



PILLAR 3 DISCLOSURES 2019

Here for good

Driving commerce and prosperity
through our unique diversity

Contents

1. Introduction	1
1.1. Purpose	1
1.2. Highlights	1
1.3. Regulatory disclosure framework	3
1.4. Risk management	4
1.5. Enhancements and future developments of Pillar 3	5
1.6. Accounting and regulatory consolidation	5
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. Minimum requirement for own funds and eligible liabilities	15
2.4. Countercyclical capital buffer	19
2.5. Capital requirements	21
2.6. Leverage ratio	24
3. Credit risk	27
3.1. Internal Ratings Based Approach to credit risk	27
3.2. Standardised Approach to credit risk	27
3.3. Internal Ratings Based models	27
3.4. Exposure values	37
3.5. Regulatory expected loss vs. impairment charge	53
3.6. Risk grade profile	53
3.7. Credit risk mitigation	66
3.8. Standardised risk weight profile	68
3.9. Securitisation	72
4. Traded risk	77
4.1. Market risk	77
4.2. Counterparty credit risk	83
5. Interest rate risk in the banking book	93
6. Liquidity risk	94
6.1. Encumbered and unencumbered assets	98
7. Forward looking statements	101
Annex 1 Standard Chartered Significant Subsidiaries	102
Acronyms	118
Glossary	119
Prudential disclosure reference table	124
Summary of differences	132

Tables

1. Key metrics for the Group (KM1)	2	36. IRB – Backtesting of probability of default (PD) for retail (CR9)	34
2. Key metrics – TLAC requirements (KM2)	3	37. IRB – Backtesting of probability of default (PD) for retail – SME (CR9)	35
3. Regulatory consolidation	5	38. IRB – Backtesting of probability of default (PD) for retail – Secured by real estate property (CR9)	36
4. Outline of the differences in the scopes of consolidation (LI3)	6	39. IRB – Backtesting of probability of default (PD) for retail – qualifying revolving (CR9)	37
5. Differences between accounting and regulatory scopes of consolidation and the mapping of financial statement categories with regulatory risk categories (LI1)	7	40. Total and average exposure at default (CRB-B)	38
6. Main sources of differences between regulatory exposure amounts and carrying values in financial statements (LI2)	9	41. Exposure at default by geography (CRB-C)	39
7. Prudent valuation adjustments (PVA) (PV1)	10	42. Exposure at default by industry (CRB-D)	41
8. Reconciliation between financial total equity and regulatory CET1 before regulatory adjustments	11	43. Exposure at default by maturity (CRB-E)	43
9. Composition of regulatory capital (CC1)	12	44. Credit quality of exposures by exposure class and instrument (CR1-A)	45
10. Reconciliation of regulatory capital to balance sheet (CC2)	14	45. Credit quality of exposures by industry (CR1-B)	47
11. TLAC composition for G-SIBs (TLAC1)	15	46. Credit quality of exposures by geography (CR1-C)	48
12. Resolution entity – creditor ranking at legal entity level (TLAC3)	16	47. Credit quality of performing and non-performing exposures by past due days	48
13. Standard Chartered Bank – creditor ranking (TLAC2)	16	48. Credit quality of forborne exposures	50
14. Standard Chartered Bank (Hong Kong) Limited – creditor ranking (TLAC2)	17	49. Performing and non-performing exposures and related provisions	50
15. Standard Chartered Bank Korea Limited – creditor ranking (TLAC2)	17	50. Changes in the stock of general and specific credit risk adjustments (CR2-A)	52
16. Standard Chartered Bank (Singapore) Limited – creditor ranking (TLAC2)	18	51. Changes in the stock of defaulted and impaired loans and debt securities (CR2-B)	52
17. Standard Chartered Bank (China) Limited – creditor ranking (TLAC2)	18	52. Regulatory expected loss	53
18. Geographical distribution of credit exposures relevant for the calculation of the countercyclical capital buffer	19	53. Exposure weighted average PD% and LGD% by geography	54
19. Amount of institution specific countercyclical capital buffer	20	54. IRB – Credit risk exposures by exposure class	55
20. Overview of RWA (OV1)	21	55. Internal ratings mapping to external ratings	57
21. Movement analysis for RWA	22	56. IRB credit exposure by internal PD grade for central governments or central banks (CR6)	58
22. RWA flow statements of credit risk exposures under IRB (CR8)	23	57. IRB credit exposure by internal PD grade for institutions (CR6)	59
23. RWA flow statements of CCR exposures under the IMM (CCR7)	23	58. IRB credit exposure by internal PD grade for corporates (CR6)	60
24. RWA flow statements of market risk exposures under an IMA (MR2-B)	24	59. IRB credit exposure by internal PD grade for corporates – specialised lending (CR6)	61
25. UK Leverage and CRR Leverage Ratio	24	60. IRB credit risk exposure by internal PD grade for corporates – SME (CR6)	62
26. Summary reconciliation of accounting assets and leverage ratio exposures	25	61. IRB credit exposure by internal PD grade for retail (CR6)	63
27. Leverage ratio common disclosure	25	62. IRB credit exposure by internal PD grade for retail – secured by real estate property (CR6)	64
28. Leverage ratio: Analysis of on-balance sheet exposures	26	63. IRB credit exposure by internal PD grade for retail – qualifying revolving (CR6)	65
29. CIC model results	29	64. IRB credit exposure by internal PD grade for retail – SME (CR6)	66
30. Retail model results	29	65. CRM techniques – Overview (CR3)	67
31. IRB – Backtesting of probability of default (PD) for central governments or central banks (CR9)	29	66. Effect of guarantees and collateral	67
32. IRB – Backtesting of probability of default (PD) for institutions (CR9)	30	67. Standardised approach – credit risk exposure and Credit Risk Mitigation (CRM) effects (CR4)	68
33. IRB – Backtesting of probability of default (PD) for corporates (CR9)	31	68. Standardised approach – exposures by asset classes and risk weights (pre CRM pre CCF) (CR5)	69
34. IRB – Backtesting of probability of default (PD) for corporates – specialised lending (CR9)	32	69. Standardised approach – exposures by asset classes and risk weights (post CRM post CCF) (CR5)	70
35. IRB – Backtesting of probability of default (PD) for corporates – SME (CR9)	33		

70. Securitisation – ABS purchased or retained	72
71. Securitisation programmes (as originator)	74
72. Securitisation positions by risk-weight category under the previous securitisations framework	75
73. Securitisation positions by risk-weight category under new EU securitisation framework	76
74. Daily value at risk (VaR at 97.5%, one day)	79
75. Daily value at risk (VaR at 97.5%, one day) by products	79
76. Market risk regulatory capital requirements	80
77. Market risk under standardised approach (MR1)	80
78. IMA values for trading portfolios (MR3)	81
79. Market risk under internal models approach (MR2-A)	81
80. 2019 Backtesting chart for Internal Model Approach regulatory trading book at Group level with hypothetical profit and loss (P&L) versus VaR (99 per cent, one day) (MR4))	82
81. 2019 Backtesting chart for Internal Model Approach regulatory trading book at Group level with actual profit and loss (P&L) versus VaR (99 per cent, one day) (MR4)	82
82. Impact of netting and collateral held on exposure values (CCR5-A)	84
83. Analysis of CCR exposure by approach (CCR1)	84
84. Exposures to central counterparties (CCPs) (CCR8)	85
85. Credit derivatives exposures (CCR6)	85
86. Credit valuation adjustment (CVA) capital charge (CCR2)	85
87. Standardised approach – CCR exposures by regulatory portfolio and risk (CCR3)	86
88. IRB – CCR exposures by exposure class	87
89. IRB – CCR exposures by PD scale for central governments or central banks (CCR4)	88
90. IRB – CCR exposures by PD scale for institutions (CCR4)	89
91. IRB – CCR exposures by PD scale for corporates (CCR4)	90
92. IRB – CCR exposures by PD scale for corporates – specialised lending (CCR4)	91
93. IRB – CCR exposures by PD scale for corporates – SME (CCR4)	92
94. Treasury Markets PV01 by currency	93
95. Liquidity Coverage Ratio (LCR) (LIQ1)	95
96. Total eligible high-quality liquid assets (HQLA)	97
97. Encumbered and unencumbered assets	98
98. Encumbered assets/collateral received and associate liabilities	99
99. Collateral received	100
100. Median value versus annual disclosure comparative	100

Standard Chartered Bank 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. Unless the context requires, within this document, 'China' refers to the People's Republic of China and, for the purposes of this document only, excludes Hong Kong Special Administrative Region (Hong Kong), Macau Special Administrative Region (Macau) and Taiwan. 'Korea' or 'South Korea' refers to the Republic of Korea. Greater China & North Asia (GCNA) includes China, Hong Kong, Japan, Korea, Macau and Taiwan; ASEAN & South Asia (ASA) includes Australia, Bangladesh, Brunei, Cambodia, India, Indonesia, Laos, Malaysia, Myanmar, Nepal, Philippines, Singapore, Sri Lanka, Thailand and Vietnam; and Africa & Middle East (AME) includes Bahrain, Egypt, Iraq, Jordan, Lebanon, Oman, Pakistan, Qatar, Saudi Arabia and the United Arab Emirates (UAE). 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 2019 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 2019 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

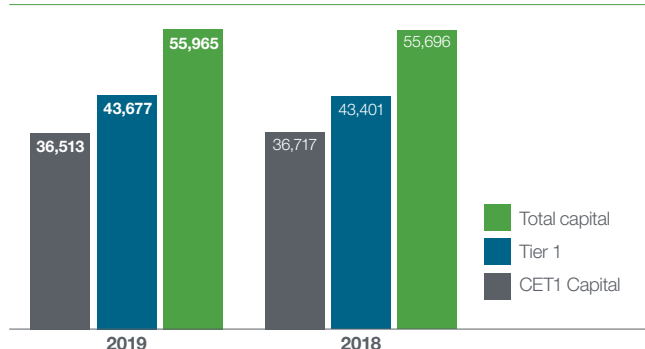
→ The Group's capital and leverage position is managed within the Board-approved risk appetite. The Group is well capitalised with low leverage and high levels of loss-absorbing capacity

→ The Group is well capitalised with a Common Equity Tier 1 (CET1) ratio of 13.8 per cent, well ahead of the current requirement of 10.2 per cent

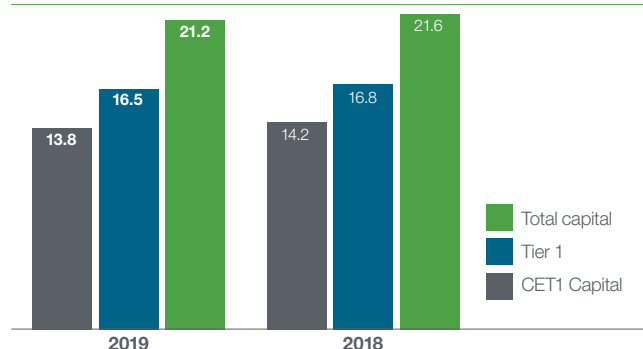
→ The Group is not highly leveraged and its leverage ratio of 5.2 per cent is well ahead of the current leverage requirement of 3.7 per cent

→ 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 2019 \$million



RWA by risk type 2018 \$million



Table 1: Key metrics for the Group (KM1)

	31.12.19 \$million	30.09.19 \$million	30.06.19 \$million	31.03.19 \$million	31.12.18 \$million
Available capital amounts¹					
Common Equity Tier 1 (CET1)	36,513	36,386	36,511	37,184	36,717
Common Equity Tier 1 (CET1) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	36,154	36,027	36,152	36,825	36,315
Tier 1	43,677	43,539	43,123	43,796	43,401
Tier 1 as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	43,318	43,180	42,764	43,437	42,999
Total capital	55,965	54,940	54,957	55,862	55,696
Total capital as IFRS 9 or analogous ECLs transitional arrangements had not been applied	55,606	54,581	54,598	55,503	55,294
Risk-weighted assets amounts					
Total risk-weighted assets (RWA)	264,090	268,668	270,739	268,206	258,297
Total risk-weighted assets if IFRS 9 or analogous ECLs transitional arrangements had not been applied	264,220	268,798	270,869	268,336	258,442
Risk-based capital ratios as a percentage of RWA					
Common Equity Tier 1 ratio	13.8%	13.5%	13.5%	13.9%	14.2%
Common Equity Tier 1 ratio as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	13.7%	13.4%	13.3%	13.7%	14.1%
Tier 1 ratio	16.5%	16.2%	15.9%	16.3%	16.8%
Tier 1 ratio as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	16.4%	16.1%	15.8%	16.2%	16.6%
Total capital ratio	21.2%	20.4%	20.3%	20.8%	21.6%
Total capital ratio as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	21.1%	20.3%	20.2%	20.7%	21.4%
Additional CET1 buffer requirements as a percentage of RWA					
Capital conservation buffer requirement (2.5% from 2019)	2.50%	2.50%	2.50%	2.50%	1.88%
Countercyclical buffer requirement	0.35%	0.41%	0.40%	0.36%	0.28%
Bank G-SIB and/or D-SIB additional requirements	1.00%	1.00%	1.00%	1.00%	0.75%
Total of bank CET1 specific buffer requirements	3.85%	3.91%	3.90%	3.86%	2.91%
CET1 available after meeting the bank's minimum capital requirements	7.43%	7.15%	7.40%	7.70%	8.10%
Total CET1 requirement ¹	10.24%	10.0%	10.0%	10.0%	9.0%
UK leverage ratio					
Total UK leverage ratio exposure measure	801,252	814,810	781,640	780,957	740,602
UK leverage ratio	5.2%	5.1%	5.3%	5.4%	5.6%
UK leverage ratio as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	5.2%	5.1%	5.3%	5.3%	5.6%
Liquidity Coverage Ratio					
Total HQLA	151,901	150,927	149,915	149,411	146,470
Total net cash outflow	107,632	102,518	98,316	95,748	94,011
LCR ratio ²	141.3%	147.5%	152.9%	156.3%	156.0%

¹ Includes a Pillar 2A CET1 requirement of around 1.9 per cent being 56 per cent of the total Pillar 2A requirement. The Group's current Pillar 2A requirement increased in 2019 to 3.38 per cent of RWA. This requirement can vary over time

² LCR ratio represents a rolling 12 month average LCR. The spot LCR as at 31 December 2019 was 143.7 per cent

Standard Chartered applies the transitional arrangements to accounting provisions recognised after 1 January 2018 under IFRS 9, as permitted by Regulation (EU) 2017/2395 of the European Parliament and of the Council, including paragraph 4 of that regulation that introduces the transitional arrangement.

Under this approach, the balance of expected credit loss (ECL) provisions in excess of the regulatory defined expected loss (EL) and additional ECL on standardised portfolios, net of related tax, are phased into the CET1 capital base over five years. The proportion phased in for the balance at each reporting period is 2019, 15 per cent; 2020, 30 per cent; 2021, 50 per cent; and 2022, 75 per cent. From 2023 onwards there is no transitional relief.

The application of the transitional relief results in a negligible effect on the CET1 ratio as the capital impact of ECL on the standardised portfolio, net of tax, has been largely offset. As there is no capital impact from additional provisions on advanced IRB portfolios, the related deferred tax asset continues to be recognised in full in CET1.

Table 2 shows information about the Group's total loss-absorbing capacity (TLAC) available, and TLAC requirements, applied at the resolution group level under a Single Point of Entry resolution strategy.

Table 2: Key metrics – TLAC requirements (KM2)

	31.12.19 \$million	30.09.19 \$million	30.06.19 \$million
Resolution group			
Total loss-absorbing capacity (TLAC) available	75,649	74,359	70,856
Fully loaded ECL accounting model TLAC available	75,290	74,000	70,497
Total RWA at the level of the resolution group	264,090	268,668	270,739
TLAC as a percentage of RWA	28.6%	27.7%	26.2%
Fully loaded ECL accounting model TLAC as a percentage of fully loaded ECL accounting model RWA (%)	28.5%	27.5%	26.0%
UK Leverage ratio exposure measure at the level of the resolution group	801,252	814,810	781,640
TLAC as a percentage of UK Leverage exposure measure	9.4%	9.1%	9.1%
Fully loaded ECL accounting model TLAC as a percentage of fully loaded ECL accounting model UK Leverage exposure measure	9.4%	9.1%	9.0%
Does the subordination exemption in the antepenultimate paragraph of Section 11 of the FSB TLAC Term Sheet apply?	Yes	Yes	Yes
Does the subordination exemption in the penultimate paragraph of Section 11 of the FSB TLAC Term Sheet apply?	No	No	No
If the capped subordination exemption applies, the amount of funding issued that ranks pari passu with Excluded Liabilities and that is recognised as external TLAC, divided by funding issued that ranks pari passu with Excluded Liabilities and that would be recognised as external TLAC if no cap was applied (%)	N/A	N/A	N/A

1.3 Regulatory disclosure framework

The Group complies with the Basel III framework as implemented in the United Kingdom. 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 2019 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 132 to 133 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 2019 performance year are set out on pages 108 to 137 of the Directors' remuneration report in the 2019 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 CRR and the Basel Committee on Banking Supervision (BCBS) 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 BCBS's methodology for assessing and identifying G-SIBs has resulted in an additional loss-absorbency requirement of 1 per cent of CET1. The EU's Capital Requirements Directive (CRD IV) mandates the Group to 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 Basel Committee, whereas CRD IV refers to 'G-SII'. The Standard Chartered PLC 2018 G-SII disclosure is published on: <https://www.sc.com/en/investors/financial-results>.

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 2019 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 2019 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, off-balance sheet collateral received, effect on the RWAs of credit derivatives used as CRM techniques and Collateral obtained by taking possession and execution processes
- Qualitative and quantitative disclosures on exposures to equities not included in the trading book

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, traded, 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 2019 Annual Report and Accounts we describe our approach and strategy for managing risk. We discuss our risk management practices, monitoring and mitigation, and governance in relation to our main activities and significant risks.

The Group is exposed to 10 key risks:

- Credit risk (refer to section Credit risk in pages 212 to 214 of the 2019 Annual Report and Accounts)
- Country risk (refer to section Country risk on page 219 of the 2019 Annual Report and Accounts)
- Traded risk (refer to section Traded risk on pages 215 to 216 of the 2019 Annual Report and Accounts)
- Capital and liquidity risk (refer to section Capital and liquidity risk on pages 217 to 218 of the 2019 Annual Report and Accounts)
- Operational risk (refer to section Operational risk on page 221 of the 2019 Annual Report and Accounts)
- Reputational risk (refer to section Reputational risk on page 220 of the 2019 Annual Report and Accounts)
- Compliance risk (refer to section Compliance risk on page 222 of the 2019 Annual Report and Accounts)
- Conduct risk (refer to section Conduct risk on pages 223 to 224 of the 2019 Annual Report and Accounts)
- Information and cyber security risk (refer to section Information and cyber security risk on pages 226 to 227 of the 2019 Annual Report and Accounts)
- Financial crime risk (refer to section Financial crime risk on page 225 of the 2019 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 (SA) is used.

Refer to Credit Risk (pages 212 to 214) in the 2019 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 212 in the 2019 Annual Report and Accounts.

Traded Risk

Traded Risk is the potential for loss resulting from activities undertaken by the bank in financial markets. This includes market risk, counterparty credit risk and other risk sub-types.

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. Hence, 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 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 foreign exchange risk which is reflected in reserves

The primary categories of market risk for the Group are interest rate risk, foreign exchange rate risk and commodity 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 the standard rules set by the regulatory framework.

Counterparty credit risk is the risk that a counterparty defaults before satisfying its obligations under a derivative, a securities financing transaction (SFT) or a similar contract.

Refer to Traded risk 215 to 216 in the 2019 Annual Report and Accounts where we describe the main components of traded risk management, including our traded risk profile.

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). Non-financial risks are managed through the Control Assessment Standards which are used to determine the design strength and reliability of the Group's processes. 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 20 on page 21 and to pages 239 of the 2019 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 Total loss-absorbing capacity (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 have been phased in from year-end 2017. The 2019 year-end disclosure document incorporates some of these templates, although the additional disclosure requirements arising from the March 2017 BCBS standard have yet to be implemented in the EU.

In December 2018, the Basel Committee published the finalised standard for the third phase of its Pillar 3 review which covers disclosure requirements resulting from the finalisation of the regulatory framework, including credit risk, operational risk, the leverage ratio and credit valuation adjustment (CVA) risk, risk-weighted assets (RWA) as calculated by internal models and according to the standardised approaches; and an overview of risk management, RWA and key prudential metrics. The disclosure requirements as set out in the standard have been phased in from year-end 2020.

Also in December 2018, the EBA issued guidelines on the disclosure of non-performing and forbore exposures that came into effect from 31 December 2019. Our 2019 year-end Pillar 3 disclosures incorporate these new templates but do not reflect any of the additional requirements arising from the December 2018 BCBS standard.

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 2019 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/tentang-kami/hubungan-investor>

Table 3: Regulatory consolidation

Type	Description	Regulatory consolidation	Principal undertakings within each category
Investment (non significant)	The Group holds no more than 10 per cent 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 per cent and less than 20 per cent 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
Subsidiary	The Group holds more than 50 per cent 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 Managers (Hong Kong) Limited
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

Table 4: Outline of the differences in the scopes of consolidation (LI3)

Name of the entity	Description of the entity	Method of accounting consolidation	2019			
			Method of regulatory consolidation			
			Full consolidation	Proportional consolidation	Neither consolidated nor deducted	Deducted
PT Bank Permata Tbk	Joint venture credit institution	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,

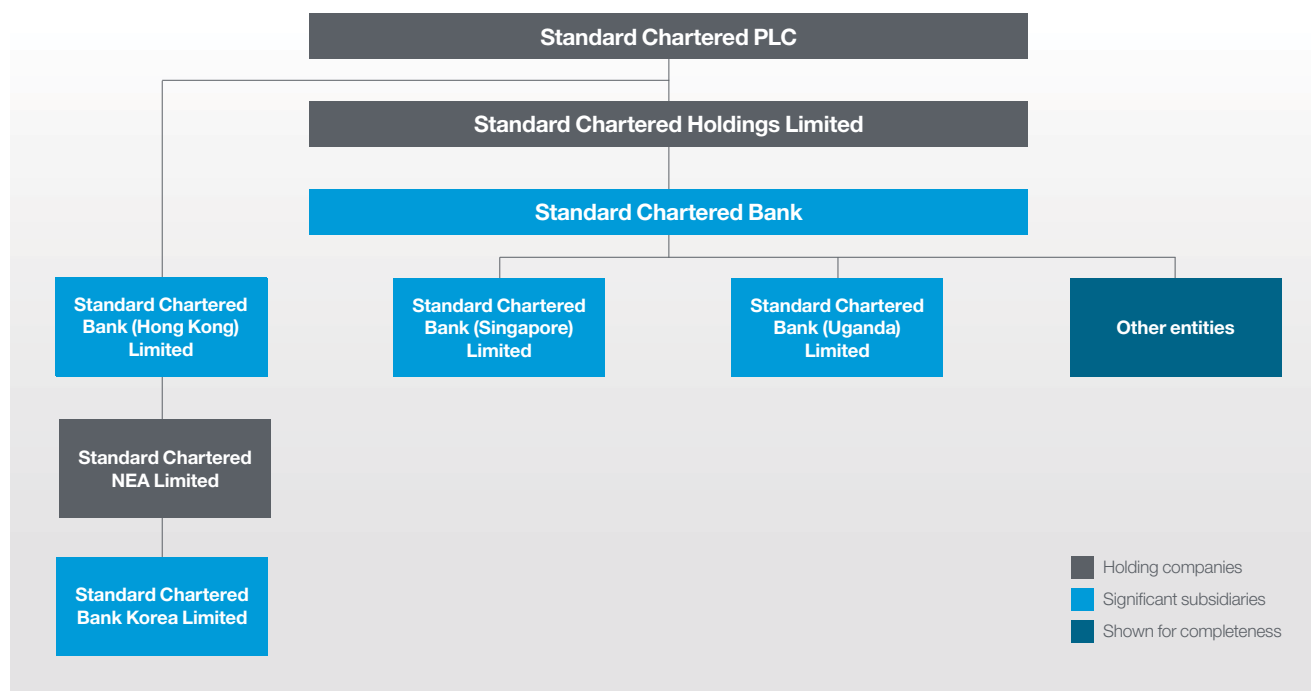
Standard Chartered Bank (Hong Kong) Limited (regulated by the Hong Kong Monetary Authority) and Standard Chartered Bank Korea Limited (regulated by the Financial Supervisory Service (FSS) in Korea). Standard Chartered Bank Singapore

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 basis is the treatment of capital, which is presented in Table 8 based on the group regulatory balance sheet and not the financial accounting balance sheet.

Table 5 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 RWA.

Table 5: Differences between accounting and regulatory scopes of consolidation and the mapping of financial statement categories with regulatory risk categories (L1)

	2019						
	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 counter-party 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	52,728	53,477	53,477	–	–	–	–
Financial assets held at fair value through profit or loss	92,818	92,981	9,976	65,001	4,657	82,728	–
Derivative financial instruments	47,212	47,228	–	47,228	–	47,228	–
Loans and advances to banks	53,549	54,806	53,465	1,341	–	1,341	–
Loans and advances to customers	268,523	276,137	259,191	1,469	15,477	1,469	–
Investment securities	143,731	144,674	126,065	–	3,649	36,338	–
Other assets	42,022	42,432	23,179	10,101	–	9,169	–
Current tax assets	539	539	539	–	–	–	–
Prepayments and accrued income	2,700	2,771	2,771	–	–	–	–
Interests in associates and joint ventures	1,908	1,908	1,908	–	–	–	–
Goodwill and intangible assets	5,290	5,427	–	–	–	–	5,427
Property, plant and equipment	6,220	6,258	6,258	–	–	–	–
Deferred tax assets	1,105	1,223	1,108	–	–	–	115
Asset classified as held for sale	2,053	1,195	1,195	–	–	–	–
Total assets	720,398	731,056	539,132	125,140	23,783	178,273	5,542
Liabilities							
Deposits by banks	28,562	28,754	–	–	–	–	28,754
Customer accounts	405,356	414,242	–	–	–	–	414,242
Repurchase agreements and other similar secured borrowing	1,935	2,276	–	2,276	–	–	–
Financial liabilities held at fair value through profit or loss	66,974	66,974	–	45,829	–	4,153	16,992
Derivative financial instruments	48,484	48,490	–	48,490	–	48,490	–
Debt securities in issue	53,026	53,026	–	–	–	–	53,026
Other liabilities	41,591	41,511	2,090	7,824	–	14,347	25,432
Current tax liabilities	703	700	–	–	–	–	700
Accruals and deferred income	5,369	5,414	–	–	–	–	5,414
Subordinated liabilities and other borrowed funds	16,207	16,313	–	–	–	–	16,313
of which: considered as Additional Tier 1 capital	–	260	–	–	–	–	260
of which: considered as Tier 2 capital	–	16,053	–	–	–	–	16,053
Deferred tax liabilities	450	450	–	–	–	–	651
Provisions for liabilities and charges	434	434	–	–	–	–	434
Retirement benefit obligation	469	480	–	–	–	–	480
Total liabilities	669,737	679,281	2,090	104,419	–	66,990	562,438
Equity							
Share capital and share premium account	7,082	7,082	–	–	–	–	–
Other reserves	11,685	11,685	–	–	–	–	–
Retained earnings	26,070	25,984	–	–	–	–	–
Other equity instruments	5,512	5,871	–	–	–	–	–
Non-controlling interest	313	1,154	–	–	–	–	–
Total equity	50,661	51,775	–	–	–	–	–
Total equity and liabilities	720,398	731,056	2,090	104,419	–	66,990	562,438

Table 5: Differences between accounting and regulatory scopes of consolidation and the mapping of financial statement categories with regulatory risk categories (L1) continued

	2018						
	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 counter-party 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
Assets¹							
Cash and balances at central banks	57,511	58,277	58,277	–	–	–	–
Financial assets held at fair value through profit or loss	87,132	87,132	7,869	60,502	1,104	55,989	–
Derivative financial instruments	45,621	45,636	–	45,636	–	45,636	–
Loans and advances to banks	61,414	62,311	58,496	3,815	–	3,815	–
Loans and advances to customers	256,557	263,750	245,504	3,151	15,095	3,151	–
Investment securities	125,901	126,978	111,010	–	6,367	30,812	–
Other assets	35,401	36,048	19,444	16,603	–	2,536	–
Current tax assets	492	492	492	–	–	–	–
Prepayments and accrued income	2,505	2,576	2,576	–	–	–	–
Interests in associates and joint ventures	2,307	1,590	1,590	–	–	–	–
Goodwill and intangible assets	5,056	5,194	–	–	–	–	5,194
Property, plant and equipment	6,490	6,532	6,532	–	–	–	–
Deferred tax assets	1,047	1,047	932	–	–	–	115
Asset classified as held for sale	1,328	1,216	1,216	–	–	–	–
Total assets	688,762	698,779	513,938	129,707	22,566	141,939	5,309
Liabilities¹							
Deposits by banks	29,715	29,854	–	–	–	–	29,854
Customer accounts	391,013	399,184	–	–	–	–	399,184
Repurchase agreements and other similar secured borrowing	1,401	1,401	–	1,401	–	–	–
Financial liabilities held at fair value through profit or loss	60,700	60,688	–	44,974	–	3,214	12,501
Derivative financial instruments	47,209	47,217	–	47,217	–	47,217	–
Debt securities in issue	46,454	46,454	–	–	–	–	46,454
Other liabilities	38,556	38,883	1,656	9,259	–	11,852	25,371
Current tax liabilities	676	670	–	–	–	–	670
Accruals and deferred income	5,393	5,452	–	–	–	–	5,452
Subordinated liabilities and other borrowed funds	15,001	15,276	–	–	–	–	15,276
of which: considered as Additional Tier 1 capital	–	249	–	–	–	–	249
of which: considered as Tier 2 capital	–	11,709	–	–	–	–	11,709
Deferred tax liabilities	563	587	–	–	–	–	587
Provisions for liabilities and charges	1,330	1,330	–	–	–	–	1,330
Retirement benefit obligation	399	377	–	–	–	–	377
Total liabilities	638,410	647,373	1,656	102,851	–	62,284	537,056
Equity							
Share capital and share premium account	7,111	7,111	–	–	–	–	–
Other reserves	11,878	11,878	–	–	–	–	–
Retained earnings	26,129	26,449	–	–	–	–	–
Other equity instruments	4,961	4,961	–	–	–	–	–
Non-controlling interest	273	1,007	–	–	–	–	–
Total equity	50,352	51,406	–	–	–	–	–
Total equity and liabilities	688,762	698,779	1,656	102,851	–	62,284	537,056

¹ 2018 has been represented to align asset and liability classifications to the row structure of the balance sheet used in the latest financial statements

Table 6 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 6 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 41 to 43; standardised credit risk before and after the effect of CRM is presented in Table 67; standardised credit and counterparty credit risk by risk weight is presented in Tables 68 to 69 and IRB credit and counterparty credit risk before and after

the effect of Credit Risk Mitigation (CRM) is presented in Table 54. Information on the standardised and IRB counterparty credit risk exposures can be found in section 4.2. Further detail on the EAD under the securitisation framework can be found in Table 70.

Table 6: Main sources of differences between regulatory exposure amounts and carrying values in financial statements (LI2)

	2019		
	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	539,132	125,140	23,783
Derivatives netting benefit ²	–	(62,661)	–
Differences due to consideration of provisions	3,675	–	–
Differences due to consideration of collateral	–	–	–
Differences due to capital deductions	–	–	–
Differences due to off-balance sheet amounts recognised in regulatory exposures	89,206	89,782	1,508
Differences due to the impact of the use of own-models in exposures	–	19,887	–
Other	1,609	206	–
Regulatory exposure at default pre credit risk mitigation	633,622	172,354	25,290

	2018		
	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	513,938	129,707	22,566
Derivatives netting benefit ²	–	(34,300)	–
Differences due to consideration of provisions ³	5,941	–	–
Differences due to consideration of collateral	–	–	–
Differences due to capital deductions	–	–	–
Differences due to off-balance sheet amounts recognised in regulatory exposures	83,997	83,066	1,455
Differences due to the impact of the use of own-models in exposures	–	–	–
Other	54	124	(5)
Regulatory exposure at default pre credit risk mitigation³	603,931	178,596	24,016

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 requirement

3 2018 Differences due to consideration of provisions and Regulatory exposure at default pre credit risk mitigation have been restated to reflect the change in accounting treatment of interest in suspense. Note 1 of the Notes to financial statements sets out the basis for this change on page 263 in the 2019 Annual Report and Accounts.

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 (PVA) 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 7: Prudent valuation adjustment (PVA) (PV1)

		2019						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		
1	Closeout uncertainty	77	332	18	31	12	469	186	283
2	Of which Mid-market value	11	140	13	27	6	198	106	92
3	Of which Closeout cost	–	65	4	1	4	75	75	–
4	Of which Concentration	65	126	1	2	1	196	5	191
5	Early termination	–	–	–	–	–	–	–	–
6	Model risk	–	–	–	–	–	1	1	–
7	Operational risk	1	21	2	4	1	29	20	9
8	Investing and funding costs	–	–	–	–	–	2	2	–
9	Unearned credit spreads	–	–	–	–	–	33	33	–
10	Future administrative costs	7	6	–	5	–	18	7	11
11	Other	–	44	–	20	–	63	63	–
12	Total adjustment	85	402	20	59	14	615	312	303

		2018						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		
1	Closeout uncertainty	68	296	19	67	11	461	245	216
2	Of which Mid-market value	16	158	12	29	8	223	136	88
3	Of which Closeout cost	–	62	6	–	3	72	71	1
4	Of which Concentration	52	76	1	38	–	166	39	128
5	Early termination	–	–	–	–	–	–	–	–
6	Model risk	–	–	–	–	–	1	1	–
7	Operational risk	3	23	2	3	1	32	21	11
8	Investing and funding costs	–	–	–	2	–	2	2	–
9	Unearned credit spreads	–	–	–	41	–	41	41	–
10	Future administrative costs	–	6	8	3	2	19	11	8
11	Other	–	7	–	–	–	7	7	–
12	Total adjustment	71	332	29	117	14	564	329	235

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 2019 Annual Report and Accounts sets out our approach to capital management (pages 217 to 218).

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.

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

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 <https://www.sc.com/en/investors/credit-ratings-fixed-income/#capitalsecurities>.

Table 8 summarises the consolidated capital position of the Group.

