Pillar 3 Report 2018

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Forward looking statements

This document contains forward-looking statements within the meaning of the United States Private Securities Litigation Reform Act of 1995, including (but not limited to) those related to RBS Group in respect of: its regulatory capital position and related requirements, its financial position, profitability and financial performance (including financial, capital and operational targets), its access to adequate sources of liquidity and funding, increasing competition from new incumbents and disruptive technologies, its impairment losses and credit exposures under certain specified scenarios, substantial regulation and oversight, ongoing legal, regulatory and governmental actions and investigations, LIBOR, EURIBOR and other benchmark reform and RBS Group's exposure to economic and political risks (including in respect of Brexit and climate change), operational risk, conduct risk, cyber and IT risk and credit rating risk. In addition, forward-looking statements may include, without limitation, the words 'expect', 'estimate', 'project', 'anticipate', 'commit', 'believe', 'should', 'intend', 'plan', 'could', 'probability', 'risk', 'Value-at-Risk (VaR)', 'target', 'goal', 'objective', 'may', 'endeavour', 'outlook', 'optimistic', 'prospects' and similar expressions or variations on these expressions. These statements concern or may affect future matters, such as RBS Group's future economic results, business plans and current strategies. Forward-looking statements are subject to a number of risks and uncertainties that might cause actual results and performance to differ materially from any expected future results or performance expressed or implied by the forward-looking statements. Factors that could cause or contribute to differences in current expectations include, but are not limited to, legislative, political, fiscal and regulatory developments, accounting standards, competitive conditions, technological developments, interest and exchange rate fluctuations and general economic conditions. These and other factors, risks and uncertainties that may impact any forward-looking statement or RBSG's actual results are discussed in RBSG's UK 2018 Annual Report and Accounts (ARA). The forward-looking statements contained in this document speak only as of the date of this document and RBS Group does not assume or undertake any obligation or responsibility to update any of the forward-looking statements contained in this document, whether as a result of new information, future events or otherwise, except to the extent legally required.

Pillar 3 Report 2018

Attestation statement

We confirm that the 2018 Pillar 3 Report meets the relevant requirements for Pillar 3 disclosures and has been prepared in line with internal controls agreed by the Board.

As set out in the Compliance report of the 2018 Annual Report and Accounts, the Board is responsible for the system of internal controls that is designed to maintain effective and efficient operations, compliant with applicable laws and regulations. The system of internal control is designed to manage risk, or mitigate it to an acceptable residual level rather than eliminate it entirely. Systems of internal control can only provide reasonable and not absolute assurance against misstatement, fraud or loss.

The 2018 Pillar 3 Report was approved by the Board on 14 February 2019.

Katie Murray
Chief Financial Officer
Executive director, RBS Board

Bruce Fletcher
Chief Risk Officer
Member, Executive Committee

Disclosure framework

The Pillar 3 disclosures made by The Royal Bank of Scotland Group plc (RBSG) and its consolidated subsidiaries (together RBS or the Group) are designed to comply with the Capital Requirements Regulation (CRR). RBS's significant subsidiaries at 31 December 2018 were National Westminster Bank Plc (NWB Plc), The Royal Bank of Scotland plc (RBS plc, previously Adam & Company PLC), NatWest Markets Plc (NWM Plc) and Ulster Bank Ireland Designated Activity Company (UBI DAC). RBS determines its significant subsidiaries, in accordance with the CRR requirements for disclosure, as those entities whose total risk- weighted assets (RWAs) account for 5% or more of RBS's consolidated RWAs.

RBS's main risks are described in the Capital and risk management and the Risk factors section of the 2018 Annual Report and Accounts (ARA) and in the 2018 Pillar 3 Report. The glossary in each document explains terms used.

On 30 April 2018 following the completion of the first ring-fenced transfer scheme (RFTS), the business formerly known as The Royal Bank of Scotland plc was renamed NatWest Markets Plc (NWM Plc) and the business formerly known as Adam & Company PLC was renamed The Royal Bank of Scotland plc (RBS plc). The RFTS included the transfer of the majority of the former RBS plc Personal & Business Banking (PBB), Commercial & Private Banking (CPB) and certain parts of Central items and NatWest Markets business due to remain in the ring-fenced bank, to the subsidiaries of NatWest Holdings. Following this transfer the new RBS plc became a significant subsidiary for CRR reporting purposes and is included in the Pillar 3 Report where necessary. In this document NWM Plc and RBS plc disclosures refer to the renamed entities.

For RBS, NWB Plc, RBS plc and NWM Plc, the Pillar 3 disclosures in this report are based on the CRR as promulgated by the Prudential Regulation Authority (PRA). For UBI DAC, they are based on the CRR as implemented by the Central Bank of Ireland (CBI).

In this report, in line with the regulatory framework, the term credit risk excludes counterparty credit risk, unless specifically indicated otherwise.

Regulatory framework

The European Union (EU) has implemented the initial phase of Basel III capital framework through the CRR and the Capital Requirements Directive IV.

The framework is based on three Pillars:

- Pillar 1 - Minimum capital requirements: defines rules for the determination of the capital requirement relating to credit, counterparty credit, market and operational risk;
- Pillar 2 - Supervisory review process: requires banks to undertake an internal capital adequacy assessment process for risks not included in Pillar 1; and
- Pillar 3 - Market discipline: requires individual banks to disclose key information which allows investors and other market participants to understand their risk profiles.

Pillar 1 - Minimum capital requirements

The CRR determines minimum capital requirements predominantly by calculating RWAs for credit, counterparty credit, market and operational risks. Various RWA calculation approaches are available to banks, with differing levels of sophistication. The minimum capital requirement is then calculated as 8% of RWAs.

RBS uses the following approaches to calculate RWAs:

- Credit risk: the advanced internal ratings based (IRB) approach is used for most exposures. The standardised (STD) approach is used for exposures in certain portfolios.
- Counterparty credit risk: both the mark-to-market (mtm) method and the internal model method (IMM) are used for derivative transactions. The financial collateral comprehensive method is used for securities financing transactions.
- Securitisation: the IRB approach is used.
- Market risk: both the STD approach and the internal model approach (IMA) are used.
- Operational risk: the STD approach is used and is based on gross income. Refer to 2018 ARA Capital and risk management (C&RM) - Operational risk.

Pillar 2 - Supervisory review process

Pillar 2 comprises RBS's and its key subsidiaries' internal capital adequacy assessment process (ICAAP) and a supervisory review and evaluation process undertaken on an annual basis and focused on the amounts, types and distribution of capital which RBS considers adequate to cover the risks to which it is or may be exposed.

The ICAAP evaluates capital requirements for major sources of risk over the short and long term:

- Pillar 2A comprises risks that are not captured in Pillar 1 (such as non-traded interest rate risk (NTIRR), structural foreign exchange risk and pension risk) or not adequately captured in Pillar 1 (such as credit concentration risk); and
- Pillar 2B incorporates stress testing and scenario analysis, which serve as a basis for a forward-looking assessment of RBS's capital requirements in stress conditions and any resultant stress capital buffers.

RBS undertakes a risk assessment to ensure all material risks are identified, adequately managed and capitalised where appropriate.

Within Pillar 2A, RBS assesses credit concentration risk, certain aspects of traded market risk that are not fully captured in Pillar 1, non-traded interest rate risk (NTIRR), pension risk and operational risk to compensate for shortcomings of the Pillar 1 standardised approach. RBS uses economic capital models to estimate Pillar 2A capital charges for operational and credit concentration risk. For more information, refer to pages 111 and 162 of the 2018 ARA. Information regarding specific credit risk concentrations, such as sector or geography, is included within Pillar 3. Refer also to 2018 ARA – C&RM – Non-traded market risk and Pension risk.

Pillar 2B is based on stress testing and scenario analysis. It is used to assess the quantum and quality of capital required to be set aside to counteract the adverse impact of a severe but plausible stress on RBS's capital, and to ensure capital levels in stress conditions remain above minimum requirements.

The ICAAP submission is approved by the Board before it is delivered to the regulator and forms the basis of the supervisory review and the setting of the Individual Capital Guidance by the PRA. Refer to page 94 of the 2018 ARA.

Pillar 3 - Market discipline

RBS is committed to delivering leading practice risk and capital disclosures to ensure that stakeholders understand the risks faced by RBS. The Pillar 3 disclosures are designed to encourage and promote market transparency and stability. They represent a component of RBS's broader disclosures framework.

RBS publishes its Pillar 3 disclosures as required by and in accordance with the EU and UK regulatory frameworks.

RBS has not omitted any disclosures on the grounds that the information may be proprietary or confidential. Certain of RBS's subsidiaries in Europe publish capital and RWA data externally through an appropriate mechanism (such as websites and annual reports), thereby satisfying the European Banking Authority (EBA) requirements for disclosures in the member states. Outside the EU, local subsidiaries may make additional disclosures under Pillar 3 as required by their local regulators.

RBS continues to participate in the UK Finance drive towards consistent Pillar 3 disclosures for UK banks wherever possible.

It is possible that disclosures made by other banks, especially outside the UK, are not directly comparable with those in this report. Notes are included with the data tables to ensure transparency regarding the approaches used for the disclosures. At EU and global levels, different definitions and assumptions adopted by other banks can make direct comparison difficult.

Consolidation

RBSG is the parent entity for all authorised firms in the Group and is subject to consolidated supervision by the PRA. From 1 January 2019, the ring-fenced banking group, NatWest Holdings Limited, is also subject to consolidated supervision by the PRA.

Control

Inclusion of an entity in the statutory consolidation is driven by RBS's ability to exercise control over that entity. The regulatory consolidation applies a comparable test but consolidation is restricted to certain categories of entities. In accordance with PRA rules, non-financial and certain structured entities are excluded from the regulatory consolidation.

Significant influence or joint control

Where RBS does not have control of an entity but has more than 20% of the voting rights or capital of that entity, then it must be included in the regulatory consolidation on a pro-rata basis, unless it falls into one of the excluded categories or RBS has agreed a different treatment with the PRA (by obtaining permission). Such entities will only be included in the statutory consolidation on a pro-rata basis where RBS has joint control. Entities where RBS has significant influence will be equity accounted in the statutory consolidation. For further information see Note 10 Related undertakings in the 2018 ARA.

Impediments to the transfer of capital resources and aggregate capital deficiency

All RBS companies are subject to policies, governance and controls set centrally. Aside from regulatory requirements, there are no current or foreseen material, practical or legal impediments to the transfer of capital or prompt repayments of liabilities when due.

Regulatory disclosure developments

Phase 1 of the revised Pillar 3 framework of the Basel Committee on Banking Supervision (BCBS) was addressed by the EBA in guidelines implemented in December 2017. The guidelines introduced more specific guidance and prescribed tables and templates, regarded by the regulators as a significant step towards enhancing the consistency and comparability of banks' regulatory disclosures.

During 2018 new disclosure requirements were introduced by the EBA for IFRS 9 transitional arrangements. The PRA also requested early adoption of a small subsection of qualitative and quantitative tables from Phase 2 of the BCBS revised Pillar 3 framework. The Basel committee published Phase 3 of the Pillar 3 framework in December 2018.

Disclosure roadmap

Banks are required to disclose their material risks as part of the Pillar 3 framework. Most of this information is disclosed in the 2018 ARA, available at rbs.com. The 2018 ARA includes a range of risk factors and provides in-depth analysis on the specific risks to which RBS is or may be exposed. These Pillar 3 disclosures provide additional information over and above that contained in the 2018 ARA.

Key metrics for RBS are published as follows:

- Financial performance measures and ratios - 2018 ARA - Strategic report – 2018 Highlights.
- Key metrics – capital, leverage and liquidity for RBS, NWB Plc, RBS plc and UBI DAC in their respective ARAs – C&RM – Capital, liquidity and funding risk.

Certain Pillar 3 disclosures are included in the 2018 ARA as follows:

- Corporate governance – Directors' remuneration report.
- Strategic report - Risk overview.
- Corporate governance - Report of the Board Risk Committee
- Capital and risk management:
    - Risk management framework
    - Capital, liquidity and funding risk
    - Credit risk
    - Market risk
    - Operational risk
- Capital instruments - detailed terms - are found on the RBS Investor Relations website.
- Global Systemically Important Banks (GSIB) indicators at 31 December 2018 will be published on the RBS Investor Relations website in April 2019. The Financial Stability Board publishes the GSIB list around November each year which informs the requirement for the following 12 months transition.

Independent review

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

Internal Audit undertakes procedures to provide management and the Board with assurance relating to the adequacy and effectiveness of the processes, controls and governance framework over the production of the Pillar 3 disclosures.

Internal Audit includes within the scope of its assurance work, the modelling and management of the organisation's capital and liquidity risks. Internal Audit is independent from the risk management function, and therefore from those responsible for the development and independent validation activity. Any material gaps in control identified by Internal Audit are escalated through standard board reporting and action plans agreed with those accountable for the activity behind the control.

Capital, liquidity and funding

Capital and leverage

Capital consists of reserves and instruments issued that are available that have a degree of permanency and are capable of absorbing losses. A number of strict conditions set by regulators must be satisfied to be eligible to count as capital.

Capital adequacy risk is the risk that there is or will be insufficient capital and other loss absorbing debt instruments to operate effectively including meeting minimum regulatory requirements, operating within Board approved Group risk appetite and supporting its strategic goals.

Capital management is the process by which the Group ensures that it has sufficient capital and other loss absorbing instruments to operate effectively including meeting minimum regulatory requirements, operating within Board approved risk appetite, maintaining its credit rating and supporting its strategic goals. Capital management is critical in supporting the Group's business and is enacted through an end to end framework across the Group, its businesses and the legal entities through which it operates.

The Group manages capital having regard to regulatory requirements. Regulatory capital is monitored and reported on an individual regulated bank legal entity basis, which is the CRR transitional basis as relevant in the jurisdiction for significant subsidiaries of the Group. The Group itself is monitored and reported on a consolidated and CRR end-point basis.

Determination of capital sufficiency

In determining whether the Group holds sufficient capital and other loss absorbing debt instruments, the Group assesses the amount and type of capital under a number of different bases:

Going concern vs. gone concern view

Going concern: This determination of capital sufficiency is made on the basis that there is sufficient capital to absorb losses and remain a viable going concern. The Group is considered a going concern if it can operate in the foreseeable future to carry out its objectives and commitments without the need or intention on the part of management to liquidate.

Gone concern: This determination of capital sufficiency is made on the basis that there is sufficient capital and other loss absorbing instruments to enable an orderly resolution in the event of failure. Gone concern would apply if the Group had been deemed to fail, or is likely to fail by the Bank of England (BoE).

Spot vs. forward-looking view

Spot view: This determination of capital sufficiency is made on the basis of prevailing actual positions and exposures.

Forward-looking view: This determination of capital sufficiency is made on the basis of positions, balance and exposures under a forward looking view of the balance sheet in line with the Group's planning horizons and parameters. This analysis examines both base and stress views.

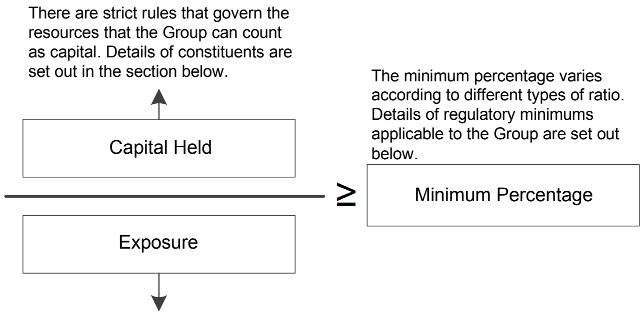
Regulatory vs. risk appetite view

Regulatory requirements: This determination of capital sufficiency is an assessment of whether the Group has sufficient capital and other loss absorbing debt instruments to meet the requirements of prudential regulation.

Risk appetite: This determination of capital sufficiency is an assessment of whether the Group has sufficient capital and other loss absorbing debt instruments to meet risk appetite limits. The Group's risk appetite framework establishes quantitative and qualitative targets and limits within which the Group operates to achieve its strategic objectives.

Capital sufficiency: going concern view

The regulatory requirement for going concern capital typically takes the form of a ratio of capital compared to a defined exposure amount having to exceed a minimum percentage:



There are two types of capital ratios based on different exposure types:

Ratio	Exposure type	Description
Capital adequacy ratio	Risk-weighted assets	Assesses capital held against both size and inherent riskiness of on and off-balance sheet exposures.
Leverage ratio	Leverage exposure	Assesses capital held against the size of on and off-balance sheet exposures (largely based on accounting value with some adjustments).

Constituents of capital held

The determination of what instruments and financial resources are eligible to be counted as capital is laid down by applicable regulation.

Capital is categorised by the CRR under two tiers (Tier 1 and Tier 2) according to the ability to absorb losses, degree of permanency and the ranking of absorbing losses. There are three broad categories of capital across these two tiers:

- CET1 capital. Common Equity Tier (CET1) capital must be perpetual and capable of unrestricted and immediate use to cover risks or losses as soon as these occur. This includes ordinary shares issued and retained earnings. CET1 capital absorbs losses before other types of capital and any loss absorbing instruments.
- AT1 capital. This is the second form of loss absorbing capital and must be capable of absorbing losses on a going concern basis. These instruments are either written down or converted into CET1 capital when a pre-specified CET1 ratio is reached. Coupons on Additional Tier 1 (AT1) issuances are discretionary and may be cancelled at the discretion of the issuer at any time. AT1 capital may not be called, redeemed or repurchased for five years from issuance.
- Tier 2 capital. Tier 2 capital is the Group's supplementary capital and provides loss absorption on a gone concern basis. Tier 2 capital absorbs losses after Tier 1 capital. It typically consists of subordinated debt securities with a minimum maturity of five years.

Capital, liquidity and funding

In addition to capital, other specific loss absorbing instruments including senior notes issued by RBS Group may be used to cover certain gone concern capital requirements which, in the EU, is referred to as minimum requirement for own funds and eligible liabilities (MREL). In order for liabilities to be eligible for MREL, a number of conditions must be met including the BoE being able to apply its stabilisation powers to them, including the use of bail-in provisions.

Capital adequacy

The Group has to hold a minimum amount and quality of capital to satisfy capital adequacy regulatory requirements.

Risk-weighted assets

Capital adequacy ratios compare the amount of capital held to RWAs. RWAs are a measure of the Group's assets and off-balance sheet positions that capture both the size and risks inherent in those positions.

RWAs are grouped into four categories:

Risk	Description
Credit	Risk of loss from a borrower failing to repay amounts due by the due date.
Counterparty credit	Risk of loss from a counterparty not meeting its contractual obligations. Also included is the risk of loss from changes in the fair value of derivative instruments.
Market	Risk of loss arising from fluctuations in market prices.
Operational	Risk of loss from inadequate or failed internal processes, people and systems or from external events.

Minimum percentage

Regulation defines a minimum percentage of capital compared to RWAs. The percentage comprises system-wide requirements that apply to all banks and a component where the percentage is specific to the Group. This is summarised as follows:

Type	Name	Description
System-wide	Pillar 1	Standard minimum percentages applicable to all banks. Must be held at all times
	Capital conservation, countercyclical and GSII buffers	Includes capital to absorb losses in times of stress, capital built up in response to credit conditions in the macro economic environment and for institutions of systemic importance.
Bank-specific	Pillar 2A	Captures risks that apply to individual banks that are either not adequately captured or not captured at all under Pillar 1. For example, pension risk is not captured in Pillar 1; therefore, capital that may need to be held against the risk is assessed under Pillar 2A. Must be held at all times.
	PRA buffer	Captures forward looking risks and potential losses under a severe stress scenario. The PRA buffer is a capital buffer that is designed to ensure that the Group can continue to meet minimum requirements (Pillar 1 and Pillar 2A) during a stressed period. The buffer also accommodates add-ons which may be applied by the regulator to cover Group Risk (subsidiary/sub-group capital requirements in excess of their share of the Group) and Risk Management and Governance scalars (which may be levied where Risk Management and Governance deficiencies have been identified by the regulator.

These minimum requirements are shown in more detail in the RBS ARA 2018 – Capital, liquidity and funding risk. These ratios apply in full from 1 January 2019. Before this date the transitional rules in place meant that the minimum capital requirements the Group had to comply with were lower. However, the Group, in line with other UK banks, has been reporting on a fully implemented basis since 2014.

The assessment of Pillar 2 requirements (including the PRA buffer) is an output from the Group's Internal Capital Adequacy Assessment Process ICAAP that is described in more detail on page 94 of the 2018 ARA. Pillar 2 also utilises the output of the Group's stress testing exercises which is described in more detail on pages 94 to 96 of the 2018 ARA.

Future changes to regulation

UK, EU and international standard and rule-making bodies have issued proposals, draft regulation and final standards on revising the level and measurement of capital adequacy ratios including the measurement of RWAs. This may affect the level of RWAs and the capital that the Group is required to hold in future years. Further details of prudential regulatory changes that may impact the Group's capital adequacy ratio are set out on page 9.

Leverage ratios

The Group has to hold a minimum amount and quality of capital to satisfy leverage ratio regulatory requirements. Unlike capital adequacy ratios, leverage ratio requirements do not consider the riskiness of the Group's positions.

The leverage exposure is broadly aligned to the accounting value of the Group's on and off-balance sheet exposures but subject to certain adjustments for trading positions, repurchase agreements and off balance sheet exposures.

In common with capital adequacy ratios, the leverage ratio requirement for the Group consists of a minimum requirement and a leverage ratio buffer. The leverage ratio requirements that the Group must meet may be subject to change from developing regulation. Further details are set out on page 9.

