologies	Section 3.10 Securitisation on page 72
	(j)(iv) Accounting treatment of synthetic securitisations	Section 3.10 Securitisation on page 72
	(j)(v) Valuation and regulatory classification of assets awaiting securitisation	The securitised assets are originated by the Group in its ordinary course of business. Assets awaiting securitisation are not specifically identified for reporting purposes and are not subject to a specific accounting and prudential policies
	(j)(vi) Recognition of liabilities for arrangements that could require the institution to provide financial support for securitised assets	Section 3.10 Securitisation on page 72
	(k) The use of ECAs for securitisations exposures	Section 3.10 Securitisation on page 72
	(l) Where applicable, a description of the Internal Assessment Approach	Not applicable. The Group does not originate or sponsor asset-backed commercial paper programs (ABCP)
	(m) An explanation of significant changes to the quantitative disclosures in points (n) to (q) since the last reporting period	Section 3.10 Securitisation on page 72
	(n)(i) Separately for the trading and the non-trading book and by exposure type: The total amount of outstanding exposures securitised by the institution	Table 74. Securitisation positions by risk-weight category on page 74
	(n)(ii) Retained securitisation exposures	Table 74. Securitisation positions by risk-weight category on page 74
	(n)(iii) Assets awaiting securitisation	See Article 449(j)(v) above
	(n)(iv) For securitised facilities subject to the early amortisation treatment, drawn exposures attributed to the originator's and investors' interests respectively, the aggregate capital requirements incurred by the institution against the originator's interest and the capital requirements incurred by the institution against the investor's shares of drawn balances and undrawn lines	Table 73. Securitisation programmes (as originator) on page 74
	(n)(v) Securitisation positions that are deducted from own funds or risk-weighted at 1250%	Table 74. Securitisation positions by risk-weight category on page 74
	(n)(vi) The securitisation activity of the current period, including the amount of exposures securitised and recognised gain or loss on sale	Table 72. Securitisation: ABS purchased or retained on page 72 Table 74. Securitisation positions by risk-weight category on page 74