Table 8: Reconciliation between financial total equity and regulatory CET1 before regulatory adjustments

	2019 \$million	2018 \$million
Total equity per balance sheet (financial view)	50,661	50,352
Consolidation and regulatory adjustments	1,114	1,054
Total equity per balance sheet (regulatory view)	51,775	51,406
Foreseeable dividend net of scrip	(871)	(527)
Other equity instruments (included in AT1)	(7,007)	(6,455)
Non-controlling interests	(431)	(321)
Common Equity Tier 1 capital before regulatory adjustments	43,466	44,103

2.2 Capital resources continued

Table 9: Composition of regulatory capital (CC1)

	2019 Transitional position \$million	2019 End point adjustment \$million	2019 End point position \$million	2018 Transitional position \$million
Common Equity Tier 1 (CET1) capital: instruments and reserves				
Capital instruments and the related share premium accounts	5,584	–	5,584	5,617
Of which: Share premium accounts	3,989	–	3,989	3,965
Retained earnings ¹	24,044	–	24,044	25,377
Accumulated other comprehensive income (and other reserves)	11,685	–	11,685	11,878
Non-controlling interests (amount allowed in consolidated CET1)	723	–	723	686
Independently reviewed interim and year-end profits/(loss) ²	2,301	–	2,301	1,072
Foreseeable dividends net of scrip ³	(871)	–	(871)	(527)
Common Equity Tier 1 capital before regulatory adjustments	43,466	–	43,466	44,103
Common Equity Tier 1 capital: regulatory adjustments				
Additional value adjustments	(615)	–	(615)	(564)
Intangible assets	(5,318)	–	(5,318)	(5,146)
Deferred tax assets that rely on future profitability	(129)	–	(129)	(115)
Fair value reserves related to gains or losses on cash flow hedges	59	–	59	10
Negative amounts resulting from the calculation of expected loss amounts	(822)	–	(822)	(875)
Gains or losses on liabilities at fair value resulting from changes in own credit	(2)	–	(2)	(412)
Defined-benefit pension fund assets	(26)	–	(26)	(34)
Fair value gains and losses from own credit risk related to derivative liabilities	(38)	–	(38)	(127)
Exposure amounts which could qualify for risk weight of 1250%	(62)	–	(62)	(123)
Of which: securitisation positions	(57)	–	(57)	(110)
Of which: free deliveries	(5)	–	(5)	(13)
Total regulatory adjustments to Common Equity Tier 1 capital	(6,953)	–	(6,953)	(7,386)
Common Equity Tier 1 capital	36,513	–	36,513	36,717
Additional Tier 1 (AT1) capital: instruments				
Capital Instruments and the related share premium accounts	7,184	(1,671)	5,513	6,704
Of which: classified as equity under applicable accounting standards	7,007	(1,494)	5,513	6,455
Of which: classified as liabilities under applicable accounting standards	177	(177)	–	249
Additional Tier 1 (AT1) capital before regulatory adjustments⁴	7,184	(1,671)	5,513	6,704
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	7,164	(1,671)	5,493	6,684
Tier 1 capital (T1 = CET1 + AT1)	43,677	(1,671)	42,006	43,401
Tier 2 (T2) capital: instruments and provisions				
Capital instruments and the related share premium accounts	11,726	1,752	13,478	11,708
Qualifying items and the related share premium accounts subject to phase out from T2	328	(328)	–	240
Qualifying own funds instruments included in consolidated T2 issued by subsidiaries and held by third parties	264	–	264	377
Tier 2 capital before regulatory adjustments⁴	12,318	1,424	13,742	12,325
Tier 2 capital: regulatory adjustments				
Direct and indirect holdings by an institution of own Tier 2 instruments and subordinated loans	(30)	–	(30)	(30)
Reciprocal cross-holdings in Tier 2 instruments and other TLAC liabilities	N/A	N/A	N/A	N/A
Investments in the capital and other TLAC liabilities of banking, financial and insurance entities that are outside the scope of regulatory consolidation, where the bank does not own more than 10% of the issued common share capital of the entity (amount above 10% threshold)	N/A	N/A	N/A	N/A
Investments in the other TLAC liabilities of banking, financial and insurance entities that are outside the scope of regulatory consolidation and where the bank does not own more than 10% of the issued common share capital of the entity: amount previously designated for the 5% threshold but that no longer meets the conditions (for G-SIBs only)	N/A	N/A	N/A	N/A
Significant investments in the capital and other TLAC liabilities of banking, financial and insurance entities that are outside the scope of regulatory consolidation (net of eligible short positions)	N/A	N/A	N/A	N/A
Total regulatory adjustments to Tier 2 capital	(30)	–	(30)	(30)
Tier 2 capital	12,288	1,424	13,712	12,295
Total capital (TC = T1 + T2)	55,965	(247)	55,718	55,696
Total risk-weighted assets⁵	264,090	–	264,090	258,297

2.2 Capital resources continued

Table 9: Composition of regulatory capital (CC1) continued

	2019 Transitional position \$million	2019 End point adjustment \$million	2019 End point position \$million	2018 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)	1,170	–	1,170	1,774
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)	1,942	–	1,942	1,633
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)	1,061	–	1,061	925
Applicable caps on the inclusion of provisions in Tier 2				
Provisions eligible for inclusion in Tier 2 in respect of exposures subject to standardised approach (prior to application of cap)	–	–	–	–
Cap on inclusion of provisions in Tier 2 under standardised approach	619	–	619	586
Provisions eligible for inclusion in Tier 2 in respect of exposures subject to internal ratings-based approach (prior to application of cap)	–	–	–	–
Cap for inclusion of provisions in Tier 2 under internal ratings-based approach	973	–	973	978
Risk-weighted assets				
Credit risk	213,551	–	213,551	210,022
Credit valuation adjustment risk	2,113	–	2,113	1,116
Operational risk	27,620	–	27,620	28,050
Market risk	20,806	–	20,806	19,109
Total risk-weighted assets⁵	264,090	–	264,090	258,297
Capital ratios				
Common Equity Tier 1 capital	13.8%	–	13.8%	14.2%
Tier 1 capital	16.5%	(0.6)%	15.9%	16.8%
Total capital	21.2%	(0.1)%	21.1%	21.6%
Capital buffers				
Institution specific buffer requirement (CET1 requirement in accordance with article 92 (1) (a) plus capital conservation and countercyclical buffer requirement, plus systemic risk buffer, plus systemically important institution buffer expressed as a percentage of risk exposure amount.)	10.24%	0.06%	10.30%	9.00%
Of which: capital conservation buffer requirement	2.50%	–	2.50%	1.88%
Of which: countercyclical buffer requirement ⁶	0.35%	0.06%	0.41%	0.28%
Of which systemic risk buffer requirement	–	–	–	–
Of which: Global systemically important institution (G-SII) or Other systemically important institution (O-SII) buffer	1.0%	–	1.0%	0.8%
Common Equity Tier 1 available to meet buffers (as percentage of risk exposure amount)	7.4%	–	7.4%	8.1%

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

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

3 Foreseeable dividends as at 2019 year-end represent ordinary dividends and preference dividends

4 End point Tier 2 capital includes ineligible AT1 capital subject to grandfathering including any excess over AT1 limit

5 RWA are not covered by the scope of the Audit

6 Transitional adjustment of 6bps shown in 2019 relates to proposed UK CCY Buffer increase from 1% to 2% with effect from 16 December 2020

The main movements in capital in the period were:

- The CET1 ratio decreased from 14.2 per cent to 13.8 per cent predominantly because of higher RWAs, the impact of the \$1.0 billion share buy-back and other distributions to shareholders, including preference dividends, partly offset by profit for the period
- CET1 capital decreased by \$0.2 billion, due to the share buy-back of \$1.0 billion and other distributions during the period of \$1.5 billion, partly offset by profit after tax of \$2.3 billion

→ AT1 increased slightly to \$7.2 billion, mainly due to the new issuance of Singapore Dollar 750 million of AT1 securities

→ Tier 2 capital was unchanged at \$12.3 billion mainly due to \$1 billion of new subordinated debt issuance, offset by amortisation of \$1.1 billion during the year

The Group's current CET1 requirement is 10.2 per cent, comprising:

- A minimum Pillar 1 CET1 requirement of 4.5 per cent

→ A Pillar 2A CET1 requirement of 1.9 per cent being 56 per cent of the total Pillar 2A requirement of 3.4 per cent

→ A capital conservation buffer of 2.5 per cent

→ A G-SII buffer of 1.0 per cent

→ A countercyclical capital buffer of 0.35 per cent

2.2 Capital resources continued

Table 10: Reconciliation of regulatory capital to balance sheet (CC2)

	2019	
	Balance sheet as in published financial statements \$million	Under regulatory scope of consolidation \$million
Assets		
Cash and balances at central banks	52,728	53,477
Financial assets held at fair value through profit or loss	92,818	92,981
Derivative financial instruments	47,212	47,228
Loans and advances to banks	53,549	54,806
Loans and advances to customers	268,550	276,164
Investment securities	143,731	144,674
Other assets	42,022	42,430
Current tax assets	539	539
Prepayments and accrued income	2,700	2,771
Interests in associates and joint ventures	1,908	1,908
Goodwill and intangible assets	5,290	5,427
Of which: goodwill	3,079	3,198
Of which: other intangibles (excluding MSRs)	2,211	2,229
Of which: MSRs	–	–
Property, plant and equipment	6,220	6,258
Deferred tax assets	1,105	1,223
Assets classified as held for sale	2,053	1,195
Total assets	720,398	731,056
Liabilities		
Deposits by banks	28,562	28,754
Customer accounts	405,356	414,242
Repurchase agreements and other similar secured borrowing	1,935	2,276
Financial liabilities held at fair value through profit or loss	66,974	66,974
Derivative financial instruments	48,484	48,490
Debt securities in issue	53,026	53,026
Other liabilities	41,591	41,511
Current tax liabilities	703	700
Accruals and deferred income	5,369	5,414
Subordinated liabilities and other borrowed funds	16,207	16,313
of which: considered as Additional Tier 1 capital	258	260
of which: considered as Tier 2 capital	15,948	16,053
Deferred tax liabilities	611	651
Of which: DTLs related to goodwill	571	609
Of which: DTLs related to intangible assets (excluding MSRs)	40	42
Of which: DTLs related to MSRs	–	–
Provisions for liabilities and charges	450	450
Retirement benefit obligations	469	480
Total liabilities	669,737	679,281
Shareholders' Equity		
Share capital and share premium account	7,082	7,082
Of which: amount eligible for CET1	1,567	1,570
Of which: amount eligible for AT1	5,512	5,512
Other reserves	11,685	11,685
Retained earnings	26,070	25,984
Other equity instruments	5,512	5,871
Non-controlling interest	313	1,154
Total equity	50,661	51,775
Total equity and liabilities	720,398	731,056

2.3 Minimum requirement for own funds and eligible liabilities

From 1 January 2019, a requirement for total loss-absorbing capacity (TLAC) was introduced, as defined in the final standards adopted by the Financial Stability Board (FSB). In the EU, TLAC requirements were implemented by the Capital Requirements Regulation II (CRR II) which was published in the Official Journal of the European Union on the 7 June 2019 and came into effect on 27 June 2019. It included a new framework on minimum requirement for own funds and eligible liabilities (MREL).

MREL is intended to ensure that 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. The new framework is complemented with new disclosure requirements. As the specific EU format for disclosure is yet to be agreed, the disclosures are based on the formats provided in the Basel Committee Standards for Pillar 3 Phase 2 disclosures requirements.

The Group's fully phased minimum requirement for own funds and eligible liabilities (MREL) is 22.8 per cent of RWA from 1 January 2022. The Group's combined buffer (the capital conservation, global systemically important institution (G-SII)

and countercyclical buffers) is additive to the minimum requirement, resulting in a total MREL requirement of 26.7¹ per cent of RWA from 1 January 2022. As at 31 December 2019, the Group's MREL position at 31 December 2019 was 28.6 per cent of RWA and 9.4 per cent of leverage exposure.

Details of the Group's MREL eligible instruments are set out in the Standard Chartered PLC Main Features of Capital Instruments document available on the Group's website at <https://www.sc.com/en/investors/credit-ratings-fixed-income/#capitalsecurities>.

Table 11 shows details of the composition of the Group's MREL.

¹ Fully phased minimum 2022 MREL requirement includes the estimated impact of the proposed UK countercyclical buffer increase from 1.0 per cent to 2.0 per cent with effect from 16 December 2020

Table 11: TLAC composition for G-SIBs (TLAC1)

	2019 \$million
Regulatory capital elements of TLAC and adjustments	
Common Equity Tier 1 capital (CET1)	36,513
Additional Tier 1 capital (AT1) before TLAC adjustments	7,164
AT1 ineligible as TLAC as issued out of subsidiaries to third parties	–
Other adjustments	–
AT1 instruments eligible under the TLAC framework	7,164
Tier 2 capital (T2) before TLAC adjustments	12,288
Amortised portion of T2 instruments where remaining maturity > 1 year	1,922
T2 capital ineligible as TLAC as issued out of subsidiaries to third parties	–
Other adjustments	(72)
T2 instruments eligible under the TLAC framework	14,139
TLAC arising from regulatory capital	57,839
Non-regulatory capital elements of TLAC	
External TLAC instruments issued directly by the bank and subordinated to excluded liabilities	–
External TLAC instruments issued directly by the bank which are not subordinated to excluded liabilities but meet all other TLAC term sheet requirements	17,837
Of which: amount eligible as TLAC after application of the caps	17,837
External TLAC instruments issued by funding vehicles prior to 1 January 2022	–
Eligible ex ante commitments to recapitalise a G-SIB in resolution	–
TLAC arising from non-regulatory capital instruments before adjustments	17,837
Non-regulatory capital elements of TLAC: adjustments	
TLAC before deductions	75,652
Deductions of exposures between MPE resolution groups that correspond to items eligible for TLAC (not applicable to SPE G-SIBs)	–
Deduction of investments in own other TLAC liabilities	(3)
Other adjustments to TLAC	–
TLAC after deductions	75,649
Risk-weighted assets and leverage exposure measure for TLAC purposes	
Total risk-weighted assets adjusted as permitted under the TLAC regime	264,090
UK Leverage exposure measure	801,261
TLAC ratios and buffers	
TLAC (as a percentage of risk-weighted assets adjusted as permitted under the TLAC regime)	28.6%
TLAC (as a percentage of leverage exposure)	9.4%
CET1 (as a percentage of risk-weighted assets) available after meeting the resolution group's minimum capital and TLAC requirements	7.4%
Institution-specific buffer requirement (capital conservation buffer plus countercyclical buffer requirements plus higher loss absorbency requirement, expressed as a percentage of risk-weighted assets)	3.9%
Of which: capital conservation buffer requirement	2.5%
Of which: bank specific countercyclical buffer requirement	0.4%
Of which: higher loss absorbency requirement	1.0%

2.3 Minimum requirement for own funds and eligible liabilities continued

Table 12 shows information regarding the ranking of the Group's liabilities at the resolution group level.

Table 12: Resolution entity – creditor ranking at legal entity level (TLAC3)

Description of creditor ranking	2019			Total \$million
	Creditor ranking			
	1 \$million	2 \$million	3 \$million	
	Tertiary non- preferential debt ²	Tertiary non- preferential debt – Tier 2 securities	Ordinary non- preferential debt ³	
Total capital and liabilities net of credit risk mitigation ¹	7,279	14,401	21,200	42,900
Of which: are excluded liabilities	–	–	(738)	(738)
Total capital and liabilities less excluded liabilities	7,279	14,401	20,482	42,162
Of which: are potentially eligible as TLAC	7,279	14,401	17,869	39,549
Of which: with 1 year ≤ residual maturity < 2 years	–	–	2,794	2,794
Of which: with 2 years ≤ residual maturity < 5 years	–	5,549	7,865	13,414
Of which: with 5 years ≤ residual maturity < 10 years	–	3,160	5,303	8,463
Of which: with residual maturity ≥ 10 years, but excluding perpetual securities	–	5,515	1,906	7,421
Of which: perpetual securities	7,279	177	–	7,456

1 Excludes CET1 and is based on accounting carrying values

2 AT1 Preference shares and Contingent Convertible Capital Instruments

3 Senior bonds, derivative liabilities, tax claims etc

TLAC 2 is a G-SII disclosure requirement to provide the ranking of the liability structure of all of the Group's material sub-groups in as defined by the FSB TLAC Term Sheet. The group has 5 material sub-groups; Standard Chartered Bank, Standard Chartered Bank (Hong Kong) Limited, Standard Chartered Bank Korea Limited, Standard Chartered Bank (China) Limited, and Standard Chartered Bank (Singapore) Limited for which disclosure would be required.

The following tables show the nominal values of capital and liabilities and the position in the creditor hierarchy for these material sub-groups.

Table 13: Standard Chartered Bank – creditor ranking (TLAC2)

	2019				Total \$million
	Creditor ranking				
	1 \$million	2 \$million	3 \$million	3 \$million	
Is the resolution entity the creditor/investor?	No ¹	Yes	No	Yes	
Description of creditor ranking	Tertiary non-preferential debt – common shares	Tertiary non-preferential debt – AT1 cocos	Tertiary non-preferential debt – Tier 2 securities	Tertiary non-preferential debt – Tier 2 securities	
Total capital and liabilities net of credit risk mitigation ²	19,024	6,500	709	12,337	38,570
Of which: are excluded liabilities	–	–	–	–	–
Total capital and liabilities less excluded liabilities	19,024	6,500	709	12,337	38,570
Of which: are potentially eligible as TLAC	19,024	6,500	709	12,337	38,570
Of which: with 1 year ≤ residual maturity < 2 years	–	–	–	–	–
Of which: with 2 years ≤ residual maturity < 5 years	–	–	–	2,960	2,960
Of which: with 5 years ≤ residual maturity < 10 years	–	–	–	2,698	2,698
Of which: with residual maturity ≥ 10 years, but excluding perpetual securities	–	–	291	6,500	6,791
Of which: perpetual securities	19,024	6,500	418	179	26,120

1 Held by Standard Chartered Holdings Limited

2 Excludes CET1 (except common shares) and is based on accounting carrying values

2.3 Minimum requirement for own funds and eligible liabilities continued

Table 14: Standard Chartered Bank (Hong Kong) Limited – creditor ranking (TLAC2)

	2019						Total \$million
	Creditor ranking						
	1 \$million	2 \$million	2 \$million	3 \$million	3 \$million	4 \$million	
Is the resolution entity the creditor/investor?	Yes	No ¹	Yes	No	Yes	Yes	
Description of creditor ranking	Common Shares	Securities and preference shares qualifying as AT1	Securities and preference shares qualifying as AT1	Dated subordinated notes qualifying as Tier 2	Dated subordinated notes qualifying as Tier 2	Loss absorbing non- preferred notes	
Total capital and liabilities net of credit risk mitigation ²	7,851	498	1,153	754	1,499	2,399	14,154
Of which: are excluded liabilities	–	–	–	–	–	–	–
Total capital and liabilities less excluded liabilities	7,851	498	1,153	754	1,499	2,399	14,154
Of which: are potentially eligible as TLAC	7,851	–	1,153	–	1,499	2,399	12,902
Of which: with 1 year ≤ residual maturity < 2 years	–	–	–	–	–	–	–
Of which: with 2 years ≤ residual maturity < 5 years	–	–	–	–	–	2,399	2,399
Of which: with 5 years ≤ residual maturity < 10 years	–	–	–	–	1,249	–	1,249
Of which: with residual maturity ≥ 10 years, but excluding perpetual securities	–	–	–	–	250	–	250
Of which: perpetual securities	7,851	–	1,153	–	–	–	9,004

1 Held by Standard Chartered Bank

2 Excludes CET1 (except common shares) and is based on accounting carrying values

Table 15: Standard Chartered Bank Korea Limited – creditor ranking (TLAC2)

	2019		
	Creditor ranking		Total \$million
	1 \$million	2 \$million	
Is the resolution entity the creditor/investor?	No ¹	No ²	
Description of creditor ranking	Common shares	Tier 2 securities	
Total capital and liabilities net of credit risk mitigation ³	1,302	519	1,821
Of which: are excluded liabilities	–	–	–
Total capital and liabilities less excluded liabilities	1,302	519	1,821
Of which: are potentially eligible as TLAC	1,302	519	1,821
Of which: with 1 year ≤ residual maturity < 2 years	–	–	–
Of which: with 2 years ≤ residual maturity < 5 years	–	519	519
Of which: with 5 years ≤ residual maturity < 10 years	–	–	–
Of which: with residual maturity ≥ 10 years, but excluding perpetual securities	–	–	–
Of which: perpetual securities	1,302	–	1,302

1 Held by Standard Chartered NEA Limited

2 Held by Standard Chartered Bank

3 Excludes CET1 (except common shares) and is based on accounting carrying values

2.3 Minimum requirement for own funds and eligible liabilities continued

Table 16: Standard Chartered Bank (Singapore) Limited – creditor ranking (TLAC2)

	2019				
	Creditor ranking				
	1 \$million	2 \$million	2 \$million	3 \$million	Total \$million
Is the resolution entity the creditor/investor?	No ¹	Yes	No ²	Yes	
Description of creditor ranking	Common Shares	AT1 Non- cumulative Preference Shares	AT1 Non- cumulative Preference Shares	Tier 2 Subordinated Notes	
Total capital and liabilities net of credit risk mitigation ³	3,963	1,057	223	540	5,783
Of which: are excluded liabilities	–	–	–	–	–
Total capital and liabilities less excluded liabilities	3,963	1,057	223	540	5,783
Of which: are potentially eligible as TLAC	3,963	1,057	223	540	5,783
Of which: with 1 year ≤ residual maturity < 2 years	–	–	–	–	–
Of which: with 2 years ≤ residual maturity < 5 years	–	–	–	–	–
Of which: with 5 years ≤ residual maturity < 10 years	–	–	–	–	–
Of which: with residual maturity ≥ 10 years, but excluding perpetual securities	–	–	–	540	540
Of which: perpetual securities	3,963	1,057	223	–	5,243

1 Held by Standard Chartered Holdings (Singapore) Private Limited

2 Held by Standard Chartered Bank

3 Excludes CET1 (except common shares) and is based on accounting carrying values

Table 17: Standard Chartered Bank (China) Limited – creditor ranking (TLAC2)

	2019	
	Creditor ranking	
	1 \$million	Total \$million
Is the resolution entity the creditor/investor?	No ¹	
Description of creditor ranking	Common Shares	
Total capital and liabilities net of credit risk mitigation ²	1,446	1,446
Of which: are excluded liabilities	–	–
Total capital and liabilities less excluded liabilities	1,446	1,446
Of which: are potentially eligible as TLAC	1,446	1,446
Of which: with 1 year ≤ residual maturity < 2 years	–	–
Of which: with 2 years ≤ residual maturity < 5 years	–	–
Of which: with 5 years ≤ residual maturity < 10 years	–	–
Of which: with residual maturity ≥ 10 years, but excluding perpetual securities	–	–
Of which: perpetual securities	1,446	1,446

1 Held by Standard Chartered Bank (Hong Kong) Limited

2 Excludes CET1 (except common shares) and is based on accounting carrying values

2.4 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.

The Group's current CCyB requirement is 0.35 per cent. This includes the impact of the HKMA's decision to reduce its CCyB rate to

2.0 per cent from 2.5 percent announced in October 2019. The majority of the Group's CCyB requirement relates to exposures to Hong Kong counterparties with exposures to other jurisdictions being an immaterial part of the Group's CCyB.

The Financial Policy Committee announced that it would increase the UK countercyclical buffer to 2 per cent from 1 per cent with effect from 16 December 2020. If implemented, this increase in the UK

countercyclical buffer rate is estimated to increase the Group's minimum CET1 requirement by 6 basis points (based on the period end balance sheet) to 10.3 per cent by the end of 2020.

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

Breakdown by country	2019												
	General credit exposures		Trading book exposures		Securitisation exposures		Own funds requirements				Own funds requirements weights %	CCyB rate as at 31 Dec 2018 %	CCyB rate as at 1 Jan 2019 %
	Exposure value for SA \$million	Exposure value for IRB \$million	Sum of long and short positions of trading book exposures for SA \$million	Value of trading book exposures for internal models \$million	Exposure value for SA \$million	Exposure value for IRB \$million	General credit exposures \$million	Trading book exposures \$million	Securitisation exposures \$million	Total \$million			
Bangladesh	1,498	3,304	72	–	–	–	260	6	–	266	1.9%	0.0%	0.0%
China	6,616	16,950	2,546	–	–	3,561	1,162	65	40	1,266	9.1%	0.0%	0.0%
Czech Republic	–	–	–	–	–	–	–	–	–	–	0.0%	1.5%	1.8%
Hong Kong	4,833	71,130	235	–	–	3,561	1,908	9	40	1,957	14.0%	2.0%	2.0%
Iceland	–	–	–	–	–	–	–	–	–	–	0.0%	1.8%	1.8%
India	6,241	20,800	1,089	–	–	4,901	1,330	52	55	1,437	10.3%	0.0%	0.0%
Indonesia	8,491	2,438	151	–	–	–	778	15	–	793	5.7%	0.0%	0.0%
Korea	1,078	42,401	819	–	–	–	1,017	13	–	1,031	7.4%	0.0%	0.0%
Malaysia	726	9,319	770	–	–	–	399	22	–	420	3.0%	0.0%	0.0%
Nigeria	520	3,178	854	–	–	–	157	94	–	252	1.8%	0.0%	0.0%
Norway	1	151	–	–	–	–	8	–	–	8	0.1%	2.5%	2.5%
Pakistan	583	2,432	115	–	–	–	168	15	–	182	1.3%	0.0%	0.0%
Singapore	6,282	31,025	446	–	–	–	1,114	15	–	1,129	8.1%	0.0%	0.0%
Slovakia	–	1	–	–	–	–	–	–	–	–	0.0%	1.5%	1.5%
Sweden	–	603	2	–	–	–	28	1	–	28	0.2%	2.5%	2.5%
Taiwan	1,013	9,789	339	–	–	–	234	4	–	238	1.7%	0.0%	0.0%
United Arab Emirates	3,001	14,481	8	–	–	–	616	7	–	623	4.5%	0.0%	0.0%
United Kingdom	2,280	26,163	261	–	–	12,507	585	37	181	802	5.7%	1.0%	1.0%
United States	598	37,588	225	–	–	12	447	15	–	462	3.3%	0.0%	0.0%
Virgin Islands, British	1,699	485	134	–	–	–	149	3	–	152	1.1%	0.0%	0.0%
Other countries	7,802	78,217	2,838	–	–	76	2,648	258	4	2,910	20.9%	0.0%	0.0%

2.4 Countercyclical capital buffer continued

Table 18: Geographical distribution of credit exposures relevant for the calculation of the countercyclical capital buffer
continued

Breakdown by country	2018												
	General credit exposures		Trading book exposures		Securitisation exposures		Own funds requirements						
	Exposure value for SA \$million	Exposure value for IRB \$million	Sum of long and short positions of trading book exposures for SA \$million	Value of trading book exposures for internal models \$million	Exposure value for SA \$million	Exposure value for IRB \$million	General credit exposures \$million	Trading book exposures \$million	Securitisation exposures \$million	Total \$million	Own funds requirements weights %	CCyB rate as at 31 Dec 2018 %	CCyB rate as at 1 Jan 2019 %
Bangladesh	1,445	3,176	–	–	–	–	232	–	–	232	1.7%	0.0%	0.0%
Cayman Islands	279	2,399	114	–	–	168	120	4	15	139	1.0%	0.0%	0.0%
China	6,130	11,950	2,690	–	–	–	1,002	53	–	1,055	7.9%	0.0%	0.0%
Czech Republic	–	5	–	–	–	–	–	–	–	–	0.0%	1.0%	1.3%
Hong Kong	4,476	62,827	123	–	–	–	1,572	9	–	1,581	11.8%	1.9%	2.5%
Iceland	–	–	–	–	–	–	–	–	–	–	0.0%	1.3%	1.3%
India	5,842	20,304	2,031	–	–	–	1,363	49	–	1,412	10.5%	0.0%	0.0%
Indonesia	8,073	3,112	65	–	–	–	783	10	–	793	5.9%	0.0%	0.0%
Korea	1,165	39,634	1,091	–	–	–	994	4	–	998	7.4%	0.0%	0.0%
Lithuania	–	–	–	–	–	–	–	–	–	–	0.0%	0.5%	0.5%
Malaysia	816	9,915	1,049	–	–	–	464	14	–	479	3.6%	0.0%	0.0%
Netherlands	6	5,287	39	–	–	–	161	3	–	163	1.2%	0.0%	0.0%
Nigeria	630	3,091	703	–	–	–	186	80	–	266	2.0%	0.0%	0.0%
Norway	1	112	–	–	–	–	5	–	–	5	0.0%	2.0%	2.0%
Pakistan	551	1,959	82	–	–	–	165	9	–	174	1.3%	0.0%	0.0%
Singapore	5,787	31,557	453	–	–	–	1,115	11	–	1,126	8.4%	0.0%	0.0%
Slovakia	–	2	–	–	–	–	–	–	–	–	0.0%	1.3%	1.3%
Sweden	3	406	–	–	–	–	15	–	–	15	0.1%	2.0%	2.0%
Taiwan	1,038	9,453	278	–	–	–	250	1	–	251	1.9%	0.0%	0.0%
United Arab Emirates	3,077	13,359	182	–	–	–	756	9	–	765	5.7%	0.0%	0.0%
United Kingdom	1,775	27,138	198	–	–	21,844	522	33	237	792	5.9%	1.0%	1.0%
United States	314	25,177	124	–	–	17	450	9	–	460	3.4%	0.0%	0.0%
Vietnam	690	1,591	8	–	–	–	130	1	–	130	1.0%	0.0%	0.0%
Other countries	8,007	64,888	2,469	–	–	71	2,441	155	6	2,602	19.4%	0.0%	0.0%

Table 19: Amount of institution specific countercyclical capital buffer

	2019 \$million	2018 \$million
Total risk exposure amount (see Table 20: Overview of RWA (OV1))	264,090	258,297
Institution specific countercyclical capital buffer rate	0.35%	0.28%
Institution specific countercyclical capital buffer requirement	929	730

2.5 Capital Requirements

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 falls 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, and 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 55 for credit risk exposures under IRB (which include counterparty credit risk); Table 22 for the RWA flow statements for credit risk exposures under IRB (which includes securitisation balances below); Table 66 for exposures under the SA (which include amounts below the threshold for deduction) and section 4.2 for exposures subject to counterparty credit risk.

Table 20: Overview of RWA (OV1)

	31.12.19		30.09.19		31.12.18	
	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
1 Credit risk (excluding counterparty credit risk)²	188,759	15,101	191,012	15,281	188,522	15,082
4 Of which advanced IRB approach (Table 55)	147,365	11,789	149,428	11,954	148,537	11,883
2 Of which standardised approach (Table 68)	41,394	3,312	41,584	3,327	39,985	3,199
6 Counterparty credit risk³	15,405	1,232	16,573	1,326	12,998	1,040
7 Of which mark to market method	3,075	246	3,436	275	10,551	844
10 Of which internal model method (IMM)	8,032	643	8,859	709	–	–
Of which securities financing transactions	2,018	144	1,802	144	1,272	102
11 Of which risk exposure amount for contributions to the default fund of a CCP	167	13	263	21	59	5
12 Of which CVA (Table 87)	2,113	169	2,213	177	1,116	89
13 Settlement risk	1	–	2	–	3	–
14 Securitisation exposures in the banking book	3,992	319	3,651	292	3,219	258
15 Of which IRB ratings based approach	2,727	218	2,614	209	2,596	208
16 Of which IRB supervisory formula approach	1,265	101	1,037	83	623	50
18 Of which standardised approach	–	–	–	–	–	–
19 Market risk (Table 77)	20,806	1,664	22,850	1,828	19,109	1,529
21 Of which internal model approaches	11,364	909	12,481	998	11,862	949
20 Of which standardised approach	9,442	755	10,369	830	7,247	580
22 Large exposures	–	–	–	–	–	–
23 Operational risk⁴	27,620	2,210	27,620	2,210	28,050	2,244
25 Of which standardised approach	27,620	2,210	27,620	2,210	28,050	2,244
27 Amounts below the thresholds for deduction (subject to 250% risk weight) (Table 68)	7,507	601	6,960	557	6,396	512
28 Floor Adjustment	–	–	–	–	–	–
29 Total	264,090	21,127	268,668	21,494	258,297	20,664

1 The regulatory capital requirement is calculated as 8 per cent of the RWA, 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 SA

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

2.5 Capital Requirements

continued

RWA increased by \$5.8 billion, or 2.2 per cent from 31 December 2018 to \$264.1 billion.

This was due to an increase in counterparty credit risk RWA of \$2.4 billion, credit risk RWA of \$2.1 billion, and market risk RWA of \$1.7 billion.

→ Credit risk including counterparty credit increased to \$215.7 billion. The increase was driven by:

- \$6.2 billion increase driven by a \$4.0 billion increase in higher liquid assets in Treasury Markets primarily in Europe & Americas and ASA regions. The remaining increase was spread over multiple business areas

- \$3.4 billion increase due to net credit migration, primarily in Greater China & North Asia (GCNA) and Europe & Americas
- \$1.4 billion increase from the implementation of the IFRS16 standard relating to leases on property
- \$0.7 billion decrease due to savings from disposal of an investment in ASEAN & South Asia
- \$0.9 billion decrease in model, methodology and policy changes, driven by the implementation of the Internal Model Method (IMM) for counterparty credit risk
- \$0.9 billion decrease from foreign currency translation due to the depreciation of various currencies against the US dollar

- \$4.0 billion decrease mainly due to \$2.4 billion of efficiencies in financial markets through novation, trade compressions and process enhancement in collateral recognition. The remaining decrease was driven by RWA efficiencies, relating to a number of initiatives across Corporate & Institutional Banking

→ Total Market risk RWA increased by \$1.7 billion, or by 8.9 per cent from 31 December 2018 to \$20.8 billion. This change was due mainly to increased RWA under standardised rules, and a net increase in internal models approach (IMA) RWA following an increase in regulatory backtesting exceptions, partly offset by reduced IMA positions

Table 21 shows the significant drivers of credit risk, market risk and operational RWA movements from 1 January 2019.

Table 21: Movement analysis for RWA

	Credit risk ² IRB \$million	Credit risk SA \$million	Credit risk Total \$million	Counterparty Credit risk \$million	Total Credit & Counterparty Credit risk \$million	Operational \$million	Market \$million	Total \$million
As at 1 January 2019	151,756	46,384	198,140	12,998	211,138	28,050	19,109	258,297
Asset size	6,859	1,800	8,659	3,649	12,308	–	–	12,308
Asset quality	551	–	551	1,370	1,921	–	–	1,921
Model updates	(308)	–	(308)	(904)	(1,212)	–	–	(1,212)
Methodology and policy	5	1,400	1,405	–	1,405	–	800	2,205
Acquisitions and disposals	–	(677)	(677)	–	(677)	–	–	(677)
Foreign exchange movements	(2,262)	(361)	(2,623)	(150)	(2,773)	–	–	(2,773)
Other, including non-credit risk movements ¹	(3,522)	–	(3,522)	(390)	(3,912)	(430)	2,941	(1,401)
As at 30 September 2019	153,079	48,546	201,625	16,573	218,198	27,620	22,850	268,668
Asset size	(4,318)	127	(4,191)	(1,730)	(5,921)	–	–	(5,921)
Asset quality	1,021	–	1,021	428	1,449	–	–	1,449
Model updates	296	–	296	–	296	–	–	296
Methodology and policy	–	–	–	–	–	–	(300)	(300)
Acquisitions and disposals	–	(161)	(161)	–	(161)	–	–	(161)
Foreign exchange movements	1,319	390	1,709	134	1,843	–	–	1,843
Other, including non-credit risk movements ¹	(40)	–	(40)	–	(40)	–	(1,744)	(1,784)
As at 31 December 2019	151,357	48,902	200,259	15,405	215,664	27,620	20,806	264,090

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

² See Table 20: 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

2.5 Capital Requirements continued

Table 22 shows the significant drivers of credit risk, IRB RWA movements (excluding counterparty credit risk and standardised credit risk) from 1 January 2019.

Table 22: RWA flow statements of credit risk exposures under IRB (CR8)

	Risk-weighted assets ¹ \$million	Regulatory capital requirement ¹ \$million
As at 1 January 2019	151,756	12,140
Asset size	6,859	549
Asset quality	551	44
Model updates	(308)	(25)
Methodology and policy	5	–
Acquisitions and disposals	–	–
Foreign exchange movements	(2,262)	(181)
Other	(3,522)	(282)
1 As at 30 September 2019	153,079	12,246
2 Asset size	(4,318)	(345)
3 Asset quality	1,021	82
4 Model updates	296	24
5 Methodology and policy	–	–
6 Acquisitions and disposals	–	–
7 Foreign exchange movements	1,319	106
8 Other	(40)	(3)
9 As at 31 December 2019	151,357	12,109

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

2 See Table 20: Overview of RWA (OV1). Comprises advanced IRB credit risk \$147,365 million and securitisation of \$3,992 million

IRB credit RWA decreased by \$0.4 billion from 31 December 2018 driven by:

→ \$3.6 billion decrease driven the benefit from RWA initiatives on Treasury Markets' exposures

→ \$0.9 billion decrease from foreign currency translation against the US Dollar

→ \$1.6 billion increase due to net credit migration, primarily in Greater China & North Asia (GCNA)

→ \$2.5 billion increase driven by asset size across multiple business areas

Table 23 shows the significant drivers of credit counterparty risk under IMM RWA movements from 1 January 2019.

Table 23: RWA flow statements of CCR exposures under the IMM (CCR7)

	Risk-weighted assets \$million	Regulatory capital requirement \$million
As at 1 January 2019	–	–
Asset size	(924)	(74)
Asset quality	14	1
Model updates	9,773	782
Methodology and policy	–	–
Acquisitions and disposals	–	–
Foreign exchange movements	(4)	–
Other ¹	–	–
1 As at 30 September 2019	8,859	709
2 Asset size	(1,144)	(92)
3 Asset quality	193	15
4 Model updates	–	–
5 Methodology and policy	–	–
6 Acquisitions and disposals	–	–
7 Foreign exchange movements	124	10
8 Other ¹	–	–
9 As at 31 December 2019	8,032	643

1 RWA efficiencies are disclosed against 'Other'

2.5 Capital Requirements continued

Table 24 shows the RWA flow statements of market risk RWA exposures under the Internal Model Approach (IMA) from 1 January 2019.

