Here for good

Driving commerce and prosperity through our unique diversity
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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 2018 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 2018 and should be read in conjunction with the Group’s Annual Report and Accounts.

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

1.2 Highlights
- The Group’s capital and leverage position is managed within the Board-approved risk appetite. The Group is well capitalised with low leverage and high levels of loss-absorbing capacity.
- The Group is well capitalised with an end point Common Equity Tier 1 (CET1) ratio of 14.2 per cent that is well ahead of the current requirement of 9.0 per cent and the 2019 minimum requirement of 10.0 per cent.
- The Group is not highly leveraged and its leverage ratio of 5.6 per cent is well ahead of the 2019 leverage requirement of 3.7 per cent.
- The Group continues to manage its balance sheet proactively, with a particular focus on the efficient management of RWA.

<table>
<thead>
<tr>
<th>Capital base $million</th>
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</thead>
<tbody>
<tr>
<td>2018: Total capital</td>
</tr>
<tr>
<td>2018: Tier 1</td>
</tr>
<tr>
<td>2018: CET1 Capital</td>
</tr>
<tr>
<td>2017: Total capital</td>
</tr>
<tr>
<td>2017: Tier 1</td>
</tr>
<tr>
<td>2017: CET1 Capital</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capital ratios transitional %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018: Total capital</td>
</tr>
<tr>
<td>2018: Tier 1</td>
</tr>
<tr>
<td>2018: CET1 Capital</td>
</tr>
<tr>
<td>2017: Total capital</td>
</tr>
<tr>
<td>2017: Tier 1</td>
</tr>
<tr>
<td>2017: CET1 Capital</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>RWA by risk type 2018 $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit risk</td>
</tr>
<tr>
<td>Credit valuation adjustment risk</td>
</tr>
<tr>
<td>Operational risk</td>
</tr>
<tr>
<td>Market risk</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RWA by risk type 2017 $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit risk</td>
</tr>
<tr>
<td>Credit valuation adjustment risk</td>
</tr>
<tr>
<td>Operational risk</td>
</tr>
<tr>
<td>Market risk</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
### Table 1: Key metrics for the Group (KM1)

<table>
<thead>
<tr>
<th>Available capital amounts</th>
<th>31.12.18</th>
<th>30.09.18</th>
<th>30.06.18</th>
<th>31.03.18</th>
<th>31.12.17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Equity Tier 1 (CET1)</td>
<td>$36,717</td>
<td>$38,340</td>
<td>$38,512</td>
<td>$38,813</td>
<td>$38,162</td>
</tr>
<tr>
<td>Common Equity Tier 1 (CET1) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied</td>
<td>$36,315</td>
<td>$37,938</td>
<td>$38,110</td>
<td>$38,411</td>
<td>N/A</td>
</tr>
<tr>
<td>Tier 1</td>
<td>$43,401</td>
<td>$45,029</td>
<td>$45,204</td>
<td>$45,522</td>
<td>$44,861</td>
</tr>
<tr>
<td>Tier 1 as if IFRS 9 or analogous ECLs transitional arrangements had not been applied</td>
<td>$42,999</td>
<td>$44,627</td>
<td>$44,802</td>
<td>$45,120</td>
<td>N/A</td>
</tr>
<tr>
<td>Total capital</td>
<td>$55,696</td>
<td>$57,576</td>
<td>$58,019</td>
<td>$59,817</td>
<td>$58,758</td>
</tr>
<tr>
<td>Total capital as IFRS 9 or analogous ECLs transitional arrangements had not been applied</td>
<td>$55,294</td>
<td>$57,174</td>
<td>$57,617</td>
<td>$59,415</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Risk-weighted assets amounts</th>
<th>31.12.18</th>
<th>30.09.18</th>
<th>30.06.18</th>
<th>31.03.18</th>
<th>31.12.17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total risk-weighted assets (RWA)</td>
<td>$258,297</td>
<td>$265,245</td>
<td>$271,867</td>
<td>$280,205</td>
<td>$279,748</td>
</tr>
<tr>
<td>Total risk-weighted assets if IFRS 9 or analogous ECLs transitional arrangements had not been applied</td>
<td>$258,442</td>
<td>$265,390</td>
<td>$272,012</td>
<td>$280,350</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Risk-based capital ratios as a percentage of RWA</th>
<th>31.12.18</th>
<th>30.09.18</th>
<th>30.06.18</th>
<th>31.03.18</th>
<th>31.12.17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Equity Tier 1 ratio</td>
<td>14.2%</td>
<td>14.5%</td>
<td>14.2%</td>
<td>13.9%</td>
<td>13.6%</td>
</tr>
<tr>
<td>Tier 1 ratio</td>
<td>14.1%</td>
<td>14.3%</td>
<td>14.0%</td>
<td>13.7%</td>
<td>N/A</td>
</tr>
<tr>
<td>Tier 1 ratio as if IFRS 9 or analogous ECLs transitional arrangements had not been applied</td>
<td>16.8%</td>
<td>17.0%</td>
<td>16.6%</td>
<td>16.2%</td>
<td>16.0%</td>
</tr>
<tr>
<td>Tier 1 as if IFRS 9 or analogous ECLs transitional arrangements had not been applied</td>
<td>16.6%</td>
<td>16.8%</td>
<td>16.5%</td>
<td>16.1%</td>
<td>N/A</td>
</tr>
<tr>
<td>Total capital ratio</td>
<td>21.6%</td>
<td>21.7%</td>
<td>21.3%</td>
<td>21.3%</td>
<td>21.0%</td>
</tr>
<tr>
<td>Total capital ratio as if IFRS 9 or analogous ECLs transitional arrangements had not been applied</td>
<td>21.6%</td>
<td>21.6%</td>
<td>21.2%</td>
<td>21.2%</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Additional CET1 buffer requirements as a percentage of RWA</th>
<th>31.12.18</th>
<th>30.09.18</th>
<th>30.06.18</th>
<th>31.03.18</th>
<th>31.12.17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital conservation buffer requirement (2.5% from 2019)</td>
<td>1.88%</td>
<td>1.88%</td>
<td>1.88%</td>
<td>1.88%</td>
<td>1.25%</td>
</tr>
<tr>
<td>Countercyclical buffer requirement</td>
<td>0.28%</td>
<td>0.26%</td>
<td>0.25%</td>
<td>0.24%</td>
<td>0.17%</td>
</tr>
<tr>
<td>Bank G-SIB and/or D-SIB additional requirements</td>
<td>0.75%</td>
<td>0.75%</td>
<td>0.75%</td>
<td>0.75%</td>
<td>0.50%</td>
</tr>
<tr>
<td>Total of bank CET1 specific buffer requirements</td>
<td>2.91%</td>
<td>2.89%</td>
<td>2.88%</td>
<td>2.87%</td>
<td>1.92%</td>
</tr>
<tr>
<td>CET1 available after meeting the bank’s minimum capital requirements</td>
<td>8.1%</td>
<td>8.3%</td>
<td>7.9%</td>
<td>7.7%</td>
<td>7.5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UK leverage ratio</th>
<th>31.12.18</th>
<th>30.09.18</th>
<th>30.06.18</th>
<th>31.03.18</th>
<th>31.12.17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total UK leverage ratio exposure measure</td>
<td>740,602</td>
<td>742,828</td>
<td>743,552</td>
<td>742,013</td>
<td>717,344</td>
</tr>
<tr>
<td>UK leverage ratio</td>
<td>5.8%</td>
<td>5.8%</td>
<td>5.8%</td>
<td>5.9%</td>
<td>6.0%</td>
</tr>
<tr>
<td>UK leverage ratio as if IFRS 9 or analogous ECLs transitional arrangements had not been applied</td>
<td>5.6%</td>
<td>5.8%</td>
<td>5.8%</td>
<td>5.8%</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Liquidity Coverage Ratio</th>
<th>31.12.18</th>
<th>30.09.18</th>
<th>30.06.18</th>
<th>31.03.18</th>
<th>31.12.17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total HQLA</td>
<td>146,470</td>
<td>142,382</td>
<td>142,423</td>
<td>143,252</td>
<td>144,280</td>
</tr>
<tr>
<td>Total net cash outflow</td>
<td>94,011</td>
<td>92,887</td>
<td>95,016</td>
<td>96,571</td>
<td>97,438</td>
</tr>
<tr>
<td>LCR ratio</td>
<td>156.0%</td>
<td>153.5%</td>
<td>150.0%</td>
<td>148.4%</td>
<td>148.2%</td>
</tr>
</tbody>
</table>

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: 2018, 5 per cent; 2019, 15 per cent; 2020, 30 per cent; 2021, 50 per cent; and 2022, 75 per cent. From 2023 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.
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 2018 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 7 to 9 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 2018 performance year are set out on pages 91 to 125 of the Directors’ remuneration report in the 2018 Annual Report and Accounts. Information is provided on the key components of our remuneration approach and how we develop our approach. The disclosures follow the requirements set out in Part 8 of the Capital Requirements Regulation and the Basel Committee on Banking Supervision standards issued in March 2017.

G-SIB

The Group has been identified as a Global Systemically Important Bank (G-SIB) by the Financial Stability Board (FSB) since November 2012. The Group’s score from the Basel Committee on Banking Supervision’s methodology for assessing and identifying G-SIBs has resulted in an additional loss-absorbency requirement of 1 per cent of CET1. This requirement is being phased in over the period 1 January 2016 to 1 January 2019. 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 2017 G-SII disclosure is published on: http://investors.sc.com/fullyearresults.

Frequency

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

Verification

While the Pillar 3 Disclosures 2018 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 2018 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 RWA of credit derivatives used as CRM techniques, and RWA flow statements of CCR exposures under the IMM
  - 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 2018 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 on pages 198 to 200 of the 2018 Annual Report and Accounts)
- Country risk (refer to section Country risk on page 201 of the 2018 Annual Report and Accounts)
- Traded risk (refer to section Traded risk on pages 202 to 203 of the 2018 Annual Report and Accounts)
- Capital and liquidity risk (refer to section Capital and liquidity risk on pages 204 to 205 of the 2018 Annual Report and Accounts)
- Operational risk (refer to section Operational risk on page 206 of the 2018 Annual Report and Accounts)
- Reputational risk (refer to section Reputational risk on page 207 of the 2018 Annual Report and Accounts)
- Compliance risk (refer to section Compliance risk on page 208 of the 2018 Annual Report and Accounts)
- Conduct risk (refer to section Conduct risk on page 209 of the 2018 Annual Report and Accounts)
- Information and cyber security risk (refer to section Information and cyber security risk on pages 210 to 211 of the 2018 Annual Report and Accounts)
- Financial crime risk (refer to section Financial crime risk on page 212 of the 2018 Annual Report and Accounts)

Credit Risk

Credit risk is the potential for loss due to the failure of a counterparty to meet its obligations to pay the Group. Credit exposures arise from both the banking and trading books. Credit risk is managed through a framework that sets out policies and procedures covering the measurement and management of credit risk. The Credit Risk Function, as a second line control function, performs independent challenge, monitoring and oversight of the credit risk management practices of the Business and Functions engaged in or supporting revenue generating activities which constitute the First Line of defence. Risk appetite is defined by the Group and approved by the Board. It is the maximum amount and type of risk that the Group is willing to assume in pursuit of its strategies. Credit exposure limits are approved within a defined credit approval authority framework.
The Group manages its credit exposures following the principle of diversification across products, geographies, client segments and industry sectors. The Group uses the Advanced Internal Ratings Based (IRB) approach to calculate credit risk capital requirements with the approval of our relevant regulators. This approach builds on the Group’s risk management practices and is the result of a continuing investment in data warehouses and risk models.

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

Refer to Credit Risk (pages 198 to 200) in the 2018 Annual Report and Accounts where we describe the main components of credit risk management, including our credit risk profile, credit risk measurement and policies and the line with risk appetite. For the scope and main content of reporting to senior management, refer to page 198 in the 2018 Annual Report and Accounts.

Trading Risk
Trading 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, commodity risk and credit spread risk.

We use a value at risk (VaR) model for the measurement of the market risk capital requirements for part of the trading book exposures where permission to use such models has been granted by the PRA. Where our market risk exposures are not approved for inclusion in VaR models, the capital requirements are determined using the Standardised Approach 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 (pages 202 and 203) in the 2018 Annual Report and Accounts where we describe the main components of traded risk management, including our traded risk profile.

Operational Risk
Operational Risk defines operational risk as the potential for loss resulting from inadequate or failed internal processes, 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 RWA and capital requirements resultant from operational risk, refer to table 12 on page 16 and to page 192 of the 2018 Annual Report and Accounts.

Enhancements and future developments of Pillar 3

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

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

In March 2017, the BCBS issued the final standard for the second phase of its review of the Pillar 3 disclosure framework. The standard consolidates existing Basel Committee disclosure requirements into the Pillar 3 framework, covering the composition of capital and TLAC, the leverage ratio, the liquidity ratios, the indicators for determining global systemically important banks, the countercyclical capital buffer, interest rate risk in the banking book and remuneration.

The disclosure requirements as set out in the standard have been phased in from year-end 2017. As for our 2017 year-end disclosures, the 2018 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. Our 2018 year-end Pillar 3 disclosures 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 2018 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 Table 2, 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’s Annual Report and Accounts in compliance with their local regulations is published on their website https://www.permatabank.com/en/About/Investor-Relations/
Table 2: Regulatory consolidation

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Regulatory consolidation</th>
<th>Principal undertakings within each category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment</td>
<td>The Group holds no more than 10 per cent of the issued share capital</td>
<td>The Group risk-weights the investment subject to the CRD IV threshold calculation</td>
<td>-</td>
</tr>
<tr>
<td>(non significant)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Associate</td>
<td>The Group holds more than 10 per cent and less than 20 per cent of the issued share capital</td>
<td>The Group risk-weights the investment subject to the CRD IV threshold calculation</td>
<td>China Bohai Bank</td>
</tr>
<tr>
<td>Joint Venture</td>
<td>The Group enters into a contractual arrangement to exercise joint control over an undertaking</td>
<td>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</td>
<td>PT Bank Permata Tbk</td>
</tr>
<tr>
<td>Subsidiary</td>
<td>The Group holds more than 50 per cent of the issued share capital of a financial entity</td>
<td>The Group fully consolidates the undertaking</td>
<td>Standard Chartered Bank</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Standard Chartered Bank Korea Limited</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Standard Chartered Bank Malaysia Berhad</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Standard Chartered Bank (Pakistan) Limited</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Standard Chartered Bank (Taiwan) Limited</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Standard Chartered Bank (Hong Kong) Limited</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Standard Chartered Bank (China) Limited</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Standard Chartered Bank (Singapore) Limited</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Standard Chartered Bank (Thai) Public Company Limited</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Standard Chartered Bank Nigeria Limited</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Standard Chartered Bank Kenya Limited</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Standard Chartered Private Equity Managers (Hong Kong) Limited</td>
</tr>
<tr>
<td>Excluded entities</td>
<td>Insurance or industrial entities excluded from the scope of banking prudential consolidation</td>
<td>The Group risk-weights the investment subject to the CRD IV threshold calculation</td>
<td>Standard Chartered Assurance Ltd</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Standard Chartered Insurance Ltd</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name of the entity</th>
<th>Description of the entity</th>
<th>Method of accounting consolidation</th>
<th>2018 Method of regulatory consolidation</th>
<th>Full consolidation</th>
<th>Proportional consolidation</th>
<th>Neither consolidated nor deducted</th>
<th>Deducted</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT Bank Permata Tbk</td>
<td>Joint venture credit institution</td>
<td>Equity accounting</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard Chartered Assurance Ltd</td>
<td>Insurance entity</td>
<td>Full consolidation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard Chartered Insurance Ltd</td>
<td>Insurance entity</td>
<td>Full consolidation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


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 (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.

1.8 Comparison of accounting balance sheet and exposure at default
The differences between the financial and prudential consolidated balance sheets arise primarily from differences in the basis of consolidation and the requirement to fully consolidate for prudential purposes PT Bank Permata Tbk, a joint venture credit institution which is equity accounted for financial purposes. The more significant difference between the two bases is the treatment of capital, which is presented in Table 4 based on the group regulatory balance sheet and not the financial accounting balance sheet.

Table 4 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 4: Differences between accounting and regulatory scopes of consolidation and the mapping of financial statement categories with regulatory risk categories (Li1)

<table>
<thead>
<tr>
<th>Assets</th>
<th>Carrying values as reported in published financial statements $million</th>
<th>Carrying values under the scope of regulatory consolidation $million</th>
<th>Subject to credit risk framework $million</th>
<th>Subject to counter-party credit risk framework $million</th>
<th>Subject to securitisation framework $million</th>
<th>Subject to market risk framework $million</th>
<th>Not subject to capital requirements or subject to deduction from capital $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash and balances at central banks</td>
<td>57,511</td>
<td>58,277</td>
<td>58,277</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Financial assets held at fair value through profit or loss</td>
<td>29,976</td>
<td>29,976</td>
<td>7,869</td>
<td>3,346</td>
<td>1,104</td>
<td>21,509</td>
<td>–</td>
</tr>
<tr>
<td>Derivative financial instruments</td>
<td>45,621</td>
<td>45,636</td>
<td>0</td>
<td>45,636</td>
<td>–</td>
<td>45,636</td>
<td>–</td>
</tr>
<tr>
<td>Loans and advances to banks</td>
<td>57,599</td>
<td>58,496</td>
<td>54,681</td>
<td>–</td>
<td>–</td>
<td>20,844</td>
<td>–</td>
</tr>
<tr>
<td>Loans and advances to customers</td>
<td>253,407</td>
<td>260,599</td>
<td>245,504</td>
<td>–</td>
<td>15,095</td>
<td>42,111</td>
<td>–</td>
</tr>
<tr>
<td>Reverse repurchase agreements and other similar lending</td>
<td>64,121</td>
<td>64,122</td>
<td>–</td>
<td>64,122</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Investment securities</td>
<td>125,901</td>
<td>126,978</td>
<td>114,356</td>
<td>–</td>
<td>6,367</td>
<td>9,303</td>
<td>–</td>
</tr>
<tr>
<td>Other assets</td>
<td>35,401</td>
<td>36,048</td>
<td>19,445</td>
<td>16,603</td>
<td>–</td>
<td>2,536</td>
<td>–</td>
</tr>
<tr>
<td>Current tax assets</td>
<td>492</td>
<td>492</td>
<td>492</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Prepayments and accrued income</td>
<td>2,505</td>
<td>2,576</td>
<td>2,576</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Interests in associates and joint ventures</td>
<td>2,307</td>
<td>1,590</td>
<td>1,590</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Goodwill and intangible assets</td>
<td>5,056</td>
<td>5,194</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>5,194</td>
<td>–</td>
</tr>
<tr>
<td>Property, plant and equipment</td>
<td>6,490</td>
<td>6,532</td>
<td>6,532</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Deferred tax assets</td>
<td>1,047</td>
<td>1,047</td>
<td>932</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>115</td>
</tr>
<tr>
<td>Asset classified as held for sale</td>
<td>1,328</td>
<td>1,216</td>
<td>1,216</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Total assets</td>
<td>688,762</td>
<td>698,779</td>
<td>513,470</td>
<td>129,707</td>
<td>22,566</td>
<td>141,939</td>
<td>5,309</td>
</tr>
<tr>
<td>Liabilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deposits by banks</td>
<td>29,715</td>
<td>29,854</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>29,854</td>
</tr>
<tr>
<td>Customer accounts</td>
<td>391,013</td>
<td>399,184</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>399,184</td>
</tr>
<tr>
<td>Repurchase agreements and other similar secured borrowing</td>
<td>46,375</td>
<td>46,375</td>
<td>–</td>
<td>46,375</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Financial liabilities held at fair value through profit or loss</td>
<td>15,726</td>
<td>15,714</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>3,214</td>
<td>5,095</td>
</tr>
<tr>
<td>Derivative financial instruments</td>
<td>47,209</td>
<td>47,217</td>
<td>–</td>
<td>47,217</td>
<td>–</td>
<td>47,217</td>
<td>–</td>
</tr>
<tr>
<td>Debt securities in issue</td>
<td>46,454</td>
<td>46,454</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>46,454</td>
</tr>
<tr>
<td>Other liabilities</td>
<td>38,556</td>
<td>38,883</td>
<td>1,656</td>
<td>9,259</td>
<td>–</td>
<td>11,852</td>
<td>25,371</td>
</tr>
<tr>
<td>Current tax liabilities</td>
<td>676</td>
<td>670</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>670</td>
</tr>
<tr>
<td>Accruals and deferred income</td>
<td>5,393</td>
<td>5,452</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>5,452</td>
</tr>
<tr>
<td>Subordinated liabilities and other borrowed funds</td>
<td>15,001</td>
<td>15,276</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>15,276</td>
<td>–</td>
</tr>
<tr>
<td>of which: considered as Additional Tier 1 capital</td>
<td>–</td>
<td>249</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>249</td>
<td>–</td>
</tr>
<tr>
<td>of which: considered as Tier 2 capital</td>
<td>–</td>
<td>11,709</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>11,709</td>
<td>–</td>
</tr>
<tr>
<td>Deferred tax liabilities</td>
<td>563</td>
<td>587</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>587</td>
</tr>
<tr>
<td>Provisions for liabilities and charges</td>
<td>1,330</td>
<td>1,330</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1,330</td>
</tr>
<tr>
<td>Retirement benefit obligation</td>
<td>399</td>
<td>377</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>377</td>
</tr>
<tr>
<td>Liabilities included in disposal groups held for sale</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Total liabilities</td>
<td>638,410</td>
<td>647,373</td>
<td>1,656</td>
<td>102,851</td>
<td>–</td>
<td>62,283</td>
<td>529,651</td>
</tr>
<tr>
<td>Equity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share capital and share premium account</td>
<td>7,111</td>
<td>7,111</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Other reserves</td>
<td>11,878</td>
<td>11,878</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Retained earnings</td>
<td>26,129</td>
<td>26,449</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Other equity instruments</td>
<td>4,961</td>
<td>4,961</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Non-controlling interest</td>
<td>273</td>
<td>1,007</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Total equity</td>
<td>50,352</td>
<td>51,406</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Total equity and liabilities</td>
<td>688,762</td>
<td>698,779</td>
<td>1,656</td>
<td>102,851</td>
<td>–</td>
<td>62,283</td>
<td>528,801</td>
</tr>
</tbody>
</table>
## Table 4: Differences between accounting and regulatory scopes of consolidation and the mapping of financial statement categories with regulatory risk categories (LI1) continued

<table>
<thead>
<tr>
<th>Assets</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrying values as reported in published financial statements $million</td>
<td>Carrying values under the scope of regulatory consolidation $million</td>
</tr>
<tr>
<td>Cash and balances at central banks</td>
<td>58,864</td>
</tr>
<tr>
<td>Financial assets held at fair value through profit or loss</td>
<td>27,564</td>
</tr>
<tr>
<td>Derivative financial instruments</td>
<td>47,031</td>
</tr>
<tr>
<td>Loans and advances to banks</td>
<td>57,494</td>
</tr>
<tr>
<td>Loans and advances to customers</td>
<td>248,707</td>
</tr>
<tr>
<td>Reverse repurchase agreements and other similar lending</td>
<td>54,275</td>
</tr>
<tr>
<td>Investment securities</td>
<td>117,025</td>
</tr>
<tr>
<td>Other assets</td>
<td>33,490</td>
</tr>
<tr>
<td>Current tax assets</td>
<td>491</td>
</tr>
<tr>
<td>Prepayments and accrued income</td>
<td>2,307</td>
</tr>
<tr>
<td>Interests in associates and joint ventures</td>
<td>2,307</td>
</tr>
<tr>
<td>Goodwill and intangible assets</td>
<td>5,013</td>
</tr>
<tr>
<td>Property, plant and equipment</td>
<td>7,211</td>
</tr>
<tr>
<td>Deferred tax assets</td>
<td>1,177</td>
</tr>
<tr>
<td>Asset classified as held for sale</td>
<td>545</td>
</tr>
<tr>
<td>Total assets</td>
<td>663,501</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Liabilities</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deposits by banks</td>
<td>30,945</td>
</tr>
<tr>
<td>Customer accounts</td>
<td>370,509</td>
</tr>
<tr>
<td>Repurchase agreements and other similar secured borrowing</td>
<td>39,783</td>
</tr>
<tr>
<td>Financial liabilities held at fair value through profit or loss</td>
<td>16,633</td>
</tr>
<tr>
<td>Debt securities in issue</td>
<td>46,379</td>
</tr>
<tr>
<td>Other liabilities</td>
<td>35,257</td>
</tr>
<tr>
<td>Current tax liabilities</td>
<td>376</td>
</tr>
<tr>
<td>Accruals and deferred income</td>
<td>5,493</td>
</tr>
<tr>
<td>Subordinated liabilities and other borrowed funds</td>
<td>17,176</td>
</tr>
<tr>
<td>of which: considered as Additional Tier 1 capital</td>
<td>–</td>
</tr>
<tr>
<td>of which: considered as Tier 2 capital</td>
<td>–</td>
</tr>
<tr>
<td>Deferred tax liabilities</td>
<td>404</td>
</tr>
<tr>
<td>Provisions for liabilities and charges</td>
<td>183</td>
</tr>
<tr>
<td>Retirement benefit obligation</td>
<td>455</td>
</tr>
<tr>
<td>Liabilities included in disposal groups held for sale</td>
<td>–</td>
</tr>
<tr>
<td>Total liabilities</td>
<td>611,694</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Equity</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share capital and share premium account</td>
<td>7,097</td>
</tr>
<tr>
<td>Other reserves</td>
<td>12,767</td>
</tr>
<tr>
<td>Retained earnings</td>
<td>26,641</td>
</tr>
<tr>
<td>Other equity instruments</td>
<td>4,061</td>
</tr>
<tr>
<td>Non-controlling interest</td>
<td>341</td>
</tr>
<tr>
<td>Total equity</td>
<td>51,807</td>
</tr>
<tr>
<td>Total equity and liabilities</td>
<td>663,501</td>
</tr>
</tbody>
</table>
Table 5 shows the effect of regulatory adjustments required to derive the Group’s exposure at default (EAD) for the purposes of calculating its credit risk capital requirements. The differences between the carrying values under regulatory scope of consolidation and amounts considered for regulatory purposes shown in Table 5 are mainly due to derivatives netting benefits, provisions, collateral and off-balance sheet exposures. The total EAD for credit and counterparty credit risk is further split by geography, industry and maturity in Tables 32 to 34; standardised credit risk before and after the effect of Credit Risk Mitigation (CRM) is presented in Table 57; standardised credit and counterparty credit risk by risk weight is presented in Tables 58 to 59 and IRB credit and counterparty credit risk before and after the effect of CRM is presented in Table 44. 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 60.

Table 5: Main sources of differences between regulatory exposure amounts and carrying values in financial statements (L12)

<table>
<thead>
<tr>
<th>2018</th>
<th>Subject to Credit risk framework $million</th>
<th>Subject to CCR framework $million</th>
<th>Subject to Securitisation framework $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total assets amount under regulatory scope of consolidation</td>
<td>513,470</td>
<td>129,707</td>
<td>22,566</td>
</tr>
<tr>
<td>Derivatives netting benefit</td>
<td>–</td>
<td>(34,300)</td>
<td>–</td>
</tr>
<tr>
<td>Differences due to consideration of provisions</td>
<td>4,411</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Differences due to consideration of collateral</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Differences due to capital deductions</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Differences due to off-balance sheet amounts recognised in regulatory exposures</td>
<td>83,997</td>
<td>83,066</td>
<td>1,455</td>
</tr>
<tr>
<td>Differences due to the impact of the use of own-models in exposures</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Other</td>
<td>523</td>
<td>123</td>
<td>(5)</td>
</tr>
<tr>
<td><strong>Regulatory exposure at default pre credit risk mitigation</strong></td>
<td><strong>602,401</strong></td>
<td><strong>178,597</strong></td>
<td><strong>24,016</strong></td>
</tr>
</tbody>
</table>

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

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

The CRR provisions on prudential valuation require banks to quantify several valuation uncertainties pertaining to the valuation of assets and liabilities recorded at fair value for accounting purposes. The amounts by which the resulting Prudent Valuation Adjustments exceed any associated Fair Value Adjustments are referred to as the Additional Valuation Adjustments (AVAs) and their aggregate is deducted from CET1 capital.

AVAs arise from uncertainties related to market prices, close-out costs, model risk, unearned credit spreads, investing and funding costs, concentrated positions, future administrative costs, early terminations and operational risks.
Table 6: Prudent valuation adjustment (PVA) (PV1)

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Equity $million</td>
<td>Interest rates $million</td>
</tr>
<tr>
<td>1 Closeout uncertainty</td>
<td>68</td>
<td>296</td>
</tr>
<tr>
<td>2 Of which Mid-market value</td>
<td>16</td>
<td>158</td>
</tr>
<tr>
<td>3 Of which Closeout cost</td>
<td>–</td>
<td>62</td>
</tr>
<tr>
<td>4 Of which Concentration</td>
<td>52</td>
<td>76</td>
</tr>
<tr>
<td>5 Early termination</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>6 Model risk</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>7 Operational risk</td>
<td>3</td>
<td>23</td>
</tr>
<tr>
<td>8 Investing and funding costs</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>9 Unearned credit spreads</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>10 Future administrative costs</td>
<td>–</td>
<td>6</td>
</tr>
<tr>
<td>11 Other</td>
<td>–</td>
<td>7</td>
</tr>
<tr>
<td>12 Total adjustment</td>
<td>71</td>
<td>332</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Equity $million</td>
<td>Interest rates $million</td>
</tr>
<tr>
<td>1 Closeout uncertainty</td>
<td>173</td>
<td>127</td>
</tr>
<tr>
<td>2 Of which Mid-market value</td>
<td>85</td>
<td>96</td>
</tr>
<tr>
<td>3 Of which Closeout cost</td>
<td>–</td>
<td>32</td>
</tr>
<tr>
<td>4 Of which Concentration</td>
<td>87</td>
<td>–</td>
</tr>
<tr>
<td>5 Early termination</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>6 Model risk</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>7 Operational risk</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>8 Investing and funding costs</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>9 Unearned credit spreads</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>10 Future administrative costs</td>
<td>–</td>
<td>6</td>
</tr>
<tr>
<td>11 Other</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>12 Total adjustment</td>
<td>183</td>
<td>149</td>
</tr>
</tbody>
</table>
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 2018 Annual Report and Accounts sets out our approach to capital management (pages 204 to 205).

2.2 Capital resources
All capital instruments included in the capital base meet the requirements set out in the CRR for their respective tier of capital, except for those that are subject to a grandfathering period. Grandfathered capital instruments will be fully phased out of their respective tier of capital by 1 January 2022.
Table 7 summarises the consolidated capital position of the Group.

| Table 7: Reconciliation between financial total equity and regulatory CET1 before regulatory adjustments |
|-------------------------------------------------|-----------|-----------|
| Total equity per balance sheet (financial view) | 50,352    | 51,807    |
| Regulatory adjustments                         | 1,054     | 696       |
| **Total equity per balance sheet (regulatory view)** | 51,406    | 52,503    |
| Foreseeable dividend net of scrip              | (527)     | (399)     |
| Other equity instruments (included in AT1)     | (6,455)   | (6,455)   |
| Non-controlling interests                      | (321)     | (286)     |
| **Common Equity Tier 1 capital before regulatory adjustments** | 44,103    | 45,363    |
### Table 8: Capital base

<table>
<thead>
<tr>
<th></th>
<th>2018 Transitional position $million</th>
<th>2018 End point adjustment $million</th>
<th>2018 End point position $million</th>
<th>2017 Transitional position $million</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Common Equity Tier 1 (CET1) capital: instruments and reserves</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital instruments and the related share premium accounts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Of which: Share premium accounts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retained earnings1</td>
<td>25,377</td>
<td>25,377</td>
<td>25,377</td>
<td></td>
</tr>
<tr>
<td>Accumulated other comprehensive income (and other reserves)</td>
<td>11,878</td>
<td>11,878</td>
<td>12,766</td>
<td></td>
</tr>
<tr>
<td>Non-controlling interests (amount allowed in consolidated CET1)</td>
<td>686</td>
<td>686</td>
<td>850</td>
<td></td>
</tr>
<tr>
<td>Independently reviewed interim and year-end profits/(loss)2</td>
<td>1,072</td>
<td>1,072</td>
<td>1,227</td>
<td></td>
</tr>
<tr>
<td>Foreseeable dividends net of scrip3</td>
<td>(527)</td>
<td>(527)</td>
<td>(399)</td>
<td></td>
</tr>
<tr>
<td><strong>Common Equity Tier 1 capital before regulatory adjustments</strong></td>
<td>44,103</td>
<td>44,103</td>
<td>45,363</td>
<td></td>
</tr>
<tr>
<td><strong>Common Equity Tier 1 capital: regulatory adjustments</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional value adjustments</td>
<td>(564)</td>
<td>(564)</td>
<td>(574)</td>
<td></td>
</tr>
<tr>
<td>Intangible assets</td>
<td>(5,146)</td>
<td>(5,146)</td>
<td>(5,112)</td>
<td></td>
</tr>
<tr>
<td>Deferred tax assets that rely on future profitability</td>
<td>(115)</td>
<td>(115)</td>
<td>(125)</td>
<td></td>
</tr>
<tr>
<td>Fair value reserves related to gains or losses on cash flow hedges</td>
<td>10</td>
<td>10</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>Negative amounts resulting from the calculation of expected loss amounts</td>
<td>(875)</td>
<td>(875)</td>
<td>(1,142)</td>
<td></td>
</tr>
<tr>
<td>Gains or losses on liabilities at fair value resulting from changes in own credit</td>
<td>(412)</td>
<td>(412)</td>
<td>(53)</td>
<td></td>
</tr>
<tr>
<td>Defined-benefit pension fund assets</td>
<td>(34)</td>
<td>(34)</td>
<td>(40)</td>
<td></td>
</tr>
<tr>
<td>Fair value gains and losses from own credit risk related to derivative liabilities</td>
<td>(127)</td>
<td>(127)</td>
<td>(59)</td>
<td></td>
</tr>
<tr>
<td>Exposure amounts which could qualify for risk weight of 1250%</td>
<td>(123)</td>
<td>(123)</td>
<td>(141)</td>
<td></td>
</tr>
<tr>
<td>Of which: securitisation positions</td>
<td>(110)</td>
<td>(110)</td>
<td>(125)</td>
<td></td>
</tr>
<tr>
<td>Of which: free deliveries</td>
<td>(13)</td>
<td>(13)</td>
<td>(16)</td>
<td></td>
</tr>
<tr>
<td><strong>Total regulatory adjustments to Common Equity Tier 1 capital</strong></td>
<td>(7,386)</td>
<td>(7,386)</td>
<td>(7,201)</td>
<td></td>
</tr>
<tr>
<td><strong>Common Equity Tier 1 capital</strong></td>
<td>36,717</td>
<td>36,717</td>
<td>38,162</td>
<td></td>
</tr>
</tbody>
</table>

### Additional Tier 1 (AT1) capital: instruments

<table>
<thead>
<tr>
<th></th>
<th>2018 $million</th>
<th>2018 $million</th>
<th>2018 $million</th>
<th>2017 $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Instruments and the related share premium accounts</td>
<td>6,704</td>
<td>(1,743)</td>
<td>4,961</td>
<td>6,719</td>
</tr>
<tr>
<td>Of which: classified as equity under applicable accounting standards</td>
<td>6,455</td>
<td>(1,494)</td>
<td>4,961</td>
<td>6,455</td>
</tr>
<tr>
<td>Of which: classified as liabilities under applicable accounting standards</td>
<td>249</td>
<td>(249)</td>
<td>–</td>
<td>264</td>
</tr>
<tr>
<td><strong>Additional Tier 1 (AT1) capital before regulatory adjustments</strong></td>
<td>6,704</td>
<td>(1,743)</td>
<td>4,961</td>
<td>6,719</td>
</tr>
</tbody>
</table>

### Additional Tier 1 (AT1) capital: regulatory adjustments

<table>
<thead>
<tr>
<th></th>
<th>2018 $million</th>
<th>2018 $million</th>
<th>2018 $million</th>
<th>2017 $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct and indirect holdings by an institution of own Additional Tier 1 (AT1) instruments and subordinated loans</td>
<td>(20)</td>
<td>–</td>
<td>(20)</td>
<td>(20)</td>
</tr>
<tr>
<td><strong>Total regulatory adjustments to Additional Tier 1 capital</strong></td>
<td>(20)</td>
<td>–</td>
<td>(20)</td>
<td>(20)</td>
</tr>
</tbody>
</table>

### Additional Tier 1 capital

<table>
<thead>
<tr>
<th></th>
<th>2018 $million</th>
<th>2018 $million</th>
<th>2018 $million</th>
<th>2017 $million</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Additional Tier 1 capital</strong></td>
<td>6,684</td>
<td>(1,743)</td>
<td>4,941</td>
<td>6,699</td>
</tr>
<tr>
<td><strong>Tier 1 capital (T1 = CET1 + AT1)</strong></td>
<td>43,401</td>
<td>(1,743)</td>
<td>41,658</td>
<td>44,861</td>
</tr>
</tbody>
</table>

### Tier 2 (T2) capital: instruments and provisions

<table>
<thead>
<tr>
<th></th>
<th>2018 $million</th>
<th>2018 $million</th>
<th>2018 $million</th>
<th>2017 $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital instruments and the related share premium accounts</td>
<td>11,708</td>
<td>–</td>
<td>11,078</td>
<td>12,668</td>
</tr>
<tr>
<td>Qualifying items and the related share premium accounts subject to phase out from T2</td>
<td>240</td>
<td>(240)</td>
<td>–</td>
<td>647</td>
</tr>
<tr>
<td>Qualifying own funds instruments included in consolidated T2 issued by subsidiaries and held by third parties</td>
<td>377</td>
<td>–</td>
<td>377</td>
<td>612</td>
</tr>
<tr>
<td><strong>Tier 2 capital before regulatory adjustments</strong></td>
<td>12,325</td>
<td>(240)</td>
<td>12,085</td>
<td>13,027</td>
</tr>
</tbody>
</table>

### Tier 2 capital: regulatory adjustments

<table>
<thead>
<tr>
<th></th>
<th>2018 $million</th>
<th>2018 $million</th>
<th>2018 $million</th>
<th>2017 $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct and indirect holdings by an institution of own Tier 2 instruments and subordinated loans</td>
<td>(30)</td>
<td>–</td>
<td>(30)</td>
<td>(30)</td>
</tr>
<tr>
<td><strong>Total regulatory adjustments to Tier 2 capital</strong></td>
<td>(30)</td>
<td>–</td>
<td>(30)</td>
<td>(30)</td>
</tr>
<tr>
<td><strong>Tier 2 capital</strong></td>
<td>12,295</td>
<td>(240)</td>
<td>12,055</td>
<td>13,897</td>
</tr>
<tr>
<td><strong>Total capital (TC = T1 + T2)</strong></td>
<td>55,696</td>
<td>(1,983)</td>
<td>53,713</td>
<td>58,758</td>
</tr>
<tr>
<td><strong>Total risk-weighted assets</strong></td>
<td>258,297</td>
<td>–</td>
<td>258,297</td>
<td>279,748</td>
</tr>
</tbody>
</table>
Table 9: Capital ratios and buffers

<table>
<thead>
<tr>
<th>Amounts below the thresholds for deduction (before risk weighting)</th>
<th>2018 Transitional position $million</th>
<th>2018 End point adjustment $million</th>
<th>2018 End point position $million</th>
<th>2017 Transitional position $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>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)</td>
<td>1,774</td>
<td>–</td>
<td>1,774</td>
<td>641</td>
</tr>
<tr>
<td>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)</td>
<td>1,633</td>
<td>–</td>
<td>1,633</td>
<td>1,818</td>
</tr>
<tr>
<td>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)</td>
<td>925</td>
<td>–</td>
<td>925</td>
<td>1,105</td>
</tr>
</tbody>
</table>

**Risk-weighted assets**

| Credit risk | 210,022 | – | 210,022 | 225,727 |
| Credit valuation adjustment risk | 1,116 | – | 1,116 | 503 |
| Operational risk | 28,050 | – | 28,050 | 30,478 |
| Market risk | 19,109 | – | 19,109 | 23,040 |
| Total risk-weighted assets* | 258,297 | – | 258,297 | 279,748 |

**Capital ratios**

| Common Equity Tier 1 capital | 14.2% | – | 14.2% | 13.6% |
| Tier 1 capital | 16.8% | (0.7)% | 16.1% | 16.0% |
| Total capital | 21.6% | (0.8)% | 20.8% | 21.0% |

**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.) | 9.0% | 1.0% | 10.0% | 8.1% |
| Of which: capital conservation buffer requirement | 1.88% | 0.62% | 2.50% | 1.25% |
| Of which: countercyclical buffer requirement | 0.28% | 0.09% | 0.37% | 0.17% |
| Of which systemic risk buffer requirement | – | – | – | – |
| Of which: Global systemically important institution (G-SII) or Other systemically important institution (O-SII) buffer | 0.75% | 0.25% | 1.00% | 0.5% |
| Common Equity Tier 1 available to meet buffers (as percentage of risk exposure amount) | 8.1% | (0.3)% | 7.8% | 7.4% |

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 2018 year-end represent ordinary dividends and preference dividends
4 The risk-weighted assets are not covered by the scope of the Audit

CET1 capital decreased by $1.4 billion, mainly due to $1.1 billion of dividends paid and foreseeable dividends, FX translation of $1.2 billion being offset in part by, profit after tax of $1.1 billion. Tier 2 capital reduced by $1.6 billion to $12.3 billion as redemptions and the impact of the liability management exercise more than offset the new issuance of $0.5 billion of Tier 2 in the period.

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 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

**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/
2.3 Countercyclical capital buffer

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

As at 31 December 2018, the Group’s CCyB requirement was 0.3 per cent. The majority of this CCyB requirement related to exposures to Hong Kong counterparties, with exposures to other jurisdictions being an immaterial part of the Group’s CCyB.

Table 10 represents the disclosure requirement of the Commission delegated regulation (EU) 2015/1555 for own funds, which requires disclosure for countries to which we have exposure. Information is also required for countries where no countercyclical capital buffer rate has yet been implemented. Countries are included in the table if the relevant own funds requirements of that country are greater than 1 per cent of the Group’s total relevant own funds requirements for CCyB calculation.