CRR article ref.	Requirement summary	Disclosure
449	(o)(i) Securitisation positions retained or purchased and the associated capital requirements	Table 74. Securitisation positions by risk-weight category on page 74
	(o)(ii) Re-securitisation exposures retained or purchased	Not applicable, the Group does not invest in re-securitisation exposures
	(p) For the non-trading book and regarding exposures securitised by the institution, impaired/past due assets securitised and the losses recognised by the institution during the current period	Section 3.10 Securitisation sub section Capital Structuring & Distribution Group Securities on page 73
	(q) For the trading book, outstanding exposures securitised by the institution and subject to a capital requirement for market risk	There are no trading book exposures originated by the Group
	(r) Whether the institution provided implicit support (Article 248(1)) and the impact on own funds	The Group does not provide implicit support within the terms of Article 248(1)
Remuneration policy		
450	(1)(a) Information on the decision-making process used for determining remuneration policy and the number of meetings held during the year by the main body overseeing remuneration.	2017 Annual Reports and Accounts on pages 83 to 94
	(1)(b) Explanation of links between pay and performance.	2017 Annual Reports and Accounts on pages 93 to 94
	(1)(c) Key design characteristics of the remuneration system.	2017 Annual Reports and Accounts on page 94
	(1)(d) The ratios between fixed and variable remuneration.	2017 Annual Reports and Accounts on page 101
	(1)(e) Information on the performance criteria for entitlement to shares, options and variable remuneration entitlements.	2017 Annual Reports and Accounts on page 94
	(1)(f) Description of main parameters and rational for variable components and other non-cash benefits.	2017 Annual Reports and Accounts on pages 93 to 94
	(1)(g) Quantitative information on remuneration by business areas.	2017 Annual Reports and Accounts on page 101
	(1)(h)(i) Amounts of fixed and variable compensation for senior management and staff of significant influence and the number of beneficiaries for the year.	2017 Annual Reports and Accounts on pages 100 to 102
	(1)(h)(ii) The amount of variable compensation broken down by remuneration types.	See Article 450(1)(h)(i) above
	(1)(h)(iii) Amounts of outstanding deferred remuneration.	See Article 450(1)(h)(i) above
	(1)(h)(iv) The amounts of deferred remuneration during the year.	See Article 450(1)(h)(i) above
	(1)(h)(v) Amount of sign-on and severance payment made during the year and the number of beneficiaries.	See Article 450(1)(h)(i) above
	(1)(h)(vi) The amount of severance payments awarded during the year and the number of beneficiaries.	See Article 450(1)(h)(i) above
	(1)(i) The number of individuals receiving remuneration over EUR1 million in a financial year by pay bands.	2017 Annual Reports and Accounts on page 102
	(1)(j) On request from the regulator the total remuneration of the management body.	Provided upon demand, not disclosed publicly
	(2) Quantitative information to be made available at the level of members of the management body for institutions that are significant in size.	2017 Annual Reports and Accounts on pages 95 to 97
Leverage		
451	(1)(a) Calculation of leverage ratio and application of transitional arrangements.	Table 17: UK and CRR Leverage Ratio on page 20 Table 18: Leverage ratio common disclosure on page 21
	(1)(b) Breakdown and reconciliation of total exposure measure to published financial statements.	Table 17: Summary of reconciliation of accounting assets and leverage exposure on page 20 Table 19: Leverage ratio: Split-up of on-balance sheet exposures on page 22
	(1)(c) The amount of de-recognised fiduciary items.	The Group has no fiduciary items
	(1)(d) Description of the processes used to manage excessive leverage.	Section 2.5 Leverage ratio on page 19
	(1)(e) Description of factors impacting leverage ratio during the period.	Section 2.5 Leverage ratio on page 19
	(2) EBA mandate to issue ITS on common disclosure	Implementing Standard (EU) 2016/200 in 2016
Use of the IRB Approach to credit risk		
452	(a) Details of permission for the use of IRB approach received from authority	Section 3.3 Internal Ratings Based models on pages 23 to 24
	(b)(i) Explanation and view of the structure of internal ratings and relation to external ratings	Table 45: Internal default grade probabilities and mapping to external ratings on page 48
	(b)(ii) Explanation of the use of internal estimates other than those used for capital requirements calculation under the IRB approach	Section 3.6 Risk grade profile on pages 44 to 46