Table 24: 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 2019	1,413	7,253	–	–	3,196	11,862	949
Regulatory adjustment	–	–	–	–	–	–	–
RWAs post adjustment at 1 January 2019	1,413	7,253	–	–	3,196	11,862	949
Movement in risk levels	569	(974)	–	–	224	(181)	(14)
Model updates/changes	–	–	–	–	–	–	–
Methodology and policy	137	476	–	–	187	800	64
Acquisitions and disposals	–	–	–	–	–	–	–
Foreign exchange movements	–	–	–	–	–	–	–
Other	–	–	–	–	–	–	–
1 At 30 September 2019	2,119	6,755	–	–	3,607	12,481	999
1a Regulatory adjustment	–	–	–	–	–	–	–
1b RWAs post adjustment at 30 September 2019	2,119	6,755	–	–	3,607	12,481	999
2 Movement in risk levels	(282)	(367)	–	–	(168)	(817)	(66)
3 Model updates/changes	–	–	–	–	–	–	–
4 Methodology and policy	(51)	(162)	–	–	(87)	(300)	(24)
5 Acquisitions and disposals	–	–	–	–	–	–	–
6 Foreign exchange movements	–	–	–	–	–	–	–
7 Other	–	–	–	–	–	–	–
8a At 31 December 2019	1,786	6,226	–	–	3,352	11,364	909
8b Regulatory adjustment	–	–	–	–	–	–	–
8 RWAs post adjustment at 31 December 2019	1,786	6,226	–	–	3,352	11,364	909

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 2019 Annual Report and Accounts on page 192

Market risk RWA under an IMA approach decreased by \$0.5 billion from 31 December 2018 mainly due to reduced positions, partially offset by an increase in the capital multiplier as a result of increased backtesting exceptions.

2.6 Leverage ratio

UK banks are currently subject to a minimum leverage ratio of 3.25 per cent. 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. These buffers are applied to individual banks and are phased in.

Following the FPC's recommendation to the PRA to exclude qualifying claims on central bank exposures from the leverage exposure measure in the UK leverage ratio framework, and the corresponding 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.

At 31 December 2019, the Group's current minimum requirement inclusive of leverage buffers was 3.72 per cent:

- (i) The minimum 3.25 per cent
- (ii) A 0.35 per cent G-SII leverage ratio buffer and

- (iii) A 0.12 per cent countercyclical capital leverage ratio buffer, based on FY 2019 countercyclical capital buffer rates

The Group's current UK leverage ratio of 5.2 per cent is well above the current minimum requirement. The leverage ratio in the period declined 0.4 per cent reflecting: asset growth (on and off-balance sheet), offset by a small increase in Tier 1 capital following the issuance of Singapore Dollar 750 million of new AT1 in the period.

Table 25: UK and CRR leverage ratio

	2019 \$million	2018 \$million
Tier 1 capital (end point)	42,006	41,658
UK leverage exposure	801,252	740,602
UK leverage ratio	5.2%	5.6%
CRR leverage exposure	843,395	795,736
CRR leverage ratio	5.0%	5.2%
UK leverage exposure quarterly average	816,244	734,976
UK leverage ratio quarterly average	5.1%	5.8%
Countercyclical leverage ratio buffer	0.1%	0.1%
G-SII additional leverage ratio buffer	0.4%	0.3%

2.6 Leverage ratio continued

CRR leverage ratio

Table 26, 27 and 28 present the leverage ratio based on CRR basis requirements.

Table 26: Summary reconciliation of accounting assets and leverage exposure

	2019 \$million	2018 \$million
1 Total assets as per published financial statements	720,398	688,762
2 Adjustment difference between the accounting scope of consolidation and the regulatory scope of consolidation	10,658	9,613
4 Adjustments for derivative financial instruments	(10,094)	(19,408)
5 Adjustments for securities financing transactions (SFTs)	7,005	8,281
6 Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	122,341	115,335
7 Other adjustments	(6,913)	(6,847)
8 Total leverage ratio exposure	843,395	795,736

Table 27: Leverage ratio common disclosure

	2019 \$million	2018 \$million
On-balance sheet exposures (excluding derivatives and SFTs)		
1 On-balance sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral)	623,413	591,004
2 (Asset amounts deducted in determining Tier 1 capital)	(6,913)	(6,847)
3 Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets)	616,500	584,157
Derivative exposures		
4 Replacement cost associated with all derivatives transactions (i.e. net of eligible cash variation margin)	10,015	5,476
5 Add-on amounts for PFE associated with all derivatives transactions (mark-to-market method)	32,961	28,498
6 Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the applicable accounting framework	–	–
7 (Deductions of receivables assets for cash variation margin provided in derivatives transactions)	(7,491)	(8,967)
8 (Exempted CCP leg of client-cleared trade exposures)	–	–
9 Adjusted effective notional amount of written credit derivatives	34,695	14,392
10 (Adjusted effective notional offsets and add-on deductions for written credit derivatives)	(33,045)	(13,171)
11 Total derivative exposures	37,135	26,228
Securities financing transaction exposures		
12 Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	63,535	65,191
13 (Netted amounts of cash payables and cash receivables of gross SFT assets)	(3,121)	(3,456)
14 Counterparty credit risk exposure for SFT assets	7,005	8,281
16 Total securities financing transaction exposures	67,419	70,016
Other off-balance sheet exposures		
17 Off-balance sheet exposures at gross notional amount	408,135	378,467
18 (Adjustments for conversion to credit equivalent amounts)	(285,794)	(263,132)
19 Other off-balance sheet exposures	122,341	115,335
Capital and total exposures		
20 Tier 1 capital (end point)	42,006	41,658
Leverage ratio total exposure measure	843,395	795,736
22 Leverage ratio	5.0%	5.3%
Choice on transitional arrangements and amount of derecognised fiduciary items		
EU-23 Choice on transitional arrangements for the definition of the capital measure	Fully phased in	Fully phased in

2.6 Leverage ratio continued

Table 28: Leverage ratio: Split-up of on-balance sheet exposures (excluding derivatives, SFTs and exempted exposures)

		2019 \$million	2018 \$million
EU-1	Total on-balance sheet exposures (excluding derivatives, SFTs, and exempted exposures), of which:	623,413	591,004
EU-2	Trading book exposures	41,149	47,976
EU-3	Banking book exposures, of which:	582,263	543,028
EU-4	Covered bonds	6,120	5,572
EU-5	Exposures treated as sovereigns	191,323	178,735
EU-6	Exposures to regional governments, MDB, international organisations and PSE not treated as sovereigns	61	54
EU-7	Institutions	73,936	77,344
EU-8	Secured by mortgages of immovable properties	87,109	75,601
EU-9	Retail exposures	29,187	27,098
EU-10	Corporates	147,924	133,634
EU-11	Exposures in default	7,158	7,470
EU-12	Other exposures (eg equity, securitisations, and other non-credit obligation assets)	39,445	37,520

3. Credit risk

Our approach to credit risk can be found in the Risk management approach section in the 2019 Annual Report and Accounts on page 212 to 214.

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), and Exposure at Default (EAD) to determine an asset risk-weighting. The IRB models cover 76 per cent of the Group's credit RWA (2018: 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 exempted 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 zero 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 Enterprise Risk Analytics (ERA). 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 Model Risk Committee (MRC) based on materiality. ERA and GMV are separate departments within Group Risk. The Model Risk and Stress Testing Oversight team (MRO) was established in 2018 to provide independent oversight of model risk management.

The performance of existing IRB models, including actual against predicted metrics, is monitored regularly by ERA and reported to CMAC on a quarterly basis. MRO independently reviews model performance monitoring results based on applicable standards. 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. Excluding the Sovereign model, the 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 2019 and are compared with default observations through 31 December 2019.

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 2019.

The actual default rates for institutions and corporate exposures in 2019 remained below IRB model predictions as at the beginning of 2019, 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 2019 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 2016 to 2019 defaults that have completed their workout process as at the end of 2019. 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 2016 cohort (existing defaults and those defaulted in the next 12 months) was calculated based on actual recoveries observed from January 2017 until December 2019. 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 2019 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 tables are before the application of any conservative adjustment.

3.3 Internal Ratings Based models continued

Table 29: CIC model results

	PD Predicted 1 January 2019 %	PD Observed 31 December 2019 %	LGD Predicted (2016-2019) %	LGD Realised (2016-2019) %	EAD Predicted/ Realised %	Proportion of total IRB portfolio ¹ %
Corporate, Institutions and Commercial						
Central governments or central banks	1.20	–	N/A	N/A	N/A	25.3%
Institutions	0.43	–	38.58	7.80	N/A	18.2%
Corporates	1.99	0.55	48.13	31.32	1.22	39.6%
Corporate SME	4.23	2.91	49.20	27.05	1.27	0.8%

¹ Proportion of EAD (before the effect of collateral but after substitution) as a per cent of total IRB EAD

Table 30: Retail model results

	PD Predicted 1 January 2019 %	PD Observed 31 December 2019 %	LGD Predicted (2016-2019) %	LGD Realised (2016-2019) %	EAD Predicted/ Observed %	Proportion of total IRB portfolio ¹ %
Retail						
Qualifying revolving retail	4.07	1.57	74.59	67.89	1.23	2.5%
Other retail	3.51	2.07	61.42	42.24	1.09	2.6%
Residential mortgages	0.56	0.42	16.38	6.03	1.12	10.8%
Retail SME	3.38	2.48	70.92	69.09	1.19	0.3%

¹ Proportion of EAD (before the effect of collateral but after substitution) as a per cent of total IRB EAD

Table 31: IRB – Backtesting of probability of default (PD) for central governments or central banks (CR9)

2019								
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 2018	31 December 2019			
		0.19	1.20	310	300	–	–	–
0.00 to <0.15	AAA to BBB–			181	174			
0.15 to <0.25	BBB, BBB–			11	10			
0.25 to <0.50	BBB–, BB+, BB			14	17			
0.50 to <0.75	BB+, BB			5	5			
0.75 to <2.50	BB, BB–, B+, B			68	58			
2.50 to <10.00	B, B–, CCC, C			21	22			
10.00 to <100.00	CCC, C			10	14			
100.00 (default)	D			–	–			
2018								
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 2017	31 December 2018			
		0.16	1.07	321	310	–	–	–
0.00 to <0.15	AAA to BBB–			180	181			
0.15 to <0.25	BBB, BBB–			17	11			
0.25 to <0.50	BBB–, BB+, BB			13	14			
0.50 to <0.75	BB+, BB			5	5			
0.75 to <2.50	BB, BB–, B+, B			72	68			
2.50 to <10.00	B, B–, CCC, C			22	21			
10.00 to <100.00	CCC, C			12	10			
100.00 (default)	D			–	–			

3.3 Internal Ratings Based models continued

Table 32: IRB – Backtesting of probability of default (PD) for institutions (CR9)

2019								
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 2018	31 December 2019			
		0.19	0.43	1,996	1,962	–	–	0.03
0.00 to <0.15	AAA to BBB–			1,005	996			
0.15 to <0.25	BBB, BBB–			137	133			
0.25 to <0.50	BBB–, BB+, BB			216	223			
0.50 to <0.75	BB+, BB			64	58			
0.75 to <2.50	BB, BB–, B+, B			483	452			
2.50 to <10.00	B, B–, CCC, C			52	62			
10.00 to <100.00	CCC, C			37	37			
100.00 (default)	D			2	1			
2018								
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 2017	31 December 2018			
		0.19	0.46	2,010	1,996	3	–	0.03
0.00 to <0.15	AAA to BBB–			993	1,005			
0.15 to <0.25	BBB, BBB–			155	137			
0.25 to <0.50	BBB–, BB+, BB			226	216			
0.50 to <0.75	BB+, BB			67	64			
0.75 to <2.50	BB, BB–, B+, B			462	483			
2.50 to <10.00	B, B–, CCC, C			56	52			
10.00 to <100.00	CCC, C			47	37			
100.00 (default)	D			4	2			

3.3 Internal Ratings Based models continued

Table 33: IRB – Backtesting of probability of default (PD) for corporates (CR9)¹

2019								
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 2018	31 December 2019			
		0.96	2.78	28,194	27,679	349	55	1.55
0.00 to <0.15	AAA to BBB–			6,027	6,510			
0.15 to <0.25	BBB, BBB–			3,068	2,886			
0.25 to <0.50	BBB–, BB+, BB			3,933	4,252			
0.50 to <0.75	BB+, BB			1,579	1,433			
0.75 to <2.50	BB, BB–, B+, B			6,049	5,687			
2.50 to <10.00	B, B–, CCC, C			3,763	3,718			
10.00 to <100.00	CCC, C			2,590	2,160			
100.00 (default)	D			1,185	1,033			
2018								
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 2017	31 December 2018			
		1.08	2.91	56,018	28,194	470	132	1.69
0.00 to <0.15	AAA to BBB–			5,367	6,027			
0.15 to <0.25	BBB, BBB–			2,867	3,068			
0.25 to <0.50	BBB–, BB+, BB			3,236	3,933			
0.50 to <0.75	BB+, BB			1,830	1,579			
0.75 to <2.50	BB, BB–, B+, B			29,302	6,049			
2.50 to <10.00	B, B–, CCC, C			5,968	3,763			
10.00 to <100.00	CCC, C			2,337	2,590			
100.00 (default)	D			5,111	1,185			

¹ Corporate includes Corporate, Specialised Lending and Corporate SME

3.3 Internal Ratings Based models continued

Table 34: IRB – Backtesting of probability of default (PD) for corporates – specialised lending (CR9)

2019								
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 2018	31 December 2019			
		0.97	1.32	1,141	1,019	1	–	1.21
0.00 to <0.15	AAA to BBB–			181	167			
0.15 to <0.25	BBB, BBB–			129	111			
0.25 to <0.50	BBB–, BB+ BB			200	233			
0.50 to <0.75	BB+, BB			101	79			
0.75 to <2.50	BB, BB–, B+, B			341	287			
2.50 to <10.00	B, B–, CCC, C			82	54			
10.00 to <100.00	CCC, C			47	40			
100.00 (default)	D			60	48			
2018								
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 2017	31 December 2018			
		1.09	1.25	1,108	1,141	5	–	1.23
0.00 to <0.15	AAA to BBB–			151	181			
0.15 to <0.25	BBB, BBB–			149	129			
0.25 to <0.50	BBB–, BB+ BB			181	200			
0.50 to <0.75	BB+, BB			62	101			
0.75 to <2.50	BB, BB–, B+, B			361	341			
2.50 to <10.00	B, B–, CCC, C			85	82			
10.00 to <100.00	CCC, C			58	47			
100.00 (default)	D			61	60			

3.3 Internal Ratings Based models continued

Table 35: IRB – Backtesting of probability of default (PD) for corporates – SME (CR9)

2019								
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 2018	31 December 2019			
		3.13	4.23	7,631	6,535	210	54	2.75
0.00 to <0.15	AAA to BBB–			44	24			
0.15 to <0.25	BBB, BBB–			582	446			
0.25 to <0.50	BBB–, BB+, BB			766	737			
0.50 to <0.75	BB+, BB			302	264			
0.75 to <2.50	BB, BB–, B+, B			2,015	1,729			
2.50 to <10.00	B, B–, CCC, C			2,329	2,075			
10.00 to <100.00	CCC, C			1,262	1,010			
100.00 (default)	D			331	250			
2018								
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 2017	31 December 2018			
		3.48	4.67	36,312	7,631	339	131	3.20
0.00 to <0.15	AAA to BBB–			57	44			
0.15 to <0.25	BBB, BBB–			189	582			
0.25 to <0.50	BBB–, BB+, BB			160	766			
0.50 to <0.75	BB+, BB			612	302			
0.75 to <2.50	BB, BB–, B+, B			25,496	2,015			
2.50 to <10.00	B, B–, CCC, C			4,402	2,329			
10.00 to <100.00	CCC, C			1,127	1,262			
100.00 (default)	D			4,269	331			

3.3 Internal Ratings Based models continued

Table 36: IRB – Backtesting of probability of default (PD) for retail (CR9)

2019							
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 2018	31 December 2019			
	0.86	3.69	4,174,985	4,325,359	68,243	2,845	1.65
0.00 to <0.15			1,461,766	1,576,306			
0.15 to <0.25			340,065	318,666			
0.25 to <0.50			250,611	246,016			
0.50 to <0.75			197,417	229,303			
0.75 to <2.50			676,627	678,770			
2.50 to <10.00			844,066	889,984			
10.00 to <100.00			331,223	320,708			
100.00 (default)			73,210	65,606			
2018							
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 2017	31 December 2018			
	0.70	3.46	3,994,453	4,174,985	60,466	2,376	1.80
0.00 to <0.15			1,291,254	1,461,766			
0.15 to <0.25			345,813	340,065			
0.25 to <0.50			308,761	250,611			
0.50 to <0.75			204,315	197,417			
0.75 to <2.50			657,708	676,627			
2.50 to <10.00			788,593	844,066			
10.00 to <100.00			319,073	331,223			
100.00 (default)			78,936	73,210			

3.3 Internal Ratings Based models continued

Table 37: IRB – Backtesting of probability of default (PD) for retail – SME (CR9)

2019							
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 2018	31 December 2019			
	2.59	3.38	36,202	33,302	961	196	2.93
0.00 to <0.15			2,590	2,340			
0.15 to <0.25			2,038	1,961			
0.25 to <0.50			3,910	3,104			
0.50 to <0.75			2,252	1,861			
0.75 to <2.50			14,402	13,165			
2.50 to <10.00			7,965	8,061			
10.00 to <100.00			2,303	2,194			
100.00 (default)			742	616			
2018							
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 2017	31 December 2018			
	2.41	3.64	9,481	36,202	1,168	235	3.11
0.00 to <0.15			424	2,590			
0.15 to <0.25			724	2,038			
0.25 to <0.50			83	3,910			
0.50 to <0.75			47	2,252			
0.75 to <2.50			3,700	14,402			
2.50 to <10.00			3,293	7,965			
10.00 to <100.00			910	2,303			
100.00 (default)			300	742			

3.3 Internal Ratings Based models continued

Table 38: IRB – Backtesting of probability of default (PD) for retail – secured by real estate property (CR9)

2019							
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 2018	31 December 2019			
	0.28	0.56	334,610	358,221	1,581	74	0.39
0.00 to <0.15			255,399	260,395			
0.15 to <0.25			24,803	30,812			
0.25 to <0.50			18,446	27,061			
0.50 to <0.75			11,281	12,944			
0.75 to <2.50			14,017	15,061			
2.50 to <10.00			4,796	5,812			
10.00 to <100.00			2,654	3,046			
100.00 (default)			3,214	3,090			
2018							
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 2017	31 December 2018			
	0.25	0.54	363,906	334,610	1,407	25	0.41
0.00 to <0.15			251,864	255,399			
0.15 to <0.25			43,108	24,803			
0.25 to <0.50			25,386	18,446			
0.50 to <0.75			11,948	11,281			
0.75 to <2.50			19,071	14,017			
2.50 to <10.00			5,860	4,796			
10.00 to <100.00			3,161	2,654			
100.00 (default)			3,508	3,214			

3.3 Internal Ratings Based models continued

Table 39: IRB – Backtesting of probability of default (PD) for retail – qualifying revolving (CR9)

2019							
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 2018	31 December 2019			
	1.66	4.07	3,249,935	3,351,699	53,080	1,760	1.62
0.00 to <0.15			1,180,257	1,218,032			
0.15 to <0.25			265,685	269,820			
0.25 to <0.50			149,019	157,419			
0.50 to <0.75			159,663	178,916			
0.75 to <2.50			443,508	480,507			
2.50 to <10.00			699,207	731,824			
10.00 to <100.00			315,547	282,470			
100.00 (default)			37,049	32,711			

2018							
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 2017	31 December 2018			
	1.52	3.94	3,099,167	3,249,935	46,334	1,768	1.74
0.00 to <0.15			1,017,822	1,180,257			
0.15 to <0.25			248,526	265,685			
0.25 to <0.50			195,125	149,019			
0.50 to <0.75			168,530	159,663			
0.75 to <2.50			467,513	443,508			
2.50 to <10.00			655,029	699,207			
10.00 to <100.00			304,563	315,547			
100.00 (default)			42,059	37,049			

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 2019 Annual Report and Accounts on page 177 to 178.

EAD increased by \$23.4 billion (Tables 40 to 43) mainly due to:

- IRB corporates EAD increased \$26.4 billion driven by an increase in loans and SFT transactions, primarily in Europe & Americas
- IRB central governments and central banks EAD increased \$13.3 billion driven by an increase in bonds in Europe & Americas
- Standardised corporates EAD increased \$7.9 billion driven by an increase in Reverse Repo transactions, primarily in Europe & Americas

Offset by:

- IRB institutions EAD decreased \$14.5 billion driven by a reduction across multiple product lines, primarily in GCNA
- Standardised institutions EAD decreased \$12.7 billion driven mainly by a decrease in repos in Europe & Americas
- Standardised central governments and central banks EAD decreased \$3.9 billion mainly in Europe & Americas

3.4 Exposure values continued

Table 40: Total and average exposure at default (CRB-B)

	2019		2018	
	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 Class³				
1 Central governments or central banks	165,777	157,419	152,583	143,495
2 Institutions	119,742	133,025	134,207	136,032
3 Corporates	265,496	253,549	239,265	237,050
4 Of which specialised lending	19,821	19,012	18,476	18,571
5 Of which SME	5,342	5,810	6,392	6,792
6 Retail	104,198	100,260	98,970	99,085
7 Secured by real estate collateral	70,856	68,499	67,968	69,762
8 - SME	425	409	408	284
9 - Non SME	70,431	68,090	67,560	69,478
10 Qualifying revolving retail	16,433	15,824	15,460	14,757
11 Other retail	16,909	15,937	15,542	14,566
12 - SME	2,014	1,857	1,758	1,580
13 - Non SME	14,895	14,080	13,784	12,987
Non-credit obligation assets	1,003	1,079	1,091	1,218
15 Total IRB⁴	656,216	645,332	626,116	616,881
Standardised Exposure Class				
16 Central governments or central banks	28,229	29,007	32,095	37,168
19 Multilateral development banks	15,073	15,922	16,220	15,825
21 Institutions	24,694	32,349	37,413	38,476
22 Corporates	42,854	43,635	34,880	37,118
23 Of which SME	15,801	16,058	15,111	15,201
24 Retail	13,989	12,938	12,471	12,586
25 Of which SME	3,805	3,232	2,909	3,075
26 Secured on real estate property	9,877	9,891	9,610	10,094
27 Of which SME	3,673	3,735	3,664	3,736
28 Past due items	517	649	783	446
29 Items belonging to regulatory high risk categories	1,070	1,398	1,671	1,926
33 Equity	1,942	1,420	1,633	1,683
34 Other items ⁵	11,515	11,242	9,901	10,553
35 Total Standardised	149,760	158,451	156,677	165,874
36 Total	805,976	803,783	782,793	782,754

1 EAD before the effect of collateral but after substitution

2 Averages are calculated using past five quarters

3 2018 IRB exposures have been restated to reflect the change in accounting treatment of interest in suspense

4 Excludes securitisation exposures

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

3.4 Exposure values continued

Table 41: Exposure at default by geography (CRB-C)

	2019				
	Greater China & North Asia \$million	ASEAN & South Asia \$million	Africa & Middle East \$million	Europe & Americas \$million	Period End Total \$million
IRB Exposure Class¹					
1 Central governments or central banks	68,235	28,687	17,849	51,006	165,777
2 Institutions	45,937	21,095	15,097	37,613	119,742
3 Corporates	67,281	48,954	33,694	115,567	265,496
3a Of which specialised lending	4,677	6,551	4,250	4,343	19,821
3b Of which SME	2,922	1,270	677	473	5,342
4 Retail	79,322	24,336	516	24	104,198
4a Secured by real estate collateral	53,831	17,023	2	–	70,856
4b Of which SME	131	292	2	–	425
4c Of which Non SME	53,700	16,731	–	–	70,431
4d Qualifying revolving retail	11,571	4,549	299	14	16,433
4e Other retail	13,920	2,764	215	10	16,909
4f Of which SME	1,027	926	61	–	2,014
4g Of which Non SME	12,893	1,838	154	10	14,895
Non-credit obligation assets	250	288	172	293	1,003
6 Total IRB²	261,025	123,360	67,328	204,503	656,216
Standardised Exposure Class					
7 Central governments or central banks	247	2,998	640	24,344	28,229
10 Multilateral development banks	367	2,046	1,875	10,785	15,073
12 Institutions	1,462	1,570	84	21,578	24,694
13 Corporates	6,646	12,951	3,207	20,050	42,854
13a Of which SME	3,646	4,988	2,331	4,836	15,801
14 Retail	3,322	7,729	2,897	41	13,989
14a Of which SME	841	2,783	181	–	3,805
15 Secured by mortgages on immovable property	2,797	3,415	2,428	1,237	9,877
15a Of which SME	356	1,671	439	1,207	3,673
16 Past due items	29	403	67	18	517
17 Items belonging to regulatory high risk categories	340	216	226	288	1,070
21 Equity	1,864	33	–	45	1,942
22 Other items ³	3,957	5,031	1,236	1,291	11,515
23 Total Standardised	21,031	36,392	12,660	79,677	149,760
24 Total⁴	282,056	159,752	79,988	284,180	805,976

1 2018 IRB exposures have been restated to reflect the change in accounting treatment of interest in suspense

2 Excludes securitisation exposures

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

4 Refer to Table 40 (CRB-B) for EAD before the effect of CRM

3.4 Exposure values continued

Table 41: Exposure at default by geography (CRB-C) continued

		2018				Period End Total \$million
		Greater China & North Asia \$million	ASEAN & South Asia \$million	Africa & Middle East \$million	Europe & Americas \$million	
IRB Exposure Class ¹						
1	Central governments or central banks	66,234	29,269	15,834	41,246	152,583
2	Institutions	54,293	24,984	14,948	39,982	134,207
3	Corporates	62,424	49,061	33,605	94,175	239,265
3a	Of which specialised lending	3,649	6,867	3,641	4,319	18,476
3b	Of which SME	3,595	1,735	721	341	6,392
4	Retail	73,496	24,749	698	27	98,970
4a	Secured by real estate collateral	50,396	17,569	3	–	67,968
4b	Of which SME	80	325	3	–	408
4c	Of which Non SME	50,316	17,244	–	–	67,560
4d	Qualifying revolving retail	10,697	4,406	343	14	15,460
4e	Other retail	12,403	2,774	352	13	15,542
4f	Of which SME	855	866	36	1	1,758
4g	Of which Non SME	11,548	1,908	316	12	13,784
Non-credit obligation assets		308	377	164	242	1,091
6	Total IRB ²	256,755	128,440	65,249	175,672	626,116
Standardised Exposure Class						
7	Central governments or central banks	273	2,864	563	28,395	32,095
10	Multilateral development banks	–	1,986	1,744	12,490	16,220
12	Institutions	745	2,652	83	33,933	37,413
13	Corporates	7,015	11,135	3,215	13,515	34,880
13a	Of which SME	3,274	5,470	2,261	4,106	15,111
14	Retail	3,011	6,620	2,812	28	12,471
14a	Of which SME	670	2,137	102	–	2,909
15	Secured on real estate property	2,863	3,165	2,430	1,152	9,610
15a	Of which SME	337	1,814	381	1,132	3,664
16	Past due items	32	666	73	12	783
17	Items belonging to regulatory high risk categories	501	667	260	243	1,671
21	Equity	1,551	30	–	52	1,633
22	Other items ³	3,341	4,426	1,237	897	9,901
23	Total Standardised	19,332	34,211	12,417	90,717	156,677
24	Total ⁴	276,087	162,651	77,666	266,389	782,793

1 2018 IRB exposures have been restated to reflect the change in accounting treatment of interest in suspense

2 Excludes securitisation exposures

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

4 Refer to Table 40 (CRB-B) for EAD before the effect of CRM

3.4 Exposure values continued

Table 42: Exposure at default by industry (CRB-D)

		2019										
		Loans to Individuals Mortgage \$million	Loans to Individuals Other \$million	SME \$million	Commerce \$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												
1	Central governments or central banks	–	–	–	–	–	322	152,510	8,235	8	4,702	165,777
2	Institutions	–	–	–	–	44	4	3,478	113,812	237	2,167	119,742
3	Corporates	–	–	6,501	31,326	54,124	15,050	653	111,319	13,891	32,632	265,496
3a	Of which specialised lending	–	–	1,160	7,847	1,039	3,836	–	669	1,437	3,833	19,821
3b	Of which SME	–	–	5,342	–	–	–	–	–	–	–	5,342
4	Retail	70,431	31,328	2,439	–	–	–	–	–	–	–	104,198
4a	Secured by real estate collateral	70,431	–	425	–	–	–	–	–	–	–	70,856
4b	Of which SME	–	–	425	–	–	–	–	–	–	–	425
4c	Of which Non SME	70,431	–	–	–	–	–	–	–	–	–	70,431
4d	Qualifying revolving retail	–	16,433	–	–	–	–	–	–	–	–	16,433
4e	Other retail	–	14,895	2,014	–	–	–	–	–	–	–	16,909
4f	Of which SME	–	–	2,014	–	–	–	–	–	–	–	2,014
4g	Of which Non SME	–	14,895	–	–	–	–	–	–	–	–	14,895
	Non-credit obligation assets	–	–	12	9	–	–	–	–	841	141	1,003
6	Total IRB¹	70,431	31,328	8,952	31,335	54,168	15,376	156,641	233,366	14,977	39,642	656,216
Standardised Exposure Class												
7	Central governments or central banks	–	–	–	204	–	–	17,526	3,892	5	6,602	28,229
10	Multilateral development banks	–	–	–	–	–	–	217	12	–	14,844	15,073
12	Institutions	–	–	–	–	–	–	–	23,697	–	997	24,694
13	Corporates	18	1	15,801	731	872	287	4	19,769	173	5,198	42,854
13a	Of which SME	–	–	15,801	–	–	–	–	–	–	–	15,801
14	Retail	546	9,638	3,805	–	–	–	–	–	–	–	13,989
14a	Of which SME	–	–	3,805	–	–	–	–	–	–	–	3,805
15	Secured on real estate property	5,182	–	3,673	51	33	30	–	53	2	853	9,877
15a	Of which SME	–	–	3,673	–	–	–	–	–	–	–	3,673
16	Past due items	58	32	206	2	10	–	–	–	–	209	517
17	Items belonging to regulatory high risk categories	2	78	193	29	50	82	–	250	2	384	1,070
21	Equity	–	–	–	–	–	–	–	–	–	1,942	1,942
22	Other items ²	–	2	–	–	2	2	–	61	–	11,448	11,515
23	Total Standardised	5,806	9,751	23,678	1,017	967	401	17,747	47,734	182	42,477	149,760
24	Total³	76,237	41,079	32,630	32,352	55,135	15,777	174,388	281,100	15,159	82,119	805,976

1 Excludes securitisation exposures

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

3 Refer to Table 40 (CRB-B) for EAD before the effect of CRM

3.4 Exposure values continued

Table 42: Exposure at default by industry (CRB-D) continued

		2018										
		Loans to Individuals Mortgage \$million	Loans to Individuals Other \$million	SME \$million	Commerce \$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 Class¹												
1	Central governments or central banks	–	–	–	–	183	334	141,269	6,110	7	4,680	152,583
2	Institutions	–	–	–	129	1	5	3,016	128,686	36	2,334	134,207
3	Corporates	–	–	6,729	28,104	51,157	13,512	1,222	90,657	14,908	32,977	239,266
3a	Of which specialised lending	–	–	528	6,679	1,408	2,473	–	485	2,756	4,147	18,476
3b	Of which SME	–	–	6,201	–	55	4	–	1	31	100	6,392
4	Retail	67,560	29,244	2,128	–	7	1	–	–	4	25	98,969
4a	Secured by real estate collateral	67,560	–	405	–	–	–	–	–	–	2	67,967
4b	Of which SME	–	–	405	–	–	–	–	–	–	2	407
4c	Of which Non SME	67,560	–	–	–	–	–	–	–	–	–	67,560
4d	Qualifying revolving retail	–	15,460	–	–	–	–	–	–	–	–	15,460
4e	Other retail	–	13,784	1,723	–	7	1	–	–	4	23	15,542
4f	Of which SME	–	–	1,723	–	7	1	–	–	4	23	1,758
4g	Of which Non SME	–	13,784	–	–	–	–	–	–	–	–	13,784
	Non-credit obligation assets	–	–	7	8	–	–	–	–	1,057	19	1,091
6	Total IRB²	67,560	29,244	8,864	28,241	51,348	13,852	145,507	225,453	16,012	40,035	626,116
Standardised Exposure Class												
7	Central governments or central banks	–	–	–	148	–	–	23,243	2,159	1	6,544	32,095
10	Multilateral development banks	–	–	–	–	–	–	332	13	–	15,875	16,220
12	Institutions	–	–	–	–	–	–	–	36,575	–	838	37,413
13	Corporates	–	1	15,111	589	1,145	371	1	12,746	405	4,511	34,880
13a	Of which SME	–	–	15,111	–	–	–	–	–	–	–	15,111
14	Retail	406	9,156	2,909	–	–	–	–	–	–	–	12,471
14a	Of which SME	–	–	2,909	–	–	–	–	–	–	–	2,909
15	Secured on real estate property	5,099	1	3,664	48	38	86	–	53	3	618	9,610
15a	Of which SME	–	–	3,664	–	–	–	–	–	–	–	3,664
16	Past due items	53	39	170	1	13	–	–	–	–	507	783
17	Items belonging to regulatory high risk categories	4	45	173	127	118	92	–	475	84	553	1,671
21	Equity	–	–	–	–	–	–	–	–	–	1,633	1,633
22	Other Items ³	–	–	–	–	–	29	–	123	–	9,749	9,901
23	Total Standardised	5,562	9,242	22,027	913	1,314	578	23,576	52,144	493	40,828	156,677
24	Total⁴	73,122	38,486	30,891	29,154	52,662	14,430	169,083	277,597	16,505	80,863	782,793

1 2018 IRB exposures have been restated to reflect the change in accounting treatment of interest in suspense

2 Excludes securitisation exposures

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

4 Refer to Table 40 (CRB-B) for EAD before the effect of CRM

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 177 which is based on accounting balances. Approximately 64 per cent (2018: 67 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 73 per cent (2018: 76 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 68 per cent (2018: 69 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 43: Exposure at default by maturity (CRB-E)

IRB Exposure Class	2019			Total \$million
	On demand and one year or less \$million	One to five years \$million	Over five years \$million	
1 Central governments or central banks	113,372	44,389	8,016	165,777
2 Institutions	97,746	19,843	2,153	119,742
3 Corporates	188,919	61,625	14,952	265,496
3a Of which specialised lending	9,618	6,007	4,196	19,821
3b Of which SME	3,981	780	581	5,342
4 Retail	9,390	24,372	70,436	104,198
4a Secured by real estate collateral	1,448	878	68,530	70,856
4b Of which SME	129	17	279	425
4c Of which Non SME	1,319	861	68,251	70,431
4d Qualifying revolving retail	1,029	15,171	233	16,433
4e Other retail	6,913	8,323	1,673	16,909
4f Of which SME	938	875	201	2,014
4g Of which Non SME	5,975	7,448	1,472	14,895
Non-credit obligation assets	156	550	297	1,003
6 Total IRB¹	409,583	150,779	95,854	656,216
Standardised Exposure Class				
7 Central governments or central banks	19,582	6,081	2,566	28,229
10 Multilateral development banks	1,794	11,007	2,272	15,073
12 Institutions	20,336	2,393	1,965	24,694
13 Corporates	39,363	2,068	1,423	42,854
13a Of which SME	14,454	565	782	15,801
14 Retail	6,527	4,402	3,060	13,989
14a Of which SME	1,244	1,356	1,205	3,805
15 Secured on real estate property	2,880	696	6,301	9,877
15a Of which SME	2,408	260	1,005	3,673
16 Past due items	404	39	74	517
17 Items belonging to regulatory high risk categories	933	62	75	1,070
21 Equity	-	-	1,942	1,942
22 Other items ²	11,458	55	2	11,515
23 Total Standardised	103,277	26,803	19,680	149,760
24 Total³	512,860	177,582	115,534	805,976

1 Excludes securitisation exposures

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

3 Refer to Table 40 (CRB-B) EAD before the effect of CRM

3.4 Exposure values continued

Table 43: Exposure at default by maturity (CRB-E) continued

		2018			
		On demand and one year or less \$million	One to five years \$million	Over five years \$million	Total \$million
IRB Exposure Class ¹					
1	Central governments or central banks	126,719	24,748	1,116	152,583
2	Institutions	109,233	21,512	3,462	134,207
3	Corporates	166,815	57,333	15,118	239,266
3a	Of which specialised lending	8,041	5,381	5,054	18,476
3b	Of which SME	4,683	966	743	6,392
4	Retail	8,910	21,959	68,100	98,969
4a	Secured by real estate collateral	938	913	66,116	67,967
4b	Of which SME	89	13	305	407
4c	Of which Non SME	849	900	65,811	67,560
4d	Qualifying revolving retail	1,222	13,993	245	15,460
4e	Other retail	6,750	7,053	1,739	15,542
4f	Of which SME	860	709	189	1,758
4g	Of which Non SME	5,890	6,344	1,550	13,784
Non-credit obligation assets		310	465	316	1,091
6	Total IRB ²	411,987	126,017	88,112	626,116
Standardised Exposure Class					
7	Central governments or central banks	24,196	5,195	2,704	32,095
10	Multilateral development banks	6,265	8,517	1,438	16,220
12	Institutions	31,955	5,000	458	37,413
13	Corporates	31,288	2,134	1,458	34,880
13a	Of which SME	13,533	728	850	15,111
14	Retail	5,609	4,186	2,676	12,471
14a	Of which SME	824	1,169	916	2,909
15	Secured on real estate property	2,660	605	6,345	9,610
15a	Of which SME	2,358	259	1,047	3,664
16	Past due items	659	41	83	783
17	Items belonging to regulatory high risk categories	1,550	73	48	1,671
21	Equity	–	–	1,633	1,633
22	Other Items ³	9,827	57	17	9,901
23	Total Standardised	114,009	25,808	16,860	156,677
24	Total ⁴	525,996	151,825	104,972	782,793

1 2018 IRB exposures have been restated to reflect the change in accounting treatment of interest in suspense

2 Excludes securitisation exposures

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

4 Refer to Table 40 (CRB-B) EAD before the effect of CRM

3.4 Exposure values continued

Credit quality of exposures

Tables 44 to 46 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 47 to 50 are gross carrying values in accordance with IFRS. Tables 47 to 50 depict past-due exposures, broken down by past-due bands and provide further information on non-performing and forborne exposures.