Capital, liquidity and funding

For more information regarding the minimum capital and leverage requirements that RBS must meet, refer to the RBS 2018 ARA – Capital, liquidity and funding risk.

MREL: capital sufficiency under the gone concern view
The Group will be required to hold sufficient capital and other loss absorbing instruments such that, in the event of failure, there can be an orderly resolution that minimises any adverse impact on financial stability whilst preventing public funds being exposed to loss.

In June 2018, the BoE published its policy statement on its approach to setting MREL and updated the indicative MREL requirements for the UK's systemically important banks.

MREL will be set by the BoE on a case-by-case basis but it has stated that it expects institutions that are G-SIBs and subject to a bail-in resolution strategy, such as the Group, to meet interim MREL requirements from 1 January 2019 and end state MREL requirements from 1 January 2022 as follows:

Interim MREL

1 January 2019	The minimum requirements set out in the Financial Stability Board total loss absorbing capacity standard being the higher of: • 16% of the Group's RWAs; and • 6% of the Group's leverage exposures.
1 January 2020 (1)	The higher of: • The sum of two times the Group's Pillar 1 requirement and one times the Group's Pillar 2A add-ons; and • Two times the applicable leverage ratio requirement for the Group.

End state MREL

1 January 2022 (1)	The higher of: • Two times the sum of the Group's Pillar 1 requirement and Group's Pillar 2A add-ons; and • The higher of: ○ Two times the applicable leverage ratio requirement for the Group; and ○ 6.75% of the Group's leverage exposure.

Note:
(1) Excludes buffers. In June 2018 the BoE published indicative data on MREL requirements for individual firms. RBS is expected to require loss-absorbing resources, including MREL and capital buffers (capital conservation, GSIB and countercyclical buffer), of 23.0% of RWAs by 1 January 2020, rising to 26.6% by 1 January 2022.

MREL may consist of capital and other loss absorbing instruments. In order for liabilities to be eligible for MREL, a number of strict conditions will be set by the BoE including the ability for the BoE to apply its stabilisation powers to those liabilities. In addition, liabilities must have an effective remaining maturity (taking account of any rights of early repayment to investors) of greater than one year.

The Group continues to expect to issue between £4 billion and £6 billion of MREL compliant senior debt from the single resolution entity (RBSG) each year to meet this requirement.

Internal MREL
In order that there is sufficient loss absorbing capacity pre-positioned across the Group, the proceeds of externally issued MREL will be down-streamed to material operating subsidiaries in the form of capital or other subordinated claims. This ensures that internal MREL will absorb losses before operating liabilities within operating subsidiaries.

In June 2018 the BoE published a Policy Statement on internal MREL and updated the MREL Statement of Policy. This policy statement sets out the framework that it will use to determine the distribution of MREL within banking groups. Under this framework, the BoE will set individual MRELs for all material entities within the Group and may also set individual MRELs for entities within the Group that are important from a resolution perspective. The framework requires that ring-fence bank sub-groups meet MREL requirements equivalent to 90% of the equivalent Group requirement, whilst other material legal entities are required to meet 75% of the equivalent Group requirement.

Double leverage
Double leverage is where one or more parent entities in a group funds some of the capital in its subsidiaries by raising debt or lower forms of capital externally. In April 2018, the PRA issued a Policy Statement related to the Group's policy and the assessment and mitigation of risks associated with double leverage. Associated analysis and assessments are now incorporated into the ICAAP submission and form part of the Group's assessment of its adequacy of capital resources.

Regulatory changes that may impact capital requirements
The Group faces a number of changes in prudential regulation that may adversely impact the amount of capital it must hold and consequently may increase funding costs and reduce return on equity. The nature and timing of implementation of a number of these changes are not currently final.

In 2019, the UK, EU and BCBS are expected to further develop prudential regulation in a number of areas including the approach to calculating credit risk and counterparty credit risk, capital floors and operational risk RWAs.

Regulatory changes are actively monitored by the Group including engagement with industry associations and regulators and participation in quantitative impact studies. Monitoring the changing regulatory landscape forms a fundamental part of capital planning and management of its business.

The Group believes that its strategy to focus on simpler, lower risk activities within a more resilient recovery and resolution framework will enable it to manage the impact of these changes.

Key prudential regulatory developments that have been published and may impact the Group are set out in the following table.

Capital, liquidity and funding

Summary of potential changes to regulation that may impact the Group's capital requirements

Area of development	Actual or potential key changes that might impact the Group's capital requirements	Source of changes/implementation date
Capital adequacy buffers	• A new systemic risk buffer will apply to the RBS ring-fenced bank sub-group from 1 January 2019. • The buffer will be set between 0% and 3%.	• Statement of Policy published by the PRA in December 2016. • Implementation date – 1 January 2019.
IFRS 16	• Recognition of Right of Use Asset on balance sheet for operating leases. • New asset will be risk weighted in accordance with treatment of other tangible assets.	• Implementation of IFRS 16 • Implementation date – 1 January 2019.
Securitisation RWAs	• Amendment of risk weights for securitisation exposures. • Introduction of Simple, Transparent and Standardised securitisation category.	• Application date 1 January 2019 with 1 year transition for securitisations issued prior to this date.
Credit risk RWAs	• Restriction in the scope of using internal models. • Avoidance of mechanistic reliance on external ratings. • For model-based RWAs, adoption of "input" floors for PD and LGD. • Revision to UK residential mortgage risk weights.	• Finalisation of Basel 3(2). • Expected implementation date – 1 January 2023. • Mortgage risk weight changes proposed by the PRA for 31 March 2019.
Leverage ratio	• Changes to the design and calibration of the framework with a focus on derivative exposures and margining.	• CRR 2(1) proposal. • Expected implementation date – 1 January 2022.
Large exposure framework	• Changes to the design and calibration of the capital base and large exposure limit. • Changes to the exposure measure to incorporate SA-CCR.	• CRR 2(1) proposal. • Expected implementation date – 1 January 2022.
Counterparty credit risk RWAs	• Introduction of new standardised approach ("SA-CCR") with greater risk sensitivity and incorporation of margining into PFE.	• CRR 2(1) proposal. • Expected implementation date – 1 January 2022.
Market risk RWAs	• Change from value at risk to expected shortfall models. • Implementation of a more risk-sensitive standardised approach. • Inclusion of risk of market illiquidity. • Transitional arrangement applying scalar of 65% 3 years from implementation.	• Staggered implementation across CRR 2(1) proposal and finalisation of Basel 3(2) • Expected CRR 2 implementation date – 1 January 2022
Capital floors	• Aggregate output floor to limit the benefit of internal models compared to standardised approach, noting that the standardised approach is being updated. • Extended transitional arrangements culminating in a floor of 72.5% by 1 January 2027.	• Finalising of Basel 3(2) • Expected implementation date – 1 January 2023.
Credit valuation adjustment (CVA) risk RWAs	• Alignment of CVA risk charge with revised standardised market risk framework. • Removal of modelled CVA risk methodology.	• Finalisation of Basel 3(2). • Expected implementation date – 1 January 2023.
Operational risk RWAs	• Revision of business indicator as proxy for size of operational risk. • Potential incorporation of bank-specific loss data into the calculation.	• Finalisation of Basel 3(2) • Expected implementation date – 1 January 2023.

Notes:
(1) CRR 2 relates to the European Commission publication on 23 November 2016 to amend the Capital Requirements Regulation. Additional amendments were proposed to amend the Capital Requirements Directive and Banking Recovery and Resolution Directive.
(2) Finalisation of the Basel 3 standards published by BCBS on 7 December 2017. These standards will subsequently be brought into national legislation via amendments to CRR or successor legislation.

Capital, liquidity and funding

Liquidity and funding

Definition

Liquidity consists of assets that can be readily converted to cash within a short timeframe at a reliable value. Liquidity risk is the risk of being unable to meet financial obligations as and when they fall due.

Funding consists of on-balance sheet liabilities that are used to provide cash to finance assets. Funding risk is the risk of not maintaining a diversified, stable and cost-effective funding base.

Regulatory oversight and liquidity framework

RBS operates across different jurisdictions and is subject to a number of regulatory regimes, with the key metrics being:

Ratio	Profile type	Description
Liquidity coverage ratio (LCR)	Liquidity profile	Coverage of 30 day net outflows in stress - effective from 1 October 2015.
Net stable funding ratio (NSFR)	Structural funding profile	Required and available stable funding sources less than and greater than 1 year timeline. The implementation timeframe for a binding NSFR requirement remains subject to uncertainty.

The principal regulator, the PRA, implements the CRR liquidity regime in the UK. To comply with the regulatory framework, RBS undertakes the following:

Activity	Description
Individual Liquidity Adequacy Assessment Process (ILAAP)	This is RBS's annual assessment of its key liquidity and funding vulnerabilities including control frameworks to measure and manage the risks.
Liquidity Supervisory Review and Evaluation Process (L-SREP)	An annual exercise with the PRA that involves a comprehensive review of the RBS ILAAP, liquidity policies and risk management framework. This results in the settings of the Individual Liquidity Guidance, which influences the size of the liquidity portfolio.

Regulatory developments

The BCBS published its final recommendations for implementation of the NSFR in October 2014. The proposal included an implementation date of 1 January 2018, by which time banks were expected to meet and maintain an NSFR of 100%. In November 2016 the European Commission (EC) included an NSFR of 100% as part of the CRR 2 package of legislative proposals. The timing of a binding NSFR coming into force in the EU and the UK remains subject to uncertainty. In the meantime, RBS uses the definitions from the BCBS guidelines, and its own interpretations, to calculate the NSFR.

Asset encumbrance

RBS evaluates the extent to which assets can be financed in a secured form (encumbrance), but certain asset types lend themselves more readily to encumbrance. The typical characteristics that support encumbrance are an ability to pledge those assets to another counterparty or entity through operation of law without necessarily requiring prior notification, homogeneity, predictable and measurable cash flows, and a consistent and uniform underwriting and collection process. Retail assets including residential mortgages, credit card receivables and personal loans display many of these features.

RBS categorises its assets into three broad groups; assets that are:

- Already encumbered and used to support funding currently in place via own asset securitisations, covered bonds and securities repurchase agreements.
- Pre-positioned with central banks as part of funding schemes and those encumbered under such schemes.
- Not currently encumbered. In this category, RBS has in place an enablement programme which seeks to identify assets which are capable of being encumbered. The programme identifies required actions to facilitate such encumbrance without impacting customer relationships or servicing.

Encumbered and unencumbered assets for the year ended 31 December 2018, based on the requirements in Part Eight of CRR and related guideline issued by the EBA in June 2018, are set out on page 33.

Capital, liquidity and funding

CAP 1: CAP and LR: Capital and leverage ratios - RBS and significant subsidiaries

Capital, RWAs and leverage on a PRA transitional basis for RBS and its significant subsidiaries (CBI basis for UBI DAC) are set out below. For RBS, end point metrics and measures are also included as the main basis for monitoring. The movements in NWB Plc and RBS plc reflect the various transfers as part of ring-fencing implementation in addition to the annual phasing-in of the CRR transition rules relating to the capital deduction for significant investment in financial institutions. At 31 December 2018, 90% was treated as capital deduction and 10% as RWAs compared with 80% and 20% respectively at 31 December 2017.

	2018					2017			
	RBS	NWB Plc	RBS plc	UBI DAC	NWM Plc	RBS	NWB Plc	UBI DAC	NWM Plc
Capital adequacy ratios - transitional (1)	%	%	%	%	%	%	%	%	%
CET1	16.2	17.4	13.2	27.5	15.6	15.9	23.5	30.5	14.7
Tier 1	19.2	20.4	16.0	27.5	18.0	19.7	23.5	30.5	16.1
Total	23.4	24.5	20.2	30.4	21.5	23.9	30.9	33.3	18.7
Capital adequacy ratios - end point									
CET1	16.2					15.9			
Tier 1	18.4					17.9			
Total	21.8					21.3			
Capital - transitional	£m	£m	£m	£m	£m	£m	£m	£m	£m
CET1	30,639	13,138	4,569	3,996	6,369	31,957	13,301	5,356	20,169
Tier 1	36,223	15,389	5,538	3,996	7,352	39,554	13,301	5,356	21,966
Total	44,174	18,490	6,984	4,414	8,757	47,931	17,536	5,851	25,600
Capital - end point									
CET1	30,639					31,957			
Tier 1	34,690					35,998			
Total	41,173					42,763			
RWAs									
Credit risk	137,824	63,548	28,683	13,387	9,234	144,676	48,575	16,079	94,259
Counterparty credit risk	13,639	325	—	122	13,285	15,395	266	321	13,691
Market risk	14,837	50	23	47	14,106	17,012	136	68	15,809
Operational risk	22,391	11,660	5,819	958	4,152	23,840	7,724	1,101	13,052
	188,691	75,583	34,525	14,514	40,777	200,923	56,701	17,569	136,811
CRR leverage - transitional									
Tier 1 capital	36,223	15,389	5,538	3,996	7,352	39,554	13,301	5,356	21,966
Exposure	644,498	295,483	98,264	27,259	148,502	679,120	213,474	27,765	390,055
Leverage ratio (%)	5.6	5.2	5.6	14.7	5.0	5.8	6.2	19.3	5.6
CRR leverage - end point									
Tier 1 capital	34,690					35,998			
Exposure	644,498					679,120			
Leverage ratio (%)	5.4					5.3			
Average Tier 1 capital	35,701					36,360			
Average exposure (2)	665,198					692,507			
Average leverage ratio (%)	5.4					5.3			
UK leverage - end point									
Tier 1 capital	34,690					35,998			
Exposure	559,514					587,095			
Leverage ratio (%)	6.2					6.1			
Average Tier 1 capital	35,701					36,360			
Average exposure (2)	573,825					602,984			
Average leverage ratio (%)	6.2					6.0			
UK GSIB leverage (3)									
CET1 buffer	1,469					1,027			

Notes:
(1) CRR end-point for RBS set by the PRA is 10.50% minimum total capital ratio, with a minimum CET1 ratio of 7.00%. These minimum ratios exclude the G-SIB buffer and any bank specific buffers, including Pillar 2A and PRA buffer. See CAP 5a and 5b for more information regarding the countercyclical capital buffer requirement.
(2) Based on the daily average of on-balance sheet items and three month-end average of off-balance sheet items (2017 - three month-end average of both on and off-balance sheet items).
(3) The PRA minimum leverage ratio requirement is supplemented with a G-SII additional leverage ratio buffer rate, currently 0.2625% under transitional arrangements (2017 - 0.175%) increasing to 0.35% from 1 January 2019.

Capital, liquidity and funding

KM1: BCBS 2 & EBA IFRS 9-FL: Key metrics – RBS

The table below reflects the key metrics template in the BCBS consolidated Pillar 3 framework and the EBA's IFRS 9 template for RBS. RBS has elected to take advantage of the transitional capital rules in respect of expected credit losses. This has a negligible effect on CET1 in 2018, however this would mitigate the impact on capital in adverse conditions. The transitional rules reduce the full CET1 effect by 95%, 85%, 70%, 50% and 25% in each of the first five years of IFRS 9 adoption. Capital and leverage ratios presented are based on end point CRR rules.

BCBS2 KM1	EBA IFRS 9-FL	Capital	31 December 2018 £m	30 September 2018 £m	30 June 2018 £m	31 March 2018 £m	31 December 2017 £m
1	1	Common equity tier 1 (CET1)	30,639	32,455	31,950	33,334	31,957
	2	Common equity tier 1 (CET1) capital as if IFRS 9 transitional arrangements had not been applied	30,639	32,455	31,950	33,334	n/a
2	3	Tier 1	34,690	36,506	36,001	37,375	35,998
	4	Tier 1 capital as if IFRS 9 transitional arrangements had not been applied	34,690	36,506	36,001	37,375	n/a
3	5	Total capital	41,173	42,961	42,660	43,756	42,763
	6	Total capital as if IFRS 9 transitional arrangements had not been applied	41,173	42,961	42,660	43,756	n/a
		Risk-weighted assets (amounts)					
4	7	Total risk-weighted assets (RWAs)	188,691	194,467	198,780	202,700	200,923
	8	Total risk-weighted assets as if IFRS 9 transitional arrangements had not been applied	188,691	194,467	198,780	202,700	n/a
		Risk-based capital ratios as a percentage of RWA	%	%	%	%	%
5	9	Common equity tier 1 ratio	16.2	16.7	16.1	16.4	15.9
	10	Common equity tier 1 ratio as if IFRS 9 transitional arrangements had not been applied	16.2	16.7	16.1	16.4	n/a
6	11	Tier 1 ratio	18.4	18.8	18.1	18.4	17.9
	12	Tier 1 ratio as if IFRS 9 transitional arrangements had not been applied	18.4	18.8	18.1	18.4	n/a
7	13	Total capital ratio	21.8	22.1	21.5	21.6	21.3
	14	Total capital ratio as if IFRS 9 transitional arrangements had not been applied	21.8	22.1	21.5	21.6	n/a
		Additional CET1 buffer requirements as a percentage of RWA					
8		Capital conservation buffer requirement (2.5% from 2019)	2.5	2.5	2.5	2.5	2.5
9		Countercyclical capital buffer requirement (1)	0.7	0.4	0.4	—	—
10		Bank GSIB and/or DSIB additional requirements	1.0	1.0	1.0	1.0	1.0
11		Total of CET1 specific buffer requirements (8+9+10)	4.2	3.9	3.9	3.5	3.5
12		CET1 available after meeting the bank's minimum capital requirements (2)	11.7	12.2	11.6	11.9	11.4
		Leverage ratio	£m	£m	£m	£m	£m
13	15	CRR leverage ratio exposure measure	644,498	676,198	693,344	693,181	679,120
		UK leverage ratio exposure measure	559,514	580,266	597,694	602,489	587,095
			%	%	%	%	%
14	16	CRR leverage ratio	5.4	5.4	5.2	5.4	5.3
	17	CRR leverage ratio as if IFRS 9 transitional arrangements had not been applied	5.4	5.4	5.2	5.4	n/a
		UK leverage ratio	6.2	6.3	6.0	6.2	6.1
		Liquidity coverage ratio					
15		Total high-quality liquid asset (HQLA)	137,905	135,653	131,131	127,084	122,900
16		Total net cash outflows	87,530	87,595	87,427	87,640	87,600
17		LCR ratio % (3)	158	155	150	145	140
		Net stable funding ratio (NSFR)					
18		Total available stable funding	375,909	374,358	374,710	366,005	370,350
19		Total required stable funding	266,087	268,932	267,107	266,706	281,517
20		NSFR % (4)	141	139	140	137	132

Notes:
(1) See CAP 5a and 5b for more information regarding the countercyclical capital buffer requirement.
(4) This represents the CET1 ratio less the CRR minimum of 4.5%
(2) The LCR uses the simple average of the preceding 12 monthly periods ending on the quarterly reporting date as specified in the table. The LCR reported here differs from the period end LCR used for internal monitoring and therefore disclosed in the 2018 ARA.
(3) In November 2016, the European Commission published its proposal for NSFR rules within the EU as part of its CRR2 package of regulatory reforms. CRR2 NSFR is expected to become the regulatory requirement in future within the EU and the UK. RBS has changed its policy on the NSFR to align with its interpretation of the CRR2 proposals with effect from 1 January 2018. The pro forma CRR2 NSFR at 31 December 2017 under CRR2 proposals is estimated to be 139%.

Capital, liquidity and funding

Key points

Capital and leverage

RBS

- The CET1 ratio increased by 30 basis points to 16.2% as a result of lower RWAs, £1,622 million attributable profit and the 30 basis point impact at 1 January 2018 on the implementation of IFRS9 partially offset by the impact of the pension contribution in Q2. CET1 capital reflects the 2p interim dividend paid to ordinary shareholders and the foreseeable H2 dividends of 3.5p final dividend and 7.5p special dividend.
- RWAs reduced by £12.2 billion driven by decreases across credit and counterparty credit risk of £8.6 billion, market risk £2.2 billion and a £1.4 billion decrease in operational risk as a result of the annual recalculation. The credit risk decrease was primarily due to reduced asset size due to repayments partially offset by increases reflecting various LGD model changes. Table EU CR8 provides additional details. The market risk decrease reflects RWA reductions under both internal model and standardised approaches. Table MR 2_B provides additional details.
- Both the CRR end-point and UK leverage ratios increased to 5.4% and 6.2% respectively in line with the balance sheet reduction.
- The average CRR leverage ratio and UK leverage ratios increased to 5.4% and 6.2% respectively.

NWB Plc

- The CET1 ratio decreased by 610 basis points from 23.5% to 17.4%, mainly due to increased RWAs resulting from the Ring-Fencing Transfer Scheme (RFTS). These transfers into NWB Plc included Treasury Services and a significant portion of the ring-fenced group liquidity portfolio. The RFTS increased RWAs by £10.7 billion in H1 2018, with further increases in credit risk RWAs in H2 driven by increased asset size due to lending growth and various LGD model changes.
- The leverage ratio decreased to 5.2%, reflecting the RFTS assets partially offset by increased Tier 1 capital.

RBS plc

- Immediately prior to the RFTS in H1 2018, the Bank was recapitalised in order to maintain capital sufficiency thresholds. CET1 includes attributable profit of £690 million less foreseeable dividends of £1.8 billion, resulting in a CET1 ratio of 13.2%. RWAs increased by £34.1 billion due to the RFTS in H1 2018, credit risk RWAs reduced in H2 2018 mainly reflecting reduced asset size due to repayments.
- The leverage ratio decreased to 5.6% as a result of the capital and asset movements explained above.