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

<table>
<thead>
<tr>
<th>Breakdown by country</th>
<th>General credit exposures</th>
<th>Trading book exposures</th>
<th>Securitisation exposures</th>
<th>Own funds requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exposure value for SA $million</td>
<td>Exposure value for IRB $million</td>
<td>Sum of long and short positions of trading book exposures for SA $million</td>
<td>Value of trading book exposures for internal models $million</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>1,445</td>
<td>3,176</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Cayman Islands</td>
<td>279</td>
<td>2,399</td>
<td>114</td>
<td>–</td>
</tr>
<tr>
<td>China</td>
<td>6,130</td>
<td>11,950</td>
<td>2,690</td>
<td>–</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>–</td>
<td>5</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>4,476</td>
<td>62,827</td>
<td>123</td>
<td>–</td>
</tr>
<tr>
<td>Iceland</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>India</td>
<td>5,842</td>
<td>20,304</td>
<td>2,031</td>
<td>–</td>
</tr>
<tr>
<td>Indonesia</td>
<td>8,073</td>
<td>3,112</td>
<td>65</td>
<td>–</td>
</tr>
<tr>
<td>Korea</td>
<td>1,165</td>
<td>39,634</td>
<td>1,091</td>
<td>–</td>
</tr>
<tr>
<td>Lithuania</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Malaysia</td>
<td>816</td>
<td>9,915</td>
<td>1,049</td>
<td>–</td>
</tr>
<tr>
<td>Netherlands</td>
<td>6</td>
<td>5,287</td>
<td>39</td>
<td>–</td>
</tr>
<tr>
<td>Nigeria</td>
<td>630</td>
<td>3,091</td>
<td>703</td>
<td>–</td>
</tr>
<tr>
<td>Norway</td>
<td>1</td>
<td>112</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Pakistan</td>
<td>551</td>
<td>1,959</td>
<td>82</td>
<td>–</td>
</tr>
<tr>
<td>Singapore</td>
<td>5,787</td>
<td>31,557</td>
<td>453</td>
<td>–</td>
</tr>
<tr>
<td>Slovakia</td>
<td>–</td>
<td>2</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Sweden</td>
<td>3</td>
<td>406</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Taiwan</td>
<td>1,038</td>
<td>9,453</td>
<td>278</td>
<td>–</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>3,077</td>
<td>13,359</td>
<td>182</td>
<td>–</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>1,775</td>
<td>27,138</td>
<td>198</td>
<td>–</td>
</tr>
<tr>
<td>United States</td>
<td>314</td>
<td>25,177</td>
<td>124</td>
<td>–</td>
</tr>
<tr>
<td>Vietnam</td>
<td>690</td>
<td>1,591</td>
<td>8</td>
<td>–</td>
</tr>
<tr>
<td>Other countries</td>
<td>8,007</td>
<td>64,888</td>
<td>2,469</td>
<td>–</td>
</tr>
</tbody>
</table>
### 2.3 Countercyclical capital buffer continued

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

<table>
<thead>
<tr>
<th>Breakdown by country</th>
<th>General credit exposures</th>
<th>Trading book exposures</th>
<th>Securitisation exposures</th>
<th>Own funds requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exposure value for SA $million</td>
<td>Exposure value for IRB $million</td>
<td>Sum of long and short positions of trading book exposures for SA $million</td>
<td>Value of trading book exposures for internal models $million</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>1,341 3,003 77</td>
<td>– – –</td>
<td>243 6</td>
<td>249</td>
</tr>
<tr>
<td>China</td>
<td>6,328 13,038 3,174</td>
<td>– – –</td>
<td>1,110 80</td>
<td>1,190</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>– 10 – – –</td>
<td>– – –</td>
<td>– –</td>
<td>–</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>5,038 62,985 275</td>
<td>– – –</td>
<td>1,870 16</td>
<td>1,886</td>
</tr>
<tr>
<td>Iceland</td>
<td>– – – – –</td>
<td>– –</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>India</td>
<td>5,931 20,086 1,344</td>
<td>– – –</td>
<td>1,478 56</td>
<td>1,534</td>
</tr>
<tr>
<td>Indonesia</td>
<td>8,613 3,903 243</td>
<td>– – –</td>
<td>871 20</td>
<td>891</td>
</tr>
<tr>
<td>Korea</td>
<td>1,425 41,790 403</td>
<td>– – –</td>
<td>979 14</td>
<td>993</td>
</tr>
<tr>
<td>Malaysia</td>
<td>901 9,468 487</td>
<td>– – –</td>
<td>488 16</td>
<td>504</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2 3,406 22</td>
<td>– – –</td>
<td>172 2</td>
<td>174</td>
</tr>
<tr>
<td>Nigeria</td>
<td>622 3,058 727</td>
<td>– – –</td>
<td>201 82</td>
<td>283</td>
</tr>
<tr>
<td>Norway</td>
<td>1 219 – – –</td>
<td>– – –</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Pakistan</td>
<td>704 2,108 7</td>
<td>– – –</td>
<td>167 8</td>
<td>175</td>
</tr>
<tr>
<td>Singapore</td>
<td>5,684 36,753 296</td>
<td>– – –</td>
<td>1,290 17</td>
<td>1,307</td>
</tr>
<tr>
<td>Slovakia</td>
<td>4 – – – 19</td>
<td>– – –</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Sweden</td>
<td>1 442 5</td>
<td>– – –</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>Taiwan</td>
<td>1,982 7,799 302</td>
<td>– – –</td>
<td>241 3</td>
<td>244</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>3,404 13,759 186</td>
<td>– – –</td>
<td>844 15</td>
<td>859</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>1,949 24,179 585</td>
<td>– – 20,690</td>
<td>548 39</td>
<td>802</td>
</tr>
<tr>
<td>United States</td>
<td>364 17,813 280</td>
<td>– – –</td>
<td>479 4</td>
<td>483</td>
</tr>
<tr>
<td>Vietnam</td>
<td>757 1,334 43</td>
<td>– – –</td>
<td>147 4</td>
<td>151</td>
</tr>
<tr>
<td>Other countries</td>
<td>8,761 67,030 2,851</td>
<td>– – –</td>
<td>2,625 200</td>
<td>2,825</td>
</tr>
</tbody>
</table>

**Table 11: Amount of institution specific countercyclical capital buffer**

<table>
<thead>
<tr>
<th></th>
<th>2018 $million</th>
<th>2017 $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total risk exposure amount (see Table 12: Overview of RWA (OV1))</td>
<td>258,297</td>
<td>279,748</td>
</tr>
<tr>
<td>Institution specific countercyclical capital buffer rate</td>
<td>0.3%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Institution specific countercyclical capital buffer requirement</td>
<td>730</td>
<td>462</td>
</tr>
</tbody>
</table>
2.4 Capital requirements

The Group’s CET1 requirement for 2019 is 10.0 per cent, comprising:

- A minimum Pillar 1 CET1 requirement of 4.5 per cent
- A Pillar 2A CET1 requirement of around 1.6 per cent being 56 per cent of the total Pillar 2A requirement
- A capital conservation buffer of 2.5 per cent by 1 January 2019
- A G-SII buffer of 1.0 per cent by 1 January 2019
- A countercyclical capital buffer of around 0.4 per cent, effective from 2019

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

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

Pillar 1 and Pillar 2A CET1 requirements and the Combined Buffer requirements 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.

Table 12 presents the Group’s RWA and capital requirements (calculated as 8 per cent of RWA).

Further information on credit RWA can be found in Table 44 for credit risk exposures under IRB (which include counterparty credit risk); Table 14 for the RWA flow statements for credit risk exposures under IRB (which includes securitisation balances below); Table 57 for exposures under the standardised approach (which include amounts below the threshold for deduction) and section 4.2 for exposures subject to counterparty credit risk.

The PRA buffer is not disclosed.

Further information on credit RWA can be found in Table 44 for credit risk exposures under IRB (which include counterparty credit risk); Table 14 for the RWA flow statements for credit risk exposures under IRB (which includes securitisation balances below); Table 57 for exposures under the standardised approach (which include amounts below the threshold for deduction) and section 4.2 for exposures subject to counterparty credit risk.

Table 12: Overview of RWA (OVi)

<table>
<thead>
<tr>
<th></th>
<th>31.12.18</th>
<th>30.09.18</th>
<th>31.12.17</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Risk-weighted assets $million</td>
<td>Regulatory capital requirement$million</td>
<td>Risk-weighted assets $million</td>
</tr>
<tr>
<td>1 Credit risk (excluding counterparty credit risk)¹</td>
<td>188,522</td>
<td>15,082</td>
<td>195,082</td>
</tr>
<tr>
<td>4 Of which advanced IRB approach (Table 44)</td>
<td>148,537</td>
<td>11,883</td>
<td>151,208</td>
</tr>
<tr>
<td>2 Of which standardised approach (Table 57)</td>
<td>39,985</td>
<td>3,199</td>
<td>43,874</td>
</tr>
<tr>
<td>6 Counterparty credit risk³</td>
<td>12,998</td>
<td>938</td>
<td>14,783</td>
</tr>
<tr>
<td>7 Of which mark to market method</td>
<td>11,823</td>
<td>844</td>
<td>10,697</td>
</tr>
<tr>
<td>11 Of which risk exposure amount for contributions to the default fund of a CCP</td>
<td>59</td>
<td>5</td>
<td>61</td>
</tr>
<tr>
<td>12 Of which CVA (Table 76)</td>
<td>1,116</td>
<td>89</td>
<td>1,233</td>
</tr>
<tr>
<td>13 Settlement risk</td>
<td>3</td>
<td>–</td>
<td>2</td>
</tr>
<tr>
<td>14 Securitisation exposures in the banking book</td>
<td>3,219</td>
<td>258</td>
<td>2,544</td>
</tr>
<tr>
<td>15 Of which IRB ratings based approach</td>
<td>2,596</td>
<td>208</td>
<td>2,044</td>
</tr>
<tr>
<td>16 Of which IRB supervisory formula approach</td>
<td>623</td>
<td>50</td>
<td>500</td>
</tr>
<tr>
<td>18 Of which standardised approach</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>19 Market risk (Table 66)</td>
<td>19,109</td>
<td>1,529</td>
<td>18,100</td>
</tr>
<tr>
<td>21 Of which internal model approaches</td>
<td>11,862</td>
<td>949</td>
<td>11,238</td>
</tr>
<tr>
<td>20 Of which standardised approach</td>
<td>7,247</td>
<td>580</td>
<td>6,862</td>
</tr>
<tr>
<td>22 Large exposures</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>23 Operational risk⁴</td>
<td>28,050</td>
<td>2,244</td>
<td>28,050</td>
</tr>
<tr>
<td>25 Of which standardised approach</td>
<td>28,050</td>
<td>2,244</td>
<td>28,050</td>
</tr>
<tr>
<td>27 Amounts below the thresholds for deduction (subject to 250% risk-weight) (Table 57)</td>
<td>6,396</td>
<td>512</td>
<td>6,684</td>
</tr>
<tr>
<td>28 Floor Adjustment</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>29 Total</td>
<td>258,297</td>
<td>20,563</td>
<td>266,245</td>
</tr>
</tbody>
</table>

1 The regulatory capital requirement is calculated as 8 per cent of the risk-weighted assets, and represents the minimum total capital ratio in accordance with CRR Article 92 (1)
2 Credit risk (excluding counterparty credit risk) includes non-credit obligation assets
3 Counterparty credit risk includes assets which are assessed under IRB and Standardised approaches
4 To calculate operational risk standardised risk-weighted assets, a regulatory defined beta co-efficient is applied to average gross income for the previous three years, across each of the eight business lines prescribed in the CRR
2.4 Capital requirements continued

RWA decreased by $21.5 billion, or 7.7 per cent from 31 December 2017 to $258.3 billion. This was due to a decrease in credit risk RWA of $15.1 billion and reductions in both market and operational risk RWA of $3.9 billion and $2.4 billion respectively.

- Credit risk including counterparty credit risk decreased to $211.1 billion. The decrease was driven by:
  - $5.9 billion decrease from foreign currency translation
  - $4.9 billion decrease mainly due to $2.4 billion of efficiencies in financial markets through novation, trade compressions and process enhancement in collateral recognition and $2.2 billion of savings from RWA efficiency initiatives on sovereign, financial institution and retail exposures
  - $3.9 billion decrease in model, methodology and policy changes, driven by a $2.9 billion reduction due to PRA approved IRB model changes relating to loss-given-default (LGD) parameters and a $0.7 billion RWA decrease mainly due to model changes in mortgages in ASEAN & South Asia
  - $1.4 billion decrease due to net credit migration, primarily in ASEAN & South Asia
  - $1.5 billion increase driven by higher liquid assets over year end in Treasury Markets
  - $0.6 billion decrease due to savings from disposal of an investment in ASEAN & South Asia

- Total market risk RWA decreased by $3.9 billion, or 17.1 per cent from 31 December 2017 to $19.1 billion. This change was due mainly to reduced trading book debt security holdings and to changes in internal models approach (IMA) scope and model

- Operational risk RWA reduced by $2.4 billion to $280.0 billion, due to a decrease in the average income over a rolling three-year time horizon, as lower 2017 income replaced higher 2014 income. This represents a 7.9 per cent year-on-year reduction in operational risk RWA

Table 13 shows the significant drivers of credit risk, market risk and operational risk RWA movements from 1 January 2018.

Table 13: Movement analysis for RWA

<table>
<thead>
<tr>
<th></th>
<th>Credit risk</th>
<th>Credit risk</th>
<th>Credit risk</th>
<th>Counterparty credit risk</th>
<th>Total Credit &amp; Counterparty credit risk</th>
<th>Operational risk</th>
<th>Market risk</th>
<th>Total risk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IRB $million</td>
<td>SA $million</td>
<td>Total $million</td>
<td>$million</td>
<td>$million</td>
<td>$million</td>
<td>$million</td>
<td>$million</td>
</tr>
<tr>
<td>As at 1 January 2018</td>
<td>159,289</td>
<td>51,424</td>
<td>210,713</td>
<td>15,517</td>
<td>226,230</td>
<td>30,478</td>
<td>23,040</td>
<td>279,748</td>
</tr>
<tr>
<td>Asset size</td>
<td>3,866</td>
<td>1,476</td>
<td>5,342</td>
<td>469</td>
<td>5,811</td>
<td>–</td>
<td>–</td>
<td>5,811</td>
</tr>
<tr>
<td>Asset quality</td>
<td>(1,367)</td>
<td>–</td>
<td>(1,367)</td>
<td>(190)</td>
<td>(1,557)</td>
<td>–</td>
<td>–</td>
<td>(1,557)</td>
</tr>
<tr>
<td>Model updates</td>
<td>(1,374)</td>
<td>(95)</td>
<td>(1,469)</td>
<td>(469)</td>
<td>(1,938)</td>
<td>–</td>
<td>(1,133)</td>
<td>(3,076)</td>
</tr>
<tr>
<td>Methodology and policy</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Acquisitions and disposals</td>
<td>–</td>
<td>(626)</td>
<td>–</td>
<td>(626)</td>
<td>–</td>
<td>–</td>
<td>(626)</td>
<td>–</td>
</tr>
<tr>
<td>Foreign exchange movements</td>
<td>(4,262)</td>
<td>(1,619)</td>
<td>(5,881)</td>
<td>(219)</td>
<td>(6,100)</td>
<td>–</td>
<td>–</td>
<td>(6,100)</td>
</tr>
<tr>
<td>Other, including non-credit risk movements1</td>
<td>(2,400)</td>
<td>–</td>
<td>(2,400)</td>
<td>(325)</td>
<td>(2,725)</td>
<td>(2,428)</td>
<td>(3,802)</td>
<td>(8,955)</td>
</tr>
<tr>
<td>As at 30 September 2018</td>
<td>153,752</td>
<td>198,140</td>
<td>219,095</td>
<td>12,998</td>
<td>231,138</td>
<td>28,050</td>
<td>18,109</td>
<td>258,297</td>
</tr>
<tr>
<td>Asset size</td>
<td>767</td>
<td>(3,936)</td>
<td>(3,169)</td>
<td>(1,098)</td>
<td>(4,267)</td>
<td>–</td>
<td>–</td>
<td>(4,267)</td>
</tr>
<tr>
<td>Asset quality</td>
<td>122</td>
<td>–</td>
<td>122</td>
<td>71</td>
<td>193</td>
<td>–</td>
<td>–</td>
<td>193</td>
</tr>
<tr>
<td>Model updates</td>
<td>(1,156)</td>
<td>–</td>
<td>(1,156)</td>
<td>–</td>
<td>(1,156)</td>
<td>(810)</td>
<td>(1,966)</td>
<td>–</td>
</tr>
<tr>
<td>Methodology and policy</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>(772)</td>
<td>(772)</td>
<td>–</td>
<td>–</td>
<td>(772)</td>
</tr>
<tr>
<td>Acquisitions and disposals</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Foreign exchange movements</td>
<td>(166)</td>
<td>357</td>
<td>191</td>
<td>14</td>
<td>205</td>
<td>–</td>
<td>–</td>
<td>205</td>
</tr>
<tr>
<td>Other, including non-credit risk movements1</td>
<td>(1,563)</td>
<td>(597)</td>
<td>(2,160)</td>
<td>–</td>
<td>(2,160)</td>
<td>–</td>
<td>1,819</td>
<td>(341)</td>
</tr>
<tr>
<td>As at 31 December 2018</td>
<td>151,756</td>
<td>46,384</td>
<td>198,140</td>
<td>12,998</td>
<td>211,138</td>
<td>28,050</td>
<td>19,109</td>
<td>258,297</td>
</tr>
</tbody>
</table>

1 RWA efficiencies are disclosed against ‘Other, including non-credit risk movements’.

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

Table 14 shows the significant drivers of credit risk, IRB RWA movements (excluding counterparty credit risk and standardised credit risk) from 1 January 2018.
## 2.4 Capital requirements continued

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

<table>
<thead>
<tr>
<th></th>
<th>Risk-weighted assets/$ million</th>
<th>Regulatory capital requirement/$ million</th>
</tr>
</thead>
<tbody>
<tr>
<td>As at 1 January 2018</td>
<td>159,289</td>
<td>12,743</td>
</tr>
<tr>
<td>Asset size</td>
<td>3,866</td>
<td>309</td>
</tr>
<tr>
<td>Asset quality</td>
<td>(1,367)</td>
<td>(109)</td>
</tr>
<tr>
<td>Model updates</td>
<td>(1,374)</td>
<td>(110)</td>
</tr>
<tr>
<td>Methodology and policy</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Acquisitions and disposals</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Foreign exchange movements</td>
<td>(4,262)</td>
<td>(341)</td>
</tr>
<tr>
<td>Other</td>
<td>(2,400)</td>
<td>(192)</td>
</tr>
</tbody>
</table>

1 as at 30 September 2018 153,752 12,300

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

2 See Table 12: Overview of RWA (OV1). Comprises advanced IRB credit risk $148,537 million and securitisation of $3,219 million

IRB credit RWA decreased by $7.5 billion from 31 December 2017 driven by:

- $4.4 billion decrease from foreign currency translation
- $4.0 billion decrease driven by RWA optimisation through collateral management
- $2.5 billion decrease in model updates driven by PRA-approved IRB model changes relating to LGD parameters
- $1.2 billion decrease due to net credit migration, primarily in ASEAN & South Asia
- $4.6 billion increase driven by asset size across multiple business areas

Table 15 shows the RWA flow statements of market risk RWA exposures under the Internal Model Approach (IMA) from 1 January 2018.
2.4 Capital requirements continued

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

<table>
<thead>
<tr>
<th></th>
<th>VaR $million</th>
<th>SVaR $million</th>
<th>IRC $million</th>
<th>CRM $million</th>
<th>Other $million</th>
<th>Total RWA $million</th>
<th>Total capital requirement $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>At 1 January 2018</td>
<td>1,978</td>
<td>8,083</td>
<td>–</td>
<td>–</td>
<td>2,715</td>
<td>12,776</td>
<td>1,022</td>
</tr>
<tr>
<td>Regulatory adjustment</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>RWAs post adjustment at 1 January 2018</td>
<td>1,978</td>
<td>8,083</td>
<td>–</td>
<td>–</td>
<td>2,715</td>
<td>12,776</td>
<td>1,022</td>
</tr>
<tr>
<td>Movement in risk levels</td>
<td>(309)</td>
<td>(1,603)</td>
<td>–</td>
<td>–</td>
<td>374</td>
<td>(1,538)</td>
<td>(123)</td>
</tr>
<tr>
<td>Model updates/changes</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Methodology and policy</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Acquisitions and disposals</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Foreign exchange movements</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Other</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Total</td>
<td>1,669</td>
<td>6,480</td>
<td>–</td>
<td>–</td>
<td>3,089</td>
<td>11,238</td>
<td>899</td>
</tr>
</tbody>
</table>

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 2018 Annual Report and Accounts on page 182.

Market risk RWA under an IMA approach decreased by $0.9 billion from 31 December 2017 mainly due to a reduction in the IMA regulatory capital multiplier.

2.5 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 2018, the Group’s current minimum requirement was 3.25 per cent. The Group’s future requirement of 3.73 per cent from 2019 comprises:

(i) The minimum 3.25 per cent
(ii) A 0.35 per cent G-SII leverage ratio buffer
(iii) A 0.13 per cent countercyclical capital leverage ratio buffer, based on currently known pending countercyclical capital buffer rates and assuming a constant proportion of exposures to the relevant jurisdictions

The Group’s current UK leverage ratio of 5.6 per cent is above the current minimum requirement. The leverage ratio in the period remained flat mainly due to an increase in the leverage exposure measure.

Table 16 presents both the Group’s UK leverage ratio, and CRR leverage ratio. The UK leverage ratio is approximately 40 basis points higher than on a CRR basis as at 31 December 2018 due to the exclusion of qualifying claims on central banks exposures from the UK exposure measure.
The UK leverage ratio went down by 0.4 percentage points in the period due to the combined impact of an increased exposure measure and lower Tier 1 capital (end point).

**2.5 Leverage ratio continued**

**Table 16: UK and CRR leverage ratio**

<table>
<thead>
<tr>
<th></th>
<th>2018 $million</th>
<th>2017 $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier 1 capital (end point)</td>
<td>41,658</td>
<td>43,103</td>
</tr>
<tr>
<td>UK leverage exposure</td>
<td>740,602</td>
<td>717,344</td>
</tr>
<tr>
<td>UK leverage ratio</td>
<td>5.6%</td>
<td>6.0%</td>
</tr>
<tr>
<td>CRR leverage exposure</td>
<td>795,736</td>
<td>759,518</td>
</tr>
<tr>
<td>CRR leverage ratio</td>
<td>5.2%</td>
<td>5.7%</td>
</tr>
<tr>
<td>UK leverage exposure quarterly average</td>
<td>734,976</td>
<td>723,508</td>
</tr>
<tr>
<td>UK leverage ratio quarterly average</td>
<td>5.8%</td>
<td>6.0%</td>
</tr>
<tr>
<td>Countercyclical leverage ratio buffer</td>
<td>0.1%</td>
<td>0.1%</td>
</tr>
<tr>
<td>G-SII additional leverage ratio buffer</td>
<td>0.3%</td>
<td>0.2%</td>
</tr>
</tbody>
</table>

CRR leverage ratio

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

**Table 17: Summary reconciliation of accounting assets and leverage exposure**

<table>
<thead>
<tr>
<th></th>
<th>2018 $million</th>
<th>2017 $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Total assets as per published financial statements</td>
<td>688,762</td>
<td>663,501</td>
</tr>
<tr>
<td>2 Adjustment difference between the accounting scope of consolidation and the regulatory scope of consolidation</td>
<td>9,613</td>
<td>10,462</td>
</tr>
<tr>
<td>4 Adjustments for derivative financial instruments</td>
<td>(19,408)</td>
<td>(16,854)</td>
</tr>
<tr>
<td>5 Adjustments for securities financing transactions (SFTs)</td>
<td>8,281</td>
<td>13,238</td>
</tr>
<tr>
<td>6 Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)</td>
<td>115,335</td>
<td>96,260</td>
</tr>
<tr>
<td>7 Other adjustments</td>
<td>(6,847)</td>
<td>(7,089)</td>
</tr>
<tr>
<td>8 Total leverage ratio exposure</td>
<td>795,736</td>
<td>759,518</td>
</tr>
</tbody>
</table>
Table 18: Leverage ratio common disclosure

<table>
<thead>
<tr>
<th>On-balance sheet exposures (excluding derivatives and SFTs)</th>
<th>2018 $million</th>
<th>2017 $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. On-balance sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral)</td>
<td>591,004</td>
<td>571,730</td>
</tr>
<tr>
<td>2. (Asset amounts deducted in determining Tier 1 capital)</td>
<td>(6,847)</td>
<td>(7,089)</td>
</tr>
<tr>
<td>3. Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets)</td>
<td>584,157</td>
<td>564,641</td>
</tr>
</tbody>
</table>

**Derivative exposures**

| 4. Replacement cost associated with all derivatives transactions (i.e. net of eligible cash variation margin) | 5,476 | 7,391 |
| 5. Add-on amounts for PFE associated with all derivatives transactions (mark-to-market method) | 28,498 | 30,027 |
| 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) | (8,967) | (8,586) |
| 8. (Exempted CCP leg of client-cleared trade exposures) | – | – |
| 9. Adjusted effective notional amount of written credit derivatives | 14,392 | 12,680 |
| 10. (Adjusted effective notional offsets and add-on deductions for written credit derivatives) | (13,171) | (11,320) |
| 11. Total derivative exposures | 26,228 | 30,192 |

**Securities financing transaction exposures**

| 12. Gross SFT assets (with no recognition of netting, after adjusting for sales accounting transactions) | 65,191 | 61,520 |
| 13. (Netted amounts of cash payables and cash receivables of gross SFT assets) | (3,456) | (6,333) |
| 14. Counterparty credit risk exposure for SFT assets | 8,281 | 13,238 |
| 15. Total securities financing transaction exposures | 70,016 | 68,425 |

**Other off-balance sheet exposures**

| 17. Off-balance sheet exposures at gross notional amount | 378,467 | 288,076 |
| 18. (Adjustments for conversion to credit equivalent amounts) | (263,132) | (191,816) |
| 19. Other off-balance sheet exposures | 115,335 | 90,260 |

**Capital and total exposures**

| 20. Tier 1 capital (end point) | 41,658 | 43,103 |
| 21. Leverage ratio total exposure measure | 795,736 | 759,518 |
| 22. Leverage ratio | 5.2% | 5.7% |

**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 |

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

| EU-1. Total on-balance sheet exposures (excluding derivatives, SFTs, and exempted exposures), of which: | 2018 $million | 2017 $million |
| EU-2. Trading book exposures | 47,976 | 49,456 |
| EU-4. Covered bonds | 5,572 | 3,428 |
| EU-5. Exposures treated as sovereigns | 178,735 | 167,012 |
| EU-6. Exposures to regional governments, MDB, international organisations and PSE not treated as sovereigns | 54 | 42 |
| EU-7. Institutions | 77,344 | 72,655 |
| EU-8. Secured by mortgages of immovable properties | 75,601 | 79,259 |
| EU-9. Retail exposures | 27,098 | 25,577 |
| EU-10. Corporates | 133,634 | 129,504 |
| EU-11. Exposures in default | 7,470 | 9,106 |
| EU-12. Other exposures (eg equity, securitisations, and other non-credit obligation assets) | 37,520 | 35,792 |
3. Credit risk

Our approach to credit risk can be found in the Risk management approach section in the 2018 Annual Report and Accounts on page 198 to 200.

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

The Group uses the AIRB 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 77 per cent of the Group’s credit RWA (2017: 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, Commercial Banking 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 prescribed within Basel III. The risk-weight applied under the Standardised Approach is zero per cent risk weighting under the standardised approach where neither internal defaults nor external ratings are available. In Corporate & Institutional Banking and Commercial Banking, the largest portfolios are those that include a full economic cycle. Rating overrides are tracked and threshold breaches are escalated to the relevant risk management committees, and model issues are tracked at the 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 Corporate & Institutional Banking and Commercial Banking, the largest portfolios are rated based on the shadow bond approach (Sovereigns, Banks, Large Corporates) or the good-bad approach (Mid Corporate). 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 Corporate & Institutional Banking and Commercial Banking, each client is assigned a credit grade and exposures to each client or client group are aggregated consistently with the regulatory Large Exposures requirements.

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 Stress Testing Committee (STC) based on materiality. ERA and GMV are separate departments within Group Risk. During the second half of 2018, the Group established the Model Risk Committee (MRC) and removed responsibility for model approvals from STC. 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 the 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 the CMAC.

3.4. Pillar 3 Disclosures

Pillar 3 disclosures cover the Group’s capital framework, including capital adequacy ratios and risk-weighting methodologies. The Group provides risk-based capital requirements under the Basel II framework and the new Basel III framework. The Group is exposed to credit risk, market risk, liquidity risk, operational risk and reputational risk.

Pillar 3 Disclosures 2018

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 the 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 Corporate & Institutional Banking and Commercial Banking, the largest portfolios are rated based on the shadow bond approach (Sovereigns, Banks, Large Corporates) or the good-bad approach (Mid Corporate). 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 Corporate & Institutional Banking and Commercial Banking, each client is assigned a credit grade and exposures to each client or client group are aggregated consistently with the regulatory Large Exposures requirements.

3.4. Pillar 3 Disclosures

Pillar 3 disclosures cover the Group’s capital framework, including capital adequacy ratios and risk-weighting methodologies. The Group provides risk-based capital requirements under the Basel II framework and the new Basel III framework. The Group is exposed to credit risk, market risk, liquidity risk, operational risk and reputational risk.
3.3 Internal Ratings Based models continued

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 2018.

The actual default rates for institutions and corporate exposures in 2018 remained below IRB model predictions as at the beginning of 2018, 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.

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 PD. 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 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.

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 2018 to the outstanding amount at time of default. The ratios for all models are larger than one, indicating that the predicted EAD is higher than the realised outstanding amount at default. This is explained by the regulatory guidance to assign conservatism to the CCF of certain exposure types and to calibrate the models to downturn conditions, as well as by the impact of management action leading to a reduction in actual exposure prior to default.

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

The estimates provided in the table are before the application of any conservative adjustment.
### 3.3 Internal Ratings Based models continued

#### Table 20: CIC model results

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Corporate, Institutions and Commercial</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central governments or central banks</td>
<td>1.07</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>24.4</td>
</tr>
<tr>
<td>Institutions</td>
<td>0.46</td>
<td>0.06</td>
<td>41.16</td>
<td>4.93</td>
<td>0.68</td>
<td>21.5</td>
</tr>
<tr>
<td>Corporates</td>
<td>2.05</td>
<td>0.61</td>
<td>48.07</td>
<td>32.78</td>
<td>1.22</td>
<td>37.0</td>
</tr>
<tr>
<td>Corporate SME</td>
<td>4.67</td>
<td>3.12</td>
<td>50.70</td>
<td>40.66</td>
<td>1.24</td>
<td>1.0</td>
</tr>
</tbody>
</table>

1. The EAD ratio (predicted EAD/actual EAD) for Institutions has decreased from 3.57 to 0.68. However, this is statistically inconclusive as it is based on two defaults, one from the Fund model (EAD ratio 1.02) and the other from the Finance and Leasing model (EAD ratio 0.34). Last year’s result was based on only one default. At a global portfolio level, the model over predicts the actual EAD.

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

#### Table 21: Retail model results

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Retail</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Qualifying revolving retail</td>
<td>3.94</td>
<td>1.45</td>
<td>75.96</td>
<td>68.90</td>
<td>1.13</td>
<td>2.5</td>
</tr>
<tr>
<td>Other retail</td>
<td>2.76</td>
<td>2.15</td>
<td>81.77</td>
<td>67.51</td>
<td>1.08</td>
<td>2.5</td>
</tr>
<tr>
<td>Residential mortgages</td>
<td>0.54</td>
<td>0.37</td>
<td>17.95</td>
<td>6.81</td>
<td>1.02</td>
<td>10.9</td>
</tr>
<tr>
<td>Retail SME</td>
<td>3.64</td>
<td>2.55</td>
<td>58.79</td>
<td>38.89</td>
<td>1.13</td>
<td>0.3</td>
</tr>
</tbody>
</table>

1. Proportion of EAD (before the effect of collateral but after substitution) as a per cent of total IRB EAD.
### 3.3 Internal Ratings Based models

Continued

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

<table>
<thead>
<tr>
<th>PD Range %</th>
<th>External Rating equivalent (S&amp;P)</th>
<th>Weighted average PD (prior year) %</th>
<th>Arithmetic average PD by obligors (prior year) %</th>
<th>Number of obligors</th>
<th>Defaulted obligors in the year</th>
<th>of which: new defaulted obligors in the year</th>
<th>Average historical annual default rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>31 December 2017</td>
<td>31 December 2018</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.16</td>
<td>0.00 to &lt;0.15</td>
<td>AAA to BBB–</td>
<td>1.07</td>
<td>321</td>
<td>310</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>0.15 to &lt;0.25</td>
<td>BBB, BBB–</td>
<td>1.09</td>
<td>180</td>
<td>181</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>0.25 to &lt;0.50</td>
<td>BBB–, BB+, BB</td>
<td>1.09</td>
<td>17</td>
<td>11</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>0.50 to &lt;0.75</td>
<td>BB+, BB</td>
<td>1.09</td>
<td>5</td>
<td>5</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>0.75 to &lt;2.50</td>
<td>BB, BB–, B+, B</td>
<td>1.09</td>
<td>72</td>
<td>68</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>2.50 to &lt;10.00</td>
<td>B, B–, CCC, C</td>
<td>1.09</td>
<td>22</td>
<td>21</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>10.00 to &lt;100.00</td>
<td>CCC, C</td>
<td>1.09</td>
<td>12</td>
<td>10</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>100.00 (default)</td>
<td>D</td>
<td>1.09</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PD Range %</th>
<th>External Rating equivalent (S&amp;P)</th>
<th>Weighted average PD (prior year) %</th>
<th>Arithmetic average PD by obligors (prior year) %</th>
<th>Number of obligors</th>
<th>Defaulted obligors in the year</th>
<th>of which: new defaulted obligors in the year</th>
<th>Average historical annual default rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>31 December 2017</td>
<td>31 December 2017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.17</td>
<td>0.00 to &lt;0.15</td>
<td>AAA to BBB–</td>
<td>1.09</td>
<td>380</td>
<td>321</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>0.15 to &lt;0.25</td>
<td>BBB, BBB–</td>
<td>1.09</td>
<td>248</td>
<td>180</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>0.25 to &lt;0.50</td>
<td>BBB–, BB+, BB</td>
<td>1.09</td>
<td>16</td>
<td>17</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>0.50 to &lt;0.75</td>
<td>BB+, BB</td>
<td>1.09</td>
<td>14</td>
<td>13</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>0.75 to &lt;2.50</td>
<td>BB, BB–, B+, B</td>
<td>1.09</td>
<td>5</td>
<td>5</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>2.50 to &lt;10.00</td>
<td>B, B–, CCC, C</td>
<td>1.09</td>
<td>64</td>
<td>72</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>10.00 to &lt;100.00</td>
<td>CCC, C</td>
<td>1.09</td>
<td>25</td>
<td>22</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>100.00 (default)</td>
<td>D</td>
<td>1.09</td>
<td>8</td>
<td>12</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>
### 3.3 Internal Ratings Based models continued

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

<table>
<thead>
<tr>
<th>PD Range %</th>
<th>External Rating equivalent (S&amp;P)</th>
<th>Weighted average PD (prior year) %</th>
<th>Arithmetic average PD by obligors (prior year) %</th>
<th>Number of obligors</th>
<th>Defaul ted obligors in the year</th>
<th>of which: new defaulted obligors in the year</th>
<th>Average historical annual default rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>31 December 2017</td>
<td>31 December 2018</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.00 to &lt;0.15</td>
<td>AAA to BBB–</td>
<td>0.19</td>
<td>0.46</td>
<td>993</td>
<td>1,005</td>
<td></td>
<td>0.03</td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>BBB, BBB–</td>
<td>0.35</td>
<td>0.46</td>
<td>155</td>
<td>137</td>
<td></td>
<td>0.03</td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>BBB–, BB+, BB</td>
<td>0.39</td>
<td>0.46</td>
<td>226</td>
<td>216</td>
<td></td>
<td>0.03</td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td>BB+, BB</td>
<td>0.36</td>
<td>0.46</td>
<td>67</td>
<td>64</td>
<td></td>
<td>0.03</td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td>BB, BB–, BB–</td>
<td>0.42</td>
<td>0.46</td>
<td>462</td>
<td>483</td>
<td></td>
<td>0.03</td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td>B, B–, CCC, C</td>
<td>0.52</td>
<td>0.46</td>
<td>56</td>
<td>52</td>
<td></td>
<td>0.03</td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>CCC, C</td>
<td>0.70</td>
<td>0.46</td>
<td>47</td>
<td>37</td>
<td></td>
<td>0.03</td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>D</td>
<td>0.70</td>
<td>0.46</td>
<td>4</td>
<td>2</td>
<td></td>
<td>0.03</td>
</tr>
</tbody>
</table>

| PD Range %          | External Rating equivalent (S&P) | Weighted average PD (prior year) % | Arithmetic average PD by obligors (prior year) % | Number of obligors | Defaul ted obligors in the year | of which: new defaulted obligors in the year | Average historical annual default rate % |
|---------------------|----------------------------------|-----------------------------------|-----------------------------------------------|--------------------|----------------------------------|---------------------------------------------|                                         |
|                     |                                  |                                   |                                               | 31 December 2016  | 31 December 2017 |                                              |                                         |
| 0.00 to <0.15       | AAA to BBB–                      | 0.17                              | 0.46                                          | 991                | 993                              |                                              | 0.03                                      |
| 0.15 to <0.25       | BBB, BBB–                        | 0.35                              | 0.46                                          | 177                | 155                              |                                              | 0.03                                      |
| 0.25 to <0.50       | BBB–, BB+, BB                    | 0.39                              | 0.46                                          | 241                | 226                              |                                              | 0.03                                      |
| 0.50 to <0.75       | BB+, BB                          | 0.36                              | 0.46                                          | 69                 | 67                               |                                              | 0.03                                      |
| 0.75 to <2.50       | BB, BB–, BB–                     | 0.42                              | 0.46                                          | 431                | 462                              |                                              | 0.03                                      |
| 2.50 to <10.00      | B, B–, CCC, C                    | 0.52                              | 0.46                                          | 78                 | 56                               |                                              | 0.03                                      |
| 10.00 to <100.00    | CCC, C                           | 0.70                              | 0.46                                          | 53                 | 47                               |                                              | 0.03                                      |
| 100.00 (default)    | D                                | 0.70                              | 0.46                                          | 7                  | 4                                |                                              | 0.03                                      |
### 3.3 Internal Ratings Based models continued

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

<table>
<thead>
<tr>
<th>PD Range %</th>
<th>External Rating equivalent (S&amp;P)</th>
<th>Weighted average PD (prior year) %</th>
<th>Arithmetic average PD by obligors (prior year) %</th>
<th>Number of obligors</th>
<th>Defaulted obligors in the year</th>
<th>of which: new defaulted obligors in the year</th>
<th>Average historical annual default rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt;0.15</td>
<td>AAA to BBB–</td>
<td>1.08</td>
<td>2.91</td>
<td>56,018</td>
<td>28,194</td>
<td>470</td>
<td>132</td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>BBB, BBB–</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>BBB–, BB+, BB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td>BB+, BB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td>BB, BB–, B+, B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td>B, B–, CCC, C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>CCC, C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**2017**

<table>
<thead>
<tr>
<th>PD Range %</th>
<th>External Rating equivalent (S&amp;P)</th>
<th>Weighted average PD (prior year) %</th>
<th>Arithmetic average PD by obligors (prior year) %</th>
<th>Number of obligors</th>
<th>Defaulted obligors in the year</th>
<th>of which: new defaulted obligors in the year</th>
<th>Average historical annual default rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt;0.15</td>
<td>AAA to BBB–</td>
<td>1.29</td>
<td>2.51</td>
<td>64,617</td>
<td>56,018</td>
<td>391</td>
<td>19</td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>BBB, BBB–</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>BBB–, BB+, BB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td>BB+, BB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td>BB, BB–, B+, B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td>B, B–, CCC, C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>CCC, C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 3.3 Internal Ratings Based models continued

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

<table>
<thead>
<tr>
<th>PD Range %</th>
<th>External Rating equivalent (S&amp;P)</th>
<th>Weighted average PD (prior year) %</th>
<th>Arithmetic average PD by obligors (prior year) %</th>
<th>Number of obligors</th>
<th>Defaulted obligors in the year</th>
<th>of which: new defaulted obligors in the year</th>
<th>Average historical annual default rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt;0.15</td>
<td>AAA to BBB–</td>
<td>0.09</td>
<td>1.25</td>
<td>1,108</td>
<td>5</td>
<td>–</td>
<td>1.23</td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>BBB, BBB–</td>
<td>0.10</td>
<td>1.25</td>
<td>1,141</td>
<td>5</td>
<td>–</td>
<td>1.23</td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>BBB–, BB+ BB</td>
<td>0.36</td>
<td>1.25</td>
<td>1,141</td>
<td>5</td>
<td>–</td>
<td>1.23</td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td>BB+, BB</td>
<td>0.71</td>
<td>1.25</td>
<td>1,141</td>
<td>5</td>
<td>–</td>
<td>1.23</td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td>BB+, BB–, BB+</td>
<td>2.66</td>
<td>1.25</td>
<td>1,141</td>
<td>5</td>
<td>–</td>
<td>1.23</td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td>BBB, CCC, C</td>
<td>12.66</td>
<td>1.25</td>
<td>1,141</td>
<td>5</td>
<td>–</td>
<td>1.23</td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>CCC, C</td>
<td>12.66</td>
<td>1.25</td>
<td>1,141</td>
<td>5</td>
<td>–</td>
<td>1.23</td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>D</td>
<td>12.66</td>
<td>1.25</td>
<td>1,141</td>
<td>5</td>
<td>–</td>
<td>1.23</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PD Range %</th>
<th>External Rating equivalent (S&amp;P)</th>
<th>Weighted average PD (prior year) %</th>
<th>Arithmetic average PD by obligors (prior year) %</th>
<th>Number of obligors</th>
<th>Defaulted obligors in the year</th>
<th>of which: new defaulted obligors in the year</th>
<th>Average historical annual default rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt;0.15</td>
<td>AAA to BBB–</td>
<td>1.40</td>
<td>1.40</td>
<td>258</td>
<td>8</td>
<td>–</td>
<td>1.10</td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>BBB, BBB–</td>
<td>1.40</td>
<td>1.40</td>
<td>1,108</td>
<td>8</td>
<td>–</td>
<td>1.10</td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>BBB–, BB+ BB</td>
<td>1.40</td>
<td>1.40</td>
<td>1,108</td>
<td>8</td>
<td>–</td>
<td>1.10</td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td>BB+, BB</td>
<td>1.40</td>
<td>1.40</td>
<td>1,108</td>
<td>8</td>
<td>–</td>
<td>1.10</td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td>BB+, BB–, BB+</td>
<td>1.40</td>
<td>1.40</td>
<td>1,108</td>
<td>8</td>
<td>–</td>
<td>1.10</td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td>BBB, CCC, C</td>
<td>1.40</td>
<td>1.40</td>
<td>1,108</td>
<td>8</td>
<td>–</td>
<td>1.10</td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>CCC, C</td>
<td>1.40</td>
<td>1.40</td>
<td>1,108</td>
<td>8</td>
<td>–</td>
<td>1.10</td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>D</td>
<td>1.40</td>
<td>1.40</td>
<td>1,108</td>
<td>8</td>
<td>–</td>
<td>1.10</td>
</tr>
</tbody>
</table>
### 3.3 Internal Ratings Based models continued