The 2019 Annual Report and Accounts pages 158 to 180 provide additional information on credit quality analysis.

Table 44: Credit quality of exposures by exposure class and instruments (CR1-A)

		2019				
		EAD before the effect of CCF & CRM ¹		Specific credit risk adjustment \$million	Credit risk adjustment changes in the period Net values \$million	Net values \$million
		Defaulted exposures \$million	Non-defaulted exposures \$million			
IRB Exposure Class						
1	Central governments or central banks	–	317,833	45	(4)	317,787
2	Institutions	–	272,875	9	4	272,866
3	Corporates	6,849	470,485	5,132	(954)	472,201
4	Of which specialised lending	724	34,685	573	(14)	34,836
5	Of which SME	610	6,976	337	(133)	7,249
6	Retail	699	122,725	452	27	122,972
7	Secured by real estate collateral	201	70,670	38	(2)	70,833
8	Of which SME	6	439	1	(2)	444
9	Of which Non SME	195	70,231	37	(1)	70,389
10	Qualifying revolving retail	148	32,484	134	13	32,497
11	Other retail	350	19,571	280	16	19,642
12	Of which SME	144	3,104	81	6	3,166
13	Of which Non SME	206	16,467	198	11	16,475
	Non-credit obligation assets	66	937	–	–	1,003
15	Total IRB ²	7,614	1,184,854	5,639	(927)	1,186,830
Standardised Exposure Class						
16	Central governments or central banks	–	117,041	2	(4)	117,039
19	Multilateral development banks	–	25,036	7	1	25,029
21	Institutions	–	26,598	3	1	26,595
22	Corporates	910	69,050	770	(171)	69,190
23	Of which SME	414	37,857	280	61	37,991
24	Retail	121	24,209	184	(17)	24,146
25	Of which SME	43	6,697	40	5	6,700
26	Secured on real estate property	116	10,230	80	7	10,266
27	Of which SME	14	3,901	12	(2)	3,904
29	Items belonging to regulatory high risk categories	726	715	61	(32)	1,380
33	Equity	–	1,942	–	–	1,942
34	Other Items ³	–	11,600	–	–	11,600
35	Total Standardised	1,873	286,421	1,107	(216)	287,187
	Of which past due items	1,873	–	823	(271)	1,050
36	Total ⁴	9,488	1,471,274	6,745	(1,143)	1,474,017
37	Of which Loans	7,643	302,917	6,344	(733)	304,216
38	Of which Debt securities	66	137,555	99	(431)	137,521
39	Of which Off-balance-sheet exposures	1,570	760,764	302	21	762,032

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 \$1,897 million

3.4 Exposure values continued

Table 44: Credit quality of exposures by exposure class and instruments (CR1-A) continued

		2018				
		EAD before the effect of CCF & CRM ¹		Specific credit risk adjustment \$million	Credit risk adjustment changes in the period Net values \$million	Net values \$million
		Defaulted exposures \$million	Non-defaulted exposures \$million			
IRB Exposure Class ²						
1	Central governments or central banks	–	296,457	49	(260)	296,408
2	Institutions	–	267,385	5	(272)	267,379
3	Corporates	8,993	430,843	6,086	1,108	433,750
4	Of which specialised lending	912	31,957	587	90	32,281
5	Of which SME	782	8,370	470	155	8,681
6	Retail	720	115,822	425	38	116,117
7	Secured by real estate collateral	199	67,764	40	(119)	67,923
8	Of which SME	7	402	3	1	406
9	Of which Non SME	192	67,362	38	(120)	67,516
10	Qualifying revolving retail	153	30,431	121	27	30,464
11	Other retail	368	17,626	264	131	17,730
12	Of which SME	143	2,453	76	41	2,521
13	Of which Non SME	224	15,173	188	90	15,210
	Non-credit obligation assets	63	1,028	–	–	1,091
15	Total IRB ³	9,776	1,111,535	6,565	614	1,114,745
Standardised Exposure Class						
16	Central governments or central banks	–	113,867	6	(115)	113,861
19	Multilateral development banks	–	26,391	6	(17)	26,386
21	Institutions	–	38,769	2	(42)	38,767
22	Corporates	1,381	60,389	941	282	60,829
23	Of which SME	320	37,203	218	(82)	37,305
24	Retail	128	20,894	201	(16)	20,820
25	Of which SME	40	4,362	35	(26)	4,366
26	Secured on real estate property	113	9,871	74	(13)	9,910
27	Of which SME	15	3,839	14	(2)	3,839
29	Items belonging to regulatory high risk categories	647	1,414	93	(405)	1,968
33	Equity	–	1,633	–	(2)	1,633
34	Other Items ⁴	–	9,997	–	–	9,997
35	Total Standardised	2,269	283,224	1,323	(330)	284,170
	Of which past due items	2,269	–	1,094	(268)	1,175
36	Total ⁵	12,045	1,394,758	7,888	285	1,398,915
37	Of which Loans	9,216	301,834	7,077	100	303,973
38	Of which Debt securities	766	121,120	530	233	121,357
39	Of which Off-balance-sheet exposures	1,571	704,940	281	(48)	706,230

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

2 2018 IRB defaulted exposures and specific credit risk adjustments have been restated to reflect the change in accounting treatment of interest in suspense

3 Excludes securitisation exposures

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

5 Amount written off during the year is \$2,223 million

3.4 Exposure values continued

Table 45: Credit quality of exposures by industry types (CR1-B)

	2019				
	EAD before the effect of CCF & CRM ¹		Specific credit risk adjustment \$million	Credit risk adjustment changes in the period \$million	Net values \$million
	Defaulted exposures \$million	Non-defaulted exposures \$million			
Loans to individuals mortgage	291	76,329	98	10	76,522
Loans to individuals other	561	65,656	485	–	65,732
SME	1,609	60,539	777	170	61,371
Commerce	1,180	70,910	1,089	95	71,001
Manufacturing	2,012	113,206	1,477	264	113,741
Commercial real estate	308	20,697	138	13	20,866
Government	–	406,056	45	(6)	406,011
Financing, insurance and business services	398	509,150	690	(89)	508,858
Transport, storage and communication	750	26,130	583	(485)	26,297
Other	2,379	122,603	1,364	(1,117)	123,618
Total^{2,3}	9,488	1,471,274	6,745	(1,143)	1,474,017

	2018				
	EAD before the effect of CCF & CRM ¹		Specific credit risk adjustment \$million	Credit risk adjustment changes in the period \$million	Net values \$million
	Defaulted exposures \$million	Non-defaulted exposures \$million			
Loans to individuals mortgage	284	72,992	87	(58)	73,189
Loans to individuals other	563	61,679	485	(417)	61,757
SME	1,395	57,684	607	607	58,471
Commerce	1,286	66,459	994	249	66,751
Manufacturing	1,869	112,229	1,212	(2,520)	112,885
Commercial real estate	596	21,853	125	6	22,324
Government	–	388,060	51	51	388,009
Financing, insurance and business services	429	466,896	779	136	466,546
Transport, storage and communication	1,530	28,604	1,068	202	29,065
Other	4,095	118,303	2,481	2,030	119,917
Total^{2,3,4}	12,045	1,394,758	7,888	285	1,398,915

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

2 Refer to Table 44 (CR1-A) for total net values

3 Accumulated write-off for the year is \$1,897 million (2018: \$2,223 million)

4 2018 IRB defaulted exposures and specific credit risk adjustments have been restated to reflect the change in accounting treatment of interest in suspense

3.4 Exposure values continued

Table 46: Credit quality of exposures by geography (CR1-C)

	2019				
	EAD before the effect of CCF & CRM ¹		Specific credit risk adjustment \$million	Credit risk adjustment changes in the period \$million	Net values \$million
	Defaulted exposures \$million	Non-defaulted exposures \$million			
Greater China & North Asia	825	493,091	674	(8)	493,241
ASEAN & South Asia	4,382	279,906	3,110	(887)	281,178
Africa & Middle East	3,151	140,408	2,310	(58)	141,249
Europe & Americas	1,130	557,870	652	(190)	558,348
Total^{2,3}	9,488	1,471,274	6,745	(1,143)	1,474,017
	2018				
	EAD before the effect of CCF & CRM ¹		Specific credit risk adjustment \$million	Credit risk adjustment changes in the period ² \$million	Net values \$million
	Defaulted exposures \$million	Non-defaulted exposures \$million			
Greater China & North Asia	1,185	468,821	682	161	469,324
ASEAN & South Asia	6,063	272,382	3,996	20	274,449
Africa & Middle East	3,811	136,604	2,367	(106)	138,048
Europe & Americas	986	516,951	842	210	517,095
Total^{2,3,4}	12,045	1,394,758	7,888	285	1,398,915

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

2 Refer to Table 44 (CR1-A) for total net values

3 Accumulated write-off for the year is \$1,897 million (2018: \$2,223 million)

4 2018 IRB defaulted exposures and specific credit risk adjustments have been restated to reflect the change in accounting treatment of interest in suspense

Table 47: Credit quality of performing and non-performing exposures by past due days

	2019		
	Gross carrying amount/nominal amount		
	Performing exposures		
	\$million	Not past due or past due ≤ 30 days \$million	Past due > 30 days ≤ 90 days \$million
1 Loans and advances	447,476	446,565	910
2 Central banks	65,844	65,844	–
3 General governments	5,616	5,609	7
4 Credit institutions	69,373	69,348	25
5 Other financial corporations	62,549	62,545	4
6 Non-financial corporations	117,940	117,469	471
7 Of which SMEs	4,712	4,696	16
8 Households	126,153	125,750	404
9 Debt securities	145,604	145,598	6
10 Central banks	25,250	25,250	–
11 General governments	71,443	71,443	–
12 Credit institutions	30,272	30,272	–
13 Other financial corporations	14,532	14,531	1
14 Non-financial corporations	4,107	4,103	5
15 Off-balance-sheet exposures	188,365	–	–
16 Central banks	688	–	–
17 General governments	1,688	–	–
18 Credit institutions	10,331	–	–
19 Other financial corporations	21,963	–	–
20 Non-financial corporations	101,426	–	–
21 Households	52,269	–	–
22 Total	781,445	592,164	916

3.4 Exposure values continued

Table 47: Credit quality of performing and non-performing exposures by past due days continued

		2019								
		Gross carrying amount/nominal amount								
		Non-performing exposures								
			Unlikely to pay that are not past due or are past due ≤ 90 days	Past due > 90 days ≤ 180 days	Past due > 180 days ≤ 1 year	Past due > 1 year ≤ 2 years	Past due > 2 years ≤ 5 years	Past due > 5 years ≤ 7 years	Past due > 7 years	Of which defaulted
		\$million	\$million	\$million	\$million	\$million	\$million	\$million	\$million	\$million
1	Loans and advances	7,762	2,182	955	385	883	2,241	521	594	7,008
2	Central banks	–	–	–	–	–	–	–	–	–
3	General governments	–	–	–	–	–	–	–	–	–
4	Credit institutions	5	5	–	–	–	–	–	–	–
	Other financial corporations	257	5	7	31	214	–	–	–	244
6	Non-financial corporations	6,262	1,741	369	309	534	2,205	520	584	5,822
7	Of which SMEs	358	222	–	7	127	–	–	1	350
8	Households	1,237	430	579	44	136	36	1	10	943
9	Debt securities	75	47	–	–	–	28	–	–	55
10	Central banks	–	–	–	–	–	–	–	–	–
11	General governments	–	–	–	–	–	–	–	–	–
12	Credit institutions	–	–	–	–	–	–	–	–	–
	Other financial corporations	–	–	–	–	–	–	–	–	–
14	Non-financial corporations	75	47	–	–	–	28	–	–	55
15	Off-balance-sheet exposures	610	–	–	–	–	–	–	–	539
16	Central banks	–	–	–	–	–	–	–	–	–
17	General governments	–	–	–	–	–	–	–	–	–
18	Credit institutions	–	–	–	–	–	–	–	–	–
	Other financial corporations	9	–	–	–	–	–	–	–	9
20	Non-financial corporations	601	–	–	–	–	–	–	–	530
21	Households	–	–	–	–	–	–	–	–	–
22	Total	8,447	2,229	955	385	883	2,270	521	594	7,602

3.4 Exposure values continued

Table 48: Credit quality of forborne exposures

		2019						
		Gross carrying amount/nominal amount of exposures with forbearance measures				Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions		Collateral received and financial guarantees received on forborne exposures
		Performing forborne	Non-performing forborne			On performing forborne exposures	On non-performing forborne exposures	Of which collateral and financial guarantees received on non-performing exposures with forbearance measures
		\$million	\$million	Of which defaulted \$million	Of which impaired \$million	\$million	\$million	\$million
1	Loans and advances	1,008	2,376	1,850	2,294	(17)	(1,630)	729
2	Central banks	–	–	–	–	–	–	–
3	General governments	–	–	–	–	–	–	–
4	Credit institutions	–	–	–	–	–	–	–
5	Other financial corporations	1	106	106	106	–	(75)	–
6	Non-financial corporations	867	1,940	1,726	1,936	(17)	(1,387)	479
7	Households	140	330	18	252	–	(169)	250
8	Debt Securities	–	–	–	–	–	–	–
9	Loan commitments given	–	–	–	–	–	–	–
10	Total	1,008	2,376	1,850	2,294	(17)	(1,630)	729

Table 49: Performing and non-performing exposures and related provisions

		2019					
		Gross carrying amount/nominal amount					
		Performing exposures			Non-performing exposures		
		\$million	Of which stage 1 \$million	Of which stage 2 \$million	\$million	Of which stage 2 \$million	Of which stage 3 \$million
1	Loans and advances	447,476	360,276	22,062	7,762	–	7,762
2	Central banks	65,844	63,424	36	–	–	–
3	General governments	5,616	3,660	908	–	–	–
4	Credit institutions	69,373	50,346	615	5	–	5
5	Other financial corporations	62,549	22,765	1,079	257	–	257
6	Non-financial corporations	117,940	97,765	15,841	6,262	–	6,262
7	Of which SMEs	4,712	3,816	896	358	–	358
8	Households	126,153	122,315	3,583	1,237	–	1,237
9	Debt securities	145,604	140,510	4,649	75	–	75
10	Central banks	25,250	23,313	1,936	–	–	–
11	General governments	71,443	69,102	2,031	–	–	–
12	Credit institutions	30,272	29,978	253	–	–	–
13	Other financial corporations	14,532	14,274	224	–	–	–
14	Non-financial corporations	4,107	3,842	206	75	–	75
15	Off-balance-sheet exposures	188,365	175,906	12,460	610	–	610
16	Central banks	688	685	3	–	–	–
17	General governments	1,688	1,313	375	–	–	–
18	Credit institutions	10,331	10,138	193	–	–	–
19	Other financial corporations	21,963	21,036	928	9	–	9
20	Non-financial corporations	101,426	92,764	8,663	601	–	601
21	Households	52,269	49,970	2,298	–	–	–
22	Total	781,445	676,692	39,171	8,447	–	8,447

3.4 Exposure values continued

Table 49: Performing and non-performing exposures and related provisions continued

		2019							Collateral and financial guarantees received	
		Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions								
		Performing exposures – accumulated impairment and provisions			Non-performing exposures – accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions			Accumulated partial write-off \$million	On performing exposures \$million	On non-performing exposures \$million
1	Loans and advances	(843)	(453)	(390)	(5,304)	–	(5,304)	(3,236)	124,529	1,394
2	Central banks	(1)	(1)	–	–	–	–	–	1,515	–
3	General governments	(4)	(1)	(4)	–	–	–	(3)	511	–
4	Credit institutions	(4)	(3)	–	–	–	–	(27)	5,448	–
5	Other financial corporations	(26)	(9)	(17)	(177)	–	(177)	(270)	1,800	38
6	Non-financial corporations	(330)	(132)	(198)	(4,565)	–	(4,565)	(2,934)	25,387	819
7	Of which SMEs	(21)	(11)	(10)	(276)	–	(276)	0	1,815	70
8	Households	(479)	(307)	(171)	(563)	–	(563)	(3)	89,868	536
9	Debt securities	(73)	(51)	(22)	(45)	–	(45)	–	51	30
10	Central banks	(25)	(14)	(11)	–	–	–	–	–	–
11	General governments	(21)	(18)	(3)	–	–	–	–	–	–
12	Credit institutions	(4)	(4)	–	–	–	–	–	–	–
13	Other financial corporations	(9)	(7)	(2)	–	–	–	–	30	–
14	Non-financial corporations	(14)	(8)	(6)	(45)	–	(45)	–	21	30
15	Off-balance-sheet exposures	(111)	(58)	(53)	(191)	–	(191)	–	5,120	16
16	Central banks	(1)	(1)	(0)	–	–	–	–	–	–
17	General governments	(1)	–	–	–	–	–	–	154	–
18	Credit institutions	(1)	(1)	(0)	–	–	–	–	170	–
19	Other financial corporations	(7)	(5)	(2)	–	–	–	–	791	–
20	Non-financial corporations	(87)	(41)	(46)	(191)	–	(191)	–	3,763	16
21	Households	(14)	(9)	(6)	–	–	–	–	242	–
22	Total	(1,027)	(561)	(466)	(5,540)	–	(5,540)	(3,236)	129,700	1,440

3.4 Exposure values continued

Table 50: Changes in the stock of general and specific credit risk adjustments (CR2-A)

	2019	
	Accumulated specific credit risk adjustment \$million	Accumulated general credit risk adjustment \$million
1 Opening balance	7,886	N/A
2 Increases due to amounts set aside for estimated loan losses during the period	2,003	N/A
3 Decreases due to amounts reversed for estimated loan losses during the period	(781)	N/A
4 Decreases due to amounts taken against accumulated credit risk adjustments	(2,201)	N/A
5 Transfers between credit risk adjustments	–	N/A
6 Impact of exchange rate differences	141	N/A
7 Business combinations, including acquisitions and disposals of subsidiaries	–	N/A
8 Other adjustments	(458)	N/A
9 Closing balance	6,591	N/A
10 Recoveries on credit risk adjustments recorded directly to the statement of profit or loss	(249)	N/A
11 Specific credit risk adjustments directly recorded to the statement of profit or loss	1,148	N/A
	2018	
	Accumulated specific credit risk adjustment ¹ \$million	Accumulated general credit risk adjustment \$million
1 Opening balance	9,736	N/A
2 Increases due to amounts set aside for estimated loan losses during the period	1,920	N/A
3 Decreases due to amounts reversed for estimated loan losses during the period	(822)	N/A
4 Decreases due to amounts taken against accumulated credit risk adjustments	(2,228)	N/A
5 Transfers between credit risk adjustments	–	N/A
6 Impact of exchange rate differences	(290)	N/A
7 Business combinations, including acquisitions and disposals of subsidiaries	–	N/A
8 Other adjustments	(430)	N/A
9 Closing balance	7,886	N/A
10 Recoveries on credit risk adjustments recorded directly to the statement of profit or loss	(312)	N/A
11 Specific credit risk adjustments directly recorded to the statement of profit or loss	965	N/A

¹ 2018 specific credit risk adjustments have been restated to reflect the change in accounting treatment of interest in suspense

Table 51: Changes in the stock of defaulted and impaired loans and debt securities (CR2-B)

	2019 Gross carrying value of defaulted exposures \$million	2018 Gross carrying value of defaulted exposures ¹ \$million
1 Opening balance	10,180	12,299
2 Loans and debt securities that have defaulted or impaired since the last reporting period	2,323	2,869
3 Returned to non-defaulted status	(193)	(220)
4 Amounts written off	(2,278)	(2,423)
5 Other changes	(1,587)	(2,345)
6 Closing balance	8,446	10,180

¹ 2018 values have been restated to reflect the change in accounting treatment of interest in suspense

3.5 Regulatory expected loss vs. impairment charge

The Risk profile section of the 2019 Annual Report and Accounts provides on page 152 an overview of the key differences between regulatory and IFRS expected credit loss models. The table below compares the regulatory expected loss at 31 December 2019 against expected credit loss in the 2019 Annual Report and Account for the IRB portfolio.

Table 52: Regulatory expected loss

	2019		2018	
	Regulatory expected loss \$million	Net impairment charge \$million	Regulatory expected loss \$million	Net impairment charge \$million
IRB Exposure Class ¹				
Central governments or central banks	125	(4)	137	(260)
Institutions	68	4	69	(272)
Corporates	5,243	(954)	4,165	1,108
Retail, of which	914	27	809	38
Secured by real estate collateral	79	(2)	68	(119)
Qualifying revolving retail	263	13	276	27
Retail SME	110	6	65	41
Other retail	462	11	400	90
Total IRB	6,350	(927)	5,180	614

¹ 2018 Regulatory expected loss has been restated to reflect the change in accounting treatment of interest in suspense

Expected loss reduced by \$0.4 billion reflecting the changes to the Group's risk profile. The overall decrease in expected losses is mainly driven by an improvement in the credit quality of Corporates exposures.

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, application and behaviour credit scores are calibrated to generate a PD and mapped to the standard alphanumeric credit risk grade system. Where available, information from credit bureaus is considered, but is not the sole determinant for PDs.

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 – In CIB and CB, 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. In

Retail, credit scores are relied upon as one of the primary drivers for credit decisioning. The recession loss (derived from PD, LGD and EAD) is used for determining level of approval authority required for Credit Approval Documents which outlines peak exposure and credit acceptance criteria for the portfolio.

- 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 unsecured lending, a risk-return approach based on PD estimates is used as guidance for pricing strategy.
- 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 unsecured lending, limit assignment / loan amounts are risk-based and segregated by credit score bands.

3.6 Risk grade profile continued

Table 53: Exposure weighted average PD% and LGD% by geography

	2019				Total %
	Greater China & North Asia ¹ %	ASEAN & South Asia ¹ %	Africa & Middle East ¹ %	Europe & Americas ¹ %	
Exposure weighted average PD%					
Central governments or central banks	0.02	0.12	1.32	0.01	0.18
Institutions	0.06	0.34	0.54	0.15	0.20
Corporates	1.25	6.91	8.21	0.96	3.04
Of which Specialised lending	2.16	4.93	13.11	1.12	5.77
Of which SME	4.39	18.76	41.44	0.66	12.17
Retail	0.98	2.97	16.76	3.69	1.52
Of which secured by real estate property	0.28	1.46	–	–	0.56
Of which qualifying revolving retail	0.90	5.76	8.86	1.24	2.39
Of which SME	3.96	8.33	–	–	0.55
Total IRB	0.63	3.36	4.71	0.57	1.54
Exposure weighted average LGD%					
Central governments or central banks	41	38	41	45	42
Institutions	36	33	28	25	31
Corporates	39	39	39	24	32
Of which Specialised lending	32	31	30	37	32
Of which SME	18	44	50	60	32
Retail	35	31	83	92	34
Of which secured by real estate property	11	15	–	–	12
Of which qualifying revolving retail	88	72	85	90	83
Of which SME	72	50	50	70	61
Total IRB	38	36	37	29	35

	2018				Total %
	Greater China & North Asia ¹ %	ASEAN & South Asia ¹ %	Africa & Middle East ¹ %	Europe & Americas ¹ %	
Exposure weighted average PD%					
Central governments or central banks	0.02	0.12	1.61	0.02	0.21
Institutions	0.06	0.24	0.54	0.19	0.19
Corporates	1.60	8.94	10.06	1.24	4.14
Of which Specialised lending	3.98	6.29	14.67	2.19	6.74
Of which SME	4.57	16.99	44.93	4.40	12.49
Retail	0.95	2.92	13.09	5.89	1.53
Of which secured by real estate property	0.32	1.20	–	5.15	0.55
Of which qualifying revolving retail	0.94	6.35	8.44	1.02	2.65
Of which SME	4.36	11.72	–	–	0.53
Total IRB²	0.68	4.02	5.84	0.71	1.91
Exposure weighted average LGD%					
Central governments or central banks	41	37	40	44	41
Institutions	36	28	31	28	31
Corporates	34	39	38	28	33
Of which Specialised lending	28	35	31	37	33
Of which SME	20	41	53	61	31
Retail	34	31	88	91	34
Of which secured by real estate property	11	16	82	–	13
Of which qualifying revolving retail	88	72	85	90	83
Of which SME	76	53	71	97	65
Total IRB²	36	35	37	32	35

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

2 2018 weighted averages have been restated to reflect the change in accounting treatment of interest in suspense

3.6 Risk grade profile continued

Table 54 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 56 to 64.

IRB credit risk excluding counterparty credit risk EAD increased by \$29.9 billion and RWA decreased by \$1.2 billion (Tables 56 to 64):

- Central governments and central banks EAD increased \$16.6 billion and RWA increased by \$0.6 billion driven by an increase in Fixed and Floating rate notes and bond exposures mainly in Europe & Americas
- Institutions EAD decreased \$3.7 billion and RWA \$1.8 billion driven by an increase in exposures to GCNA
- IRB corporates EAD increased \$10.3 billion, principally in Europe & Americas. RWA decreased \$1.1 billion across multiple product lines and regions
- IRB Retail EAD increased \$5.2 billion and RWA \$1.3 billion driven by an increase in loans and mortgages, primarily in GCNA

Table 54: IRB – Credit risk exposure by exposure class

2019												
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 years	RWA \$million	RWA density ¹ %	Expected loss \$million	Value adjustments and provisions \$million
Central governments or central banks	148,292	152,562	–	150,754	0.18	0.3	45	1.40	21,807	14	116	44
Institutions	76,361	162,607	6	85,009	0.22	1.6	38	0.91	15,638	18	61	9
Corporates	130,092	268,848	21	184,245	4.31	22.1	41	1.47	86,061	47	5,202	5,132
Of which Specialised lending	18,478	19,501	16	18,456	6.11	1.1	32	1.71	9,917	54	565	573
Of which SME	4,637	3,090	25	5,124	12.67	6.5	30	1.46	3,312	65	356	337
Retail	85,592	38,073	49	104,198	1.52	4,325.4	34		22,857	22	914	452
Of which secured by real estate	68,844	2,032	99	70,856	0.56	358.2	12		4,264	6	79	38
- SME	403	42	54	425	3.51	2.7	–		–	–	–	1
- Non SME	68,442	1,990	100	70,431	0.55	355.5	12		4,264	6	78	37
Of which qualifying revolving retail	3,539	29,092	44	16,433	2.39	3,351.7	83		4,592	28	263	134
Of which other retail	13,209	6,948	57	16,908	4.71	617.2	78		14,001	83	572	280
- SME	2,082	1,401	12	2,013	8.05	33.3	61		1,299	65	110	81
- Non SME	11,127	5,547	68	14,895	4.25	583.9	80		12,702	85	462	198
Non-credit obligation assets	1,003	–	–	1,003	–				1,003	100		–
Total IRB⁴	441,340	622,089	14	525,209	1.88	4,349.0	40	1.06	147,365	27	6,293	5,638

1 Weighted averages are based on EAD

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 Corporates of which specialised lending includes exposures for specialised lending subject to supervisory slotting criteria

4 Refer to Table 20 (OV1) for RWA

3.6 Risk grade profile continued

Table 54: IRB – Credit risk exposure by exposure class continued

2018												
	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 years	RWA \$million	RWA density ¹ %	Expected loss \$million	Value adjustments and provisions \$million
IRB Exposure Class³												
Central governments or central banks	132,026	144,666	1	134,146	0.23	0.3	45	1.36	21,197	16	135	49
Institutions	81,086	141,343	6	88,730	0.21	1.6	39	0.98	17,478	20	60	5
Corporates	119,006	255,464	21	174,176	5.48	22.9	41	1.51	87,206	50	5,887	6,086
Of which Specialised lending ⁴	17,314	17,695	15	16,899	7.25	1.2	33	2.20	10,099	60	619	587
Of which SME	5,429	3,599	23	6,135	12.98	7.6	30	1.54	3,274	53	460	470
Retail	82,178	34,649	49	98,969	1.53	4,175.0	34		21,564	22	845	425
Of which secured by real estate	66,408	1,555	100	67,967	0.55	334.6	13		3,710	5	70	40
- SME	404	5	68	407	3.36	2.8	1		–	–	2	3
- Non SME	66,004	1,550	100	67,560	0.53	331.8	13		3,710	5	68	38
Of which qualifying revolving retail	3,498	27,087	44	15,460	2.65	3,249.9	83		4,574	30	276	121
Of which other retail	12,272	6,007	59	15,541	4.69	590.4	78		13,281	85	499	264
- SME	1,975	907	7	1,757	9.81	36.2	65		1,328	76	100	76
- Non SME	10,297	5,101	68	13,784	4.04	554.2	80		11,952	87	400	188
Non-credit obligation assets	1,091	–	–	1,091	–				1,091	100		–
Total IRB⁵	415,287	576,122	14	497,112	2.01	4,199.8	40	1.07	148,537	30	6,927	6,565

1 Weighted averages are based on EAD

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 2018 values have been restated to reflect the change in accounting treatment of interest in suspense

4 Corporates of which specialised lending includes exposures for specialised lending subject to supervisory slotting criteria

5 Refer to Table 20 (OV1) for RWA

3.6 Risk grade profile continued

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

Tables 56 to 64 and tables 89 to 93 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 81 per cent (2018: 80 per cent) of the Group's total credit risk exposure before collateral.

Table 55: Internal default grade probabilities and mapping to external ratings

SCB 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-
2B	0.036 – 0.045	AA-/A+	A+
3A	0.046 – 0.060	A+	A
3B	0.061 – 0.083	A/A-	A-
4A	0.084 – 0.110	BBB+	BBB+
4B	0.111 – 0.170	BBB	BBB
5A	0.171 – 0.300	BBB-	BBB-
5B	0.301 – 0.425	BB+	BB+
6A	0.426 – 0.585	BB	BB
6B	0.586 – 0.770	BB/BB-	BB/BB-
7A	0.771 – 1.020	BB-	BB-
7B	1.021 – 1.350	BB-	BB-/B+
8A	1.351 – 1.750	BB-/B+	B+
8B	1.751 – 2.350	B+	B+/B
9A	2.351 – 3.050	B+/B	B
9B	3.051 – 4.000	B	B/B-
10A	4.001 – 5.300	B/B-	B-
10B	5.301 – 7.000	B-	B-/CCC
11A/B/C	7.001 – 15.750	B-/CCC/C	B-/CCC
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 56: IRB credit risk exposure by internal PD grade for central governments or central banks (CR6)

2019												
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 years	RWA \$million	RWA density ¹ %	Expected loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	130,998	120,796	–	134,248	0.02	0.2	45	1.39	9,605	7	12	
0.15 to <0.25	6,084	2,776	1	6,180	0.22	–	45	2.13	2,788	45	6	
0.25 to <0.50	987	1,525	–	747	0.39	–	45	1.48	402	54	2	
0.50 to <0.75	981	529	–	981	0.67	–	45	1.18	655	67	3	
0.75 to <2.50	8,127	11,695	3	7,923	1.59	0.1	44	1.06	7,111	90	55	
2.50 to <10.00	774	2,354	1	395	5.89	–	45	1.72	615	156	10	
10.00 to <100.00	342	12,887	–	281	24.55	–	41	1.27	631	225	28	
100.00 (default)	–	–	–	–	–	–	–	–	–	–	–	
Total	148,292	152,562	–	150,754	0.18	0.3	45	1.40	21,807	14	116	44
2018												
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 years	RWA \$million	RWA density ¹ %	Expected loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	114,046	127,714	1	116,616	0.02	0.2	45	1.36	7,819	7	10	
0.15 to <0.25	6,634	2,456	–	6,700	0.22	–	45	1.73	2,756	41	7	
0.25 to <0.50	439	1,249	–	394	0.43	–	45	1.55	226	57	1	
0.50 to <0.75	1,312	–	–	1,312	0.67	–	45	1.06	858	65	4	
0.75 to <2.50	8,030	11,269	1	7,657	1.61	0.1	45	1.09	7,068	92	55	
2.50 to <10.00	895	1,075	2	782	4.84	–	42	1.11	1,005	129	16	
10.00 to <100.00	670	903	–	684	13.77	–	45	1.08	1,465	214	43	
100.00 (default)	–	–	–	–	–	–	–	–	–	–	–	
Total	132,026	144,666	1	134,146	0.23	0.3	45	1.36	21,197	16	135	49

1 Weighted averages are based on EAD

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

3.6 Risk grade profile continued

Table 57: IRB credit risk exposure by internal PD grade for institutions (CR6)

2019												
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 years	RWA \$million	RWA density ¹ %	Expected loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	59,924	124,158	5	69,216	0.04	0.8	39	0.98	7,491	11	11	
0.15 to <0.25	2,699	10,997	10	3,636	0.22	0.1	35	0.63	1,089	30	3	
0.25 to <0.50	4,754	10,192	4	4,373	0.45	0.2	34	0.78	1,902	43	7	
0.50 to <0.75	809	2,111	7	545	0.67	0.1	38	0.40	316	58	1	
0.75 to <2.50	7,495	14,029	13	6,753	1.44	0.4	31	0.44	4,314	64	29	
2.50 to <10.00	494	884	10	430	5.98	0.1	25	0.36	408	95	7	
10.00 to <100.00	186	236	1	56	13.90	–	41	0.42	118	209	3	
100.00 (default)	–	–	–	–	–	–	–	–	–	–	–	
Total	76,361	162,607	6	85,009	0.22	1.6	38	0.91	15,638	18	61	9
2018												
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 years	RWA \$million	RWA density ¹ %	Expected loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	61,792	104,558	5	70,362	0.04	0.8	41	1.07	8,444	12	12	
0.15 to <0.25	5,891	10,290	10	6,447	0.22	0.1	32	0.73	1,801	28	5	
0.25 to <0.50	4,775	8,936	6	4,435	0.47	0.2	39	0.65	2,362	53	8	
0.50 to <0.75	695	2,374	3	628	0.68	–	33	0.63	319	51	1	
0.75 to <2.50	7,607	13,840	13	6,499	1.52	0.4	31	0.44	4,353	67	31	
2.50 to <10.00	291	1,204	12	337	3.87	0.1	15	1.02	160	47	2	
10.00 to <100.00	34	141	7	22	15.83	–	34	0.67	39	174	1	
100.00 (default)	–	–	–	–	–	–	–	–	–	–	–	
Total	81,086	141,343	6	88,730	0.21	1.6	39	0.98	17,478	20	60	5

1 Weighted averages are based on EAD

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

3.6 Risk grade profile continued

Table 58: IRB credit risk exposure by internal PD grade for Corporates (CR6)

2019												
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 years	RWA \$million	RWA density ¹ %	Expected loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	42,491	122,887	18	74,360	0.08	3.2	44	1.54	14,879	20	25	
0.15 to <0.25	14,746	35,978	23	22,743	0.22	2.2	41	1.24	7,682	34	21	
0.25 to <0.50	20,195	47,279	23	29,990	0.45	3.4	38	1.61	15,325	51	52	
0.50 to <0.75	7,256	13,913	24	9,285	0.68	1.2	41	1.37	5,939	64	26	
0.75 to <2.50	23,041	37,614	23	27,201	1.52	5.2	34	1.54	19,529	72	141	
2.50 to <10.00	7,982	7,185	23	7,361	5.52	3.7	38	1.20	8,874	121	156	
10.00 to <100.00	4,689	2,355	41	3,124	39.27	2.0	36	1.36	6,178	198	341	
100.00 (default)	5,119	879	–	5,376	100.00	1.0	57	1.03	3,730	69	4,398	
Total	125,520	268,090	21	179,441	4.31	22.0	41	1.47	82,137	47	5,160	5,133
2018												
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 years	RWA \$million	RWA density ¹ %	Expected loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	37,243	112,275	20	69,270	0.08	3.0	44	1.52	14,600	21	24	
0.15 to <0.25	13,199	37,339	22	21,317	0.22	2.4	41	1.50	7,857	37	20	
0.25 to <0.50	16,352	41,078	22	25,217	0.44	3.2	35	1.63	11,889	47	42	
0.50 to <0.75	6,646	15,210	21	9,315	0.68	1.3	38	1.49	5,550	60	25	
0.75 to <2.50	22,403	37,440	23	27,377	1.56	5.7	34	1.65	20,637	75	153	
2.50 to <10.00	8,617	7,636	24	7,810	5.60	3.7	36	1.14	9,176	117	163	
10.00 to <100.00	5,259	2,706	35	4,503	40.21	2.4	39	1.31	11,445	254	371	
100.00 (default)	6,742	914	–	6,707	100.00	1.2	65	1.10	3,801	57	5,069	
Total³	116,462	254,599	21	171,515	5.63	22.9	41	1.51	84,955	51	5,866	6,086