UBI DAC

- The CET1 ratio decreased to 27.5% following capital repatriation as part of ring-fencing implementation in January 2018 and a reduction in RWAs. RWAs decreased by £3.1 billion due to the sale of a portfolio of non performing loans and risk parameters improvements, primarily mortgages.
- The leverage ratio decreased as a result of the capital repatriation exercise.

NWM Plc

- The CET1 ratio increased 600 bps from 14.7% at December 2017 to 20.7% at H1 2018, as the RWA decrease related to the RFTS and transfer of ownership of NatWest Holdings to RBSG. In H2 2018 the CET1 ratio subsequently reduced by 510 bps to 15.6% following the interim dividend payable to its parent company of £2.5 billion in Q4 2018.
- NWM plc issued USD 950 million AT1 instruments in Q4 2018.
- The RFTS decreased RWAs by £49.3 billion in H1 2018. There were reductions in significant investments standardised credit risk RWAs of £24.3 billion due to the CRR phase-in in Q1 2018 and a further reduction of £15.0 billion relating to significant investments following the transfer of the investment in NatWest Holdings to RBSG.
- The leverage ratio decreased to 5.0% as a result of the reduction in Tier 1 capital.

Capital, liquidity and funding

EBA IFRS 9-FL: EBA Key metrics - significant subsidiaries

The table below shows key metrics as required by the EBA relating to IFRS 9 for RBS and its significant subsidiaries. RBS has elected to take advantage of the transitional capital rules in respect of expected credit losses. This has a negligible effect on CET1 in 2018, however this would mitigate the impact on capital in adverse conditions. The transitional rules reduce the full CET1 effect by 95%, 85%, 70%, 50% and 25% in each of the first five years of IFRS 9 adoption.

Capital measures are on a CRR transitional basis.

	31 December 2018				
	RBS	NWB Plc	RBS plc	UBI DAC	NWM Plc
Available capital (amounts) - transitional	£m	£m	£m	£m	£m
1 Common equity tier 1	30,639	13,138	4,569	3,996	6,369
2 Common equity tier 1 capital as if IFRS 9 transitional arrangements had not been applied	30,639	13,138	4,569	3,996	6,369
3 Tier 1	36,223	15,389	5,538	3,996	7,352
4 Tier 1 capital as if IFRS 9 transitional arrangements had not been applied	36,223	15,389	5,538	3,996	7,352
5 Total capital	44,174	18,490	6,984	4,414	8,757
6 Total capital as if IFRS 9 transitional arrangements had not been applied	44,174	18,490	6,984	4,414	8,757
Risk-weighted assets (amounts)					
7 Total risk-weighted assets	188,691	75,583	34,525	14,514	40,777
8 Total risk-weighted assets as if IFRS 9 transitional arrangements had not been applied	188,691	75,583	34,525	14,514	40,777
Risk-based capital ratios as a percentage of RWAs	%	%	%	%	%
9 Common equity tier 1 ratio	16.2	17.4	13.2	27.5	15.6
10 Common equity tier 1 ratio as if IFRS 9 transitional arrangements had not been applied	16.2	17.4	13.2	27.5	15.6
11 Tier 1 ratio	19.2	20.4	16.0	27.5	18.0
12 Tier 1 ratio as if IFRS 9 transitional arrangements had not been applied	19.2	20.4	16.0	27.5	18.0
13 Total capital ratio	23.4	24.5	20.2	30.4	21.5
14 Total capital ratio as if IFRS 9 transitional arrangements had not been applied	23.4	24.5	20.2	30.4	21.5
Leverage ratio					
15 CRR leverage ratio exposure measure (£m)	644,498	295,483	98,264	27,259	148,502
16 CRR leverage ratio (%)	5.6	5.2	5.6	14.7	5.0
17 CRR leverage ratio (%) as if IFRS 9 transitional arrangements had not been applied	5.6	5.2	5.6	14.7	5.0

	30 September 2018				
	RBS	NWB Plc	RBS plc	UBI DAC	NWM Plc
Available capital (amounts) - transitional	£m	£m	£m	£m	£m
1 Common equity tier 1	32,455	12,170	6,090	3,958	9,277
2 Common equity tier 1 capital as if IFRS 9 transitional arrangements had not been applied	32,455	12,170	6,090	3,958	9,277
3 Tier 1	40,092	14,453	7,059	3,958	11,231
4 Tier 1 capital as if IFRS 9 transitional arrangements had not been applied	40,092	14,453	7,059	3,958	11,231
5 Total capital	48,015	16,097	8,477	4,397	14,923
6 Total capital as if IFRS 9 transitional arrangements had not been applied	48,015	16,097	8,477	4,397	14,923
Risk-weighted assets (amounts)					
7 Total risk-weighted assets	194,467	73,628	36,623	16,356	40,839
8 Total risk-weighted assets as if IFRS 9 transitional arrangements had not been applied	194,467	73,628	36,623	16,356	40,839
Risk-based capital ratios as a percentage of RWAs	%	%	%	%	%
9 Common equity tier 1 ratio	16.7	16.5	16.6	24.2	22.7
10 Common equity tier 1 ratio as if IFRS 9 transitional arrangements had not been applied	16.7	16.5	16.6	24.2	22.7
11 Tier 1 ratio	20.6	19.6	19.3	24.2	27.5
12 Tier 1 ratio as if IFRS 9 transitional arrangements had not been applied	20.6	19.6	19.3	24.2	27.5
13 Total capital ratio	24.7	21.9	23.1	26.9	36.5
14 Total capital ratio as if IFRS 9 transitional arrangements had not been applied	24.7	21.9	23.1	26.9	36.5
Leverage ratio					
15 CRR leverage ratio exposure measure (£m)	676,198	304,444	98,752	27,902	176,370
16 CRR leverage ratio (%)	5.9	4.7	7.1	14.2	6.4
17 CRR leverage ratio (%) as if IFRS 9 transitional arrangements had not been applied	5.9	4.7	7.1	14.2	6.4

EBA IFRS 9-FL: EBA Key metrics - significant subsidiaries continued

	30 June 2018				
	RBS	NWB Plc	RBS plc	UBI DAC	NWM Plc
Available capital (amounts) - transitional	£m	£m	£m	£m	£m
1 Common equity tier 1	31,950	12,007	5,946	3,929	9,359
2 Common equity tier 1 capital as if IFRS 9 transitional arrangements had not been applied	31,950	12,007	5,946	3,929	9,359
3 Tier 1	39,577	14,290	6,915	3,929	11,292
4 Tier 1 capital as if IFRS 9 transitional arrangements had not been applied	39,577	14,290	6,915	3,929	11,292
5 Total capital	47,681	15,932	8,317	4,389	14,844
6 Total capital as if IFRS 9 transitional arrangements had not been applied	47,681	15,932	8,317	4,389	14,844
Risk-weighted assets (amounts)					
7 Total risk-weighted assets	198,780	72,761	37,511	16,548	45,195
8 Total risk-weighted assets as if IFRS 9 transitional arrangements had not been applied	198,780	72,761	37,511	16,548	45,195
Risk-based capital ratios as a percentage of RWA	%	%	%	%	%
9 Common equity tier 1 ratio	16.1	16.5	15.9	23.7	20.7
10 Common equity tier 1 ratio as if IFRS 9 transitional arrangements had not been applied	16.1	16.5	15.9	23.7	20.7
11 Tier 1 ratio	19.9	19.6	18.4	23.7	25.0
12 Tier 1 ratio as if IFRS 9 transitional arrangements had not been applied	19.9	19.6	18.4	23.7	25.0
13 Total capital ratio	24.0	21.9	22.2	26.5	32.8
14 Total capital ratio as if IFRS 9 transitional arrangements had not been applied	24.0	21.9	22.2	26.5	32.8
Leverage ratio					
15 CRR leverage ratio exposure measure (£m)	693,344	319,321	103,257	27,376	176,155
16 CRR leverage ratio (%)	5.7	4.5	6.7	14.4	6.4
17 CRR leverage ratio (%) as if IFRS 9 transitional arrangements had not been applied	5.7	4.5	6.7	14.4	6.4

	31 March 2018			
	RBS	NWB Plc	UBI DAC	NWM Plc
Available capital (amounts) - transitional	£m	£m	£m	£m
1 Common equity tier 1	33,334	13,208	3,884	14,541
2 Common equity tier 1 capital as if IFRS 9 transitional arrangements had not been applied	33,334	13,208	3,884	14,541
3 Tier 1	40,899	13,208	3,884	16,348
4 Tier 1 capital as if IFRS 9 transitional arrangements had not been applied	40,899	13,208	3,884	16,348
5 Total capital	48,804	17,054	4,363	19,977
6 Total capital as if IFRS 9 transitional arrangements had not been applied	48,804	17,054	4,363	19,977
Risk-weighted assets (amounts)				
7 Total risk-weighted assets	202,700	62,735	16,714	111,604
8 Total risk-weighted assets as if IFRS 9 transitional arrangements had not been applied	202,700	62,735	16,714	111,604
Risk-based capital ratios as a percentage of RWA	%	%	%	%
9 Common equity tier 1 ratio	16.4	21.1	23.2	13.0
10 Common equity tier 1 ratio as if IFRS 9 transitional arrangements had not been applied	16.4	21.1	23.2	13.0
11 Tier 1 ratio	20.2	21.1	23.2	14.6
12 Tier 1 ratio as if IFRS 9 transitional arrangements had not been applied	20.2	21.1	23.2	14.6
13 Total capital ratio	24.1	27.2	26.1	17.9
14 Total capital ratio as if IFRS 9 transitional arrangements had not been applied	24.1	27.2	26.1	17.9
Leverage ratio				
15 CRR leverage ratio exposure measure (£m)	693,181	235,793	25,504	370,984
16 CRR leverage ratio (%)	5.9	5.6	15.2	4.4
17 CRR leverage ratio (%) as if IFRS 9 transitional arrangements had not been applied	5.9	5.6	15.2	4.4

Capital, liquidity and funding

CAP 2: Capital resources (CRR own funds template) - RBS and significant subsidiaries

The table below sets out the capital resources in the prescribed template on a CRR transitional basis as relevant for the jurisdiction. The adjustments to end-point CRR are presented for RBS only, as prescribed.

		2018							
		RBS							
	CET1 capital: instruments and reserves	PRA transitional £m	CRR prescribed residual amounts £m	CRR end-point £m	Source based on reference number/ letters of the balance sheet under its regulatory scope of consolidation	NWB Plc £m	RBS plc £m	UBI DAC £m	NWM Plc £m
1	Capital instruments and the related share premium accounts	13,076	—	13,076		3,903	20	4,241	2,159
	Of which: ordinary shares	*12,049*	—	*12,049*	*(c)*	*1,678*	*20*	*3,216*	*400*
2	Retained earnings	12,330	—	12,330		10,051	4,723	72	6,280
3	Accumulated other comprehensive income (and other reserves)	14,290	—	14,290	(e)	738	49	1	15
4	Public sector capital injections grandfathered until 1 January 2018	—	—	—		—	—	—	—
5a	Independently reviewed interim net profits net of any foreseeable charge or dividend	55	—	55		1,208	—	76	—
6	CET1 capital before regulatory adjustments	39,751	—	39,751		15,900	4,792	4,390	8,454
7	Additional value adjustments	(494)	—	(494)		(18)	(7)	—	(450)
8	(-) Intangible assets (net of related tax liability)	(6,616)	—	(6,616)	(a) minus (b)	(966)	(86)	(1)	—
10	(-) Deferred tax assets that rely on future profitability excluding those arising from temporary differences (net of related tax liability)	(740)	—	(740)	(f) minus (g)	(462)	—	(261)	—
11	Fair value reserves related to gains or losses on cash flow hedges	191	—	191	(d)	—	(49)	—	(114)
12	(-) Negative amounts resulting from the calculation of expected loss amounts	(654)	—	(654)		(193)	(81)	(1)	(351)
14	Gains or losses on liabilities valued at fair value resulting from changes in own credit standing	(405)	—	(405)		—	—	(2)	(223)
15	(-) Defined-benefit pension fund assets	(394)	—	(394)	(h) minus (i)	(11)	—	(129)	(197)
18	(-) Direct and indirect holdings by the institution of the CET1 instruments of financial sector entities where the institution does not have a significant investment in those entities (above the 10% threshold and net of eligible short positions)	—	—	—		—	—	—	(65)
19	(-) Direct, indirect and synthetic holdings by the institution of the CET1 instruments of financial sector where the institution has a significant investment in those entities (amount above 10% threshold and net of eligible short positions)	—	—	—		(538)	—	—	(380)
22	(-) Amount exceeding the 17.65% threshold	—	—	—		(574)	—	—	—
23	*(-) Of which: 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*	—	—	—		*(325)*	—	—	—
25	*(-) Of which: deferred tax assets arising from temporary differences*	—	—	—		*(249)*	—	—	—
25a	(-) Losses for the current financial period	—	—	—		—	—	—	(305)
26	Regulatory adjustments applied to CET1 in respect of amounts subject to pre-CRR treatment	—	—	—		—	—	—	—
26a	*Regulatory adjustments relating to unrealised gains and losses pursuant to articles 467 and 468*	—	—	—		—	—	—	—
26b	*Amount to be deducted from or added to CET1 capital with regard to additional filters and deductions required pre CRR*	—	—	—		—	—	—	—
27	(-) Qualifying Additional Tier 1 (AT1) deductions that exceed the AT1 capital of the institution	—	—	—		—	—	—	—
28	Total regulatory adjustments to CET1	(9,112)	—	(9,112)		(2,762)	(223)	(394)	(2,085)
29	CET1 capital	30,639	—	30,639		13,138	4,569	3,996	6,369

Capital, liquidity and funding

CAP 2: Capital resources (CRR own funds template) - RBS and significant subsidiaries *continued*

	2018							
	RBS							
AT1 capital: instruments	PRA transitional £m	CRR prescribed residual amounts £m	CRR end point £m	Source based on reference numbers/ letters of the balance sheet under its regulatory scope of consolidation	NWB Plc £m	RBS plc £m	UBI DAC £m	NWM Plc £m
30 Capital instruments and the related share premium accounts	4,051	—	4,051		2,370	969	—	749
31 Of which: classified as equity under applicable accounting standards	4,051	—	4,051		2,370	969	—	749
32 Of which: classified as debt under applicable accounting standards	—	—	—		—	—	—	—
33 Amount of qualifying items referred to in Article 484(4) and the related share premium accounts subject to phase out from AT1	1,393	(1,393)	—		117	—	—	234
34 Qualifying tier 1 capital included in consolidated AT1 capital (including minority interests not included in row 5 CET1) issued by subsidiaries and held by third parties	140	(140)	—		—	—	—	—
35 *Of which: instruments issued by subsidiaries subject to phase out*	*140*	*(140)*	—		—	—	—	—
36 AT1 capital before regulatory adjustments	5,584	(1,533)	4,051		2,487	969	—	983
AT1 capital: regulatory adjustments								
40 (-) Direct, indirect and synthetic holdings by the institution of the AT1 instruments of financial sector entities where the institution has a significant investment in those entities (amount above 10% threshold and net of eligible short positions)	—	—	—		(236)	—	—	—
41 (-) Actual or contingent obligations to purchase own AT1 instruments	—	—	—		—	—	—	—
41b Residual amounts deducted from AT1 capital with regard to deduction from Tier 2 (T2) capital during the *transitional period of which: Direct and indirect holdings by the institution of the T2 instruments and subordinated loans of financial sector entities where the institution has a significant investment in those entities*	—	—	—		—	—	—	—
43 Total regulatory adjustments to AT1 capital	—	—	—		(236)	—	—	—
44 AT1 capital	5,584	(1,533)	4,051		2,251	969	—	983
45 Tier 1 capital (T1 = CET1 + AT1)	36,223	(1,533)	34,690		15,389	5,538	3,996	7,352
T2 capital: instruments and provisions								
46 Capital instruments and the related share premium accounts	6,301	—	6,301		2,886	1,446	418	1,973
47 Amount of qualifying items referred to in Article 484 (5) and the related share premium accounts subject to phase out from T2	85	(85)	—		490	—	—	125
48 Qualifying own funds instruments included in consolidated T2 capital (including minority interests phase out from T2 and AT1 instruments not included in CET1 or AT1) issued by subsidiaries	—	—	—		—	—	—	—
49 *Of which: instruments issued by subsidiaries subject to phase out*	*1,565*	*(1,383)*	*182*		—	—	—	—
50 Credit risk adjustments	1,383	(1,383)	—		—	—	—	—
51 T2 capital before regulatory adjustments	7,951	(1,468)	6,483		3,376	1,446	418	2,098
T2 capital: regulatory adjustments								
54 (-)Direct and indirect holdings of the T2 instruments and subordinated loans of financial sector entities where the institution does not have a significant investment in those entities (amount above the 10% threshold and net of eligible short positions)	—	—	—		—	—	—	(211)
55 (-) Direct and indirect holdings by the institution of the T2 instruments and subordinated loans of financial sector entities where the institution has a significant investment in those entities (net of eligible short positions)	—	—	—		(275)	—	—	(482)
56a (-) Actual or contingent obligations to purchase own AT1 instruments	—	—	—		—	—	—	—
56b (-) Residual amounts deducted from T2 capital with regard to deduction from AT1 capital during the transitional period	—	—	—		—	—	—	—
56c (-) Amount to be deducted from or added to T2 capital with regard to additional filters and deductions required pre CRR	—	—	—		—	—	—	—
T2 capital before regulatory adjustments								
57 Total regulatory adjustments to T2 capital	—	—	—		(275)	—	—	(693)

CAP 2: CAP: Capital resources (CRR own funds template) - RBS and significant subsidiaries *continued*

		2018							
		RBS							
		PRA transitional	CRR prescribed residual amounts	Final CRD IV	Source based on reference numbers/ letters of the balance sheet under the regulatory scope of consolidation	NWB Plc	RBS plc	UBI DAC	NWM Plc
T2 capital before regulatory adjustments		£m	£m	£m		£m	£m	£m	£m
58	T2 capital	7,951	(1,468)	6,483		3,101	1,446	418	1,405
59	Total capital (TC= T1 + T2)	44,174	(3,001)	41,173		18,490	6,984	4,414	8,757
60	Total risk-weighted assets	188,691	-	188,691		75,583	34,525	14,514	40,777
Capital ratios and buffers									
61	CET1 (as a percentage of risk exposure amount)	16.2%	—	16.2%		17.4%	13.2%	27.5%	15.6%
62	T1 (as a percentage of risk exposure amount)	19.2%	—	18.4%		20.4%	16.0%	27.5%	18.0%
63	Total capital (as a percentage of risk exposure amount)	23.4%	—	21.8%		24.5%	20.2%	30.4%	21.5%
64	Institution specific buffer requirement (CET1 requirement in accordance with article 92 (1)(a) plus capital conservation and countercyclical buffer requirements, plus systemic risk buffer, plus the systemically important institution buffer (G-SII or O-SII buffer), expressed as a percentage of risk exposure amount)	7.8%	—	8.7%		7.3%	7.3%	6.4%	6.9%
65	*Of which: capital conservation buffer requirement*	*1.9%*	—	*2.5%*		*1.9%*	*1.9%*	*1.9%*	*1.9%*
66	*Of which: counter cyclical buffer requirement (1)*	*0.7%*	—	*0.7%*		*0.9%*	*0.9%*	—	*0.5%*
67	*Of which: systemic risk buffer requirement*	—	—	—		—	—	—	—
67a	*Of which: Global Systemically Important Institution (G-SII) or Other Systemically Important Institution (O-SII) buffer*	*0.8%*	—	*1.0%*		—	—	—	—
68	CET1 available to meet buffers (2)	11.7%	—	11.7%		12.9%	8.7%	23.0%	11.1%
Amounts below the threshold deduction									
72	Direct and indirect holdings of the capital of financial sector entities where the institution does not have a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	1,127	—	1,127		—	6	—	681
73	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)	548	—	548		1,426	26	3	675
75	Deferred tax assets arising from temporary differences (amount below 10% threshold, net of related tax liability)	344	—	344		1,088	3	—	—
Available caps on the inclusion of provisions in T2									
76	Credit risk adjustments included in T2 in respect of exposures subject to standardised approach (prior to the application of the cap)	—	—	—		—	—	—	—
77	Cap on inclusion of credit risk adjustments in T2 under standardised approach	290	—	290		112	36	12	45
78	Credit risk adjustments included in T2 in respect of exposures subject to internal ratings based approach (prior to the application of the cap)	—	—	—		—	—	—	—
79	Cap for inclusion of credit risk adjustments in T2 under internal ratings-based approach	688	—	688		327	155	75	34
Capital instruments subject to phase-out arrangements (only applicable between 1 January 2013 and 1 January 2022)									
82	Current cap on AT1 instruments subject to phase out arrangements	3,840	(3,840)	—		117	—	—	2,002
83	Amount excluded from AT1 due to cap (excess over cap after redemptions and maturities)	—	—	—		23	—	—	—
84	Current cap on T2 instruments subject to phase out arrangements	2,690	(2,690)	—		490	—	57	1,113
85	Amount excluded from T2 due to cap (excess over cap after redemptions and maturities)	—	—	—		503	—	—	—

Notes:
(1) See CAP 5a and 5b for more information regarding the countercyclical capital buffer requirement.
(2) This represents the CET1 ratio less the CRR minimum of 4.5%.