CRR article ref.	Requirement summary	Disclosure
452	(b)(iii) The process of managing and recognising credit risk mitigation	Section 3.7 Credit risk mitigation on page 57
	(b)(iv) The control mechanisms for rating systems	Section 3.3 Internal Ratings Based models on pages 23 to 24
	(c)(i) Description for internal ratings process for central governments and central banks	Section 3.3 Internal Ratings Based models on page 23
	(c)(ii) Description for internal ratings process for institutions	See Article 452(c)(i) above
	(c)(iii) Description for internal ratings process for corporates, including SMEs, specialised lending and purchased corporate receivables	See Article 452(c)(i) above
	(c)(iv) Description for internal ratings process for retail, including SMEs, exposures secured by immovable property and qualifying revolving exposures	See Article 452(c)(i) above
	(c)(v) Description for internal ratings process for equities	The standardised approach is used for equities
	(d) The exposure values for each of the exposure classes defined under IRB approach	Table 44: IRB – Credit risk exposures by exposure class on page 46
	(e)(i) For central governments and central banks, institutions, corporates and equity by obligor grades the total exposure amounts	Table 46: IRB credit exposure by internal PD grade for Central governments or central banks (CR6) on page 49 Table 47: IRB credit exposure by internal PD grade for Institutions (CR6) on page 50 Table 48: IRB credit exposure by internal PD grade for Corporates (CR6) on page 51 Table 49: IRB credit exposure by internal PD grade for Corporates Specialised Lending (CR6) on page 52 Table 50: IRB credit risk exposure by internal PD grade for Corporates SME (CR6) on page 53
	(e)(ii) The exposure weighted average risk weight	See Article 452(e)(i) above
	(e)(iii) For institutions using own estimates of CCF, the RWA, the amount of undrawn commitments, and exposure-weighted average exposure values	See Article 452(e)(i) above
	(f) For retail exposures either the disclosure of 452(e) or analysis of exposures against EL grades	Table 51: IRB credit exposure by internal PD grade for retail (CR6) on page 54 Table 52: IRB credit exposure by internal PD grade for retail – secured by real estate property (CR6) on page 55 Table 53: IRB credit exposure by internal PD grade for retail – qualifying revolving (CR6) on page 56 Table 54: IRB credit exposure by internal PD grade for retail – SME (CR6) on page 57
	(g) The actual specific credit risk adjustments compared to past experience by asset classes	Table 42: Regulatory expected loss on page 44
	(h) Description of factors that impacted on loss experience	Section 3.5. Regulatory expected loss vs. impairment charge on page 44
	(i) Analysis of estimates against actual outcomes for losses by asset classes over a period sufficient enough to assess the performance of the IRB models	Table 20: CIC model results on page 25 Table 21: Retail model results on page 25
	(j)(i) The exposure-weighted average LGD and PD in percentage for each exposure class by geography	Table 43: Exposure weighted average PD% and LGD% by geography on page 45
	(j)(ii) For institutions that do not use own estimates of LGD, the weighted-average PD in percentage for each exposure class by geography	Table 43: Exposure weighted average PD% and LGD% by geography on page 45
Use of credit risk mitigation techniques		
453	(a) Description of policies and processes for the use of on- and off-balance sheet netting.	Section 3.7. Credit risk mitigation on page 57
	(b) Description of policies and processes for collateral valuation and management.	See Article 453(a) above
	(c) Description of the main types of collaterals taken by institutions.	See Article 453(a) above
	(d) Description of the main type of guarantor credit derivative counterparty and their credit worthiness.	See Article 453(a) above
	(e) Information on the market or credit risk concentrations within credit risk mitigation.	See Article 453(a) above

CRR article ref.	Requirement summary	Disclosure
453	(f) Total exposure value by eligible financial and other eligible collateral for each asset class under the Standardised or IRB approaches, but not providing own estimates of LGD or conversation factors.	Table 56: Effect of guarantees and collateral on page 58
	(g) Total exposure value covered by guarantees or credit derivatives by all asset classes under the Standardised or IRB approaches.	Table 56: Effect of guarantees and collateral on page 58
Use of the Advanced Measurement Approaches to operational risk		
454	Description of risk transfer mechanisms for mitigating operational risk measured under the advanced measurement approach.	The Group does not hold a permission to use the advanced measurement approach for operational risk
Use of Internal Market Risk Models		
455	(a)(i) Explanation of characteristics of the models used by sub-portfolio.	Section 4 under headings 'Regulatory VaR' and 'Regulatory VaR vs. Management VaR' on page 76 The Group does not have CRM, IMA and IRC approvals. The related disclosure requirements are not applicable
	(a)(ii) Description of the methodologies used and the risks measured through the use of internal models	The Group does not have IMA approval for incremental default and migration risk for correlation trading
	(a)(iii) Description of stress testing applied by sub-portfolio	Section 4 under heading 'Stressed VaR' on page 77
	(a)(iv) Description of the approaches used for backtesting and valuating the accuracy of internal models	Section 4 under heading 'Backtesting' on page 77
	(b) The scope of permission received	Section 4 under the heading 'Regulatory VaR' and "Regulatory VaR vs. management VaR2" on page 76
	(c) Description of methodologies adopted for and the extent of compliance with the definitions of trading book and requirements of prudent valuation in CRR Article 104 and 105	Section 4 under the heading 'Trading book' and 'Valuation framework' on page 76
	(d)(i) The highest, lowest and the mean of daily VaR over the reporting period at period end	Table 80 (MR3) in row VaR (10 day 99%) on page 80
	(d)(ii) The highest, lowest and the mean of the stressed VaR over the reporting period at period end	Table 80 (MR3) in row Stressed VaR (10 day 99%) on page 80
	(d)(iii) The highest, lowest and the mean of the risk numbers of correlation trading over the reporting period at period end	Table 80 (MR3) in row incremental risk capital charge (99.9%) on page 80 The Group does not have IMA approval for incremental default and migration risk for correlation trading, therefore, the rows of incremental risk capital charge and comprehensive risk capital charge are reported as zero
	(e) Elements of own funds requirements when using internal models	Table 81 (MR2-A) on page 80 provides the required breakdown
	(f) The weighted average liquidity horizon covered by internal models for incremental default, migration and correlation risks	The Group has no model permissions for specific rate and comprehensive risk measure
	(g) Comparison of the daily end of day VaR to the value by the end of next business day	Backtesting overshooting are shown in tables 82 and 83 (MR4) on page 81