1 Weighted averages are based on EAD

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

3 2018 values have been restated to reflect the change in accounting treatment of interest in suspense

3.6 Risk grade profile continued

Table 59: IRB credit risk exposure by internal PD grade for corporates – specialised lending (CR6)

2019												
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 years	RWA \$million	RWA density ¹ %	Expected loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	1,984	3,747	16	2,666	0.09	0.2	33	2.14	454	17	1	
0.15 to <0.25	2,999	2,441	11	2,703	0.22	0.1	31	1.07	599	22	2	
0.25 to <0.50	2,947	4,189	18	2,942	0.47	0.2	31	1.84	1,268	43	4	
0.50 to <0.75	497	1,714	28	768	0.67	0.1	29	1.34	345	45	2	
0.75 to <2.50	3,850	5,804	12	3,323	1.53	0.5	31	1.89	2,258	68	16	
2.50 to <10.00	691	589	8	368	6.21	–	35	1.36	435	118	8	
10.00 to <100.00	393	230	60	376	62.06	–	23	2.29	517	137	38	
100.00 (default)	545	30	14	506	100.00	–	54	0.64	117	23	454	
Total	13,906	18,743	16	13,652	6.16	1.2	32	1.68	5,994	44	525	573
2018												
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 years	RWA \$million	RWA density ¹ %	Expected loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	2,916	2,414	9	3,036	0.09	0.2	34	2.53	662	22	1	
0.15 to <0.25	1,881	2,300	14	1,963	0.22	0.1	36	1.60	615	31	2	
0.25 to <0.50	2,801	3,529	22	2,865	0.46	0.2	30	2.49	1,276	45	6	
0.50 to <0.75	689	1,988	15	824	0.67	0.1	32	1.31	414	50	3	
0.75 to <2.50	4,226	5,334	12	3,826	1.47	0.4	30	2.50	2,786	73	21	
2.50 to <10.00	1,024	987	8	564	5.81	0.1	33	1.64	688	122	14	
10.00 to <100.00	540	215	61	438	44.83	–	30	2.18	924	211	34	
100.00 (default)	693	63	44	721	100.00	0.1	55	1.08	483	67	518	
Total³	14,770	16,830	15	14,238	7.25	1.2	33	2.20	7,849	55	598	587

1 Weighted averages are based on EAD

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

3 2018 values have been restated to reflect the change in accounting treatment of interest in suspense

3.6 Risk grade profile continued

Table 60: IRB credit risk exposure by internal PD grade for corporates – SME (CR6)

2019												
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 years	RWA \$million	RWA density ¹ %	Expected loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	189	161	14	218	0.07	–	55	0.72	53	24	–	
0.15 to <0.25	284	426	37	465	0.23	0.4	26	3.88	79	17	–	
0.25 to <0.50	417	452	19	504	0.49	0.7	23	0.92	105	21	1	
0.50 to <0.75	184	194	21	228	0.70	0.3	21	0.79	54	24	–	
0.75 to <2.50	1,563	1,138	21	1,746	1.78	1.7	25	1.65	849	49	8	
2.50 to <10.00	1,183	507	33	1,215	5.72	2.1	30	1.66	956	79	21	
10.00 to <100.00	398	98	30	297	30.78	1.0	30	0.59	472	159	19	
100.00 (default)	418	114	30	452	100.00	0.2	60	0.14	746	165	307	
Total	4,637	3,090	25	5,124	12.67	6.5	30	1.46	3,312	65	356	337
2018												
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 years	RWA \$million	RWA density ¹ %	Expected loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	61	276	22	127	0.07	–	40	2.79	28	22	–	
0.15 to <0.25	468	643	24	655	0.23	0.6	27	1.34	122	19	–	
0.25 to <0.50	986	448	27	1,130	0.45	0.8	29	1.72	421	37	1	
0.50 to <0.75	233	206	17	250	0.70	0.3	17	1.36	52	21	0	
0.75 to <2.50	1,617	1,253	24	1,902	1.76	2.0	26	1.72	947	50	9	
2.50 to <10.00	1,082	462	23	1,075	5.83	2.3	23	1.29	659	61	15	
10.00 to <100.00	407	157	24	405	24.98	1.3	27	1.18	532	131	20	
100.00 (default)	575	155	10	591	100.00	0.3	67	1.39	514	87	414	
Total³	5,429	3,599	23	6,135	12.98	7.6	30	1.54	3,274	53	460	470

1 Weighted averages are based on EAD

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

3 2018 values have been restated to reflect the change in accounting treatment of interest in suspense

3.6 Risk grade profile continued

Table 61: IRB credit risk exposure by internal PD grade for retail (CR6)

2019												
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 years	RWA \$million	RWA density ¹ %	Expected loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	58,617	20,329	56	69,948	0.06	1,576.3	26		2,736	4	12	
0.15 to <0.25	5,492	4,272	44	7,362	0.23	318.7	31		842	11	6	
0.25 to <0.50	5,337	2,081	54	6,425	0.40	246.0	26		1,831	29	12	
0.50 to <0.75	2,627	3,376	49	4,260	0.68	229.3	136		1,500	35	18	
0.75 to <2.50	6,741	4,671	42	8,584	1.72	678.8	54		6,478	75	104	
2.50 to <10.00	5,136	2,591	27	5,791	5.87	890.0	55		6,500	112	241	
10.00 to <100.00	1,029	715	26	1,207	30.21	320.7	49		2,040	169	226	
100.00 (default)	613	39	24	622	100.00	65.6	53		928	149	295	
Total	85,592	38,073	49	104,198	1.52	4,325.4	34		22,857	22	914	452
2018												
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 years	RWA \$million	RWA density ¹ %	Expected loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	58,686	17,491	52	67,852	0.05	1,461.8	22		2,382	4	10	
0.15 to <0.25	3,913	4,392	51	6,129	0.23	340.1	43		865	14	6	
0.25 to <0.50	4,010	2,426	62	5,470	0.42	250.6	54		1,820	33	12	
0.50 to <0.75	2,332	2,920	51	3,779	0.67	197.4	61		1,308	35	16	
0.75 to <2.50	7,739	4,268	44	9,499	1.70	676.6	68		7,330	77	114	
2.50 to <10.00	3,947	2,407	25	4,496	5.39	844.1	71		4,910	109	170	
10.00 to <100.00	881	731	28	1,071	31.41	331.2	68		1,867	174	207	
100.00 (default)	670	15	24	673	100.00	73.2	58		1,082	161	310	
Total³	82,178	34,649	49	98,969	1.53	4,175.0	34		21,564	22	845	425

1 Weighted averages are based on EAD

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

3 2018 values have been restated to reflect the change in accounting treatment of interest in suspense

3.6 Risk grade profile continued

Table 62: IRB credit risk exposure by internal PD grade for retail – secured by real estate property (CR6)

2019												
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 years	RWA \$million	RWA density ¹ %	Expected loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	56,972	1,465	100	58,438	0.06	260.4	11		1,922	3	4	
0.15 to <0.25	4,817	299	96	5,106	0.22	30.8	17		450	9	2	
0.25 to <0.50	3,230	108	99	3,335	0.42	27.1	20		541	16	3	
0.50 to <0.75	1,355	39	99	1,394	0.66	12.9	16		223	16	1	
0.75 to <2.50	1,605	63	92	1,663	1.39	15.1	14		418	25	3	
2.50 to <10.00	464	54	98	516	6.49	5.8	14		263	51	5	
10.00 to <100.00	205	3	96	209	38.24	3.0	18		204	98	13	
100.00 (default)	195	1	100	196	100.00	3.1	32		242	123	47	
Total	68,844	2,032	99	70,856	0.56	358.2	12		4,264	6	79	38
2018												
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 years	RWA \$million	RWA density ¹ %	Expected loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	57,184	1,188	100	58,378	0.05	255.4	12		1,843	3	4	
0.15 to <0.25	3,349	159	100	3,507	0.22	24.8	16		304	9	1	
0.25 to <0.50	2,178	73	100	2,251	0.43	18.4	17		320	14	2	
0.50 to <0.75	1,251	33	99	1,285	0.66	11.3	16		208	16	1	
0.75 to <2.50	1,640	74	99	1,714	1.40	14.0	14		418	24	3	
2.50 to <10.00	440	26	100	465	5.68	4.8	15		252	54	4	
10.00 to <100.00	172	1	88	173	41.91	2.7	14		134	77	10	
100.00 (default)	194	1	100	195	100.00	3.2	31		230	118	45	
Total³	66,408	1,555	100	67,967	0.55	334.6	13		3,710	5	70	40

1 Weighted averages are based on EAD

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

3 2018 values have been restated to reflect the change in accounting treatment of interest in suspense

3.6 Risk grade profile continued

Table 63: IRB credit risk exposure by internal PD grade for retail – qualifying revolving (CR6)

2019												
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 years	RWA \$million	RWA density ¹ %	Expected loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	1,003	16,299	48	8,876	0.08	1,218.0	85		377	4	6	
0.15 to <0.25	227	3,435	40	1,596	0.25	269.8	79		174	11	3	
0.25 to <0.50	175	1,136	51	760	0.43	157.4	76		121	16	2	
0.50 to <0.75	285	2,885	49	1,690	0.68	178.9	88		449	27	10	
0.75 to <2.50	608	2,912	36	1,663	1.75	480.5	81		816	49	24	
2.50 to <10.00	820	1,911	25	1,303	6.26	731.8	79		1,494	115	65	
10.00 to <100.00	273	514	25	399	27.44	282.5	80		825	207	87	
100.00 (default)	147	1	–	147	100.00	32.7	64		336	229	66	
Total	3,539	29,092	44	16,433	2.39	3,351.7	83		4,592	28	263	134
2018												
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 years	RWA \$million	RWA density ¹ %	Expected loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	950	15,125	48	8,231	0.07	1,180.3	85		346	4	5	
0.15 to <0.25	220	3,231	40	1,514	0.25	265.7	80		165	11	3	
0.25 to <0.50	149	1,111	50	699	0.44	149.0	76		113	16	2	
0.50 to <0.75	276	2,455	49	1,480	0.68	159.7	88		393	27	9	
0.75 to <2.50	627	2,678	37	1,616	1.72	443.5	81		787	49	23	
2.50 to <10.00	824	1,875	26	1,308	6.23	699.2	78		1,490	114	64	
10.00 to <100.00	300	610	26	460	27.23	315.5	79		952	207	99	
100.00 (default)	152	1	–	152	100.00	37.0	63		329	216	70	
Total	3,498	27,087	44	15,460	2.65	3,249.9	83		4,574	30	276	121

1 Weighted averages are based on EAD

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

3.6 Risk grade profile continued

Table 64: IRB credit risk exposure by internal PD grade for retail – SME (CR6)

2019												
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 years	RWA \$million	RWA density ¹ %	Expected loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	71	35	14	73	0.10	2.3	68		9	13	–	
0.15 to <0.25	109	126	22	123	0.26	2.0	58		28	23	–	
0.25 to <0.50	117	103	18	100	0.44	3.1	61		33	33	–	
0.50 to <0.75	92	61	26	85	0.68	1.9	61		35	42	–	
0.75 to <2.50	965	546	9	917	1.77	13.2	64		587	64	10	
2.50 to <10.00	574	371	7	552	5.25	8.1	57		405	73	17	
10.00 to <100.00	87	123	13	92	46.52	2.2	56		137	148	22	
100.00 (default)	66	35	20	73	100.00	0.6	61		63	87	61	
Total	2,082	1,401	12	2,013	8.05	33.3	61		1,299	65	110	81
2018												
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 years	RWA \$million	RWA density ¹ %	Expected loss \$million	Value adjustments and provisions \$million
0.00 to <0.15	72	44	15	73	0.10	2.6	69		10	13	–	
0.15 to <0.25	101	46	21	97	0.26	2.0	68		26	27	–	
0.25 to <0.50	124	36	20	87	0.45	3.9	70		33	38	–	
0.50 to <0.75	88	26	13	63	0.69	2.3	71		31	50	–	
0.75 to <2.50	904	376	4	802	1.78	14.4	67		535	67	9	
2.50 to <10.00	512	316	5	469	5.31	8.0	57		333	71	14	
10.00 to <100.00	72	50	9	64	47.91	2.3	65		141	222	13	
100.00 (default)	101	12	12	102	100.00	0.7	71		219	215	62	
Total³	1,975	907	7	1,757	9.81	36.2	65		1,328	76	100	76

1 Weighted averages are based on EAD

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

3 2018 values have been restated to reflect the change in accounting treatment of interest in suspense

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 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.

Our approach to credit risk mitigation can be found in the Risk management approach section of the 2019 Annual Report and Accounts on pages 174 to 178.

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.

Table 65: CRM techniques – overview (CR3)

		2019				
		Exposures unsecured \$million	Exposures secured \$million	Exposures secured by collateral \$million	Exposures secured by financial guarantees \$million	Exposures secured by credit derivatives \$million
1	Total loans	169,075	140,564	114,943	25,620	–
2	Total debt securities	135,150	2,463	1,820	643	–
3	Total exposures	304,225	143,027	116,763	26,263	–
4	Of which defaulted	5,939	1,158	1,158	–	–

		2018				
		Exposures unsecured \$million	Exposures secured \$million	Exposures secured by collateral \$million	Exposures secured by financial guarantees \$million	Exposures secured by credit derivatives \$million
1	Total loans	176,416	133,516	111,500	22,017	–
2	Total debt securities	117,357	4,522	3,894	628	–
3	Total exposures	293,773	138,038	115,394	22,645	–
4	Of which defaulted	7,888	1,455	1,455	–	–

Table 66: Effect of guarantees and collateral

	2019		2018	
	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	4,072	12,275	2,591	14,780
Institutions	5,742	29,796	4,810	34,392
Corporates	20,209	89,302	19,464	75,652
Retail ¹	8	69,910	5	67,024
Securitisation positions	–	1,040	–	1,391
Total IRB	30,031	202,323	26,870	193,239
Standardised Exposure Class				
Central governments or central banks	3,003	46	1,388	226
Multilateral development banks	2,040	–	1,405	435
Institutions	216	13,233	359	26,753
Corporates	680	29,320	834	21,872
Retail ¹	3	1,303	4	922
Secured on real estate property	–	–	–	–
Exposures in default	–	3	–	1
Items belonging to regulatory high risk categories	–	28	–	29
Other items ²	61	–	55	3
Total Standardised	6,003	43,933	4,045	50,241
Total Exposure	36,034	246,256	30,915	243,480

¹ The combined retail IRB exposure class includes both retail mortgages (secured by real estate collateral) and other types of retail exposures. The standardized 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

Table 67 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.

3.7 Credit risk mitigation continued

Table 67: Standardised approach – credit risk exposure and Credit Risk Mitigation (CRM) effects (CR4)

		2019					
		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 %
Standardised Exposure Class							
1	Central governments or central banks	25,508	88,328	27,365	621	4,391	16
2	Multilateral development banks	12,233	9,884	13,962	126	–	–
6	Institutions	4,037	2,079	3,648	29	926	25
7	Corporates	24,819	27,624	13,614	977	13,799	95
8	Retail	13,111	11,052	11,978	854	8,973	70
9	Secured on real estate property	9,595	606	9,593	282	4,616	47
10	Exposures in default	532	12	509	6	515	100
11	Items belonging to regulatory high risk categories	963	380	922	123	1,568	150
15	Equity	1,942	–	1,942	–	4,854	250
16	Other items ²	11,241	269	11,302	184	9,259	81
17	Total Standardised³	103,981	140,234	94,835	3,202	48,901	50

		2018					
		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 %
Standardised Exposure Class							
1	Central governments or central banks	30,029	81,728	31,089	281	3,969	13
4	Multilateral development banks	13,120	10,133	14,305	113	–	–
6	Institutions	2,952	1,747	2,598	26	643	25
7	Corporates	24,139	27,126	13,167	995	13,350	94
8	Retail	12,156	8,667	11,337	320	8,312	71
9	Secured on real estate property	9,389	458	9,389	219	4,750	49
10	Exposures in default	781	7	778	3	782	100
11	Items belonging to regulatory high risk categories	1,694	290	1,607	37	2,466	150
15	Equity	1,633	–	1,633	–	4,082	250
16	Other items ²	9,685	224	9,738	130	8,027	81
17	Total Standardised	105,578	130,380	95,641	2,124	46,381	47

1 EAD before the effect of collateral and substitution

2 Other items includes public sector entities

3 Refer to Table 20 (OV1): Standardised approach \$41,395 million and amount below threshold for deduction \$7,507 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 \$8.2 billion driven by:

- Central governments and central banks EAD increased by \$2.1 billion, primarily in Europe & Americas
- Retail EAD increased by \$3.3 billion, primarily in ASEAN & South Asia
- Other items EAD increased by \$1.6 billion across GCNA (\$0.6 billion), ASEAN and South Asia (\$0.6 billion) and Europe & Americas (\$0.4 billion)
- Institutions EAD increased by \$1.4 billion driven by increased exposures across Europe & Americas (\$0.6 billion) and ASEAN & South Asia (£0.4 billion)

3.8 Standardised risk weight profile continued

Table 68: Standardised approach – exposures by asset classes and risk weights (pre CRM pre CCF) (CR5)

		2019														
		Risk Weight												Deduc- ted	Total	Of which unrated
		0%	2%	4%	20%	35%	50%	75%	100%	150%	250%	Others				
Standardised Exposure Class																
1	Central governments or central banks	109,384	–	–	24	–	2,494	–	859	13	1,061	–	–	113,835		
4	Multilateral development banks	22,117	–	–	–	–	–	–	–	–	–	–	–	22,117	–	
6	Institutions	–	1,305	504	1,341	–	2,490	–	476	–	–	–	–	6,116	3,582	
7	Corporates	–	–	–	1,266	–	265	–	50,912	–	–	–	–	52,443	49,644	
8	Retail	–	–	–	–	–	–	24,163	–	–	–	–	–	24,163	24,097	
9	Secured on real estate property	–	–	–	–	8,133	–	–	2,068	–	–	–	–	10,201	10,199	
10	Exposures in default	–	–	–	–	–	–	–	544	–	–	–	–	544	544	
11	Items belonging to regulatory high risk categories	–	–	–	–	–	–	–	–	1,343	–	–	–	1,343	1,322	
15	Equity	–	–	–	–	–	–	–	–	–	1,942	–	–	1,942	1,942	
16	Other items ¹	1,333	–	–	25	–	–	–	8,195	–	–	1,958	–	11,511	11,510	
17	Total Standardised	132,833	1,305	504	2,656	8,133	5,249	24,163	63,054	1,356	3,003	1,958	–	244,215	102,840	
		2018														
		Risk Weight												Deduc- ted	Total	Of which unrated
		0%	2%	4%	20%	35%	50%	75%	100%	150%	250%	Others				
Standardised Exposure Class																
1	Central governments or central banks	107,695	–	–	11	–	2,521	–	598	7	925	–	–	111,757	–	
4	Multilateral development banks	23,253	–	–	–	–	–	–	–	–	–	–	–	23,253	–	
6	Institutions	–	1,050	10	1,073	–	2,285	–	281	–	–	–	–	4,699	2,440	
7	Corporates	–	–	–	960	–	148	–	50,157	–	–	–	–	51,265	49,032	
8	Retail	–	–	–	–	–	–	20,823	–	–	–	–	–	20,823	20,766	
9	Secured on real estate property	–	–	–	–	7,496	–	–	2,351	–	–	–	–	9,847	9,847	
10	Exposures in default	–	–	–	–	–	–	–	788	–	–	–	–	788	788	
11	Items belonging to regulatory high risk categories	–	–	–	–	–	–	–	–	1,984	–	–	–	1,984	1,976	
15	Equity	–	–	–	–	–	–	–	–	–	1,633	–	–	1,633	1,633	
16	Other items ¹	1,484	–	–	66	–	–	–	7,294	–	–	1,065	–	9,909	9,909	
17	Total Standardised	132,432	1,050	10	2,110	7,496	4,954	20,823	61,469	1,991	2,558	1,065	–	235,958	96,391	

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

3.8 Standardised risk weight profile continued

Table 69: Standardised approach – exposures by asset classes and risk weights (post CRM post CCF) (CR5)

		2019													
		Risk Weight											Deduc-	Total	Of which
		0%	2%	4%	20%	35%	50%	75%	100%	150%	250%	Others	ted		unrated
Standardised Exposure Class															
1	Central governments or central banks	23,788	–	–	180	–	2,522	–	421	13	1,061	–	–	27,986	–
4	Multilateral development banks	14,088	–	–	–	–	–	–	–	–	–	–	–	14,088	–
6	Institutions	–	1,305	504	951	–	456	–	461	–	–	–	–	3,677	2,970
7	Corporates	–	–	–	699	112	66	–	13,714	–	–	–	–	14,591	13,766
8	Retail	–	–	–	–	–	–	12,832	–	–	–	–	–	12,832	12,832
9	Secured on real estate property	–	–	–	–	7,902	–	–	1,973	–	–	–	–	9,875	9,875
10	Exposures in default	–	–	–	–	–	–	–	515	–	–	–	–	515	515
11	Items belonging to regulatory high risk categories	–	–	–	–	–	–	–	–	1,045	–	–	–	1,045	1,044
15	Equity	–	–	–	–	–	–	–	–	–	1,942	–	–	1,942	1,942
16	Other items ¹	1,333	–	–	86	–	–	–	8,109	–	–	1,958	–	11,486	11,425
17	Total Standardised	39,209	1,305	504	1,916	8,014	3,044	12,832	25,193	1,058	3,003	1,958	–	98,037	54,369

		2018													
		Risk Weight											Deduc-	Total	Of which
		0%	2%	4%	20%	35%	50%	75%	100%	150%	250%	Others	ted		unrated
Standardised Exposure Class															
1	Central governments or central banks	27,408	–	–	141	–	2,545	–	344	7	925	–	–	31,370	–
4	Multilateral development banks	14,418	–	–	–	–	–	–	–	–	–	–	–	14,418	–
6	Institutions	–	1,048	10	966	–	343	–	257	–	–	–	–	2,624	1,717
7	Corporates	–	–	–	284	774	13	–	13,091	–	–	–	–	14,162	13,064
8	Retail	–	–	–	–	–	–	11,657	–	–	–	–	–	11,657	11,657
9	Secured on real estate property	–	–	–	–	7,342	–	–	2,266	–	–	–	–	9,608	9,608
10	Exposures in default	–	–	–	–	–	–	–	781	–	–	–	–	781	781
11	Items belonging to regulatory high risk categories	–	–	–	–	–	–	–	–	1,644	–	–	–	1,644	1,642
15	Equity	–	–	–	–	–	–	–	–	–	1,633	–	–	1,633	1,633
16	Other items ¹	1,484	–	–	120	–	–	–	7,199	–	–	1,065	–	9,868	9,812
17	Total Standardised	43,310	1,048	10	1,511	8,116	2,901	11,657	23,938	1,651	2,558	1,065	–	97,765	49,914

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

→ Standardised EAD post CRM and post CCF increased by \$0.2 billion

→ Central governments and central banks EAD decreased by \$3.4 billion, primarily in Europe & Americas

→ Other items EAD increased by \$1.6 billion across GCNA (\$0.6 billion), ASEAN and South Asia (\$0.6 billion) and Europe & Americas (\$0.4 billion)

→ Retail EAD increased by \$1.2 billion, primarily in ASEAN & South Asia

3.9 Securitisation

Securitisation is defined by the CRR as a transaction or scheme where the credit risk of an exposure or pool of exposures is tranching and where the payments arising from the transaction or scheme are dependent upon the performance of the underlying exposure(s) and where the subordination of tranches determine the distribution of losses during the ongoing life of the transaction or the scheme.

Securitisation can be categorised as either:

- **Traditional securitisation:** A securitisation involving the economic transfer of the exposures being securitised via the transfer of ownership of securitised exposures from the originator institution to a securitisation special purpose entity (SSPE), where the securitised assets are beyond the reach of the originator and its creditors. The purchase of the assets by the SSPE are usually funded via the issuance of securities where the payments obligations does not belong to the originator institution
- **Synthetic transaction:** A securitisation where the originator retains the ownership of the underlying exposure(s) and transfer the associated credit risk of the securitised exposures to third party through the use of credit derivatives or guarantees

The Group has undertaken securitisation of its own originated assets to diversify sources of funding and capital management and may play one or more of the following roles in a securitisation transaction:

Originator – The Group securitised assets (Corporate loans and trade finance facilities) originated in its normal course of business for capital management and diversification of its sources of funding. The Group may be exposed to credit and market risk on the underlying assets, particularly if the structure of the transaction does not transfer these risks to third parties.

Investor – To generate financial returns, the group may purchase securitised issued by third-party SSPE or purchased securities from SSPE which it originates for market making purpose.

Arranger – The Group may act as arranger for securitisation transactions it originates or by its customers, usually financial institutions or large corporates.

Underwriter – The Group may underwrite the securities issued by a SSPE originated by the Group or for its customers.

Credit Event Monitor Agent – Monitor the credit quality of the underlying securitised assets on behalf of the SSPE or investors.

Account Bank – The Group may hold the bank account of a SSPE originated by the Group on its own books.

Program Manager – Report on the performance of the securitised assets of the SSPE to investors.

Servicer – Manage and service the asset pool of the securitisation transactions.

The Group has \$15.6 billion (2018: \$24.0 billion) of EAD classified as securitisation positions, as shown in Table 73 on page 76. 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 \$8.3 billion (2018: \$7.5 billion), held either as investments or arranged for clients, represents 1 per cent of the Group's total assets (2018: 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 97 per cent of the overall portfolio rated Investment Grade, and 89 per cent of the overall portfolio is rated as AAA. The portfolio is diversified across asset classes and geographies. Residential mortgage-backed securities (RMBS) make up 68 per cent of the overall portfolio and have a weighted averaged credit rating of AAA. This also includes US Agency MBS and Korean Agency MBS (AAA in 2018).

Other ABS include Auto ABS, comprising 12 per cent of the overall portfolio, CLOs (5 per cent) The balance of Other ABS mainly includes securities backed by CMBS, Credit Cards, consumer loans, 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 note 24 to the financial statements of the 2019 Annual Report and Accounts, page 330. The ABS portfolio is assessed frequently for objective evidence of impairment. In 2019, 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.

3.9 Securitisation continued

Table 70: Securitisation – ABS purchased or retained

	2019			2018		
	Carrying value of asset backed securities \$million	Notional amount		Carrying value of asset backed securities \$million	Notional amount	
		Traditional securitisation programmes \$million	Synthetic securitisation programmes \$million		Traditional securitisation programmes \$million	Synthetic securitisation programmes \$million
Residential Mortgage Backed Securities (RMBS)	5,688	5,684	4	4,369	4,369	–
Collateralised Loan Obligations (CLOs)	422	422	–	150	155	–
Commercial Mortgage Backed Securities (CMBS)	145	145	–	94	94	–
Auto Asset Backed Securities	957	957	–	1,620	1,627	–
Credit Cards Asset Backed Securities	171	171	–	227	227	–
Other Asset Backed Securities	924	924	–	1,001	1,000	1
Total	8,306	8,303	4	7,461	7,472	1
Of which included within:						
Financial assets held at fair value through profit or loss	4,657	4,657	–	1,094	1,104	1
Investment securities – available-for-sale	3,586	3,582	4	2,556	2,559	–
Investment securities – loans and receivables	63	63	–	3,811	3,809	–
Total	8,306	8,302	4	7,461	7,472	1

Capital Structuring & Distribution Group Balance Sheet Securitisation

Synthetic Securitisation - Significant Risk Transfer (SRT) trades

The Group via its Capital Structuring & Distribution Group (CSDG) Balance Sheet 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 & 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 Balance Sheet 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 Balance Sheet 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 2019, \$11.4 million of Trade Finance (2018: \$0.2 million) and \$33.3 million of Commercial Loans (2018: \$17.7 million) totalling \$44.7 million (2018: \$17.9 million) of securitised exposures were classified as impaired and past due.

The Group has seven synthetic securitisation transactions originated and managed by CSDG Balance Sheet Securitisation unit, with an aggregate hedge capacity of \$17 billion (2018: \$18.0 billion). CSDG Balance Sheet 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 71 provides details of current securitisation programmes originated and managed by the Group.

3.9 Securitisation continued

Capital Structuring & Distribution Group Balance Sheet Securitisation continued

The Group transfer credit risk of underlying securitised assets (refer to Table 71) to non-consolidated securitisation special purpose entity (SSPE) via credit derivatives. In these transactions, the underlying assets are not sold into the relevant SSPE. Instead, the credit risk of the underlying assets is transferred to the SSPE synthetically via credit default swaps whereby the SSPEs act as sellers of credit protection and receive premiums paid by the Group in return. The SSPE 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 SSPE 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.

Traditional Securitisation

The Group entered into traditional securitisation transaction to diversify its sources of funding. The Group originated a revolving cashflow traditional trade finance securitisation transaction, which consolidated the SSPE (Prunelli Issuer S.a.r.l.) into the Group's financials as required under IFRS 10 as the Group was deemed to have control over the SSPE. Assets sold to the SSPE continue to remain on the Group's balance sheet as they did not satisfy derecognition criteria under the Group's accounting policy.

As of 31 December 2019, the outstanding securitised exposures were \$624 million (2018: \$942 million).

Governance of securitisation activities

Securitisation transactions proposed for funding and capital management must obtain support from the Group Operational Balance Sheet Committee (OBSC), which manages the capital requirements of the Group. For a securitisation transaction that will lead to reduction in regulatory capital, it must be submitted to UK PRA for review one-month post deal close.

Execution of each securitisation transaction must either be approved through a Product Programme (PPG) or an individual Transaction Programme Approval (TPA) where approvals across all functions involved in the transaction are obtained. 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

The Synthetic securitisation transactions originated by the Group in Table 71 meet the Significant risk transfer requirement ("SRT") under the CRR. Where securitisations do not achieve SRT (for instance when they are entered into for funding purpose), their associated exposures will be presented in other sections of the Pillar 3 report. Synthetic Securitisation transactions (Table 71) executed prior to 2019 are rated by an external credit assessment institution, namely Moody's. Transactions executed from 2019 are unrated as the bank utilised SEC-IRBA for risk capital calculation under CRR IV.

Accounting

Accounting assessment takes place at the time of transaction closing. The Group consolidate structured entities (including SSPE) when the substance of the relationship indicates control over the SSPE. The Group

controls an entity if it has all the three elements of control which are i) power over the entity; ii) the ability to use its power over the entity to affect the returns of the Group and iii) exposure to variable returns from its involvement with the entity. The consolidation treatment is initially assessed at inception and is reassessed if circumstances indicate that there are changes to one or more of the three elements of control.

A securitisation transaction is recognised as a sale or partial sale where derecognition is achieved. The difference between the carrying amount and the consideration received is recorded in the income statement. Securitisation transactions which do not achieve derecognition are treated as financing activity. In a synthetic securitisation transaction, the underlying assets are not sold into the securitisation special purpose entity (SSPE). Instead, the underlying assets' performance is transferred into the SSPE through a synthetic instrument such as a CDS, a credit-linked note or a financial guarantee. Synthetic securitisation are assessed using the same accounting approach summarised above, with the associated credit derivative accounted as a financial guarantee under IFRS 9. As of both 31 December 2019 and 31 December 2018, no securitised assets have been derecognised from the Group's balance sheet.

Financial assets awaiting for securitisation are valued using the Group's accounting policy for financial instrument. There are no assets classified as awaiting securitisation for both 31 December 2019 and 31 December 2018.

Any financial support or contractual arrangements provided to unconsolidated entities for securitised assets would be recognised as a liability on balance sheet if it met the relevant IFRS criteria. The Group has not provided support to any securitisation transactions beyond its contractual obligations.

The Group's approach to accounting for SSPEs can be found in the notes to the financial statements in the 2019 Annual Report and Accounts.

3.9 Securitisation continued

Table 71: Securitisation programmes (as originator)

2019								
	Underlying facilities hedged	Start date	Scheduled maturity	Maximum notional \$million	Retained exposures \$million	Outstanding exposures \$million	Capital requirement before securitisation \$million	Capital requirement after securitisation \$million
Sumeru III	Commercial Loan	Jun-18	Dec-21	2,989	2,704	2,877	181	33
Shangren IV	Trade Finance	Sep-18	Dec-20	3,997	3,677	3,762	170	34
Sealane IV	Trade Finance	Nov-18	May-22	3,498	3,201	3,309	158	32
Khartaphu	Commercial Loan	Dec-18	Jun-22	2,000	1,810	1,868	116	24
Gongga	Commercial Loan	Aug-19	Aug-24	2,000	1,810	1,824	110	28
Chakra III	Revolving Credit Facility	Jun-19	Jun-27	1,000	910	829	56	17
Chakra IV	Revolving Credit Facility	Nov-19	Nov-27	1,500	1,365	1,108	69	21
Total				16,984	15,477	15,577	860	189
2018								
	Underlying facilities hedged	Start date	Scheduled maturity	Maximum notional \$million	Retained exposures \$million	Outstanding exposures \$million	Capital requirement before securitisation \$million	Capital requirement after securitisation \$million
Start X	Commercial Loan	Sep-15	Mar-19	2,053	1,822	2,051	133	63
Baruntse	Commercial Loan	Nov-15	May-19	1,997	1,865	1,652	97	42
Sumeru III	Commercial Loan	Jun-18	Dec-21	3,000	2,715	2,897	192	48
Shangren IV	Trade Finance	Sep-18	Dec-20	4,000	3,680	3,591	220	54
Sealane IV	Trade Finance	Nov-18	May-22	3,500	3,203	3,168	188	50
Khartaphu	Commercial Loan	Dec-18	Jun-22	2,000	1,810	1,921	136	34
Total				16,550	15,095	15,280	966	291

Assets securitised by the Group's in its capacity as originator increased by \$0.5 billion to \$17 billion:

Traditional Securitisation:

- There was no traditional securitisation executed by the Group during the year.

Synthetic Securitisation:

- The Group synthetically securitised \$2.5 billion portfolio of revolving credit facilities exposures, referencing the EAD amount of the facilities.
- Two transactions (Start X and Baruntse), referencing \$4 billion matured in 2019 and was replaced by a new transaction, Gongga (\$2 billion).

The following tables show the distribution of the Group's securitisation exposures across risk-weights. The vast majority of the Group's exposure to securitisation programmes is to the lower risk weighted tranches.

The Rating Based Approach (under the previous securitisation regime) is used to calculate risk-weights for all the rated tranches of securitisation transactions that were executed prior to 1st January 2019. Transactions executed from 1st January 2019 uses the SEC-IRBA method to calculate risk-weights for all tranches as required under the new Securitisation Regulation (EU) No 2017/2401 (amendments to Capital Requirement Regulation or CRR).

As there is a '1-year grandfathering provision' in the new Securitisation Regulation (EU) No 2017/2401 (amendments to Capital Requirement Regulation or CRR) that is available to significant risk transfer transactions executed prior to the 1st January 2019 (go-live date), both Tables 72 and 73 are organised to reflect the Group securitisation exposures across risk-weights under both frameworks.