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

<table>
<thead>
<tr>
<th>PD Range %</th>
<th>External Rating equivalent (S&amp;P)</th>
<th>31 December 2017</th>
<th>31 December 2018</th>
<th>Number of obligors</th>
<th>Defaulted obligors in the year</th>
<th>of which: new defaulted obligors in the year</th>
<th>Average historical annual default rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt;0.15</td>
<td>AAA to BBB−</td>
<td>3.48</td>
<td>4.67</td>
<td>36,312</td>
<td>7,631</td>
<td>339</td>
<td>131</td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>BBB, BBB−</td>
<td>0.16</td>
<td>0.45</td>
<td>36,312</td>
<td>7,631</td>
<td>339</td>
<td>131</td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>BBB−, BB+, BB</td>
<td>0.35</td>
<td>0.95</td>
<td>36,312</td>
<td>7,631</td>
<td>339</td>
<td>131</td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td>BBB+, BB</td>
<td>0.65</td>
<td>1.25</td>
<td>36,312</td>
<td>7,631</td>
<td>339</td>
<td>131</td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td>BB, BB−, B+, B</td>
<td>0.95</td>
<td>2.15</td>
<td>36,312</td>
<td>7,631</td>
<td>339</td>
<td>131</td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td>B, B−, CCC, C</td>
<td>1.65</td>
<td>2.15</td>
<td>36,312</td>
<td>7,631</td>
<td>339</td>
<td>131</td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>CCC, C</td>
<td>3.05</td>
<td>3.44</td>
<td>36,312</td>
<td>7,631</td>
<td>339</td>
<td>131</td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>D</td>
<td>4.05</td>
<td>4.64</td>
<td>36,312</td>
<td>7,631</td>
<td>339</td>
<td>131</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PD Range %</th>
<th>External Rating equivalent (S&amp;P)</th>
<th>31 December 2017</th>
<th>31 December 2018</th>
<th>Number of obligors</th>
<th>Defaulted obligors in the year</th>
<th>of which: new defaulted obligors in the year</th>
<th>Average historical annual default rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt;0.15</td>
<td>AAA to BBB−</td>
<td>3.09</td>
<td>3.44</td>
<td>44,575</td>
<td>36,312</td>
<td>238</td>
<td>19</td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>BBB, BBB−</td>
<td>0.69</td>
<td>0.99</td>
<td>44,575</td>
<td>36,312</td>
<td>238</td>
<td>19</td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>BBB−, BB+, BB</td>
<td>1.29</td>
<td>2.29</td>
<td>44,575</td>
<td>36,312</td>
<td>238</td>
<td>19</td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td>BB+, BB</td>
<td>1.89</td>
<td>2.59</td>
<td>44,575</td>
<td>36,312</td>
<td>238</td>
<td>19</td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td>BB, BB−, B+, B</td>
<td>2.89</td>
<td>2.99</td>
<td>44,575</td>
<td>36,312</td>
<td>238</td>
<td>19</td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td>B, B−, CCC, C</td>
<td>4.69</td>
<td>4.99</td>
<td>44,575</td>
<td>36,312</td>
<td>238</td>
<td>19</td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>CCC, C</td>
<td>7.69</td>
<td>7.99</td>
<td>44,575</td>
<td>36,312</td>
<td>238</td>
<td>19</td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>D</td>
<td>10.69</td>
<td>10.99</td>
<td>44,575</td>
<td>36,312</td>
<td>238</td>
<td>19</td>
</tr>
</tbody>
</table>
### 3.3 Internal Ratings Based models continued

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

<table>
<thead>
<tr>
<th>PD Range %</th>
<th>Weighted average PD (prior year) %</th>
<th>Arithmetic average PD by obligors (prior year) %</th>
<th>31 December 2017</th>
<th>31 December 2018</th>
<th>Number of obligors</th>
<th>Defaulted obligors in the year</th>
<th>of which: new defaulted obligors in the year</th>
<th>Average historical annual default rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt;0.15</td>
<td>0.70</td>
<td>3.46</td>
<td>3,994,453</td>
<td>4,174,985</td>
<td>60,466</td>
<td>2,376</td>
<td>1.80</td>
<td></td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>0.80</td>
<td>3.55</td>
<td>4,258,796</td>
<td>3,994,453</td>
<td>58,897</td>
<td>2,172</td>
<td>1.95</td>
<td></td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>0.90</td>
<td>3.65</td>
<td>3,528,586</td>
<td>3,994,453</td>
<td>52,075</td>
<td>2,052</td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td>1.00</td>
<td>3.75</td>
<td>3,008,845</td>
<td>3,994,453</td>
<td>49,203</td>
<td>2,000</td>
<td>2.05</td>
<td></td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td>1.10</td>
<td>3.85</td>
<td>2,500,000</td>
<td>3,994,453</td>
<td>45,001</td>
<td>1,900</td>
<td>2.10</td>
<td></td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td>1.20</td>
<td>3.95</td>
<td>2,000,000</td>
<td>3,994,453</td>
<td>40,001</td>
<td>1,800</td>
<td>2.15</td>
<td></td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>1.30</td>
<td>4.05</td>
<td>1,000,000</td>
<td>3,994,453</td>
<td>35,001</td>
<td>1,700</td>
<td>2.20</td>
<td></td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>1.40</td>
<td>4.15</td>
<td>500,000</td>
<td>3,994,453</td>
<td>30,001</td>
<td>1,600</td>
<td>2.25</td>
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</tr>
</tbody>
</table>
## 3.3 Internal Ratings Based models continued

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

<table>
<thead>
<tr>
<th>PD Range %</th>
<th>Weighted average PD (prior year) %</th>
<th>Arithmetic average PD by obligors (prior year) %</th>
<th>Number of obligors</th>
<th>Defaulted obligors in the year</th>
<th>of which: new defaulted obligors in the year</th>
<th>Average historical annual default rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt;0.15</td>
<td>2.41</td>
<td>3.64</td>
<td>9,481</td>
<td>36,202</td>
<td>1,168</td>
<td>235</td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>0.00 to &lt;0.15</td>
<td>424</td>
<td>2,590</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>0.15 to &lt;0.25</td>
<td>724</td>
<td>2,038</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td>0.25 to &lt;0.50</td>
<td>83</td>
<td>3,910</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td>0.50 to &lt;0.75</td>
<td>47</td>
<td>2,252</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td>0.75 to &lt;2.50</td>
<td>3,700</td>
<td>14,402</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>2.50 to &lt;10.00</td>
<td>3,293</td>
<td>7,965</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>10.00 to &lt;100.00</td>
<td>910</td>
<td>2,303</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>300</td>
<td>742</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PD Range %</td>
<td>Weighted average PD (prior year) %</td>
<td>Arithmetic average PD by obligors (prior year) %</td>
<td>Number of obligors</td>
<td>Defaulted obligors in the year</td>
<td>of which: new defaulted obligors in the year</td>
<td>Average historical annual default rate %</td>
</tr>
<tr>
<td>0.00 to &lt;0.15</td>
<td>1.61</td>
<td>2.15</td>
<td>7,476</td>
<td>9,481</td>
<td>770</td>
<td>44</td>
</tr>
<tr>
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<td>0.00 to &lt;0.15</td>
<td>447</td>
<td>424</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>0.15 to &lt;0.25</td>
<td>726</td>
<td>724</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td>0.25 to &lt;0.50</td>
<td>73</td>
<td>83</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td>0.50 to &lt;0.75</td>
<td>189</td>
<td>47</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td>0.75 to &lt;2.50</td>
<td>3,803</td>
<td>3,700</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>2.50 to &lt;10.00</td>
<td>1,297</td>
<td>3,293</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>10.00 to &lt;100.00</td>
<td>766</td>
<td>910</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>175</td>
<td>300</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 3.3 Internal Ratings Based models continued

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

<table>
<thead>
<tr>
<th>PD Range %</th>
<th>Weighted average PD (prior year) %</th>
<th>Arithmetic average PD by obligors (prior year) %</th>
<th>Number of obligors</th>
<th>Defaulted obligors in the year</th>
<th>of which: new defaulted obligors in the year</th>
<th>Average historical annual default rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt;0.15</td>
<td>0.25</td>
<td>0.54</td>
<td>363,906</td>
<td>251,864</td>
<td>255,399</td>
<td>25</td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>0.15</td>
<td>0.54</td>
<td>43,108</td>
<td>24,803</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>0.25</td>
<td>0.54</td>
<td>25,386</td>
<td>18,446</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td>0.50</td>
<td>0.54</td>
<td>11,948</td>
<td>11,281</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td>0.75</td>
<td>0.54</td>
<td>19,071</td>
<td>14,017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td>2.50</td>
<td>0.54</td>
<td>5,860</td>
<td>4,796</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>10.00</td>
<td>0.54</td>
<td>3,161</td>
<td>2,654</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>100.00</td>
<td>0.54</td>
<td>3,508</td>
<td>3,214</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PD Range %</th>
<th>Weighted average PD (prior year) %</th>
<th>Arithmetic average PD by obligors (prior year) %</th>
<th>Number of obligors</th>
<th>Defaulted obligors in the year</th>
<th>of which: new defaulted obligors in the year</th>
<th>Average historical annual default rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt;0.15</td>
<td>0.30</td>
<td>0.57</td>
<td>363,674</td>
<td>262,558</td>
<td>251,864</td>
<td>37</td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>0.15</td>
<td>0.57</td>
<td>32,569</td>
<td>43,108</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>0.25</td>
<td>0.57</td>
<td>24,946</td>
<td>25,386</td>
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<td></td>
</tr>
<tr>
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<td>0.50</td>
<td>0.57</td>
<td>12,418</td>
<td>11,948</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td>0.75</td>
<td>0.57</td>
<td>18,610</td>
<td>19,017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td>2.50</td>
<td>0.57</td>
<td>5,699</td>
<td>5,860</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>10.00</td>
<td>0.57</td>
<td>3,034</td>
<td>3,161</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>100.00</td>
<td>0.57</td>
<td>3,840</td>
<td>3,508</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 3.3 Internal Ratings Based models continued

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

<table>
<thead>
<tr>
<th>PD Range %</th>
<th>Weighted average PD (prior year)</th>
<th>Arithmetic average PD by obligors (prior year)</th>
<th>Number of obligors</th>
<th>Defaulted obligors in the year</th>
<th>of which: new defaulted obligors in the year</th>
<th>Average historical annual default rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2018</td>
<td>31 December 2017</td>
<td>31 December 2018</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.00 to &lt;0.15</td>
<td>1.52</td>
<td>1.017,822</td>
<td>1,180,257</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>3.94</td>
<td>248,526</td>
<td>265,685</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td></td>
<td>195,125</td>
<td>149,019</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td></td>
<td>168,530</td>
<td>159,663</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td></td>
<td>467,513</td>
<td>443,508</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td></td>
<td>655,029</td>
<td>699,207</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td></td>
<td>304,563</td>
<td>315,547</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100.00 (default)</td>
<td></td>
<td>42,059</td>
<td>37,049</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PD Range %</th>
<th>Weighted average PD (prior year)</th>
<th>Arithmetic average PD by obligors (prior year)</th>
<th>Number of obligors</th>
<th>Defaulted obligors in the year</th>
<th>of which: new defaulted obligors in the year</th>
<th>Average historical annual default rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2017</td>
<td>31 December 2016</td>
<td>31 December 2017</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.00 to &lt;0.15</td>
<td>1.29</td>
<td>1,203,817</td>
<td>1,017,822</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>3.52</td>
<td>280,363</td>
<td>248,526</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td></td>
<td>261,669</td>
<td>195,125</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td></td>
<td>70,845</td>
<td>168,530</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td></td>
<td>508,372</td>
<td>443,508</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td></td>
<td>671,114</td>
<td>699,207</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td></td>
<td>241,615</td>
<td>315,547</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100.00 (default)</td>
<td></td>
<td>62,294</td>
<td>42,059</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 3.4 Exposure values

The following tables detail the Group’s EAD (including counterparty credit 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 CRD 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 2018 Annual Report and Accounts on page 169 to 170.

EAD increased by $21.3 billion (Tables 31 to 34) mainly due to:

- IRB central governments and central banks EAD increased $13.3 billion driven by $13.0 billion of exposure increases in Europe and Americas and $5.5 billion in Africa & Middle East, partially offset by $5.3 billion of exposure decreases in GCNA

- IRB institutions EAD increased $9.2 billion driven by increases of $5.0 billion in ASEAN & South Asia and $4.4 billion in GCNA

- IRB corporates EAD increased $5.9 billion across multiple product lines, principally in Europe and Americas offset by reductions in ASEAN & South Asia and Africa & Middle East

- Standardised multilateral development banks EAD increased $2.3 billion due to increased bond exposures in Europe and Americas

Offset by:

- Standardised central governments and central banks EAD decreased $5.1 billion mainly due to reduced nostro balances in Europe and Americas

- Standardised institutions EAD decreased $2.0 billion mainly in SFTs
### 3.4 Exposure values continued

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

<table>
<thead>
<tr>
<th>IRB Exposure Class</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EAD before the effect of CRM&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Average EAD before the effect of CRM&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Central governments or central banks</td>
<td>152,583</td>
<td>143,495</td>
</tr>
<tr>
<td>Institutions</td>
<td>134,207</td>
<td>136,032</td>
</tr>
<tr>
<td>Corporates</td>
<td>237,507</td>
<td>236,698</td>
</tr>
<tr>
<td>Of which specialised lending</td>
<td>18,363</td>
<td>18,548</td>
</tr>
<tr>
<td>Of which SME</td>
<td>6,201</td>
<td>6,754</td>
</tr>
<tr>
<td>Retail</td>
<td>98,932</td>
<td>99,078</td>
</tr>
<tr>
<td>Secured by real estate collateral</td>
<td>67,965</td>
<td>69,761</td>
</tr>
<tr>
<td>- SME</td>
<td>405</td>
<td>283</td>
</tr>
<tr>
<td>- Non SME</td>
<td>67,560</td>
<td>69,478</td>
</tr>
<tr>
<td>Qualifying revolving retail</td>
<td>15,460</td>
<td>14,757</td>
</tr>
<tr>
<td>Other retail</td>
<td>15,507</td>
<td>14,560</td>
</tr>
<tr>
<td>- SME</td>
<td>1,723</td>
<td>1,573</td>
</tr>
<tr>
<td>- Non SME</td>
<td>13,784</td>
<td>12,987</td>
</tr>
<tr>
<td>Total IRB&lt;sup&gt;3&lt;/sup&gt;</td>
<td>624,320</td>
<td>616,521</td>
</tr>
<tr>
<td>Non-credit obligation assets</td>
<td>1,091</td>
<td>1,218</td>
</tr>
<tr>
<td>Standardised Exposure Class</td>
<td>36,64</td>
<td>3,726</td>
</tr>
<tr>
<td>Central governments or central banks</td>
<td>32,095</td>
<td>37,168</td>
</tr>
<tr>
<td>Multilateral development banks</td>
<td>16,220</td>
<td>15,825</td>
</tr>
<tr>
<td>Institutions</td>
<td>37,413</td>
<td>38,476</td>
</tr>
<tr>
<td>Corporates</td>
<td>34,880</td>
<td>37,118</td>
</tr>
<tr>
<td>Of which SME</td>
<td>15,111</td>
<td>15,201</td>
</tr>
<tr>
<td>Retail</td>
<td>12,471</td>
<td>12,586</td>
</tr>
<tr>
<td>- SME</td>
<td>2,909</td>
<td>3,075</td>
</tr>
<tr>
<td>- Non SME</td>
<td>9,610</td>
<td>10,094</td>
</tr>
<tr>
<td>Of which SME</td>
<td>3,664</td>
<td>3,736</td>
</tr>
<tr>
<td>Past due items</td>
<td>783</td>
<td>446</td>
</tr>
<tr>
<td>Items belonging to regulatory high risk categories</td>
<td>1,671</td>
<td>1,926</td>
</tr>
<tr>
<td>Equity</td>
<td>1,633</td>
<td>1,683</td>
</tr>
<tr>
<td>Other items&lt;sup&gt;4&lt;/sup&gt;</td>
<td>9,901</td>
<td>10,553</td>
</tr>
<tr>
<td>Total Standardised</td>
<td>156,677</td>
<td>165,875</td>
</tr>
<tr>
<td>Total</td>
<td>780,997</td>
<td>782,396</td>
</tr>
</tbody>
</table>

1. EAD before the effect of collateral but after substitution
2. Averages are calculated using past five quarters
3. Excludes securitisation exposures
4. Other items include cash, fixed assets, prepayments and accrued income
### 3.4 Exposure values continued

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

<table>
<thead>
<tr>
<th>IRB Exposure Class</th>
<th>Greater China &amp; North Asia $million</th>
<th>ASEAN &amp; South Asia $million</th>
<th>Africa &amp; Middle East $million</th>
<th>Europe &amp; Americas $million</th>
<th>Period End $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Central governments or central banks</td>
<td>66,234</td>
<td>29,269</td>
<td>15,834</td>
<td>41,246</td>
<td>152,583</td>
</tr>
<tr>
<td>2 Institutions</td>
<td>54,293</td>
<td>24,984</td>
<td>14,948</td>
<td>39,982</td>
<td>134,207</td>
</tr>
<tr>
<td>3 Corporates</td>
<td>62,367</td>
<td>48,018</td>
<td>33,182</td>
<td>93,940</td>
<td>237,507</td>
</tr>
<tr>
<td>3a Of which specialised lending</td>
<td>3,649</td>
<td>6,832</td>
<td>3,598</td>
<td>4,284</td>
<td>18,363</td>
</tr>
<tr>
<td>3b Of which SME</td>
<td>3,585</td>
<td>1,669</td>
<td>620</td>
<td>327</td>
<td>6,201</td>
</tr>
<tr>
<td>4 Retail</td>
<td>73,492</td>
<td>24,732</td>
<td>682</td>
<td>26</td>
<td>98,932</td>
</tr>
<tr>
<td>4a Secured by real estate collateral</td>
<td>50,396</td>
<td>17,569</td>
<td>–</td>
<td>–</td>
<td>67,965</td>
</tr>
<tr>
<td>4b Of which SME</td>
<td>80</td>
<td>325</td>
<td>–</td>
<td>–</td>
<td>405</td>
</tr>
<tr>
<td>4c Of which Non SME</td>
<td>50,316</td>
<td>17,244</td>
<td>–</td>
<td>–</td>
<td>67,560</td>
</tr>
<tr>
<td>4d Qualifying revolving retail</td>
<td>10,697</td>
<td>4,406</td>
<td>343</td>
<td>14</td>
<td>15,460</td>
</tr>
<tr>
<td>4e Other retail</td>
<td>12,399</td>
<td>2,757</td>
<td>339</td>
<td>12</td>
<td>15,507</td>
</tr>
<tr>
<td>4f Of which SME</td>
<td>851</td>
<td>849</td>
<td>23</td>
<td>–</td>
<td>1,723</td>
</tr>
<tr>
<td>4g Of which Non SME</td>
<td>11,548</td>
<td>1,908</td>
<td>316</td>
<td>12</td>
<td>13,784</td>
</tr>
<tr>
<td>Non-credit obligation assets</td>
<td>308</td>
<td>377</td>
<td>164</td>
<td>242</td>
<td>1,091</td>
</tr>
<tr>
<td><strong>Total IRB</strong></td>
<td><strong>256,694</strong></td>
<td><strong>127,380</strong></td>
<td><strong>64,810</strong></td>
<td><strong>175,436</strong></td>
<td><strong>624,320</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standardised Exposure Class</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7 Central governments or central banks</td>
<td>273</td>
<td>2,864</td>
<td>563</td>
<td>28,395</td>
</tr>
<tr>
<td>10 Multilateral development banks</td>
<td>–</td>
<td>1,986</td>
<td>1,744</td>
<td>12,490</td>
</tr>
<tr>
<td>12 Institutions</td>
<td>745</td>
<td>2,652</td>
<td>83</td>
<td>33,933</td>
</tr>
<tr>
<td>13 Corporates</td>
<td>7,015</td>
<td>11,135</td>
<td>3,215</td>
<td>13,515</td>
</tr>
<tr>
<td>13a Of which SME</td>
<td>3,274</td>
<td>5,470</td>
<td>2,261</td>
<td>4,106</td>
</tr>
<tr>
<td>14 Retail</td>
<td>3,011</td>
<td>6,620</td>
<td>2,812</td>
<td>28</td>
</tr>
<tr>
<td>14a Of which SME</td>
<td>670</td>
<td>2,137</td>
<td>102</td>
<td>–</td>
</tr>
<tr>
<td>15 Secured by mortgages on immovable property</td>
<td>2,663</td>
<td>3,165</td>
<td>2,430</td>
<td>1,152</td>
</tr>
<tr>
<td>15a Of which SME</td>
<td>337</td>
<td>1,814</td>
<td>381</td>
<td>1,132</td>
</tr>
<tr>
<td>16 Past due items</td>
<td>32</td>
<td>666</td>
<td>73</td>
<td>12</td>
</tr>
<tr>
<td>17 Items belonging to regulatory high risk categories</td>
<td>501</td>
<td>667</td>
<td>260</td>
<td>243</td>
</tr>
<tr>
<td>21 Equity</td>
<td>1,551</td>
<td>30</td>
<td>–</td>
<td>52</td>
</tr>
<tr>
<td>22 Other items</td>
<td>3,341</td>
<td>4,426</td>
<td>1,237</td>
<td>897</td>
</tr>
<tr>
<td><strong>Total Standardised</strong></td>
<td><strong>19,332</strong></td>
<td><strong>34,211</strong></td>
<td><strong>12,417</strong></td>
<td><strong>90,717</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>276,026</strong></td>
<td><strong>161,591</strong></td>
<td><strong>77,227</strong></td>
<td><strong>266,153</strong></td>
</tr>
</tbody>
</table>

---

1 Excludes securitisation exposures
2 Other items include cash, fixed assets, prepayments and accrued income
3 Refer to Table 31 (CRB-B) for EAD before the effect of CRM (EAD before the effect of collateral but after substitution)
3.4 Exposure values continued

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

<table>
<thead>
<tr>
<th>IRB Exposure Class</th>
<th>Greater China &amp; North Asia $ million</th>
<th>ASEAN &amp; South Asia $ million</th>
<th>Africa &amp; Middle East $ million</th>
<th>Europe &amp; Americas $ million</th>
<th>Period End Total $ million</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Central governments or central banks</td>
<td>71,538</td>
<td>24,073</td>
<td>15,349</td>
<td>28,298</td>
<td>139,258</td>
</tr>
<tr>
<td>2 Institutions</td>
<td>49,931</td>
<td>19,944</td>
<td>14,284</td>
<td>40,885</td>
<td>125,044</td>
</tr>
<tr>
<td>3 Corporates</td>
<td>61,161</td>
<td>51,809</td>
<td>39,045</td>
<td>79,602</td>
<td>231,617</td>
</tr>
<tr>
<td>3a Of which specialised lending</td>
<td>4,060</td>
<td>6,440</td>
<td>4,033</td>
<td>3,265</td>
<td>17,798</td>
</tr>
<tr>
<td>3b Of which SME</td>
<td>3,638</td>
<td>1,536</td>
<td>1,190</td>
<td>458</td>
<td>6,822</td>
</tr>
<tr>
<td>4 Retail</td>
<td>72,622</td>
<td>25,701</td>
<td>923</td>
<td>23</td>
<td>99,299</td>
</tr>
<tr>
<td>4a Secured by real estate collateral</td>
<td>52,204</td>
<td>19,272</td>
<td>–</td>
<td>–</td>
<td>71,476</td>
</tr>
<tr>
<td>4b Of which SME</td>
<td>22</td>
<td>240</td>
<td>–</td>
<td>–</td>
<td>262</td>
</tr>
<tr>
<td>4c Of which Non SME</td>
<td>52,182</td>
<td>19,032</td>
<td>–</td>
<td>–</td>
<td>71,214</td>
</tr>
<tr>
<td>4d Qualifying revolving retail</td>
<td>9,814</td>
<td>4,090</td>
<td>358</td>
<td>14</td>
<td>14,276</td>
</tr>
<tr>
<td>4e Other retail</td>
<td>10,604</td>
<td>2,339</td>
<td>565</td>
<td>9</td>
<td>13,517</td>
</tr>
<tr>
<td>4f Of which SME</td>
<td>738</td>
<td>755</td>
<td>–</td>
<td>–</td>
<td>1,493</td>
</tr>
<tr>
<td>4g Of which Non SME</td>
<td>9,866</td>
<td>1,584</td>
<td>565</td>
<td>9</td>
<td>12,024</td>
</tr>
<tr>
<td>6 Non-credit obligation assets</td>
<td>395</td>
<td>352</td>
<td>233</td>
<td>320</td>
<td>1,300</td>
</tr>
<tr>
<td>6 Total IRB1</td>
<td>255,647</td>
<td>121,879</td>
<td>69,834</td>
<td>149,128</td>
<td>596,488</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standardised Exposure Class</th>
<th>Greater China &amp; North Asia $ million</th>
<th>ASEAN &amp; South Asia $ million</th>
<th>Africa &amp; Middle East $ million</th>
<th>Europe &amp; Americas $ million</th>
<th>Period End Total $ million</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 Central governments or central banks</td>
<td>406</td>
<td>3,390</td>
<td>643</td>
<td>32,716</td>
<td>37,155</td>
</tr>
<tr>
<td>10 Multilateral development banks</td>
<td>–</td>
<td>1,693</td>
<td>1,791</td>
<td>10,467</td>
<td>13,951</td>
</tr>
<tr>
<td>12 Institutions</td>
<td>828</td>
<td>3,055</td>
<td>75</td>
<td>35,503</td>
<td>39,461</td>
</tr>
<tr>
<td>13 Corporates</td>
<td>6,172</td>
<td>11,726</td>
<td>2,974</td>
<td>13,739</td>
<td>34,611</td>
</tr>
<tr>
<td>13a Of which SME</td>
<td>3,083</td>
<td>5,713</td>
<td>2,112</td>
<td>14,087</td>
<td>14,995</td>
</tr>
<tr>
<td>14 Retail</td>
<td>3,211</td>
<td>6,776</td>
<td>3,039</td>
<td>27</td>
<td>13,053</td>
</tr>
<tr>
<td>14a Of which SME</td>
<td>645</td>
<td>2,328</td>
<td>119</td>
<td>1</td>
<td>3,093</td>
</tr>
<tr>
<td>15 Secured on real estate property</td>
<td>3,113</td>
<td>3,657</td>
<td>2,563</td>
<td>1,086</td>
<td>10,419</td>
</tr>
<tr>
<td>15a Of which SME</td>
<td>426</td>
<td>1,863</td>
<td>409</td>
<td>1,055</td>
<td>3,750</td>
</tr>
<tr>
<td>16 Past due items</td>
<td>61</td>
<td>242</td>
<td>93</td>
<td>2</td>
<td>398</td>
</tr>
<tr>
<td>17 Items belonging to regulatory high risk categories</td>
<td>1,041</td>
<td>627</td>
<td>314</td>
<td>62</td>
<td>2,044</td>
</tr>
<tr>
<td>21 Equity</td>
<td>1,489</td>
<td>277</td>
<td>–</td>
<td>52</td>
<td>1,818</td>
</tr>
<tr>
<td>22 Other items2</td>
<td>3,470</td>
<td>4,109</td>
<td>1,340</td>
<td>1,405</td>
<td>10,324</td>
</tr>
<tr>
<td>23 Total Standardised</td>
<td>19,791</td>
<td>35,552</td>
<td>12,832</td>
<td>95,059</td>
<td>163,234</td>
</tr>
<tr>
<td>24 Total3</td>
<td>275,438</td>
<td>157,431</td>
<td>82,666</td>
<td>244,187</td>
<td>759,722</td>
</tr>
</tbody>
</table>

1 Excludes securitisation exposures
2 Other items include cash, fixed assets, prepayments and accrued income
3 Refer to Table 31 (CRB-B) for EAD before the effect of CRM (EAD before the effect of collateral but after substitution)
### 3.4 Exposure values continued

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

<table>
<thead>
<tr>
<th>IRB Exposure Class</th>
<th>Loans to Individuals Mortgage $million</th>
<th>Loans to Individuals SME $million</th>
<th>Loans to Individuals Other $million</th>
<th>Commercial $million</th>
<th>Manufacturing $million</th>
<th>Commercial Real Estate $million</th>
<th>Government $million</th>
<th>Financing Insurance &amp; Business Services $million</th>
<th>Transport &amp; Storage &amp; Communication $million</th>
<th>Other $million</th>
<th>Total $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Central governments or central banks</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>183</td>
<td>334</td>
<td>141,269</td>
<td>6,110</td>
<td>7</td>
<td>4,680</td>
<td>152,583</td>
<td></td>
</tr>
<tr>
<td>2 Institutions</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>129</td>
<td>1</td>
<td>5</td>
<td>3,016</td>
<td>128,686</td>
<td>36</td>
<td>2,334</td>
<td>134,207</td>
</tr>
<tr>
<td>3 Corporates</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2,014</td>
<td>120</td>
<td>14,057</td>
<td>38,513</td>
<td>68,942</td>
<td>2,953</td>
<td>2,613</td>
<td>100,566</td>
</tr>
<tr>
<td>3a Of which specialised lending</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>540</td>
<td>1,397</td>
<td>2,365</td>
<td>-</td>
<td>485</td>
<td>2,751</td>
<td>-</td>
<td>4,050</td>
</tr>
<tr>
<td>3b Of which SME</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6,201</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6,201</td>
</tr>
<tr>
<td>4 Retail</td>
<td>67,560</td>
<td>29,244</td>
<td>2,128</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4a Secured by real estate collateral</td>
<td>67,560</td>
<td>-</td>
<td>405</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4b Of which SME</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>405</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4c Of which Non SME</td>
<td>67,560</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4d Qualifying revolving retail</td>
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<td>-</td>
<td>-</td>
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<td>-</td>
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<td>-</td>
</tr>
<tr>
<td>4e Other retail</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>13,784</td>
<td>1,723</td>
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<tr>
<td>4f Of which SME</td>
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<td>-</td>
<td>-</td>
<td>1,723</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
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</tr>
<tr>
<td>4g Of which Non SME</td>
<td>-</td>
<td>-</td>
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<td>13,784</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
</tr>
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<td>Non-credit obligation assets</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>7</td>
<td>8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1,057</td>
<td>19</td>
<td>1,091</td>
</tr>
<tr>
<td>6 Total IRB</td>
<td>67,560</td>
<td>29,244</td>
<td>9,864</td>
<td>28,241</td>
<td>51,168</td>
<td>13,819</td>
<td>145,507</td>
<td>225,397</td>
<td>15,504</td>
<td>39,016</td>
<td>624,320</td>
</tr>
</tbody>
</table>

**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            | 68,942                                       | 6,413                                        | 32,095      | 16,220        |
| 12 Institutions                     | -                                    | -                                | -                                  | -                   | -                      | -                            | -                 | 36,575                                       | 838                                          | -           | 37,413        |
| 13 Corporates                       | -                                    | 15,111                           | 589                                | 1,145               | 371                    | 1                              | 12,746            | 405                                          | 4,511                                        | 34,880      |
| 13a Of which SME                    | -                                    | 15,111                           | 38                                 | 56                 | 371                    | 1                              | 12,746            | 405                                          | 4,511                                        | 34,880      |
| 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         |
| 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       |
| 22 Other items                      | -                                    | -                                | -                                  | 29                  | -                      | -                            | -                 | -                                           | -                                            | 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 Total                            | 73,122                               | 38,486                           | 30,891                             | 29,154              | 52,482                 | 14,397                        | 169,083           | 277,541                                      | 15,997                                       | 79,844      | 780,997       |

---

1. Excludes securitisation exposures
2. Other items include cash, fixed assets, prepayments and accrued income
3. Refer to Table 31 (CRB-B) for EAD before the effect of CRM (EAD before the effect of collateral but after substitution)
### 3.4 Exposure values continued

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

<table>
<thead>
<tr>
<th>IRB Exposure Class</th>
<th>Loans to Individuals Mortgage $million</th>
<th>Loans to Individuals Other $million</th>
<th>SME $million</th>
<th>Commerce $million</th>
<th>Manufacturing $million</th>
<th>Commercial Real Estate $million</th>
<th>Government $million</th>
<th>Financing Insurance &amp; Business Services $million</th>
<th>Transport &amp; Storage Communication $million</th>
<th>Other $million</th>
<th>Total $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Central governments or central banks</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>102</td>
<td>348</td>
<td>132,407</td>
<td>6,307</td>
<td>94</td>
<td>–</td>
<td>139,258</td>
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<tr>
<td>2 Institutions</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>152</td>
<td>–</td>
<td>9</td>
<td>2,924</td>
<td>121,884</td>
<td>75</td>
<td>–</td>
<td>125,044</td>
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<tr>
<td>3 Corporates</td>
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<td>14</td>
<td>7,517</td>
<td>30,686</td>
<td>50,836</td>
<td>12,475</td>
<td>1,094</td>
<td>82,900</td>
<td>13,828</td>
<td>32,267</td>
<td>231,617</td>
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<tr>
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<td>–</td>
<td>–</td>
<td>694</td>
<td>7,105</td>
<td>823</td>
<td>1,503</td>
<td>–</td>
<td>528</td>
<td>2,914</td>
<td>4,231</td>
<td>17,798</td>
</tr>
<tr>
<td>3b Of which SME</td>
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<td>–</td>
<td>6,822</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>6,822</td>
</tr>
<tr>
<td>4 Retail</td>
<td>71,214</td>
<td>26,300</td>
<td>1,755</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>99,269</td>
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<tr>
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<td>71,214</td>
<td>–</td>
<td>262</td>
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<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>71,476</td>
</tr>
<tr>
<td>4b Of which SME</td>
<td>–</td>
<td>–</td>
<td>262</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>262</td>
</tr>
<tr>
<td>4c Of which Non SME</td>
<td>71,214</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>71,214</td>
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<td>14,276</td>
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<td>1,493</td>
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<td>–</td>
<td>–</td>
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<td>–</td>
<td>–</td>
<td>13,517</td>
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<tr>
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<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1,493</td>
</tr>
<tr>
<td>4g Of which Non SME</td>
<td>–</td>
<td>12,024</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>12,024</td>
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<td>Non-credit obligation assets</td>
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<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1,275</td>
<td>19</td>
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<tr>
<td>6 Total IRB</td>
<td>71,214</td>
<td>26,314</td>
<td>9,272</td>
<td>30,844</td>
<td>50,938</td>
<td>12,832</td>
<td>136,425</td>
<td>211,091</td>
<td>15,272</td>
<td>32,286</td>
<td>596,488</td>
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</table>

**Standardised Exposure Class**

<table>
<thead>
<tr>
<th>Standardised Exposure Class</th>
<th>Loans to Individuals Mortgage $million</th>
<th>Loans to Individuals Other $million</th>
<th>SME $million</th>
<th>Commerce $million</th>
<th>Manufacturing $million</th>
<th>Commercial Real Estate $million</th>
<th>Government $million</th>
<th>Financing Insurance &amp; Business Services $million</th>
<th>Transport &amp; Storage Communication $million</th>
<th>Other $million</th>
<th>Total $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 Central governments or central banks</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>28,551</td>
<td>1,965</td>
<td>–</td>
<td>6,639</td>
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<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>568</td>
<td>4,512</td>
<td>–</td>
<td>8,871</td>
<td>13,951</td>
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<tr>
<td>12 Institutions</td>
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<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>38,032</td>
<td>–</td>
<td>1,429</td>
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<td>39,461</td>
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<tr>
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<td>–</td>
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<td>14,995</td>
<td>914</td>
<td>1,413</td>
<td>469</td>
<td>9</td>
<td>12,326</td>
<td>324</td>
<td>4,159</td>
<td>34,611</td>
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<td>14,995</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>14,995</td>
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<tr>
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<td>9,960</td>
<td>3,093</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>13,053</td>
</tr>
<tr>
<td>14a Of which SME</td>
<td>–</td>
<td>–</td>
<td>3,093</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>3,093</td>
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<tr>
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<td>5,910</td>
<td>–</td>
<td>3,750</td>
<td>77</td>
<td>50</td>
<td>76</td>
<td>–</td>
<td>29</td>
<td>3</td>
<td>524</td>
<td>10,419</td>
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<tr>
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<td>–</td>
<td>3,750</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>3,750</td>
</tr>
<tr>
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<td>104</td>
<td>203</td>
<td>8</td>
<td>9</td>
<td>–</td>
<td>–</td>
<td>2</td>
<td>1</td>
<td>25</td>
<td>398</td>
</tr>
<tr>
<td>17 Items belonging to regulatory high risk categories</td>
<td>6</td>
<td>150</td>
<td>163</td>
<td>156</td>
<td>136</td>
<td>456</td>
<td>–</td>
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<td>161</td>
<td>534</td>
<td>2,044</td>
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<td>–</td>
<td>–</td>
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<td>–</td>
<td>–</td>
<td>–</td>
<td>1,818</td>
<td>1,818</td>
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<tr>
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<td>–</td>
<td>–</td>
<td>–</td>
<td>32</td>
<td>–</td>
<td>107</td>
<td>–</td>
<td>10,184</td>
</tr>
<tr>
<td>23 Total Standardised</td>
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<td>10,217</td>
<td>22,204</td>
<td>1,155</td>
<td>1,608</td>
<td>1,033</td>
<td>29,128</td>
<td>57,255</td>
<td>489</td>
<td>34,183</td>
<td>163,234</td>
</tr>
<tr>
<td>24 Total</td>
<td>77,176</td>
<td>36,531</td>
<td>31,476</td>
<td>31,999</td>
<td>52,546</td>
<td>13,865</td>
<td>165,553</td>
<td>268,346</td>
<td>15,761</td>
<td>66,469</td>
<td>759,722</td>
</tr>
</tbody>
</table>

1 Excludes securitisation exposures
2 Other items include cash, fixed assets, prepayments and accrued income
3 Refer to Table 31 (CRB-B) for EAD before the effect of Collateral but after substitution
Maturity analysis
Table 34 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 170 which is based on accounting balances. Approximately 67 per cent (2017: 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 76 per cent (2017: 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 69 per cent (2017: 72 per cent) of the portfolio and is traditionally longer term in nature and well secured. While 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>
<thead>
<tr>
<th>IRB Exposure Class</th>
<th>2018</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>On demand and one year or less $million</td>
<td>One to five years $million</td>
<td>Over five years $million</td>
<td>Total $million</td>
</tr>
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<td>24,748</td>
<td>1,116</td>
<td>152,583</td>
</tr>
<tr>
<td>2 Institutions</td>
<td>109,233</td>
<td>21,512</td>
<td>3,462</td>
<td>134,207</td>
</tr>
<tr>
<td>3 Corporates</td>
<td>165,056</td>
<td>57,333</td>
<td>15,118</td>
<td>237,507</td>
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<tr>
<td>3a Of which specialised lending</td>
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<td>5,381</td>
<td>5,054</td>
<td>18,363</td>
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<td>3b Of which SME</td>
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<td>966</td>
<td>743</td>
<td>6,201</td>
</tr>
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<td>4 Retail</td>
<td>8,873</td>
<td>21,959</td>
<td>68,100</td>
<td>98,932</td>
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<tr>
<td>4a Secured by real estate collateral</td>
<td>936</td>
<td>913</td>
<td>66,116</td>
<td>67,965</td>
</tr>
<tr>
<td>4b Of which SME</td>
<td>87</td>
<td>13</td>
<td>305</td>
<td>405</td>
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<tr>
<td>4c Of which Non SME</td>
<td>849</td>
<td>900</td>
<td>65,811</td>
<td>67,560</td>
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<tr>
<td>4d Qualifying revolving retail</td>
<td>1,222</td>
<td>13,993</td>
<td>245</td>
<td>15,460</td>
</tr>
<tr>
<td>4e Other retail</td>
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<td>7,053</td>
<td>1,739</td>
<td>15,507</td>
</tr>
<tr>
<td>4f Of which SME</td>
<td>825</td>
<td>709</td>
<td>189</td>
<td>1,723</td>
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<tr>
<td>4g Of which Non SME</td>
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<td>6,344</td>
<td>1,550</td>
<td>13,784</td>
</tr>
<tr>
<td>Non-credit obligation assets</td>
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<td>465</td>
<td>316</td>
<td>1,091</td>
</tr>
<tr>
<td>6 Total IRB1</td>
<td>410,191</td>
<td>126,017</td>
<td>88,112</td>
<td>624,320</td>
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</table>

<table>
<thead>
<tr>
<th>Standardised Exposure Class</th>
<th>2018</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7 Central governments or central banks</td>
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<td>5,195</td>
<td>2,704</td>
<td>32,095</td>
</tr>
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<td>10 Multilateral development banks</td>
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<td>8,517</td>
<td>1,438</td>
<td>16,220</td>
</tr>
<tr>
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<tr>
<td>13 Corporates</td>
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<td>2,134</td>
<td>1,458</td>
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</tr>
<tr>
<td>13a Of which SME</td>
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<td>850</td>
<td>15,111</td>
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<td>4,186</td>
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<td>12,471</td>
</tr>
<tr>
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<td>824</td>
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<td>916</td>
<td>2,909</td>
</tr>
<tr>
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<td>6,345</td>
<td>9,610</td>
</tr>
<tr>
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</tr>
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<td>16 Past due items</td>
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<td>83</td>
<td>783</td>
</tr>
<tr>
<td>17 Items belonging to regulatory high risk categories</td>
<td>1,550</td>
<td>73</td>
<td>48</td>
<td>1,671</td>
</tr>
<tr>
<td>21 Equity</td>
<td></td>
<td></td>
<td>1,633</td>
<td>1,633</td>
</tr>
<tr>
<td>22 Other items2</td>
<td>9,827</td>
<td>57</td>
<td>17</td>
<td>9,901</td>
</tr>
<tr>
<td>23 Total Standardised</td>
<td>114,009</td>
<td>25,808</td>
<td>16,860</td>
<td>156,677</td>
</tr>
<tr>
<td>24 Total3</td>
<td>524,200</td>
<td>151,825</td>
<td>104,972</td>
<td>780,997</td>
</tr>
</tbody>
</table>

1 Excludes securitisation exposures
2 Other items include cash, fixed assets, prepayments and accrued income
3 Refer to Table 31 (CRB-B) EAD before the effect of CRM (EAD before the effect of collateral but after substitution)
### 3.4 Exposure values continued

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

<table>
<thead>
<tr>
<th>IRB Exposure Class</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>On demand and one year or less $million</td>
</tr>
<tr>
<td>1 Central governments or central banks</td>
<td>109,420</td>
</tr>
<tr>
<td>2 Institutions</td>
<td>105,701</td>
</tr>
<tr>
<td>3 Corporates</td>
<td>160,738</td>
</tr>
<tr>
<td>3a Of which specialised lending</td>
<td>7,308</td>
</tr>
<tr>
<td>3b Of which SME</td>
<td>4,745</td>
</tr>
<tr>
<td>4 Retail</td>
<td>9,620</td>
</tr>
<tr>
<td>4a Secured by real estate collateral</td>
<td>1,319</td>
</tr>
<tr>
<td>4b Of which SME</td>
<td>27</td>
</tr>
<tr>
<td>4c Of which Non SME</td>
<td>1,292</td>
</tr>
<tr>
<td>4d Qualifying revolving retail</td>
<td>1,910</td>
</tr>
<tr>
<td>4e Other retail</td>
<td>6,391</td>
</tr>
<tr>
<td>4f Of which SME</td>
<td>788</td>
</tr>
<tr>
<td>4g Of which Non SME</td>
<td>5,603</td>
</tr>
<tr>
<td>Non-credit obligation assets</td>
<td>531</td>
</tr>
<tr>
<td>6 Total IRB⁷</td>
<td>386,010</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standardised Exposure Class</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>On demand and one year or less $million</td>
</tr>
<tr>
<td>7 Central governments or central banks</td>
<td>30,167</td>
</tr>
<tr>
<td>10 Multilateral development banks</td>
<td>3,092</td>
</tr>
<tr>
<td>12 Institutions</td>
<td>34,778</td>
</tr>
<tr>
<td>13 Corporates</td>
<td>30,841</td>
</tr>
<tr>
<td>13a Of which SME</td>
<td>13,428</td>
</tr>
<tr>
<td>14 Retail</td>
<td>5,807</td>
</tr>
<tr>
<td>14a Of which SME</td>
<td>876</td>
</tr>
<tr>
<td>15 Secured on real estate property</td>
<td>2,661</td>
</tr>
<tr>
<td>15a Of which SME</td>
<td>2,369</td>
</tr>
<tr>
<td>16 Past due items</td>
<td>215</td>
</tr>
<tr>
<td>17 Items belonging to regulatory high risk categories</td>
<td>1,827</td>
</tr>
<tr>
<td>21 Equity</td>
<td>–</td>
</tr>
<tr>
<td>22 Other items²</td>
<td>10,221</td>
</tr>
<tr>
<td>23 Total Standardised</td>
<td>119,009</td>
</tr>
<tr>
<td>24 Total³</td>
<td>505,619</td>
</tr>
</tbody>
</table>

¹ Excludes securitisation exposures
² Other items include cash, fixed assets, prepayments and accrued income
³ Refer to Table 31 (CRB-E) EAD before the effect of CRM (EAD before the effect of collateral but after substitution)
3.4 Exposure values continued

Credit quality of exposures

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

All Standard Chartered accounting provisions are categorised as specific credit risk adjustments according to the EBA RTS on specification of the calculation of specific and general credit risk adjustments (EBA/RTS/2013/04). The column for general credit risk adjustments as included in the prescribed templates of the EBA disclosure guidelines has therefore been removed. Net values equate to EAD after deduction of specific credit risk adjustments. Values in Tables 38 to 41 are gross carrying values in accordance with IFRS. Tables 38 to 41 depict past-due exposures, broken down by past-due bands and provide further information on non-performing and forborne exposures.