CAP 2: Capital resources (CRR own funds template) - RBS and significant subsidiaries continued

		RBS						
		2017						
CET1 capital: instruments and reserves		PRA transitional £m	CRR prescribed residual amounts £m	Final CRD IV £m	Source based on reference numbers/letters of the balance sheet under the regulatory scope of consolidation	NWB Plc £m	UBI DAC £m	NWM Plc £m
1	Capital instruments and the related share premium accounts	12,851	—	12,851		3,903	4,202	33,416
	Of which: ordinary shares	*11,965*	—	*11,965*	*(c)*	*1,678*	*3,188*	*6,609*
2	Retained earnings	13,790	—	13,790	(d)	10,633	1,524	12,139
3	Accumulated other comprehensive income (and other reserves)	14,291	—	14,291	(e)	786	—	(73)
4	Public sector capital injections grandfathered until 1 January 2018	—	—	—		—	—	—
5a	Independently reviewed interim net profits net of any foreseeable charge or dividend	752	—	752		26	—	—
6	CET1 capital before regulatory adjustments	41,684	—	41,684		15,348	5,726	45,482
7	Additional value adjustments	(496)	—	(496)	—	(1)	—	(471)
8	Intangible assets (net of related tax liability)	(6,492)	—	(6,492)	(a) minus (b)	(490)	(1)	(551)
10	(-) Deferred tax assets that rely on future profitability excluding those arising from temporary differences (net of related tax liability)	(849)	—	(849)	(f) minus (g)	(537)	(259)	(50)
11	Fair value reserves related to gains or losses on cash flow hedges	(227)	—	(227)	(h)	—	—	49
12	(-) Negative amounts resulting from the calculation of expected loss amounts	(1,286)	—	(1,286)		(511)	(133)	(579)
14	Gains or losses on liabilities valued at fair value resulting from changes in own credit standing	(90)	—	(90)		—	(1)	10
15	(-) Defined-benefit pension fund assets	(287)	—	(287)	(i) minus (j)	(11)	(49)	(196)
19	(-) Direct, indirect and synthetic holdings by the institution of the CET1 instruments of financial sector where the institution has a significant investment in those entities	—	—	—		(456)	—	(22,539)
22	(-) Amount exceeding the 17.65% threshold	—	—	—		—	—	(3,204)
23	*(-) Of which: 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*	—	—	—		—	—	*(2,885)*
25	*(-) Of which: deferred tax assets arising from temporary differences*	—	—	—		—	—	*(319)*
25a	(-) Losses for the current financial period	—	—	—		—	(43)	(983)
26	Regulatory adjustments applied to CET1 in respect of amounts subject to pre-CRR treatment	—	—	—		—	129	3,201
26a	*Regulatory adjustments relating to unrealised gains and losses pursuant to articles 467 and 468*	—	—	—		—	—	—
26b	*Amount to be deducted from or added to CET1 capital with regard to additional filters and deductions required pre CRR*	—	—	—		—	*129*	*3,201*
27	(-) Qualifying AT1 deductions that exceed the AT1 capital of the institution	—	—	—		(41)	(13)	—
28	Total regulatory adjustments to CET1	(9,727)	—	(9,727)		(2,047)	(370)	(25,313)
29	CET1 capital	31,957	—	31,957		13,301	5,356	20,169

CAP 2: Capital resources (CRR own funds template) - RBS and significant subsidiaries *continued*

		2017						
		RBS			Source based on reference numbers/letters of the balance sheet under the regulatory scope of consolidation			
AT1 capital: instruments		PRA transitional £m	CRR prescribed residual amounts £m	Final CRD IV £m		NWB Plc £m	UBI DAC £m	NWM Plc £m
30	Capital instruments and the related share premium accounts	4,051	—	4,051		—	—	—
31	*Of which: classified as equity under applicable accounting standards*	4,051	—	4,051		—	—	—
32	*Of which: classified as debt under applicable accounting standards*	—	—	—		—	—	—
33	Amount of qualifying items referred to in Article 484(4) and the related share premium accounts subject to phase out from AT1	3,416	(3,416)	—		140	—	1,887
34	Qualifying tier 1 capital included in consolidated AT1 capital (including minority interests not included in row 5 CET1) issued by subsidiaries and held by third parties	140	(140)	—		—	—	—
35	*Of which: instruments issued by subsidiaries subject to phase out*	140	(140)	—		—	—	—
36	AT1 capital before regulatory adjustments	7,607	(3,556)	4,051		140	—	1,887
AT1 capital: regulatory adjustments								
40	(-) Direct, indirect and synthetic holdings by the institution of the AT1 instruments of financial sector entities where the institution has a significant investment in those entities (amount above 10% threshold and net of eligible short positions)	—	—	—		(140)	—	(80)
41	(-) Actual or contingent obligations to purchase own AT1 instruments	(10)	—	(10)		—	—	(10)
41b	Residual amounts deducted from AT1 capital with regard to deduction from T2 capital during the transitional period	—	—	—		—	—	—
	Of which: Direct and indirect holdings by the institution of the T2 instruments and subordinated loans of financial sector entities where the institution has a significant investment in those entities	—	—	—		—	—	—
43	Total regulatory adjustments to AT1 capital	(10)	—	(10)		(140)	—	(90)
44	AT1 capital	7,597	(3,556)	4,041		—	—	1,797
45	Tier 1 capital (T1 = CET1 + AT1)	39,554	(3,556)	35,998		13,301	5,356	21,966
T2 capital: instruments and provisions								
46	Capital instruments and the related share premium accounts	6,406	—	6,406		3,800	508	4,134
47	Amount of qualifying items referred to in Article 484 (5) and the related share premium accounts subject to phase out from T2	105	(105)	—		612	—	229
48	Qualifying own funds instruments included in consolidated T2 capital (including minority interests and AT1 instruments not included in CET1 or AT1) issued by subsidiaries and held by third parties	1,876	(1,507)	369		—	—	—
49	*Of which: instruments issued by subsidiaries subject to phase out*	*1,507*	*(1,507)*	—		—	—	—
50	Credit risk adjustments	—	—	—		—	—	—
51	T2 capital before regulatory adjustments	8,387	(1,612)	6,775		4,412	508	4,363
T2 capital: regulatory adjustments								
55	(-) Direct and indirect holdings by the institution of the T2 instruments and subordinated loans of financial sector entities where the institution has a significant investment in those entities (net of eligible short positions)	—	—	—		(177)	—	(719)
56a	(-) Actual or contingent obligations to purchase own AT1 instruments	(10)	—	(10)		—	—	(10)
56b	(-) Residual amounts deducted from T2 capital with regard to deduction from AT1 capital during the transitional period	—	—	—		—	(13)	—
56c	(-) Amount to be deducted from or added to T2 capital with regard to additional filters and deductions required	—	—	—		—	—	—
57	Total regulatory adjustments to T2 capital	(10)	—	(10)		(177)	(13)	(729)
58	T2 capital	8,377	(1,612)	6,765		4,235	495	3,634
59	Total capital (TC = T1 + T2)	47,931	(5,168)	42,763		17,536	5,851	25,600

Capital, liquidity and funding

CAP 2: Capital resources (CRR own funds template) - RBS and significant subsidiaries *continued*

		2017						
		RBS						
T2 capital: regulatory adjustments		PRA transitional £m	CRR prescribed residual amounts £m	Final CRD IV £m	Source based on reference numbers/letters of the balance sheet under the regulatory scope of consolidation	NWB Plc £m	UBI DAC £m	NWM Plc £m
60	Total risk-weighted assets	200,923	—	200,923		56,701	17,569	136,811
Capital ratios and buffers								
61	CET1 (as a percentage of risk exposure amount)	15.9%	—	15.9%		23.5%	30.5%	14.7%
62	T1 (as a percentage of risk exposure amount)	19.7%	—	17.9%		23.5%	30.5%	16.1%
63	Total capital (as a percentage of risk exposure amount)	23.9%	—	21.3%		30.9%	33.3%	18.7%
64	Institution specific buffer requirement (CET1 requirement in accordance with article 92 (1)(a) plus capital conservation and countercyclical buffer requirements, plus systemic risk buffer, plus the systemically important institution buffer (G-SII or O-SII buffer), expressed as a percentage of risk exposure amount)	6.3%	—	8.0%		5.8%	5.8%	5.8%
65	*Of which: capital conservation buffer requirement*	*1.3%*	—	*2.5%*		*1.3%*	*1.3%*	*1.3%*
66	*Of which: counter cyclical buffer requirement (1)*	—	—	—		—	—	—
67	*Of which: systemic risk buffer requirement*	—	—	—		—	—	—
67a	*Of which: Global Systemically Important Institution (G-SII) or Other Systemically Important Institution (O-SII) buffer*	*0.5%*	—	*1.0%*		—	—	—
68	CET1 available to meet buffers	11.4%	—	11.4%		19.0%	26.0%	10.2%
Amounts below the threshold deduction								
72	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)	790	—	790		7	—	681
73	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)	537	—	537		1,380	5	4,294
75	Deferred tax assets arising from temporary differences (amount below 10% threshold, net of related tax liability)	413	—	413		527	—	473
Available caps on the inclusion of provisions in T2								
76	Credit risk adjustments included in T2 in respect of exposures subject to standardised approach (prior to the application of the cap)	—	—	—		—	—	—
77	Cap on inclusion of credit risk adjustments in T2 under standardised approach	306	—	306		98	9	588
78	Credit risk adjustments included in T2 in respect of exposures subject to internal ratings based approach (prior to the application of the cap)	—	—	—		—	—	—
79	Cap for inclusion of credit risk adjustments in T2 under internal ratings-based approach	721	—	721		245	92	283
Capital instruments subject to phase-out arrangements (only applicable between 1 January 2013 and 1 January 2022)								
82	Current cap on AT1 instruments subject to phase out arrangements	4,799	(4,799)	—		146	—	2,502
83	Amount excluded from AT1 due to cap (excess over cap after redemptions and maturities)	—	—	—		—	—	—
84	Current cap on T2 instruments subject to phase out arrangements	3,363	(3,363)	—		613	70	1,391
85	Amount excluded from T2 due to cap (excess over cap after redemptions and maturities)	—	—	—		386	—	—

Note:
(1) See CAP 5a and 5b for more information regarding the countercyclical capital buffer requirement.

Capital, liquidity and funding

CC2: Reconciliation of regulatory capital to balance sheet

The table below sets out the reconciliation between the accounting and regulatory consolidation with references showing the linkage between this table and CAP 2.

	a Balance sheet as in published financial statements as at period end £m	b Under regulatory scope of of consolidation as at period end £m	References
Assets			
Cash and balances at central banks	88,897	89,344	
Trading assets	75,119	75,119	
Derivative financial instruments	133,349	133,360	
Settlement balances	2,928	2,928	
Loans and advances to banks - amortised cost	12,947	12,947	
Loans and advances to customers - amortised cost	305,089	310,009	
Securities subject to repurchase agreements	24,758	24,758	
Other financial assets excluding securities subject to repurchase agreements	34,727	35,916	
Other financial assets	59,485	60,674	
Intangible assets	6,616	6,616	(a)
Property, plant and equipment	4,351	4,460	
Current and deferred tax assets	1,467	1,467	
of which: rely on future profitability	*740*	*740*	*(f)*
Prepayments, accrued income and other assets	2,583	2,846	
of which: Pension scheme in net surplus	*520*	*520*	*(h)*
Assets of disposal groups	1,404	225	
Total Assets	694,235	699,995	
Liabilities			
Bank deposits	23,297	23,297	
Customer deposits	360,914	366,387	
Settlement balances	3,066	3,066	
Trading liabilities	72,350	72,350	
Derivatives	128,897	128,902	
Other financial liabilities	39,732	39,940	
Provisions, deferred income and other liabilities	8,217	8,317	
Retirement benefit liabilities	165	165	
Current and deferred tax liabilities	571	545	
of which: intangible assets	—	—	*(b)*
of which: rely on future profitability	—	—	*(g)*
of which: Defined benefit pension scheme assets	*126*	*126*	*(i)*
Subordinated liabilities	10,535	10,535	
Liabilities of disposal groups	1	1	
Total liabilities	647,745	653,505	
Shareholder's Equity			
Non-controlling interests	754	754	
Owners' equity	—	—	
Called up share capital	12,049	12,049	
of which: amount eligible for CET1	*12,049*	*12,049*	*(c)*
Reserves	33,687	33,687	
of which: amount eligible for retained earnings	*10,821*	*10,821*	
of which: amount eligible for Cash flow hedging reserve	*(191)*	*(191)*	
of which: amount eligible for accumulated OCI and other reserves	*14,481*	*14,481*	*(d) and (e)*
Total Shareholder's Equity	46,490	46,490	

EU OV1: CAP: RWAs and MCR summary - RBS and significant subsidiaries

The table below summarises RWAs and minimum capital requirements (MCR) by risk type for RBS and its significant subsidiaries. MCR is calculated as 8% of RWAs.

		RBS		NWB Plc		RBS plc		UBI DAC		NWM Plc	
	31 December 2018 (1)	RWAs £m	MCR £m	RWAs £m	MCR £m	RWAs £m	MCR £m	RWAs £m	MCR £m	RWAs £m	MCR £m
1	Credit risk (excluding counterparty credit risk)	133,052	10,644	57,470	4,598	28,293	2,262	13,378	1,070	6,744	539
2	Standardised (STD) approach	20,974	1,678	4,121	330	2,817	225	935	75	2,064	165
4	Advanced IRB approach (2)	111,057	8,884	53,349	4,268	25,476	2,037	12,443	995	4,665	373
5	Equity IRB under the simple risk-weight or the internal model approach (IMA)	1,021	82	—	—	—	—	—	—	15	1
6	Counterparty credit risk (CCR)	13,211	1,057	325	26	—	—	122	9	12,998	1,040
6a	of which: securities financing transactions	1,260	101	189	14	—	—	2	—	975	78
7	of which: marked-to-market	2,247	180	34	3	—	—	92	7	1,988	159
10	of which: internal model method (IMM)	7,192	575	82	7	—	—	28	2	7,576	606
11	of which: risk exposure amount for contributions to the default fund of a central counterparty	56	5	11	1	—	—	—	—	45	4
12	of which: credit valuation adjustment (CVA)	2,456	196	9	1	—	—	—	—	2,414	193
13	Settlement risk	1	—	—	—	—	—	—	—	1	—
14	Securitisation exposures in banking book	2,970	238	1,230	98	319	26	—	—	1,249	100
15	IRB approach	2,956	237	1,230	98	319	26	—	—	1,235	99
17	Internal assessment approach	14	1	—	—	—	—	—	—	14	1
19	Market risk	14,837	1,187	50	4	23	2	47	4	14,106	1,129
20	STD approach	1,848	148	36	3	23	2	47	4	1,211	97
21	IMA	12,989	1,039	14	1	—	—	—	—	12,895	1,032
23	Operational risk - STD approach	22,391	1,791	11,660	933	5,819	466	958	77	4,152	332
27	Amounts below the thresholds for deduction (subject to 250% risk-weight)	2,229	178	4,848	388	71	6	9	1	1,527	122
29	Total	188,691	15,095	75,583	6,047	34,525	2,762	14,514	1,161	40,777	3,262

For the notes to this table refer to the following page.

EU OV1: CAP: RWA and MCR summary - RBS and significant subsidiaries continued

		RBS		NWB Plc		UBI DAC		NWM Plc	
	31 December 2017 (1)	RWAs £m	MCR £m	RWAs £m	MCR £m	RWAs £m	MCR £m	RWAs £m	MCR £m
1	Credit risk (excluding counterparty credit risk)	140,003	11,200	42,726	3,418	16,067	1,286	89,140	7,131
2	Standardised (STD) approach	22,099	1,768	3,055	244	714	57	43,111	3,449
4	Advanced IRB approach (2)	116,695	9,335	39,671	3,174	15,353	1,229	46,012	3,681
5	Equity IRB under the simple risk-weight or the internal model approach (IMA)	1,209	97	—	—	—	—	17	1
6	Counterparty credit risk (CCR)	14,842	1,187	266	22	321	26	13,393	1,071
6a	of which: securities financing transactions	1,476	118	—	—	4	—	786	63
7	of which: marked-to-market	3,159	253	33	3	191	16	2,387	191
10	of which: internal model method (IMM)	7,590	607	232	19	123	10	7,753	619
11	of which: risk exposure amount for contributions to the default fund of a central counterparty	61	5	—	—	—	—	58	5
12	of which: credit valuation adjustment (CVA)	2,556	204	1	—	3	—	2,409	193
13	Settlement risk	21	2	—	—	—	—	21	2
14	Securitisation exposures in banking book	2,830	227	1,080	86	—	—	1,431	115
15	IRB approach	2,819	226	1,080	86	—	—	1,420	114
17	Internal assessment approach	11	1	—	—	—	—	11	1
19	Market risk	17,012	1,361	136	11	68	5	15,809	1,265
20	STD approach	2,994	240	134	11	68	5	2,090	167
21	IMA	14,018	1,121	2	—	—	—	13,719	1,098
23	Operational risk - STD approach	23,840	1,907	7,724	618	1,101	88	13,052	1,044
27	Amounts below the thresholds for deduction (subject to 250% risk-weight)	2,375	190	4,769	381	12	1	3,965	317
28	Floor adjustment (3)	—	1,981	—	2,092	—	—	—	—
29	Total	200,923	18,055	56,701	6,628	17,569	1,406	136,811	10,945

Notes:
(1) Excludes RWA approaches not used by RBS, such as the credit risk foundation IRB, counterparty credit risk original exposure and STD approaches, the securitisation IRB supervisory formula and STD approaches and the operational risk basic indicator and AMA approaches.
(2) Of which £569 million RWAs (2017 - £752 million) relate to equity IRB under the PD/LGD approach.
(3) The Basel I floor adjustment represents the additional capital requirement when comparing the Basel III Pillar 1 approach (sum of capital requirements from individual risk types) to the Basel I floor (calculated as 80% of the Basel I capital requirement adjusted for excess expected loss). The B1 floor adjustment is no longer required to be added to capital in 2018.

OV1_a: RWA bridge between EU OV1 and credit risk RWAs

The table below provides a bridge between the EU OV1 RWA summary, the RWA categorisation used by RBS for capital management, and the detailed tables in this report. The principal reasons for the presentational differences relate to securitisations, thresholds and CVA.

	RWAs	
	2018 £m	2017 £m
Credit risk excluding counterparty credit risk (EU OV1 row 1)	133,052	140,003
Securitisations (banking book only)	2,543	2,298
Threshold (EU OV1 row 27)	2,229	2,375
Credit risk including securitisations (EU CR8 row 9)	137,824	144,676
Counterparty risk total (EU OV1 row 6)	13,211	14,842
Less: CVA capital charge (EU OV1 row 12)	(2,456)	(2,556)
Settlement risk (EU OV1 row 13)	1	21
Securitisations (trading book)	427	532
Counterparty risk (EU CCR7 row 9)	11,183	12,839
Total STD (EU OV1 row 2)	20,974	22,099
Threshold (EU OV1 row 27)	2,229	2,375
Total STD credit risk (EU CR8 row 9)	23,203	24,474
Total AIRB credit risk (EU OV1 row 4)	111,057	116,695
Equity (EU OV1 row 5)	1,021	1,209
Securitisations in credit risk (banking book)	2,543	2,298
Total AIRB credit risk (EU CR8 row 9)	114,621	120,202

Refer to the commentary following CAP 1 for explanations relating to RWA movements for RBS and its significant subsidiaries. This commentary is based on credit and counterparty credit risk as managed internally within RBS whereby securitisations, thresholds and CVA are included within credit and counterparty credit risk as relevant. EU OV1_a provides a bridge between the two RWA approaches. Refer also to the commentary relating to RWA flow statements EU CR8, EU CCR7 and MR 1 and MR 2_B for individual components in OV1_a.

EU OV1_b: RWA bridge between EU OV1 and counterparty credit risk

The table below provides a bridge between the overall RWA summary disclosure in EU OV1 and the detailed tables in the counterparty credit risk sections presented in line with the EBA Pillar 3 guidelines. The principal differences relate to CVA and central counterparties (CCPs).

	RWAs				
	EU OV1_a £m	CCR1 £m	CCR2 £m	CCR8 £m	Total CCR £m
2018	13,211	10,370	2,456	385	13,211
2017	14,842	12,006	2,556	280	14,842

Capital, liquidity and funding

EU CR8: IRB and STD: Credit risk RWAs and MCR flow statement

The table below presents the drivers of movements in credit risk RWAs and MCR. RWAs include securitisations, deferred tax assets and significant investments to align with the capital management approaches of RBS and its segments. There were no methodology or policy changes in the period. Additionally there were no acquisitions or disposals of subsidiaries during the period.

		a			b
		RWAs			
		IRB £m	STD £m	Total RWAs £m	MCR £m
1	At 1 January 2018	120,202	24,474	144,676	11,574
	IFRS 9 impact	—	(99)	(99)	(8)
	Opening position post IFRS 9 impact	120,202	24,375	144,577	11,566
2	Asset size (1)	(9,818)	(1,586)	(11,404)	(912)
3	Asset quality (2)	(913)	58	(855)	(68)
5	Model updates (3)	4,533	—	4,533	362
7	Foreign exchange movements (4)	617	356	973	78
9	At 31 December 2018	114,621	23,203	137,824	11,026

Notes:
(1) Organic changes in portfolio size and composition (including the origination of new businesses) and maturing loans and changes due to acquisitions and disposals.
(2) Changes in the assessed quality of assets due to changes in borrower risk, such as rating grade migration or similar effects.
(3) Updates to the model to reflect recent experience or changes to the model scope.
(4) Changes arising from foreign currency retranslation movements.

Key points

- The fall in RWAs principally reflected lower overall assets, due to customer repayments and selective asset reductions (largely across the corporate portfolio).
- The overall reduction in RWAs was partly offset by retail portfolio increases, largely driven by regular model enhancements (mainly mortgages), revisions to LGD models in both the UK mid-corporate and quasi-government portfolios, and foreign exchange rate movements.