3.9 Securitisation continued

Table 72: Securitisation positions by risk-weight category under the previous securitisation framework

2019											
Credit Assessments Moody's	Risk weight %	Originated						ABS		Total	
		Senior		Non Senior		Non Granular Pools					
		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%	9,933	60	—	—	—	—	2,596	195	12,529	255
Aa	8% to 25%	—	—	600	8	—	—	114	10	714	18
A1	10% to 35%	—	—	393	6	—	—	24	2	417	8
A2	12% to 35%	—	—	—	—	—	—	195	24	195	24
A3	20% to 35%	—	—	270	8	—	—	—	—	270	8
Baa1	35% to 50%	—	—	150	6	—	—	—	—	150	6
Baa2	60% to 75%	—	—	—	—	—	—	8	5	8	5
Baa3	100%	—	—	—	—	—	—	—	—	—	—
Ba1	250%	—	—	—	—	—	—	193	483	193	483
Ba2	425%	—	—	—	—	—	—	4	18	4	18
Ba3	650%	—	—	—	—	—	—	—	—	—	—
Supervisory Formula		—	—	1,092	35	—	—	—	1	1,092	36
Deductions		—	—	47	—	—	—	—	—	47	—
Total¹		9,933	60	2,552	63	—	—	3,134	738	15,619	861
2018											
Credit Assessments Moody's	Risk weight %	Originated						ABS		Total	
		Senior		Non Senior		Non Granular Pools					
		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%	12,046	72	460	5	—	—	5,319	30	17,825	107
Aa	8% to 25%	—	—	600	8	—	—	907	6	1,507	14
A1	10% to 35%	—	—	1,053	16	—	—	26	—	1,079	16
A2	12% to 35%	—	—	—	—	—	—	186	2	186	2
A3	20% to 35%	—	—	380	11	—	—	13	—	393	11
Baa1	35% to 50%	—	—	384	16	—	—	—	—	384	16
Baa2	60% to 75%	—	—	—	—	—	—	113	5	113	5
Baa3	100%	—	—	55	5	—	—	842	67	897	72
Ba1	250%	—	—	—	—	—	—	32	6	32	6
Ba2	425%	—	—	—	—	—	—	—	—	—	—
Ba3	650%	—	—	—	—	—	—	22	12	22	12
Supervisory Formula		—	—	1,464	50	—	—	—	—	1,464	50
Deductions		—	—	109	—	—	—	1	1	110	1
Total¹		12,046	72	4,505	111	—	—	7,461	129	24,012	312

¹ See Table 20: Overview of RWA (OV1)

3.9 Securitisation continued

Table 73: Securitisation positions by risk weight category under new EU securitisation framework

		2019									
Hierarchy Approaches	Risk weight %	Senior		Originated Non Senior		Non Granular Pools		ABS		Total	
		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
SEC-IRBA	15% to 20%	4,075	51	–	–	–	–	–	–	4,075	51
SEC-IRBA	955% to 975%	–	–	135	15	–	–	–	–	135	15
SEC-IRBA	975% to 985%	–	–	190	–	–	–	–	–	190	–
SEC-IRBA	1065% to 1085%	–	–	90	–	–	–	–	–	90	–
Deductions	1250%	–	–	10	–	–	–	–	–	10	–
SEC-IRBA	15% to 20%	–	–	–	–	–	–	4,793	850	4,793	850
SEC-IRBA	>20% to <45%	–	–	–	–	–	–	283	85	283	85
SEC-IRBA	45% to <70%	–	–	–	–	–	–	–	–	–	–
SEC-IRBA	70% to <100%	–	–	–	–	–	–	62	53	62	53
SEC-IRBA	100% to <200%	–	–	–	–	–	–	16	24	16	24
SEC-IRBA	200% to <300%	–	–	–	–	–	–	1	2	1	2
SEC-IRBA	300% to <500%	–	–	–	–	–	–	7	22	7	22
SEC-IRBA	500% to <750%	–	–	–	–	–	–	–	–	–	–
SEC-IRBA	750% to <1250%	–	–	–	–	–	–	2	12	2	12
Deductions	1250%	–	–	–	–	–	–	8	94	8	94
Total¹		4,075	51	425	15	–	–	5,171	1,144	9,671	1,210

¹ Pertains to securitisation transactions executed from 2019 onwards under the new framework. These transactions are not included in Table 73 and formed part of the transactions listed in Table 72

4. Traded risk

Our approach to Traded risk can be found in the Enterprise Risk Management approach section in the 2019 Annual Report and Accounts on pages 215 to 216.

4.1 Market risk

Interest rate risk from non-trading book portfolios is transferred to local Treasury Markets desks under the supervision of local Asset and Liability Committees. Treasury Markets 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.

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
- Foreign exchange rate risk: arising from changes in exchange rates and implied volatilities on foreign exchange options
- Commodity risk: arising from changes in commodity prices and implied volatilities on commodity options; covering energy, precious metals, base metals and agriculture as well as commodity baskets
- Equity Risk: arising from changes in the prices of equities, equity indices, equity baskets and implied volatilities on related options

Trading book

The Trading book contains positions held with trading intent or hedges for such positions. The Traded Risk Framework sets out the Group's standard systematic approach to risk managing market risk. The Trading Book Policy Statement identifies the policies and procedures determining the positions included in the Trading book and their risk management and valuation. All trading book desks are subject to market risk limits. Traded Risk Management, 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, Commercial 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 2019 Annual Report and Accounts on page 216.

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. A more conservative multiplier is applied if statistical hypothesis testing shows that the square root of 10 multiplier is not sufficiently appropriate.	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 FX, bonds and simple cash flow products where the cash flows are discounted with a single benchmark yield curve adjusted by the Interest rate 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.

4.1 Market risk continued

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 (China) 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
Standard Chartered Bank AG	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'. At the end of 2019 the Group is in the 'yellow zone' with five backtesting exception in 2019. For details see the further Pillar 3 disclosure on regulatory backtesting below.

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 2019, 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 Traded Risk Stress Testing standard.

Market risk changes

The average level of total trading and non-trading VaR in 2019 was \$30.2 million, 47 per cent higher than in 2018 (\$20.6 million). The actual level of total trading and non-trading VaR in 2019 was \$34.4 million, 35 per cent higher than in 2018 (\$25.5 million). The increase in total average VaR was driven by the non-trading book, which has seen an increase in the bond inventory size in high-quality assets from Treasury Markets business.

For the trading book, the average level of VaR in 2019 was \$11 million, 12 per cent higher than in 2018 (\$9.8 million). Trading activities have remained relatively unchanged and client-driven.

4.1 Market risk continued

Table 74: Daily value at risk (VaR at 97.5%, one day)

	2019				2018			
	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	28.9	35.2	24.1	34.2	19.2	25.9	16.6	25.9
Foreign exchange risk	4.3	8.5	2.3	5.1	4.4	8.6	2.5	7.7
Commodity risk	1.3	2.2	0.8	1.4	1.3	2.1	0.8	1.2
Equity risk	3.5	4.6	2.5	2.5	4.8	6.8	2.6	2.7
Total⁴	30.2	37.1	24.1	34.4	20.6	26.1	16.4	25.5
Trading⁵								
Interest rate risk ³	8.0	11.8	6.3	7.0	8.0	11.7	6.0	7.9
Foreign exchange risk	4.3	8.5	2.3	5.1	4.4	8.6	2.5	7.7
Commodity risk	1.3	2.2	0.8	1.4	1.3	2.1	0.8	1.2
Equity risk	–	0.1	–	–	0.1	0.1	–	–
Total⁴	11.0	14.0	8.8	10.0	9.8	13.8	7.5	13.6
Non-trading								
Interest rate risk ³	26.2	33.3	21.2	33.3	16.8	20.7	14.1	20.7
Equity risk ⁶	3.5	4.6	2.5	2.5	4.7	6.8	2.6	2.7
Total⁴	26.7	33.4	20.6	32.0	17.2	21.3	15.3	21.3

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 accounted as fair value through profit or loss ('FVPL') or as fair value through other comprehensive income ('FVOCI')

4 The total VaR shown in the tables 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 (CRD/IV/CRR) Part 3 Title I Chapter 3 which restricts the positions permitted in the trading book

6 Non-trading equity risk VaR includes only listed equities

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

Table 75: Daily value at risk (VaR at 97.5%, one day) by products

	2019				2018			
	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	30.2	37.1	24.1	34.4	20.6	26.1	16.4	25.5
Trading⁴								
Rates	5.4	7.6	4.0	5.1	5.0	7.1	3.8	5.8
Global Foreign Exchange	4.3	8.5	2.3	5.1	4.4	8.6	2.5	7.7
Credit Trading & Capital Markets	4.2	7.9	1.9	4.6	3.8	6.1	1.8	2.9
Commodities	1.3	2.2	0.8	1.4	1.3	2.1	0.8	1.2
Equities	–	0.1	–	–	0.1	0.1	–	–
XVA	4.0	6.8	1.8	2.8	3.1	4.1	2.3	3.5
Total³	11.0	14.0	8.8	10.0	9.8	13.8	7.5	13.6
Non-trading								
Treasury Markets	26.2	33.3	21.2	33.3	16.8	20.7	14.1	20.7
Listed private equity	3.5	4.6	2.5	2.5	4.7	6.8	2.6	2.7
Total³	26.7	33.4	20.6	32.0	17.2	21.3	15.3	21.3

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 tables 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 (CRD/IV/CRR) Part 3 Title I Chapter 3 which restricts the positions permitted in the trading book

4.1 Market risk continued

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 76: Market risk regulatory capital requirements

	2019		2018	
	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	8,751	700	6,432	515
Equity	9	1	3	–
Options	17	1	16	1
Commodity ²	20	2	129	10
Foreign exchange ²	645	52	667	53
Internal Models Approach ³	11,364	909	11,862	949
Total	20,806	1,664	19,109	1,528

1 Securitisation positions contributed \$27.5 million to the interest rate position risk requirement (PRR) and \$344 million to interest rate RWA as at 31 December 2019 (securitised positions contributed \$15.3million to the interest rate PRR and \$192 million to interest rate RWA as at 31 December 2018)

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 77: Market risk under standardised approach (MR1)

	2019		2018	
	Risk Weighted Assets \$million	Regulatory capital requirement \$million	Risk Weighted Assets \$million	Regulatory capital requirement \$million
Outright products				
1 Interest rate risk	8,751	700	6,432	515
2 Equity risk	9	1	3	–
3 Foreign exchange risk	645	52	667	53
4 Commodity risk	20	2	129	10
Options	17	1	16	1
5 Simplified approach	–	–	–	–
6 Delta-plus method	3	–	3	–
7 Scenario approach	14	1	13	1
8 Securitisation (specific risk) ¹	344	28	192	15
9 Total	9,442	755	7,247	579

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

4.1 Market risk continued

Internal Models Approach

The table below shows the average, high and low VaR and Stressed VaR for the period January 2019 to December 2019 and the actual position on 31 December 2019. The results reflect only the Group portfolio covered by the IMA and are calculated at a 99 per cent confidence level.

Table 78: IMA values for trading portfolios (MR3)

	2019 \$million	2018 \$million
VaR (10 day 99%)		
1 Maximum value ¹	91	48
2 Average value	38	32
3 Minimum value ¹	25	21
4 Period end ²	38	36
Stressed VaR (10 day 99%)		
5 Maximum value ¹	231	260
6 Average value	146	153
7 Minimum value ¹	96	100
8 Period end ²	159	136
Incremental Risk Charge (99.99%)		
9 Maximum value ¹	–	–
10 Average value	–	–
11 Minimum value ¹	–	–
12 Period end ²	–	–
Comprehensive Risk capital charge (99.9%)		
13 Maximum value ¹	–	–
14 Average value	–	–
15 Minimum value ¹	–	–
16 Period end ²	–	–

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

	2019		2018	
	Risk Weighted Assets \$million	Regulatory capital requirement \$million	Risk Weighted Assets \$million	Regulatory capital requirement \$million
1 VaR (higher of values a and b)	1,786	143	1,413	113
(a) Previous day's VaR	561	45	600	48
(b) Average of the daily VaR	1,786	143	1,413	113
2 SVaR (higher of values a and b)	6,226	498	7,250	580
(a) Latest SVaR	2,320	186	2,113	169
(b) Average of the SVaR	6,226	498	7,250	580
5 Other¹	3,352	268	3,196	256
6 Total²	11,364	909	11,862	949

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 2019 Annual Reports and Accounts on page 192

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

4.1 Market risk continued

Backtesting

In 2019, there were five regulatory backtesting negative exceptions at Group level (in 2018, there were two regulatory backtesting negative exceptions at Group level). Group exceptions occurred on:

- 1 April: when markets rallied following the release of strong Chinese manufacturing data.
- 30 May: driven by a reduction in US Dollar yields and implied volatility which reversed an increase of the previous day.
- 10 June: when US Treasury yields rallied following reports that proposed tariffs on goods from Mexico to the USA would not be implemented.

→ 8 August: Stronger than expected Chinese renminbi fixing eased concerns over US-China trade tensions and new Chinese economic data signalled some recovery for China's export-heavy economy. US Dollar and US Treasury yields rose.

→ 19 August: US and Mexico reached agreement on illegal migration. President Trump announced suspension of proposed tariffs on Mexican goods. US Dollar yields rose.

In total there have been five Group exceptions in the previous 250 business days which is within the 'amber 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 80: 2019 Backtesting chart for Internal Model Approach regulatory trading book at Group level with hypothetical profit and loss (P&L) versus VaR (99 per cent, one day) (MR4)

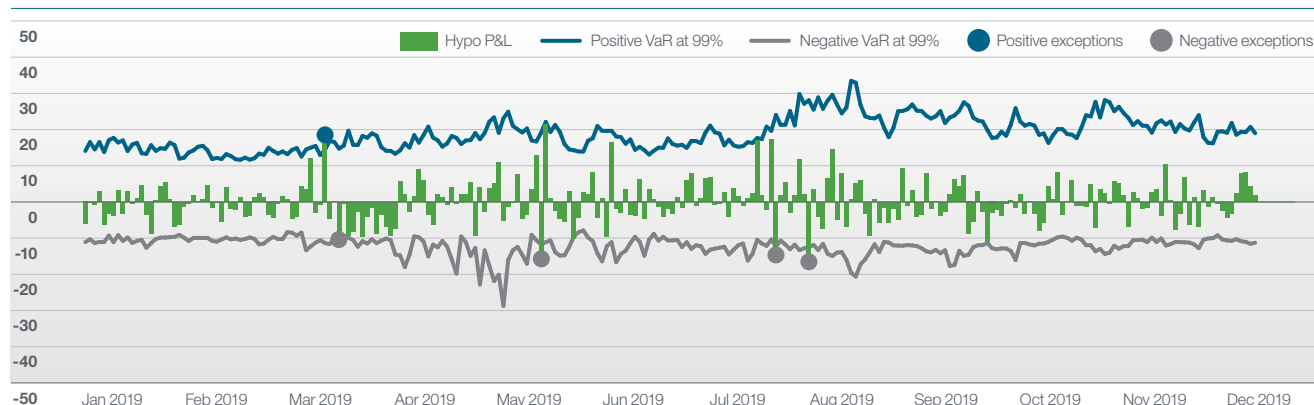
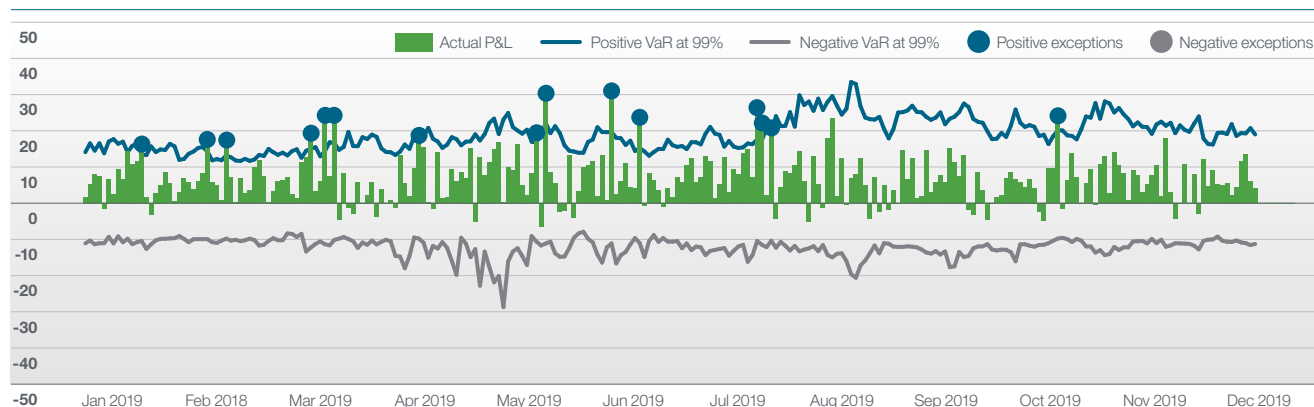


Table 81: 2019 Backtesting chart for Internal Model Approach regulatory trading book at Group level with actual profit and loss (P&L) versus VaR (99 per cent, one day) (MR4)



4.2 Counterparty credit risk

Counterparty credit risk (CCR) is the risk that a counterparty in a 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 when hedging with external counterparties is required.

CCR is managed within the overall credit risk appetite for corporate and financial institutions. CCR limits are set for individual counterparties, including central clearing counterparties, and for specific portfolios. Individual limits are calibrated to the credit grade and business model of the counterparties, and are set on Potential Future Exposure (PFE). Portfolio limits are set to contain concentration risk across multiple dimensions, and are set on PFE or other equivalent measures.

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. In line with the International Accounting Standard (IAS) 32 principles, the Group's balance sheet will present assets and liabilities on a net basis provided there is a legally enforceable right to set off assets and liabilities, 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. Wrong-way risk mostly arises from FX transactions and financing transactions. 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 country, tenor, collateral type and counterparty.

Stress testing

Stress testing is an integral part of CCR management, complementing PFE or other portfolio limits. Single and multi-factor scenarios are regularly applied to the CCR portfolio to identify and quantify exposures that could become a concern for the Group. The stressed exposures are monitored monthly at regional and global counterparty credit risk exposure forums. The relevance and severity of the stress scenarios are periodically reviewed with cross functional stakeholders.

Exposure value calculation

Exposure calculation used for risk management is based on PFE. The PFE is mostly calculated from simulation models, and from PFE add-ons for the non-simulated products.

Derivatives exposures are calculated using the Mark-to-Market Method. Individual transactions are measured using the sum of current replacement cost and potential future credit exposure, and the benefit of master netting agreements is applied using the Net-Gross Ratio. This approach is used for all derivative products not covered by our Internal Models Method (IMM) permission. Under the IMM approach, EAD is calculated by multiplying the effective expected positive exposure by a factor stipulated by the regulator called alpha. The Group has been granted permission by the regulator to use the IMM approach for "vanilla" Interest Rate and Foreign Exchange over the counter derivatives. The alpha value set to 1.6. The IMM model is subject to model validation including regular model performance monitoring.

Exposure for repurchase transactions and securities lending or borrowing transactions is calculated using the Financial Collateral Comprehensive Method. Supervisory volatility adjustments are applied to both collateral and exposure legs and the benefit of master netting agreements is taken into consideration.

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. The Group seeks to negotiate Credit Support Annexes (CSA) with counterparties when 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 \$180 million (2018: \$331 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 from counterparty credit risk capital standpoint.

Credit valuation adjustments

CVA measures potential MTM loss associated with the deterioration in the creditworthiness of the counterparty. The group applies standardised approach to calculate CVA capital charge on over-the-counter derivative contracts. Details on CVA are provided in note 13 of the 2019 Annual Report and Accounts on page 296.

Table 82 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 83 specifies the methods used by the Group to calculate counterparty credit risk regulatory requirements, followed by Table 84 which demonstrates the risk-weighted exposure amounts to central counterparties by derivative types.

Table 85 indicates the notional amounts of credit derivative transactions segregated between protection bought and sold within each product type.

Table 86 describes the exposure value subject to credit valuation adjustment charge and related RWA.

4.2 Counterparty credit risk continued

Table 82: Impact of netting and collateral held on exposure values (CCR5-A)

		2019				
		EAD before netting benefit \$million	Netting benefits \$million	Netted current credit exposure \$million	Collateral held \$million	Net credit exposure \$million
1	Derivative contracts	78,182	(45,301)	32,881	(1,100)	31,781
2	Repo style transactions	139,202	–	139,202	(128,857)	10,345
4	Total	217,384	(45,301)	172,083	(129,957)	42,126
		2018				
		EAD before netting benefit \$million	Netting benefits \$million	Netted current credit exposure \$million	Collateral held \$million	Net credit exposure \$million
1	Derivative contracts	85,974	(41,936)	44,038	(8,683)	35,355
2	Repo style transactions	134,083	–	134,083	(124,454)	9,629
4	Total	220,057	(41,936)	178,121	(133,137)	44,984

Table 83: Analysis of CCR exposures by approach (CCR1)

		2019						
		Notional \$million	Replacement cost/current market value \$million	Potential future exposure \$million	EEPE \$million	Multiplier \$million	EAD post CRM \$million	RWA \$million
1	Mark to market		12,196	22,672			5,676	3,000
2	Original exposure	N/A					N/A	N/A
3	Standardised approach				N/A	N/A	N/A	N/A
4	IMM (for derivatives and SFTs)				12,249	1.6	19,599	7,960
5	Of which securities financing transactions				N/A	N/A	N/A	N/A
6	Of which derivatives and long settlement transactions				12,249	1.6	19,599	7,960
8	Financial collateral simple method (for SFTs)						N/A	N/A
9	Financial collateral comprehensive method (for SFTs)						107,973	2,002
10	VaR for SFTs						N/A	N/A
11	Total							12,961

		2018						
		Notional \$million	Replacement cost/current market value \$million	Potential future exposure \$million	EEPE \$million	Multiplier \$million	EAD post CRM ¹ \$million	RWA \$million
1	Mark to market		12,323	21,714			35,121	10,399
2	Original exposure	N/A					N/A	N/A
3	Standardised approach				N/A	N/A	N/A	N/A
4	IMM (for derivatives and SFTs)				N/A	N/A	N/A	N/A
5	Of which securities financing transactions				N/A	N/A	N/A	N/A
6	Of which derivatives and long settlement transactions				N/A	N/A	N/A	N/A
8	Financial collateral simple method (for SFTs)						N/A	N/A
9	Financial collateral comprehensive method (for SFTs)						96,564	1,257
10	VaR for SFTs						N/A	N/A
11	Total							11,656

1 EAD post CRM has been represented for 2018 to exclude IRB CRM

4.2 Counterparty credit risk continued

Table 84: Exposures to central counterparties (CCPs) (CCR8)

	2019		2018	
	EAD post CRM \$million	RWA \$million	EAD post CRM \$million	RWA \$million
Exposures to QCCPs				
Trade exposure	7,889	163	8,189	167
Of which OTC derivatives	5,010	106	5,419	111
Of which exchange-traded derivatives	2,074	41	2,042	41
Of which SFTs	805	16	728	15
Collateral posted	1,810	46	1,060	21
Prefunded default fund contributions	332	167	244	59
Total	10,031	376	9,493	247

Table 85: Credit derivatives exposures (CCR6)

	2019			2018		
	Bought \$million	Sold \$million	Total \$million	Bought \$million	Sold \$million	Total \$million
Notionals						
Credit default swaps	42,728	34,897	77,625	20,944	14,333	35,277
Total return swaps	1,523	664	2,187	4,065	–	4,065
Credit options	–	–	–	–	–	–
Other Credit derivatives	1,160	–	1,160	2	–	2
Total notionals	45,411	35,561	80,972	25,010	14,333	39,343
Fair values						
Positive fair value (asset)	415	817	1,232	81	171	252
Negative fair value (liability)	2,389	522	2,911	235	45	281

Table 86: Credit valuation adjustment (CVA) capital charge (CCR2)

	2019		2018	
	Exposure Value \$million	RWA \$million	Exposure Value \$million	RWA \$million
1 Total portfolios subject to the Advanced Method	–	–	–	–
2 (i) VaR component (including the 3x multiplier)	–	–	–	–
3 (ii) Stressed VaR component (including the 3x multiplier)	–	–	–	–
4 All portfolios subject to the Standardised Method	15,619	2,113	17,245	1,116
5 Total subject to the CVA capital charge	15,619	2,113	17,245	1,116

Table 87 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.

4.2 Counterparty credit risk continued

Table 87: Standardised approach – CCR exposures by regulatory portfolio and risk (CCR3)

		2019													
		Risk Weight													Of which
		0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	Others	Total	unrated
Standardised Exposure Class															
1	Central governments or central banks	196	–	–	–	–	–	2	–	–	–	–	–	197	
4	Multilateral development banks	985	–	–	–	–	–	–	–	–	–	–	–	985	–
6	Institutions	–	7,858	–	–	5	–	9	–	–	–	–	–	7,872	–
7	Corporates	–	–	–	–	773	–	3	–	–	268	–	–	1,045	339
8	Retail	–	–	–	–	–	–	–	–	1	–	–	–	1	1
10a	Secured on real estate property	–	–	–	–	–	2	–	–	–	1	–	–	3	1
10b	Exposures in default	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10c	Items belonging to regulatory high risk categories	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10d	Other items	–	–	–	–	–	–	–	–	–	28	–	–	28	28
11	Total Standardised	1,181	7,858	–	–	779	2	13	–	1	298	–	–	10,131	370
		2018													
		Risk Weight													Of which
		0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	Others	Total	unrated
Standardised Exposure Class															
1	Central governments or central banks	497	–	–	–	–	–	5	–	–	–	–	–	502	–
4	Multilateral development banks	1,373	–	–	–	–	–	–	–	–	–	–	–	1,373	–
6	Institutions	–	8,176	–	–	1	–	9	–	–	–	–	–	8,186	–
7	Corporates	–	–	–	–	555	–	6	–	–	215	–	–	776	250
8	Retail	–	–	–	–	–	–	–	–	1	–	–	–	1	1
10a	Secured on real estate property	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10b	Exposures in default	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10c	Items belonging to regulatory high risk categories	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10d	Other items	–	–	–	–	–	–	–	–	–	32	–	–	32	32
11	Total Standardised	1,870	8,176	–	–	556	–	20	–	1	247	–	–	10,870	283

→ Multilateral development banks exposures decreased by \$0.4 billion mainly due to a reduction in derivatives, primarily across ASEAN & South Asia.

4.2 Counterparty credit risk continued

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 grade which relate to the PD ranges presented.

- Central government and central bank exposures decreased by \$3.4 billion due to an increase in repo activity
- Institutions exposures reduced by \$10.7 billion and RWA by \$0.8 billion mainly due to a decrease in derivative exposures
- Corporates exposures increased by \$16.2 billion and RWA by \$1.7 billion driven by an increase in SFTs

Table 88: IRB – CCR exposures by exposure class

	2019						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ years	RWA \$million	RWA density ¹ %
IRB exposure class							
Central governments or central banks	15,023	0.17	120	10	0.22	831	6
Institutions	34,733	0.13	1,373	13	0.55	2,874	8
Corporates	81,252	0.24	12,035	13	0.44	8,803	11
Of which specialised lending	1,365	1.64	488	37	2.65	787	58
Of which SME	218	0.46	303	66	2.04	150	69
Total IRB	131,008	0.20	13,528	13	0.44	12,508	10
2018							
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ years	RWA \$million	RWA density ¹ %
IRB exposure class							
Central governments or central banks	18,437	0.06	123	11	0.27	525	3
Institutions	45,476	0.14	1,398	16	0.73	3,664	8
Corporates	65,090	0.21	11,741	13	0.43	7,101	11
Of which specialised lending	1,577	2.06	483	30	1.78	650	41
Of which SME	256	0.55	467	66	2.21	177	69
Total IRB	129,004	0.16	13,262	14	0.51	11,290	9

1 Weighted averages are based on EAD

2 Number of obligors is based on number of counterparties

4.2 Counterparty credit risk continued

Table 89: IRB – CCR exposures by PD scale for central governments or central banks (CCR4)

PD range %	2019						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ years	RWA \$million	RWA density ¹ %
0.00 to < 0.15	13,585	0.04	60	7	0.21	180	1
0.15 to < 0.25	521	0.22	6	45	0.15	132	25
0.25 to < 0.50	76	0.39	8	45	0.20	29	39
0.50 to < 0.75	–	–	2	–	–	–	–
0.75 to < 2.50	820	2.26	26	42	0.41	459	56
2.50 to < 10.00	21	3.51	11	45	3.75	29	142
10.00 to < 100.00	–	13.77	7	45	5.00	–	255
100.00 (default)	–	–	–	–	–	–	–
Total	15,023	0.17	120	10	0.22	831	6

PD range %	2018						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ years	RWA \$million	RWA density ¹ %
0.00 to < 0.15	17,904	0.04	64	10	0.25	227	1
0.15 to < 0.25	301	0.22	6	45	0.05	73	24
0.25 to < 0.50	7	0.51	7	46	1.00	4	57
0.50 to < 0.75	–	–	–	–	–	–	–
0.75 to < 2.50	216	1.67	32	46	1.69	211	98
2.50 to < 10.00	9	3.51	11	38	1.00	9	104
10.00 to < 100.00	–	13.77	3	63	1.90	1	309
100.00 (default)	–	–	–	–	–	–	–
Total	18,437	0.06	123	11	0.27	525	3

¹ Weighted averages are based on EAD

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

4.2 Counterparty credit risk continued

Table 90: IRB – CCR exposures by PD scale for institutions (CCR4)

PD range %	2019						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ years	RWA \$million	RWA density ¹ %
0.00 to < 0.15	29,503	0.05	676	14	0.55	1,681	6
0.15 to < 0.25	2,502	0.22	109	10	0.59	267	11
0.25 to < 0.50	1,271	0.46	169	12	0.42	232	18
0.50 to < 0.75	142	0.67	45	15	0.67	40	28
0.75 to < 2.50	1,311	1.27	326	17	0.76	647	49
2.50 to < 10.00	5	7.19	32	43	1.40	8	161
10.00 to < 100.00	–	13.77	16	45	1.00	–	237
100.00 (default)	–	–	–	–	–	–	–
Total	34,733	0.13	1,373	13	0.55	2,874	8

PD range %	2018						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ years	RWA \$million	RWA density ¹ %
0.00 to < 0.15	37,827	0.05	683	17	0.70	2,356	6
0.15 to < 0.25	3,963	0.22	110	9	0.55	359	9
0.25 to < 0.50	1,881	0.45	169	15	0.38	397	21
0.50 to < 0.75	418	0.67	53	7	0.44	54	13
0.75 to < 2.50	1,360	1.74	352	13	2.66	458	34
2.50 to < 10.00	15	3.57	21	9	0.08	4	27
10.00 to < 100.00	12	13.77	10	63	1.02	36	294
100.00 (default)	–	–	–	–	–	–	–
Total	45,476	0.14	1,398	16	0.73	3,664	8

1 Weighted averages are based on EAD

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

4.2 Counterparty credit risk continued

Table 91: IRB – CCR exposures by PD scale for corporates (CCR4)

PD range %	2019						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ years	RWA \$million	RWA density ¹ %
0.00 to < 0.15	57,627	0.05	4,583	10	0.32	2,569	4
0.15 to < 0.25	3,490	0.22	1,634	36	1.52	1,271	36
0.25 to < 0.50	13,213	0.44	2,069	12	0.52	2,031	15
0.50 to < 0.75	2,253	0.67	662	19	0.75	628	28
0.75 to < 2.50	4,386	1.09	1,978	21	0.60	1,806	41
2.50 to < 10.00	129	4.83	495	45	1.79	196	153
10.00 to < 100.00	88	26.81	293	56	1.78	239	271
100.00 (default)	2	100.00	261	63	2.41	12	482
Total	81,189	0.24	11,975	13	0.44	8,752	11

PD range %	2018						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ years	RWA \$million	RWA density ¹ %
0.00 to < 0.15	54,119	0.06	4,282	10	0.31	2,230	4
0.15 to < 0.25	2,951	0.22	1,648	33	1.17	964	33
0.25 to < 0.50	4,822	0.45	1,953	20	0.71	1,354	28
0.50 to < 0.75	819	0.67	736	40	1.20	500	61
0.75 to < 2.50	2,138	1.26	1,871	35	1.17	1,514	71
2.50 to < 10.00	114	4.59	577	62	2.01	239	209
10.00 to < 100.00	107	34.69	350	50	1.73	287	268
100.00 (default)	3	100.00	290	62	1.64	–	5
Total	65,074	0.21	11,707	13	0.43	7,088	11

¹ Weighted averages are based on EAD

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

4.2 Counterparty credit risk continued

Table 92: IRB – CCR exposures by PD scale for corporates – specialised lending (CCR4)

PD range %	2019						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ years	RWA \$million	RWA density ¹ %
0.00 to < 0.15	199	0.12	48	30	2.90	45	22
0.15 to < 0.25	272	0.22	37	35	3.33	102	38
0.25 to < 0.50	430	0.48	102	41	2.24	235	55
0.50 to < 0.75	78	0.67	44	50	1.67	59	76
0.75 to < 2.50	288	1.69	139	39	2.78	252	88
2.50 to < 10.00	15	5.67	24	28	3.77	14	92
10.00 to < 100.00	20	62.02	10	31	2.08	29	140
100.00 (default)	–	100.00	24	36	1.00	–	8
Total	1,302	1.68	428	38	2.67	736	57

PD range %	2018						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ years	RWA \$million	RWA density ¹ %
0.00 to < 0.15	272	0.10	51	26	3.81	58	21
0.15 to < 0.25	728	0.22	36	22	0.48	103	14
0.25 to < 0.50	155	0.44	87	42	2.91	94	61
0.50 to < 0.75	152	0.67	58	45	1.98	106	69
0.75 to < 2.50	207	1.40	146	42	2.36	177	85
2.50 to < 10.00	14	4.57	36	45	2.81	21	149
10.00 to < 100.00	31	80.51	13	35	3.25	78	249
100.00 (default)	–	100.00	22	37	1.49	–	–
Total	1,561	2.08	449	30	1.77	637	41

1 Weighted averages are based on EAD

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

4.2 Counterparty credit risk continued

Table 93: IRB – CCR exposures by PD scale for corporates – SME (CCR4)

PD range %	2019						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ years	RWA \$million	RWA density ¹ %
0.00 to < 0.15	–	0.09	2	67	1.00	–	17
0.15 to < 0.25	194	0.22	51	64	2.03	102	53
0.25 to < 0.50	1	0.41	34	63	1.14	1	50
0.50 to < 0.75	1	0.67	13	69	2.05	–	97
0.75 to < 2.50	19	2.01	99	86	2.30	42	219
2.50 to < 10.00	3	4.90	47	60	1.69	5	152
10.00 to < 100.00	–	16.54	12	77	1.00	–	319
100.00 (default)	–	100.00	45	70	1.00	–	343
Total	218	0.46	303	66	2.04	150	69

PD range %	2018						
	EAD post CRM and post CCF \$million	Average PD ¹ %	Number of obligors ²	Average LGD ¹ %	Average maturity ¹ years	RWA \$million	RWA density ¹ %
0.00 to < 0.15	191	0.13	13	64	2.13	75	39
0.15 to < 0.25	2	0.22	77	58	2.18	1	48
0.25 to < 0.50	10	0.50	66	59	1.45	7	66
0.50 to < 0.75	–	0.70	20	62	1.40	–	85
0.75 to < 2.50	53	1.94	163	73	2.69	93	176
2.50 to < 10.00	1	4.12	57	65	1.00	1	163
10.00 to < 100.00	–	33.72	14	27	1.45	–	156
100.00 (default)	–	100.00	57	70	1.00	–	567
Total	256	0.55	467	66	2.21	177	69

1 Weighted averages are based on EAD

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

5. Interest rate risk in the banking book

Overview

The Group defines Interest Rate Risk in the Banking Book ('IRRBB') as the potential for loss of future 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 Capital and Liquidity Risk Type Framework, as a risk sub-type of Capital and Liquidity Risk.

The Board delegates the management of IRRBB 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 IRRBB as per the risk type framework.

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

Measurement of IRRBB

The Group uses two key metric types for measuring IRRBB: Net Interest Income ('NII') Sensitivity, an income measure which quantifies the potential change in projected net interest income over a one-year horizon from defined movements in interest rates; and Economic Value ('EV') Sensitivity, a value measure which estimates the potential change in the present value of the Group's Banking Book assets and liabilities from defined movements in interest rates. EV measures include PV01, which measures the

economic value sensitivity that would result from a 1 basis point instantaneous upward parallel shift in interest rates. The two types of measure differ in their coverage of the drivers of interest rate risk and the time horizon for these to materialise, but used together they can provide a complementary and rounded view of the Group's risk profile. Both NII and EV Sensitivities are monitored monthly against defined Risk Appetite limits, which are set at the Group level and, where appropriate, at a country level in compliance with local regulatory requirements. PV01 is controlled and monitored daily at country and currency level.

Methodology

NII and EV Sensitivities are calculated under various interest rate scenarios, including parallel and non-parallel shifts and a range of internally designed scenarios that assess vulnerabilities in the Group's business model and key behavioural assumptions under interest rate shocks and stresses. Risk Appetite limits are monitored with respect to specific interest rate scenarios designed to reflect severe but plausible changes in global interest rates.

IRRBB 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.

Management of IRRBB

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 Traded Risk Management (TRM) function.

Table 94 below reflects Treasury Markets interest rate risk profile (at year end). The table shows that net PV01 increased year on year, especially in US Dollar and Hong Kong Dollar, as Treasury Markets managed exposures against a falling rate environment.

More details on NII sensitivity can be found in the 2019 Annual Reports and Accounts on page 204.