Summary of differences

Summary of differences between Pillar 3 Disclosures and the Risk and capital review section of the Annual Report

The Group's Pillar 3 Disclosures for 31 December 2017 provide details from a regulatory perspective on certain aspects of credit risk, market risk and operational risk. The quantitative disclosures in the Pillar 3 Disclosures will not, however, be directly comparable to those in the Risk and capital review section of the Annual Report and Accounts as they are largely based on internally modelled risk metrics such as PD, LGD and EAD under Basel framework, whereas the quantitative disclosures in the Risk review are based on IFRS. EAD differs from the IFRS exposure primarily due to the inclusion of undrawn credit lines and off-balance sheet commitments. In addition, a number of the credit risk disclosures within the Pillar 3 Disclosures are only provided for the internal ratings based portfolio.

Topic	Annual Report	Pillar 3 Disclosures
Basis of requirements	<ul style="list-style-type: none"> → The Group's Annual Report is prepared in accordance with the requirements of IFRS as endorsed by the EU, the UK Companies Act 2006, and the UK, Hong Kong and India Listing rules 	<ul style="list-style-type: none"> → The Group's Pillar 3 Disclosures, provides details on risk from a regulatory perspective to fulfil Basel III/CRD IV rule requirements which have been implemented in the UK by the Prudential Regulatory Authority (PRA) via EU legislation, Capital Requirements Regulation (CRR), Part Eight
Basis of preparation	<ul style="list-style-type: none"> → The quantitative credit risk disclosures in the Risk review are based on IFRS → Loans and advances are analysed between the four client segments of Corporate & Institutional, Commercial, Private and Retail Banking (split by industry classification codes) → Market risk disclosures are presented using VaR methodology for the trading and non-trading books 	<ul style="list-style-type: none"> → Provides details from a regulatory perspective on certain aspects of credit risk, market risk and operational risk. For credit risk this is largely based on internally modeled risk metrics such as PD, LGD and EAD under Basel rules → Loans and advances are analysed between those that are internal ratings basis (IRB) and standardised, split by standard CRR categories → Market risk and operational risk disclosures are based on the capital required
Coverage	<ul style="list-style-type: none"> → All external assets which have an exposure to credit risk → Market risk exposure is the trading and non-trading books → Liquidity risk analysis of contractual maturities, liquid assets and encumbered assets 	<ul style="list-style-type: none"> → The credit risk disclosures are provided for approved portfolios as per the IRB approach and remaining portfolios are assessed as per Standardised rules as prescribed in the CRR → The PRA has granted the Group permission to use the internal model approach (IMA) covering the majority of market risk in the trading book. Positions outside the IMA scope are assessed according to standard CRR rules → The Standardised Approach consistent with the CRR requirements is used to assess its regulatory operational risk capital requirement
Credit rating and measurement	<ul style="list-style-type: none"> → Overview of credit risk management credit grading and the use of IRB models is on page 166 → Maximum exposure to credit risk set out on page 124 → Internal credit grading analysis provided by business segment for both performing and non-performing loans and advances on page 125 → External credit grading analysis for unimpaired debt securities and treasury bills is set out on page 144 	<ul style="list-style-type: none"> → Details of IRB and Standardised approach to credit risk is set out on pages 23 to 24 → For the IRB portfolio, page 48 provides an indicative mapping of the Group's credit grades in relation to Standard & Poor's credit ratings. → Minimum regulatory capital requirements for credit risk on page 17 → Credit grade analysis provided for the IRB portfolio only. EAD within the IRB portfolio after CRM, Undrawn commitments, exposure weighted average LGD and weighted average risk-weight internal credit grade on pages 49 to 57 and 67 to 71 → Credit quality step analysis for Standardised portfolio is provided on page 60 to 62