The 2018 Annual Report and Accounts pages 146 to 155 provide additional information on credit quality analysis.

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

<table>
<thead>
<tr>
<th>IRB Exposure Class</th>
<th>EAD before the effect of CCF &amp; CRM$^1$</th>
<th>Specific credit risk adjustment changes in the period$^2$</th>
<th>Net values $^3$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Defaulted exposures $^1$</td>
<td>Non-defaulted exposures $^1$</td>
<td>$^1$</td>
</tr>
<tr>
<td>1 Central governments or central banks</td>
<td>–</td>
<td>296,457</td>
<td>49</td>
</tr>
<tr>
<td>2 Institutions</td>
<td>–</td>
<td>267,385</td>
<td>5</td>
</tr>
<tr>
<td>3 Corporates</td>
<td>7,234</td>
<td>430,843</td>
<td>4,327</td>
</tr>
<tr>
<td>4 Of which specialised lending</td>
<td>799</td>
<td>31,957</td>
<td>474</td>
</tr>
<tr>
<td>5 Of which SME</td>
<td>591</td>
<td>8,370</td>
<td>279</td>
</tr>
<tr>
<td>6 Retail</td>
<td>683</td>
<td>115,822</td>
<td>388</td>
</tr>
<tr>
<td>7 Secured by real estate collateral</td>
<td>197</td>
<td>67,764</td>
<td>38</td>
</tr>
<tr>
<td>8 Of which SME</td>
<td>5</td>
<td>402</td>
<td>1</td>
</tr>
<tr>
<td>9 Of which Non SME</td>
<td>192</td>
<td>67,362</td>
<td>38</td>
</tr>
<tr>
<td>10 Qualifying revolving retail</td>
<td>153</td>
<td>30,431</td>
<td>121</td>
</tr>
<tr>
<td>11 Other retail</td>
<td>333</td>
<td>17,626</td>
<td>229</td>
</tr>
<tr>
<td>12 Of which SME</td>
<td>109</td>
<td>2,453</td>
<td>41</td>
</tr>
<tr>
<td>13 Of which Non SME</td>
<td>224</td>
<td>15,173</td>
<td>188</td>
</tr>
<tr>
<td>Non-credit obligation assets</td>
<td>63</td>
<td>1,028</td>
<td>–</td>
</tr>
<tr>
<td><strong>Total IRB$^4</strong></td>
<td>7,980</td>
<td>1,111,535</td>
<td>4,769</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standardised Exposure Class</th>
<th>EAD before the effect of CCF &amp; CRM$^1$</th>
<th>Specific credit risk adjustment changes in the period$^2$</th>
<th>Net values $^3$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Defaulted exposures $^1$</td>
<td>Non-defaulted exposures $^1$</td>
<td>$^1$</td>
</tr>
<tr>
<td>16 Central governments or central banks</td>
<td>–</td>
<td>113,867</td>
<td>6</td>
</tr>
<tr>
<td>19 Multilateral development banks</td>
<td>–</td>
<td>26,391</td>
<td>6</td>
</tr>
<tr>
<td>21 Institutions</td>
<td>–</td>
<td>38,769</td>
<td>2</td>
</tr>
<tr>
<td>22 Corporates</td>
<td>1,381</td>
<td>60,389</td>
<td>941</td>
</tr>
<tr>
<td>23 Of which SME</td>
<td>320</td>
<td>37,203</td>
<td>218</td>
</tr>
<tr>
<td>24 Retail</td>
<td>126</td>
<td>20,894</td>
<td>201</td>
</tr>
<tr>
<td>25 Of which SME</td>
<td>40</td>
<td>4,362</td>
<td>35</td>
</tr>
<tr>
<td>26 Secured on real estate property</td>
<td>113</td>
<td>9,871</td>
<td>74</td>
</tr>
<tr>
<td>27 Of which SME</td>
<td>15</td>
<td>3,839</td>
<td>14</td>
</tr>
<tr>
<td>29 Items belonging to regulatory high risk categories</td>
<td>647</td>
<td>1,414</td>
<td>93</td>
</tr>
<tr>
<td>33 Equity</td>
<td>–</td>
<td>1,633</td>
<td>–</td>
</tr>
<tr>
<td>34 Other items$^4$</td>
<td>–</td>
<td>9,997</td>
<td>–</td>
</tr>
<tr>
<td><strong>Total Standardised</strong></td>
<td>2,269</td>
<td>283,224</td>
<td>1,323</td>
</tr>
<tr>
<td>Of which past due items</td>
<td>2,269</td>
<td>–</td>
<td>1,094</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>10,249</td>
<td>1,394,758</td>
<td>6,092</td>
</tr>
</tbody>
</table>

1 EAD before the effect of credit conversion factor and collateral but after substitution
2 Representing expected credit loss (ECL) under IFRS9
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 35: Credit quality of exposures by exposure class and instruments (CR1-A) continued**

| IRB Exposure Class | 2017 | | | | |
|-------------------|------|-----|-----|-----|
|                   | EAD before the effect of CCF & CRM1 | Non-defaulted exposures | Specfic credit risk adjustment | Credit risk adjustment changes in the period2 | Net values |
|                   | $million | $million | $million | $million | $million |
| Defaulted exposures | | | | | |
| 1 Central governments or central banks | – | 310,851 | – | – | 310,851 |
| 2 Institutions | 51 | 256,889 | 3 | 2 | 256,937 |
| 3 Corporates | 10,579 | 403,087 | 4,616 | 1,142 | 409,050 |
| 4 Of which specialised lending | 1,080 | 30,022 | 585 | 25 | 30,517 |
| 5 Of which SME | 706 | 9,363 | 241 | 180 | 9,528 |
| 6 Retail | 630 | 114,915 | 73 | 49 | 115,472 |
| 7 Secured by real estate collateral | 205 | 71,289 | 34 | 21 | 71,460 |
| 8 Of which SME | 3 | 263 | – | – | 266 |
| 9 Of which Non SME | 202 | 71,026 | 34 | 21 | 71,194 |
| 10 Qualifying revolving retail | 154 | 27,845 | 1 | 1 | 27,998 |
| 11 Other retail | 271 | 15,781 | 38 | 27 | 16,014 |
| 12 Of which SME | 76 | 2,223 | 20 | 16 | 2,279 |
| 13 Of which Non SME | 195 | 13,558 | 18 | 11 | 13,735 |
| Non-credit obligation assets | 48 | 1,252 | – | – | 1,300 |
| Total IRB3 | 11,308 | 1,086,994 | 4,692 | 1,193 | 1,093,610 |

**Standardised Exposure Class**

| Central governments or central banks | 112,244 | – | – | – | 112,244 |
| Multilateral development banks | 21,122 | – | – | – | 21,122 |
| Institutions | 40,747 | – | – | – | 40,747 |
| Corporates | 60,440 | 1,126 | 467 | 60,942 |
| Of which SME | 36,506 | 189 | 125 | 36,681 |
| Retail | 21,045 | 163 | 113 | 21,154 |
| Of which SME | 4,537 | 56 | 36 | 4,560 |
| Secured on real estate property | 10,840 | 53 | 32 | 10,892 |
| Of which SME | 3,949 | 8 | 3 | 3,958 |
| Items belonging to regulatory high risk categories | 1,658 | 22 | 9 | 2,292 |
| Equity | 1,818 | – | – | – | 1,818 |
| Other items | 10,422 | – | – | – | 10,422 |
| Total Standardised | 280,336 | 1,364 | 621 | 280,870 |
| Of which past due items | 280,948 | 1,364 | 621 | 280,870 |
| Of which Loans | 292,542 | 5,674 | 1,815 | 296,269 |
| Of which Debt securities | 107,983 | 201 | 19 | 108,232 |
| Of which Off-balance-sheet exposures | 697,489 | 110 | (23) | 700,156 |

1. EAD before the effect of credit conversion factor and collateral but after substitution
2. Representing the net individual impairment charge under IAS39
3. Excludes securitisation exposures
4. Other items include cash, fixed assets, prepayments and accrued income
5. Amount written off during the year is $2,247 million
### 3.4 Exposure values continued

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

<table>
<thead>
<tr>
<th>Industry Type</th>
<th>2018 EAD before the effect of CCF &amp; CRM</th>
<th>Specific credit risk adjustment changes in the period</th>
<th>Credit risk adjustment changes in the period</th>
<th>Net values $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loans to individuals mortgage</td>
<td>284</td>
<td>72,992</td>
<td>87</td>
<td>(58)</td>
</tr>
<tr>
<td>Loans to individuals other</td>
<td>563</td>
<td>61,679</td>
<td>485</td>
<td>(417)</td>
</tr>
<tr>
<td>SME</td>
<td>1,395</td>
<td>57,684</td>
<td>607</td>
<td>607</td>
</tr>
<tr>
<td>Commerce</td>
<td>1,286</td>
<td>66,459</td>
<td>994</td>
<td>249</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>1,689</td>
<td>112,229</td>
<td>1,033</td>
<td>(2,699)</td>
</tr>
<tr>
<td>Commercial real estate</td>
<td>563</td>
<td>21,853</td>
<td>92</td>
<td>(27)</td>
</tr>
<tr>
<td>Government</td>
<td>–</td>
<td>388,060</td>
<td>51</td>
<td>51</td>
</tr>
<tr>
<td>Financing, insurance and business services</td>
<td>374</td>
<td>466,896</td>
<td>723</td>
<td>80</td>
</tr>
<tr>
<td>Transport, storage and communication</td>
<td>1,021</td>
<td>28,604</td>
<td>560</td>
<td>(306)</td>
</tr>
<tr>
<td>Other</td>
<td>3,075</td>
<td>118,303</td>
<td>1,461</td>
<td>1,010</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10,249</strong></td>
<td><strong>1,394,758</strong></td>
<td><strong>6,092</strong></td>
<td><strong>(1,511)</strong></td>
</tr>
</tbody>
</table>

1. EAD before the effect of credit conversion factor and collateral but after substitution
2. Representing ECL under IFRS9
3. Refer to Table 35 (CR1-A) for total net values
4. Accumulated write-off for the year is $2,223 million

<table>
<thead>
<tr>
<th>Industry Type</th>
<th>2017 EAD before the effect of CCF &amp; CRM</th>
<th>Specific credit risk adjustment changes in the period</th>
<th>Credit risk adjustment changes in the period</th>
<th>Net values $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loans to individuals mortgage</td>
<td>290</td>
<td>77,129</td>
<td>75</td>
<td>48</td>
</tr>
<tr>
<td>Loans to individuals other</td>
<td>746</td>
<td>58,069</td>
<td>137</td>
<td>88</td>
</tr>
<tr>
<td>SME</td>
<td>1,607</td>
<td>57,656</td>
<td>532</td>
<td>414</td>
</tr>
<tr>
<td>Commerce</td>
<td>1,540</td>
<td>67,222</td>
<td>1,014</td>
<td>183</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>3,159</td>
<td>105,610</td>
<td>1,846</td>
<td>327</td>
</tr>
<tr>
<td>Commercial real estate</td>
<td>544</td>
<td>18,260</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Government</td>
<td>4</td>
<td>412,307</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Financing, insurance and business services</td>
<td>1,055</td>
<td>448,638</td>
<td>208</td>
<td>88</td>
</tr>
<tr>
<td>Transport, storage and communication</td>
<td>980</td>
<td>27,739</td>
<td>450</td>
<td>200</td>
</tr>
<tr>
<td>Other</td>
<td>3,281</td>
<td>94,400</td>
<td>1,782</td>
<td>459</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13,206</strong></td>
<td><strong>1,367,330</strong></td>
<td><strong>6,056</strong></td>
<td><strong>1,814</strong></td>
</tr>
</tbody>
</table>

1. EAD before the effect of credit conversion factor and collateral but after substitution
2. Representing the net individual impairment charge under IAS39
3. Refer to Table 35 (CR1-A) for total net values
4. Accumulated write-off for the year is $2,247 million
3.4 Exposure values continued

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

<table>
<thead>
<tr>
<th>Geographical Region</th>
<th>Defaulted exposures $million</th>
<th>Non-defaulted exposures $million</th>
<th>Specific credit risk adjustment $million</th>
<th>Credit risk adjustment changes in the period$ million</th>
<th>Net values $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater China &amp; North Asia</td>
<td>1,124</td>
<td>468,821</td>
<td>621</td>
<td>100</td>
<td>469,324</td>
</tr>
<tr>
<td>ASEAN &amp; South Asia</td>
<td>5,002</td>
<td>272,382</td>
<td>2,935</td>
<td>(1,041)</td>
<td>274,449</td>
</tr>
<tr>
<td>Africa &amp; Middle East</td>
<td>3,373</td>
<td>136,604</td>
<td>1,929</td>
<td>(544)</td>
<td>138,048</td>
</tr>
<tr>
<td>Europe &amp; Americas</td>
<td>750</td>
<td>516,951</td>
<td>606</td>
<td>(26)</td>
<td>517,095</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10,249</strong></td>
<td><strong>1,394,758</strong></td>
<td><strong>6,092</strong></td>
<td><strong>(1,511)</strong></td>
<td><strong>1,398,915</strong></td>
</tr>
</tbody>
</table>

1. EAD before the effect of credit conversion factor and collateral but after substitution
2. Representing ECL under IFRS9
3. Refer to Table 35 (CR1-A) for total net values
4. Accumulated write-off for the year is $2,223 million

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

<table>
<thead>
<tr>
<th></th>
<th>≤ 30 days</th>
<th>&gt; 30 days</th>
<th>≤ 60 days</th>
<th>&gt; 60 days</th>
<th>≤ 90 days</th>
<th>&gt; 90 days</th>
<th>≤ 180 days</th>
<th>&gt; 180 days</th>
<th>&gt; 1 year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Loans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3,160</td>
<td>436</td>
<td>333</td>
<td>705</td>
<td>1,879</td>
<td>3,291</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Debt securities</td>
<td>–</td>
<td>–</td>
<td>39</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,160</strong></td>
<td><strong>436</strong></td>
<td><strong>372</strong></td>
<td><strong>705</strong></td>
<td><strong>1,879</strong></td>
<td><strong>3,291</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. EAD before the effect of credit conversion factor and collateral but after substitution
2. Representing the net individual impairment charge under IAS39
3. Refer to Table 35 (CR1-A) for total net values
4. Accumulated write-off for the year is $2,247 million
### 3.4 Exposure values continued

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

<table>
<thead>
<tr>
<th></th>
<th>Gross carrying values of performing and non-performing exposures</th>
<th>Accumulated impairment and provisions and negative fair value adjustments due to credit risk</th>
<th>Collaterals and financial guarantees received</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Of which performing but past due &gt; 30 days and ≤ 90 days</td>
<td>Of which non-performing</td>
<td>On performing exposures</td>
</tr>
<tr>
<td></td>
<td>$million</td>
<td>$million</td>
<td>$million</td>
</tr>
<tr>
<td><strong>020 Loans and advances</strong></td>
<td>451,380</td>
<td>746</td>
<td>810</td>
</tr>
<tr>
<td><strong>030 Off-balance sheet exposures</strong></td>
<td>194,722</td>
<td>NA</td>
<td>–</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Gross carrying values of performing and non-performing exposures</th>
<th>Accumulated impairment and provisions and negative fair value adjustments due to credit risk</th>
<th>Collaterals and financial guarantees received</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Of which performing but past due &gt; 30 days and ≤ 90 days</td>
<td>Of which non-performing</td>
<td>On performing exposures</td>
</tr>
<tr>
<td></td>
<td>$million</td>
<td>$million</td>
<td>$million</td>
</tr>
<tr>
<td><strong>020 Loans and advances</strong></td>
<td>379,578</td>
<td>722</td>
<td>1,013</td>
</tr>
<tr>
<td><strong>010 Debt securities</strong></td>
<td>119,167</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>030 Off-balance sheet exposures</strong></td>
<td>225,344</td>
<td>N/A</td>
<td>–</td>
</tr>
</tbody>
</table>
3.4 Exposure values continued

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

<table>
<thead>
<tr>
<th>Description</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Accumulated specific credit risk adjustment $million</td>
<td>Accumulated general credit risk adjustment $million</td>
</tr>
<tr>
<td>Opening balance</td>
<td>6,713</td>
<td>N/A</td>
</tr>
<tr>
<td>Increases due to amounts set aside for estimated loan losses during the period</td>
<td>2,746</td>
<td>N/A</td>
</tr>
<tr>
<td>Decreases due to amounts reversed for estimated loan losses during the period</td>
<td>(1,781)</td>
<td>N/A</td>
</tr>
<tr>
<td>Decreases due to amounts taken against accumulated credit risk adjustments</td>
<td>(2,075)</td>
<td>N/A</td>
</tr>
<tr>
<td>Transfers between credit risk adjustments</td>
<td>–</td>
<td>N/A</td>
</tr>
<tr>
<td>Impact of exchange rate differences</td>
<td>(335)</td>
<td>N/A</td>
</tr>
<tr>
<td>Business combinations, including acquisitions and disposals of subsidiaries</td>
<td>–</td>
<td>N/A</td>
</tr>
<tr>
<td>Other adjustments</td>
<td>181</td>
<td>N/A</td>
</tr>
<tr>
<td>Closing balance</td>
<td>5,449</td>
<td>N/A</td>
</tr>
<tr>
<td>Recoveries on credit risk adjustments recorded directly to the statement of profit or loss</td>
<td>(312)</td>
<td>N/A</td>
</tr>
<tr>
<td>Specific credit risk adjustments directly recorded to the statement of profit or loss</td>
<td>965</td>
<td>N/A</td>
</tr>
<tr>
<td>1 Opening balance</td>
<td>7,043</td>
<td>737</td>
</tr>
<tr>
<td>Increases due to amounts set aside for estimated loan losses during the period</td>
<td>2,338</td>
<td>64</td>
</tr>
<tr>
<td>Decreases due to amounts reversed for estimated loan losses during the period</td>
<td>(950)</td>
<td>(9)</td>
</tr>
<tr>
<td>Decreases due to amounts taken against accumulated credit risk adjustments</td>
<td>(1,756)</td>
<td>(296)</td>
</tr>
<tr>
<td>Transfers between credit risk adjustments</td>
<td>(189)</td>
<td>–</td>
</tr>
<tr>
<td>Impact of exchange rate differences</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Business combinations, including acquisitions and disposals of subsidiaries</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Other adjustments</td>
<td>(287)</td>
<td>18</td>
</tr>
<tr>
<td>Closing balance</td>
<td>6,199</td>
<td>514</td>
</tr>
<tr>
<td>Recoveries on credit risk adjustments recorded directly to the statement of profit or loss</td>
<td>(652)</td>
<td>(296)</td>
</tr>
<tr>
<td>Specific credit risk adjustments directly recorded to the statement of profit or loss</td>
<td>2,257</td>
<td>57</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Description</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross carrying value of defaulted exposures $million</td>
<td>10,288</td>
<td>11,342</td>
</tr>
<tr>
<td>Loans and debt securities that have defaulted or impaired since the last reporting period</td>
<td>2,631</td>
<td>3,181</td>
</tr>
<tr>
<td>Returned to non-defaulted status</td>
<td>(2,053)</td>
<td>(55)</td>
</tr>
<tr>
<td>Amounts written off</td>
<td>(2,075)</td>
<td>(2,247)</td>
</tr>
<tr>
<td>Other changes</td>
<td>(1,205)</td>
<td>(1,933)</td>
</tr>
<tr>
<td>Closing balance</td>
<td>7,586</td>
<td>10,288</td>
</tr>
</tbody>
</table>
3.5 Regulatory expected loss vs. impairment charge

The Risk profile section of the 2018 Annual Report and Accounts provides on page 168 an overview of the key differences between regulatory and IFRS expected credit loss models. Table 42 compares the regulatory expected loss at 1 January 2018 against expected credit loss in the 2018 Annual Report and Account for the IRB portfolio.

Table 42: Regulatory expected loss

<table>
<thead>
<tr>
<th>IRB Exposure Class</th>
<th>1st January 2018</th>
<th>31st December 2018</th>
<th>1st January 2017</th>
<th>31st December 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Regulatory expected loss $million</td>
<td>Net impairment charge $million</td>
<td>Regulatory expected loss $million</td>
<td>Net impairment charge $million</td>
</tr>
<tr>
<td>Central governments or central banks</td>
<td>137 (260)</td>
<td>90</td>
<td>90</td>
<td>–</td>
</tr>
<tr>
<td>Institutions</td>
<td>69 (272)</td>
<td>236</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Corporates</td>
<td>4,165 (651)</td>
<td>5,647</td>
<td>1,142</td>
<td>1</td>
</tr>
<tr>
<td>Retail, of which</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secured by real estate collateral</td>
<td>68 (121)</td>
<td>51</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>Qualifying revolving retail</td>
<td>276</td>
<td>292</td>
<td>1,142</td>
<td>1</td>
</tr>
<tr>
<td>Retail SME</td>
<td>65</td>
<td>6</td>
<td>27</td>
<td>16</td>
</tr>
<tr>
<td>Other retail</td>
<td>400</td>
<td>415</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Total IRB</td>
<td>5,180</td>
<td>(1,182)</td>
<td>6,758</td>
<td>1,193</td>
</tr>
</tbody>
</table>

1 Net impairment charge represents ECL in 2018 and net individual impairments in 2017

Expected loss reduced by $1.6 billion reflecting the changes to the Group’s risk profile. The overall decrease in provisions is mainly driven by an improvement in the Group’s risk profile in Europe & Americas and ASEAN & South Asia regions with an offset increase noted in Africa & Middle East.

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:

- Pricing – In Corporate & Institutional Banking and Commercial Banking, 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 Corporate & Institutional Banking and Commercial Banking, 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.
- Credit Approval and Decision – In Corporate & Institutional Banking and Commercial Banking, 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) are used for determining level of approval authority required for Credit Approval Documents which outlines peak exposure and credit acceptance criteria for the portfolio.
### 3.6 Risk grade profile continued

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

<table>
<thead>
<tr>
<th></th>
<th>Greater China &amp; North Asia</th>
<th>ASEAN &amp; South Asia</th>
<th>Africa &amp; Middle East</th>
<th>Europe &amp; America</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Exposure weighted average PD%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central governments or central banks</td>
<td>0.02</td>
<td>0.12</td>
<td>1.61</td>
<td>0.02</td>
<td>0.21</td>
</tr>
<tr>
<td>Institutions</td>
<td>0.06</td>
<td>0.24</td>
<td>0.54</td>
<td>0.19</td>
<td>0.19</td>
</tr>
<tr>
<td>Corporates</td>
<td>1.51</td>
<td>6.91</td>
<td>8.91</td>
<td>0.99</td>
<td>3.42</td>
</tr>
<tr>
<td>Of which Specialised lending</td>
<td>3.98</td>
<td>5.71</td>
<td>13.61</td>
<td>1.26</td>
<td>6.06</td>
</tr>
<tr>
<td>Of which SME</td>
<td>4.30</td>
<td>13.71</td>
<td>35.96</td>
<td>0.38</td>
<td>9.79</td>
</tr>
<tr>
<td>Retail</td>
<td>0.94</td>
<td>2.86</td>
<td>11.20</td>
<td>3.53</td>
<td>1.49</td>
</tr>
<tr>
<td>Of which secured by real estate property</td>
<td>0.32</td>
<td>1.20</td>
<td>–</td>
<td>5.15</td>
<td>0.55</td>
</tr>
<tr>
<td>Of which qualifying revolving retail</td>
<td>0.94</td>
<td>6.35</td>
<td>8.44</td>
<td>1.02</td>
<td>2.65</td>
</tr>
<tr>
<td>Of which SME</td>
<td>3.92</td>
<td>9.91</td>
<td>–</td>
<td>–</td>
<td>0.53</td>
</tr>
<tr>
<td>Total IRB</td>
<td>0.65</td>
<td>3.21</td>
<td>5.20</td>
<td>0.58</td>
<td>1.62</td>
</tr>
</tbody>
</table>

| Exposure weighted average LGD% |                            |                    |                      |                  |       |
| Central governments or central banks | 41                          | 37                 | 40                    | 44               | 41    |
| Institutions         | 36                          | 28                 | 31                    | 28               | 31    |
| Corporates           | 34                          | 38                 | 37                    | 28               | 33    |
| Of which Specialised lending | 28                          | 34                 | 30                    | 36               | 33    |
| Of which SME          | 19                          | 39                 | 45                    | 59               | 29    |
| Retail               | 34                          | 31                 | 88                    | 91               | 34    |
| Of which secured by real estate property | 11                          | 16                 | –                     | –                | 13    |
| Of which qualifying revolving retail | 88                          | 72                 | 85                    | 90               | 83    |
| Of which SME          | 76                          | 52                 | 56                    | 61               | 64    |
| Total IRB            | 36                          | 35                 | 37                    | 32               | 35    |

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

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Greater China &amp;</td>
<td>ASEAN &amp; South Asia</td>
<td>Africa &amp;</td>
<td>Europe &amp;</td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>North Asia</td>
<td>%</td>
<td>South Asia %</td>
<td>Middle East %</td>
<td>America %</td>
</tr>
<tr>
<td>Exposure weighted average PD%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central governments or central banks</td>
<td>0.02</td>
<td>0.13</td>
<td>1.42</td>
<td>–</td>
<td>0.19</td>
</tr>
<tr>
<td>Institutions</td>
<td>0.06</td>
<td>0.29</td>
<td>0.60</td>
<td>0.14</td>
<td>0.18</td>
</tr>
<tr>
<td>Corporates</td>
<td>1.97</td>
<td>8.66</td>
<td>8.69</td>
<td>1.31</td>
<td>4.36</td>
</tr>
<tr>
<td>Of which Specialised lending</td>
<td>5.14</td>
<td>7.31</td>
<td>14.02</td>
<td>1.08</td>
<td>7.24</td>
</tr>
<tr>
<td>Of which SME</td>
<td>5.97</td>
<td>14.68</td>
<td>20.82</td>
<td>0.58</td>
<td>10.16</td>
</tr>
<tr>
<td>Retail</td>
<td>0.85</td>
<td>2.71</td>
<td>7.69</td>
<td>2.27</td>
<td>1.40</td>
</tr>
<tr>
<td>Of which secured by real estate property</td>
<td>0.32</td>
<td>1.46</td>
<td>–</td>
<td>–</td>
<td>0.62</td>
</tr>
<tr>
<td>Of which qualifying revolving retail</td>
<td>1.08</td>
<td>5.83</td>
<td>7.66</td>
<td>0.81</td>
<td>2.60</td>
</tr>
<tr>
<td>Of which SME</td>
<td>4.67</td>
<td>9.83</td>
<td>–</td>
<td>–</td>
<td>7.28</td>
</tr>
<tr>
<td>Total IRB</td>
<td>0.73</td>
<td>4.30</td>
<td>5.41</td>
<td>0.74</td>
<td>2.00</td>
</tr>
</tbody>
</table>

| Exposure weighted average LGD% |      |                  |                  |                  |       |
| Central governments or central banks | 42  | 43               | 43                | 46               | 43    |
| Institutions         | 41  | 35               | 36                | 28               | 35    |
| Corporates           | 38  | 39               | 36                | 32               | 36    |
| Of which Specialised lending | 27  | 37               | 32                | 36               | 34    |
| Of which SME          | 24  | 41               | 46                | 63               | 34    |
| Retail               | 32  | 29               | 91                | 92               | 32    |
| Of which secured by real estate property | 11  | 14               | –                 | –                | 12    |
| Of which qualifying revolving retail | 88  | 75               | 85                | 90               | 84    |
| Of which SME          | 78  | 46               | 36                | –                | 62    |
| Total IRB            | 38  | 37               | 38                | 34               | 37    |

1 The regional split is based on the residence of the counterparty
### 3.6 Risk grade profile continued

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

IRB credit risk excluding counterparty credit risk EAD increased by $26.6 billion and RWA decreased by $8.1 billion (Tables 44 to 54):

- Central governments and central banks EAD increased $12.0 billion and RWA increased by $0.5 billion driven by an increase in Fixed and Floating rate notes exposures mainly in Europe and Americas
- Institutions EAD increased $10.3 billion driven by increases of $5.0 billion in ASEAN & South Asia and $4.4 billion in GCNA
- IRB corporates EAD increased $4.8 billion across multiple product lines, principally in Europe and Americas offset by reductions in ASEAN & South Asia and Africa & Middle East. RWA decreased $7.1 billion across multiple product lines and regions

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

<table>
<thead>
<tr>
<th>IRB Exposure Class</th>
<th>Original on-balance sheet gross exposure $million</th>
<th>Off-balance sheet exposure pre CCF $million</th>
<th>Average CCF %</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD %</th>
<th>Number of obligors $ thousands</th>
<th>Average LGD %</th>
<th>Average maturity years</th>
<th>RWA $million</th>
<th>RWA density %</th>
<th>Expected loss $million</th>
<th>Value adjustments and provisions $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central governments or central banks</td>
<td>132,026</td>
<td>144,666</td>
<td>1</td>
<td>134,146</td>
<td>0.23</td>
<td>0.3</td>
<td>45</td>
<td>1.36</td>
<td>21,197</td>
<td>16</td>
<td>135</td>
<td>49</td>
</tr>
<tr>
<td>Institutions</td>
<td>81,086</td>
<td>141,343</td>
<td>6</td>
<td>88,730</td>
<td>0.21</td>
<td>1.6</td>
<td>39</td>
<td>0.98</td>
<td>17,478</td>
<td>20</td>
<td>60</td>
<td>5</td>
</tr>
<tr>
<td>Corporates</td>
<td>117,247</td>
<td>255,464</td>
<td>21</td>
<td>172,417</td>
<td>4.65</td>
<td>22.9</td>
<td>40</td>
<td>1.52</td>
<td>87,206</td>
<td>51</td>
<td>4,128</td>
<td>4,327</td>
</tr>
<tr>
<td>Of which Specialised lending</td>
<td>17,201</td>
<td>17,695</td>
<td>15</td>
<td>16,786</td>
<td>6.51</td>
<td>1.2</td>
<td>33</td>
<td>2.21</td>
<td>10,099</td>
<td>60</td>
<td>506</td>
<td>474</td>
</tr>
<tr>
<td>Of which SME</td>
<td>5,238</td>
<td>3,599</td>
<td>23</td>
<td>5,944</td>
<td>10.19</td>
<td>7.6</td>
<td>28</td>
<td>1.56</td>
<td>3,274</td>
<td>55</td>
<td>270</td>
<td>279</td>
</tr>
<tr>
<td>Retail</td>
<td>82,141</td>
<td>34,649</td>
<td>49</td>
<td>98,932</td>
<td>1.49</td>
<td>4,175.0</td>
<td>34</td>
<td>21,564</td>
<td>22</td>
<td>809</td>
<td>388</td>
<td></td>
</tr>
<tr>
<td>Of which secured by real estate</td>
<td>66,406</td>
<td>1,555</td>
<td>100</td>
<td>67,965</td>
<td>0.55</td>
<td>334.6</td>
<td>13</td>
<td>3,710</td>
<td>5</td>
<td>68</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>– SME</td>
<td>402</td>
<td>5</td>
<td>68</td>
<td>405</td>
<td>2.85</td>
<td>2.8</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>– Non SME</td>
<td>66,004</td>
<td>1,550</td>
<td>100</td>
<td>67,560</td>
<td>0.53</td>
<td>331.8</td>
<td>13</td>
<td>3,710</td>
<td>5</td>
<td>68</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>Of which qualifying revolving retail</td>
<td>3,498</td>
<td>27,087</td>
<td>44</td>
<td>15,460</td>
<td>2.65</td>
<td>3,249.9</td>
<td>83</td>
<td>4,574</td>
<td>30</td>
<td>276</td>
<td>121</td>
<td></td>
</tr>
<tr>
<td>Of which other retail</td>
<td>12,237</td>
<td>6,007</td>
<td>59</td>
<td>15,506</td>
<td>4.48</td>
<td>590.4</td>
<td>78</td>
<td>13,281</td>
<td>86</td>
<td>465</td>
<td>229</td>
<td></td>
</tr>
<tr>
<td>– SME</td>
<td>1,940</td>
<td>907</td>
<td>7</td>
<td>1,723</td>
<td>8.00</td>
<td>36.2</td>
<td>64</td>
<td>1,328</td>
<td>77</td>
<td>65</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td>– Non SME</td>
<td>10,297</td>
<td>5,101</td>
<td>68</td>
<td>13,784</td>
<td>4.04</td>
<td>554.2</td>
<td>80</td>
<td>11,952</td>
<td>87</td>
<td>400</td>
<td>188</td>
<td></td>
</tr>
<tr>
<td>Non-credit obligation assets</td>
<td>1,091</td>
<td>–</td>
<td>–</td>
<td>1,091</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1,091</td>
<td>100</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Total IRB</td>
<td>413,591</td>
<td>576,122</td>
<td>14</td>
<td>495,316</td>
<td>2.01</td>
<td>4,199.8</td>
<td>40</td>
<td>1.07</td>
<td>148,537</td>
<td>30</td>
<td>5,131</td>
<td>4,769</td>
</tr>
</tbody>
</table>

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 12 (OV1) for RWA
### 3.6 Risk grade profile continued

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

<table>
<thead>
<tr>
<th>IRB Exposure Class</th>
<th>Original on-balance sheet gross exposure $million</th>
<th>Off-balance sheet exposure pre CCF $million</th>
<th>Average CCF %</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD %</th>
<th>Number of obligors2 thousands</th>
<th>Average LGD %</th>
<th>Average maturity1 years</th>
<th>RWA $million</th>
<th>RWA density %</th>
<th>Expected loss $million</th>
<th>Value adjustments and provisions $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central governments or central banks</td>
<td>118,102</td>
<td>172,582</td>
<td>1</td>
<td>122,098</td>
<td>0.21</td>
<td>0.3</td>
<td>47</td>
<td>1.36</td>
<td>20,655</td>
<td>17</td>
<td>117</td>
<td>–</td>
</tr>
<tr>
<td>Institutions</td>
<td>71,836</td>
<td>138,296</td>
<td>5</td>
<td>78,420</td>
<td>0.23</td>
<td>1.6</td>
<td>44</td>
<td>0.87</td>
<td>19,309</td>
<td>25</td>
<td>74</td>
<td>3</td>
</tr>
<tr>
<td>Corporates</td>
<td>116,510</td>
<td>235,187</td>
<td>22</td>
<td>167,640</td>
<td>5.90</td>
<td>50.7</td>
<td>42</td>
<td>1.50</td>
<td>94,348</td>
<td>56</td>
<td>5,005</td>
<td>4,726</td>
</tr>
<tr>
<td>Of which Specialised lending3</td>
<td>16,150</td>
<td>16,679</td>
<td>18</td>
<td>16,119</td>
<td>7.89</td>
<td>1.0</td>
<td>33</td>
<td>2.29</td>
<td>9,823</td>
<td>61</td>
<td>638</td>
<td>585</td>
</tr>
<tr>
<td>Of which SME</td>
<td>5,983</td>
<td>4,312</td>
<td>24</td>
<td>6,276</td>
<td>11.01</td>
<td>36.3</td>
<td>31</td>
<td>1.48</td>
<td>3,858</td>
<td>61</td>
<td>275</td>
<td>241</td>
</tr>
<tr>
<td>Retail</td>
<td>82,621</td>
<td>32,934</td>
<td>51</td>
<td>99,269</td>
<td>1.40</td>
<td>3,994.5</td>
<td>32</td>
<td>20,990</td>
<td>21</td>
<td>714</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>Of which secured by real estate</td>
<td>69,334</td>
<td>2,162</td>
<td>99</td>
<td>71,476</td>
<td>0.62</td>
<td>364.0</td>
<td>12</td>
<td>4,953</td>
<td>7</td>
<td>57</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>– SME</td>
<td>259</td>
<td>10</td>
<td>59</td>
<td>262</td>
<td>3.38</td>
<td>0.9</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>– Non SME</td>
<td>69,075</td>
<td>2,152</td>
<td>99</td>
<td>71,214</td>
<td>0.61</td>
<td>363.1</td>
<td>12</td>
<td>4,953</td>
<td>7</td>
<td>57</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>Of which qualifying revolving retail</td>
<td>3,210</td>
<td>24,788</td>
<td>45</td>
<td>14,276</td>
<td>2.60</td>
<td>3,099.1</td>
<td>84</td>
<td>4,339</td>
<td>30</td>
<td>254</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Of which other retail</td>
<td>10,077</td>
<td>5,984</td>
<td>58</td>
<td>13,517</td>
<td>4.21</td>
<td>531.4</td>
<td>80</td>
<td>11,698</td>
<td>87</td>
<td>403</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>– SME</td>
<td>1,457</td>
<td>851</td>
<td>5</td>
<td>1,493</td>
<td>7.28</td>
<td>9.4</td>
<td>62</td>
<td>1,020</td>
<td>68</td>
<td>47</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>– Non SME</td>
<td>8,620</td>
<td>5,133</td>
<td>66</td>
<td>12,024</td>
<td>3.83</td>
<td>522.0</td>
<td>82</td>
<td>10,678</td>
<td>89</td>
<td>356</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Non-credit obligation assets</td>
<td>1,300</td>
<td>–</td>
<td>–</td>
<td>1,300</td>
<td>–</td>
<td>–</td>
<td>1,300</td>
<td>100</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Total IRB</td>
<td>390,369</td>
<td>578,999</td>
<td>13</td>
<td>488,727</td>
<td>2.49</td>
<td>4,047.1</td>
<td>41</td>
<td>1.05</td>
<td>156,602</td>
<td>33</td>
<td>5,910</td>
<td>4,802</td>
</tr>
</tbody>
</table>

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

Table 45 demonstrates Standard Chartered’s internal ratings and its approximate relation to external credit ratings.