Table 94: Treasury Markets PV01 by currency

By currency	2019 Actual ¹ \$million	2018 Actual ¹ \$million
USD	(2.7)	0.6
EUR	(0.3)	0.1
GBP	(0.2)	(0.1)
CNY	(0.9)	(0.3)
KRW	(0.6)	(0.3)
INR	(0.4)	(0.1)
HKD	(0.4)	0.6
SGD	(0.2)	0.2
Other	(1.3)	0.1
Total Treasury Markets	(7.0)	0.8

1 Actual PV01 at period end date

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 2019 Annual Report and Accounts on pages 195 and 203 respectively.

Liquidity Coverage Ratio (LCR) 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, except for 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 of on-balance sheet items (e.g. 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 196 of the 2019 Annual Report and Accounts.

Table 95: Liquidity Coverage Ratio (LCR) (LIQ1)

		2019							
		Total unweighted value (average)				Total weighted value (average)			
		31.03.19 \$million	30.06.19 \$million	30.09.19 \$million	31.12.19 \$million	31.03.19 \$million	30.06.19 \$million	30.09.19 \$million	31.12.19 \$million
	Number of data points used in the calculation of averages	12	12	12	12	12	12	12	12
	High-Quality Liquid Assets								
1	Total High-Quality Liquid Assets (HQLA)					149,411	149,915	150,927	151,901
	Cash outflows								
2	Retail deposits and deposits from small business customers, of which:	131,637	132,035	132,208	132,831	12,882	12,852	12,810	12,938
3	Stable deposits	31,800	32,433	33,118	33,106	1,590	1,622	1,656	1,655
4	Less stable deposits	99,837	99,602	99,090	99,725	11,292	11,231	11,154	11,283
5	Unsecured wholesale funding, of which:	217,142	217,632	220,955	223,644	110,609	109,935	110,449	109,947
6	Operational deposits (all counterparties) and deposits in networks of cooperative banks	66,035	68,852	74,119	81,428	16,357	17,070	18,394	20,205
7	Non-operational deposits (all counterparties)	145,147	142,941	140,752	136,798	88,291	87,026	85,971	84,324
8	Unsecured debt	5,961	5,839	6,084	5,417	5,961	5,839	6,084	5,417
9	Secured wholesale funding					3,007	3,721	4,465	6,463
10	Additional requirements	87,776	88,512	89,048	88,017	27,295	27,075	26,606	26,780
11	Outflows related to derivative exposures and other collateral requirements	14,652	14,034	13,068	12,718	14,646	14,031	13,068	12,718
12	Outflows related to loss of funding on debt products	22	21	6	10	22	21	6	10
13	Credit and liquidity facilities	73,102	74,456	75,974	75,289	12,627	13,022	13,532	14,051
14	Other contractual funding obligations	8,550	8,899	9,497	10,295	8,550	8,899	9,497	10,246
15	Other contingent funding obligations	191,198	189,385	191,534	197,403	2,111	2,284	2,600	3,100
16	Total cash outflows					164,453	164,766	166,426	169,473
	Cash inflows								
17	Secured lending (e.g. reverse repos)	37,063	39,913	42,623	41,644	8,672	8,842	8,810	8,358
18	Inflows from fully performing exposures	54,976	53,174	51,632	50,777	42,326	40,313	38,294	36,571
19	Other cash inflows	27,642	27,202	26,968	27,281	17,708	17,296	16,803	16,906
EU-19a	(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)					–	–	–	–
EU-19b	(Excess inflows from a related specialised credit institutions)					–	–	–	–
20	Total cash inflows	119,681	120,289	121,223	118,907	68,706	66,450	63,908	61,842
EU-20a	Fully exempt inflows	–	–	–	–	–	–	–	–
EU-20b	Inflows subject to 90% cap	–	–	–	–	–	–	–	–
EU-20c	Inflows subject to 75% cap	119,681	120,289	121,223	118,907	68,706	66,450	63,908	61,842
	Total adjusted value								
21	Liquidity buffer					149,411	149,915	150,927	151,901
22	Total net cash outflows					95,748	98,316	102,518	107,632
23	Liquidity coverage ratio (%)					156%	153%	148%	141%

Table 95: Liquidity Coverage Ratio (LCR) (LIQ1) continued

		2018							
		Total unweighted value (average)				Total weighted value (average)			
		31.03.18 \$million	30.06.18 \$million	30.09.18 \$million	31.12.18 \$million	31.03.18 \$million	30.06.18 \$million	30.09.18 \$million	31.12.18 \$million
	Number of data points used in the calculation of averages	12	12	12	12	12	12	12	12
High-Quality Liquid Assets									
1	Total High-Quality Liquid Assets (HQLA)					143,252	142,423	142,382	146,470
Cash outflows									
2	Retail deposits and deposits from small business customers, of which:	125,787	127,736	129,409	131,200	12,425	12,611	12,784	12,920
3	Stable deposits	28,814	29,437	29,991	31,045	1,441	1,472	1,500	1,552
4	Less stable deposits	96,973	98,300	99,418	100,156	10,984	11,139	11,284	11,368
5	Unsecured wholesale funding, of which:	210,955	213,977	215,133	217,251	111,305	111,585	110,946	111,379
6	Operational deposits (all counterparties) and deposits in networks of cooperative banks	60,734	62,671	64,310	64,959	15,042	15,519	15,924	16,086
7	Non-operational deposits (all counterparties)	144,309	145,354	145,256	146,496	90,351	90,114	89,455	89,497
8	Unsecured debt	5,912	5,952	5,567	5,796	5,912	5,952	5,567	5,796
9	Secured wholesale funding					2,091	1,992	1,938	2,363
10	Additional requirements	82,829	85,517	86,432	86,839	22,946	24,628	25,744	26,981
11	Outflows related to derivative exposures and other collateral requirements	10,613	12,197	13,405	14,643	10,518	12,182	13,391	14,632
12	Outflows related to loss of funding on debt products	41	40	48	39	41	40	48	39
13	Credit and liquidity facilities	72,174	73,280	72,978	72,157	12,386	12,406	12,305	12,310
14	Other contractual funding obligations	11,455	10,822	9,976	8,882	11,455	10,822	9,976	8,882
15	Other contingent funding obligations	209,253	198,363	192,745	192,927	2,172	2,144	2,127	2,111
16	Total cash outflows					162,394	163,782	163,514	164,637
Cash inflows									
17	Secured lending (e.g. reverse repos)	31,656	33,313	33,731	35,204	9,514	9,610	9,095	8,526
18	Inflows from fully performing exposures	56,699	57,605	58,118	57,175	42,552	43,489	44,822	44,439
19	Other cash inflows	22,786	25,316	26,578	27,415	13,756	15,667	16,711	17,661
EU-19a	(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)					–	–	–	–
EU-19b	(Excess inflows from a related specialised credit institutions)					–	–	–	–
20	Total cash inflows	111,140	116,234	118,428	119,794	65,822	68,766	70,628	70,626
EU-20a	Fully exempt inflows	–	–	–	–	–	–	–	–
EU-20b	Inflows subject to 90% cap	–	–	–	–	–	–	–	–
EU-20c	Inflows subject to 75% cap	111,140	116,234	118,428	119,794	65,822	68,766	70,628	70,626
Total adjusted value									
21	Liquidity buffer					143,252	142,423	142,382	146,470
22	Total net cash outflows					96,571	95,016	92,887	94,011
23	Liquidity coverage ratio (%)					148%	150%	153%	156%

The ratios reported in the above table are simple averages of month-end Group LCR ratios over the twelve 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 was 144 per cent in the fourth quarter (first quarter: 156 per cent) with higher average HQLA holdings and higher cash outflows, reflecting the overall growth in the Group's balance sheet. The increase in net outflows, mainly due to reduced inflows, exceeded the growth in HQLA resulting in an overall decrease in the ratio as we looked to optimise our liquidity position.

HQLA composition

Figures reported in this section are simple averages of the 21 data points over the reporting period April 2018 to Dec 2019.

Our average weighted HQLA over the reporting period was approximately \$150 billion. Of this amount, 90 per cent consisted of Level 1 assets in the form of unencumbered central bank reserves (average 32 per cent) and high quality level 1 securities 58 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, 8 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 (10 per cent) were well below the 40 per cent composition cap for such assets as required under LCR Delegated Act rules with Level 2B securities (2 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 198 of the 2019 Annual Report and Accounts.

Table 96: Total eligible high-quality liquid assets (HQLA)

	Average unweighted	Average weighted
Level 1 reserves	32%	32%
Level 1 liquid securities	57%	58%
Level 2A liquid assets	9%	8%
Level 2B liquid assets	2%	2%

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 195 to 203 of the 2019 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

In addition to regulatory requirements, the Group employs various measures to actively reduce the risk of potential collateral calls on our derivative positions.

On average over the reporting period, weighted 'Outflows related to derivative exposures and other collateral requirements' made up only 8 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 Table 96 above 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 EBA RTS (EBA/RTS/2017/03).

Standard Chartered's primary funding source is its customer deposit base. The Group's advances-to-deposits ratio remained broadly unchanged from last year at 64.2 per cent (2018: 63.1 per cent). 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 97: Encumbered and unencumbered assets

		2019							
		Carrying amount of encumbered assets \$million	of which notionally eligible EHQLA and HQLA \$million	Fair value of encumbered assets \$million	of which notionally eligible EHQLA and HQLA \$million	Carrying amount of unencumbered assets \$million	of which notionally eligible EHQLA and HQLA \$million	Fair value of unencumbered assets \$million	of which notionally eligible EHQLA and HQLA \$million
010	Assets of the Reporting Institution	28,023	7,986			696,310	128,373		
030	Equity instruments	–	–	–	–	1,814	–	1,814	–
040	Debt securities	10,876	7,986	10,876	7,986	149,444	100,920	149,444	100,920
050	of which: covered bonds	6	–	6	–	5,477	5,164	5,477	5,164
060	of which: asset-backed securities	143	140	143	140	8,120	2,531	8,120	2,531
070	of which: issued by general governments	8,342	6,373	8,342	6,373	85,785	67,750	85,785	67,750
080	of which: issued by financial corporations	1,431	970	1,431	970	37,888	20,013	37,888	20,013
090	of which: issued by non-financial corporations	443	125	445	125	12,799	5,315	12,799	5,315
120	Other Assets ¹	17,692	–			543,405	25,635		
121	of which: HK Govt securities of Indebtedness	6,517	–			–	–		
122	of which: Cash collateral for derivatives	9,099	–			–	–		
123	of which: Loans and Advances to customers	1,319	–			320,354	344		
124	of which: Derivative assets	–	–			49,093	–		

Table 97: Encumbered and unencumbered assets continued

		2018							
		Carrying amount of encumbered assets \$million	of which notionally eligible EHQLA and HQLA \$million	Fair value of encumbered assets \$million	of which notionally eligible EHQLA and HQLA \$million	Carrying amount of unencumbered assets \$million	of which notionally eligible EHQLA and HQLA \$million	Fair value of unencumbered assets \$million	of which notionally eligible EHQLA and HQLA \$million
010	Assets of the Reporting Institution	24,866	N/A			672,236	N/A		
030	Equity instruments	84	N/A	84	N/A	1,971	N/A	1,971	N/A
040	Debt securities	8,699	N/A	8,699	N/A	135,215	N/A	135,215	N/A
050	of which: covered bonds	70	N/A	70	N/A	5,008	N/A	5,008	N/A
060	of which: asset-backed securities	4	N/A	4	N/A	6,337	N/A	6,337	N/A
070	of which: issued by general governments	7,103	N/A	7,103	N/A	73,583	N/A	73,583	N/A
080	of which: issued by financial corporations	1,129	N/A	1,129	N/A	37,279	N/A	37,279	N/A
090	of which: issued by non-financial corporations	358	N/A	358	N/A	9,308	N/A	9,308	N/A
120	Other Assets ¹	16,338	N/A			535,260	N/A		
121	of which: HK Govt securities of Indebtedness	5,689	N/A			–	N/A		
122	of which: Cash collateral for derivatives	10,375	N/A			–	N/A		
123	of which: Loans and Advances to customers	9	N/A			299,928	N/A		
124	of which: Derivative assets	–	N/A			50,608	N/A		

¹ All remaining regulatory balance sheet assets

Table 98: Encumbered assets/collateral received and associated liabilities

		2019		2018	
		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
010	Carrying amount of selected financial liabilities	63,753	64,556	57,605	57,934
011	of which: Derivatives	8,548	9,079	10,012	10,363
012	of which: Repurchase agreements	55,522	55,213	48,184	48,367
013	of which: Debt securities issued	188	781	188	944

Table 99: Collateral received

		2019			
		Fair Value of encumbered collateral received or own debt securities issued \$million	of which notionally eligible EHQLA and HQLA \$million	Fair Value of collateral received or own debt securities issued available for encumbrance \$million	of which notionally eligible EHQLA and HQLA \$million
130	Collateral received by the reporting institution	66,605	39,227	37,611	26,459
140	Loans on Demand	–	–	–	–
150	Equity Instruments	–	–	–	–
160	Debt securities	66,605	39,227	37,611	26,459
170	of which: covered bonds	–	–	–	–
180	of which: Asset backed securities	–	–	289	–
190	of which: issued by General Governments	48,191	36,548	26,337	24,368
200	of which: issued by Financial Corporations	13,233	460	3,747	417
210	of which: issued by Non Financial Corporations	5,629	1,277	7,160	2,541
220	Loans and Advances other than Loans on demand	–	–	–	–
230	Other collateral received	–	–	–	–

		2018			
		Fair Value of encumbered collateral received or own debt securities issued \$million	of which notionally eligible EHQLA and HQLA \$million	Fair Value of collateral received or own debt securities issued available for encumbrance \$million	of which notionally eligible EHQLA and HQLA \$million
130	Collateral received by the reporting institution	59,586	N/A	21,569	N/A
140	Loans on Demand	–	N/A	–	N/A
150	Equity Instruments	–	N/A	–	N/A
160	Debt securities	59,586	N/A	21,569	N/A
170	of which: covered bonds	–	N/A	–	N/A
180	of which: Asset backed securities	–	N/A	2	N/A
190	of which: issued by General Governments	49,542	N/A	15,759	N/A
200	of which: issued by Financial Corporations	4,635	N/A	2,824	N/A
210	of which: issued by Non Financial Corporations	6,565	N/A	1,381	N/A
220	Loans and Advances other than Loans on demand	–	N/A	–	N/A
230	Other collateral received	–	N/A	–	N/A

The median value of the Group's encumbered and unencumbered assets, as at 31 December 2019, differs from the Group's disclosures in the 2019 Annual Report and Accounts. The difference is due to the basis of calculation with the EBA Guidelines requiring disclosure of median values of 2019 monthly data. The table above compares the different values.

Table 100: Median values versus annual disclosure comparative

	Group Median Value		Group ARA value	
	2019 \$billion	2018 \$billion	2019 \$billion	2018 \$billion
Encumbered Assets	28	25	26	25
Unencumbered Assets	696	672	695	664

The Group's median asset encumbrance for 2019 was \$28 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. 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 2019 Annual Report and Accounts on pages 174 to 177.

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 101 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 101: Capital resources of significant subsidiaries

	2019					2018				
	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 \$million	Standard Chartered Bank Korea Ltd \$million	Standard Chartered Bank (Singapore) Ltd ² \$million	Standard Chartered Bank Uganda Ltd \$million
Local Regulator	PRA	HKMA	FSS	MAS	BOU	PRA	HKMA	FSS	MAS	BOU
Common Equity Tier 1 capital before regulatory adjustments	27,989	14,402	3,937	4,161	126	45,477	8,295	4,375	1,614	111
Regulatory adjustments	(5,064)	(6,921)	(247)	(319)	(4)	(6,924)	(957)	(641)	(247)	(2)
Common Equity Tier 1 capital	22,925	7,482	3,691	3,842	122	38,553	7,338	3,734	1,367	110
Additional Tier 1 (AT1) capital: instruments	6,606	1,651	–	1,284	–	6,480	745	–	220	–
Tier 1 capital (T1 = CET1 + AT1)	29,531	9,133	3,691	5,126	122	45,033	8,082	3,734	1,588	110
Tier 2 capital	10,336	1,907	527	763	4	10,431	1,436	12	630	4
Total capital (TC = T1 + T2)	39,867	11,040	4,217	5,889	126	55,464	9,518	3,746	2,217	113
Total risk-weighted assets	185,615	60,693	24,976	31,304	718	257,497	52,993	25,988	12,052	656
Capital Ratios										
Common Equity Tier 1	12.4%	12.3%	14.8%	12.3%	17.0%	15.0%	13.8%	14.4%	11.2%	16.7%
Tier 1 Capital	15.9%	15.0%	14.8%	16.4%	17.0%	17.5%	15.3%	14.4%	13.0%	16.7%
Total Capital	21.5%	18.2%	16.9%	18.8%	17.5%	21.5%	18.0%	14.4%	18.3%	17.3%

1 Standard Chartered Bank disclosed in the table above aligns with the capital section of the 2019 Standard Chartered Bank Accounts.

2 2018 Capital resources have been re-presented to align with local regulatory returns, which included late adjustments for Standard Chartered Bank (Singapore) Ltd

Capital management – Standard Chartered Bank

The Risk management approach section of the 2019 Annual Report and Accounts sets out our approach to capital management (pages 217 to 218). Tables 102 to 110 summarise the consolidated capital position of Standard Chartered Bank, as well as a summary of exposures and credit quality.

Further disclosures of the legal entity Standard Chartered Bank may be found in the 2019 Standard Chartered Bank Accounts.

Table 102: Capital resources - Standard Chartered Bank

	2019 Transitional position \$million	2019 End point adjustment \$million	2019 End point position \$million	2018 Transitional position \$million
Standard Chartered Bank				
Common Equity Tier 1 (CET1) capital: instruments and reserves				
Capital instruments and the related share premium accounts	19,320	–	19,320	26,820
Of which: Share premium accounts	296	–	296	296
Retained earnings ¹	15,723	–	15,723	19,352
Accumulated other comprehensive income (and other reserves)	(3,813)	–	(3,813)	(5,176)
Non-controlling interests (amount allowed in consolidated CET1)	697	–	697	3,829
Independently reviewed interim and year-end profits/(loss) ²	(3,705)	–	(3,705)	873
Foreseeable dividends net of scrip	(233)	–	(233)	(221)
Common Equity Tier 1 capital before regulatory adjustments	27,989	–	27,989	45,477
Common Equity Tier 1 capital: regulatory adjustments				
Additional value adjustments	(409)	–	(409)	(564)
Intangible assets	(3,794)	–	(3,794)	(4,720)
Deferred tax assets that rely on future profitability	(83)	–	(83)	(115)
Fair value reserves related to gains or losses on cash flow hedges	11	–	11	27
Negative amounts resulting from the calculation of expected loss	(686)	–	(686)	(875)
Gains or losses on liabilities at fair value resulting from changes in own credit	(24)	–	(24)	(391)
Defined-benefit pension fund assets	(12)	–	(12)	(36)
Fair value gains and losses from own credit risk related to derivative liabilities	(28)	–	(28)	(127)
Exposure amounts which could qualify for risk weighting	(39)	–	(39)	(123)
Of which: securitisation positions	(33)	–	(33)	(110)
Of which: free deliveries	(6)	–	(6)	(13)
Total regulatory adjustments to Common Equity Tier 1	(5,064)	–	(5,064)	(6,924)
Common Equity Tier 1 capital	22,925	–	22,925	38,553
Additional Tier 1 (AT1) capital: instruments				
Capital Instruments and the related share premium accounts	6,626	(1,493)	5,133	6,500
Additional Tier 1 (AT1) capital before regulatory adjustments	6,626	(1,493)	5,133	6,500
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	6,606	(1,493)	5,113	6,480
Tier 1 capital (T1 = CET1 + AT1)	29,531	(1,493)	28,038	45,033
Tier 2 (T2) capital: instruments and provisions				
Capital instruments and the related share premium accounts	10,078	1,500	11,578	9,932
Qualifying items and the related share premium accounts subject to phase out from T2	115	(115)	–	326
Qualifying own funds instruments included in T2 issued by subsidiaries and held by third parties	173	–	173	203
Tier 2 capital before regulatory adjustments	10,366	1,385	11,751	10,461
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	10,336	1,385	11,721	10,431
Total capital (TC = T1 + T2)	39,867	(108)	39,759	55,464

Table 103: Capital ratios and risk-weighted assets - Standard Chartered Bank

	2019 Transitional position \$million	2019 End point adjustment \$million	2019 End point position \$million	2018 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)	984	–	984	1,666
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)	78	–	78	1,633
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)	766	–	766	925
Risk-weighted assets				
Credit risk	150,529	–	150,529	210,020
Credit valuation adjustment		–	–	
Operational risk	18,194	–	18,194	28,386
Market risk	16,892	–	16,892	19,091
Total Risk Weighted Assets³	185,615	–	185,615	257,497
Capital ratios and buffers				
CET1 capital	12.4%	–	12.4%	15.0%
Tier 1 capital	15.9%	(0.8)%	15.1%	17.5%
Total capital	21.5%	(0.1)%	21.4%	21.5%
Capital buffers				
Institution specific buffer requirement (CET1 requirement in accordance with article 92 (1) (a) plus capital conservation and countercyclical buffer requirement, plus systemic risk buffer, plus systemically important institution 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: systemic risk buffer requirement	N/A	N/A	N/A	N/A
Of which: Global systemically important institution (G-SII) or Other Systemically 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 104: Exposure at default by geography (CRB-C) - Standard Chartered Bank

		2019				Period End Total \$million
		Greater China & North Asia \$million	ASEAN & South Asia \$million	Africa & Middle East \$million	Europe & Americas \$million	
IRB Exposure Class						
1	Central governments or central banks	15,202	28,673	16,681	47,275	107,831
2	Institutions	40,656	17,124	14,406	34,467	106,652
3	Corporates	13,791	46,725	32,353	109,170	202,040
3a	Of which specialised lending	583	5,351	4,005	3,884	13,824
3b	Of which SME	18	1,588	788	568	2,962
4	Retail	1	24,307	516	8	24,831
4a	Secured by real estate collateral	–	17,023	2	–	17,026
4b	Of which SME	–	292	2	–	295
4c	Of which Non SME	–	16,731	–	–	16,731
4d	Qualifying revolving retail	–	4,523	298	–	4,821
4e	Other retail	1	2,760	215	8	2,984
4f	Of which SME	–	927	61	–	988
4g	Of which Non SME	–	1,834	154	8	1,996
	Non-credit obligation assets	–	–	–	–	–
6	Total IRB¹	69,650	116,828	63,956	190,920	441,354
Standardised Exposure Class						
7	Central governments or central banks	–	2,140	372	22,528	25,040
10	Multilateral development banks	312	1,835	1,875	8,380	12,402
12	Institutions	88	1,677	81	8,875	10,721
13	Corporates	292	8,610	1,763	1,981	12,646
13a	Of which SME	94	2,877	991	1,022	4,984
14	Retail	28	6,852	2,826	22	9,728
14a	Of which SME	–	2,682	153	–	2,836
15	Secured by mortgages on immovable property	165	3,809	2,461	1,258	7,693
15a	Of which SME	53	1,667	439	1,226	3,386
16	Past due items	–	362	66	3	431
17	Items belonging to regulatory high risk categories	841	245	180	164	1,429
21	Equity	–	–	–	–	–
22	Other items ²	44	5,030	1,236	1,143	7,454
23	Total Standardised	1,769	30,560	10,861	44,355	87,545
24	Total	71,419	147,389	74,816	235,275	528,899

1 Excludes securitisation exposures

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

Table 104: Exposure at default by geography (CRB-C) - Standard Chartered Bank continued

		2018				Period End Total \$million
		Greater China & North Asia \$million	ASEAN & South Asia \$million	Africa & Middle East \$million	Europe & Americas \$million	
IRB Exposure Class						
1	Central governments or central banks	66,234	29,269	15,834	41,247	152,583
2	Institutions	54,293	24,984	14,948	39,982	134,207
3	Corporates	62,351	48,935	33,663	94,145	239,094
3a	Of which specialised lending	3,649	6,864	3,649	4,318	18,480
3b	Of which SME	3,585	1,729	739	340	6,394
4	Retail	73,493	24,748	700	26	98,966
4a	Secured by real estate collateral	50,395	17,569	3	–	67,968
4b	Of which SME	79	325	3	–	408
4c	Of which Non SME	50,316	17,244	–	–	67,560
4d	Qualifying revolving retail	10,698	4,406	343	14	15,460
4e	Other retail	12,400	2,772	353	12	15,538
4f	Of which SME	851	865	38	1	1,754
4g	Of which Non SME	11,549	1,908	316	12	13,784
	Non-credit obligation assets	252	285	152	115	804
6	Total IRB ¹	256,622	128,221	65,297	175,515	625,654
Standardised Exposure Class						
7	Central governments or central banks	–	2,203	234	28,817	31,255
10	Multilateral development banks	–	1,986	1,744	12,490	16,220
12	Institutions	1,064	3,011	83	30,675	34,833
13	Corporates	6,695	10,775	3,214	13,444	34,129
13a	Of which SME	3,274	5,470	2,261	4,107	15,111
14	Retail	2,935	6,299	2,803	27	12,065
14a	Of which SME	670	2,136	102	–	2,909
15	Secured on real estate property	2,940	3,486	2,440	1,152	10,018
15a	Of which SME	337	1,815	381	1,132	3,664
16	Past due items	32	666	73	12	783
17	Items belonging to regulatory high risk categories	427	226	248	230	1,131
21	Equity	–	–	–	–	–
22	Other items ²	3,341	4,426	1,237	897	9,900
23	Total Standardised	17,434	33,078	12,076	87,744	150,334
24	Total	274,056	161,299	77,373	263,259	775,988

1 Excludes securitisation exposures

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

Table 105: Exposure at default by industry (CRB-D) - Standard Chartered Bank

		2019										
		Loans to Individuals Mortgage \$million	Loans to Individuals Other \$million	SME \$million	Commerce \$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												
1	Central governments or central banks	-	-	-	110	-	-	101,159	1,808	8	4,746	107,831
2	Institutions	-	-	-	-	44	-	1,773	103,340	3	1,492	106,652
3	Corporates	-	-	2,962	19,639	38,253	8,319	581	97,369	8,757	26,159	202,040
3a	Of which specialised lending	-	-	-	5,883	876	2,661	-	334	669	3,400	13,824
3b	Of which SME	-	-	2,962	-	-	-	-	-	-	-	2,962
4	Retail	16,731	6,817	1,283	-	-	-	-	-	-	-	24,831
4a	Secured by real estate collateral	16,731	-	295	-	-	-	-	-	-	-	17,026
4b	Of which SME	-	-	295	-	-	-	-	-	-	-	295
4c	Of which Non SME	16,731	-	-	-	-	-	-	-	-	-	16,731
4d	Qualifying revolving retail	-	4,821	-	-	-	-	-	-	-	-	4,821
4e	Other retail	-	1,996	988	-	-	-	-	-	-	-	2,984
4f	Of which SME	-	-	988	-	-	-	-	-	-	-	988
4g	Of which Non SME	-	1,996	-	-	-	-	-	-	-	-	1,996
Non-credit obligation assets		-	-	-	-	-	-	-	-	-	-	-
6	Total IRB¹	16,731	6,817	4,244	19,749	38,298	8,319	103,513	202,517	8,768	32,397	441,354
Standardised Exposure Class												
7	Central governments or central banks	-	-	-	204	-	-	16,688	3,342	5	4,801	25,040
10	Multilateral development banks	-	-	-	-	-	-	214	12	-	12,175	12,402
12	Institutions	-	-	-	-	-	-	-	9,404	-	1,317	10,721
13	Corporates	-	-	4,984	451	746	217	3	1,680	164	4,401	12,646
13a	Of which SME	-	-	4,984	-	-	-	-	-	-	-	4,984
14	Retail	-	6,893	2,836	-	-	-	-	-	-	-	9,728
14a	Of which SME	-	-	2,836	-	-	-	-	-	-	-	2,836
15	Secured on real estate property	3,337	-	3,386	40	33	13	-	25	2	857	7,693
15a	Of which SME	-	-	3,386	-	-	-	-	-	-	-	3,386
16	Past due items	51	21	159	1	3	-	-	-	-	195	431
17	Items belonging to regulatory high risk categories	2	64	204	27	21	-	-	884	2	225	1,429
21	Equity	-	-	-	-	-	-	-	-	-	-	-
22	Other items ²	-	-	-	-	2	-	-	61	-	7,391	7,454
23	Total Standardised	3,390	6,978	11,569	723	805	230	16,905	15,409	172	31,363	87,545
24	Total	20,121	13,795	15,813	20,472	39,103	8,549	120,418	217,926	8,940	63,761	528,899

1 Excludes securitisation exposures

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

Table 105: Exposure at default by industry (CRB-D) - Standard Chartered Bank continued

		2018										
		Loans to Individuals Mortgage \$million	Loans to Individuals Other \$million	SME \$million	Commerce \$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												
1	Central governments or central banks	–	–	–	–	183	334	141,269	6,110	7	4,680	152,583
2	Institutions	–	–	–	129	1	5	3,016	128,685	36	2,334	134,207
3	Corporates	–	–	6,729	28,104	51,135	13,509	1,222	90,662	14,774	32,959	239,094
3a	Of which specialised lending	–	–	528	6,679	1,408	2,473	–	485	2,756	4,151	18,480
3b	Of which SME	–	–	6,201	–	51	2	–	–	33	107	6,394
4	Retail	67,560	29,244	2,128	–	6	1	–	–	4	23	98,966
4a	Secured by real estate collateral	67,560	–	405	–	–	–	–	–	–	2	67,968
4b	Of which SME	–	–	405	–	–	–	–	–	–	2	408
4c	Of which Non SME	67,560	–	–	–	–	–	–	–	–	–	67,560
4d	Qualifying revolving retail	–	15,460	–	–	–	–	–	–	–	–	15,460
4e	Other retail	–	13,784	1,723	–	6	1	–	–	4	21	15,538
4f	Of which SME	–	–	1,723	–	6	1	–	–	4	21	1,754
4g	Of which Non SME	–	13,784	–	–	–	–	–	–	–	–	13,784
	Non-credit obligation assets	–	–	7	8	–	–	–	–	771	19	804
6	Total IRB¹	67,560	29,244	8,864	28,240	51,325	13,849	145,508	225,458	15,592	40,015	625,654
Standardised Exposure Class												
7	Central governments or central banks	–	–	–	148	–	–	23,243	2,159	1	5,703	31,254
10	Multilateral development banks	–	–	–	–	–	–	332	13	–	15,875	16,220
12	Institutions	–	–	–	–	–	–	–	33,245	–	1,588	34,833
13	Corporates	–	1	15,111	589	1,145	371	1	12,748	405	3,759	34,130
13a	Of which SME	–	–	15,111	–	–	–	–	–	–	–	15,111
14	Retail	–	9,156	2,909	–	–	–	–	–	–	–	12,065
14a	Of which SME	–	–	2,909	–	–	–	–	–	–	–	2,909
15	Secured on real estate property	5,505	1	3,664	48	38	86	–	53	3	619	10,017
15a	Of which SME	–	–	3,664	–	–	–	–	–	–	–	3,664
16	Past due items	53	39	170	1	13	–	–	–	–	508	784
17	Items belonging to regulatory high risk categories	4	45	173	64	92	92	–	294	70	296	1,130
21	Equity	–	–	–	–	–	–	–	–	–	–	–
22	Other Items ²	–	–	–	–	–	29	–	123	–	9,749	9,901
23	Total Standardised	5,562	9,242	22,027	850	1,288	578	23,576	48,635	479	38,097	150,334
24	Total	73,122	38,486	30,891	29,090	52,613	14,427	169,084	274,093	16,071	78,112	775,988

1 Excludes securitisation exposures

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

Table 106: Exposure at default by maturity (CRB-E) - Standard Chartered Bank

		2019			
		On demand and one year or less \$million	One to five years \$million	Over five years \$million	Total \$million
IRB Exposure Class					
1	Central governments or central banks	71,198	29,691	6,942	107,831
2	Institutions	89,660	14,405	2,587	106,652
3	Corporates	147,236	43,620	11,184	202,040
3a	Of which specialised lending	6,922	3,805	3,096	13,824
3b	Of which SME	1,556	702	703	2,962
4	Retail	1,954	6,296	16,581	24,831
4a	Secured by real estate collateral	777	304	15,944	17,026
4b	Of which SME	16	11	268	295
4c	Of which Non SME	762	294	15,676	16,731
4d	Qualifying revolving retail	396	4,344	81	4,821
4e	Other retail	781	1,647	556	2,984
4f	Of which SME	628	169	191	988
4g	Of which Non SME	152	1,479	365	1,996
	Non-credit obligation assets	–	–	–	–
6	Total IRB¹	310,048	94,011	37,295	441,354
Standardised Exposure Class					
7	Central governments or central banks	17,868	4,805	2,367	25,040
10	Multilateral development banks	1,642	8,798	1,962	12,402
12	Institutions	7,071	1,784	1,866	10,721
13	Corporates	9,889	1,616	1,141	12,646
13a	Of which SME	4,017	386	581	4,984
14	Retail	4,644	2,733	2,351	9,728
14a	Of which SME	959	767	1,110	2,836
15	Secured on real estate property	2,728	708	4,257	7,693
15a	Of which SME	2,244	255	887	3,386
16	Past due items	356	21	55	431
17	Items belonging to regulatory high risk categories	1,287	65	77	1,429
21	Equity	–	–	–	–
22	Other items ²	7,454	–	–	7,454
23	Total Standardised	52,938	20,531	14,076	87,545
24	Total	362,986	114,542	51,371	528,899

1 Excludes securitisation exposures

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

Table 106: Exposure at default by maturity (CRB-E) - Standard Chartered Bank continued

		2018			
		On demand and one year or less \$million	One to five years \$million	Over five years \$million	Total \$million
IRB Exposure Class					
1	Central governments or central banks	126,718	24,748	1,116	152,583
2	Institutions	109,233	21,512	3,462	134,207
3	Corporates	166,766	57,252	15,076	239,094
3a	Of which specialised lending	8,045	5,381	5,054	18,480
3b	Of which SME	4,685	966	743	6,394
4	Retail	8,907	21,958	68,101	98,966
4a	Secured by real estate collateral	938	913	66,116	67,968
4b	Of which SME	90	13	305	408
4c	Of which Non SME	849	900	65,811	67,560
4d	Qualifying revolving retail	1,222	13,993	245	15,460
4e	Other retail	6,747	7,052	1,739	15,538
4f	Of which SME	857	709	189	1,754
4g	Of which Non SME	5,890	6,344	1,550	13,784
Non-credit obligation assets		92	408	304	804
6	Total IRB¹	411,717	125,879	88,058	625,654
Standardised Exposure Class					
7	Central governments or central banks	24,196	5,777	1,282	31,255
10	Multilateral development banks	6,265	8,517	1,438	16,220
12	Institutions	32,705	1,670	458	34,833
13	Corporates	30,537	2,134	1,457	34,128
13a	Of which SME	13,533	728	850	15,111
14	Retail	5,585	4,125	2,355	12,065
14a	Of which SME	824	1,169	916	2,909
15	Secured on real estate property	2,680	667	6,670	10,017
15a	Of which SME	2,358	259	1,048	3,665
16	Past due items	659	41	84	784
17	Items belonging to regulatory high risk categories	1,010	73	48	1,131
21	Equity	–	–	–	–
22	Other Items²	9,827	57	17	9,901
23	Total Standardised	113,464	23,061	13,809	150,334
24	Total	525,181	148,940	101,867	775,988

1 Excludes securitisation exposures

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

Table 107: Credit quality of exposures by exposure class and instruments (CR1-A) - Standard Chartered Bank