EU CCR7: CCR: IMM and Non-IMM: Counterparty credit risk RWAs and MCR flow statement

The table below presents the drivers of movements in counterparty credit risk RWAs and MCR (excluding CVA and exposures cleared through a central counterparty). There were no IMM methodology or policy changes in 2018. Additionally there were no acquisitions or disposals of subsidiaries during 2018.

		a			b		
		RWAs			MCR		
		IMM £m	Non-IMM £m	Total £m	IMM £m	Non-IMM £m	Total £m
1	At 1 January 2018	7,709	5,130	12,839	617	410	1,027
2	Asset size (1)	(371)	(393)	(764)	(30)	(31)	(61)
3	Credit quality of counterparties (2)	50	(108)	(58)	4	(9)	(5)
7	Foreign exchange movements (3)	(91)	(48)	(139)	(7)	(4)	(11)
	Other	—	(695)	(695)	—	(56)	(56)
9	At 31 December 2018	7,298	3,886	11,183	584	311	895

Notes:
(1) Organic changes in portfolio size and composition (including the origination of new business) and changes due to acquisitions and disposal of portfolios and exposures.
(2) Changes in the assessed quality of counterparties as measured under RBS's credit risk framework, including changes due to IRB models. Changes due to IMM model changes are not included here.
(3) Changes arising from foreign currency retranslation movements.

Key points

- A key driver of the RWA reduction was a decrease in asset size, reflecting trade novations and maturing transactions and, to a lesser extent, an increase in the scope of the IMM model.
- Additionally, RWAs fell due to NWMSI being granted the regulatory waiver to use the AIRB approach to calculate its counterparty credit risk capital requirements.

EU MR2_B: MR IMA and STD: Market risk RWAs and MCR flow statement

The table below presents the drivers of movements in market risk RWAs and MCR. There were no regulatory policy changes during 2018. Additionally there were no acquisitions or disposals of subsidiaries during 2018. Changes in market risk arising from foreign currency retranslation are included within 'Movement in risk levels' as they are managed together with portfolio changes.

		IMA						STD		Total	
		RWAs (1)									
		a	b	c	e	f	g				
		VaR £m	SVaR £m	IRC £m	Other (RNIV) £m	Total £m	MCR £m	RWAs £m	MCR £m	RWAs £m	MCR £m
1	At 1 January 2018	2,769	4,990	3,715	2,544	14,018	1,121	2,994	240	17,012	1,361
2	Movement in risk levels (2)	(741)	282	(983)	1,003	(439)	(35)	(924)	(74)	(1,363)	(109)
3	Model updates/changes (3)	—	—	—	(590)	(590)	(47)	—	—	(590)	(47)
4	Methodology (4)	—	—	—	—	—	—	(222)	(18)	(222)	(18)
8	At 31 December 2018	2,028	5,272	2,732	2,957	12,989	1,039	1,848	148	14,837	1,187

Notes:
(1) RBS does not use the comprehensive risk measure to calculate market risk RWAs.
(2) Due to position changes.
(3) Due to updates to the model to reflect recent experience or changes to model scope.
(4) Changes to the calculations driven by methodology changes.

Key points

- The decrease in RWAs associated with the internal model approach was largely driven by a decrease in the incremental risk charge and in VaR requirements. It was partly offset by an increase in RNIVs and SVaR requirements. The comments below relate to NatWest Markets Plc, which accounts for the majority of the exposure. Refer to Table EU MR1 for comments relating to other significant subsidiaries.
- The rolling number of regulatory VaR model back-testing exceptions in NatWest Markets Plc increased to five in December 2018. (For more information, refer to Tables EU MR4 and MR4_A.) As a result, the entity's capital multiplier was raised.
- The lower incremental risk charge largely reflected a reduction in eurozone government bond positions.
- The decrease in VaR mainly reflected lower interest rate risk and risk arising from currency options.
- The increase in SVaR was mainly driven by the increase in the capital multiplier.
- The main upward driver related to RNIVs. This largely reflected interest rate risk changes over the period. This was partly offset by a reduction resulting from model updates and a reduction in inflation risk factors.
- The decrease under the standardised approach was driven by disposals and expiries in trading book securitisations and a lower banking book foreign exchange charge driven by a refinement to the capital requirement calculation. This was partly offset by an increase in interest rate risk.

CAP 3: LR: Leverage exposures (CRR Delegated Act Template) - RBS and significant subsidiaries

LRSum: Summary reconciliation of accounting assets and leverage ratio exposure

		2018					2017			
		RBS £m	NWB Plc £m	RBS plc £m	UBI DAC £m	NWM Plc £m	RBS £m	NWB Plc £m	UBI DAC £m	NWM Plc £m
1	Total assets as per published financial statements	694,235	301,624	94,497	26,448	242,041	738,056	259,717	26,849	525,889
2	Adjustment for entities which are consolidated for accounting purposes but are outside the scope of regulatory consolidation	5,762	—	—	—	—	6,943	—	—	—
4	Adjustment for derivative financial instruments	(99,216)	(669)	267	52	(99,133)	(112,224)	(1,409)	179	(112,447)
5	Adjustments for securities financing transactions (SFTs)	2,083	203	—	—	1,800	2,262	—	—	2,958
6	Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	50,341	21,047	11,409	1,150	7,306	53,062	10,466	1,066	33,714
EU-6a	Adjustment for Intra-Group exposures excluded from the leverage ratio exposure measure in accordance with Article 429 (7) of Regulation (EU) No 575/2013	—	(23,725)	(7,687)	—	(1,955)	—	(53,112)	—	(35,687)
7	Other adjustments	(8,707)	(2,997)	(222)	(391)	(1,557)	(8,979)	(2,188)	(329)	(24,372)
8	Total leverage ratio exposure	644,498	295,483	98,264	27,259	148,502	679,120	213,474	27,765	390,055
LRCom: Leverage ratio common disclosure										
On-balance sheet exposures (excluding derivatives and SFTs)										
1	On-balance sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral)	538,889	296,808	94,382	25,713	90,203	544,092	257,440	25,568	327,542
2	Asset amounts deducted in determining Tier 1 capital	(8,707)	(2,997)	(222)	(391)	(1,557)	(9,646)	(2,188)	(329)	(24,428)
3	Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets)	530,182	293,811	94,160	25,322	88,646	534,446	255,252	25,239	303,114
Derivative exposures										
4	Replacement cost associated with all derivatives transactions (i.e. net of eligible cash variation margin)	9,706	931	105	134	9,738	14,769	581	441	15,647
5	Add-on amounts for PFE associated with all derivatives transactions (mtm method)	42,306	1,203	277	106	41,909	49,906	287	255	51,928
6	Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the applicable accounting framework	—	—	—	—	—	760	—	—	760
7	Deductions of receivable assets for cash variation margin provided in derivatives transactions	(18,349)	(1,526)	—	—	(16,959)	(20,025)	—	—	(20,021)
8	Exempted CCP leg of client-cleared trade exposures	(249)	—	—	—	(249)	(529)	—	—	(319)
9	Adjusted effective notional amount of written credit derivatives	6,171	—	—	—	6,171	16,432	—	—	16,432
10	(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	(5,452)	—	—	—	(5,452)	(12,695)	—	—	(12,695)
11	Total derivative exposures	34,133	608	382	240	35,158	48,618	868	696	51,732

CAP 3: LR: Leverage exposures (CRR Delegated Act Template) - RBS and significant subsidiaries *continued*

		2018					2017			
		RBS £m	NWB Plc £m	RBS plc £m	UBI DAC £m	NWM Plc £m	RBS £m	NWB Plc £m	UBI DAC £m	NWM Plc £m
Securities financing transaction exposures										
12	Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	67,496	11,900	—	547	35,514	84,705	—	764	59,299
13	Netted amounts of cash payables and cash receivable of gross SFT assets	(39,737)	(8,361)	—	—	(17,967)	(43,973)	—	—	(25,075)
14	Counterparty credit risk exposures for SFT assets	2,083	203	—	—	1,800	2,262	—	—	2,958
16	Total securities financing transaction exposures	29,842	3,742	—	547	19,347	42,994	—	764	37,182
Other off-balance sheet exposures										
17	Off-balance sheet exposures at gross notional amount	174,740	88,128	34,302	3,491	19,138	156,972	46,764	3,207	89,231
18	Adjustments for conversion to credit equivalent amounts	(124,399)	(67,081)	(22,893)	(2,341)	(11,832)	(103,910)	(36,298)	(2,141)	(55,517)
19	Other off-balance sheet exposures	50,341	21,047	11,409	1,150	7,306	53,062	10,466	1,066	33,714
EU-19a	Exemption of Intra-Group exposures (solo basis) in accordance with Article 429(7) of Regulation (EU) No 575/2013 (on and off-balance sheet)	—	(23,725)	(7,687)	—	(1,955)	—	(53,112)	—	(35,687)
Capital and total exposures										
20	Tier 1 capital	36,223	15,389	5,538	3,996	7,352	39,554	13,301	5,356	21,966
21	Total leverage ratio exposure	644,498	295,483	98,264	27,259	148,502	679,120	213,474	27,765	390,055
Leverage ratio		5.6%	5.2%	5.6%	14.7%	5.0%	5.8%	6.2%	19.3%	5.6%

		2018					2017			
		Leverage ratio exposures								
LRSpl: Split-up of on balance sheet exposures (excluding derivatives, SFTs and exempted exposures)		RBS £m	NWB Plc £m	RBS plc £m	UBI DAC £m	NWM Plc £m	RBS £m	NWB Plc £m	UBI DAC £m	NWM Plc £m
EU-1	Total on-balance sheet exposures (excluding derivatives, SFTs, and exempted exposures), of which:	530,182	270,147	86,855	25,322	86,737	534,446	202,140	25,239	267,427
EU-2	Trading book exposures	53,292	—	—	—	47,580	52,575	7	—	47,027
EU-3	Banking book exposures, of which:	476,890	270,147	86,855	25,322	39,157	481,871	202,133	25,239	220,400
EU-4	Covered bonds	926	791	—	—	—	1,290	—	—	1,132
EU-5	Exposures treated as sovereigns	140,875	80,132	21,297	4,258	18,104	144,676	36,148	3,427	101,678
EU-6	Exposures to regional governments, multilateral development bank, international organisations and public sector entities not treated as sovereigns	4,872	3,298	642	436	250	6,387	1,297	444	4,405
EU-7	Institutions	6,631	7,081	3,511	1,402	7,100	5,552	1,183	1,495	12,220
EU-8	Secured by mortgages of immovable properties	185,031	126,169	36,843	13,423	35	187,652	122,139	2,117	44,236
EU-9	Retail exposures	35,536	14,359	4,330	1,923	—	35,676	13,569	13,450	4,464
EU-10	Corporate	76,993	24,381	15,941	2,099	7,824	76,508	17,694	2,112	31,869
EU-11	Exposures in default	5,397	1,484	1,067	1,389	648	6,480	1,510	1,831	2,586
EU-12	Other exposures (e.g. equity, securitisations, and non-credit obligation assets)	20,629	12,452	3,224	392	5,196	17,650	8,593	363	17,810

Capital, liquidity and funding

CAP 4: CAP: Capital instruments - RBS and significant subsidiaries

The following table sets out the main terms and conditions of RBS's Tier 1 and Tier 2 capital instruments that will be treated as non-end point CRR compliant, for instance because they are legacy Tier 1 instruments or because they are Tier 2 instruments that include an incentive for the issuer to redeem. The balances are the International Financial Reporting Standard (IFRS) balance sheet carrying amounts, which may differ from the amount which the instrument contributes to regulatory capital. Regulatory balances exclude, for example, issuance costs and fair value movements, while dated capital is required to be amortised on a straight-line basis over the final five years of maturity. For accounting purposes the capital instruments in the following table are included within equity or subordinated liabilities, details of which are included in Note 19 Subordinated Liabilities of the 2018 ARA. Refer to RBS.com for more details on these and other instruments issued to third parties on an instrument-by-instrument basis.

Pillar 1 treatment - Additional Tier 1	Step-up coupon	31 December 2018 £m	31 December 2017 £m
RBS - undated loan capital			
US780097AH44 US$1,200 million 7.648% perpetual regulatory (callable quarterly from September 2031)	3 month US$ LIBOR plus 2.5%	603	571
NWB Plc - debt preference shares			
GB0006227051 Series A £140 million 9% (not callable)		145	143
RBS US Capital Trusts - debt trust preferred securities			
US74927PAA75 US$650 million 6.425% 2043 (callable quarterly from January 2034)	3 month US$ LIBOR plus 1.9425%	409	407
RBS - equity preference shares			
US7800977396 Series S US$950 million 6.6% (callable any time)		—	321
US780097AU54 Series U US$1,500 million 7.64% (callable every ten years from September 2017)	3 month US$ LIBOR plus 2.32%	494	494
XS0205935470 Series 1 €1,250 million 5.5% (callable quarterly)		—	859
DE000A0E6C37 Series 2 €1,250 million 5.25% (callable quarterly)		—	512
XS0323734961 Series 3 €1,300 million 7.0916% (callable quarterly from September 2017)	3 month EURIBOR plus 2.33%	—	325
GB00B2825B77 Series 1 £750 million floating rate notes (callable quarterly)		—	54

Tier 2 capital securities which contain an incentive for the issuer to redeem

Pillar 1 treatment Tier 2			
NWM Plc - undated loan capital			
XS0045071932 £200 million 9.5% undated subordinated bonds (callable every five years from August 2018)	The higher of 9.5% or the 5 year UK Gilts yield plus 2.375%	—	111
XS0206633082 £600 million 5.5% undated subordinated notes (callable every five years from December 2019)	Aggregate of 1.84% and the 5 year UK Gilts yield	36	37
XSS0144810529 £500 million 6.2% undated subordinated notes (callable every five years from March 2022)	Aggregate of 2.05% and the 5 year UK Gilts yield	25	26
XS0154144132 £900 million 5.625% undated subordinated notes (callable every five years from September 2026)	Aggregate of 2.10% and the 5 year UK Gilts yield	23	24
XS0138939854 £500 million 5.625% undated subordinated notes (callable every five years from June 2032)	Aggregate of 2.41% and the 5 year UK Gilts yield	21	21
NWB Plc - undated loan capital			
XS0102480786 €100 million floating rate undated step-up notes (callable quarterly)	3 month EURIBOR plus 2.15%	9	9
XS0102480869 €400 million floating rate undated subordinated notes (callable quarterly)	3 month EURIBOR plus 2.15%	160	158
XS0102493680 £200 million 7.125% undated subordinated step-up notes (callable every five years from October 2022)	5 year UK Gilts yield plus 3.08%	55	55

Capital, liquidity and funding

CAP 5a: CAP: Countercyclical capital buffer - geographical distribution of credit exposures

As part of the banking reforms introduced by Basel III, a countercyclical capital buffer is required to ensure banks take account of the macro-financial environment when assessing adequate capital requirements. The buffer is to help protect banks during periods of excess aggregate credit growth that have often been associated with the build-up of system wide risk. This regime is intended to help reduce the risk that the supply of credit will be constrained during a period of economic downturn which in turn could undermine the performance of the real economy and consequently result in additional credit losses in the banking system.

The table below summarises RBS's total exposures and own funds requirements based on country of economic operation of the customer. Where applicable, a countercyclical capital buffer rate is applied to the own funds requirement for the geographic region to capture an additional countercyclical requirement.

General credit and trading book exposures exclude those with central governments/banks, regional governments, local authorities, public sector entities, multilateral development banks, international organisations and institutions. The exposures therefore differ to those in the Credit and Counterparty risk sections.

2018		UK £m	RoI £m	US £m	Sweden £m	Hong Kong £m	Norway £m	Other £m	Total £m
General credit exposures	Exposure value for STD	19,384	869	344	84	—	125	11,951	32,757
	Exposure value for IRB	292,313	22,305	11,075	1,061	170	700	30,551	358,175
Trading book	Sum of long and short position of trading book	440	—	1	—	—	—	71	512
	Value of trading book exposure for internal models	321	52	107	—	3	32	671	1,186
Securitisation exposures	Exposure value for STD	—	—	—	—	—	—	—	—
	Exposure value for IRB	11,859	403	1,666	—	—	—	990	14,918
Own funds	Of which: General credit exposures	7,499	1,024	331	37	5	34	1,703	10,633
	Trading book exposures	75	11	21	1	—	1	105	214
	Securitisation exposures	174	16	17	—	—	—	31	238
	Total	7,748	1,051	369	38	5	35	1,839	11,085
Own funds requirement weights		69.89%	9.49%	3.32%	0.35%	0.04%	0.31%	16.60%	100.00%
Countercyclical capital buffer rate		1.00%	—	—	2.00%	1.88%	2.00%	—	0.71%
Total risk exposure (sum of general credit, trading and securitisation)									
NWB Plc		197,077	298	2,479	1,391	76	466	11,569	213,356
RBS plc		70,933	191	1,903	82	43	114	4,008	77,274
UBI DAC		378	21,979	54	23	—	—	65	22,499
NWM Plc		16,390	777	8,040	87	51	54	9,778	35,177
Total own fund requirements									
NWB Plc		4,015	14	84	90	2	19	484	4,708
RBS plc		1,938	5	57	1	2	9	178	2,190
UBI DAC		20	982	2	1	—	—	4	1,009
NWM Plc		660	42	187	4	1	2	337	1,233

CAP 5b: CAP: Countercyclical capital buffer requirement

The additional countercyclical capital buffer requirement is shown below for RBS and its significant subsidiaries.

	RBS £m	NWB Plc £m	RBS plc £m	UBI DAC £m	NWM Plc £m
Total risk exposure amount	188,691	75,583	34,525	14,514	40,777
Institution specific countercyclical buffer rate	0.71%	0.90%	0.90%	0.02%	0.55%
Institution specific countercyclical buffer requirement	1,345	680	309	3	223

Note:
(1) The institution specific countercyclical capital buffer requirement is based on the weighted average of geographical exposures. The Financial Policy Committee (FPC) sets the UK countercyclical capital buffer, which is currently 1.0% (effective from November 2018). The rate had previously increased from 0.0% to 0.5% (effective June 2018). The Republic of Ireland countercyclical buffer is currently 0.0%, the CBI have announced an increase to 1.0% effective July 2019. Foreign exposures may be subject to different countercyclical capital buffer rates depending on the rate set in those jurisdictions.

PV1: BCBS 2: Prudential valuation adjustment

Prudential valuation

Prudential valuation is a regulatory provision that requires additional valuation adjustments (AVAs) to be made over and above fair value adjustments that are calculated in accordance with accounting standards. AVAs represent excess valuation adjustments required to achieve a prudential value over the reported fair value. The purpose of these adjustments is to achieve an appropriate degree of certainty that the valuation is sufficiently prudent having regard to the dynamic nature of trading positions. Prudential valuation adjustments result in a deduction to CET1 capital in accordance with Article 105 of the CRR.

RBS applies prudential valuation to all positions that are subject to fair value accounting (both regulatory trading and non-trading books) classified for accounting purposes as fair value through profit or loss, including held for trading and available for sale.
The prudential valuation is the value of the positions at the lower bound (downside) of the valuation uncertainty range and is always equal to or lower than the fair value for assets, and equal to or higher than the fair value for liabilities. Types of financial instruments on which the highest PVA is observed include interest rate swaps, inflation swaps and equity positions.

For more information regarding valuation methodologies of modelled and non-modelled products, the independent price verification process and the control and governance framework, please refer to the 2018 ARA Financial instruments – valuation (note 12).

2018		a Equities £m	b Interest rates £m	c FX £m	d Credit £m	f Total £m	g Of which: in the trading book £m	h Of which: in the non-trading book £m
1	Closeout uncertainty, of which	27	237	10	33	307	263	44
2	*Mid-market value*	*27*	*210*	*5*	*32*	*274*	*232*	*42*
3	*Closeout cost*	*—*	*15*	*5*	*—*	*20*	*18*	*2*
4	*Concentration*	*—*	*12*	*—*	*1*	*13*	*13*	*—*
5	Early termination	—	—	—	—	—	—	—
6	Model risk	—	44	1	2	47	46	1
7	Operational risk	3	23	1	3	30	25	5
8	Investing and funding costs	—	70	—	—	70	70	—
9	Unearned credit spreads	—	24	—	—	24	24	—
10	Future administrative costs	1	12	1	2	16	14	2
11	Other	—	—	—	—	—	—	—
12	Total prudential valuation adjustment (PVA)	31	410	13	40	494	442	52
	PVA excluding diversification benefit	60	774	24	74	932	830	102

2017		a Equities £m	b Interest rates £m	c FX £m	d Credit £m	f Total £m	g Of which: in the trading book £m	h Of which: in the non-trading book £m
1	Closeout uncertainty of which	8	350	13	4	375	358	17
2	*Mid-market value*	*8*	*328*	*7*	*3*	*346*	*329*	*17*
3	*Closeout cost*	*—*	*17*	*6*	*—*	*23*	*23*	*—*
4	*Concentration*	*—*	*5*	*—*	*1*	*6*	*6*	*—*
5	Early termination	—	—	—	—	—	—	—
6	Model risk	—	33	—	1	34	34	—
7	Operational risk	1	34	1	—	36	36	—
8	Investing and funding costs	—	2	—	—	2	2	—
9	Unearned credit spreads	—	31	—	—	31	31	—
10	Future administrative costs	—	17	1	—	18	18	—
11	Other	—	—	—	—	—	—	—
12	Total prudential valuation adjustment (PVA)	9	467	15	5	496	479	17
	PVA excluding diversification benefit	18	877	27	9	931	898	33

Notes:
(1) A diversification benefit is applied, where permitted under the EBA Regulatory Technical Standards on prudential valuation.
(2) Commodities has been excluded from the above table as this was nil in both the current and prior period.