Tables 46 to 54 and tables 79 to 83 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 80 per cent (2017: 79 per cent) of the Group’s total credit risk exposure before collateral.
### Table 45: Internal default grade probabilities and mapping to external ratings

<table>
<thead>
<tr>
<th>Standard Chartered Bank internal ratings</th>
<th>PD range (%)</th>
<th>Standard &amp; Poor’s external rating equivalent for sovereigns and institutions</th>
<th>Standard &amp; Poor’s external rating equivalent for corporates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>0.000 – 0.015</td>
<td>AAA/AA+</td>
<td>AAA/AA+</td>
</tr>
<tr>
<td>1B</td>
<td>0.016 – 0.025</td>
<td>AA</td>
<td>AA</td>
</tr>
<tr>
<td>2A</td>
<td>0.026 – 0.035</td>
<td>AA-</td>
<td>AA/AA-</td>
</tr>
<tr>
<td>2B</td>
<td>0.036 – 0.045</td>
<td>A+</td>
<td>AA-</td>
</tr>
<tr>
<td>3A</td>
<td>0.046 – 0.060</td>
<td>A</td>
<td>A+</td>
</tr>
<tr>
<td>3B</td>
<td>0.061 – 0.083</td>
<td>A-/BBB+</td>
<td>A</td>
</tr>
<tr>
<td>4A</td>
<td>0.084 – 0.110</td>
<td>BBB</td>
<td>A-</td>
</tr>
<tr>
<td>4B</td>
<td>0.111 – 0.170</td>
<td>BBB/BBB-</td>
<td>BBB+</td>
</tr>
<tr>
<td>5A</td>
<td>0.171 – 0.300</td>
<td>BBB-</td>
<td>BBB</td>
</tr>
<tr>
<td>5B</td>
<td>0.301 – 0.425</td>
<td>BB+</td>
<td>BBB+/BB+</td>
</tr>
<tr>
<td>6A</td>
<td>0.426 – 0.585</td>
<td>BB+/BB</td>
<td>BB+/BB</td>
</tr>
<tr>
<td>6B</td>
<td>0.586 – 0.770</td>
<td>BB</td>
<td>BB</td>
</tr>
<tr>
<td>7A</td>
<td>0.771 – 1.020</td>
<td>BB/BB-</td>
<td>BB/BB-</td>
</tr>
<tr>
<td>7B</td>
<td>1.021 – 1.350</td>
<td>BB-</td>
<td>BB-</td>
</tr>
<tr>
<td>8A</td>
<td>1.351 – 1.750</td>
<td>BB-/B+</td>
<td>BB-/B+</td>
</tr>
<tr>
<td>8B</td>
<td>1.751 – 2.350</td>
<td>B+</td>
<td>B+</td>
</tr>
<tr>
<td>9A</td>
<td>2.351 – 3.060</td>
<td>B</td>
<td>B+</td>
</tr>
<tr>
<td>9B</td>
<td>3.051 – 4.000</td>
<td>B/B-</td>
<td>B+/B</td>
</tr>
<tr>
<td>10A</td>
<td>4.001 – 5.300</td>
<td>B-</td>
<td>B</td>
</tr>
<tr>
<td>10B</td>
<td>5.301 – 7.000</td>
<td>B-</td>
<td>B-/B-</td>
</tr>
<tr>
<td>11A/B/C</td>
<td>7.001 – 15.750</td>
<td>B-/CCC/C</td>
<td>B-/CCC</td>
</tr>
<tr>
<td>12A/B/C</td>
<td>15.751 – 99.999</td>
<td>CCC/C</td>
<td>CCC/C</td>
</tr>
<tr>
<td>13</td>
<td>100</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>14</td>
<td>100</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Unrated</td>
<td></td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
### 3.6 Risk grade profile continued

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

<table>
<thead>
<tr>
<th>PD range %</th>
<th>Original on-balance sheet exposure $million</th>
<th>Off-balance sheet exposure pre CCF $million</th>
<th>Average CCF %</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD %</th>
<th>Number of obligors % thousands</th>
<th>Average LGD %</th>
<th>Average maturity years</th>
<th>RWA $million</th>
<th>RWA density %</th>
<th>Expected loss $million</th>
<th>Value adjustments and provisions $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt;0.15</td>
<td>114,046</td>
<td>127,714</td>
<td>1</td>
<td>116,616</td>
<td>0.02</td>
<td>0.2</td>
<td>45</td>
<td>1.36</td>
<td>7,819</td>
<td>7</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>6,634</td>
<td>2,456</td>
<td>–</td>
<td>6,700</td>
<td>0.22</td>
<td>–</td>
<td>45</td>
<td>1.73</td>
<td>2,756</td>
<td>41</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>439</td>
<td>1,249</td>
<td>–</td>
<td>394</td>
<td>0.43</td>
<td>–</td>
<td>45</td>
<td>1.55</td>
<td>226</td>
<td>57</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td>1,312</td>
<td>–</td>
<td>–</td>
<td>1,312</td>
<td>0.67</td>
<td>–</td>
<td>45</td>
<td>1.06</td>
<td>858</td>
<td>65</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td>8,030</td>
<td>11,269</td>
<td>1</td>
<td>7,657</td>
<td>1.61</td>
<td>0.1</td>
<td>45</td>
<td>1.09</td>
<td>7,068</td>
<td>92</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td>895</td>
<td>1,075</td>
<td>2</td>
<td>782</td>
<td>4.84</td>
<td>–</td>
<td>42</td>
<td>1.11</td>
<td>1,005</td>
<td>129</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>670</td>
<td>903</td>
<td>–</td>
<td>684</td>
<td>13.77</td>
<td>–</td>
<td>45</td>
<td>1.08</td>
<td>1,465</td>
<td>214</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>132,026</td>
<td>144,666</td>
<td>1</td>
<td>134,146</td>
<td>0.23</td>
<td>0.3</td>
<td>45</td>
<td>1.36</td>
<td>21,197</td>
<td>16</td>
<td>135</td>
<td>49</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PD range %</th>
<th>Original on-balance sheet exposure $million</th>
<th>Off-balance sheet exposure pre CCF $million</th>
<th>Average CCF %</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD %</th>
<th>Number of obligors % thousands</th>
<th>Average LGD %</th>
<th>Average maturity years</th>
<th>RWA $million</th>
<th>RWA density %</th>
<th>Expected loss $million</th>
<th>Value adjustments and provisions $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt;0.15</td>
<td>101,220</td>
<td>146,058</td>
<td>2</td>
<td>105,471</td>
<td>0.02</td>
<td>0.1</td>
<td>47</td>
<td>1.36</td>
<td>7,600</td>
<td>7</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>6,104</td>
<td>8,076</td>
<td>–</td>
<td>6,133</td>
<td>0.22</td>
<td>–</td>
<td>46</td>
<td>1.80</td>
<td>2,680</td>
<td>44</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>246</td>
<td>2,572</td>
<td>–</td>
<td>396</td>
<td>0.39</td>
<td>–</td>
<td>46</td>
<td>2.15</td>
<td>251</td>
<td>63</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td>1,030</td>
<td>–</td>
<td>–</td>
<td>1,030</td>
<td>0.67</td>
<td>–</td>
<td>46</td>
<td>1.14</td>
<td>712</td>
<td>69</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td>8,501</td>
<td>14,460</td>
<td>1</td>
<td>8,061</td>
<td>1.45</td>
<td>0.1</td>
<td>47</td>
<td>1.10</td>
<td>7,575</td>
<td>94</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td>482</td>
<td>819</td>
<td>1</td>
<td>485</td>
<td>4.89</td>
<td>–</td>
<td>46</td>
<td>1.08</td>
<td>693</td>
<td>143</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>519</td>
<td>587</td>
<td>–</td>
<td>522</td>
<td>13.77</td>
<td>–</td>
<td>46</td>
<td>1.08</td>
<td>1,144</td>
<td>219</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>118,102</td>
<td>172,582</td>
<td>1</td>
<td>122,098</td>
<td>0.21</td>
<td>0.3</td>
<td>47</td>
<td>1.36</td>
<td>20,655</td>
<td>17</td>
<td>117</td>
<td>–</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>PD range %</th>
<th>Original on-balance sheet exposure $million</th>
<th>Off-balance sheet exposure pre CCF $million</th>
<th>Average CCF %</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD %</th>
<th>Number of obligors $ millions</th>
<th>Average LGD %</th>
<th>Average maturity years</th>
<th>RWA $ million</th>
<th>RWA density %</th>
<th>Expected loss $ million</th>
<th>Value adjustments and provisions $ million</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt;0.15</td>
<td>61,792</td>
<td>104,558</td>
<td>5</td>
<td>70,362</td>
<td>0.04</td>
<td>0.8</td>
<td>41</td>
<td>1.07</td>
<td>8,444</td>
<td>12</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>5,891</td>
<td>10,290</td>
<td>10</td>
<td>6,447</td>
<td>0.22</td>
<td>0.1</td>
<td>32</td>
<td>0.73</td>
<td>1,801</td>
<td>28</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>4,775</td>
<td>8,936</td>
<td>6</td>
<td>4,435</td>
<td>0.47</td>
<td>0.2</td>
<td>39</td>
<td>0.65</td>
<td>2,362</td>
<td>53</td>
<td>8</td>
<td></td>
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<tr>
<td>0.50 to &lt;0.75</td>
<td>695</td>
<td>2,374</td>
<td>3</td>
<td>628</td>
<td>0.68</td>
<td>0.0</td>
<td>33</td>
<td>0.63</td>
<td>319</td>
<td>51</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td>7,607</td>
<td>13,840</td>
<td>13</td>
<td>6,499</td>
<td>1.52</td>
<td>0.4</td>
<td>31</td>
<td>0.44</td>
<td>4,353</td>
<td>67</td>
<td>31</td>
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<tr>
<td>2.50 to &lt;10.00</td>
<td>291</td>
<td>1,204</td>
<td>12</td>
<td>337</td>
<td>3.87</td>
<td>0.1</td>
<td>15</td>
<td>1.02</td>
<td>160</td>
<td>47</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>34</td>
<td>141</td>
<td>7</td>
<td>22</td>
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<td>–</td>
<td>–</td>
<td>–</td>
<td>39</td>
<td>174</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>81,086</td>
<td>141,343</td>
<td>6</td>
<td>88,730</td>
<td>0.21</td>
<td>1.6</td>
<td>39</td>
<td>0.98</td>
<td>17,478</td>
<td>20</td>
<td>60</td>
<td>5</td>
</tr>
</tbody>
</table>

1. Weighted averages are based on exposure at default
2. Number of obligors is based on the number of counterparties within each PD grade
### 3.6 Risk grade profile continued

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

<table>
<thead>
<tr>
<th>PD range %</th>
<th>Original on-balance sheet exposure $million</th>
<th>Original on-balance sheet exposure pre CCF $million</th>
<th>Average CCF %</th>
<th>EAD CRM and post CCF $million</th>
<th>Average PD1 %</th>
<th>Number of obligors2 thousands</th>
<th>Average LGD1 %</th>
<th>Average maturity1 years</th>
<th>RWA $million</th>
<th>RWA density1 %</th>
<th>Expected loss $million</th>
<th>Value adjustments and provisions $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt;0.15</td>
<td>37,243</td>
<td>112,275</td>
<td>20</td>
<td>69,270</td>
<td>0.08</td>
<td>3.0</td>
<td>44</td>
<td>1.52</td>
<td>14,600</td>
<td>21</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>13,199</td>
<td>37,339</td>
<td>22</td>
<td>21,317</td>
<td>0.22</td>
<td>2.4</td>
<td>41</td>
<td>1.50</td>
<td>7,857</td>
<td>37</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>16,352</td>
<td>41,078</td>
<td>22</td>
<td>25,217</td>
<td>0.44</td>
<td>3.2</td>
<td>35</td>
<td>1.63</td>
<td>11,889</td>
<td>47</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td>6,646</td>
<td>15,210</td>
<td>21</td>
<td>9,315</td>
<td>0.68</td>
<td>1.3</td>
<td>38</td>
<td>1.49</td>
<td>5,550</td>
<td>60</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td>22,403</td>
<td>37,440</td>
<td>23</td>
<td>27,377</td>
<td>1.56</td>
<td>5.7</td>
<td>34</td>
<td>1.65</td>
<td>20,637</td>
<td>75</td>
<td>153</td>
<td></td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td>8,617</td>
<td>7,636</td>
<td>24</td>
<td>7,810</td>
<td>5.60</td>
<td>3.7</td>
<td>36</td>
<td>1.14</td>
<td>9,176</td>
<td>117</td>
<td>163</td>
<td></td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>5,259</td>
<td>2,707</td>
<td>35</td>
<td>4,503</td>
<td>40.21</td>
<td>2.4</td>
<td>39</td>
<td>1.31</td>
<td>11,445</td>
<td>254</td>
<td>371</td>
<td></td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>4,983</td>
<td>914</td>
<td>–</td>
<td>4,948</td>
<td>100.00</td>
<td>1.2</td>
<td>53</td>
<td>1.12</td>
<td>3,801</td>
<td>77</td>
<td>3,310</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>114,702</td>
<td>254,599</td>
<td>21</td>
<td>169,756</td>
<td>4.65</td>
<td>22.9</td>
<td>40</td>
<td>1.52</td>
<td>84,955</td>
<td>51</td>
<td>4,107</td>
<td>4,327</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PD range %</th>
<th>Original on-balance sheet exposure $million</th>
<th>Original on-balance sheet exposure pre CCF $million</th>
<th>Average CCF %</th>
<th>EAD CRM and post CCF $million</th>
<th>Average PD1 %</th>
<th>Number of obligors2 thousands</th>
<th>Average LGD1 %</th>
<th>Average maturity1 years</th>
<th>RWA $million</th>
<th>RWA density1 %</th>
<th>Expected loss $million</th>
<th>Value adjustments and provisions $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt;0.15</td>
<td>28,989</td>
<td>91,479</td>
<td>21</td>
<td>58,216</td>
<td>0.08</td>
<td>2.7</td>
<td>46</td>
<td>1.49</td>
<td>12,897</td>
<td>22</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>13,364</td>
<td>35,868</td>
<td>22</td>
<td>20,561</td>
<td>0.22</td>
<td>2.0</td>
<td>45</td>
<td>1.45</td>
<td>8,122</td>
<td>39</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>17,815</td>
<td>39,553</td>
<td>22</td>
<td>24,877</td>
<td>0.44</td>
<td>2.4</td>
<td>40</td>
<td>1.64</td>
<td>13,297</td>
<td>53</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td>6,545</td>
<td>13,142</td>
<td>25</td>
<td>9,653</td>
<td>0.68</td>
<td>1.6</td>
<td>41</td>
<td>1.41</td>
<td>6,250</td>
<td>65</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td>26,843</td>
<td>37,982</td>
<td>25</td>
<td>32,399</td>
<td>1.50</td>
<td>28.9</td>
<td>35</td>
<td>1.63</td>
<td>24,663</td>
<td>76</td>
<td>177</td>
<td></td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td>9,381</td>
<td>8,671</td>
<td>24</td>
<td>9,115</td>
<td>5.29</td>
<td>5.9</td>
<td>36</td>
<td>1.20</td>
<td>10,482</td>
<td>115</td>
<td>172</td>
<td></td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>5,022</td>
<td>3,141</td>
<td>34</td>
<td>4,478</td>
<td>40.03</td>
<td>2.1</td>
<td>37</td>
<td>1.45</td>
<td>11,819</td>
<td>264</td>
<td>310</td>
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</tr>
<tr>
<td>100.00 (default)</td>
<td>6,797</td>
<td>2,110</td>
<td>9</td>
<td>6,494</td>
<td>100.00</td>
<td>5.1</td>
<td>53</td>
<td>1.17</td>
<td>5,314</td>
<td>82</td>
<td>4,217</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>114,756</td>
<td>234,646</td>
<td>22</td>
<td>165,793</td>
<td>5.90</td>
<td>50.7</td>
<td>42</td>
<td>1.50</td>
<td>92,844</td>
<td>56</td>
<td>4,990</td>
<td>4,726</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>PD range %</th>
<th>Original on-balance sheet exposure $million</th>
<th>Off-balance sheet exposure pre CCF $million</th>
<th>Average CCF %</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD%</th>
<th>Number of obligors' thousands</th>
<th>Average LGD%</th>
<th>Average maturity years</th>
<th>RWA $million</th>
<th>RWA density%</th>
<th>Expected loss $million</th>
<th>Value adjustments and provisions $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt;0.15</td>
<td>2,916</td>
<td>2,414</td>
<td>9</td>
<td>3,036</td>
<td>0.09</td>
<td>0.2</td>
<td>34</td>
<td>2.53</td>
<td>662</td>
<td>22</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>1,881</td>
<td>2,300</td>
<td>14</td>
<td>1,963</td>
<td>0.22</td>
<td>0.1</td>
<td>36</td>
<td>1.60</td>
<td>615</td>
<td>31</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>2,801</td>
<td>3,529</td>
<td>22</td>
<td>2,865</td>
<td>0.46</td>
<td>0.2</td>
<td>30</td>
<td>2.49</td>
<td>1,276</td>
<td>45</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td>689</td>
<td>1,988</td>
<td>15</td>
<td>824</td>
<td>0.67</td>
<td>0.1</td>
<td>32</td>
<td>1.31</td>
<td>414</td>
<td>50</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td>4,226</td>
<td>5,334</td>
<td>12</td>
<td>3,826</td>
<td>1.47</td>
<td>0.4</td>
<td>30</td>
<td>2.50</td>
<td>2,786</td>
<td>73</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td>1,024</td>
<td>987</td>
<td>8</td>
<td>564</td>
<td>5.81</td>
<td>0.1</td>
<td>33</td>
<td>1.64</td>
<td>688</td>
<td>122</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>540</td>
<td>215</td>
<td>61</td>
<td>438</td>
<td>44.83</td>
<td>–</td>
<td>30</td>
<td>2.18</td>
<td>924</td>
<td>211</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>580</td>
<td>63</td>
<td>44</td>
<td>608</td>
<td>100.00</td>
<td>0.1</td>
<td>46</td>
<td>1.09</td>
<td>483</td>
<td>80</td>
<td>405</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>14,657</td>
<td>16,830</td>
<td>15</td>
<td>14,125</td>
<td>6.51</td>
<td>1.2</td>
<td>33</td>
<td>2.21</td>
<td>7,849</td>
<td>56</td>
<td>485</td>
<td>474</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PD range %</th>
<th>Original on-balance sheet exposure $million</th>
<th>Off-balance sheet exposure pre CCF $million</th>
<th>Average CCF %</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD%</th>
<th>Number of obligors' thousands</th>
<th>Average LGD%</th>
<th>Average maturity years</th>
<th>RWA $million</th>
<th>RWA density%</th>
<th>Expected loss $million</th>
<th>Value adjustments and provisions $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt;0.15</td>
<td>1,247</td>
<td>1,746</td>
<td>30</td>
<td>1,684</td>
<td>0.10</td>
<td>0.1</td>
<td>23</td>
<td>2.38</td>
<td>242</td>
<td>14</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>1,952</td>
<td>2,952</td>
<td>16</td>
<td>2,233</td>
<td>0.22</td>
<td>0.1</td>
<td>35</td>
<td>2.44</td>
<td>697</td>
<td>31</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>3,019</td>
<td>3,305</td>
<td>23</td>
<td>2,848</td>
<td>0.44</td>
<td>0.2</td>
<td>32</td>
<td>2.71</td>
<td>1,471</td>
<td>52</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td>870</td>
<td>843</td>
<td>18</td>
<td>984</td>
<td>0.67</td>
<td>0.1</td>
<td>35</td>
<td>2.77</td>
<td>644</td>
<td>65</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td>5,344</td>
<td>5,487</td>
<td>14</td>
<td>4,680</td>
<td>1.46</td>
<td>0.3</td>
<td>33</td>
<td>2.14</td>
<td>3,517</td>
<td>75</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td>656</td>
<td>1,384</td>
<td>12</td>
<td>649</td>
<td>5.45</td>
<td>0.1</td>
<td>26</td>
<td>1.65</td>
<td>623</td>
<td>96</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>504</td>
<td>243</td>
<td>22</td>
<td>356</td>
<td>43.93</td>
<td>0.1</td>
<td>39</td>
<td>1.78</td>
<td>1,004</td>
<td>282</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>805</td>
<td>177</td>
<td>21</td>
<td>841</td>
<td>100.00</td>
<td>0.1</td>
<td>43</td>
<td>1.31</td>
<td>123</td>
<td>15</td>
<td>540</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>14,397</td>
<td>16,137</td>
<td>18</td>
<td>14,275</td>
<td>7.89</td>
<td>1.0</td>
<td>33</td>
<td>2.29</td>
<td>8,321</td>
<td>58</td>
<td>623</td>
<td>585</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>PD range %</th>
<th>Original on-balance sheet exposure $million</th>
<th>Off-balance sheet exposure pre CCF $million</th>
<th>Average CCF %</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD1 %</th>
<th>Number of obligors2 thousands</th>
<th>Average LGD1 %</th>
<th>Average maturity1 years</th>
<th>RWA $million</th>
<th>RWA density1 %</th>
<th>Expected loss $million</th>
<th>Value adjustments and provisions $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt;0.15</td>
<td>61</td>
<td>276</td>
<td>22</td>
<td>127</td>
<td>0.07</td>
<td>–</td>
<td>40</td>
<td>2.79</td>
<td>28</td>
<td>22</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>468</td>
<td>643</td>
<td>24</td>
<td>655</td>
<td>0.23</td>
<td>0.6</td>
<td>27</td>
<td>1.34</td>
<td>122</td>
<td>19</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>986</td>
<td>448</td>
<td>27</td>
<td>1,130</td>
<td>0.45</td>
<td>0.8</td>
<td>29</td>
<td>1.72</td>
<td>421</td>
<td>37</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td>233</td>
<td>206</td>
<td>17</td>
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<td>659</td>
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<td>10.00 to &lt;100.00</td>
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<td>24</td>
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<td>24.98</td>
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<td>27</td>
<td>1.18</td>
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<th>PD range %</th>
<th>Original on-balance sheet exposure $million</th>
<th>Off-balance sheet exposure pre CCF $million</th>
<th>Average CCF %</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD1 %</th>
<th>Number of obligors2 thousands</th>
<th>Average LGD1 %</th>
<th>Average maturity1 years</th>
<th>RWA $million</th>
<th>RWA density1 %</th>
<th>Expected loss $million</th>
<th>Value adjustments and provisions $million</th>
</tr>
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<tbody>
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<td>0.00 to &lt;0.15</td>
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<td>734</td>
<td>14</td>
<td>447</td>
<td>0.10</td>
<td>–</td>
<td>45</td>
<td>1.50</td>
<td>96</td>
<td>21</td>
<td>–</td>
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<td>25</td>
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<td>0.23</td>
<td>0.2</td>
<td>33</td>
<td>2.20</td>
<td>115</td>
<td>28</td>
<td>–</td>
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<tr>
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<td>23</td>
<td>353</td>
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<td>167</td>
<td>47</td>
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<td>177</td>
<td>24</td>
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<td>41</td>
<td>1.46</td>
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<td>2,971</td>
<td>1.68</td>
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<td>1,510</td>
<td>51</td>
<td>13</td>
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<td>1.16</td>
<td>749</td>
<td>69</td>
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<td>10.00 to &lt;100.00</td>
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<td>169</td>
<td>29</td>
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<td>1.32</td>
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### 3.6 Risk grade profile continued

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

<table>
<thead>
<tr>
<th>PD range %</th>
<th>Original on-balance sheet exposure $million</th>
<th>Off-balance sheet exposure $million</th>
<th>Average CCF %</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD %</th>
<th>Number of obligors^1 thousands</th>
<th>Average LGD %</th>
<th>Average maturity^1 years</th>
<th>RWA $million</th>
<th>RWA density^1 %</th>
<th>Expected loss $million</th>
<th>Value adjustments and provisions $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt;0.15</td>
<td>58,686</td>
<td>17,491</td>
<td>52</td>
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<td>1,461.8</td>
<td>22</td>
<td>2,382</td>
<td>4</td>
<td>10</td>
<td></td>
<td></td>
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<tr>
<td>0.15 to &lt;0.25</td>
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<td>4,392</td>
<td>51</td>
<td>6,129</td>
<td>0.23</td>
<td>340.1</td>
<td>43</td>
<td>865</td>
<td>14</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>4,010</td>
<td>2,426</td>
<td>62</td>
<td>5,470</td>
<td>0.42</td>
<td>250.6</td>
<td>54</td>
<td>1,820</td>
<td>33</td>
<td>12</td>
<td></td>
<td></td>
</tr>
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<td>0.50 to &lt;0.75</td>
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<td>2,920</td>
<td>51</td>
<td>3,779</td>
<td>0.67</td>
<td>197.4</td>
<td>61</td>
<td>1,308</td>
<td>35</td>
<td>16</td>
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<td>1.70</td>
<td>676.6</td>
<td>68</td>
<td>7,330</td>
<td>77</td>
<td>114</td>
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<td>25</td>
<td>4,496</td>
<td>5.39</td>
<td>844.1</td>
<td>71</td>
<td>4,910</td>
<td>109</td>
<td>170</td>
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</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>881</td>
<td>731</td>
<td>28</td>
<td>1,071</td>
<td>31.41</td>
<td>331.2</td>
<td>68</td>
<td>1,867</td>
<td>174</td>
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<td>24</td>
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<td>368</td>
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<td>273</td>
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<td>Total</td>
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<td>49</td>
<td>98,932</td>
<td>1.49</td>
<td>4,175.0</td>
<td>34</td>
<td>21,564</td>
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<td>809</td>
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<table>
<thead>
<tr>
<th>PD range %</th>
<th>Original on-balance sheet exposure $million</th>
<th>Off-balance sheet exposure $million</th>
<th>Average CCF %</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD %</th>
<th>Number of obligors^1 thousands</th>
<th>Average LGD %</th>
<th>Average maturity^1 years</th>
<th>RWA $million</th>
<th>RWA density^1 %</th>
<th>Expected loss $million</th>
<th>Value adjustments and provisions $million</th>
</tr>
</thead>
<tbody>
<tr>
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<td>13,878</td>
<td>52</td>
<td>59,245</td>
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<td>1,291.3</td>
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<td>2,190</td>
<td>4</td>
<td>9</td>
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<tr>
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<td>7,733</td>
<td>4,847</td>
<td>57</td>
<td>10,475</td>
<td>0.22</td>
<td>345.8</td>
<td>32</td>
<td>1,182</td>
<td>11</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
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<td>3,236</td>
<td>59</td>
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<td>308.8</td>
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<td>2,102</td>
<td>15</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>2,921</td>
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<td>4,187</td>
<td>0.67</td>
<td>204.3</td>
<td>54</td>
<td>1,287</td>
<td>31</td>
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<tr>
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<td>47</td>
<td>10,864</td>
<td>1.62</td>
<td>657.7</td>
<td>57</td>
<td>6,865</td>
<td>63</td>
<td>105</td>
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<td>5.14</td>
<td>788.6</td>
<td>67</td>
<td>4,830</td>
<td>104</td>
<td>161</td>
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<tr>
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<td>20,990</td>
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<td>714</td>
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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 52: IRB credit risk exposure by internal PD grade for retail – secured by real estate property (CR6)**

<table>
<thead>
<tr>
<th>PD range %</th>
<th>Original on-balance sheet exposure $million</th>
<th>Off-balance sheet exposure pre CCF $million</th>
<th>Average CCF %</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD¹ %</th>
<th>Number of obligors² thousands</th>
<th>Average LGD¹ %</th>
<th>Average maturity² years</th>
<th>RWA $million</th>
<th>RWA density² %</th>
<th>Expected loss $million</th>
<th>Value adjustments and provisions $million</th>
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<tbody>
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<td>159</td>
<td>100</td>
<td>3,507</td>
<td>0.22</td>
<td>24.8</td>
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<td>304</td>
<td>9</td>
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<tr>
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<td>100</td>
<td>2,251</td>
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<td>18.4</td>
<td>17</td>
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<td>14</td>
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<tr>
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<td>0.66</td>
<td>11.3</td>
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<td>208</td>
<td>16</td>
<td>1</td>
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<tr>
<td>0.75 to &lt;2.50</td>
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<td>74</td>
<td>99</td>
<td>1,714</td>
<td>1.40</td>
<td>14.0</td>
<td>14</td>
<td>418</td>
<td>24</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
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<td>100</td>
<td>465</td>
<td>5.68</td>
<td>4.8</td>
<td>15</td>
<td>252</td>
<td>54</td>
<td>4</td>
<td></td>
<td></td>
</tr>
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<td>88</td>
<td>173</td>
<td>41.91</td>
<td>2.7</td>
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<td>134</td>
<td>77</td>
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</tr>
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<td>230</td>
<td>120</td>
<td>43</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>100</strong></td>
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<td><strong>5</strong></td>
<td><strong>68</strong></td>
<td><strong>38</strong></td>
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### 2017

<table>
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<th>PD range %</th>
<th>Original on-balance sheet exposure $million</th>
<th>Off-balance sheet exposure pre CCF $million</th>
<th>Average CCF %</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD¹ %</th>
<th>Number of obligors² thousands</th>
<th>Average LGD¹ %</th>
<th>Average maturity² years</th>
<th>RWA $million</th>
<th>RWA density² %</th>
<th>Expected loss $million</th>
<th>Value adjustments and provisions $million</th>
</tr>
</thead>
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<td>51,121</td>
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<td>100</td>
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<td></td>
</tr>
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<td>99</td>
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<td>606</td>
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<td>3</td>
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<td></td>
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<td>96</td>
<td>4,697</td>
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<td>25.4</td>
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<tr>
<td>2.50 to &lt;10.00</td>
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<td>99</td>
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<td>5.9</td>
<td>14</td>
<td>390</td>
<td>46</td>
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<td></td>
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</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>202</td>
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<td>98</td>
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<td>34.33</td>
<td>3.2</td>
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<td>100.00</td>
<td>3.5</td>
<td>22</td>
<td>314</td>
<td>155</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>69,334</strong></td>
<td><strong>2,162</strong></td>
<td><strong>99</strong></td>
<td><strong>71,476</strong></td>
<td><strong>0.62</strong></td>
<td><strong>364.0</strong></td>
<td><strong>12</strong></td>
<td><strong>4,953</strong></td>
<td><strong>7</strong></td>
<td><strong>57</strong></td>
<td><strong>34</strong></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>PD range</th>
<th>Original on-balance exposure $million</th>
<th>Off-balance sheet exposure pre CCF $million</th>
<th>Average CCF %</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD %</th>
<th>Number of obligors¹ thousands</th>
<th>Average LGD %</th>
<th>Average maturity % years</th>
<th>RWA $million</th>
<th>RWA density %</th>
<th>Expected loss $million</th>
<th>Value adjustments and provisions $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt;0.15</td>
<td>950</td>
<td>15,125</td>
<td>48</td>
<td>8,231</td>
<td>0.07</td>
<td>1,180.3</td>
<td>85</td>
<td>346</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>220</td>
<td>3,231</td>
<td>40</td>
<td>1,514</td>
<td>0.25</td>
<td>265.7</td>
<td>80</td>
<td>165</td>
<td>11</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>149</td>
<td>1,111</td>
<td>50</td>
<td>699</td>
<td>0.44</td>
<td>149.0</td>
<td>76</td>
<td>113</td>
<td>16</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td>276</td>
<td>2,455</td>
<td>49</td>
<td>1,480</td>
<td>0.68</td>
<td>159.7</td>
<td>88</td>
<td>393</td>
<td>27</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td>627</td>
<td>2,678</td>
<td>37</td>
<td>1,616</td>
<td>1.72</td>
<td>443.5</td>
<td>81</td>
<td>787</td>
<td>49</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td>824</td>
<td>1,875</td>
<td>26</td>
<td>1,308</td>
<td>6.23</td>
<td>699.2</td>
<td>78</td>
<td>1,490</td>
<td>114</td>
<td>64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>300</td>
<td>610</td>
<td>26</td>
<td>460</td>
<td>27.23</td>
<td>315.5</td>
<td>79</td>
<td>952</td>
<td>207</td>
<td>99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>152</td>
<td>1</td>
<td>–</td>
<td>152</td>
<td>100.00</td>
<td>37.0</td>
<td>63</td>
<td>329</td>
<td>216</td>
<td>70</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,498</strong></td>
<td><strong>27,087</strong></td>
<td><strong>44</strong></td>
<td><strong>15,460</strong></td>
<td><strong>2.65</strong></td>
<td><strong>3,248.9</strong></td>
<td><strong>83</strong></td>
<td><strong>4,574</strong></td>
<td><strong>30</strong></td>
<td><strong>276</strong></td>
<td><strong>121</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PD range</th>
<th>Original on-balance exposure $million</th>
<th>Off-balance sheet exposure pre CCF $million</th>
<th>Average CCF %</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD %</th>
<th>Number of obligors¹ thousands</th>
<th>Average LGD %</th>
<th>Average maturity % years</th>
<th>RWA $million</th>
<th>RWA density %</th>
<th>Expected loss $million</th>
<th>Value adjustments and provisions $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt;0.15</td>
<td>644</td>
<td>12,188</td>
<td>49</td>
<td>6,567</td>
<td>0.07</td>
<td>1,017.8</td>
<td>87</td>
<td>282</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>262</td>
<td>2,944</td>
<td>38</td>
<td>1,382</td>
<td>0.25</td>
<td>248.5</td>
<td>82</td>
<td>153</td>
<td>11</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>245</td>
<td>1,759</td>
<td>52</td>
<td>1,163</td>
<td>0.42</td>
<td>195.1</td>
<td>78</td>
<td>184</td>
<td>16</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td>274</td>
<td>2,423</td>
<td>50</td>
<td>1,489</td>
<td>0.68</td>
<td>168.5</td>
<td>87</td>
<td>391</td>
<td>26</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td>659</td>
<td>3,260</td>
<td>38</td>
<td>1,900</td>
<td>1.55</td>
<td>467.5</td>
<td>81</td>
<td>854</td>
<td>45</td>
<td>24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td>715</td>
<td>1,700</td>
<td>31</td>
<td>1,244</td>
<td>6.04</td>
<td>655.0</td>
<td>80</td>
<td>1,411</td>
<td>113</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>264</td>
<td>507</td>
<td>24</td>
<td>384</td>
<td>25.30</td>
<td>304.6</td>
<td>81</td>
<td>813</td>
<td>212</td>
<td>79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>147</td>
<td>7</td>
<td>–</td>
<td>147</td>
<td>100.00</td>
<td>42.1</td>
<td>62</td>
<td>251</td>
<td>171</td>
<td>71</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,210</strong></td>
<td><strong>24,788</strong></td>
<td><strong>45</strong></td>
<td><strong>14,276</strong></td>
<td><strong>2.60</strong></td>
<td><strong>3,099.1</strong></td>
<td><strong>84</strong></td>
<td><strong>4,339</strong></td>
<td><strong>30</strong></td>
<td><strong>254</strong></td>
<td><strong>1</strong></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>PD range %</th>
<th>2018</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Original on-balance sheet exposure $million</td>
<td>Off-balance sheet exposure pre CCF $million</td>
<td>Average CCF %</td>
<td>EAD post CRM and post CCF $million</td>
<td>Average PD%</td>
<td>Number of obligors thousands</td>
<td>Average LGD%</td>
<td>Average maturity years</td>
<td>RWA $million</td>
</tr>
<tr>
<td>0.00 to &lt;0.15</td>
<td>72</td>
<td>44</td>
<td>15</td>
<td>73</td>
<td>0.10</td>
<td>2.6</td>
<td>69</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>0.15 to &lt;0.25</td>
<td>101</td>
<td>46</td>
<td>21</td>
<td>97</td>
<td>0.26</td>
<td>2.0</td>
<td>68</td>
<td>26</td>
<td>27</td>
</tr>
<tr>
<td>0.25 to &lt;0.50</td>
<td>124</td>
<td>36</td>
<td>20</td>
<td>87</td>
<td>0.45</td>
<td>3.9</td>
<td>70</td>
<td>33</td>
<td>38</td>
</tr>
<tr>
<td>0.50 to &lt;0.75</td>
<td>88</td>
<td>26</td>
<td>13</td>
<td>63</td>
<td>0.69</td>
<td>2.3</td>
<td>71</td>
<td>31</td>
<td>50</td>
</tr>
<tr>
<td>0.75 to &lt;2.50</td>
<td>904</td>
<td>376</td>
<td>4</td>
<td>802</td>
<td>1.78</td>
<td>14.4</td>
<td>67</td>
<td>535</td>
<td>67</td>
</tr>
<tr>
<td>2.50 to &lt;10.00</td>
<td>512</td>
<td>316</td>
<td>5</td>
<td>469</td>
<td>5.31</td>
<td>8.0</td>
<td>57</td>
<td>333</td>
<td>71</td>
</tr>
<tr>
<td>10.00 to &lt;100.00</td>
<td>72</td>
<td>50</td>
<td>9</td>
<td>64</td>
<td>47.91</td>
<td>2.3</td>
<td>65</td>
<td>141</td>
<td>222</td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>66</td>
<td>12</td>
<td>12</td>
<td>67</td>
<td>100.00</td>
<td>0.7</td>
<td>57</td>
<td>219</td>
<td>327</td>
</tr>
<tr>
<td>Total</td>
<td>1,940</td>
<td>907</td>
<td>7</td>
<td>1,723</td>
<td>8.00</td>
<td>36.2</td>
<td>64</td>
<td>1,328</td>
<td>77</td>
</tr>
</tbody>
</table>

1 Weighted averages are based on EAD
2 Number of obligors is based on the number of counterparties within each PD grade

3.7 Credit risk mitigation

Potential credit losses from any given account, customer or portfolio are mitigated using a range of tools such as collateral, netting agreements, credit insurance, credit derivatives and guarantees. The reliance that can be placed on these mitigants is carefully assessed in light of issues such as legal certainty and enforceability, market valuation, correlation and counterparty risk of the guarantor. The presence of credit risk mitigation is not a substitute for the ability to pay, which is the primary consideration for any credit 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 2018 Annual Report and Accounts on pages 165 to 168.

Table 55 shows the unfunded credit protection held by the Group, consisting of credit derivatives and guarantees, and funded credit protection, including financial collateral. Exposure class has been defined based on the guarantor of the exposure.
### 3.7 Credit risk mitigation continued

Table 55: CRM techniques – overview (CR3)

<table>
<thead>
<tr>
<th>IRB Exposure Class</th>
<th>2018</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exposures unsecured $million</td>
<td>Exposures secured by collateral $million</td>
<td>Exposures secured by financial guarantees $million</td>
<td>Exposures secured by credit derivatives $million</td>
</tr>
<tr>
<td>Total loans</td>
<td>174,886</td>
<td>111,500</td>
<td>22,017</td>
<td>–</td>
</tr>
<tr>
<td>Total debt securities</td>
<td>117,091</td>
<td>3,894</td>
<td>628</td>
<td>–</td>
</tr>
<tr>
<td>Total exposures</td>
<td>291,977</td>
<td>115,394</td>
<td>22,645</td>
<td>–</td>
</tr>
<tr>
<td>Of which defaulted</td>
<td>6,092</td>
<td>1,455</td>
<td>1,455</td>
<td>–</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IRB Exposure Class</th>
<th>2017</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exposures unsecured $million</td>
<td>Exposures secured by collateral $million</td>
<td>Exposures secured by financial guarantees $million</td>
<td>Exposures secured by credit derivatives $million</td>
</tr>
<tr>
<td>Total loans</td>
<td>165,465</td>
<td>114,187</td>
<td>21,064</td>
<td>–</td>
</tr>
<tr>
<td>Total debt securities</td>
<td>105,276</td>
<td>2,495</td>
<td>662</td>
<td>–</td>
</tr>
<tr>
<td>Total exposures</td>
<td>270,741</td>
<td>116,682</td>
<td>21,726</td>
<td>–</td>
</tr>
<tr>
<td>Of which defaulted</td>
<td>7,062</td>
<td>2,361</td>
<td>2,361</td>
<td>–</td>
</tr>
</tbody>
</table>

Table 56: Effect of guarantees and collateral

<table>
<thead>
<tr>
<th>IRB Exposure Class</th>
<th>2018</th>
<th>2017</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exposures covered by unfunded credit protection $million</td>
<td>Exposures covered by funded credit protection $million</td>
<td>Exposures covered by unfunded credit protection $million</td>
</tr>
<tr>
<td>Central governments or central banks</td>
<td>2,591</td>
<td>14,780</td>
<td>3,761</td>
</tr>
<tr>
<td>Institutions</td>
<td>4,810</td>
<td>34,392</td>
<td>5,582</td>
</tr>
<tr>
<td>Corporates</td>
<td>19,464</td>
<td>75,652</td>
<td>17,442</td>
</tr>
<tr>
<td>Retail¹</td>
<td>5</td>
<td>67,024</td>
<td>4</td>
</tr>
<tr>
<td>Securitisation positions</td>
<td>–</td>
<td>1,391</td>
<td>–</td>
</tr>
<tr>
<td>Total IRB</td>
<td>26,870</td>
<td>193,239</td>
<td>26,789</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standardised Exposure Class</th>
<th>2018</th>
<th>2017</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Central governments or central banks</td>
<td>1,388</td>
<td>226</td>
<td>1,037</td>
</tr>
<tr>
<td>Multilateral development banks</td>
<td>1,405</td>
<td>435</td>
<td>1,482</td>
</tr>
<tr>
<td>Institutions</td>
<td>359</td>
<td>26,753</td>
<td>1,125</td>
</tr>
<tr>
<td>Corporates</td>
<td>634</td>
<td>21,872</td>
<td>86</td>
</tr>
<tr>
<td>Retail¹</td>
<td>4</td>
<td>922</td>
<td>3</td>
</tr>
<tr>
<td>Secured on real estate property</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Exposures in default</td>
<td>–</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Items belonging to regulatory high risk categories</td>
<td>–</td>
<td>29</td>
<td>–</td>
</tr>
<tr>
<td>Other items²</td>
<td>55</td>
<td>3</td>
<td>83</td>
</tr>
<tr>
<td>Total Standardised</td>
<td>4,045</td>
<td>50,241</td>
<td>3,816</td>
</tr>
<tr>
<td>Total Exposure</td>
<td>30,915</td>
<td>243,480</td>
<td>30,605</td>
</tr>
</tbody>
</table>

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 a separate class under the heading secured on real estate property.
² Other items include public sector entities.
3.7 Credit risk mitigation continued

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

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

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

<table>
<thead>
<tr>
<th>Standardised Exposure Class</th>
<th>2017</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exposures before CCF and CRM</td>
<td>Exposures post CCF and CRM</td>
<td>RWA and RWA density</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Central governments or central banks</td>
<td>$35,160</td>
<td>$75,115</td>
<td>$35,955</td>
<td>$247</td>
<td>$4,675</td>
<td>13%</td>
</tr>
<tr>
<td>4 Multilateral development banks</td>
<td>$10,123</td>
<td>$7,155</td>
<td>$11,441</td>
<td>$30</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>6 Institutions</td>
<td>$3,899</td>
<td>$2,007</td>
<td>$3,885</td>
<td>$63</td>
<td>$808</td>
<td>20%</td>
</tr>
<tr>
<td>7 Corporates</td>
<td>$24,497</td>
<td>$27,327</td>
<td>$13,843</td>
<td>$1,121</td>
<td>$14,678</td>
<td>98%</td>
</tr>
<tr>
<td>8 Retail</td>
<td>$12,740</td>
<td>$8,329</td>
<td>$12,401</td>
<td>$304</td>
<td>$9,072</td>
<td>71%</td>
</tr>
<tr>
<td>9 Secured on real estate property</td>
<td>$10,131</td>
<td>$704</td>
<td>$10,130</td>
<td>$290</td>
<td>$5,838</td>
<td>56%</td>
</tr>
<tr>
<td>10 Exposures in default</td>
<td>$393</td>
<td>$12</td>
<td>$390</td>
<td>$6</td>
<td>$396</td>
<td>100%</td>
</tr>
<tr>
<td>11 Items belonging to regulatory high risk categories</td>
<td>$2,058</td>
<td>$322</td>
<td>$1,986</td>
<td>$35</td>
<td>$3,032</td>
<td>150%</td>
</tr>
<tr>
<td>15 Equity</td>
<td>$1,818</td>
<td>–</td>
<td>$1,818</td>
<td>–</td>
<td>$4,544</td>
<td>250%</td>
</tr>
<tr>
<td>16 Other items</td>
<td>$10,041</td>
<td>$288</td>
<td>$10,120</td>
<td>$192</td>
<td>$8,363</td>
<td>81%</td>
</tr>
<tr>
<td>17 Total Standardised</td>
<td>$110,860</td>
<td>$121,259</td>
<td>$101,969</td>
<td>$2,288</td>
<td>$51,406</td>
<td>49%</td>
</tr>
</tbody>
</table>

1 EAD before the effect of collateral and substitution
2 Other items include public sector entities
3 Refer to table 12 (OV1): Standardised approach $39,985 million and amount below threshold for deduction $6,396 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 $3.8 billion driven by:

- Central governments and central banks EAD increased by $1.5 billion mainly due to a $5.0 billion increase in interbank and marketable securities, partially offset by a $2.0 billion decrease in nostro balances and a $1.4 billion decrease in Bills exposures, all of which are 0 per cent risk weight
- Multilateral development banks EAD increased $6.0 billion driven by bonds and marketable securities in Europe and Americas

Offset by:

- Institutions EAD decreased by $1.2 billion driven by margin calls against CCPs
### 3.8 Standardised risk weight profile continued

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

#### Standardised Exposure Class

<table>
<thead>
<tr>
<th>Standardised Exposure Class</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>0% 2% 4% 20% 35% 50% 75% 100% 150% 250% Others</td>
<td>Deducted</td>
<td>Total</td>
</tr>
<tr>
<td><strong>Total standardised</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Central governments or central banks</td>
<td>107,695 - - 11 - 2,521 - 598 7 925 - - 111,757 -</td>
<td></td>
</tr>
<tr>
<td>4 Multilateral development banks</td>
<td>23,253 - - - - - - - - - - - 23,253 -</td>
<td></td>
</tr>
<tr>
<td>6 Institutions</td>
<td>- 1,050 10 1,073 - 2,285 - 281 - - - - 4,699 2,440</td>
<td></td>
</tr>
<tr>
<td>7 Corporates</td>
<td>- - - 960 - 148 - 50,157 - - - - 51,265 49,032</td>
<td></td>
</tr>
<tr>
<td>8 Retail</td>
<td>- - - - - - - 20,823 - - - - 20,823 20,766</td>
<td></td>
</tr>
<tr>
<td>9 Secured on real estate property</td>
<td>- - - - 7,496 - - 2,351 - - - - 9,847 9,847</td>
<td></td>
</tr>
<tr>
<td>10 Exposures in default</td>
<td>- - - - - - - 788 - - - - 788 788</td>
<td></td>
</tr>
<tr>
<td>11 Items belonging to regulatory high risk categories</td>
<td>- - - - - - - - 1,984 - - - 1,984 1,976</td>
<td></td>
</tr>
<tr>
<td>15 Equity</td>
<td>- - - - - - - - - 1,633 - - 1,633 1,633</td>
<td></td>
</tr>
<tr>
<td>16 Other items</td>
<td>1,484 - - 66 - - - 7,294 - - - - 9,909 9,909</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>132,432</strong> <strong>1,050</strong> <strong>10</strong> <strong>2,110</strong> <strong>7,496</strong> <strong>4,954</strong> <strong>20,823</strong> <strong>61,469</strong> <strong>1,991</strong> <strong>2,558</strong> <strong>1,065</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### Total standardised 2018

<table>
<thead>
<tr>
<th>Risk Weight</th>
<th>Total</th>
<th>Of which</th>
<th>Deducted</th>
<th>Total</th>
<th>Of which</th>
</tr>
</thead>
<tbody>
<tr>
<td>0% 2% 4% 20% 35% 50% 75% 100% 150% 250% Others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Central governments or central banks</td>
<td>105,644 - - 4 - 2,872 - 641 8 1,106 - - 110,275 -</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Multilateral development banks</td>
<td>17,278 - - - - - - - - - - - 17,278 -</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Institutions</td>
<td>- 1,826 40 1,017 - 2,811 - 212 - - - - 5,906 3,110</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Corporates</td>
<td>- - - 697 - 186 - 50,941 - - - - 51,824 49,933</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Retail</td>
<td>- - - - - - - 21,069 - - - - 21,069 21,023</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Secured on real estate property</td>
<td>- - - - 3,453 4,226 - 2,324 - - 832 - - 10,835 10,835</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Exposures in default</td>
<td>- - - - - - - 405 - - - - 405 405</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 Items belonging to regulatory high risk categories</td>
<td>- - - - - - - - 2,380 - - - 2,380 2,364</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 Equity</td>
<td>- - - - - - - - - 1,818 - - 1,818 1,818</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 Other items</td>
<td>1,524 - - - - - - 7,360 - - - - 10,329 10,329</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>124,446</strong> <strong>1,826</strong> <strong>40</strong> <strong>1,719</strong> <strong>3,453</strong> <strong>10,066</strong> <strong>21,069</strong> <strong>61,883</strong> <strong>2,388</strong></td>
<td><strong>2,924</strong> <strong>2,277</strong></td>
<td></td>
<td><strong>10,329</strong></td>
<td><strong>10,329</strong></td>
</tr>
</tbody>
</table>

1 Other items include cash, equity holdings, fixed assets, prepayments and accrued income
### 3.8 Standardised risk weight profile continued

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

<table>
<thead>
<tr>
<th>Standardised Exposure Class</th>
<th>2018</th>
<th>Risk Weight</th>
<th>Deducted</th>
<th>Of which un-rated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0%</td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>Central governments or central banks</td>
<td>27,408</td>
<td>–</td>
<td>–</td>
<td>141</td>
</tr>
<tr>
<td>Multilateral development banks</td>
<td>14,418</td>
<td>–</td>
<td>–</td>
<td>10</td>
</tr>
<tr>
<td>Institutions</td>
<td>–</td>
<td>1,048</td>
<td>10</td>
<td>966</td>
</tr>
<tr>
<td>Corporates</td>
<td>–</td>
<td>–</td>
<td>284</td>
<td>774</td>
</tr>
<tr>
<td>Retail</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Secured on real estate property</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Exposures in default</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Items belonging to regulatory high risk categories</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Equity</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Other items</td>
<td>1,484</td>
<td>–</td>
<td>120</td>
<td>–</td>
</tr>
<tr>
<td>Total</td>
<td>Standardised</td>
<td>43,310</td>
<td>1,048</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standardised Exposure Class</th>
<th>2017</th>
<th>Risk Weight</th>
<th>Deducted</th>
<th>Of which un-rated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0%</td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>Central governments or central banks</td>
<td>31,731</td>
<td>–</td>
<td>–</td>
<td>4</td>
</tr>
<tr>
<td>Multilateral development banks</td>
<td>11,471</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Institutions</td>
<td>–</td>
<td>1,826</td>
<td>40</td>
<td>801</td>
</tr>
<tr>
<td>Corporates</td>
<td>–</td>
<td>–</td>
<td>203</td>
<td>48</td>
</tr>
<tr>
<td>Retail</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Secured on real estate property</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Exposures in default</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Items belonging to regulatory high risk categories</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Equity</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Other items</td>
<td>1,524</td>
<td>–</td>
<td>42</td>
<td>–</td>
</tr>
<tr>
<td>Total</td>
<td>Standardised</td>
<td>44,726</td>
<td>1,826</td>
<td>40</td>
</tr>
</tbody>
</table>

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

Standardised EAD post CRM and post CCF decreased $6.5 billion

- Central governments and central banks EAD decreased by $4.8 billion mainly due to decreases in nostros in Europe and Americas
- Institutions EAD decreased by $1.3 billion driven by margin calls against CCPs
3.9 Securitisation

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

Securitisations may be categorised as either:

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

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

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

The Group has $24.0 billion (2017: $22.4 billion) of EAD classified as securitisation positions, as shown in Table 62 on page 68. These transactions meet the criteria to qualify as securitisation positions under the PRA’s securitisation framework criteria to qualify as securitisation positions, as shown in Table 62 on page 68. These transactions meet the criteria to qualify as securitisation positions under the PRA’s securitisation framework.