		2019				
		EAD before the effect of CCF & CRM ¹			Credit risk adjustment changes in the period \$million	Net values \$million
		Defaulted exposures \$million	Non-defaulted exposures \$million	Specific credit risk adjustment \$million		
IRB Exposure Class						
1	Central governments or central banks	–	203,179	43	(6)	203,136
2	Institutions	–	225,325	6	–	225,320
3	Corporates	6,427	361,705	4,479	(1,607)	363,653
4	Of which specialised lending	700	24,939	538	(49)	25,101
5	Of which SME	568	3,844	326	(143)	4,086
6	Retail	425	32,614	226	(199)	32,813
7	Secured by real estate collateral	122	16,904	33	(7)	16,993
8	Of which SME	6	289	1	(2)	295
9	Of which Non SME	116	16,615	32	(6)	16,698
10	Qualifying revolving retail	131	11,567	83	(38)	11,614
11	Other retail	172	4,143	110	(154)	4,206
12	Of which SME	120	1,729	67	(8)	1,781
13	Of which Non SME	52	2,414	42	(145)	2,424
	Non-credit obligation assets	–	–	–	–	–
15	Total IRB ²	6,852	822,823	4,754	(1,812)	824,922
Standardised Exposure Class						
16	Central governments or central banks	–	113,859	2	(4)	113,858
19	Multilateral development banks	–	22,365	7	1	22,358
21	Institutions	–	12,725	3	1	12,723
22	Corporates	–	28,433	137	(803)	28,296
23	Of which SME	–	16,882	19	(199)	16,862
24	Retail	–	14,959	81	(120)	14,878
25	Of which SME	–	5,443	6	(29)	5,437
26	Secured on real estate property	–	7,981	29	(45)	7,952
27	Of which SME	–	3,572	4	(10)	3,568
29	Items belonging to regulatory high risk categories	558	1,156	60	(33)	1,653
33	Equity	596	477	636	636	437
34	Other Items ³	–	7,464	–	–	7,464
35	Total Standardised	1,154	209,420	955	(368)	209,619
	Of which past due items	1,154	–	451	(643)	702
36	Total	8,006	1,032,243	5,708	(2,180)	1,034,541
37	Of which Loans	6,348	223,720	5,301	(1,776)	224,767
38	Of which Debt securities	66	84,232	55	(475)	84,242
39	Of which Off-balance-sheet exposures	1,537	570,433	262	(19)	571,708

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

Table 107: Credit quality of exposures by exposure class and instruments (CR1-A) - Standard Chartered Bank continued

		2018				
		EAD before the effect of CCF & CRM ¹		Specific credit risk adjustment \$million	Credit risk adjustment changes in the period \$million	Net values \$million
		Defaulted exposures \$million	Non-defaulted exposures \$million			
IRB Exposure Class						
1	Central governments or central banks	–	296,457	49	(260)	296,408
2	Institutions	–	267,385	5	(272)	267,379
3	Corporates	8,950	430,711	5,654	674	434,007
4	Of which specialised lending	916	31,957	591	94	32,281
5	Of which SME	784	8,370	472	157	8,681
6	Retail	717	115,822	422	35	116,117
7	Secured by real estate collateral	365	17,626	261	101	17,730
8	Of which SME	140	2,453	73	71	2,521
9	Of which Non SME	224	15,173	188	30	15,210
10	Qualifying revolving retail	153	30,431	121	27	30,464
11	Other retail	199	67,764	41	(92)	67,923
12	Of which SME	7	402	3	(32)	406
13	Of which Non SME	192	67,362	38	(60)	67,516
	Non-credit obligation assets	63	738	–	–	801
15	Total IRB²	9,730	1,111,112	6,131	178	1,114,712
Standardised Exposure Class						
16	Central governments or central banks	–	113,867	6	(115)	113,861
19	Multilateral development banks	–	26,391	6	(17)	26,386
21	Institutions	–	38,769	2	(42)	38,767
22	Corporates	1,381	60,389	941	282	60,829
23	Of which SME	320	37,203	218	(82)	37,305
24	Retail	128	20,894	201	(16)	20,820
25	Of which SME	40	4,362	35	(26)	4,366
26	Secured on real estate property	113	9,871	74	(13)	9,910
27	Of which SME	15	3,839	14	(2)	3,839
29	Items belonging to regulatory high risk categories	647	1,414	93	(405)	1,968
33	Equity	–	1,633	–	(2)	1,633
34	Other Items ³	–	9,997	–	–	9,997
35	Total Standardised	2,269	283,224	1,323	(330)	284,170
	Of which past due items	2,269	–	1,094	(268)	1,175
36	Total	11,999	1,394,336	7,453	(152)	1,398,882
37	Of which Loans	9,216	301,834	7,077	(1,430)	303,973
38	Of which Debt securities	766	121,120	530	(33)	121,357
39	Of which Off-balance-sheet exposures	1,571	704,940	281	(48)	706,230

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

Table 108: Credit quality of exposures by industry types (CR1-B) - Standard Chartered Bank

	2019				
	EAD before the effect of CCF & CRM ¹		Specific credit risk adjustment \$million	Credit risk adjustment changes in the period \$million	Net values \$million
	Defaulted exposures \$million	Non-defaulted exposures \$million			
Loans to individuals mortgage	198	19,999	85	(2)	20,112
Loans to individuals other	351	23,501	239	(246)	23,614
SME	1,294	31,942	711	104	32,525
Commerce	1,087	46,070	1,022	28	46,135
Manufacturing	1,799	78,988	1,340	128	79,446
Commercial real estate	270	11,228	117	(8)	11,380
Government	–	299,194	44	(7)	299,150
Financing, insurance and business services	426	409,056	282	(497)	409,200
Transport, storage and communication	738	13,934	582	(486)	14,089
Other	1,844	98,333	1,287	(1,193)	98,889
Total²	8,006	1,032,243	5,708	(2,180)	1,034,541

	2018				
	EAD before the effect of CCF & CRM ¹		Specific credit risk adjustment \$million	Credit risk adjustment changes in the period \$million	Net values \$million
	Defaulted exposures \$million	Non-defaulted exposures \$million			
Loans to individuals mortgage	284	72,992	87	(58)	73,189
Loans to individuals other	563	61,679	485	(417)	61,757
SME	1,395	57,684	607	607	58,471
Commerce	1,286	66,459	994	249	66,751
Manufacturing	1,846	112,229	1,189	(2,543)	112,885
Commercial real estate	592	21,853	121	2	22,324
Government	–	388,060	51	51	388,009
Financing, insurance and business services	435	466,896	394	(249)	466,937
Transport, storage and communication	1,524	28,181	1,065	197	28,641
Other	4,075	118,303	2,461	2,010	119,917
Total²	11,999	1,394,336	7,453	(152)	1,398,882

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

2 Refer to Table 107 (CR1-A) for total net values

Table 109: Credit quality of exposures by geography (CR1-C) - Standard Chartered Bank

	2019				
	EAD before the effect of CCF & CRM ¹		Specific credit risk adjustment \$million	Credit risk adjustment changes in the period \$million	Net values \$million
	Defaulted exposures \$million	Non-defaulted exposures \$million			
Greater China & North Asia	44	117,212	106	(576)	117,150
ASEAN & South Asia	3,773	269,119	2,760	(1,237)	270,133
Africa & Middle East	3,086	133,502	2,243	(125)	134,346
Europe & Americas	1,102	512,410	600	(242)	512,912
Total²	8,006	1,032,243	5,708	(2,180)	1,034,541

	2018				
	EAD before the effect of CCF & CRM ¹		Specific credit risk adjustment \$million	Credit risk adjustment changes in the period \$million	Net values \$million
	Defaulted exposures \$million	Non-defaulted exposures \$million			
Greater China & North Asia	1,124	468,748	614	93	469,258
ASEAN & South Asia	6,006	272,214	3,768	(210)	274,451
Africa & Middle East	3,891	136,573	2,431	(43)	138,032
Europe & Americas	979	516,801	640	8	517,140
Total²	11,999	1,394,336	7,453	(152)	1,398,882

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

2 Refer to Table 107 (CR1-A) for total net values

Table 110: Effect of guarantees and collateral - Standard Chartered Bank

	2019		2018	
	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	1,826	10,305	2,591	14,780
Institutions	14,806	76,394	4,810	34,392
Corporates	3,066	35,661	19,464	75,536
Retail ¹	1	17,023	5	67,024
Securitisation positions	–	–	–	1,391
Total IRB	19,699	139,383	26,870	193,123
Standardised Exposure Class				
Central governments or central banks	3,523	17,866	1,388	226
Multilateral development banks	1,678	–	1,405	435
Institutions	541	13,233	1,108	26,753
Corporates	80	24,211	84	21,872
Retail ¹	3	606	4	922
Secured on real estate property	–	1	–	1
Exposures in default	–	2	–	1
Items belonging to regulatory high risk categories	–	25	–	29
Other items ²	–	–	55	3
Total Standardised	5,825	55,944	4,044	50,242
Total Exposure	25,524	195,327	30,914	243,365

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

Table 111: Overview of RWA – Significant Subsidiaries

	2019							
	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
Local Regulator	PRA	PRA	HKMA	HKMA	FSS	FSS	MAS	MAS
Credit risk (excluding counterparty credit risk)²	132,256	10,580	44,366	3,745	18,112	1,449	34,955	3,496
Of which advanced IRB approach	98,992	7,919	40,799	3,460	13,782	1,103	22,130	2,213
Of which standardised approach	33,264	2,661	3,567	285	4,330	346	12,825	1,282
Counterparty credit risk³	13,364	1,069	2,037	168	2,759	221	1,289	129
Of which mark to market method	3,362	269	1,046	88	1,809	145	964	96
Of which internal model method (IMM)	6,232	499	–	–	–	–	–	–
Of which securities financing transactions	1,998	160	212	18	–	–	22	2
Of which risk exposure amount for contributions to the default fund of a CCP	167	13	–	–	34	3	–	–
Of which CVA	1,605	128	779	62	916	73	303	30
Settlement risk	1	–	–	–	–	–	–	–
Securitisation exposures in the banking book	2,633	211	357	29	–	–	160	16
Of which IRB ratings based approach	1,900	152	357	29	–	–	–	–
Of which IRB supervisory formula approach	733	59	–	–	–	–	–	–
Of which standardised approach	–	–	–	–	–	–	160	16
Market risk	16,892	1,351	4,109	329	1,975	158	1,132	113
Of which internal model approaches	7,280	582	–	–	1,667	133	–	–
Of which standardised approach	9,612	769	4,109	329	308	25	1,132	113
Large exposures	–	–	–	–	–	–	–	–
Operational risk	18,194	1,456	6,271	502	1,864	149	4,594	459
Of which standardised approach	18,194	1,456	6,271	502	1,864	149	4,594	459
Amounts below the thresholds for deduction (subject to 250% risk weight)	2,275	182	1,048	84	265	21	–	–
Floor Adjustment	–	–	–	–	–	–	–	–
Total	185,615	14,849	58,188	4,857	24,975	1,998	42,131	4,213

1 Standard Chartered Bank (Hong Kong) Ltd follows local disclosure rules for the OV1 table above, the net impact is \$2,505 million. Total RWA: \$60,693 million (\$58,188 million + \$2,505 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 111: Overview of RWA – Significant Subsidiaries continued

	2018							
	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
Local Regulator	PRA	PRA	HKMA	HKMA	FSS	FSS	MAS	MAS
Credit risk (excluding counterparty credit risk)²	187,494	15,000	38,929	3,285	20,534	1,643	10,508	1,051
Of which advanced IRB approach	148,229	11,859	35,578	3,017	14,522	1,162	–	–
Of which standardised approach	39,265	3,141	3,351	268	6,012	481	10,508	1,051
Counterparty credit risk³	12,998	1,040	1,767	147	1,966	157	351	35
Of which mark to market method	10,551	844	1,233	104	1,198	96	197	20
Of which internal model method (IMM)	–	–	–	–	–	–	–	–
Of which securities financing transactions	1272	102	–	–	–	–	–	–
Of which risk exposure amount for contributions to the default fund of a CCP	59	5	–	–	4	–	–	–
Of which CVA	1,116	89	534	43	764	61	154	15
Settlement risk	3	–	1	–	–	–	–	–
Securitisation exposures in the banking book	3,219	258	533	43	–	–	88	9
Of which IRB ratings based approach	2,596	208	–	–	–	–	–	–
Of which IRB supervisory formula approach	623	50	–	–	–	–	–	–
Of which standardised approach	–	–	533	43	–	–	88	9
Market risk	19,091	1,527	3,006	241	1,723	138	90	9
Of which internal model approaches	11,862	949	–	–	1,401	112	–	–
Of which standardised approach	7,229	578	3,006	241	322	26	90	9
Large exposures	–	–	–	–	–	–	–	–
Operational risk	28,386	2,271	5,553	444	1,765	141	1,014	101
Of which standardised approach	28,386	2,271	5,553	444	1,765	141	1,014	101
Amounts below the thresholds for deduction (subject to 250% risk weight)	6,306	504	1,043	83	–	–	–	–
Floor Adjustment	–	–	–	–	–	–	–	–
Total	257,497	20,600	50,832	4,243	25,988	2,079	12,051	1,205

1 Standard Chartered Bank (Hong Kong) Ltd follows local disclosure rules for the OV1 table above, the net impact is \$2,162 million. Total RWA: \$52,968 million (\$50,806 million + \$2,162 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

Table 112: Leverage ratio – Significant Subsidiaries

	2019				2018			
	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	28,038	9,133	3,691	5,126	43,533	8,082	3,734	1,572
Total leverage ratio exposures	582,597	176,456	69,511	97,081	799,174	151,275	68,974	26,783
Leverage ratio	4.8%	5.2%	5.3%	5.3%	5.4%	5.3%	5.4%	5.9%

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

Table 113: Market risk regulatory capital requirements for significant subsidiaries

Market Risk regulatory capital Requirements for Trading Book	2019				2018			
	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
	PRA	HKMA	FSS	MAS	PRA	HKMA	FSS	MAS
Interest rate	568	284	25	47	515	223	26	2
Options	3	–	–	3	1	–	–	–
Commodity	2	–	–	–	10	–	–	–
Foreign exchange	10	44	–	18	52	18	–	5
Internal Models Approach	769	–	133	–	949	–	112	–
Total	1,352	328	158	68	1,527	241	138	7
Market Risk – RWA	16,892	4,109	1,975	841	19,091	3,006	1,724	90

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

Acronyms

ABS	Asset Backed Securities
AIRB	Advanced Internal Rating Based approach
ALCO	Asset and Liability Committee
ALM	Asset and Liability Management
AT1	Additional Tier 1
BCBS	Basel Committee on Banking Supervision
BOU	Bank of Uganda
BRC	Board Risk Committee
CCF	Credit Conversion Factor
CCP	Central Counterparty
CCR	Counterparty Credit Risk
CCyB	Countercyclical capital buffer
CDOs	Collateralised Debt Obligations
CDS	Credit Default Swap
CET1	Common Equity Tier 1
CMBS	Commercial Mortgage Backed Securities
CQS	Credit Quality Step
CPM	Credit & Portfolio Management
CRD	Capital Requirements Directive
CRM	Credit Risk Mitigation
CRO	Chief Risk Officer
CRR	Capital Requirements Regulation
CSA	Credit Support Annex
CSDG	Capital Structuring & Distribution Group
CVA	Credit Valuation Adjustment
D-SIB	Domestic Systemically Important Bank
DVA	Debit Valuation Adjustment
EAD	Exposure at default
EBA	European Banking Authority
ECAI	External Credit Assessment Institutions
EL	Expected loss
FCA	Financial Conduct Authority
FIRB	Foundation Internal Ratings Based approach
FPC	Financial Policy Committee
FSB	Financial Stability Board
FSS	Financial Supervisory Service (South Korea)
FVA	Funding valuation adjustments
GCRO	Group Chief Risk Officer
G-SIB	Global Systemically Important Bank
G-SII	Global Systemically Important Institutions
HKMA	Hong Kong Monetary Authority
IAS	International Accounting Standard
ICAAP	Internal Capital Adequacy Assessment Process
ILAAP	Internal Liquidity Adequacy Assessment Process
IFRS	International Financial Reporting Standards
IIP	Individually assessed loan impairment provisions
IMA	Internal Model Approach
IMM	Internal model Method

IRB	Internal Ratings Based
IRC	Incremental Risk Charge
IRR	Interest Rate Risk
LCR	Liquidity Coverage Ratio
LGD	Loss Given Default
MAC	Model Assessment Committee
MAS	Monetary Authority of Singapore
MDB	Multilateral Development Banks
MR	Market Risk
MREL	Minimum requirements for own funds and eligible liabilities
MTM	Mark-To-Market
NII	Net Interest Income
NSFR	Net Stable Funding Ratio
O-SII	Other Systemically Important Institution
OBSC	Operational Balance Sheet Committee
OTC	Over the counter
PD	Probability of Default
PFE	Potential Future Exposure
PIP	Portfolio Impairment Provision
PIT	Point in Time
PM	Portfolio Management
PRA	Prudential Regulation Authority
PV01	Present Value 01
PVA	Prudent Valuation Adjustment
QCCP	Qualifying Central Counterparty
QRRE	Qualifying Revolving Retail Exposure
RMB	Renminbi
RMBS	Residential Mortgage Backed Securities
RNIV	Risk not in VaR
RTS	Regulatory Technical Standards
RWAs	Risk-Weighted Assets
SA	Standardised Approach
SFT	Securities Financing Transactions
SIF	Significant Influence Function
SME	Small and Medium - sized Enterprise
SPE	Special Purpose Entity
SVAR	Stressed VaR
T1	Tier 1 capital
T2	Tier 2 capital
TC	Total capital
TLAC	Total loss-absorbing capacity
TM	Treasury Markets
TRS	Total Return Swap
TTC	Through the cycle
VaR	Value at Risk
VBC	Valuation and Benchmarks Committee
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.
Africa & Middle East (AME)	Africa & Middle East (AME) includes Bahrain, Egypt, Iraq, Jordan, Lebanon, Oman, Pakistan, Qatar, Saudi Arabia and the United Arab Emirates (UAE).
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.
ASEAN & South Asia (ASA)	ASEAN & South Asia (ASA) includes Australia, Bangladesh, Brunei, Cambodia, India, Indonesia, Laos, Malaysia, Myanmar, Nepal, Philippines, Singapore, Sri Lanka, 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 cash flows 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	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. CRR II and CRD V amending the existing package came into force in June 2019 with most changes starting to apply from 28 June 2021.
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.
Greater China & North Asia (GCNA)	Greater China & North Asia (GCNA) includes China, Hong Kong, Japan, Korea, Macau 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	A CET1 capital buffer which results from designation as a G-SIB. 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. 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.
Internal Model Method (IMM)	One of three approaches defined in the Basel Framework to determine exposure values for counterparty credit risk.
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.
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)	An 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 (RWA)	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.
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 cash flows 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 20: (OV1) on page 21 and in the 2019 Annual Reports and Accounts on page 239.
	(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 3.
	(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 2018 Pillar 3 and 2019 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 2018 Pillar 3 document is made publicly available on the Group website with the 2018 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 2018 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)	(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 page 4. Risk management approach section in the 2018 Annual Report and Accounts on pages 1 to 3.
	(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 3 and in the 2019 Annual Report and Accounts on page 236.
	(2)(a) The disclosure must contain information on the number of directorship held.	2019 Annual Reports and Accounts, Board of Directors, on page 69 to 71.

CRR article ref.	Requirement summary	Disclosure
(2)(b)	The recruitment policy for the members of management body.	2019 Annual Reports and Accounts, Board of Directors, on pages 69 to 71 and Governance and Nomination Committee on pages 101 to 104.
(2)(c)	Policy on diversity for members of the management body.	2019 Annual Reports and Accounts, Governance and Nomination Committee, on pages 101 to 104. 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.	2019 Annual Reports and Accounts, Corporate Governance, on pages 92 to 97.
(2)(e)	Description of information flow on risk to the management body.	2019 Annual Reports and Accounts, Risk management, on pages 92 to 97.
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 3: Regulatory Consolidation on page 5. Table 4: Outline of the differences in the scope of consolidation (LI3) on page 6.
	(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 2019 Annual Report and Accounts on page 352.
	(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 8. Reconciliation between financial total equity 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 11.
	(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 9 Composition of regulatory capital (CC1) on pages 11 to 12.
	(1)(d)(ii) The nature and amounts of each deduction made.	Table 9 Composition of regulatory capital (CC1) on pages 11 to 12.
	(1)(d)(iii) The nature and amounts of non-deducted items.	Table 9 Composition of regulatory capital (CC1) on pages 11 to 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 217 of the 2019 Annual Reports and Accounts
	(b) On demand, 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 11.
	(c) 8% risk weight to be assigned to exposures under the standardised approach for each asset class.	Table 20: Overview of RWA (OV1) on page 21. Table 22: RWA flow statements of credit risk exposures under IRB (CR8) on page 23.
	(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 20: Overview of RWA (OV1) on page 21. Table 22: RWA flow statements of credit risk exposures under IRB (CR8) on page 23
	(d)(ii) 8% risk weight to be assigned to exposures under the IRB approach for exchange traded, private equity and other exposures.	Table 20: Overview of RWA (OV1) on page 21.
	(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
(d)(iv)	8% risk weight to be assigned to exposures under the IRB approach for exposures subject to grandfathering provisions.	The Group has no exposure subject to grandfathering provisions.
(e)	Disclosure of own funds requirements.	Section 2.5 Capital requirements on pages 21 to 24.
(f)	Disclosure of own funds requirements calculated for operational risk by approaches used.	Table 20: Overview of RWA (OV1) on page 21.
Exposure to counterparty credit risk		
439 (a)	Methodology used to assign internal capital and credit limits for counterparty credit risk.	Section 4.2. Counterparty credit risk on page 83.
(b)	Discussion of policies for securing collateral and establishing credit reserves.	Section 4.2. Counterparty credit risk on page 83.
(c)	Discussion of policies on wrong-way risk exposures.	Section 4.2. Counterparty credit risk on page 83.
(d)	The amount of collateral that would need to be provided in the event of downgrade.	Section 4.2. Counterparty credit risk on page 83.
(e)	FV of contracts, netting benefits, netted current credit exposure, collateral held and net derivatives credit exposure.	Table 82: Impact of netting and collateral held on exposure values (CCR5-A) on page 84.
(f)	Exposure values under the mark to market, original exposure, standardised or internal model methods as applicable.	Table 83: Analysis of CCR exposures by approach (CCR1) on page 84.
(g)	The notional value of credit derivative hedges and CRM by types of exposure.	Table 85: Credit derivatives exposures (CCR6) on page 85.
(h)	The notional amount of credit derivatives by own portfolio and intermediation activities, by products and by bought and sold.	Table 85: Credit derivatives exposures (CCR6) on page 85.
(i)	Estimate of alpha.	Table 83: Analysis of CCR exposures by approach (CCR1) on page 84.
Capital buffers		
440 (1)(a)	Amount of credit exposures used in the calculation of countercyclical capital buffer by geography.	Table 18: Geographical distribution of credit exposures relevant for the calculation of the countercyclical capital buffer on page 19.
(1)(b)	The amount of institution specific countercyclical capital buffer.	Table 19: Amount of institution specific countercyclical capital buffer on page 20.
(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-SIIs to disclose the values of indicators on an annual basis.	Discussed in Section 1.3. Regulatory disclosure framework on page 3.
(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 119 to 123 and 411 to 416 respectively. Credit risk section of the 2019 Annual Report and Accounts on page 153.
(b)	Approaches and methods used for determining specific and general credit risk adjustments.	Section 3.4. Exposure values on page 37. Note 8 of the 2019 Annual Report and Account on pages 274 to 278
(c)	Exposure and average exposure after accounting offsets and pre credit risk mitigations by asset classes.	Table 40: Total and average exposure at default (CRB-B) on page 38.
(d)	Exposure by significant geographies and material exposures classes.	Table 41: Exposure at default by geography (CRB-C) on page 39.
(e)	Exposures by industry and by exposure classes.	Table 42: Exposure at default by industry (CRB-D) on page 41.
(f)	Exposures by residual maturity and by exposure class.	Table 43: Exposure at default by maturity (CRB-E) on page 43.
(g)(i)	By industry or counterparty type the amount of impaired and past due exposures.	Table 44: Credit quality of exposures by exposure class and instrument (CR1-A) on page 45. Table 45: Credit quality of exposures by industry (CR1-B) on page 47.
(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.

CRR article ref.	Requirement summary	Disclosure
(h)	Impaired and past due exposures by geography.	Table 46: Credit quality of exposures by geography (CR1-C) on page 48. Table 47: Credit quality of performing and non-performing exposures by past due days on page 48.
(i)(i)	Reconciliation of changes in specific and general credit risk adjustments for impaired exposures by type of credit risk adjustments.	Table 48: Credit quality of forbore exposures on page 50. Table 49: Performing and non-performing exposures and related provisions on page 50. Table 50: Changes in the stock of general and specific credit risk adjustments (CR2-A) on page 52. Table 51: Changes in the stock of defaulted and impaired loans and debt securities (CR2-B) on page 52.
(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 ECAIs		
444	(a) The names of ECAIs used for the calculation of RWA under the standardised approach.	Section 3.8. standardised risk weight profile on page 68.
	(b) The exposure classes for which the ECAIs are used for the standardised approach.	Section 3.8. standardised risk weight profile on page 68.
	(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 68.
	(d) The relation between ECAIs and regulatory credit quality steps used within the standardised approach.	Section 3.8. standardised risk weight profile on page 68.
	(e) The exposure values before and after credit risk mitigation for each credit quality step under the standardised approach.	Table 68: Standardised approach – exposures by asset classes and risk weights (pre CRM pre CCF) (CR5) on page 69. Table 69: Standardised approach – exposures by asset classes and risk weights (post CRM post CCF) (CR5) on page 70. Table 87: Standardised approach – CCR exposures by regulatory portfolio and risk (CCR3) on page 86.
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 20: (OV1) provides RWA and capital requirements for each risk category defined on page 21. Table 76: Market risk regulatory capital requirements on page 80.
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 bases 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 bases of materiality
	(c) Description and value of exchange traded exposures.	Disclosure is excluded on the bases of materiality
	(d) The cumulative realised gains and losses on the sales and liquidations in the period.	Disclosure is excluded on the bases of materiality
	(e) Total unrealised gains and losses include in CET1 capital.	Disclosure is excluded on the bases 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 pages 93.
	(b) Measure of upward and downward rate shocks by currency.	Table 94: Treasury Markets PV01 by currency on page 93.

CRR article ref.	Requirement summary	Disclosure
Exposure to securitisation position		
449	(a) Description of the institution's objectives in relation to securitisation activity	Section 3.9 Securitisation on page 71.
	(b) The nature of other risks including liquidity risk inherent in securitised assets	Section 3.9 Securitisation on page 71.
	(c) Description of underlying exposures	Section 3.9 Securitisation on page 71.
	(d) The roles played by the institution in the securitisation process	Section 3.9 Securitisation on page 71.
	(e) The extent of the institution's involvement in the roles referred in (d)	Section 3.9 Securitisation on page 71.
	(f) The monitoring of credit and market risk from securitisation exposures	Section 3.9 Securitisation on page 71.
	(g) The use of hedging and unfunded protection to mitigate the risks of retained securitisation exposures	Section 3.9 Securitisation on page 71.
	(h) The approaches to calculating securitisation risk-weighted assets	Section 3.9 Securitisation on page 71.
	(i) The types of SSPE that the institution, as sponsor, uses to securitise third-party exposures	Section 3.9 Securitisation on page 72 including Table 71 that lists securitization programs 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 3.9 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 3.9 Securitisation on pages 71 to 73.
	(j)(iv) Accounting treatment of synthetic securitisations	Section 3.9 Securitisation on pages 71 to 73.
	(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 3.9 Securitisation on pages 71 to 73.
	(k) The use of ECAs for securitisations exposures	Section 3.9 Securitisation on pages 71 to 73.
	(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	Explanations of key movements are provided throughout
	(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 72. Securitisation positions by risk-weight category under the previous securitisation framework on page 75. Table 73. Securitisation positions by risk-weight category under the new EU securitisation framework on page 76.
	(n)(ii) Retained securitisation exposures	Table 72. Securitisation positions by risk-weight category under the previous securitisation framework on page 75. Table 73. Securitisation positions by risk-weight category under the new EU securitisation framework on page 76.
	(n)(iii) Assets awaiting securitisation	See Article 449(j)(v)
	(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 71. Securitisation programmes (as originator) on page 74.
	(n)(v) Securitisation positions that are deducted from own funds or risk-weighted at 1250%	Table 72. Securitisation positions by risk-weight category under the previous securitisation framework on page 75. Table 73. Securitisation positions by risk-weight category under the new EU securitisation framework on page 76.
	(n)(vi) The securitisation activity of the current period, including the amount of exposures securitised and recognised gain or loss on sale	Table 70. Securitisation: ABS purchased or retained on page 72 Table 72. Securitisation positions by risk-weight category under the previous securitisation framework on page 75. Table 73. Securitisation positions by risk-weight category under the new EU securitisation framework on page 76.

CRR article ref.	Requirement summary	Disclosure
(o)(i)	Securitisation positions retained or purchased and the associated capital requirements	Table 72. Securitisation positions by risk-weight category under the previous securitisation framework on page 75. Table 73. Securitisation positions by risk-weight category under the new EU securitisation framework on page 76.
(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 3.9 Securitisation sub section Capital Structuring & Distribution Group Securitisation on pages 72 to 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.
	(1)(b)	Explanation of links between pay and performance.
	(1)(c)	Key design characteristics of the remuneration system.
	(1)(d)	The ratios between fixed and variable remuneration.
	(1)(e)	Information on the performance criteria for entitlement to shares, options and variable remuneration entitlements.
	(1)(f)	Description of main parameters and rationale for variable components and other non-cash benefits.
	(1)(g)	Quantitative information on remuneration by business areas.
	(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.
	(1)(h)(ii)	The amount of variable compensation broken down by remuneration types.
	(1)(h)(iii)	Amounts of outstanding deferred remuneration.
	(1)(h)(iv)	The amounts of deferred remuneration during the year.
	(1)(h)(v)	Amount of sign-on and severance payment made during the year and the number of beneficiaries.
	(1)(h)(vi)	The amount of severance payments awarded during the year and the number of beneficiaries.
	(1)(i)	The number of individuals receiving remuneration over EUR1 million in a financial year by pay bands.
	(1)(j)	On request from the regulator the total remuneration of the management body.
	(2)	Quantitative information to be made available at the level of members of the management body for institutions that are significant in size.
Leverage		
451	(1)(a)	Calculation of leverage ratio and application of transitional arrangements.
	(1)(b)	Breakdown and reconciliation of total exposure measure to published financial statements.
	(1)(c)	The amount of de-recognised fiduciary items.
	(1)(d)	Description of the processes used to manage excessive leverage.
	(1)(e)	Description of factors impacting leverage ratio during the period.
	(2)	EBA mandate to issue ITS on common disclosure
Use of the IRB Approach to credit risk		
452	(a)	Details of permission for the use of IRB approach received from authority

CRR article ref.	Requirement summary	Disclosure
(b)(i)	Explanation and view of the structure of internal ratings and relation to external ratings	Table 55: Internal default grade probabilities and mapping to external ratings on page 57.
(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 page 53.
(b)(iii)	The process of managing and recognising credit risk mitigation	Section 3.7. Credit risk mitigation on page 66.
(b)(iv)	The control mechanisms for rating systems	Section 3.3. Internal Ratings Based models on pages 27 to 28.
(c)(i)	Description for internal ratings process for central governments and central banks	Section 3.3. Internal Ratings Based models on page 27.
(c)(ii)	Description for internal ratings process for institutions	See Article 452(c)(i).
(c)(iii)	Description for internal ratings process for corporates, including SMEs, specialised lending and purchased corporate receivables	See Article 452(c)(i).
(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).
(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 54: IRB – Credit risk exposures by exposure class on page 55.
(e)(i)	For central governments and central banks, institutions, corporates and equity by obligor grades the total exposure amounts,	Table 56: IRB credit exposure by internal PD grade for Central governments or central banks (CR6) on page 58. Table 57: IRB credit exposure by internal PD grade for Institutions (CR6) on page 59. Table 58: IRB credit exposure by internal PD grade for Corporates (CR6) on page 60. Table 59: IRB credit exposure by internal PD grade for Corporates Specialised Lending (CR6) on page 61. Table 60: IRB credit risk exposure by internal PD grade for Corporates SME (CR6) on page 62.
(e)(ii)	The exposure weighted average risk weight	See Article 452 (e)(i)
(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)
(f)	For retail exposures either the disclosure of 452(e) or analysis of exposures against EL grades	Table 61: IRB credit exposure by internal PD grade for Retail (CR6) on page 63. Table 62: IRB credit exposure by internal PD grade for Retail - SME (CR6) on page 64. Table 63: IRB credit exposure by internal PD grade for Retail - Secured by real estate collateral (CR6) on page 65. Table 64: IRB credit exposure by internal PD grade for Retail - Qualifying revolving (CR6) on page 66.
(g)	The actual specific credit risk adjustments compared to past experience by asset classes	Table 52: Regulatory expected loss on page 53.
(h)	Description of factors that impacted on loss experience	Section 3.5. Regulatory expected loss vs. impairment charge on page 53.
(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 29: CIB model results on page 29. Table 30: Retail model results on page 29.
(j)(i)	The exposure-weighted average LGD and PD in percentage for each exposure class by geography	Table 53: Exposure weighted average PD% and LGD% by geography on page 54.
(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 53: Exposure weighted average PD% and LGD% by geography on page 54.
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 66.
	(b) Description of policies and processes for collateral valuation and management.	See 453(a) above
	(c) Description of the main types of collaterals taken by institutions.	See 453(a) above
	(d) Description of the main type of guarantor credit derivative counterparty and their credit worthiness.	See 453(a) above
	(e) Information on the market or credit risk concentrations within credit risk mitigation.	See 453(a) above

CRR article ref.	Requirement summary	Disclosure
(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 66: Effect of guarantees and collateral on page 67.
(g)	Total exposure value covered by guarantees or credit derivatives by all asset classes under the Standardised or IRB approaches.	See 453(f) above.
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 4.1, under the headings Regulatory VaR and Regulatory VaR vs. Management VaR on page 77. 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 4.1 under the heading Stressed VaR on page 78.
	(a)(iv) Description of the approaches used for backtesting and valuating the accuracy of internal models	Section 4.1 under the heading Backtesting on pages 78.
	(b) The scope of permission received	Section 4.1 under the heading Regulatory VaR and Regulatory VaR vs. management VaR on pages 77.
	(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 4.1 under the heading Trading book and Valuation framework on pages 77.
	(d)(i) The highest, lowest and the mean of daily VaR over the reporting period at period end	Table 78 (MR3) in row VaR (10 day 99%) on page 81.
	(d)(ii) The highest, lowest and the mean of the stressed VaR over the reporting period at period end	Table 78 (MR3) in row Stressed VaR (10 day 99%) on page 81.
	(d)(iii) The highest, lowest and the mean of the risk numbers of correlation trading over the reporting period at period end	Table 78 (MR3) in row incremental risk capital charge (99.9%) on page 81. 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 79 (MR2-A) on page 81 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 80 and 81 (MR4) on page 82.

Summary of differences

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

The Group's Pillar 3 Disclosures for 31 December 2018 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 and Accounts	Pillar 3 Disclosures
Basis of requirements	→ The Group's Annual Report and Accounts are 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	→ 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 UK by the Prudential Regulatory Authority (PRA) via EU legislation, Capital Requirements Regulation (CRR), Part Eight
Basis of preparation	→ 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	→ 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 modelled risk metrics such as PD, LGD and EAD under Basel rules → Loans and advances are analysed between those that are Internal ratings based (IRB) and standardised, split by standard CRR categories → Market risk and operational risk disclosures are based on the capital required
Coverage	→ 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	→ 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	→ Overview of credit risk management credit grading and the use of IRB models is on pages 212 to 214 → Maximum exposure to credit risk set out on page 155 → Internal credit grading analysis provided by business segment for both performing and non-performing loans and advances on page 159 → External credit grading analysis for unimpaired debt securities and treasury bills is set out on page 161	→ Details of IRB and Standardised approach to credit risk is set out on pages 27 to 28 → For the IRB portfolio, page 57 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 21 → 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 58 to 66 and 88 to 92 → Credit quality step analysis for Standardised portfolio is provided on pages 68 to 70

Topic	Annual Report and Accounts	Pillar 3 Disclosures
Credit risk mitigation	→ CRM approach is set out on page 174 → Overview of collateral held and other credit risk mitigants provided on page 174. Quantitative overview of other risk mitigants including: → 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	→ 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 66 to 68 → 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 71 to 76 → EAD for items subject to CCR risk pre and post credit mitigation is disclosed. The products that are covered under CCR include 'repo style' transactions and derivative transactions. Please refer to pages 83 to 91
Loan portfolio	→ Group overview of the loan portfolio provided by business and by region is on page 181. Maturity analysis provided on page 178	→ EAD by region, split between IRB and Standardised portfolios page 39 and by industry types on page 41 → Maturity of EAD, split by IRB and Standardised on page 43
Problem credit management and provisioning	→ Provisioning approach set out on page 153 and definition of non-performing loans on page 414 → 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 156 → Disclosures on non-performing loans can be found on page 169 to 173	→ 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 53
Market risk	→ Details of the VaR methodology, and VAR (trading and non trading) is disclosed by risk type on pages 191 to 192 → Details on Group Treasury's market risk, including a table showing a parallel shift in the yield curves, on page 204	→ 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 80

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

> Digital Annual Report



sc.com/annualreport

> Register for electronic communications

website: investorcentre.co.uk

LSE Stock code: STAN.LN

HKSE Stock code: 02888

BSE/NSE Stock code: STAN.IN