Summary of cross references between Pillar 3 Disclosures and the Risk and capital review section of the Annual Report continued

Topic	Annual Report	Pillar 3 Disclosures
Credit risk mitigation	<ul style="list-style-type: none"> → CRM approach is set out on page 165 → Overview of collateral held and other credit risk mitigants provided on page 138. Quantitative overview of other risk mitigants including <ul style="list-style-type: none"> – Securitisations, where the Group transfers the rights to collect principal and interest on client loan assets to third parties – Master netting agreements, CSAs and cash collateral for derivatives 	<ul style="list-style-type: none"> → Provides details on CRM from a regulatory perspective by providing EAD after CRM by IRB exposure class. Explanation is given on what constitutes eligible collateral including explanations of funded and unfunded protection. The main type of collateral for the Group's Standardised portfolio is also disclosed. Please refer to pages 57 to 59 → Extensive disclosures on securitisation including notional and carrying amounts, details of securitisation programmes where the Group is an originator, the accounting and governance of securitisation activities and retained exposures and carrying value by risk weight band and by geography. Please refer to pages 72 to 75 → EAD for items subject to CCR risk pre and post credit mitigation is disclosed. The products that are covered under CCR include repo-style and derivative transactions. Please refer to pages 63 to 71
Loan portfolio	<ul style="list-style-type: none"> → Group overview of the loan portfolio provided by business and by region on pages 143, maturity analysis provided on page 142 	<ul style="list-style-type: none"> → EAD by region, split between IRB and Standardised portfolios page 35 and by industry types on page 37 → Maturity of EAD, split by IRB and Standardised on page 39
Problem credit management and provisioning	<ul style="list-style-type: none"> → Provisioning approach set out on page 167 and definition of non-performing loans on page 125 → Disclosure of loans neither past due nor impaired, loans past due but not impaired, individually impaired loans and portfolio impairment charge by region can be found on page 130 → Disclosures on non-performing loans can be found on page 126 to 129 	<ul style="list-style-type: none"> → Disclosures around the expected loss model used for regulatory purposes and a tabular disclosure showing the regulatory expected loss against the net individual impairment charge. Please refer to page 44
Market risk	<ul style="list-style-type: none"> → Details of the VaR methodology, and VAR (trading and non trading) is disclosed by risk type on pages 147 → Details on Group Treasury's market risk, including a table showing a parallel shift in the yield curves, on page 148 	<ul style="list-style-type: none"> → Provides details of the internal model approvals, such as the CAD2 granted by the PRA and the extension of the CAD2 scope to include coal market risk → Market risk capital requirements for the trading book disclosed by risk type on page 79

CONTACT INFORMATION

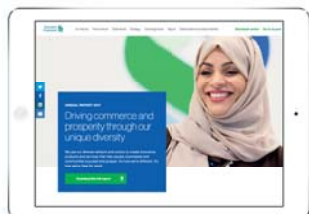
Global headquarters

Standard Chartered Group
1 Basinghall Avenue
London, EC2V 5DD
United Kingdom

telephone: +44 (0)20 7885 8888

facsimile: +44 (0)20 7885 9999

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