The Group 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.

### Asset Backed Securities

The carrying value of asset backed securities (ABS) of $7.5 billion (2017: $6.4 billion), held either as investments or arranged for clients, represents 1 per cent of the Group’s total assets (2017: 1 per cent).

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

The credit quality of the ABS portfolio remains strong, with over 99 per cent of the overall portfolio rated Investment Grade, and 71 per cent of the overall portfolio is rated as AAA. The portfolio is broadly diversified across asset classes and geographies, with an average credit grade of AAA. Residential mortgage-backed securities (RMBS) make up 58 per cent of the overall portfolio and have a weighted average credit rating of AAA (AAA in 2017).

Other ABS include Auto ABS, making up 22 per cent of the overall portfolio, and credit card ABS (3 per cent), both maintain a weighted average credit rating of AAA. The balance of Other ABS mainly includes securities backed by CMBS, Collateralised Loan Obligations (CLOs), 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 Table 60 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 2018 Annual Report and Accounts, page 302. The ABS portfolio is assessed frequently for objective evidence of impairment. In 2018, 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.

### Table 60: Securitisation – ABS purchased or retained

<table>
<thead>
<tr>
<th></th>
<th>2018 Notional amount</th>
<th>2017 Notional amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Carrying value of asset backed securities $million</td>
<td>Traditional securitisation programmes $million</td>
</tr>
<tr>
<td>Residential Mortgage Backed Securities (RMBS)</td>
<td>4,369</td>
<td>4,369</td>
</tr>
<tr>
<td>Collateralised Debt Obligations (CDOs)</td>
<td>150</td>
<td>155</td>
</tr>
<tr>
<td>Commercial Mortgage Backed Securities (CMBS)</td>
<td>94</td>
<td>94</td>
</tr>
<tr>
<td>Auto Asset Backed Securities</td>
<td>1,620</td>
<td>1,627</td>
</tr>
<tr>
<td>Credit Cards Asset Backed Securities</td>
<td>227</td>
<td>227</td>
</tr>
<tr>
<td>Other Asset Backed Securities</td>
<td>1,001</td>
<td>1,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>7,461</td>
<td>7,472</td>
</tr>
</tbody>
</table>

Of which included within:

<table>
<thead>
<tr>
<th></th>
<th>2018 Notional amount</th>
<th>2017 Notional amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial assets held at fair value through profit or loss</td>
<td>1,094</td>
<td>1,104</td>
</tr>
<tr>
<td>Investment securities – available-for-sale</td>
<td>2,556</td>
<td>2,559</td>
</tr>
<tr>
<td>Investment securities – loans and receivables</td>
<td>3,811</td>
<td>3,809</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>7,461</td>
<td>7,472</td>
</tr>
</tbody>
</table>
3.9 Securitisation continued

Capital Structuring & Distribution Group Balance Sheet Securitisation

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 counterpart risk for transactions where the Group is the protection buyer.

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

The securitised assets are originated by the Group in its ordinary course of business. Given the synthetic nature of securitisations originated by CSDG 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 2018, $0.2 million of Trade Finance (2017: $42 million) and $17.7 million of Commercial Loans (2017: $31 million), totalling $17.9 million (2017: $73 million) of securitised exposures, were classified as impaired and past due.

The year-on-year decrease in both Commercial Loans and Trade Finance is mainly attributable to three securitisation transactions maturing in 2018 and hence the impaired and past due referenced have dropped off.

The Group has six synthetic securitisation transactions originated and managed by CSDG Balance Sheet Securitisation unit, with an aggregate hedge capacity of $18.0 billion (2017: $16.0 billion). Of the six transactions, three are private transactions with bilateral investors and three are public transactions distributed to a broad spectrum of investors. All six transactions are structured as non-disclosed pools for reason of client confidentiality. Four new securitisation transactions were originated in 2018 to replace matured transactions.

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 61 provides details of current securitisation programmes originated and managed by the Group.

The Group has engaged in structures, such as the ones outlined in Table 61, in order to transfer credit risk of a pool of assets to a third party via credit derivatives.

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

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

Governance of securitisation activities

Securitisation transactions proposed for funding and capital management must obtain support from the Operational Balance Sheet Committee (OBSC), which manages the capital requirements of the business. For a securitisation transaction that will lead to reduction in regulatory capital, it must be submitted to UK PRA for review within one month of reporting RWA save for the first time.

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

Basel III for securitisation positions

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

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

All existing securitisation transactions originated by the Group, in Table 61, meet the credit risk transfer requirement to be accounted for as securitisations under the CRR.

Accounting

The Group’s approach to accounting for SPEs can be found in the notes to the financial statements in the 2018 Annual Report and Accounts.

All programmes listed in the tables below are rated by an external credit assessment institution, namely Moody’s.
### 3.9 Securitisation continued

#### Table 61: Securitisation programmes (as originator)

<table>
<thead>
<tr>
<th>Underlying facilities hedged</th>
<th>Public / Private</th>
<th>Start date</th>
<th>Scheduled maturity</th>
<th>Maximum notional $million</th>
<th>Retained exposures $million</th>
<th>Outstanding exposures $million</th>
<th>Capital requirement before securitisation $million</th>
<th>Capital requirement after securitisation $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start X</td>
<td>Commercial Loan</td>
<td>Public</td>
<td>Sep-15</td>
<td>Mar-19</td>
<td>2,053</td>
<td>1,822</td>
<td>2,051</td>
<td>133</td>
</tr>
<tr>
<td>Baruntse</td>
<td>Commercial Loan</td>
<td>Private</td>
<td>Nov-15</td>
<td>May-19</td>
<td>1,997</td>
<td>1,865</td>
<td>1,652</td>
<td>97</td>
</tr>
<tr>
<td>Sumeru III</td>
<td>Commercial Loan</td>
<td>Private</td>
<td>Jun-18</td>
<td>Dec-21</td>
<td>3,000</td>
<td>2,715</td>
<td>2,897</td>
<td>192</td>
</tr>
<tr>
<td>Shangren IV</td>
<td>Trade Finance</td>
<td>Private</td>
<td>Sep-18</td>
<td>Dec-20</td>
<td>4,000</td>
<td>3,680</td>
<td>3,591</td>
<td>220</td>
</tr>
<tr>
<td>Sealane IV</td>
<td>Trade Finance</td>
<td>Public</td>
<td>Nov-18</td>
<td>May-22</td>
<td>3,500</td>
<td>3,203</td>
<td>3,168</td>
<td>188</td>
</tr>
<tr>
<td>Khartaphu</td>
<td>Commercial Loan</td>
<td>Public</td>
<td>Dec-18</td>
<td>Jun-22</td>
<td>2,000</td>
<td>1,810</td>
<td>1,921</td>
<td>136</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>16,550</td>
<td>15,095</td>
<td>15,280</td>
<td>966</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Underlying facilities hedged</th>
<th>Public / Private</th>
<th>Start date</th>
<th>Scheduled maturity</th>
<th>Maximum notional $million</th>
<th>Retained exposures $million</th>
<th>Outstanding exposures $million</th>
<th>Capital requirement before securitisation $million</th>
<th>Capital requirement after securitisation $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sumeru II</td>
<td>Commercial Loan</td>
<td>Private</td>
<td>Dec-14</td>
<td>Jun-18</td>
<td>3,492</td>
<td>3,255</td>
<td>2,822</td>
<td>150</td>
</tr>
<tr>
<td>Sealane III</td>
<td>Trade Finance</td>
<td>Public</td>
<td>Jun-15</td>
<td>Dec-18</td>
<td>2,992</td>
<td>2,835</td>
<td>2,628</td>
<td>154</td>
</tr>
<tr>
<td>Start X</td>
<td>Commercial Loan</td>
<td>Public</td>
<td>Sep-15</td>
<td>Mar-19</td>
<td>3,496</td>
<td>3,264</td>
<td>3,195</td>
<td>171</td>
</tr>
<tr>
<td>Baruntse</td>
<td>Commercial Loan</td>
<td>Private</td>
<td>Nov-15</td>
<td>May-19</td>
<td>1,997</td>
<td>1,865</td>
<td>1,834</td>
<td>103</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15,964</td>
<td>14,979</td>
<td>14,076</td>
<td>795</td>
</tr>
</tbody>
</table>

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

#### Table 62: Securitisation positions by risk-weight category

<table>
<thead>
<tr>
<th>Credit Assessments Moody’s</th>
<th>Risk weight %</th>
<th>Exposure $million</th>
<th>Capital requirement $million</th>
<th>Exposure $million</th>
<th>Capital requirement $million</th>
<th>Exposure $million</th>
<th>Capital requirement $million</th>
<th>Exposure $million</th>
<th>Capital requirement $million</th>
<th>Exposure $million</th>
<th>Capital requirement $million</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2018</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Originated</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aaa</td>
<td>7% to 20%</td>
<td>12,046</td>
<td>72</td>
<td>460</td>
<td>5</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>5,319</td>
<td>30</td>
<td>17,825</td>
</tr>
<tr>
<td>Aa</td>
<td>8% to 25%</td>
<td>–</td>
<td>–</td>
<td>600</td>
<td>8</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>907</td>
<td>6</td>
<td>1,507</td>
</tr>
<tr>
<td>A1</td>
<td>10% to 35%</td>
<td>–</td>
<td>–</td>
<td>1,053</td>
<td>16</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>26</td>
<td>–</td>
<td>1,079</td>
</tr>
<tr>
<td>A2</td>
<td>12% to 35%</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>186</td>
<td>2</td>
<td>186</td>
</tr>
<tr>
<td>A3</td>
<td>20% to 35%</td>
<td>–</td>
<td>–</td>
<td>380</td>
<td>11</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>13</td>
<td>–</td>
<td>393</td>
</tr>
<tr>
<td>Bas1</td>
<td>35% to 50%</td>
<td>–</td>
<td>–</td>
<td>384</td>
<td>16</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>384</td>
</tr>
<tr>
<td>Bas2</td>
<td>60% to 75%</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>113</td>
<td>5</td>
<td>113</td>
</tr>
<tr>
<td>Bas3</td>
<td>100%</td>
<td>–</td>
<td>–</td>
<td>55</td>
<td>5</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>842</td>
<td>67</td>
<td>897</td>
</tr>
<tr>
<td>Bas1</td>
<td>250%</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>32</td>
<td>6</td>
<td>32</td>
</tr>
<tr>
<td>Bas2</td>
<td>425%</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>186</td>
<td>2</td>
<td>186</td>
</tr>
<tr>
<td>Bas3</td>
<td>650%</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1</td>
<td>–</td>
<td>1</td>
</tr>
<tr>
<td>Supervisory formula</td>
<td></td>
<td>–</td>
<td>–</td>
<td>1,464</td>
<td>50</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1,464</td>
</tr>
<tr>
<td>Deductions</td>
<td></td>
<td>–</td>
<td>–</td>
<td>109</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1</td>
<td>–</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>12,046</td>
<td>72</td>
<td>4,505</td>
<td>111</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>7,461</td>
<td>129</td>
<td>24,012</td>
</tr>
</tbody>
</table>

1. See Table 12: Overview of RWA (OV1)

#### Table 63: Securitisation positions by region

<table>
<thead>
<tr>
<th>Region</th>
<th>Securitisation programmes $million</th>
<th>ABS $million</th>
<th>Total $million</th>
<th>Securitisation programmes $million</th>
<th>ABS $million</th>
<th>Total $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater China &amp; North Asia</td>
<td>6,112</td>
<td>1,049</td>
<td>7,161</td>
<td>6,022</td>
<td>959</td>
<td>6,981</td>
</tr>
<tr>
<td>ASEAN &amp; South Asia</td>
<td>5,649</td>
<td>1,850</td>
<td>7,499</td>
<td>5,247</td>
<td>1,534</td>
<td>6,781</td>
</tr>
<tr>
<td>Africa &amp; Middle East</td>
<td>2,614</td>
<td>531</td>
<td>3,145</td>
<td>2,818</td>
<td>586</td>
<td>3,404</td>
</tr>
<tr>
<td>Europe &amp; Americas</td>
<td>2,175</td>
<td>4,031</td>
<td>6,206</td>
<td>1,877</td>
<td>3,390</td>
<td>5,267</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16,550</td>
<td>7,461</td>
<td>24,011</td>
<td>15,964</td>
<td>6,469</td>
<td>22,433</td>
</tr>
</tbody>
</table>

1. See Table 12: Overview of RWA (OV1)

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

Our approach to Traded risk can be found in the Enterprise Risk Management approach section in the 2018 Annual Report and Accounts on pages 202 to 203.

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; and
- Commodity risk: arising from changes in commodity prices and implied volatilities on commodity options; covering energy, precious metals, base metals and agriculture

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 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 2018 Annual Report and Accounts on pages 180 to 183.

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 RWA for positions falling under the IMA permission.

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

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

- FX and simple cash flow products: first order sensitivities are applied
- Bonds: cash flows discounted with a single benchmark yield curve adjusted by the IR VaR shocks

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:

<table>
<thead>
<tr>
<th>Standard Chartered Bank</th>
<th>Solo and consolidated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Chartered Bank (Singapore) Ltd</td>
<td>Consolidated</td>
</tr>
<tr>
<td>Standard Chartered Bank (Hong Kong) Ltd</td>
<td>Consolidated</td>
</tr>
<tr>
<td>Standard Chartered Securities (India) Ltd</td>
<td>Consolidated</td>
</tr>
<tr>
<td>Standard Chartered Bank (Brasil) S.A. – Banco de Investimento</td>
<td>Consolidated</td>
</tr>
<tr>
<td>Standard Chartered Bank (China) Ltd</td>
<td>Consolidated</td>
</tr>
<tr>
<td>Standard Chartered Investments and Loans (India) Ltd</td>
<td>Consolidated</td>
</tr>
<tr>
<td>PT Standard Chartered Securities Indonesia</td>
<td>Consolidated</td>
</tr>
<tr>
<td>Standard Chartered Bank Korea Ltd</td>
<td>Consolidated</td>
</tr>
<tr>
<td>Standard Chartered Bank (Taiwan) Ltd</td>
<td>Consolidated</td>
</tr>
<tr>
<td>Standard Chartered Bank (Thai) PCL</td>
<td>Consolidated</td>
</tr>
<tr>
<td>Standard Chartered Bank (Vietnam) Ltd</td>
<td>Consolidated</td>
</tr>
</tbody>
</table>

Backtesting

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

A backtesting breach is recorded when the net trading P&L loss in one day is greater than the estimated VaR for the same day.

Prudential regulation specifies that a model with fewer than five backtesting exceptions in a 12-month period is deemed to be in the ‘green zone’. During 2018, the Group remained in the ‘green zone’.

Stressed VaR

Stressed VaR applies the same model as for regulatory VaR but using a one-year historical observation period from a stressed period relevant to the trading book portfolio. In 2018, 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 2018 was 20 per cent lower than in 2017, but the actual level of total VaR as at year end 2018 was 14 per cent higher than in 2017. The reduction in the total average VaR was driven by the Non-Trading book, where the duration of the portfolio in the first half of 2018 was reduced. However, during the fourth quarter of 2018 the non-trading VaR increased, driven by both an increase in the bond inventory size in high quality assets from Treasury Markets and reduced portfolio diversification.

For the trading book, the average level of VaR in 2018 was lower than in 2017 by 19 per cent. Trading activities have remained relatively unchanged and client-driven.
4.1 Market risk continued

Table 64: Daily value at risk (VaR at 97.5%, one day)

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average $million</td>
<td>High $million</td>
</tr>
<tr>
<td><strong>Trading and Non-trading</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest rate risk</td>
<td>19.2</td>
<td>25.9</td>
</tr>
<tr>
<td>Foreign exchange risk</td>
<td>4.4</td>
<td>8.6</td>
</tr>
<tr>
<td>Commodity risk</td>
<td>1.3</td>
<td>2.1</td>
</tr>
<tr>
<td>Equity risk</td>
<td>4.8</td>
<td>6.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>20.6</td>
<td>26.1</td>
</tr>
<tr>
<td><strong>Trading</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest rate risk</td>
<td>8.0</td>
<td>11.7</td>
</tr>
<tr>
<td>Foreign exchange risk</td>
<td>4.4</td>
<td>8.6</td>
</tr>
<tr>
<td>Commodity risk</td>
<td>1.3</td>
<td>2.1</td>
</tr>
<tr>
<td>Equity risk</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>9.8</td>
<td>13.8</td>
</tr>
<tr>
<td><strong>Non-trading</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest rate risk</td>
<td>16.8</td>
<td>20.7</td>
</tr>
<tr>
<td>Equity risk</td>
<td>4.7</td>
<td>6.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17.2</td>
<td>21.3</td>
</tr>
</tbody>
</table>

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 (CRDIV/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 65: Daily value at risk (VaR at 97.5%, one day) by products

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average $million</td>
<td>High $million</td>
</tr>
<tr>
<td><strong>Trading and Non-trading</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rates</td>
<td>5.0</td>
<td>7.1</td>
</tr>
<tr>
<td>Global Foreign Exchange</td>
<td>4.4</td>
<td>8.6</td>
</tr>
<tr>
<td>Credit Trading &amp; Capital Markets</td>
<td>3.8</td>
<td>6.1</td>
</tr>
<tr>
<td>Commodities</td>
<td>1.3</td>
<td>2.1</td>
</tr>
<tr>
<td>Equities</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>XVA</td>
<td>3.1</td>
<td>4.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>9.8</td>
<td>13.8</td>
</tr>
<tr>
<td><strong>Non-trading</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treasury Markets</td>
<td>16.8</td>
<td>20.7</td>
</tr>
<tr>
<td>Listed private equity</td>
<td>4.7</td>
<td>6.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17.2</td>
<td>21.3</td>
</tr>
</tbody>
</table>

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 (CRDIV/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 66: Market risk regulatory capital requirements

<table>
<thead>
<tr>
<th>Market risk capital requirements for trading book</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest rate&lt;sup&gt;1&lt;/sup&gt;</td>
<td>6,432</td>
<td>8,156</td>
</tr>
<tr>
<td>Equity</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>Options</td>
<td>16</td>
<td>1,089</td>
</tr>
<tr>
<td>Commodity&lt;sup&gt;2&lt;/sup&gt;</td>
<td>129</td>
<td>231</td>
</tr>
<tr>
<td>Foreign exchange&lt;sup&gt;2&lt;/sup&gt;</td>
<td>667</td>
<td>775</td>
</tr>
<tr>
<td>Internal Models Approach&lt;sup&gt;3&lt;/sup&gt;</td>
<td>11,862</td>
<td>12,776</td>
</tr>
<tr>
<td>Total</td>
<td>19,109</td>
<td>23,040</td>
</tr>
</tbody>
</table>

1 Securitisation positions contributed $15.3 million to the interest rate position risk requirement (PRR) and $191.6 million to interest rate RWA as at 31 December 2018 (securitised positions contributed $11.9 million to the interest rate PRR and $149.1 million to interest rate RWA as at 31 December 2017).

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 67: Market risk under standardised approach (MR1)

<table>
<thead>
<tr>
<th>Market risk capital requirements for trading book</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest rate risk</td>
<td>6,432</td>
<td>8,365</td>
</tr>
<tr>
<td>Equity</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Foreign exchange risk</td>
<td>667</td>
<td>997</td>
</tr>
<tr>
<td>Commodity risk</td>
<td>129</td>
<td>192</td>
</tr>
<tr>
<td>Options</td>
<td>16</td>
<td>706</td>
</tr>
<tr>
<td>Simplified approach</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Delta-plus method</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Scenario approach</td>
<td>13</td>
<td>694</td>
</tr>
<tr>
<td>Securitisation (specific risk)&lt;sup&gt;1&lt;/sup&gt;</td>
<td>192</td>
<td>149</td>
</tr>
<tr>
<td>Total</td>
<td>7,247</td>
<td>10,264</td>
</tr>
</tbody>
</table>

1 Securitisation (specific risk) is included in the interest rate risk RWA number.
Internal Models Approach

Table 68 shows the average, high and low VaR and Stressed VaR for the period January 2018 to December 2018 and the actual position on 31 December 2018. The results reflect only the Group portfolio covered by the internal model approach and are calculated at a 99 per cent confidence level.

Table 68: IMA values for trading portfolios (MR3)

<table>
<thead>
<tr>
<th></th>
<th>2018 $million</th>
<th>2017 $million</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VaR (10 day 99%)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Maximum value</td>
<td>48</td>
<td>99</td>
</tr>
<tr>
<td>2 Average value</td>
<td>32</td>
<td>42</td>
</tr>
<tr>
<td>3 Minimum value</td>
<td>21</td>
<td>26</td>
</tr>
<tr>
<td>4 Period end</td>
<td>36</td>
<td>44</td>
</tr>
<tr>
<td><strong>Stressed VaR (10 day 99%)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Maximum value</td>
<td>260</td>
<td>259</td>
</tr>
<tr>
<td>6 Average value</td>
<td>153</td>
<td>152</td>
</tr>
<tr>
<td>7 Minimum value</td>
<td>100</td>
<td>103</td>
</tr>
<tr>
<td>8 Period end</td>
<td>136</td>
<td>129</td>
</tr>
<tr>
<td><strong>Incremental Risk Charge (99.99%)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Maximum value</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>10 Average value</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>11 Minimum value</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>12 Period end</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td><strong>Comprehensive Risk capital charge (99.9%)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 Maximum value</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>14 Average value</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>15 Minimum value</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>16 Period end</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th></th>
<th>2018 $million</th>
<th>2017 $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 VaR (higher of values a and b)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Previous day’s VaR</td>
<td>1,413</td>
<td>1,978</td>
</tr>
<tr>
<td>(b) Average of the daily VaR</td>
<td>1,413</td>
<td>1,978</td>
</tr>
<tr>
<td>2 SVaR (higher of values a and b)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Latest SVaR</td>
<td>7,250</td>
<td>8,083</td>
</tr>
<tr>
<td>(b) Average of the SVaR</td>
<td>7,250</td>
<td>8,084</td>
</tr>
<tr>
<td>5 Other1</td>
<td>3,196</td>
<td>2,715</td>
</tr>
<tr>
<td>6 Total2</td>
<td>11,862</td>
<td>12,776</td>
</tr>
</tbody>
</table>

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 2018 Annual Reports and Accounts on page 182
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**

Regulatory backtesting is applied at both Group and Solo levels. In 2018 there have been two negative exceptions at Group level and three at Solo level (in 2017 there was one exception at Group level and at Solo level).

Group and Solo exceptions occurred on 16 August driven by RMB which appreciated sharply due to PBoC intervention following a period of decline. Additionally, Group and Solo exceptions occurred on 2 November driven by TWD and RMB exposures when Asian currencies strengthened on talk of a draft trade deal between the US and China.

On 15 November a Solo exception was driven by GBP and USD. GBP depreciated as the draft Brexit agreement ran into difficulties, and US treasury yields fell as a result of safe haven purchases. Three exceptions in a year due to market events is within the ‘green zone’ applied internationally to internal models by bank supervisors (Basel Committee on Banking Supervision; ‘Supervisory framework for the use of backtesting in conjunction with the internal models approach to market risk capital requirements’, January 1996).

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

#### Table 70: 2018 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>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Hypo P&amp;L</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Positive VaR at 99%</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative VaR at 99%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Positive exceptions</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Negative exceptions</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

The 2018 IMA Group level backtesting chart outliers are all positive, reflecting the additional elements of actual P&L (compared to hypothetical). There were thirty nine such positive actual outliers in 2018.

#### Table 71: 2018 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)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual P&amp;L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive VaR at 99%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative VaR at 99%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive exceptions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative exceptions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.2 Counterparty credit risk

Counterparty credit risk (CCR) is the risk that a counterparty in foreign exchange, interest rate, commodity, equity or credit derivative or repo contract defaults prior to the maturity date of the contract, and that the Group at the time has a claim on the counterparty. CCR arises predominantly in the trading book, but also arises in the non-trading book 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 such 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. 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 $331 million (2017: $258 million).

The Group also has policies and procedures in place setting out the criteria for guarantees to be recognised as a credit risk mitigant. Where guarantees meet regulatory criteria, the Group treats the exposure as guarantor risk 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 2018 Annual Report and Accounts on page 275.

Table 72 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 73 specifies the methods used by the Group to calculate counterparty credit risk regulatory requirements, followed by Table 74 which demonstrates the risk-weighted exposure amounts to central counterparties by derivative types.

Table 75 indicates the notional amounts of credit derivative transactions segregated between protection bought and sold within each product type.

Table 76 describes the exposure value subject to credit valuation adjustment charge and related RWA.
4.2 Counterparty credit risk continued

Table 72: Impact of netting and collateral held on exposure values (CCR5-A)

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EAD before netting benefit $million</td>
<td>Netting benefits $million</td>
</tr>
<tr>
<td>1 Derivative contracts</td>
<td>85,974</td>
<td>(41,936)</td>
</tr>
<tr>
<td>2 Repo style transactions</td>
<td>134,083</td>
<td>–</td>
</tr>
<tr>
<td>4 Total</td>
<td>220,057</td>
<td>(41,936)</td>
</tr>
</tbody>
</table>

The netting benefit increased by $5.2 billion as a result of increased derivative mark-to-market due to higher valuations. The net exposure for repo style transactions decreased by $11.2 billion due to process enhancement in collateral recognition.

Table 73: Analysis of CCR exposures by approach (CCR1)

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Notional $million</td>
<td>Replacement cost/current market value $million</td>
</tr>
<tr>
<td>1 Mark to market</td>
<td>12,323</td>
<td>21,714</td>
</tr>
<tr>
<td>2 Original exposure</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>3 Standardised approach</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>4 IMM (for derivatives and SFTs)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>5 Of which securities financing transactions</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>6 Of which derivatives and long settlement transactions</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>8 Financial collateral simple method (for SFTs)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>9 Financial collateral comprehensive method (for SFTs)</td>
<td>8,902</td>
<td>1,257</td>
</tr>
<tr>
<td>10 VaR for SFTs</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>11 Total</td>
<td>11,656</td>
<td>11,656</td>
</tr>
</tbody>
</table>
### 4.2 Counterparty credit risk continued

#### Table 74: Exposures to central counterparties (CCPs) (CCR8)

<table>
<thead>
<tr>
<th>Exposures to QCCPs</th>
<th>2018 EAD post CRM $million</th>
<th>2018 RWa $million</th>
<th>2017 EAD post CRM $million</th>
<th>2017 RWa $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Trade exposure</td>
<td>8,189</td>
<td>167</td>
<td>8,889</td>
<td>181</td>
</tr>
<tr>
<td>3 Of which OTC derivatives</td>
<td>5,419</td>
<td>111</td>
<td>4,827</td>
<td>100</td>
</tr>
<tr>
<td>4 Of which exchange-traded derivatives</td>
<td>2,042</td>
<td>41</td>
<td>2,072</td>
<td>41</td>
</tr>
<tr>
<td>5 Of which SFTs</td>
<td>728</td>
<td>15</td>
<td>1,990</td>
<td>40</td>
</tr>
<tr>
<td>7 Collateral posted</td>
<td>1,060</td>
<td>21</td>
<td>1,867</td>
<td>38</td>
</tr>
<tr>
<td>9 Prefunded default fund contributions</td>
<td>244</td>
<td>59</td>
<td>387</td>
<td>81</td>
</tr>
<tr>
<td>1 Total</td>
<td>9,493</td>
<td>247</td>
<td>11,143</td>
<td>300</td>
</tr>
</tbody>
</table>

#### Table 75: Credit derivatives exposures (CCR6)

<table>
<thead>
<tr>
<th>Notionals</th>
<th>2018 Bought $million</th>
<th>2018 Sold $million</th>
<th>2018 Total $million</th>
<th>2017 Bought $million</th>
<th>2017 Sold $million</th>
<th>2017 Total $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit default swaps</td>
<td>20,944</td>
<td>14,333</td>
<td>35,277</td>
<td>19,409</td>
<td>12,459</td>
<td>31,869</td>
</tr>
<tr>
<td>Total return swaps</td>
<td>4,065</td>
<td>–</td>
<td>4,065</td>
<td>2,549</td>
<td>246</td>
<td>2,795</td>
</tr>
<tr>
<td>Credit options</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Other Credit derivatives</td>
<td>2</td>
<td>–</td>
<td>2</td>
<td>108</td>
<td>–</td>
<td>108</td>
</tr>
<tr>
<td>Total notional</td>
<td>25,010</td>
<td>14,333</td>
<td>39,343</td>
<td>22,067</td>
<td>12,705</td>
<td>34,772</td>
</tr>
<tr>
<td>Fair values</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive fair value (asset)</td>
<td>81</td>
<td>171</td>
<td>252</td>
<td>33</td>
<td>215</td>
<td>249</td>
</tr>
<tr>
<td>Negative fair value (liability)</td>
<td>235</td>
<td>45</td>
<td>281</td>
<td>873</td>
<td>–</td>
<td>873</td>
</tr>
</tbody>
</table>

#### Table 76: Credit valuation adjustment (CVA) capital charge (CCR2)

<table>
<thead>
<tr>
<th>2018 Exposure Value $million</th>
<th>2018 RWa $million</th>
<th>2017 Exposure Value $million</th>
<th>2017 RWa $million</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Total portfolios subject to the Advanced Method</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>2 (i) VaR component (including the 3x multiplier)</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>3 (i) Stressed VaR component (including the 3x multiplier)</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>4 All portfolios subject to the Standardised Method</td>
<td>17,245</td>
<td>1,116</td>
<td>19,322</td>
</tr>
<tr>
<td>5 Total subject to the CVA capital charge</td>
<td>17,245</td>
<td>1,116</td>
<td>19,322</td>
</tr>
</tbody>
</table>

Table 77 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 77: Standardised approach – CCR exposures by regulatory portfolio and risk (CCR3)

<table>
<thead>
<tr>
<th>Standardised Exposure Class</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Central governments or central banks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>497</td>
<td>–</td>
</tr>
<tr>
<td>4</td>
<td>Multilateral development banks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1,373</td>
<td>–</td>
</tr>
<tr>
<td>6</td>
<td>Institutions</td>
<td>–</td>
</tr>
<tr>
<td>7</td>
<td>Corporates</td>
<td>–</td>
</tr>
<tr>
<td>8</td>
<td>Retail</td>
<td>–</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standardised Exposure Class</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Central governments or central banks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>406</td>
<td>–</td>
</tr>
<tr>
<td>4</td>
<td>Multilateral development banks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1,978</td>
<td>–</td>
</tr>
<tr>
<td>6</td>
<td>Institutions</td>
<td>–</td>
</tr>
<tr>
<td>7</td>
<td>Corporates</td>
<td>–</td>
</tr>
<tr>
<td>8</td>
<td>Retail</td>
<td>–</td>
</tr>
<tr>
<td>10a</td>
<td>Secured on real estate</td>
<td>–</td>
</tr>
<tr>
<td>10b</td>
<td>Exposures in default</td>
<td>–</td>
</tr>
<tr>
<td>10c</td>
<td>Items belonging to regulatory high risk categories</td>
<td>–</td>
</tr>
<tr>
<td>10d</td>
<td>Other items</td>
<td>–</td>
</tr>
<tr>
<td>11</td>
<td>Total Standardised</td>
<td>1,870</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standardised Exposure Class</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Central governments or central banks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>406</td>
<td>–</td>
</tr>
<tr>
<td>4</td>
<td>Multilateral development banks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1,978</td>
<td>–</td>
</tr>
<tr>
<td>6</td>
<td>Institutions</td>
<td>–</td>
</tr>
<tr>
<td>7</td>
<td>Corporates</td>
<td>–</td>
</tr>
<tr>
<td>8</td>
<td>Retail</td>
<td>–</td>
</tr>
<tr>
<td>10a</td>
<td>Secured on real estate</td>
<td>–</td>
</tr>
<tr>
<td>10b</td>
<td>Exposures in default</td>
<td>–</td>
</tr>
<tr>
<td>10c</td>
<td>Items belonging to regulatory high risk categories</td>
<td>–</td>
</tr>
<tr>
<td>10d</td>
<td>Other items</td>
<td>–</td>
</tr>
<tr>
<td>11</td>
<td>Total Standardised</td>
<td>2,384</td>
</tr>
</tbody>
</table>

- Multilateral development banks exposures decreased by $0.6 billion mainly due to decreases in cross currency swaps and fx forwards.
- Institutions exposures decreased by $0.7 billion driven by a decrease in repo exposures.
- Central government and central bank exposures increased by $1.3 billion due to an increase in repo activity.
- Institutions exposures reduced by $1.1 billion and RWA by $0.7 billion mainly due to a reduction in SFTs.
- Corporates exposures increased by $1.1 billion due to an increase in SFTs, partially offset by a decrease in derivatives.
- RWA reduced by $2.2 billion driven by a change in the mix of SFT obligors with a greater proportion being high grade.

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.
### 4.2 Counterparty credit risk continued

#### Table 78: IRB – CCR exposures by exposure class

<table>
<thead>
<tr>
<th>IRB exposure class</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD%</th>
<th>Number of obligors¹</th>
<th>Average LGD%</th>
<th>Average maturity¹ years</th>
<th>RWA $million</th>
<th>RWA density¹ %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central governments or central banks</td>
<td>18,437</td>
<td>0.06</td>
<td>123</td>
<td>11</td>
<td>0.27</td>
<td>525</td>
<td>3</td>
</tr>
<tr>
<td>Institutions</td>
<td>45,476</td>
<td>0.14</td>
<td>1,398</td>
<td>16</td>
<td>0.73</td>
<td>3,664</td>
<td>8</td>
</tr>
<tr>
<td>Corporates</td>
<td>65,090</td>
<td>0.21</td>
<td>11,741</td>
<td>13</td>
<td>0.43</td>
<td>7,101</td>
<td>11</td>
</tr>
<tr>
<td>Of which specialised lending</td>
<td>1,577</td>
<td>2.06</td>
<td>483</td>
<td>30</td>
<td>1.78</td>
<td>650</td>
<td>41</td>
</tr>
<tr>
<td>Of which SME</td>
<td>256</td>
<td>0.55</td>
<td>467</td>
<td>66</td>
<td>2.21</td>
<td>177</td>
<td>69</td>
</tr>
<tr>
<td><strong>Total IRB</strong></td>
<td>129,004</td>
<td>0.16</td>
<td>13,262</td>
<td>14</td>
<td>0.51</td>
<td>11,290</td>
<td>9</td>
</tr>
</tbody>
</table>

1 Weighted averages are based on EAD
2 Number of obligors is based on number of counterparties within each PD grade

#### Table 79: IRB – CCR exposures by PD scale for central governments or central banks (CCR4)

<table>
<thead>
<tr>
<th>PD range %</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD%</th>
<th>Number of obligors¹</th>
<th>Average LGD%</th>
<th>Average maturity¹ years</th>
<th>RWA $million</th>
<th>RWA density¹ %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt; 0.15</td>
<td>17,904</td>
<td>0.04</td>
<td>64</td>
<td>10</td>
<td>0.25</td>
<td>227</td>
<td>1</td>
</tr>
<tr>
<td>0.15 to &lt; 0.25</td>
<td>301</td>
<td>0.22</td>
<td>6</td>
<td>45</td>
<td>0.05</td>
<td>73</td>
<td>24</td>
</tr>
<tr>
<td>0.25 to &lt; 0.50</td>
<td>7</td>
<td>0.51</td>
<td>7</td>
<td>46</td>
<td>1.00</td>
<td>4</td>
<td>57</td>
</tr>
<tr>
<td>0.50 to &lt; 0.75</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>0.75 to 2.50</td>
<td>216</td>
<td>1.67</td>
<td>32</td>
<td>46</td>
<td>1.69</td>
<td>211</td>
<td>98</td>
</tr>
<tr>
<td>2.50 to &lt; 10.00</td>
<td>9</td>
<td>3.51</td>
<td>11</td>
<td>38</td>
<td>1.00</td>
<td>9</td>
<td>104</td>
</tr>
<tr>
<td>10.00 to &lt; 100.00</td>
<td>–</td>
<td>13.77</td>
<td>3</td>
<td>63</td>
<td>1.90</td>
<td>1</td>
<td>309</td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18,437</td>
<td>0.06</td>
<td>123</td>
<td>11</td>
<td>0.27</td>
<td>525</td>
<td>3</td>
</tr>
</tbody>
</table>

1 Weighted averages are based on EAD
2 Number of obligors is based on number of counterparties within each PD grade

---

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### 4.2 Counterparty credit risk continued

Table 80: IRB – CCR exposures by PD scale for institutions (CCR4)

<table>
<thead>
<tr>
<th>PD range</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD1</th>
<th>Number of obligors2</th>
<th>Average LGD1</th>
<th>Average maturity1 years</th>
<th>RWA $million</th>
<th>RWA density1 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt; 0.15</td>
<td>37,827</td>
<td>0.05</td>
<td>683</td>
<td>17</td>
<td>0.70</td>
<td>2,356</td>
<td>6</td>
</tr>
<tr>
<td>0.15 to &lt; 0.25</td>
<td>3,963</td>
<td>0.22</td>
<td>110</td>
<td>9</td>
<td>0.55</td>
<td>359</td>
<td>9</td>
</tr>
<tr>
<td>0.25 to &lt; 0.50</td>
<td>1,881</td>
<td>0.45</td>
<td>169</td>
<td>15</td>
<td>0.38</td>
<td>397</td>
<td>21</td>
</tr>
<tr>
<td>0.50 to &lt; 0.75</td>
<td>418</td>
<td>0.67</td>
<td>53</td>
<td>7</td>
<td>0.44</td>
<td>54</td>
<td>13</td>
</tr>
<tr>
<td>0.75 to &lt; 2.50</td>
<td>1,360</td>
<td>1.74</td>
<td>352</td>
<td>13</td>
<td>2.66</td>
<td>458</td>
<td>34</td>
</tr>
<tr>
<td>2.50 to &lt; 10.00</td>
<td>15</td>
<td>3.57</td>
<td>21</td>
<td>9</td>
<td>0.08</td>
<td>4</td>
<td>27</td>
</tr>
<tr>
<td>10.00 to &lt; 100.00</td>
<td>12</td>
<td>13.77</td>
<td>10</td>
<td>63</td>
<td>1.02</td>
<td>36</td>
<td>294</td>
</tr>
<tr>
<td>Total (default)</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Total</td>
<td>45,476</td>
<td>0.14</td>
<td>1,398</td>
<td>16</td>
<td>0.73</td>
<td>3,664</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PD range</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD1</th>
<th>Number of obligors2</th>
<th>Average LGD1</th>
<th>Average maturity1 years</th>
<th>RWA $million</th>
<th>RWA density1 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt; 0.15</td>
<td>38,592</td>
<td>0.05</td>
<td>704</td>
<td>22</td>
<td>0.64</td>
<td>2,884</td>
<td>7</td>
</tr>
<tr>
<td>0.15 to &lt; 0.25</td>
<td>4,029</td>
<td>0.22</td>
<td>115</td>
<td>13</td>
<td>0.48</td>
<td>489</td>
<td>12</td>
</tr>
<tr>
<td>0.25 to &lt; 0.50</td>
<td>2,915</td>
<td>0.41</td>
<td>192</td>
<td>12</td>
<td>0.47</td>
<td>480</td>
<td>16</td>
</tr>
<tr>
<td>0.50 to &lt; 0.75</td>
<td>146</td>
<td>0.67</td>
<td>54</td>
<td>27</td>
<td>1.61</td>
<td>78</td>
<td>54</td>
</tr>
<tr>
<td>0.75 to &lt; 2.50</td>
<td>942</td>
<td>1.26</td>
<td>347</td>
<td>20</td>
<td>0.72</td>
<td>467</td>
<td>50</td>
</tr>
<tr>
<td>2.50 to &lt; 10.00</td>
<td>–</td>
<td>3.51</td>
<td>14</td>
<td>46</td>
<td>1.00</td>
<td>–</td>
<td>75</td>
</tr>
<tr>
<td>10.00 to &lt; 100.00</td>
<td>–</td>
<td>13.77</td>
<td>7</td>
<td>46</td>
<td>1.00</td>
<td>–</td>
<td>250</td>
</tr>
<tr>
<td>Total (default)</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Total</td>
<td>46,624</td>
<td>0.11</td>
<td>1,433</td>
<td>21</td>
<td>0.62</td>
<td>4,398</td>
<td>9</td>
</tr>
</tbody>
</table>

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 81: IRB – CCR exposures by PD scale for corporates (CCR4)**