Key points

- There was an increase in Investment and funding costs due to wider uncertainty in funding levels.
- Mid-market decreased due to realised exits of legacy positions and lower expected disposal costs on the remaining portfolio.

Capital, liquidity and funding

EBA asset encumbrance

The values presented below, including totals, are based on a four-point median average across the four quarters in each of 2018 and 2017.

	Median values			
Assets	Carrying amount of encumbered assets £m	Fair value of encumbered assets £m	Carrying amount of unencumbered assets £m	Fair value of unencumbered assets £m
2018				
Equity instruments	285	285	342	342
Debt securities	46,089	46,175	43,875	43,997
Other assets	67,150		579,733	
Total assets of the reporting institution	113,566		625,505	
2017				
Equity instruments	105	105	554	549
Debt securities	48,527	48,561	36,890	37,011
Other assets	68,203		621,375	
Total assets of the reporting institution	114,703		659,040	

Collateral received	Fair value of encumbered collateral received or own debt securities issued £m	Unencumbered Fair value of collateral received or own debt securities issued available for encumbrance £m
2018		
Equity instruments	1	—
Debt securities	55,597	7,683
Total collateral received by the reporting institution	55,611	7,683
2017		
Equity instruments	—	—
Debt securities	61,516	10,143
Total collateral received by the reporting institution	61,517	10,143

Sources of encumbrance	Matching liabilities, contingent liabilities or securities lent £m	Assets, collateral received and own debt securities issued other than covered bonds and asset-backed securities encumbered £m
2018		
Carrying amount of selected financial liabilities	95,606	109,219
Other sources of encumbrance	55,357	61,113
2017		
Carrying amount of selected financial liabilities	97,265	112,281
Other sources of encumbrance	60,045	63,844

Capital, liquidity and funding

EU LIQ1: Liquidity coverage ratio

The table below shows the breakdown of high quality liquid assets, cash inflows and cash outflows, on both an unweighted and weighted basis, that are used to derive the liquidity coverage ratio. The values presented below are the simple average of the preceding monthly periods ending on the quarterly reporting date as specified in the table.

LCR outflows do not capture all liquidity risks (e.g. intra-day liquidity), RBS assesses these risks as part of its Individual Liquidity Adequacy Assessment Process (ILAAP) and maintains appropriate levels of liquidity.

		Total unweighted value (average)				Total weighted value (average)			
		31 December 2018	30 September 2018	30 June 2018	31 March 2018	31 December 2018	30 September 2018	30 June 2018	31 March 2018
	Number of data points used in the calculation of averages	12	12	12	12	12	12	12	12
		£m	£m	£m	£m	£m	£m	£m	£m
High quality liquid assets									
1	Total high-quality liquid assets (HQLA)					137,905	135,653	131,131	127,084
Cash outflows									
2	Retail deposits and deposits from small business customers	203,315	202,132	200,478	198,292	16,229	15,797	15,289	14,746
3	of which: stable deposits	127,164	127,851	129,345	130,725	6,358	6,393	6,467	6,536
4	of which: less stable deposits	75,850	73,997	76,861	76,883	9,569	9,121	8,548	7,940
5	Unsecured wholesale funding	135,548	137,041	138,225	139,722	58,411	57,812	57,933	59,049
6	Operational deposits (all counterparties) and deposits in networks of cooperative banks	69,042	74,790	76,861	76,883	16,947	18,379	18,893	18,893
7	Non-operational deposits (all counterparties)	65,720	61,180	60,193	61,587	40,678	38,361	37,868	38,903
8	Unsecured debt	787	1,071	1,172	1,253	787	1,071	1,172	1,253
9	Secured wholesale funding					3,851	3,534	2,931	2,413
10	Additional requirements	78,602	80,128	81,838	83,187	20,918	22,068	23,024	23,779
11	Outflows related to derivative exposures and other collateral requirements	8,125	8,946	9,717	10,519	7,256	8,135	8,891	9,608
12	Outflows related to loss of funding on debt products	—	74	74	74	—	74	74	74
13	Credit and liquidity facilities	70,476	71,108	72,046	72,595	13,662	13,859	14,059	14,098
14	Other contractual funding obligations	22,689	23,053	23,344	22,970	1,666	1,352	1,106	1,162
15	Other contingent funding obligations	48,768	50,194	51,245	52,434	3,747	3,716	3,540	3,522
16	Total cash outflows					104,822	104,279	103,882	104,671
Cash inflows									
17	Secured lending (e.g. reverse repos)	78,078	82,463	85,003	85,279	3,257	2,919	2,484	2,000
18	Inflows from fully performing exposures	12,601	12,843	13,472	14,328	8,975	8,927	9,225	9,847
19	Other cash inflows	13,399	13,119	12,970	13,473	5,060	4,838	4,686	5,184
EU-19a	Difference between total weighted inflows and outflows	—	—	—	—	—	—	—	—
EU-19b	Excess inflows from a related specialised credit institution	—	—	—	—	—	—	—	—
20	Total cash inflows	104,078	108,425	111,445	113,080	17,292	16,684	16,396	17,031
EU-20a	Fully exempt inflows	—	—	—	—	—	—	—	—
EU-20b	Inflows subject to 90% cap	—	—	—	—	—	—	—	—
EU-20c	Inflows subject to 75% cap	90,638	93,139	94,948	95,725	17,292	16,684	16,396	17,031
	Total adjusted value								
21	Liquidity buffer					137,905	135,653	131,131	127,084
22	Total net cash outflows					87,530	87,595	87,427	87,640
23	Liquidity coverage ratio (%)					158	155	150	145

EU LI1: CAP: Accounting and regulatory scopes of consolidation

The table below provides a reconciliation between accounting and regulatory consolidation.

	2018				2017			
	Accounting balance sheet £m	Deconsolidation of non-financial entities (1) £m	Consolidation of banking associates (2) £m	Regulatory consolidation £m	Accounting balance sheet £m	Deconsolidation of non-financial entities (1) £m	Consolidation of banking associates (2) £m	Regulatory consolidation £m
Assets								
Cash and balances at central banks	88,897	—	447	89,344	98,337	—	946	99,283
Trading assets	75,119	—	—	75,119	85,991	—	—	85,991
Derivatives	133,349	—	11	133,360	160,843	—	25	160,868
Settlement balances	2,928	—	—	2,928	2,517	—	—	2,517
Loans to banks - amortised cost	12,947	—	—	12,947	11,517	—	—	11,517
Loans to customers - amortised cost	305,089	(63)	4,983	310,009	310,116	(49)	5,590	315,657
Securities subject to repurchase agreements	24,758	—	—	24,758	13,717	—	—	13,717
Other financial assets excluding securities subject to repurchase agreements	34,727	(346)	1,535	35,916	38,212	(367)	1,416	39,261
Other financial assets	59,485	(346)	1,535	60,674	51,929	(367)	1,416	52,978
Intangible assets	6,616	—	—	6,616	6,543	—	2	6,545
Other assets	8,401	181	191	8,773	10,068	206	(826)	9,448
Assets of disposal groups	1,404	—	(1,179)	225	195	—	—	195
	694,235	(228)	5,988	699,995	738,056	(210)	7,153	744,999
Of which: By significant subsidiary (includes Intra-Group exposures)								
NWB Plc	301,624	—	—	301,624	259,717	—	—	259,717
RBS plc	94,497	—	—	94,497	2,232	—	—	2,232
UBI DAC	26,448	—	—	26,448	26,848	—	—	26,848
NWM Plc	242,041	—	—	242,041	525,889	—	—	525,889
Liabilities								
Bank deposits	23,297	—	—	23,297	30,396	—	—	30,396
Customer deposits	360,914	14	5,459	366,387	361,316	78	6,472	367,866
Settlement balances	3,066	—	—	3,066	2,844	—	—	2,844
Trading liabilities	72,350	—	—	72,350	81,982	—	—	81,982
Derivatives	128,897	—	5	128,902	154,506	—	15	154,521
Other financial liabilities	39,732	—	208	39,940	30,326	—	356	30,682
Subordinated liabilities	10,535	—	—	10,535	12,722	—	—	12,722
Other liabilities	8,953	(242)	316	9,027	14,861	(288)	310	14,883
Liabilities of disposal groups	1	—	—	1	10	—	—	10
	647,745	(228)	5,988	653,505	688,963	(210)	7,153	695,906
Of which: by significant subsidiary (includes Intra-Group exposures)								
NWB Plc	283,348	—	—	283,348	244,362	—	—	244,362
RBS plc	86,936	—	—	86,936	2,146	—	—	2,146
UBI DAC	22,058	—	—	22,058	21,164	—	—	21,164
NWM Plc	233,119	—	—	233,119	481,367	—	—	481,367
Non-controlling interests	754	—	—	754	763	—	—	763
Owners' equity	45,736	—	—	45,736	48,330	—	—	48,330
Total equity	46,490	—	—	46,490	49,093	—	—	49,093
Of which: by significant subsidiary: (includes intra-group exposures)								
NWB Plc	18,276	—	—	18,276	15,355	—	—	15,355
RBS plc	7,561	—	—	7,561	86	—	—	86
UBI DAC	4,390	—	—	4,390	5,684	—	—	5,684
NWM Plc	8,922	—	—	8,922	44,522	—	—	44,522

Notes:
(1) RBS can only include particular types of subsidiary undertaking in the regulatory consolidation. Non-financial undertakings are excluded from the regulatory consolidation.
(2) RBS must proportionally consolidate its associates for regulatory purposes where they are classified as credit institutions or financial institutions. These will generally have been equity accounted for financial reporting purposes. A principal contributor is RBS's investment in Alawwal Bank.

EU LI2: IRB and STD: Balance sheet to credit risk EAD bridge

The table below provides a bridge between the balance sheet and credit risk EAD by balance sheet caption.

				Other regulatory adjustments								
2018	Balance sheet £bn	Consolidation differences (1) £bn	Regulatory consolidation £bn	Within the scope of market risk (2) £bn	Credit provisions (3) £bn	Netting and collateral (4) £bn	Capital deduction (5) £bn	Disposal groups (6) £bn	Methodology differences and reclassifications (7) £bn	Total drawn EAD £bn	Undrawn and off-balance sheet EAD £bn	Total EAD £bn
Cash and balances at central banks	88.9	0.4	89.3	—	—	—	—	1.4	—	90.7	—	90.7
Trading assets	75.1	—	75.1	(30.1)	—	(18.2)	—	—	(20.2)	6.6	—	6.6
Derivatives	133.4	—	133.4	—	0.3	(88.7)	—	—	(22.2)	22.8	—	22.8
Settlement balances	2.9	—	2.9	—	—	—	—	—	(2.9)	—	—	—
Loans to banks - amortised cost	12.9	—	12.9	(0.3)	—	—	—	—	(8.3)	4.3	—	4.3
Loans to customers - amortised cost	305.1	4.9	310.0	—	3.2	(19.7)	—	—	9.4	302.9	77.0	379.9
Securities subject to repurchase agreements	24.8	—	24.8	—	—	—	—	—	(0.2)	24.6	—	24.6
Other financial assets excluding securities subject to	34.7	1.3	36.0	—	—	—	—	—	(1.6)	34.4	—	34.4
repurchase agreements	—	—	—	—	—	—	—	—	—	—	—	—
Other financial assets	59.5	1.3	60.8	—	—	—	—	—	(1.8)	59.0	—	59.0
Intangible assets	6.6	—	6.6	—	—	—	(6.6)	—	—	—	—	—
Other assets	8.4	0.4	8.8	—	0.1	—	(0.7)	—	6.2	14.3	—	14.3
Assets of disposal groups	1.4	(1.2)	0.2	—	—	—	—	(1.4)	1.2	—	—	—
Total assets	694.2	5.8	700.0	(30.4)	3.6	(126.6)	(7.3)	—	(38.6)	500.6	77.0	577.7
Contingent obligations											5.7	5.7
											82.7	583.3

For the notes to this table refer to the following page.

Capital, liquidity and funding

EU LI2: IRB and STD: Balance sheet to credit risk EAD bridge *continued*

2017	Balance sheet £bn	Consolidation differences (1) £bn	Regulatory consolidation £bn	Other regulatory adjustments: Within the scope of market risk (2) £bn	Credit provisions (3) £bn	Netting and collateral (4) £bn	Capital deduction (5) £bn	Disposal groups (6) £bn	Methodology differences and reclassifications (7) £bn	Total drawn EAD £bn	Undrawn and off-balance sheet EAD £bn	Total EAD £bn
Cash and balances at central banks	98.3	0.9	99.2	—	—	—	—	—	0.1	99.3	—	99.3
Trading assets	86.0	—	86.0	(27.4)	—	(28.9)	—	—	(22.0)	7.7	—	7.7
Derivatives	160.9	—	160.9	—	0.3	(134.7)	—	—	(1.1)	25.4	—	25.4
Settlement balances	2.5	—	2.5	—	—	—	—	—	(2.5)	—	—	—
Loans to banks - amortised cost	11.5	—	11.5	(0.3)	—	—	—	—	(1.8)	9.4	—	9.4
Loans to customers - amortised	310.2	5.6	315.8	—	3.6	(21.6)	—	—	8.8	306.6	74.7	381.3
Securities subject to repurchase agreements	13.6	—	13.6	—	—	—	—	—	0.4	14.0	—	14.0
Other financial assets excluding securities subject to	38.2	1.0	39.2	—	—	—	—	—	0.1	39.3	—	39.3
repurchase agreements	—	—	—	—	—	—	—	—	—	—	—	—
Other financial assets	51.9	1.0	52.9	—	—	—	—	—	0.5	53.3	—	53.3
Intangible assets	6.5	—	6.5	—	—	—	(6.5)	—	—	—	—	—
Other assets	10.1	(0.6)	9.5	—	—	—	(0.9)	0.2	3.1	11.9	—	11.9
Assets of disposal groups	0.2	—	0.2	—	—	—	—	(0.2)	—	—	—	—
Total assets	738.1	6.9	745.0	(27.7)	4.0	(185.2)	(7.4)	—	(15.0)	513.6	74.7	588.3
Contingent obligations											9.2	9.2
											83.8	597.4

Notes:
(1) Represents proportional consolidation of associates and deconsolidation of certain subsidiaries, as required by regulatory rules.
(2) The exposures in regulatory trading book businesses are subject to market risk and are therefore excluded from EAD.
(3) Impairment loss provisions on loans and advances and securities, and credit valuation adjustment on derivatives.
(4) Includes:
- Reverse repos: reflects regulatory approach for securities financing transactions including netting of collateral and cash legs.
- Loans and advances: cash collateral pledged with counterparties in relation to net derivative liability positions.
- Derivatives: impact of master netting arrangements.

(5) Capital deductions are excluded as EAD only captures exposures for credit RWAs.
(6) Amounts reclassified to balance sheet lines for EAD.
(7) Primarily includes:
- Loans and advances: offset related to cash management pooling arrangements not allowed under IFRS and standardised approach credit risk mitigation.
- Settlement balances: the amount represents instruments pending settlement on which no EAD is calculated.
- Derivatives: EAD valuation adjustments offset by difference between netting arrangements and netting within regulatory netting sets.
- Property, plant and equipment: includes residual value of operating leases.

Credit risk

Credit risk

EU CRA: IRB and STD: General qualitative information about credit risk

This section details RBS's overall credit risk profile. Further analysis is provided in subsequent sections for credit risk, counterparty credit risk and securitisation credit risk.

The risk profile is analysed by a variety of asset concentrations, credit quality and regulatory RWA treatments, including internal model estimates for probability of default, loss given default and exposure at default.

An overview of these models, as well as the governance process used to develop and review them, and back-testing of model performance, is also presented.

Refer to the Glossary for definitions of terms.

General information about credit risk

Credit risk is the risk of financial loss owing to the failure of a customer or counterparty to meet its obligation to settle outstanding amounts.

RBS is exposed to credit risk as a result of a wide range of business activities. RBS's principal sources of credit risk are lending, off-balance sheet products, derivatives and securities financing and debt securities. RBS is also exposed to settlement risk through foreign exchange, trade finance and payments activities.

The disclosures in this section cover credit risk and counterparty credit risk. When discussed together, they are referred to as total credit risk.

Counterparty credit risk principally comprises exposures arising from derivatives and securities financing transactions. Credit risk excludes such exposures but includes loans and advances to customers, banks and central banks, as well as holdings of debt securities and equity shares.

The two subsequent sections cover credit risk and counterparty credit risk separately. Except where noted, the disclosures in these sections exclude intra-Group exposures. Further detail on securitisation credit risk is provided in the Securitisation section of this document.

Credit risk governance and management

For a description of the main characteristics and elements of credit risk governance and management in RBS as well as additional credit risk disclosures, refer to page 111 of the 2018 ARA.

Presentation of data in the Credit risk section

The exposure at default (EAD) figures presented in this document may be either pre or post credit risk mitigation (CRM), and are labelled accordingly.

Credit risk (excluding counterparty credit risk) EAD pre CRM:
- Standardised approach – EAD before legally enforceable netting and financial collateral.
- IRB approach – EAD before legally enforceable netting only.

Credit risk (excluding counterparty credit risk) EAD post CRM:
- Standardised approach – EAD after legally enforceable netting and financial collateral.
- IRB approach – EAD after legally enforceable netting only.

Certain tables exclude intra-Group exposures.

Counterparty credit risk EAD post CRM for derivatives and securities financing transactions, under both the standardised and IRB approaches, is EAD after legally enforceable netting and collateral.

Other items

Non-credit obligation assets that are included in the credit risk tables contain the following categories of exposure:
- Non-credit assets — assets owned by RBS without associated credit risk or uncertainty related to obligor performance affecting their future value. These comprise tangible assets (such as property, plant and equipment), prepayments, accrued income, items in transit and deferred tax assets.
- Consortium investment exposures — exposures arising as a result of equity investments made by RBS in its capacity as a member of a consortium.
- Intra-group exposures — exposures to RBS entities included in regulatory consolidation, including in the core UK group.

We have refined the classification of non-credit deferred tax assets (DTA) and significant subsidiaries' significant investments in financial institutions (SIs) reported within STD disclosures. Comparative data for 2017 has been revised to be consistent. The impact of these changes reduced Corporates Other (EAD £950 million, RWA £2,376 million) and increased Central Governments and Banks (EAD £413 million, RWA £1,033 million) relating to DTAs and Equities (EAD £537 million, RWA £1,343 million) relating to SIs.

The following templates reflect this revised presentation both on a spot and average basis as applicable: CR1, EU CR1_B, EU CR1_C, EU CRB_B, EU CRB_C, EU CRB_D, EU CRB_E and EU CRE_1.

Credit risk

CR1: IRB and STD: RWA density by RBS sector cluster

The table below summarises RBS's total credit risk profile (incorporating counterparty credit risk and securitisations) by customer type. This reflects the basis on which customers are managed internally. Wholesale customers are managed on an individual basis and grouped by sector. Personal customers are managed on a portfolio basis and grouped into portfolios of similar risk. The table presents EAD post CRM, RWAs and RWA density, each split by regulatory approach i.e. internal ratings based (IRB) and standardised (STD).

	EAD post CRM			RWAs			RWA density		
	IRB	STD	Total	IRB	STD	Total	IRB	STD	Total
2018	£m	£m	£m	£m	£m	£m	%	%	%
Sector cluster									
Sovereign									
Central banks (1)	28,222	71,431	99,653	865	860	1,725	3	1	2
Central governments	22,937	24,698	47,635	1,971	—	1,971	9	—	4
Other sovereign	2,594	655	3,249	606	148	754	23	23	23
Total sovereign	53,753	96,784	150,537	3,442	1,008	4,450	6	1	3
Financial institutions (FIs)									
Banks	21,075	563	21,638	9,425	274	9,699	45	49	45
Non-bank FIs (2)	32,224	7,303	39,527	12,176	2,870	15,046	38	39	38
SSPEs (3)	9,710	328	10,038	1,847	330	2,177	19	101	22
Total FIs	63,009	8,194	71,203	23,448	3,474	26,922	37	42	38
Corporates									
Property									
- UK	38,061	2,784	40,845	17,603	2,452	20,055	46	88	49
- RoI	1,230	145	1,375	836	143	979	68	99	71
- Western Europe	2,570	157	2,727	1,088	166	1,254	42	105	46
- US	202	1	203	82	1	83	41	100	41
- RoW	365	1,919	2,284	189	1,651	1,840	52	86	81
Total property	42,428	5,006	47,434	19,798	4,413	24,211	47	88	51
Natural resources	13,804	516	14,320	5,920	485	6,405	43	94	45
Transport	15,899	925	16,824	7,158	866	8,024	45	94	48
Manufacturing	15,193	2,105	17,298	7,153	1,895	9,048	47	90	52
Retail and leisure (4)	17,972	2,676	20,648	10,199	2,458	12,657	57	92	61
Services	19,970	1,624	21,594	11,084	1,449	12,533	56	89	58
TMT (5)	6,291	262	6,553	3,820	249	4,069	61	95	62
Total corporates	131,557	13,114	144,671	65,132	11,815	76,947	50	90	53
Personal									
Mortgages									
- UK	150,348	10,365	160,713	11,291	3,791	15,082	8	37	9
- RoI	15,033	54	15,087	7,608	23	7,631	51	42	51
- Western Europe	—	257	257	—	98	98	—	38	38
- US	—	211	211	—	79	79	—	37	37
- RoW	—	1,051	1,051	—	378	378	—	36	36
Total mortgages	165,381	11,938	177,319	18,899	4,369	23,268	11	37	13
Other personal	29,359	3,670	33,029	12,867	2,604	15,471	44	71	47
Total personal	194,740	15,608	210,348	31,766	6,973	38,739	16	45	18
Other items	4,867	1,704	6,571	3,807	598	4,405	78	35	67
Total	447,926	135,404	583,330	127,595	23,868	151,463	28	18	26

For the notes to this table refer to the following page.

Credit risk

CR1: IRB and STD: RWA density by RBS sector cluster *continued*

2017	EAD post CRM IRB £m	STD £m	Total £m	RWAs IRB £m	STD £m	Total £m	RWA density IRB %	STD %	Total %
Sector cluster									
Sovereign									
Central banks (1)	37,041	71,143	108,184	1,032	1,032	2,064	3	1	2
Central governments	20,429	22,029	42,458	1,896	13	1,909	9	—	4
Other sovereign	3,557	399	3,956	1,043	163	1,206	29	41	30
Total sovereign	61,027	93,571	154,598	3,971	1,208	5,179	7	1	3
Financial institutions (FIs)									
Banks	21,941	647	22,588	8,916	294	9,210	41	45	41
Non-bank FIs (1,2)	31,906	6,769	38,675	13,147	3,404	16,551	41	50	43
SSPEs (3)	10,146	135	10,281	2,265	126	2,391	22	93	23
Total FIs	63,993	7,551	71,544	24,328	3,824	28,152	38	51	39
Corporates									
Property									
- UK	40,812	2,615	43,427	17,879	2,299	20,178	44	88	46
- RoI	1,246	101	1,347	900	100	1,000	72	99	74
- Western Europe	3,294	143	3,437	1,669	154	1,823	51	108	53
- US	241	1	242	104	1	105	43	100	44
- RoW	341	1,854	2,195	225	1,704	1,929	66	92	88
Total property	45,934	4,714	50,648	20,777	4,258	25,035	45	90	49
Natural resources	16,479	550	17,029	6,844	576	7,420	42	105	44
Transport	17,721	918	18,639	7,996	916	8,912	45	100	48
Manufacturing	16,324	1,938	18,262	7,567	1,843	9,410	46	95	52
Retail and leisure (4)	19,590	3,594	23,184	11,134	3,510	14,644	57	98	63
Services	20,741	1,505	22,246	11,519	1,418	12,937	56	94	58
TMT (5)	5,882	306	6,188	3,897	286	4,183	66	93	68
Total corporates	142,671	13,525	156,196	69,734	12,807	82,541	49	95	53
Personal									
Mortgages									
- UK	146,957	9,719	156,676	9,738	3,612	13,350	7	37	9
- RoI	15,915	15	15,930	10,085	9	10,094	63	60	63
- Western Europe	—	229	229	—	92	92	—	40	40
- US	—	198	198	—	74	74	—	37	37
- RoW	—	977	977	—	355	355	—	36	36
Total mortgages	162,872	11,138	174,010	19,823	4,142	23,965	12	37	14
Other personal	28,823	4,696	33,519	11,764	3,495	15,259	41	74	46
Total personal	191,695	15,834	207,529	31,587	7,637	39,224	16	48	19
Other items	6,214	1,399	7,613	4,468	507	4,975	72	36	65
Total	465,600	131,880	597,480	134,088	25,983	160,071	29	20	27

Notes:
(1) 2017 presentation for STD measures has been revised, see EU CRA for details.
(2) Non-bank financial institutions, such as US agencies, insurance companies, pension funds, hedge and leverage funds, broker-dealers and non-bank subsidiaries of banks.
(3) Securitisation special purpose entities (SSPEs) primarily relate to securitisation-related vehicles.
(4) Reduction in the STD exposure was a result of refined sector cluster classification.
(5) Telecommunications, media and technology.

Key points

- EAD post CRM – Total credit risk exposure declined versus 2017, and reflected asset sales, selective disposals and limit reductions (across the corporate portfolio). This reduction was partially offset by UK mortgage portfolio growth (reflecting strategy and risk appetite).
- RWAs – The decline was driven by RBS's risk reduction strategy, and the resulting improvements in Basel risk metrics. Improvements were partly offset by revisions to LGD models for both the UK mid-corporate and quasi-government portfolios as well as mortgage portfolio model enhancements. Overall RWA density remained largely unchanged.
- Financial institutions – Bank and SSPE exposure fell, due to repayments and limit reductions. Non-bank FI exposure rose slightly, largely reflecting increased lending to the insurers and funds sector. RWA density fell slightly, reflecting a reduction in high-risk assets in non-bank FIs and SSPEs.
- Corporates – Exposures to UK property, natural resources, transport, retail and leisure, and services sectors fell in 2018, driven by repayments and limit reductions. RWAs declined driven by own asset securitisation projects and customer repayments.
- Mortgages – Exposure increased reflecting RBS's strategy to grow the mortgage portfolio in a controlled manner. The RWA reduction was driven by the Irish mortgage portfolio, where the quality of the book improved following an asset sale. Overall RWA density remained stable.

Credit risk

CR2: IRB and STD: EAD, RWAs and MCR by CRR exposure class: RBS and significant subsidiaries

The table below shows credit risk (including securitisations) and counterparty credit risk separately for RBS and significant subsidiaries (including intra-Group exposures). It presents EAD pre and post CRM, RWAs and minimum capital requirements (MCR), split by regulatory approach and exposure class. In 2018, movements in exposures and RWAs in significant subsidiaries were significantly affected by transfers as part of RBS's ring-fencing implementation. Securitisations completed in Q4 2017 have been excluded from the following corporates exposure classes for 2018: specialised lending, SME and other corporate. In 2017, they were all excluded from the other corporate exposure class.

	RBS				NWB Plc				RBS plc			
IRB	EAD pre CRM £m	EAD post CRM £m	RWAs £m	MCR £m	EAD pre CRM £m	EAD post CRM £m	RWAs £m	MCR £m	EAD pre CRM £m	EAD post CRM £m	RWAs £m	MCR £m
2018												
Credit risk												
Central governments and central banks	54,519	54,450	3,203	256	29,217	29,150	1,845	148	46	46	1	—
Institutions	12,577	10,790	3,374	270	3,877	2,471	743	59	2,906	2,544	872	70
Corporates	142,127	132,335	63,843	5,108	55,451	49,521	27,758	2,221	40,155	36,660	19,116	1,529
Specialised lending	*18,282*	*18,059*	*11,808*	*945*	*5,299*	*5,289*	*3,623*	*290*	*8,001*	*7,859*	*5,410*	*433*
SME	*21,633*	*21,012*	*10,616*	*849*	*9,893*	*9,508*	*5,053*	*404*	*4,872*	*4,712*	*2,543*	*203*
Other corporate	*102,212*	*93,264*	*41,419*	*3,314*	*40,259*	*34,724*	*19,082*	*1,527*	*27,282*	*24,089*	*11,163*	*893*
Retail	204,979	204,979	35,988	2,879	149,764	149,764	20,505	1,640	34,892	34,892	5,483	439
Secured by real estate property - SME	*1,359*	*1,359*	*508*	*41*	*1,017*	*1,017*	*377*	*30*	*307*	*307*	*112*	*9*
- non-SME	*165,381*	*165,381*	*18,902*	*1,512*	*121,144*	*121,144*	*8,727*	*698*	*27,089*	*27,089*	*1,958*	*157*
Qualifying revolving	*22,634*	*22,634*	*5,912*	*473*	*17,441*	*17,441*	*4,225*	*338*	*4,481*	*4,481*	*1,350*	*108*
Other retail - SME	*9,118*	*9,118*	*3,923*	*314*	*5,641*	*5,641*	*2,241*	*179*	*1,601*	*1,601*	*627*	*50*
- non-SME	*6,487*	*6,487*	*6,743*	*539*	*4,521*	*4,521*	*4,935*	*395*	*1,414*	*1,414*	*1,436*	*115*
Equities	722	722	1,590	127	—	—	—	—	—	—	—	—
Securitisation	14,141	14,141	2,543	203	5,988	5,988	1,230	98	1,665	1,665	319	26
Non-credit obligation assets	5,779	5,779	4,080	327	3,089	3,089	2,498	200	4	4	4	—
Total IRB	434,844	423,196	114,621	9,170	247,386	239,983	54,579	4,366	79,668	75,811	25,795	2,064
STD												
Central governments and central banks	95,657	95,595	866	69	58,050	58,050	2,098	168	21,289	21,289	8	1
Regional governments and local authorities	155	155	138	11	14	14	3	—	2	2	—	—
Multilateral development banks	31	31	—	—	—	—	—	—	—	—	—	—
Institutions	471	510	221	18	28,737	28,737	39	3	8,966	8,966	797	64
Corporates	11,047	10,433	9,588	768	2,695	2,504	2,466	198	929	864	831	66
Retail	2,859	2,836	1,830	146	491	491	306	24	209	204	130	10
Secured by mortgages on:												
immovable property - residential	12,840	12,840	4,606	368	18	18	14	1	746	746	312	25
- commercial	2,909	2,885	2,884	231	167	167	168	13	311	288	301	24
Exposures in default	555	554	680	54	26	26	38	3	86	86	114	9
Items associated with particularly high risk	28	28	42	3	—	—	—	—	—	—	—	—
Covered bonds	137	137	27	2	—	—	—	—	—	—	—	—
Equity exposures	705	705	1,533	123	1,375	1,375	3,766	302	55	55	101	8
Other exposures	2,057	2,057	788	63	353	353	71	6	1,058	1,058	294	24
Total STD	129,451	128,766	23,203	1,856	91,926	91,735	8,969	718	33,651	33,558	2,888	231
Total IRB and STD	564,295	551,962	137,824	11,026	339,312	331,718	63,548	5,084	113,319	109,369	28,683	2,295

CR2: IRB and STD: EAD, RWAs and MCR by CRR exposure class: RBS and significant subsidiaries *continued*

	UBIDAC				NWM Plc			
	EAD pre CRM £m	EAD post CRM £m	RWAs £m	MCR £m	EAD pre CRM £m	EAD post CRM £m	RWAs £m	MCR £m
2018								
Credit risk								
Central governments and central banks	4,704	4,704	471	38	15,227	15,227	772	62
Institutions	737	737	185	15	1,651	1,651	737	59
Corporates	5,095	4,985	3,258	260	9,757	9,635	2,577	206
Specialised lending	*1,098*	*1,098*	*791*	*63*	*1,070*	*999*	*284*	*23*
SME	*1,155*	*1,152*	*551*	*44*	*58*	*12*	*1*	—
Other corporate	*2,842*	*2,735*	*1,916*	*153*	*8,629*	*8,624*	*2,292*	*183*
Retail	16,184	16,184	8,342	667	—	—	—	—
Secured by real estate property - non-SME	*15,034*	*15,034*	*7,609*	*608*	—	—	—	—
Qualifying revolving	*354*	*354*	*248*	*20*	—	—	—	—
Other retail - SME	*594*	*594*	*334*	*27*	—	—	—	—
- non-SME	*202*	*202*	*151*	*12*	—	—	—	—
Equities	—	—	—	—	159	159	468	37
Securitisation	—	—	—	—	6,483	6,483	963	77
Non-credit obligation assets	444	444	187	15	148	148	126	10
Total IRB	27,164	27,054	12,443	995	33,425	33,303	5,643	451
STD								
Central governments and central banks	—	—	1	—	3,499	3,499	—	—
Regional governments and local authorities	2	2	2	—	—	—	—	—
Institutions	736	736	147	12	9,183	9,183	498	40
Corporates	682	682	660	52	1,816	1,706	879	70
Retail	15	15	8	1	—	—	—	—
Secured by mortgages on:								
immovable property - residential	87	87	87	7	—	—	—	—
- commercial	8	8	8	1	—	—	—	—
Exposures in default	11	11	17	1	5	5	7	1
Items associated with particularly high risk	—	—	—	—	28	28	42	3
Equity exposures	3	3	8	1	792	792	2,165	174
Other exposures	32	32	6	1	—	—	—	—
Total STD	1,576	1,576	944	76	15,323	15,213	3,591	288
Total IRB and STD	28,740	28,630	13,387	1,071	48,748	48,516	9,234	739

CR2: IRB and STD: EAD, RWAs and MCR by CRR exposure class: RBS and significant subsidiaries *continued*

	RBS			NWB Plc			RBS plc		
IRB	EAD post CRM £m	RWAs £m	MCR £m	EAD post CRM £m	RWAs £m	MCR £m	EAD post CRM £m	RWAs £m	MCR £m
2018									
Counterparty credit risk									
Central governments and central banks	1,454	304	24	160	5	—	—	—	—
Institutions	8,138	5,941	476	601	189	15	—	—	—
Corporates	14,361	6,302	504	47	23	2	—	—	—
Specialised lending	*965*	*729*	*58*	*10*	*7*	*1*	—	—	—
SME	*102*	*56*	*5*	—	—	—	—	—	—
Other corporate	*13,294*	*5,517*	*441*	*37*	*16*	*1*	—	—	—
Securitisation positions	777	427	34	—	—	—	—	—	—
Total IRB	24,730	12,974	1,038	808	217	17	—	—	—
STD									
Central governments and central banks	1,019	—	—	523	—	—	—	—	—
Regional governments and local authorities	15	3	—	—	—	—	—	—	—
Institutions	5,322	419	34	2,029	93	8	114	—	—
Corporates	275	238	19	15	15	1	—	—	—
Retail	7	5	—	—	—	—	—	—	—
Total STD	6,638	665	53	2,567	108	9	114	—	—
Total IRB and STD	31,368	13,639	1,091	3,375	325	26	114	—	—

CR2: IRB and STD: EAD, RWAs and MCR by CRR exposure class: RBS and significant subsidiaries *continued*

	UBIDAC			NWM Plc		
IRB	EAD post CRM £m	RWAs £m	MCR £m	EAD post CRM £m	RWAs £m	MCR £m
2018						
Counterparty credit risk						
Central governments and central banks	—	—	—	1,291	299	24
Institutions	2	1	—	7,456	5,740	459
Corporates	47	36	3	13,318	6,120	490
Specialised lending	*35*	*27*	*2*	*891*	*675*	*54*
SME	*1*	*1*	—	*101*	*55*	*4*
Other corporate	*11*	*8*	*1*	*12,326*	*5,390*	*432*
Securitisation positions	—	—	—	627	286	23
Total IRB	49	37	3	22,692	12,445	996
STD						
Central governments and central banks	—	—	—	496	—	—
Regional governments and local authorities	—	—	—	15	3	—
Institutions	178	85	7	6,111	490	39
Corporates	—	—	—	578	347	28
Total STD	178	85	7	7,200	840	67
Total IRB and STD	227	122	10	29,892	13,285	1,063

Credit risk

CR2: IRB and STD: EAD, RWAs and MCR by CRR exposure class: RBS and significant subsidiaries *continued*

	RBS				NWB Plc				UBIDAC				NWM Plc			
IRB	EAD pre CRM £m	EAD post CRM £m	RWAs £m	MCR £m	EAD pre CRM £m	EAD post CRM £m	RWAs £m	MCR £m	EAD pre CRM £m	EAD post CRM £m	RWAs £m	MCR £m	EAD pre CRM £m	EAD post CRM £m	RWAs £m	MCR £m
2017																
Credit risk																
Central governments and central banks	57,057	56,990	3,278	262	1,297	1,229	37	3	3,880	3,880	408	33	51,006	51,006	2,783	223
Institutions	15,506	13,672	3,901	312	1,928	693	219	18	445	445	87	7	8,058	7,621	2,543	203
Corporates	149,530	140,976	68,187	5,455	43,364	38,060	20,829	1,666	5,225	5,147	3,766	301	72,156	69,125	32,790	2,624
Specialised lending	*23,774*	*23,661*	*16,090*	*1,287*	*6,694*	*6,684*	*4,583*	*367*	*1,195*	*1,195*	*880*	*70*	*13,601*	*13,499*	*9,211*	*737*
SME	*24,907*	*24,271*	*11,252*	*900*	*11,828*	*11,455*	*5,318*	*425*	*1,229*	*1,224*	*734*	*59*	*5,900*	*5,688*	*2,694*	*216*
Other corporate	*100,849*	*93,044*	*40,845*	*3,268*	*24,842*	*19,921*	*10,928*	*874*	*2,801*	*2,728*	*2,152*	*172*	*52,655*	*49,938*	*20,885*	*1,671*
Retail	202,142	202,142	35,837	2,867	141,751	141,752	17,656	1,413	17,132	17,132	10,892	871	38,807	38,807	5,600	448
Secured by real estate property - SME	*1,389*	*1,389*	*504*	*40*	*1,041*	*1,041*	*379*	*30*	—	—	—	—	*349*	*349*	*126*	*10*
- non-SME	*162,871*	*162,871*	*19,822*	*1,586*	*113,944*	*113,945*	*7,036*	*563*	*15,916*	*15,916*	*10,084*	*806*	*30,736*	*30,736*	*2,094*	*168*
Qualifying revolving	*22,528*	*22,528*	*6,022*	*482*	*17,224*	*17,224*	*4,249*	*340*	*366*	*366*	*228*	*18*	*4,587*	*4,587*	*1,450*	*116*
Other retail - SME	*9,352*	*9,352*	*3,988*	*319*	*5,506*	*5,506*	*2,108*	*169*	*634*	*634*	*422*	*34*	*1,746*	*1,746*	*675*	*54*
- non-SME	*6,002*	*6,002*	*5,501*	*440*	*4,036*	*4,036*	*3,884*	*311*	*216*	*216*	*158*	*13*	*1,389*	*1,389*	*1,255*	*100*
Equities	861	861	1,961	157	—	—	—	—	—	—	—	—	145	145	435	35
Securitisation	12,563	12,563	2,298	184	5,237	5,237	1,080	86	—	—	—	—	7,319	7,319	1,154	92
Non-credit obligation assets	7,180	7,180	4,740	379	1,516	1,516	930	74	486	486	200	16	2,558	2,558	1,878	150
Total IRB	444,839	434,384	120,202	9,616	195,093	188,487	40,751	3,260	27,168	27,090	15,353	1,228	180,049	176,581	47,183	3,775
STD																
Central governments and central banks	92,807	92,821	1,039	83	34,925	34,930	1,318	105	—	—	—	—	55,147	55,155	1,183	95
Regional governments and local authorities	157	157	144	12	1	1	—	—	2	2	2	—	9	9	2	—
Multilateral development banks	30	30	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Institutions	419	474	217	17	53,997	53,998	10	1	1,132	1,132	226	18	44,808	44,808	453	36
Corporates	10,821	10,477	10,158	812	508	509	498	40	405	405	402	31	4,939	4,881	4,229	338
Retail	3,071	3,041	2,111	169	380	380	227	18	12	12	7	1	103	103	60	5
Secured by mortgages on:																
immovable property - residential	12,798	12,798	4,926	394	55	55	51	4	47	47	47	4	922	922	373	30
- commercial	2,522	2,516	2,536	203	74	67	67	5	—	—	—	—	279	279	307	25
Exposures in default	980	978	1,102	88	39	39	53	4	15	15	23	2	562	562	605	48
Items associated with particularly high risk	34	34	51	4	—	—	—	—	—	—	—	—	34	34	51	4
Covered bonds	159	159	32	3	—	—	—	—	—	—	—	—	—	—	—	—
Equity exposures	650	650	1,461	117	1,936	1,936	5,488	440	5	5	12	1	11,218	11,218	39,718	3,177
Other exposures	1,709	1,709	697	56	562	562	112	9	33	33	7	1	474	474	95	8
Total STD	126,157	125,844	24,474	1,958	92,477	92,477	7,824	626	1,651	1,651	726	58	118,495	118,445	47,076	3,766
Total IRB and STD	570,996	560,228	144,676	11,574	287,570	280,964	48,575	3,886	28,819	28,741	16,079	1,286	298,544	295,026	94,259	7,541

CR2: IRB and STD: EAD, RWAs and MCR by CRR exposure class: RBS and significant subsidiaries *continued*

	RBS			NWB Plc			UBIDAC			NWM Plc		
IRB	EAD post CRM £m	RWAs £m	MCR £m	EAD post CRM £m	RWAs £m	MCR £m	EAD post CRM £m	RWAs £m	MCR £m	EAD post CRM £m	RWAs £m	MCR £m
2017												
Counterparty credit risk												
Central governments and central banks	4,688	335	27	—	—	—	—	—	—	4,688	335	27
Institutions	7,344	5,255	420	1	—	—	7	5	—	7,335	5,243	419
Corporates	18,151	7,764	621	548	266	21	83	59	5	17,029	6,952	556
Specialised lending	*1,690*	*1,282*	*103*	*85*	*60*	*5*	*55*	*38*	*4*	*1,494*	*1,144*	*92*
SME	*125*	*103*	*8*	*62*	*44*	*4*	*2*	*3*	—	*61*	*56*	*4*
Other corporate	*16,336*	*6,379*	*510*	*401*	*162*	*12*	*26*	*18*	*1*	*15,474*	*5,752*	*460*
Securitisation positions	1,033	532	43	—	—	—	—	—	—	772	277	22
Total IRB	31,216	13,886	1,111	549	266	21	90	64	5	29,824	12,807	1,024
STD												
Central governments and central banks	542	—	—	—	—	—	—	—	—	522	—	—
Regional governments and local authorities	50	10	1	—	—	—	—	—	—	38	8	1
Institutions	4,334	367	29	1,697	—	—	531	257	21	7,283	383	31
Corporates	1,104	1,128	91	—	—	—	—	—	—	497	493	39
Retail	6	4	—	—	—	—	—	—	—	—	—	—
Total STD	6,036	1,509	121	1,697	—	—	531	257	21	8,340	884	71
Total IRB and STD	37,252	15,395	1,232	2,246	266	21	621	321	26	38,164	13,691	1,095

Key point

Credit risk and counterparty credit risk

Period-on-period movements for significant subsidiaries were affected by asset transfers as part of RBS's ring-fencing implementation.