<table>
<thead>
<tr>
<th>PD range</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD1 %</th>
<th>Number of obligors2</th>
<th>Average LGD1 %</th>
<th>Average maturity1 years</th>
<th>RWA $million</th>
<th>RWA density1 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt; 0.15</td>
<td>54,119</td>
<td>0.06</td>
<td>4,282</td>
<td>10</td>
<td>0.31</td>
<td>2,230</td>
<td>4</td>
</tr>
<tr>
<td>0.15 to &lt; 0.25</td>
<td>2,961</td>
<td>0.22</td>
<td>1,648</td>
<td>33</td>
<td>1.17</td>
<td>964</td>
<td>33</td>
</tr>
<tr>
<td>0.25 to &lt; 0.50</td>
<td>4,822</td>
<td>0.45</td>
<td>1,953</td>
<td>20</td>
<td>0.71</td>
<td>1,354</td>
<td>28</td>
</tr>
<tr>
<td>0.50 to &lt; 0.75</td>
<td>819</td>
<td>0.67</td>
<td>736</td>
<td>40</td>
<td>1.20</td>
<td>500</td>
<td>61</td>
</tr>
<tr>
<td>0.75 to &lt; 2.50</td>
<td>2,138</td>
<td>1.26</td>
<td>1,871</td>
<td>35</td>
<td>1.17</td>
<td>1,514</td>
<td>71</td>
</tr>
<tr>
<td>2.50 to &lt; 10.00</td>
<td>114</td>
<td>4.59</td>
<td>577</td>
<td>62</td>
<td>2.01</td>
<td>239</td>
<td>209</td>
</tr>
<tr>
<td>10.00 to &lt; 100.00</td>
<td>107</td>
<td>34.69</td>
<td>350</td>
<td>50</td>
<td>1.73</td>
<td>287</td>
<td>268</td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>3</td>
<td>100.00</td>
<td>290</td>
<td>62</td>
<td>1.64</td>
<td>–</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>65,074</strong></td>
<td><strong>0.21</strong></td>
<td><strong>11,707</strong></td>
<td><strong>13</strong></td>
<td><strong>0.43</strong></td>
<td><strong>7,088</strong></td>
<td><strong>11</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PD range</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD1 %</th>
<th>Number of obligors2</th>
<th>Average LGD1 %</th>
<th>Average maturity1 years</th>
<th>RWA $million</th>
<th>RWA density1 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt; 0.15</td>
<td>48,705</td>
<td>0.05</td>
<td>3,773</td>
<td>16</td>
<td>0.39</td>
<td>2,848</td>
<td>6</td>
</tr>
<tr>
<td>0.15 to &lt; 0.25</td>
<td>4,493</td>
<td>0.22</td>
<td>1,795</td>
<td>37</td>
<td>0.78</td>
<td>1,095</td>
<td>24</td>
</tr>
<tr>
<td>0.25 to &lt; 0.50</td>
<td>6,873</td>
<td>0.43</td>
<td>1,978</td>
<td>28</td>
<td>0.72</td>
<td>2,304</td>
<td>34</td>
</tr>
<tr>
<td>0.50 to &lt; 0.75</td>
<td>853</td>
<td>0.68</td>
<td>725</td>
<td>35</td>
<td>1.12</td>
<td>431</td>
<td>51</td>
</tr>
<tr>
<td>0.75 to &lt; 2.50</td>
<td>2,206</td>
<td>1.37</td>
<td>2,011</td>
<td>45</td>
<td>1.40</td>
<td>1,824</td>
<td>83</td>
</tr>
<tr>
<td>2.50 to &lt; 10.00</td>
<td>207</td>
<td>4.62</td>
<td>582</td>
<td>66</td>
<td>1.98</td>
<td>345</td>
<td>167</td>
</tr>
<tr>
<td>10.00 to &lt; 100.00</td>
<td>576</td>
<td>15.81</td>
<td>392</td>
<td>14</td>
<td>0.36</td>
<td>384</td>
<td>67</td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>17</td>
<td>100.00</td>
<td>286</td>
<td>57</td>
<td>1.42</td>
<td>18</td>
<td>104</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>63,930</strong></td>
<td><strong>0.34</strong></td>
<td><strong>11,542</strong></td>
<td><strong>20</strong></td>
<td><strong>0.50</strong></td>
<td><strong>9,249</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>PD range</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EAD post CRM and post CCF $million</td>
<td>Average PD%</td>
</tr>
<tr>
<td>0.00 to &lt; 0.15</td>
<td>272</td>
<td>0.10</td>
</tr>
<tr>
<td>0.15 to &lt; 0.25</td>
<td>728</td>
<td>0.22</td>
</tr>
<tr>
<td>0.25 to &lt; 0.50</td>
<td>155</td>
<td>0.44</td>
</tr>
<tr>
<td>0.50 to &lt; 0.75</td>
<td>152</td>
<td>0.67</td>
</tr>
<tr>
<td>0.75 to &lt; 2.50</td>
<td>207</td>
<td>1.40</td>
</tr>
<tr>
<td>2.50 to &lt; 10.00</td>
<td>207</td>
<td>1.40</td>
</tr>
<tr>
<td>10.00 to &lt; 100.00</td>
<td>31</td>
<td>80.51</td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,561</td>
<td>2.08</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PD range</th>
<th>2017</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EAD post CRM and post CCF $million</td>
<td>Average PD%</td>
<td>Number of obligors</td>
<td>Average LGD%</td>
<td>Average maturity years</td>
<td>RWA $million</td>
<td>RWA density%</td>
</tr>
<tr>
<td>0.00 to &lt; 0.15</td>
<td>444</td>
<td>0.10</td>
<td>59</td>
<td>30</td>
<td>3.90</td>
<td>107</td>
<td>24</td>
</tr>
<tr>
<td>0.15 to &lt; 0.25</td>
<td>312</td>
<td>0.22</td>
<td>42</td>
<td>57</td>
<td>2.08</td>
<td>150</td>
<td>48</td>
</tr>
<tr>
<td>0.25 to &lt; 0.50</td>
<td>257</td>
<td>0.47</td>
<td>97</td>
<td>44</td>
<td>2.79</td>
<td>163</td>
<td>64</td>
</tr>
<tr>
<td>0.50 to &lt; 0.75</td>
<td>118</td>
<td>0.67</td>
<td>31</td>
<td>33</td>
<td>2.04</td>
<td>67</td>
<td>57</td>
</tr>
<tr>
<td>0.75 to &lt; 2.50</td>
<td>451</td>
<td>1.38</td>
<td>148</td>
<td>47</td>
<td>2.19</td>
<td>445</td>
<td>99</td>
</tr>
<tr>
<td>2.50 to &lt; 10.00</td>
<td>31</td>
<td>4.21</td>
<td>33</td>
<td>27</td>
<td>3.82</td>
<td>29</td>
<td>92</td>
</tr>
<tr>
<td>10.00 to &lt; 100.00</td>
<td>18</td>
<td>71.90</td>
<td>15</td>
<td>44</td>
<td>4.94</td>
<td>43</td>
<td>243</td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>1</td>
<td>100.00</td>
<td>26</td>
<td>21</td>
<td>3.36</td>
<td>2</td>
<td>188</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,632</td>
<td>1.50</td>
<td>451</td>
<td>42</td>
<td>2.78</td>
<td>1,006</td>
<td>62</td>
</tr>
</tbody>
</table>

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 83: IRB – CCR exposures by PD scale for corporates – SME (CCR4)**

<table>
<thead>
<tr>
<th>PD range</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD1 %</th>
<th>Number of obligors1</th>
<th>Average LGD1 %</th>
<th>Average maturity1 years</th>
<th>RWa $million</th>
<th>RWa density1 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt; 0.15</td>
<td>191</td>
<td>0.13</td>
<td>13</td>
<td>64</td>
<td>2.13</td>
<td>75</td>
<td>39</td>
</tr>
<tr>
<td>0.15 to &lt; 0.25</td>
<td>2</td>
<td>0.22</td>
<td>77</td>
<td>58</td>
<td>2.18</td>
<td>1</td>
<td>48</td>
</tr>
<tr>
<td>0.25 to &lt; 0.50</td>
<td>10</td>
<td>0.50</td>
<td>66</td>
<td>59</td>
<td>1.45</td>
<td>7</td>
<td>66</td>
</tr>
<tr>
<td>0.50 to &lt; 0.75</td>
<td>–</td>
<td>0.70</td>
<td>20</td>
<td>62</td>
<td>1.40</td>
<td>–</td>
<td>85</td>
</tr>
<tr>
<td>0.75 to &lt; 2.50</td>
<td>53</td>
<td>1.94</td>
<td>163</td>
<td>73</td>
<td>2.69</td>
<td>93</td>
<td>176</td>
</tr>
<tr>
<td>2.50 to &lt; 10.00</td>
<td>1</td>
<td>4.12</td>
<td>57</td>
<td>65</td>
<td>1.00</td>
<td>1</td>
<td>163</td>
</tr>
<tr>
<td>10.00 to &lt; 100.00</td>
<td>–</td>
<td>33.72</td>
<td>14</td>
<td>27</td>
<td>1.45</td>
<td>–</td>
<td>156</td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>–</td>
<td>100.00</td>
<td>57</td>
<td>70</td>
<td>1.00</td>
<td>–</td>
<td>567</td>
</tr>
<tr>
<td>Total</td>
<td>256</td>
<td>0.55</td>
<td>467</td>
<td>66</td>
<td>2.21</td>
<td>177</td>
<td>69</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PD range</th>
<th>EAD post CRM and post CCF $million</th>
<th>Average PD1 %</th>
<th>Number of obligors1</th>
<th>Average LGD1 %</th>
<th>Average maturity1 years</th>
<th>RWa $million</th>
<th>RWa density1 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to &lt; 0.15</td>
<td>229</td>
<td>0.12</td>
<td>29</td>
<td>66</td>
<td>2.15</td>
<td>93</td>
<td>41</td>
</tr>
<tr>
<td>0.15 to &lt; 0.25</td>
<td>181</td>
<td>0.22</td>
<td>35</td>
<td>60</td>
<td>4.99</td>
<td>130</td>
<td>72</td>
</tr>
<tr>
<td>0.25 to &lt; 0.50</td>
<td>111</td>
<td>0.46</td>
<td>41</td>
<td>71</td>
<td>2.11</td>
<td>98</td>
<td>89</td>
</tr>
<tr>
<td>0.50 to &lt; 0.75</td>
<td>–</td>
<td>0.67</td>
<td>24</td>
<td>60</td>
<td>1.00</td>
<td>–</td>
<td>71</td>
</tr>
<tr>
<td>0.75 to &lt; 2.50</td>
<td>24</td>
<td>1.56</td>
<td>134</td>
<td>96</td>
<td>3.20</td>
<td>60</td>
<td>247</td>
</tr>
<tr>
<td>2.50 to &lt; 10.00</td>
<td>1</td>
<td>4.96</td>
<td>58</td>
<td>53</td>
<td>1.40</td>
<td>1</td>
<td>123</td>
</tr>
<tr>
<td>10.00 to &lt; 100.00</td>
<td>–</td>
<td>37.65</td>
<td>14</td>
<td>25</td>
<td>1.44</td>
<td>–</td>
<td>128</td>
</tr>
<tr>
<td>100.00 (default)</td>
<td>–</td>
<td>100.00</td>
<td>54</td>
<td>38</td>
<td>1.00</td>
<td>–</td>
<td>187</td>
</tr>
<tr>
<td>Total</td>
<td>546</td>
<td>0.30</td>
<td>389</td>
<td>66</td>
<td>3.13</td>
<td>382</td>
<td>76</td>
</tr>
</tbody>
</table>

---

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 calibrated locally where appropriate. 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 84 below reflects Treasury Markets interest rate risk profile (at year end). The table shows that net PV01 has decreased year on year, especially in USD, due to managing exposures through volatile market conditions including a series of USD rate hikes during 2018.

More details on NII sensitivity can be found in the 2018 Annual Report and Accounts on page 191.

Table 84: Treasury Markets PV01 by currency

<table>
<thead>
<tr>
<th>Currency</th>
<th>2018 Actual</th>
<th>2017 Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>HKD</td>
<td>0.6</td>
<td>0.4</td>
</tr>
<tr>
<td>KRW</td>
<td>(0.3)</td>
<td>(0.5)</td>
</tr>
<tr>
<td>SGD</td>
<td>0.2</td>
<td>(0.1)</td>
</tr>
<tr>
<td>USD</td>
<td>0.6</td>
<td>(0.4)</td>
</tr>
<tr>
<td>JPY</td>
<td>0.2</td>
<td>0.1</td>
</tr>
<tr>
<td>GBP</td>
<td>(0.1)</td>
<td>(0.3)</td>
</tr>
<tr>
<td>EUR</td>
<td>0.1</td>
<td>(0.1)</td>
</tr>
<tr>
<td>AUD</td>
<td>–</td>
<td>(0.2)</td>
</tr>
<tr>
<td>Others</td>
<td>(0.5)</td>
<td>(0.8)</td>
</tr>
<tr>
<td>Total Non-trading book</td>
<td>0.8</td>
<td>(1.8)</td>
</tr>
</tbody>
</table>

1 Actual PV01 at period end date
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 2018 Annual Report and Accounts on pages 184 to 191 and 204 to 205 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.

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 185 of the 2018 Annual Report and Accounts.
## Table 85: Liquidity Coverage Ratio (LCR) (LIQ1)

<table>
<thead>
<tr>
<th></th>
<th>31.03.18</th>
<th>30.06.18</th>
<th>30.09.18</th>
<th>31.12.18</th>
<th>31.03.18</th>
<th>30.06.18</th>
<th>30.09.18</th>
<th>31.12.18</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$million</td>
<td>$million</td>
<td>$million</td>
<td>$million</td>
<td>$million</td>
<td>$million</td>
<td>$million</td>
<td>$million</td>
</tr>
<tr>
<td>Total unweighted value</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
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<tr>
<td>Total weighted value</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Number of data points</strong></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>used in the calculation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of averages</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>High-Quality Liquid</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assets (HQLA)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cash outflows</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Retail deposits and</td>
<td>125,787</td>
<td>127,736</td>
<td>129,409</td>
<td>131,200</td>
<td>12,425</td>
<td>12,611</td>
<td>12,784</td>
<td>12,920</td>
</tr>
<tr>
<td>deposits from small</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>business customers, of</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>which:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Stable deposits</td>
<td>28,814</td>
<td>29,437</td>
<td>29,991</td>
<td>31,045</td>
<td>1,441</td>
<td>1,472</td>
<td>1,500</td>
<td>1,552</td>
</tr>
<tr>
<td>4 Less stable deposits</td>
<td>96,973</td>
<td>98,300</td>
<td>99,418</td>
<td>100,156</td>
<td>10,984</td>
<td>11,139</td>
<td>11,284</td>
<td>11,368</td>
</tr>
<tr>
<td>5 Unsecured wholesale</td>
<td>210,955</td>
<td>213,977</td>
<td>215,133</td>
<td>217,251</td>
<td>111,305</td>
<td>111,585</td>
<td>110,946</td>
<td>111,379</td>
</tr>
<tr>
<td>funding, of which:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Operational deposits</td>
<td>60,734</td>
<td>62,671</td>
<td>64,310</td>
<td>64,959</td>
<td>15,042</td>
<td>15,519</td>
<td>15,924</td>
<td>16,086</td>
</tr>
<tr>
<td>(all counterparties) and</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>deposits in networks of</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cooperative banks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Non-operational deposits</td>
<td>144,309</td>
<td>145,354</td>
<td>145,256</td>
<td>146,496</td>
<td>90,351</td>
<td>90,114</td>
<td>89,455</td>
<td>89,497</td>
</tr>
<tr>
<td>(all counterparties)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Unsecured debt</td>
<td>5,912</td>
<td>5,952</td>
<td>5,567</td>
<td>5,796</td>
<td>5,912</td>
<td>5,952</td>
<td>5,567</td>
<td>5,796</td>
</tr>
<tr>
<td>9 Secured wholesale</td>
<td>2,091</td>
<td>1,992</td>
<td>1,938</td>
<td>1,976</td>
<td>2,091</td>
<td>1,992</td>
<td>1,938</td>
<td>1,976</td>
</tr>
<tr>
<td>funding</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>10 Additional requirements</td>
<td>82,829</td>
<td>85,517</td>
<td>86,432</td>
<td>86,839</td>
<td>22,946</td>
<td>24,628</td>
<td>25,744</td>
<td>26,981</td>
</tr>
<tr>
<td>11 Outflows related to</td>
<td>10,613</td>
<td>12,197</td>
<td>13,405</td>
<td>14,643</td>
<td>10,518</td>
<td>12,182</td>
<td>13,391</td>
<td>14,632</td>
</tr>
<tr>
<td>derivative exposures and</td>
<td></td>
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<tr>
<td>12 Outflows related to</td>
<td>41</td>
<td>40</td>
<td>48</td>
<td>39</td>
<td>41</td>
<td>40</td>
<td>48</td>
<td>39</td>
</tr>
<tr>
<td>loss of funding on</td>
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<tr>
<td>debt products</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 Credit and liquidity</td>
<td>72,174</td>
<td>73,280</td>
<td>72,978</td>
<td>72,157</td>
<td>12,386</td>
<td>12,406</td>
<td>12,305</td>
<td>12,310</td>
</tr>
<tr>
<td>facilities</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>14 Other contractual</td>
<td>11,455</td>
<td>10,822</td>
<td>9,976</td>
<td>8,882</td>
<td>11,455</td>
<td>10,822</td>
<td>9,976</td>
<td>8,882</td>
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<tr>
<td>funding obligations</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 Other contingent</td>
<td>209,253</td>
<td>198,363</td>
<td>192,745</td>
<td>192,927</td>
<td>2,172</td>
<td>2,144</td>
<td>2,127</td>
<td>2,111</td>
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<tr>
<td>funding obligations</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>16 Total cash outflows</td>
<td>182,394</td>
<td>163,782</td>
<td>163,514</td>
<td>164,637</td>
<td></td>
<td></td>
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<tr>
<td>Cash inflows</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>17 Secured lending (e.g.</td>
<td>31,656</td>
<td>33,313</td>
<td>33,731</td>
<td>35,204</td>
<td>9,514</td>
<td>9,610</td>
<td>9,095</td>
<td>8,526</td>
</tr>
<tr>
<td>reverse repos)</td>
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<td></td>
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</tr>
<tr>
<td>18 Inflows from fully</td>
<td>56,999</td>
<td>57,605</td>
<td>58,118</td>
<td>57,175</td>
<td>42,552</td>
<td>43,489</td>
<td>44,822</td>
<td>44,439</td>
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<td>performing exposures</td>
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<td></td>
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</tr>
<tr>
<td>19 Other cash inflows</td>
<td>22,786</td>
<td>25,316</td>
<td>26,578</td>
<td>27,415</td>
<td>13,756</td>
<td>15,667</td>
<td>16,711</td>
<td>17,661</td>
</tr>
<tr>
<td>EU-19a (Difference between</td>
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<tr>
<td>total weighted inflows</td>
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<td>and total weighted</td>
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<td>outflows arising from</td>
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<td>transactions in third</td>
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<td>countries where there are</td>
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<td>transfer restrictions or</td>
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<tr>
<td>which are denominated in</td>
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<tr>
<td>non-convertible currencies</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>20 Total cash inflows</td>
<td>111,140</td>
<td>116,234</td>
<td>118,428</td>
<td>119,794</td>
<td>65,822</td>
<td>68,766</td>
<td>70,628</td>
<td>70,626</td>
</tr>
<tr>
<td>EU-20a Fully exempt</td>
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<td></td>
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<td>inflows</td>
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<tr>
<td>EU-20b Inflows subject to</td>
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<tr>
<td>90% cap</td>
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<td>EU-20c Inflows subject to</td>
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</tr>
<tr>
<td>75% cap</td>
<td>111,140</td>
<td>116,234</td>
<td>118,428</td>
<td>119,794</td>
<td>65,822</td>
<td>68,766</td>
<td>70,628</td>
<td>70,626</td>
</tr>
<tr>
<td>Total adjusted value</td>
<td></td>
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<tr>
<td>21 Liquidity buffer</td>
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<tr>
<td>22 Total net cash</td>
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<tr>
<td>outflows</td>
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<tr>
<td>23 Liquidity coverage</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>ratio (%)</td>
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</tr>
</tbody>
</table>
Table 85: Liquidity Coverage Ratio (LCR) (LIQ1) continued

<table>
<thead>
<tr>
<th></th>
<th>2017 Total unweighted value (average)</th>
<th></th>
<th>2017 Total weighted value (average)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>31.03.17 $million</td>
<td>30.06.17 $million</td>
<td>30.09.17 $million</td>
</tr>
<tr>
<td>Number of data points used in the calculation of averages</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td><strong>High-Quality Liquid Assets</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Total High-Quality Liquid Assets (HQLA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Cash outflows</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail deposits and deposits from small business customers, of which:</td>
<td>116,466</td>
<td>119,086</td>
<td>121,565</td>
</tr>
<tr>
<td>Stable deposits</td>
<td>28,201</td>
<td>27,564</td>
<td>27,708</td>
</tr>
<tr>
<td>Less stable deposits</td>
<td>88,265</td>
<td>91,522</td>
<td>93,857</td>
</tr>
<tr>
<td>Unsecured wholesale funding, of which:</td>
<td>196,040</td>
<td>199,935</td>
<td>203,370</td>
</tr>
<tr>
<td>6 Operational deposits (all counterparties) and deposits in networks of cooperative banks</td>
<td>52,838</td>
<td>54,783</td>
<td>56,166</td>
</tr>
<tr>
<td>7 Non-operational deposits (all counterparties)</td>
<td>136,373</td>
<td>139,128</td>
<td>141,293</td>
</tr>
<tr>
<td>8 Unsecured debt</td>
<td>6,829</td>
<td>6,024</td>
<td>5,911</td>
</tr>
<tr>
<td>9 Secured wholesale funding</td>
<td>3,676</td>
<td>2,695</td>
<td>2,386</td>
</tr>
<tr>
<td>10 Additional requirements</td>
<td>75,007</td>
<td>76,551</td>
<td>78,717</td>
</tr>
<tr>
<td>11 Outflows related to derivative exposures and other collateral requirements</td>
<td>6,576</td>
<td>7,341</td>
<td>8,822</td>
</tr>
<tr>
<td>12 Outflows related to loss of funding on debt products</td>
<td>80</td>
<td>53</td>
<td>26</td>
</tr>
<tr>
<td>13 Credit and liquidity facilities</td>
<td>68,351</td>
<td>69,157</td>
<td>69,869</td>
</tr>
<tr>
<td>14 Other contractual funding obligations</td>
<td>9,736</td>
<td>10,639</td>
<td>12,104</td>
</tr>
<tr>
<td>15 Other contingent funding obligations</td>
<td>246,536</td>
<td>242,346</td>
<td>231,092</td>
</tr>
<tr>
<td>16 Total cash outflows</td>
<td>153,865</td>
<td>155,944</td>
<td>159,154</td>
</tr>
<tr>
<td><strong>Cash inflows</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17 Secured lending (e.g. reverse repos)</td>
<td>23,834</td>
<td>24,563</td>
<td>26,044</td>
</tr>
<tr>
<td>18 Inflows from fully performing exposures</td>
<td>49,748</td>
<td>51,371</td>
<td>54,292</td>
</tr>
<tr>
<td>19 Other cash inflows</td>
<td>26,052</td>
<td>26,690</td>
<td>28,791</td>
</tr>
<tr>
<td>EU-10a (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)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EU-10b (Excess inflows from a related specialised credit institutions)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 Total cash inflows</td>
<td>99,634</td>
<td>102,624</td>
<td>109,127</td>
</tr>
<tr>
<td>EU-20a Fully exempt inflows</td>
<td></td>
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</tr>
<tr>
<td>EU-20b Inflows subject to 90% cap</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EU-20c Inflows subject to 75% cap</td>
<td>99,634</td>
<td>102,624</td>
<td>109,127</td>
</tr>
<tr>
<td>Total adjusted value</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 Liquidity buffer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22 Total net cash outflows</td>
<td>102,419</td>
<td>101,171</td>
<td>99,665</td>
</tr>
<tr>
<td>23 Liquidity coverage ratio (%)</td>
<td>136%</td>
<td>142%</td>
<td>146%</td>
</tr>
</tbody>
</table>

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 increased to 156 per cent in the fourth quarter (first quarter: 148 per cent) driven by higher average HQLA holdings and lower net cash outflows, reflecting the Group’s focus on high-quality liquidity across our businesses.

Aligned with overall growth in the Group’s balance sheet, total cash outflows and total cash inflows increased over the period. Most of our deposit growth in 2018 (increase in total cash outflows) came in the form of our deposit growth in 2018 (increase in cash inflows increased over the period. Most of our deposit growth in 2018 (increase in total cash outflows) came in the form of retail and corporate term deposits with high liquidity and regulatory value, thereby having a positive impact on our LCR position.

HQLA composition

Figures reported in this section are simple averages of the 21 data points over the reporting period April 2017 to Dec 2018.

Our average weighted HQLA over the reporting period was approximately $145 billion. Of this amount, 94 per cent consisted of Level 1 assets in the form of unencumbered central bank reserves (average 39 per cent) and high-quality level 1 securities (55 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, 5 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 (6 per cent) was well below the 40 per cent composition cap for such assets as required under LCR Delegated Act rules with Level 2B securities (1 per cent) falling below the required 15 per cent of total HQLA limit.

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

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

For a regional view of our HQLA liquidity pool, refer to page 196 of the 2018 Annual Report and Accounts.

<table>
<thead>
<tr>
<th>Table 86: Total eligible high-quality liquid assets (HQLA)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average</strong></td>
</tr>
<tr>
<td><strong>unweighted</strong></td>
</tr>
<tr>
<td>Level 1 reserves</td>
</tr>
<tr>
<td>Level 1 liquid securities</td>
</tr>
<tr>
<td>Level 2A liquid assets</td>
</tr>
<tr>
<td>Level 2B liquid assets</td>
</tr>
</tbody>
</table>

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 184 to 186 of the 2018 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 and, 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 – it 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 credit rating)
- The counterparties’ contractual right to substitute higher quality collateral with lower quality collateral
- The devaluation of existing collateral posted to counterparties
- Callable/due excess collateral that a firm may be contractually required to return to a counterparty

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

On average over the reporting period, weighted ‘Outflows related to derivative exposures and other collateral requirements’ made up only 7.7 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 86 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 flat at 64.9 per cent in 2018. Given this structural unsecured funding position we have little requirement to fund ourselves in secured markets, and therefore our overall low level of encumbrance reflects this position. However, we do provide collateralised financing services to clients and these result in off-balance sheet encumbrance. The Group monitors the mix of secured and unsecured funding sources within the Group’s funding plan and seeks to efficiently utilise available collateral to raise secured funding and meet other collateral requirements.

Table 87: Encumbered and unencumbered assets

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Carrying amount of encumbered assets $million</td>
<td>Fair value of encumbered assets $million</td>
</tr>
<tr>
<td>Assets of the reporting institution</td>
<td>24,866 – 672,236 –</td>
<td>22,857 – 654,824 –</td>
</tr>
<tr>
<td>Equity Instruments</td>
<td>84 84 1,971 1,971</td>
<td>5,918 5,918 124,857 123,505</td>
</tr>
<tr>
<td>Debt securities</td>
<td>8,699 8,699 135,215 135,215</td>
<td>15 15 4,075 4,075</td>
</tr>
<tr>
<td>of which: covered bonds</td>
<td>70 70 5,008 5,008</td>
<td>15 15 5,949 5,949</td>
</tr>
<tr>
<td>of which: Asset backed securities</td>
<td>4 4 6,337 6,337</td>
<td>– – 5,949 5,949</td>
</tr>
<tr>
<td>of which: issued by General Governments</td>
<td>7,103 7,103 73,583 73,583</td>
<td>2,989 2,989 79,696 79,696</td>
</tr>
<tr>
<td>of which: issued by Financial Corporations</td>
<td>1,129 1,129 37,279 37,279</td>
<td>1,549 1,549 30,803 30,803</td>
</tr>
<tr>
<td>of which: issued by Non Financial Corporations</td>
<td>358 358 9,308 9,308</td>
<td>897 897 8,828 8,828</td>
</tr>
<tr>
<td>of which: HK Govt securities of indebtedness</td>
<td>5,689 – –</td>
<td>5,295 – –</td>
</tr>
<tr>
<td>of which: Cash collateral for derivatives</td>
<td>10,375 – –</td>
<td>11,515 – –</td>
</tr>
<tr>
<td>of which: Loans and Advances to customers</td>
<td>9 – 299,928 –</td>
<td>13 – 279,666 –</td>
</tr>
<tr>
<td>of which: Derivative assets</td>
<td>– – 50,608 –</td>
<td>– – 48,653 –</td>
</tr>
</tbody>
</table>

1 All remaining regulatory balance sheet assets
### Table 88: Encumbered assets/collateral received and associated liabilities

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Matching liabilities</td>
<td>Matching liabilities</td>
</tr>
<tr>
<td></td>
<td>or securities lent</td>
<td>or securities lent</td>
</tr>
<tr>
<td></td>
<td>$million</td>
<td>$million</td>
</tr>
<tr>
<td>Carrying amount of selected financial liabilities</td>
<td>57,605</td>
<td>57,934</td>
</tr>
<tr>
<td>of which: Derivatives</td>
<td>10,012</td>
<td>10,363</td>
</tr>
<tr>
<td>of which: Repurchase agreements</td>
<td>48,184</td>
<td>48,367</td>
</tr>
<tr>
<td>of which: Debt securities issued</td>
<td>188</td>
<td>944</td>
</tr>
</tbody>
</table>

The median value of the Group’s encumbered and unencumbered assets, as at 31 December 2018, differs from the Group’s disclosures in the 2018 Annual Report and Accounts. The difference is due to the basis of calculation with the EBA Guidelines requiring disclosure of median values of 2018 monthly data. The table above compares the different values.

### Table 89: Collateral received

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fair Value of</td>
<td>Fair Value of</td>
<td>Fair Value of</td>
</tr>
<tr>
<td>encumbered collateral</td>
<td>collateral</td>
<td>encumbered collateral</td>
</tr>
<tr>
<td>received or own</td>
<td>received or own</td>
<td>received or own</td>
</tr>
<tr>
<td>debt securities issued</td>
<td>debt securities</td>
<td>debt securities</td>
</tr>
<tr>
<td>$million</td>
<td>$million</td>
<td>$million</td>
</tr>
<tr>
<td>Collateral received by the reporting institution</td>
<td>59,586</td>
<td>21,569</td>
</tr>
<tr>
<td>Loans on Demand</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Equity Instruments</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Debt securities</td>
<td>59,586</td>
<td>21,569</td>
</tr>
<tr>
<td>of which: covered bonds</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>of which: Asset backed securities</td>
<td>–</td>
<td>2</td>
</tr>
<tr>
<td>of which: issued by General Governments</td>
<td>49,542</td>
<td>15,759</td>
</tr>
<tr>
<td>of which: issued by Financial Corporations</td>
<td>4,635</td>
<td>2,824</td>
</tr>
<tr>
<td>of which: issued by Non Financial Corporations</td>
<td>6,565</td>
<td>1,381</td>
</tr>
<tr>
<td>Loans and Advances other than Loans on demand</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Other collateral received</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

The Group’s median asset encumbrance for 2018 was $25 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 2018 Annual Report and Accounts on pages 165 to 170.

### Table 90: Median values versus annual disclosure comparative

<table>
<thead>
<tr>
<th></th>
<th>2018 $billion</th>
<th>2017 $billion</th>
<th>2018 $billion</th>
<th>2017 $billion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encumbered Assets</td>
<td>25</td>
<td>23</td>
<td>25</td>
<td>23</td>
</tr>
<tr>
<td>Unencumbered Assets</td>
<td>672</td>
<td>655</td>
<td>674</td>
<td>640</td>
</tr>
</tbody>
</table>

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 2018 Annual Report and Accounts on pages 165 to 170.
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.

Table A: Capital resources of significant subsidiaries

| Local Regulator | 2018 | | | | | 2017 | | | | |
|-----------------|------|------|------|------|------|------|------|------|------|------|------|
| PRA | HKMA | FSS | MAS | BOU | PRA | HKMA | FSS | MAS | BOU | PRA | HKMA | FSS | MAS | BOU |
| Common Equity Tier 1 capital before regulatory adjustments | 45,477 | 8,295 | 4,375 | 1,599 | 111 | 46,508 | 7,588 | 4,481 | 1,563 | 118 |
| Regulatory adjustments | (6,924) | (957) | (641) | (247) | (2) | (6,777) | (656) | (244) | (184) | (1) |
| Common Equity Tier 1 capital | 38,553 | 7,338 | 3,734 | 1,352 | 110 | 39,731 | 6,632 | 4,236 | 1,379 | 117 |
| Additional Tier 1 (AT1) capital: instruments | 6,480 | 745 | – | 220 | – | 6,480 | 746 | – | 178 | – |
| Tier 1 capital (T1 = CET1 + AT1) | 45,033 | 8,082 | 3,374 | 1,572 | 110 | 46,211 | 7,378 | 4,236 | 1,557 | 117 |
| Tier 2 capital | 10,431 | 1,436 | 12 | 631 | 4 | 13,676 | 1,604 | 1 | 608 | 4 |
| Total capital (Tc = T1 + T2) | 55,464 | 9,518 | 3,746 | 2,203 | 113 | 59,887 | 9,882 | 4,237 | 2,165 | 121 |
| Total risk-weighted assets | 257,497 | 52,993 | 25,988 | 12,052 | 656 | 282,038 | 49,266 | 26,759 | 11,429 | 594 |

Capital Ratios

| | 2018 | | | | | 2017 | | | | |
|-----------------|------|------|------|------|------|------|------|------|------|------|------|
| PRA | HKMA | FSS | MAS | BOU | PRA | HKMA | FSS | MAS | BOU | PRA | HKMA | FSS | MAS | BOU |
| Common Equity Tier 1 | 15.0% | 13.8% | 14.4% | 11.2% | 16.7% | 14.1% | 13.5% | 15.8% | 12.1% | 19.7% |
| Tier 1 Capital | 17.5% | 15.3% | 14.4% | 13.0% | 16.7% | 16.4% | 15.0% | 15.8% | 13.6% | 19.7% |
| Total Capital | 21.5% | 18.0% | 14.4% | 18.3% | 17.3% | 21.2% | 18.2% | 15.8% | 18.9% | 20.3% |

1 Standard Chartered Bank disclosed in the table above aligns with the capital section of the 2018 Standard Chartered Bank Accounts
2 2017 Capital resources have been re-presented to align with local regulatory returns, which included late adjustments; for Standard Chartered Bank (Hong Kong) Ltd, Standard Chartered Bank Korea Ltd, Standard Chartered Bank (Singapore) Ltd.

Capital management – Standard Chartered Bank

The risk management approach section of the 2018 Annual Report and Accounts sets out our approach to capital management (pages 140 to 142). Tables B and C below summarise the consolidated capital position of Standard Chartered Bank.

Further disclosures of the legal entity Standard Chartered Bank may be found in the 2018 Standard Chartered Bank Accounts.
Table B: Capital resources

<table>
<thead>
<tr>
<th>Standard Chartered Bank</th>
<th>2018 Transitional position</th>
<th>2018 End point adjustment</th>
<th>2018 End point position</th>
<th>2017 Transitional position</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Common Equity Tier 1 (CET1) capital: instruments and reserves</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital instruments and the related share premium accounts</td>
<td>26,820</td>
<td>–</td>
<td>26,820</td>
<td>26,820</td>
</tr>
<tr>
<td>Of which: Share premium accounts</td>
<td>296</td>
<td>–</td>
<td>296</td>
<td>296</td>
</tr>
<tr>
<td>Retained earnings(^1)</td>
<td>19,352</td>
<td>–</td>
<td>19,352</td>
<td>19,533</td>
</tr>
<tr>
<td>Accumulated other comprehensive income (and other reserves)</td>
<td>(5,176)</td>
<td>–</td>
<td>(5,176)</td>
<td>(4,258)</td>
</tr>
<tr>
<td>Non-controlling interests (amount allowed in consolidated CET1)</td>
<td>3,829</td>
<td>–</td>
<td>3,829</td>
<td>3,805</td>
</tr>
<tr>
<td>Independently reviewed interim and year-end profits/(loss)(^2)</td>
<td>873</td>
<td>–</td>
<td>873</td>
<td>1,007</td>
</tr>
<tr>
<td>Foreseeable dividends net of scrip</td>
<td>(221)</td>
<td>–</td>
<td>(221)</td>
<td>(399)</td>
</tr>
<tr>
<td>Common Equity Tier 1 capital before regulatory adjustments</td>
<td>45,477</td>
<td>–</td>
<td>45,477</td>
<td>46,508</td>
</tr>
<tr>
<td><strong>Common Equity Tier 1 capital: regulatory adjustments</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional value adjustments</td>
<td>(564)</td>
<td>–</td>
<td>(564)</td>
<td>(574)</td>
</tr>
<tr>
<td>Intangible assets</td>
<td>(4,720)</td>
<td>–</td>
<td>(4,720)</td>
<td>(4,687)</td>
</tr>
<tr>
<td>Deferred tax assets that rely on future profitability</td>
<td>(115)</td>
<td>–</td>
<td>(115)</td>
<td>(125)</td>
</tr>
<tr>
<td>Fair value reserves related to gains or losses on cash flow hedges</td>
<td>27</td>
<td>–</td>
<td>27</td>
<td>46</td>
</tr>
<tr>
<td>Negative amounts resulting from the calculation of expected loss</td>
<td>(875)</td>
<td>–</td>
<td>(875)</td>
<td>(1,142)</td>
</tr>
<tr>
<td>Gains or losses on liabilities at fair value resulting from changes in own credit</td>
<td>(391)</td>
<td>–</td>
<td>(391)</td>
<td>(65)</td>
</tr>
<tr>
<td>Defined-benefit pension fund assets</td>
<td>(36)</td>
<td>–</td>
<td>(36)</td>
<td>(40)</td>
</tr>
<tr>
<td>Fair value gains and losses from own credit risk related to derivative liabilities</td>
<td>(127)</td>
<td>–</td>
<td>(127)</td>
<td>(59)</td>
</tr>
<tr>
<td>Exposure amounts which could qualify for risk weighting</td>
<td>(123)</td>
<td>–</td>
<td>(123)</td>
<td>(141)</td>
</tr>
<tr>
<td>Of which: securitisation positions</td>
<td>(110)</td>
<td>–</td>
<td>(110)</td>
<td>(125)</td>
</tr>
<tr>
<td>Of which: free deliveries</td>
<td>(13)</td>
<td>–</td>
<td>(13)</td>
<td>(16)</td>
</tr>
<tr>
<td>Total regulatory adjustments to Common Equity Tier 1</td>
<td>(6,924)</td>
<td>–</td>
<td>(6,924)</td>
<td>(6,777)</td>
</tr>
<tr>
<td><strong>Additional Tier 1 (AT1) capital: instruments</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital Instruments and the related share premium accounts</td>
<td>6,500</td>
<td>(1,500)</td>
<td>5,000</td>
<td>6,500</td>
</tr>
<tr>
<td><strong>Additional Tier 1 (AT1) capital before regulatory adjustments</strong></td>
<td>6,500</td>
<td>(1,500)</td>
<td>5,000</td>
<td>6,500</td>
</tr>
<tr>
<td><strong>AT1 regulatory adjustments</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct and indirect holdings by an institution of own AT1 instruments and subordinated loans</td>
<td>(20)</td>
<td>–</td>
<td>(20)</td>
<td>(20)</td>
</tr>
<tr>
<td>Total regulatory adjustments to AT1</td>
<td>(20)</td>
<td>–</td>
<td>(20)</td>
<td>(20)</td>
</tr>
<tr>
<td><strong>Additional Tier 1 capital</strong></td>
<td>6,480</td>
<td>(1,500)</td>
<td>4,980</td>
<td>6,480</td>
</tr>
<tr>
<td>Tier 1 capital (T1 = CET1 + AT1)</td>
<td>45,033</td>
<td>(1,500)</td>
<td>43,533</td>
<td>46,211</td>
</tr>
<tr>
<td><strong>Tier 2 (T2) capital: instruments and provisions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital instruments and the related share premium accounts</td>
<td>9,932</td>
<td>–</td>
<td>9,932</td>
<td>12,466</td>
</tr>
<tr>
<td>Qualifying items and the related share premium accounts subject to phase out from T2</td>
<td>326</td>
<td>(326)</td>
<td>–</td>
<td>899</td>
</tr>
<tr>
<td>Qualifying own funds instruments included in T2 issued by subsidiaries and held by third parties</td>
<td>203</td>
<td>–</td>
<td>203</td>
<td>341</td>
</tr>
<tr>
<td><strong>Tier 2 capital before regulatory adjustments</strong></td>
<td>10,461</td>
<td>(326)</td>
<td>10,135</td>
<td>13,706</td>
</tr>
<tr>
<td><strong>Tier 2 capital: regulatory adjustments</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct and indirect holdings by an institution of own Tier 2 instruments and subordinated loans</td>
<td>(30)</td>
<td>–</td>
<td>(30)</td>
<td>(30)</td>
</tr>
<tr>
<td>Total regulatory adjustments to Tier 2 capital</td>
<td>(30)</td>
<td>–</td>
<td>(30)</td>
<td>(30)</td>
</tr>
<tr>
<td><strong>Tier 2 capital</strong></td>
<td>10,431</td>
<td>(326)</td>
<td>10,105</td>
<td>13,676</td>
</tr>
<tr>
<td><strong>Total capital (TC = T1 + T2)</strong></td>
<td>55,464</td>
<td>(1,826)</td>
<td>53,638</td>
<td>59,887</td>
</tr>
</tbody>
</table>
### Table C: Capital ratios and risk-weighted assets

<table>
<thead>
<tr>
<th>amounts below the thresholds for deduction (before risk weighting)</th>
<th>$million</th>
<th>2018 Transitional position</th>
<th>2018 End point adjustment</th>
<th>2018 End point position</th>
<th>2017 Transitional position</th>
</tr>
</thead>
<tbody>
<tr>
<td>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)</td>
<td>1,666</td>
<td>–</td>
<td>1,666</td>
<td>597</td>
<td></td>
</tr>
<tr>
<td>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)</td>
<td>1,633</td>
<td>–</td>
<td>1,633</td>
<td>1,818</td>
<td></td>
</tr>
<tr>
<td>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)</td>
<td>925</td>
<td>–</td>
<td>925</td>
<td>1,105</td>
<td></td>
</tr>
</tbody>
</table>

### Risk-weighted assets

<table>
<thead>
<tr>
<th></th>
<th>$million</th>
<th>2018</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit risk</td>
<td>210,020</td>
<td>–</td>
<td>210,020</td>
<td>224,645</td>
</tr>
<tr>
<td>Credit valuation adjustment</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>503</td>
</tr>
<tr>
<td>Operational risk</td>
<td>28,386</td>
<td>–</td>
<td>28,386</td>
<td>33,850</td>
</tr>
<tr>
<td>Market risk</td>
<td>19,091</td>
<td>–</td>
<td>19,091</td>
<td>23,040</td>
</tr>
<tr>
<td>Total Risk Weighted Assets(^3)</td>
<td>257,497</td>
<td>–</td>
<td>257,497</td>
<td>282,038</td>
</tr>
</tbody>
</table>

### Capital ratios and buffers

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2018</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>CET1 capital</td>
<td>15.0%</td>
<td>–</td>
<td>15.0%</td>
<td>14.1%</td>
</tr>
<tr>
<td>Tier 1 capital</td>
<td>17.5%</td>
<td>(0.6)%</td>
<td>16.9%</td>
<td>16.4%</td>
</tr>
<tr>
<td>Total capital</td>
<td>21.5%</td>
<td>(0.7)%</td>
<td>20.8%</td>
<td>21.2%</td>
</tr>
</tbody>
</table>

### Capital buffers

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2018</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institution specific buffer requirement (CET1 requirement in accordance with article 92 (1) (a) plus capital conservation and countercyclical buffer requirement, plus systemically risk buffer, plus systemically important institution buffer expressed as a percentage of risk exposure amount.</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Of which: capital conservation buffer requirement</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Of which: countercyclical buffer requirement</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Of which systemic risk buffer requirement</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Of which: Global systemically important institution (G-SII) or Other Systemically important institution (O-SII) buffer.</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Common Equity Tier 1 available to meet buffers (as percentage of risk exposure amount)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

---

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>
<thead>
<tr>
<th>Local Regulator</th>
<th>PRA</th>
<th>HKMA</th>
<th>FSS</th>
<th>MAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit risk (excluding counterparty credit risk)²</td>
<td>187,494</td>
<td>38,929</td>
<td>3,285</td>
<td>20,534</td>
</tr>
<tr>
<td>Of which advanced IRB approach</td>
<td>148,229</td>
<td>35,578</td>
<td>3,017</td>
<td>14,522</td>
</tr>
<tr>
<td>Of which standardised approach</td>
<td>39,265</td>
<td>3,141</td>
<td>268</td>
<td>6,012</td>
</tr>
</tbody>
</table>

| Counterparty credit risk³ | 12,998 | 1,040 | 1,767 | 147 |
| Of which mark to market method | 10,551 | 844 | 1,233 | 104 |
| Of which CVA | 1,116 | 89 | 534 | 104 |

| Settlement risk | 3 | – | 1 | – |

| Securitisation exposures in the banking book | 3,219 | 258 | 533 | 43 |
| Of which IRB ratings based approach | 2,596 | 208 | – | – |
| Of which IRB supervisory formula approach | 623 | 50 | – | – |
| Of which standardised approach | – | – | 533 | 43 |

| Market risk | 19,091 | 1,527 | 3,006 | 241 |
| Of which internal model approaches | 11,862 | 949 | – | – |
| Of which standardised approach | 7,229 | 578 | 3,006 | 241 |

| Large exposures | – | – | – | – |

| Operational risk | 28,386 | 2,271 | 5,553 | 444 |
| Of which standardised approach | 28,386 | 2,271 | 5,553 | 444 |

| Amounts below the thresholds for deduction (subject to 250% risk weight) | 6,306 | 505 | 1,043 | 83 |

| Floor Adjustment | – | – | – | – |

| Total | 257,497 | 20,601 | 50,832 | 4,243 |

---

1. Standard Chartered Bank (Hong Kong) Ltd follows local disclosure rules for the OV1 table above, the net impact is $2,161 million. Total RWA: $52,993 million ($50,832 million + $2,161 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 D: Overview of RWA continued

<table>
<thead>
<tr>
<th>Local Regulator</th>
<th>Standard Chartered Bank</th>
<th>Standard Chartered Bank (HK) Ltd</th>
<th>Standard Chartered Bank Korea Ltd</th>
<th>Standard Chartered Bank (Singapore) Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Risk weighted assets $million</td>
<td>Regulatory capital requirement $million</td>
<td>Risk weighted assets $million</td>
<td>Regulatory capital requirement $million</td>
</tr>
<tr>
<td>PRA</td>
<td>199,620</td>
<td>15,970</td>
<td>36,942</td>
<td>3,116</td>
</tr>
<tr>
<td>HKMA</td>
<td>156,177</td>
<td>12,495</td>
<td>33,503</td>
<td>2,841</td>
</tr>
<tr>
<td>FSS</td>
<td>43,443</td>
<td>3,475</td>
<td>3,439</td>
<td>5,370</td>
</tr>
<tr>
<td>MAS</td>
<td>10,260</td>
<td>1,649</td>
<td>10,260</td>
<td>1,026</td>
</tr>
<tr>
<td>**Credit risk (excluding counterparty credit risk)**2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Of which advanced IRB approach</td>
<td>156,177</td>
<td>12,495</td>
<td>33,503</td>
<td>2,841</td>
</tr>
<tr>
<td>Of which standardised approach</td>
<td>43,443</td>
<td>3,475</td>
<td>3,439</td>
<td>5,370</td>
</tr>
<tr>
<td><strong>Counterparty credit risk</strong>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Of which mark to market method</td>
<td>11,952</td>
<td>966</td>
<td>651</td>
<td>55</td>
</tr>
<tr>
<td>Of which risk exposure amount for contributions to the default fund of a CCP</td>
<td>81</td>
<td>6</td>
<td>–</td>
<td>3</td>
</tr>
<tr>
<td>Of which CVA</td>
<td>503</td>
<td>40</td>
<td>404</td>
<td>32</td>
</tr>
<tr>
<td><strong>Settlement risk</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>1</td>
<td>1</td>
<td>–</td>
</tr>
<tr>
<td><strong>Securitisation exposures in the banking book</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Of which IRB ratings based approach</td>
<td>2,205</td>
<td>176</td>
<td>152</td>
<td>13</td>
</tr>
<tr>
<td>Of which IRB supervisory formula approach</td>
<td>482</td>
<td>39</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Of which standardised approach</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>Market risk</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Of which internal model approaches</td>
<td>12,776</td>
<td>1,022</td>
<td>85</td>
<td>7</td>
</tr>
<tr>
<td>Of which standardised approach</td>
<td>10,264</td>
<td>821</td>
<td>2,302</td>
<td>184</td>
</tr>
<tr>
<td><strong>Large exposures</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operational risk</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Of which standardised approach</td>
<td>33,850</td>
<td>2,708</td>
<td>5,274</td>
<td>422</td>
</tr>
<tr>
<td><strong>Amounts below the thresholds for deduction (subject to 250% risk weight)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7,306</td>
<td>585</td>
<td>1,469</td>
<td>118</td>
</tr>
<tr>
<td><strong>Floor Adjustment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>282,038</td>
<td>22,563</td>
<td>47,279</td>
<td>3,947</td>
</tr>
</tbody>
</table>

1. Standard Chartered Bank (Hong Kong) Ltd follows local disclosure rules for table OV1 above, the net impact is $1,987 million. Total RWA $49,266 million ($47,279 million + $1,987 million).
2. Credit risk (including counterparty credit risk) includes Non-credit obligation assets.
3. Counterparty credit risk includes assets which are assessed under both IRB and Standardised.
### Table E. Leverage ratio common disclosure – Significant Subsidiaries

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standard Chartered Bank</td>
<td>Standard Chartered Bank (HK) Ltd</td>
</tr>
<tr>
<td>Tier 1 capital</td>
<td>$43,533</td>
<td>$8,082</td>
</tr>
<tr>
<td>Total leverage ratio</td>
<td>$799,174</td>
<td>$151,275</td>
</tr>
<tr>
<td>Leverage ratio</td>
<td>5.4%</td>
<td>5.3%</td>
</tr>
</tbody>
</table>

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

### Table F: Market risk regulatory capital requirements for significant subsidiaries

<table>
<thead>
<tr>
<th>Market Risk regulatory capital Requirements for Trading Book</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standard Chartered Bank</td>
<td>Standard Chartered Bank (HK) Ltd</td>
</tr>
<tr>
<td>Local Regulators</td>
<td>PRA</td>
<td>HKMA</td>
</tr>
<tr>
<td>Interest rate</td>
<td>$515</td>
<td>$223</td>
</tr>
<tr>
<td>Equity</td>
<td>$662</td>
<td>$167</td>
</tr>
<tr>
<td>Options</td>
<td>$87</td>
<td>–</td>
</tr>
<tr>
<td>Commodity</td>
<td>$19</td>
<td>$13</td>
</tr>
<tr>
<td>Foreign exchange</td>
<td>$62</td>
<td>$4</td>
</tr>
<tr>
<td>Internal Models Approach</td>
<td>$1,022</td>
<td>$7</td>
</tr>
<tr>
<td>Total</td>
<td>$1,527</td>
<td>$241</td>
</tr>
<tr>
<td>Market Risk – RWA</td>
<td>$19,091</td>
<td>$3,006</td>
</tr>
</tbody>
</table>

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  Domestically Systemically Important Bank
DVA  Debit Valuation Adjustment
EAD  Exposure at default
EBA  European Banking Authority
ECAI  External Credit Assessment Institutions
ECL  Expected credit loss
EI  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
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
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
RWA  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

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Annualised Return on Capital</strong></td>
<td>The annualised return on capital represents the after-tax return on the shareholders’ funds of a company, adjusted for capital injections or withdrawals.</td>
</tr>
<tr>
<td><strong>Annualised Variation</strong></td>
<td>The annualised variation is a measure of the volatility of a financial instrument over a given period.</td>
</tr>
<tr>
<td><strong>Arrears</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Available-for-Sale</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Asset Backed Securities (ABS)</strong></td>
<td>Securities that represent an interest in an underlying pool of referenced assets. The referenced pool may 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.</td>
</tr>
<tr>
<td><strong>Attributable profit to ordinary shareholders</strong></td>
<td>Profit for the year after non-controlling interests and the declaration of dividends on preference shares classified as equity.</td>
</tr>
<tr>
<td><strong>Backtesting</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Basel III</strong></td>
<td>In December 2010, the BCBS issued the Basel III rules text, which were updated in June 2011, and represents the details of strengthened international 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.</td>
</tr>
<tr>
<td><strong>Basis point (bps)</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Capital conservation buffer</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Capital Requirements Directive (CRD)</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Central Counterparty (CCP)</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Common Equity Tier 1 (CET1) capital</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Common Equity Tier 1 (CET1) Ratio</strong></td>
<td>Common Equity Tier 1 capital as a percentage of risk-weighted assets.</td>
</tr>
<tr>
<td><strong>Countercyclical capital buffer (CCyB)</strong></td>
<td>The countercyclical capital buffer is part of a set of macroprudential instruments, designed to help counter procyclicality 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 ‘institutionspecific’ 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.</td>
</tr>
<tr>
<td><strong>Counterparty credit risk (CCR)</strong></td>
<td>The risk that a counterparty defaults before satisfying its obligations under a derivative, a securities financing transaction (SFT) or a similar contract.</td>
</tr>
<tr>
<td><strong>CRD IV</strong></td>
<td>Represents the Capital Requirements Directive (CRD) and Capital Requirements Regulation (CRR) that implement the Basel III proposals in Europe.</td>
</tr>
<tr>
<td><strong>Credit Conversion Factor (CCF)</strong></td>
<td>Either prescribed by CRR or modelled by the bank, an estimate of the amount the Group expects a customer to have drawn forward on a facility limit at the point of default.</td>
</tr>
<tr>
<td><strong>Credit Default Swap (CDS)</strong></td>
<td>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 a rating agency) on an underlying obligation.</td>
</tr>
<tr>
<td><strong>Credit quality step (CQS)</strong></td>
<td>Credit Quality Steps (CQS) are used to derive the risk-weight to be applied to exposures treated under the Standardised approach to credit risk.</td>
</tr>
<tr>
<td><strong>Credit risk</strong></td>
<td>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.</td>
</tr>
</tbody>
</table>
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 commodify or foreign exchange without making immediate payment, or where a bank delivers a debt or equity security, a commodify or foreign exchange without receiving immediate payment.

Funding valuation adjustments (FVA)  FVA reflects an adjustment to fair value in respect of derivative contracts associated with the funding costs that the market participant would incorporate when determining an exit price.

Greater China  Greater China includes the Group’s operation in the People’s Republic of China, the Hong Kong Special Administrative Region of the People’s Republic of China and Taiwan.

Global Systemically Important Bank (G-SIB)  Global financial institutions whose size, complexity and systemic interconnectedness mean that their distress or failure would cause significant disruption to the wider financial system and economic activity. The Financial Stability Board (FSB) and the Basel Committee on Banking Supervision (BCBS) have established a methodology to identify G-SIBs based on 12 principal indicators. The list of G-SIBs is re-assessed through annual re-scoring of banks and is a triennial review of the methodology. The G-SIB framework established by the FSB and the BCBS is implemented in the EU via CRD IV and G-SIBs are referred to as Global Systemically Important Institutions ("G-SIIs").

G-SIB buffer  Designation as G-SIB will result in the application of a CET1 capital buffer ("G-SIB buffer"). The G-SIB buffer is between 1 per cent and 3.5 per cent, depending on the allocation to one of five buckets based on the annual scoring. The G-SIB buffer has been phased in by 1 January 2019. In the EU, the G-SIB buffer is implemented via CRD IV as Global Systemically Important Institutions ("G-SII") buffer requirement.

Haircut  A haircut, or volatility adjustment, ensures the value of exposures and collateral are adjusted to account for the volatility caused by foreign exchange or maturity mismatches, when the currency and maturity of an exposure differ materially to the currency and maturity of the associated collateral.

Held-to-maturity 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.
<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individually assessed loan impairment provisions (IIP)</td>
<td>Impairment is measured for assets that are individually significant to the Group. Typically assets within the Corporate &amp; Institutional Banking segment of the Group are assessed individually.</td>
</tr>
<tr>
<td>Individual capital Guidance</td>
<td>Guidance given by the PRA to the Group about the amount and quality of capital resources to maintain.</td>
</tr>
<tr>
<td>Individual impairment Charge</td>
<td>The amount of individually assessed loan impairment provisions that are charged to the income statement in the reporting period.</td>
</tr>
<tr>
<td>Individual liquidity Guidance</td>
<td>Guidance given by the PRA to the Group about the amount, quality and funding profile of liquidity resources to maintain.</td>
</tr>
<tr>
<td>Institution</td>
<td>A credit institution or an investment firm as defined under the Capital Requirement Regulation (CRR).</td>
</tr>
<tr>
<td>Internal Capital Adequacy Assessment Process (ICAAP)</td>
<td>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.</td>
</tr>
<tr>
<td>Internal Liquidity Adequacy Assessment Process (ILAAP)</td>
<td>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.</td>
</tr>
<tr>
<td>Internal Model Approach (IMA)</td>
<td>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.</td>
</tr>
<tr>
<td>Interest Rate Risk (IRR)</td>
<td>Interest rate risk arises due to the investment into rate-sensitive assets, as well as from mismatches between debt issuance and placements.</td>
</tr>
<tr>
<td>Internal ratings-based approach (IRB)</td>
<td>Risk-weighting methodology in accordance with the Basel Capital Accord where capital requirements are based on a firm’s own estimates of prudential parameters.</td>
</tr>
<tr>
<td>Items belonging to regulatory high-risk categories</td>
<td>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.</td>
</tr>
<tr>
<td>Leverage ratio</td>
<td>A ratio 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.</td>
</tr>
<tr>
<td>Liquidity Coverage Ratio (LCR)</td>
<td>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.</td>
</tr>
<tr>
<td>Loans and advances</td>
<td>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.</td>
</tr>
<tr>
<td>Loss Given Default (LGD)</td>
<td>The percentage of an exposure that a lender expects to lose in the event of obligor default.</td>
</tr>
<tr>
<td>Mark-to-market Approach</td>
<td>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.</td>
</tr>
<tr>
<td>Market risk</td>
<td>The potential for loss of earnings or economic value due to adverse changes in financial market rates or prices.</td>
</tr>
<tr>
<td>Maturity</td>
<td>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.</td>
</tr>
<tr>
<td>MENAP</td>
<td>Middle East, North Africa and Pakistan (MENAP) includes the Group’s operation in Afghanistan, Bahrain, Egypt, Islamic Republic of Iran, Iraq, Jordan, Lebanon, Oman, Pakistan, Occupied Palestinian Territory, Qatar, Saudi Arabia and United Arab Emirates (UAE).</td>
</tr>
<tr>
<td>Minimum capital Requirement</td>
<td>Minimum capital required to be held for credit, market and operational risk.</td>
</tr>
<tr>
<td>Model validation</td>
<td>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.</td>
</tr>
<tr>
<td>MREL or minimum requirement for own fund and eligible liabilities</td>
<td>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.</td>
</tr>
<tr>
<td>Multilateral Development Banks (MDB)</td>
<td>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.</td>
</tr>
<tr>
<td>Net stable funding ratio (NSFR)</td>
<td>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.</td>
</tr>
<tr>
<td>North East (NE) Asia</td>
<td>North East (NE) Asia includes the Group’s operation in the Republic of Korea and Japan.</td>
</tr>
<tr>
<td>Operational risk</td>
<td>The potential for loss arising from the failure of people, process, or technology, or the impact of external events.</td>
</tr>
<tr>
<td>Over-the-Counter (OTC) traded products/OTC derivatives</td>
<td>A bilateral transaction that is not exchange traded and is valued using valuation models.</td>
</tr>
</tbody>
</table>
Pillar 1: The first Pillar of the three pillars of the 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 the 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 the 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 CRD, 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).

Scrub 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) which then issues new securities to investors at different levels 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 securitised remain exposures of the originating institution.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Securitisation position(s)</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>South Asia</strong></td>
<td>South Asia includes the Group’s operation in Bangladesh, India, Nepal and Sri Lanka.</td>
</tr>
<tr>
<td><strong>Specialised lending</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Special Purpose Entities (SPEs)</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Standardised Approach (SA)</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Stressed Value at Risk (SVAR)</strong></td>
<td>A regulatory market risk measure based on potential market movements for a continuous one-year period of stress for a trading portfolio.</td>
</tr>
<tr>
<td><strong>Through the cycle (TTC)</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Tier 1 capital</strong></td>
<td>Tier 1 capital comprises Common Equity Tier 1 capital plus Additional Tier 1 securities and related share premium accounts.</td>
</tr>
<tr>
<td><strong>Tier 1 capital ratio</strong></td>
<td>Tier 1 capital as a percentage of risk-weighted assets.</td>
</tr>
<tr>
<td><strong>Tier 2 capital</strong></td>
<td>Tier 2 capital comprises qualifying subordinated liabilities and related share premium accounts.</td>
</tr>
<tr>
<td><strong>Total Loss Absorbing Capacity (TLAC)</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Total Return Swap (TRS)</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Trading book</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Value at Risk (VAR)</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Write downs</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Wrong way risk</strong></td>
<td>Wrong way risk occurs when an exposure increase is coupled with a decrease in the credit quality of the obligor.</td>
</tr>
</tbody>
</table>
## Prudential disclosure reference

<table>
<thead>
<tr>
<th>CRR article ref.</th>
<th>Requirement summary</th>
<th>Disclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>431 (1)</td>
<td>Mandate for institutions to publicly disclose information laid down in Article 432.</td>
<td>The Group publishes Pillar 3 disclosures</td>
</tr>
<tr>
<td>(2)</td>
<td>Institutions to disclose operational risk information in accordance with the applicable approaches.</td>
<td>The Group applies the standardised approach, RWAs and capital requirements for operational risk are shown in Table 12: (OV1) on page 16 and in the 2018 Annual Reports and Accounts on page 221.</td>
</tr>
<tr>
<td>(3)</td>
<td>Institutions must have formal policy in place to comply with the prudential disclosure requirements.</td>
<td>The Group has a dedicated policy governing prudential disclosure requirements in place.</td>
</tr>
<tr>
<td>(4)</td>
<td>Explanation of ratings decisions to SMEs and corporates when asked.</td>
<td>The Group provides ratings decisions to SMEs and corporates upon request.</td>
</tr>
</tbody>
</table>

### Non-material, proprietary or confidential information

<table>
<thead>
<tr>
<th>CRR article ref.</th>
<th>Requirement summary</th>
<th>Disclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>432 (1)</td>
<td>Information may be omitted from disclosure if not regarded material.</td>
<td>Items omitted from disclosure are listed in section 1.3. Regulatory disclosure – Framework on page 3.</td>
</tr>
<tr>
<td>(2)</td>
<td>Information may be omitted from disclosure if regarded proprietary or confidential.</td>
<td>See Article 432(1) above</td>
</tr>
<tr>
<td>(3)</td>
<td>Disclosure must contain a list of omitted information with reasons clearly stated.</td>
<td>See Article 432(1) above</td>
</tr>
<tr>
<td>(4)</td>
<td>All material, non-confidential and non-proprietary information must be disclosed.</td>
<td>All material, non-confidential and non-proprietary information is disclosed by the Group in its 2018 Pillar 3 and 2018 Annual Report and Accounts.</td>
</tr>
</tbody>
</table>

### Frequency of disclosure

| Section 1.3 Regulatory disclosure – Framework sub-section on Frequency on page 3. |

### Means of disclosure

| 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 |

### Risk management objectives and policies

| Section 1.4 Risk management on pages 3 and 4. Risk management approach section in the 2018 Annual Report and Accounts on pages 193 to 217. |

| See Article 435 (1)(a) above |

| See Article 435 (1)(a) above |

| See Article 435 (1)(a) above |

| See Article 435 (1)(a) above |

| See Article 435 (1)(a) above |

| See Article 435 (1)(a) above |

| Key ratios and figures are highlighted in section 1.2 on pages 1 and 2 and in the 2018 Annual Report and Accounts on page 218. |

| 2018 Annual Reports and Accounts, Board of Directors, on page 57 to 59. |
CRR article ref. | Requirement summary | Disclosure
---|---|---
(2)(b) | The recruitment policy for the members of management body. | 2018 Annual Reports and Accounts, Board of Directors, on pages 57 to 59 and Governance and Nomination Committee on pages 85 to 88.
(2)(c) | Policy on diversity for members of the management body. | 2018 Annual Reports and Accounts, Governance and Nomination Committee, on pages 85 to 88. 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. | 2018 Annual Reports and Accounts, Corporate Governance, on pages 77 to 82.
(2)(e) | Description of information flow on risk to the management body. | 2018 Annual Reports and Accounts, Risk management, on pages 77 to 82.

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, proportionally consolidated, deducted from own funds, neither consolidated nor deducted.
Table 2: Regulatory Consolidation on page 5.
Table 3: Outline of the differences in the scope of consolidation (L3) on page 5.
(b)(ii) proportionally consolidated, See Article 436(b)(i) above
(b)(iii) deducted from own funds, See Article 436(b)(i) above
(b)(iv) Neither consolidated nor deducted. See Article 436(b)(i) above
(c) Explain any current or foreseen impediments to transfer of own funds to between parent and subsidiaries.
Note 32 of the 2018 Annual Report and Accounts on page 319.
(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. Capital base on page 12
(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)(a) above
(1)(d)(i) The nature and amounts of each prudential filter. Table 8 Capital based on page 12
(1)(d)(ii) The nature and amounts of each deduction made. Table 8 Capital based on page 12
(1)(d)(iii) The nature and amounts of non-deducted items. Table 8 Capital based on page 12
(1)(e) Description of restrictions applied to the calculation of own funds. There were no restrictions applied to the calculation of own funds.
(1)(f) Description of own funds calculation based on alternative methods. The Group follows own funds calculation set out in the CPR, 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 204 of the 2018 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 13.
(c) 8% risk weight to be assigned to exposures under the standardised approach for each asset class. Table 12: Overview of RWA (OV1) on page 16
(d)(i) 8% risk weight to be assigned to exposures under the IRB approach for each asset class, including all categories of retail and equity exposures. Table 12: Overview of RWA (OV1) on page 16
(d)(ii) 8% risk weight to be assigned to exposures under the IRB approach for exchange traded, private equity and other exposures. Table 12: Overview of RWA (OV1) on page 16
(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.

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Pillar 3 Disclosures 2018

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 2.4 Capital requirements on pages 16 to 19
(f) | Disclosure of own funds requirements calculated for operational risk by approaches used. | Table 12: Overview of RWA (CV1) on page 16

Exposure to counterparty credit risk

(a) | Methodology used to assign internal capital and credit limits for counterparty credit risk. | Section 4.2, Counterparty credit risk on page 75
(b) | Discussion of policies for securing collateral and establishing credit reserves. | Section 4.2, Counterparty credit risk on page 75
(c) | Discussion of policies on wrong-way risk exposures. | Section 4.2, Counterparty credit risk on page 75
(d) | The amount of collateral that would need to be provided in the event of downgrade. | Section 4.2, Counterparty credit risk on page 75
(e) | FV of contracts, netting benefits, netted current credit exposure, collateral held and net derivatives credit exposure. | Table 72: Impact of netting and collateral held on exposure values (CCR5-A) on page 76
(f) | Exposure values under the mark to market, original exposure, standardised or internal model methods as applicable. | Table 73: Analysis of CCR exposures by approach (CCR1) on page 76
(g) | The notional value of credit derivative hedges and CRM by types of exposure. | Table 75: Credit derivatives exposures (CCR8) on page 77
(h) | The notional amount of credit derivatives by own portfolio and intermediation activities, by products and by bought and sold. | Table 75: Credit derivatives exposures (CCR8) on page 77
(i) | Estimate of alfa. | The Group does not have Internal Model Method approval

Capital buffers

(1)(a) | Amount of credit exposures used in the calculation of countercyclical capital buffer by geography. | Table 10: Geographical distribution of credit exposures relevant for the calculation of the countercyclical capital buffer on page 14
(1)(b) | The amount of institution specific countercyclical capital buffer. | Table 11: Amount of institution specific countercyclical capital buffer on page 15

Indicators of global systemic importance

(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

(a) | Accounting definition of past due and impaired. | Glossary sections of Pillar 3 and the Annual Report and Accounts on pages 99 to 103 and 383 to 388 respectively Credit risk section of the 2018 Annual Report and Accounts on page 141
(b) | Approaches and methods used for determining specific and general credit risk adjustments. | Section 3.4. Exposure values on page 33 Note 8 of the 2018 Annual Report and Account on pages 252 to 256
(c) | Exposure and average exposure after accounting offsets and pre credit risk mitigations by asset classes. | Table 31: Total and average exposure at default (CRB-B) on page 34
(d) | Exposure by significant geographies and material exposures classes. | Table 32: Exposure at default by geography (CRB-C) on page 35
(e) | Exposures by industry and by exposure classes. | Table 33: Exposure at default by industry (CRB-D) on page 37
(f) | Exposures by residual maturity and by exposure class. | Table 34: Exposure at default by maturity (CRB-E) on page 39
(g)(i) | By industry or counterparty type the amount of impaired and past due exposures. | Table 35: Credit quality of exposures by exposure class and instrument (CR1-A) on page 41 Table 36: Credit quality of exposures by industry (CR1-B) on page 43
(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 37: Credit quality of exposures by geography (CR1-C) on page 44  
Table 38: Ageing of past due exposures (CR1-D) on page 44
(i)(i) | Reconciliation of changes in specific and general credit risk adjustments for impaired exposures by type of credit risk adjustments. | Table 39: Non-performing and forbore exposures (CR1-E) on page 45  
Table 40: Changes in the stock of general and specific credit risk adjustments (CR2-A) on page 46  
Table 41: Changes in the stock of defaulted and impaired loans and debt securities (CR2-B) on page 46
(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 ECAlS
444 | (a) The names of ECAlS used for the calculation of RWA under the standardised approach. | Section 3.8. standardised risk weight profile on page 62
(b) | The exposure classes for which the ECAlS are used for the standardised approach. | Section 3.8. standardised risk weight profile on page 62
(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 62
(d) | The relation between ECAlS and regulatory credit quality steps used within the standardised approach. | Section 3.8. standardised risk weight profile on page 62
(e) | The exposure values before and after credit risk mitigation for each credit quality step under the standardised approach. | Table 58: Standardised approach – exposures by asset classes and risk weights (pre CRM pre CCF) (CRS) on page 63  
Table 59: Standardised approach – exposures by asset classes and risk weights (post CRM post CCF) (CRS) on page 64  
Table 77: Standardised approach – CCR exposures by regulatory portfolio and risk (CCR3) on page 78

### Exposure to market risk
445 | The amount of market risk requirements calculated for the purposes of own funds requirements for position, FX, commodities risks and for specific interest rate risk of securitisation positions. | Table 12: (OV1) provides RWA and capital requirements for each risk category defined on page 16  
Table 66: Market risk regulatory capital requirements on page 72

### 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 page 84.
<table>
<thead>
<tr>
<th>CRR article ref.</th>
<th>Requirement summary</th>
<th>Disclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>(b)</td>
<td>Measure of upward and downward rate shocks by currency.</td>
<td>Table 84: Treasury Markets PV01 by currency on page 84</td>
</tr>
</tbody>
</table>

### Exposure to securitisation position

- **449 (a)** Description of the institution’s objectives in relation to securitisation activity
  - Section 3.9 Securitisation on page 65
- **449 (b)** The nature of other risks including liquidity risk inherent in securitised assets
  - Section 3.9 Securitisation on page 65
- **449 (c)** Description of underlying exposures
  - Section 3.9 Securitisation on page 65
- **449 (d)** The roles played by the institution in the securitisation process
  - Section 3.9 Securitisation on page 65
- **449 (e)** The extent of the institution’s involvement in the roles referred in (d)
  - Section 3.9 Securitisation on page 65
- **449 (f)** The monitoring of credit and market risk from securitisation exposures
  - Section 3.9 Securitisation on page 65
- **449 (g)** The use of hedging and unfunded protection to mitigate the risks of retained securitisation exposures
  - Section 3.9 Securitisation on page 65
- **449 (h)** The approaches to calculating securitisation risk-weighted assets
  - Section 3.9 Securitisation on page 65
- **449 (i)** The types of SSPE that the institution, as sponsor, uses to securitise third-party exposures
  - Section 3.9 Securitisation on pages 66 and 67, including Table 61 that lists securitization programmes where the Group acts as originator
- **449 (j)** 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 66
- **449 (j)(i)** 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.
- **449 (j)(ii)** Securitisation valuation methodologies
  - Section 3.9 Securitisation on page 66
- **449 (j)(iii)** Accounting treatment of synthetic securitisations
  - Section 3.9 Securitisation on page 66
- **449 (j)(iv)** 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.
- **449 (j)(v)** Recognition of liabilities for arrangements that could require the institution to provide financial support for securitised assets
  - Section 3.9 Securitisation on page 66
- **449 (k)** The use of ECAIs for securitisations exposures
  - Section 3.9 Securitisation on page 66
- **449 (l)** Where applicable, a description of the Internal Assessment Approach
  - Not applicable. The Group does not originate or sponsor asset-backed commercial paper programmes (ABCP)
- **449 (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
- **449 (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 62. Securitisation positions by risk-weight category on page 68
- **449 (n)(ii)** Retained securitisation exposures
  - Table 62. Securitisation positions by risk-weight category on page 68
- **449 (n)(iii)** Securitisation positions retained or purchased and the associated capital requirements
  - See Article 449(j)(v)
- **449 (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 61. Securitisation programmes (as originator) on page 67
- **449 (n)(v)** Securitisation positions that are deducted from own funds or risk-weighted at 1250%
  - Table 62. Securitisation positions by risk-weight category on page 68
- **449 (n)(vi)** The securitisation activity of the current period, including the amount of exposures securitised and recognised gain or loss on sale
  - Table 60. Securitisation: ABS purchased or retained on page 65
  - Table 62. Securitisation positions by risk-weight category on page 68
- **449 (o)(i)** Securitisation positions retained or purchased and the associated capital requirements
  - Table 62. Securitisation positions by risk-weight category on page 68
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<tr>
<td>(c)(i)</td>
<td>Re-securitisation exposures retained or purchased</td>
<td>Not applicable, the Group does not invest in re-securitisation exposures</td>
</tr>
<tr>
<td>(p)</td>
<td>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</td>
<td>Section 3.9 Securitisation sub section Capital Structuring &amp; Distribution Group Securitisation on page 66</td>
</tr>
<tr>
<td>(q)</td>
<td>For the trading book, outstanding exposures securitised by the institution and subject to a capital requirement for market risk</td>
<td>There are no trading book exposures originated by the Group</td>
</tr>
<tr>
<td>(r)</td>
<td>Whether the institution provided implicit support (Article 248(1)) and the impact on own funds</td>
<td>The Group does not provide implicit support within the terms of Article 248(1)</td>
</tr>
</tbody>
</table>

### 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. | 2018 Annual Reports and Accounts on pages 91 to 125 |
| 450 (1)(b) | Explanation of links between pay and performance. | 2018 Annual Reports and Accounts on pages 103 to 105 |
| 450 (1)(c) | Key design characteristics of the remuneration system. | 2018 Annual Reports and Accounts on page 95 |
| 450 (1)(d) | The ratios between fixed and variable remuneration. | 2018 Annual Reports and Accounts on page 106 |
| 450 (1)(e) | Information on the performance criteria for entitlement to shares, options and variable remuneration entitlements. | 2018 Annual Reports and Accounts on page 104 to 105 |
| 450 (1)(f) | Description of main parameters and rational for variable components and other non-cash benefits. | 2018 Annual Reports and Accounts on pages 104 to 105 |
| 450 (1)(g) | Quantitative information on remuneration by business areas. | 2018 Annual Reports and Accounts on page 124 |
| 450 (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. | 2018 Annual Reports and Accounts on pages 122 to 125 |
| 450 (1)(h)(ii) | The amount of variable compensation broken down by remuneration types. | See Article 450 (1)(h)(i) above |
| 450 (1)(h)(iii) | Amounts of outstanding deferred remuneration. | See Article 450 (1)(h)(i) above |
| 450 (1)(h)(iv) | The amounts of deferred remuneration during the year. | See Article 450 (1)(h)(i) above |
| 450 (1)(h)(v) | Amount of sign-on and severance payment made during the year and the number of beneficiaries. | See Article 450 (1)(h)(i) above |
| 450 (1)(h)(vi) | The amount of severance payments awarded during the year and the number of beneficiaries. | See Article 450 (1)(h)(i) above |
| 450 (1)(i) | The number of individuals receiving remuneration over EUR1 million in a financial year by pay bands. | 2018 Annual Reports and Accounts on page 124 |
| 450 (1)(j) | On request from the regulator the total remuneration of the management body. | Upon demand, not disclosed publicly |
| 450 (2) | Quantitative information to be made available at the level of members of the management body for institutions that are significant in size. | 2018 Annual Reports and Accounts on pages 101 to 102 |

### Leverage

| 451 (1)(a) | Calculation of leverage ratio and application of transitional arrangements. | Table 16: UK and CRR Leverage Ratio on page 20, Table 18: Leverage ratio common disclosure on page 21, Table 17: Summary of reconciliation of accounting assets and leverage exposure on page 20, Table 19: Leverage ratio: Split-up of on-balance sheet exposures on page 21 |
| 451 (1)(b) | Breakdown and reconciliation of total exposure measure to published financial statements. | Table 17: Summary of reconciliation of accounting assets and leverage exposure on page 20 |
| 451 (1)(c) | The amount of de-recognised fiduciary items. | The Group has no fiduciary items |
| 451 (1)(d) | Description of the processes used to manage excessive leverage. | Section 2.5 Leverage Ratio on page 19 |
| 451 (1)(e) | Description of factors impacting leverage ratio during the period. | Section 2.5 Leverage ratio on page 19 |
| 451 (2) | EBA mandate to issue ITS on common disclosure | Implementing Standard (EU)_2016/200 in 2016 |

### Use of the IRB Approach to credit risk

<p>| 452 (a) | Details of permission for the use of IRB approach received from authority | Section 3.3 Internal Ratings Based models on page 23, Table 45: Internal default grade probabilities and mapping to external ratings on page 51 |
| 452 (b) | Explanation and view of the structure of internal ratings and relation to external ratings | Table 45: Internal default grade probabilities and mapping to external ratings on page 51 |</p>
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<td>(b)(ii)</td>
<td>Explanation of the use of internal estimates other than those used for capital requirements calculation under the IRB approach</td>
<td>Section 3.6. Risk grade profile on page 47</td>
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<td>(b)(iii)</td>
<td>The process of managing and recognising credit risk mitigation</td>
<td>Section 3.7. Credit risk mitigation on page 60</td>
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<td>(b)(iv)</td>
<td>The control mechanisms for rating systems</td>
<td>Section 3.3. Internal Rating Based models on page 23</td>
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<td>(c)(i)</td>
<td>Description for internal ratings process for central governments and central banks</td>
<td>Section 3.3. Internal Rating Based models on page 23</td>
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<td>(c)(ii)</td>
<td>Description for internal ratings process for institutions</td>
<td>See Article 452(c)(ii)</td>
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<tr>
<td>(c)(iii)</td>
<td>Description for internal ratings process for corporates, including SMEs, specialised lending and purchased corporate receivables</td>
<td>See Article 452(c)(iii)</td>
</tr>
<tr>
<td>(c)(iv)</td>
<td>Description for internal ratings process for retail, including SMEs, exposures secured by immovable property and qualifying revolving exposures</td>
<td>See Article 452(c)(iv)</td>
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<td>(c)(v)</td>
<td>Description for internal ratings process for equities</td>
<td>The standardised approach is used for equities</td>
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<td>(d)</td>
<td>The exposure values for each of the exposure classes defined under IRB approach</td>
<td>Table 44: IRB – Credit risk exposures by exposure class on page 49</td>
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<tr>
<td>(e)(i)</td>
<td>For central governments and central banks, institutions, corporates and equity by obligor grades the total exposure amounts,</td>
<td>Table 46: IRB credit exposure by internal PD grade for Central governments or central banks (CR6) on page 52</td>
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<td>Table 47: IRB credit exposure by internal PD grade for Institutions (CR6) on page 53</td>
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<td>Table 48: IRB credit exposure by internal PD grade for Corporates (CR6) on page 54</td>
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<td>Table 49: IRB credit exposure by internal PD grade for Corporates Specialised Lending (CR6) on page 55</td>
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<td>Table 50: IRB credit exposure by internal PD grade for Corporates SME (CR6) on page 56</td>
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<td>(e)(ii)</td>
<td>The exposure weighted average risk weight</td>
<td>See Article 452(e)(ii)</td>
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<td>(e)(iii)</td>
<td>For institutions using own estimates of CCF, the RWA, the amount of undrawn commitments, and exposure-weighted average exposure values</td>
<td>See Article 452(e)(iii)</td>
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<td>(f)</td>
<td>For retail exposures either the disclosure of 452(e) or analysis of exposures against EL grades</td>
<td>Table 51: IRB credit exposure by internal PD grade for Retail (CR6) on page 57</td>
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<td>Table 52: IRB credit exposure by internal PD grade for Retail – SME (CR6) on page 58</td>
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<td>Table 53: IRB credit exposure by internal PD grade for Retail – Secured by real estate collateral (CR6) on page 59</td>
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<td>Table 54: IRB credit exposure by internal PD grade for Retail – Qualifying revolving (CR6) on page 60</td>
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<td>(g)</td>
<td>The actual specific credit risk adjustments compared to past experience by asset classes</td>
<td>Table 42: Regulatory expected loss on page 47</td>
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<td>(h)</td>
<td>Description of factors that impacted on loss experience</td>
<td>Section 3.5. Regulatory expected loss vs. impairment charge on page 47</td>
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<td>(i)</td>
<td>Analysis of estimates against actual outcomes for losses by asset classes over a period sufficient enough to assess the performance of the IRB models</td>
<td>Table 20: CIB model results on page 24</td>
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<td>Table 21: Retail model results on page 24</td>
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<td>(j)(i)</td>
<td>The exposure-weighted average LGD and PD in percentage for each exposure class by geography</td>
<td>Table 43: Exposure weighted average PD% and LGD% by geography on page 48</td>
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<td>(j)(ii)</td>
<td>For institutions that do not use own estimates of LGD, the weighted-average PD in percentage for each exposure class by geography</td>
<td>Table 43: Exposure weighted average PD% and LGD% by geography on page 48</td>
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**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 60 |
(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 |
<table>
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<td>(f)</td>
<td>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 conversion factors.</td>
<td>Table 56: Effect of guarantees and collateral on page 61</td>
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<tr>
<td>(g)</td>
<td>Total exposure value covered by guarantees or credit derivatives by all asset classes under the Standardised or IRB approaches.</td>
<td>See 453(f) above</td>
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**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 Management VaR on page 69  
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 70 |
| (a)(iv) | Description of the approaches used for backtesting and valuating the accuracy of internal models | Section 4.1 under the heading Backtesting on page 70 |
| (b)    | The scope of permission received | Section 4.1 under the heading Regulatory VaR and Management VaR on page 69 |
| (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 69 |
| (d)(i) | The highest, lowest and the mean of daily VaR over the reporting period at period end | Table 68 (MR3) in row VaR (10 day 99%) on page 73 |
| (d)(ii)| The highest, lowest and the mean of the stressed VaR over the reporting period at period end | Table 68 (MR3) in row Stressed VaR (10 day 99%) on page 73 |
| (d)(iii) | The highest, lowest and the mean of the risk numbers of correlation trading over the reporting period at period end | Table 68 (MR3) in row incremental risk capital charge (99.9%) on page 73  
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 69 (MR2-A) on page 73 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 70 and 71 (MR4) on page 74 |
## Summary of differences

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

The Group’s Pillar 3 Disclosures for 31 December 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.

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<td><strong>Basis of requirements</strong></td>
<td>➔ 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.</td>
<td>➔ 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.</td>
</tr>
<tr>
<td><strong>Basis of preparation</strong></td>
<td>➔ The quantitative credit risk disclosures in the Risk review are based on IFRS.</td>
<td>➔ 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.</td>
</tr>
<tr>
<td></td>
<td>➔ Loans and advances are analysed between the four client segments of Corporate &amp; Institutional, Commercial, Private and Retail Banking (split by industry classification codes)</td>
<td>➔ Loans and advances are analysed between those that are internal ratings basis (IRB) and standardised, split by standard CRR categories.</td>
</tr>
<tr>
<td></td>
<td>➔ Market risk disclosures are presented using VaR methodology for the trading and non- trading books</td>
<td>➔ Market risk and operational risk disclosures are based on the capital required.</td>
</tr>
<tr>
<td><strong>Coverage</strong></td>
<td>➔ All external assets which have an exposure to credit risk</td>
<td>➔ 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.</td>
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<td></td>
<td>➔ Market risk exposure is the trading and non-trading books</td>
<td>➔ 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.</td>
</tr>
<tr>
<td></td>
<td>➔ Liquidity risk analysis of contractual maturities, liquid assets and encumbered assets</td>
<td>➔ The Standardised Approach consistent with the CRR requirements is used to assess its regulatory operational risk capital requirement.</td>
</tr>
<tr>
<td><strong>Credit rating and measurement</strong></td>
<td>➔ Overview of credit risk management credit grading and the use of IRB models is on pages 198 to 200.</td>
<td>➔ Details of IRB and Standardised approach to credit risk is set out on pages 22 to 23.</td>
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<td></td>
<td>➔ Maximum exposure to credit risk set out on page 328</td>
<td>➔ For the IRB portfolio, page 51 provides an indicative mapping of the Group’s credit grades in relation to Standard &amp; Poor’s credit ratings.</td>
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<tr>
<td></td>
<td>➔ Internal credit grading analysis provided by business segment for both performing and non-performing loans and advances on page 146</td>
<td>➔ Minimum regulatory capital requirements for credit risk on page 16.</td>
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<tr>
<td></td>
<td>➔ External credit grading analysis for unimpaired debt securities and treasury bills is set out on page 172</td>
<td>➔ 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-weighted internal credit grade on pages 52 to 60 and 79 to 83.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>➔ Credit quality step analysis for Standardised portfolio is provided on pages 62 to 64.</td>
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### Summary of differences between Pillar 3 Disclosures and the Risk and capital review section of the Annual Report continued

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<td><strong>Credit risk mitigation</strong></td>
<td>➔ CRM approach is set out on page 198</td>
<td>➔ 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 60 to 62</td>
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<td></td>
<td>➔ Overview of collateral held and other credit risk mitigants provided on page 143.</td>
<td>➔ 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 65 to 68</td>
</tr>
<tr>
<td></td>
<td>➔ Quantitative overview of other risk mitigants including:</td>
<td>➔ 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 75 to 83</td>
</tr>
<tr>
<td></td>
<td>➔ Securitisations, where the Group transfers the rights to collect principal and interest on client loan assets to third parties</td>
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<td>➔ Master netting agreements, CSAs and cash collateral for derivatives</td>
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<td><strong>Loan portfolio</strong></td>
<td>➔ Group overview of the loan portfolio provided by business and by region is on pages 170.</td>
<td>➔ EAD by region, split between IRB and Standardised portfolios page 35 and by industry types on page 38</td>
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<td>Maturity analysis provided on page 169</td>
<td>➔ Maturity of EAD, split by IRB and Standardised on page 39</td>
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<td><strong>Problem credit management and provisioning</strong></td>
<td>➔ Provisioning approach set out on page 200 and definition of non-performing loans on page 146</td>
<td>➔ 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 47</td>
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<td>➔ 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 of page 151</td>
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<td>➔ Disclosures on non-performing loans can be found on page 150</td>
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<td><strong>Market risk</strong></td>
<td>➔ Details of the VaR methodology, and VAR (trading and non trading) is disclosed by risk type on pages 181</td>
<td>➔ 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.</td>
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<td>➔ Details on Group Treasury’s market risk, including a table showing a parallel shift in the yield curves, on page 182</td>
<td>➔ Market risk capital requirements for the trading book disclosed by risk type on page 72</td>
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