CR3: IRB and STD: EAD, RWAs and MCR by CRR exposure class: RBS segments

The table below analyses credit risk (including securitisations) and counterparty credit risk separately for RBS and its segments. It presents EAD post CRM and RWAs, analysed by regulatory approach and exposure class. RBS allocates all central costs relating to services and functions to the business using appropriate drivers. These are reported as indirect costs in the segmental income statements. The assets (and risk-weighted assets) held centrally, mainly relating to Treasury, are allocated to the business using appropriate drivers.

	UK PBB		Ulster Bank RoI		Commercial Banking		Private Banking		RBS International		NatWest Markets		Central items and other		Total	
IRB	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m
2018																
Credit risk																
Central governments and central banks	15,613	558	5,768	580	9,324	897	—	—	6,102	143	17,563	1,000	80	25	54,450	3,203
Institutions	3,023	513	943	286	4,129	1,534	—	—	948	262	1,731	756	16	23	10,790	3,374
Corporates	7,098	4,713	5,011	3,237	95,895	48,726	—	—	14,101	4,164	10,228	2,999	2	4	132,335	63,843
Specialised lending	*2,509*	*1,858*	*1,099*	*791*	10,945	7,391	—	—	*2,517*	*1,494*	*989*	*274*	—	—	*18,059*	*11,808*
SME	*2,950*	*1,616*	*1,152*	*551*	16,607	8,242	—	—	*291*	*206*	*12*	*1*	—	—	*21,012*	*10,616*
Other corporate	*1,639*	*1,239*	*2,760*	*1,895*	68,343	33,093	—	—	*11,293*	*2,464*	*9,227*	*2,724*	*2*	*4*	*93,264*	*41,419*
Retail	187,480	26,874	16,184	8,342	1,298	763	—	—	—	—	17	9	—	—	204,979	35,988
Secured by real estate property																
- SME	*1,359*	*508*	—	—	—	—	—	—	—	—	—	—	—	—	*1,359*	*508*
- non-SME	*150,348*	*11,294*	*15,033*	*7,608*	—	—	—	—	—	—	—	—	—	—	*165,381*	*18,902*
Qualifying revolving	*22,279*	*5,663*	*355*	*249*	—	—	—	—	—	—	—	—	—	—	*22,634*	*5,912*
Other retail - SME	*7,649*	*3,075*	*594*	*334*	864	507	—	—	—	—	*11*	*7*	—	—	*9,118*	*3,923*
- non-SME	*5,845*	*6,334*	*202*	*151*	434	256	—	—	—	—	*6*	*2*	—	—	*6,487*	*6,743*
Equities (1)	97	165	7	32	578	1,254	—	—	10	22	29	110	1	7	722	1,590
Securitisation	979	49	67	10	6,379	1,464	—	—	79	5	6,632	1,013	5	2	14,141	2,543
Non-credit obligation assets	2,695	1,925	569	320	2,082	1,468	—	—	131	73	301	290	1	4	5,779	4,080
Total IRB	216,985	34,797	28,549	12,807	119,685	56,106	—	—	21,371	4,669	36,501	6,177	105	65	423,196	114,621

Note:
(1) Represents equity warrants held by RBS, granting it the option to purchase shares in corporate entities. For accounting purposes, the warrants are treated as over-the-counter derivatives and are reported under counterparty credit risk in regulatory disclosures.

CR3: IRB and STD: EAD, RWAs and MCR by CRR exposure class: RBS segments *continued*

STD	UK PBB		Ulster Bank RoI		Commercial Banking		Private Banking		RBS International		NatWest Markets		Central items and other		Total	
	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m
2018																
Credit risk																
Central governments and central banks	41,333	217	2,645	43	22,848	330	4,424	160	13,423	20	10,709	84	213	12	95,595	866
Regional governments and local authorities	2	—	2	2	14	3	—	—	137	133	—	—	—	—	155	138
Multilateral development banks	—	—	—	—	—	—	—	—	—	—	31	—	—	—	31	—
Institutions	20	3	1	1	16	6	64	14	11	2	398	195	—	—	510	221
Corporates	103	80	684	661	2,381	2,312	1,192	1,036	193	190	5,880	5,309	—	—	10,433	9,588
Retail	97	71	15	8	1,131	679	855	519	100	75	638	478	—	—	2,836	1,830
Secured by mortgages on																
- immovable property - residential	77	30	87	87	94	89	9,943	3,479	2,638	921	1	—	—	—	12,840	4,606
- commercial	12	10	8	8	443	460	2,393	2,379	28	26	1	1	—	—	2,885	2,884
Exposures in default	18	26	11	16	116	173	223	230	78	88	108	147	—	—	554	680
Items associated with particularly high risk	—	—	—	—	—	—	—	—	—	—	28	42	—	—	28	42
Covered bonds	69	7	5	1	39	10	8	5	6	1	10	3	—	—	137	27
Equity exposures	281	346	19	69	181	541	32	257	23	32	167	268	2	20	705	1,533
Other exposures	1,168	210	42	17	389	188	233	230	1	—	224	143	—	—	2,057	788
Total STD	43,180	1,000	3,519	913	27,652	4,791	19,367	8,309	16,638	1,488	18,195	6,670	215	32	128,766	23,203
Total IRB and STD	260,165	35,797	32,068	13,720	147,337	60,897	19,367	8,309	38,009	6,157	54,696	12,847	320	97	551,962	137,824

CR3: IRB and STD: EAD, RWAs and MCR by CRR exposure class: RBS segments *continued*

	UK PBB		Ulster Bank RoI		Commercial Banking		Private Banking		RBS International		NatWest Markets		Central items and other		Total	
IRB	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m
2018																
Counterparty credit risk																
Central governments and central banks	—	—	—	—	—	—	—	—	—	—	1,454	304	—	—	1,454	304
Institutions	—	—	2	1	—	—	—	—	—	—	8,136	5,940	—	—	8,138	5,941
Corporates	—	—	47	36	—	—	—	—	—	—	14,314	6,266	—	—	14,361	6,302
Specialised lending	—	—	*35*	*27*	—	—	—	—	—	—	*930*	*702*	—	—	*965*	*729*
SME	—	—	*1*	*1*	—	—	—	—	—	—	*101*	*55*	—	—	*102*	*56*
Other corporate	—	—	*11*	*8*	—	—	—	—	—	—	*13,283*	*5,509*	—	—	*13,294*	*5,517*
Securitisation positions	—	—	—	—	—	—	—	—	—	—	777	427	—	—	777	427
Total IRB	—	—	49	37	—	—	—	—	—	—	24,681	12,937	—	—	24,730	12,974
STD																
Government and multilateral institutions (1)	—	—	—	—	—	—	—	—	—	—	1,019	—	—	—	1,019	—
Exposures to international organisations	—	—	—	—	—	—	—	—	—	—	15	3	—	—	15	3
Institutions	—	—	—	—	—	—	—	—	—	—	5,322	419	—	—	5,322	419
Corporates	—	—	—	—	—	—	36	36	14	14	225	188	—	—	275	238
Retail	—	—	—	—	—	—	7	5	—	—	—	—	—	—	7	5
Total STD	—	—	—	—	—	—	43	41	14	14	6,581	610	—	—	6,638	665
Total IRB and STD	—	—	49	37	—	—	43	41	14	14	31,262	13,547	—	—	31,368	13,639

Note:
(1) Comprises central governments or central banks, regional governments or local authorities, administrative bodies and non-commercial undertakings, and multilateral development banks.

CR3: IRB and STD: EAD, RWAs and MCR by CRR exposure class: RBS segments *continued*

	UK PBB		Ulster Bank RoI		Commercial Banking		Private Banking		RBS International		NatWest Markets		Central items and other		Total	
	EAD post CRM	RWAs	EAD post CRM	RWAs	EAD post CRM	RWAs	EAD post CRM	RWAs	EAD post CRM	RWAs	EAD post CRM	RWAs	EAD post CRM	RWAs	EAD post CRM	RWAs
IRB	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
2017																
Credit risk																
Central governments and central banks	11,795	613	8,795	664	20,058	1,049	—	—	2,016	90	13,670	834	656	28	56,990	3,278
Institutions	2,208	569	1,363	322	6,478	1,968	—	—	308	79	3,193	937	122	26	13,672	3,901
Corporates	8,350	5,484	5,215	3,742	108,422	51,967	—	—	8,354	2,624	10,626	4,366	9	4	140,976	68,187
Specialised lending	*3,191*	*2,412*	*1,195*	*880*	*16,598*	*11,030*	—	—	*1,545*	*980*	*1,132*	*788*	—	—	*23,661*	*16,090*
SME	*3,342*	*1,628*	*1,224*	*734*	*19,456*	*8,658*	—	—	*232*	*231*	*17*	*1*	—	—	*24,271*	*11,252*
Other corporate	*1,817*	*1,444*	*2,796*	*2,128*	*72,368*	*32,279*	—	—	*6,577*	*1,413*	*9,477*	*3,577*	*9*	*4*	*93,044*	*40,845*
Retail	183,594	24,205	17,132	10,892	1,397	730	—	—	—	—	19	10	—	—	202,142	35,837
Secured by real estate property																
- SME	*1,389*	*504*	—	—	—	—	—	—	—	—	—	—	—	—	*1,389*	*504*
- non-SME	*146,956*	*9,738*	*15,915*	*10,084*	—	—	—	—	—	—	—	—	—	—	*162,871*	*19,822*
Qualifying revolving	*22,162*	*5,794*	*366*	*228*	—	—	—	—	—	—	—	—	—	—	*22,528*	*6,022*
Other retail - SME	*7,703*	*3,027*	*635*	*422*	*1,002*	*532*	—	—	—	—	*12*	*7*	—	—	*9,352*	*3,988*
- non-SME	*5,384*	*5,142*	*216*	*158*	*395*	*198*	—	—	—	—	*7*	*3*	—	—	*6,002*	*5,501*
Equities (1)	43	125	19	53	626	1,267	—	—	8	23	163	487	2	6	861	1,961
Securitisation	519	53	216	22	5,264	1,188	—	—	62	6	6,473	1,027	29	2	12,563	2,298
Non-credit obligation assets	2,948	1,836	618	317	2,223	1,396	—	—	219	141	1,171	1,046	1	4	7,180	4,740
Total IRB	209,457	32,885	33,358	16,012	144,468	59,565	—	—	10,967	2,963	35,315	8,707	819	70	434,384	120,202

Note:
(1) Represents equity warrants held by RBS, granting it the option to purchase shares in corporate entities. For accounting purposes, the warrants are treated as over-the-counter derivatives and are reported under counterparty credit risk in regulatory disclosures.

CR3: IRB and STD: EAD, RWAs and MCR by CRR exposure class: RBS segments *continued*

	UK PBB		Ulster Bank RoI		Commercial Banking		Private Banking		RBS International		NatWest Markets		Central items and other		Total	
	EAD post CRM	RWAs	EAD post CRM	RWAs	EAD post CRM	RWAs	EAD post CRM	RWAs	EAD post CRM	RWAs	EAD post CRM	RWAs	EAD post CRM	RWAs	EAD post CRM	RWAs
STD	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
2017																
Credit risk																
Central governments and central banks	19,774	197	7,857	82	32,044	336	7,109	175	2,281	24	22,616	214	1,140	11	92,821	1,039
Regional governments and local authorities	—	—	2	2	10	2	—	—	145	140	—	—	—	—	157	144
Multilateral development banks	—	—	—	—	—	—	—	—	—	—	30	—	—	—	30	—
Institutions	4	1	2	—	8	3	64	13	2	—	394	200	—	—	474	217
Corporates	87	84	562	541	3,330	3,317	1,068	928	110	109	5,320	5,179	—	—	10,477	10,158
Retail	72	52	12	7	929	543	1,243	921	128	95	657	493	—	—	3,041	2,111
Secured by mortgages on																
- immovable property - residential	117	61	48	47	113	105	8,995	3,144	2,676	934	849	635	—	—	12,798	4,926
- commercial	26	26	1	1	351	379	2,107	2,100	29	29	2	1	—	—	2,516	2,536
Exposures in default	21	29	28	42	518	558	265	295	88	104	58	74	—	—	978	1,102
Items associated with particularly high risk	—	—	—	—	—	—	—	—	—	—	34	51	—	—	34	51
Covered bonds	34	6	14	3	55	10	13	5	4	1	37	7	2	—	159	32
Equity exposures	119	261	50	109	200	438	74	261	14	31	186	346	7	15	650	1,461
Other exposures	542	107	57	11	527	136	310	295	7	1	263	146	3	1	1,709	697
Total STD	20,796	824	8,633	845	38,085	5,827	21,248	8,137	5,484	1,468	30,446	7,346	1,152	27	125,844	24,474
Total IRB and STD	230,253	33,709	41,991	16,857	182,553	65,392	21,248	8,137	16,451	4,431	65,761	16,053	1,971	97	560,228	144,676

CR3: IRB and STD: EAD, RWAs and MCR by CRR exposure class: RBS segments *continued*

	UK PBB		Ulster Bank RoI		Commercial Banking		Private Banking		RBS International		NatWest Markets		Central items and other		Total	
IRB	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m
2017																
Counterparty credit risk																
Central governments and central banks	—	—	—	—	—	—	—	—	—	—	4,688	335	—	—	4,688	335
Institutions	—	—	7	5	—	—	—	—	—	—	7,337	5,250	—	—	7,344	5,255
Corporates	—	—	83	59	1	1	—	—	—	—	18,067	7,704	—	—	18,151	7,764
Specialised lending	—	—	*55*	*38*	—	—	—	—	—	—	*1,635*	*1,244*	—	—	*1,690*	*1,282*
SME	—	—	*2*	*3*	—	—	—	—	—	—	*123*	*100*	—	—	*125*	*103*
Other corporates	—	—	*26*	*18*	*1*	*1*	—	—	—	—	*16,309*	*6,360*	—	—	*16,336*	*6,379*
Securitisation positions	—	—	—	—	—	—	—	—	—	—	1,033	532	—	—	1,033	532
Total IRB	—	—	90	64	1	1	—	—	—	—	31,125	13,821	—	—	31,216	13,886
STD																
Government and multilateral institutions (1)	—	—	—	—	—	—	—	—	—	—	542	—	—	—	542	—
Exposures to international organisations	—	—	—	—	—	—	—	—	—	—	50	10	—	—	50	10
Institutions	—	—	—	—	—	—	—	—	7	1	4,327	366	—	—	4,334	367
Corporates	—	—	—	—	—	—	13	13	9	9	1,082	1,106	—	—	1,104	1,128
Retail	—	—	—	—	—	—	6	4	—	—	—	—	—	—	6	4
Total STD	—	—	—	—	—	—	19	17	16	10	6,001	1,482	—	—	6,036	1,509
Total IRB and STD	—	—	90	64	1	1	19	17	16	10	37,126	15,303	—	—	37,252	15,395

Note:
(1) Comprises: central governments or central banks, regional governments or local authorities, administrative bodies and non-commercial undertakings, and multilateral development banks.

Key points

Credit risk

Comparisons with 2017 are affected by transfers of assets between segments due to organisational movements associated with the establishment of the Ring-Fenced Bank.

- UK PBB – EAD post CRM increased due to higher Treasury liquidity management placements with central governments and central banks. The rise also reflected increased mortgage balances and an increase in other personal lending within Retail.
- Ulster Bank RoI – EAD post CRM fell, largely due to reduced placements with central governments and central banks and a reduction in mortgage exposure. The RWA decrease was driven by LGD and PD improvements in term and business lending and PD recalibrations for mortgages.
- Commercial Banking – Comparisons with 2017 are affected by the incoming transfer of shipping and other activities from NatWest Markets and the outgoing transfer of securitisations and relevant financial institution sectors to NatWest Markets. Additionally, the funds and trustee depositary business was transferred to RBS International. EAD post CRM fell, notably reflecting repayments and reduced limits in the large corporate sector, in addition to real estate finance reductions. RWAs declined due to customer repayments and RWA reduction initiatives.
- RBS International – Comparisons with 2017 are affected by the transfer of the funds and trustee depositary business from Commercial Banking, in addition to the transfer of Coutts Crown Dependency and the International Client Group from Private Banking. EAD post CRM increased, largely due to increased placements with central governments and central banks, as well as an increase in other corporate exposures. RWAs rose in line with the corporate exposure increase, partly offset by PD improvements.
- NatWest Markets – EAD post CRM rose, reflecting increased placements with central governments and central banks. RWAs decreased, reflecting reduced exposures to Alawwal Bank.

Counterparty credit risk

- NatWest Markets – EAD post CRM and RWAs fell as a result of increased mitigation of exposures through collateralisation.

Credit risk

EU CRE_1: IRB Models: Credit RWA calculation approach by exposure class

There are three approaches available to calculate RWAs. These are:

- Standardised approach.
- Foundation internal ratings based (FIRB) approach.
- Advanced internal ratings based (AIRB) approach.

The CRR establishes the standardised approach as the method for banks to calculate RWAs for credit and counterparty credit risk.

To use the more complex FIRB or AIRB approaches, banks must gain regulatory permission. RBS has been granted permission by the PRA and other European regulators to use the AIRB approach to calculate RWAs for the majority of its credit and counterparty credit risk exposures.

RBS does not use the FIRB approach. Therefore, in these disclosures, IRB refers to the AIRB approach.

The IRB permission allows RBS to use own estimates for the following inputs to the regulatory formula used to calculate RWAs:

- Probability of default (PD) and loss given default (LGD) for credit risk and counterparty credit risk.
- Exposure at default (EAD) for credit risk.

EAD for counterparty credit risk is estimated in accordance with RBS's internal model method permission – refer to page 62.

In the case of specialised lending to project finance and income-producing real estate customers, the IRB supervisory slotting methodology is used to calculate RWAs.

RBS uses the standardised approach for certain portfolios:

- On a permanent basis: for low default/data portfolios where modelling is not suitable and for immaterial/run-off portfolios.
- On a transitional basis: pending an application by RBS to its regulators to transition to the IRB approach in accordance with its strategy. In addition, the CRR also contains specific discretions for regulators to permit the use of the standardised approach on a permanent basis. RBS has these permissions for areas such as UK sovereign exposures and inter-Group exposures.

EU CRE_1: IRB models: Credit RWA calculation approach by exposure class continued

The table below presents total credit risk EAD and RWAs (including counterparty credit risk) under both IRB and standardised approaches, on an IRB exposure class basis, as well as the percentage split between the two approaches.

	EAD post CRM							RWAs						
				Standardised							Standardised			
	Total credit and counterparty credit risk	AIRB		Permanent portfolios		Portfolios subject to an IRB rollout plan		Total credit and counterparty credit risk	AIRB		Permanent portfolios		Portfolios subject to an IRB rollout plan	
Exposure class	£m	% of total	£m	% of total	£m	% of total	£m	£m	% of total	£m	% of total	£m	% of total	£m
2018														
Central governments and central banks	152,499	37	55,905	63	96,594	—	—	4,367	80	3,507	20	860	—	—
Institutions	24,913	76	18,928	24	5,985	—	—	10,075	92	9,315	8	760	—	—
Corporates	160,913	91	146,695	9	14,218	—	—	83,453	84	70,146	16	13,307	—	—
Specialised lending	*19,116*	*100*	*19,023*	—	*93*	—	—	*12,630*	*99*	*12,537*	*1*	*93*	—	—
SME	*22,031*	*96*	*21,114*	*4*	*917*	—	—	*11,376*	*94*	*10,672*	*6*	*704*	—	—
Other	*119,766*	*89*	*106,558*	*11*	*13,208*	—	—	*59,447*	*79*	*46,937*	*21*	*12,510*	—	—
Retail	*220,813*	*93*	*204,979*	*7*	*15,834*	—	—	*42,604*	*84*	*35,987*	*16*	*6,617*	—	—
Secured by real estate property														
- SME	*1,420*	*96*	*1,359*	*4*	*61*	—	—	*525*	*97*	*508*	*3*	*17*	—	—
- non-SME	*178,301*	*93*	*165,381*	*7*	*12,920*	—	—	*23,630*	*80*	*18,901*	*20*	*4,729*	—	—
Qualifying revolving	*22,807*	*99*	*22,634*	*1*	*173*	—	—	*6,051*	*98*	*5,912*	*2*	*139*	—	—
Other retail														
- SME	*10,129*	*90*	*9,118*	*10*	*1,011*	—	—	*4,523*	*87*	*3,923*	*13*	*600*	—	—
- Non-SME	*8,156*	*80*	*6,487*	*20*	*1,669*	—	—	*7,875*	*86*	*6,743*	*14*	*1,132*	—	—
Equities	1,427	51	722	49	705	—	—	3,123	51	1,590	49	1,533	—	—
Non-credit obligation assets	7,846	74	5,779	26	2,067	—	—	4,870	84	4,080	16	790	—	—
Total	568,411	76	433,008	24	135,403	—	—	148,492	84	124,625	16	23,867	—	—

Credit risk

EU CRE_1: IRB models: Credit RWA calculation approach by exposure class continued

	EAD post CRM							RWAs						
				Standardised							Standardised			
	Total credit and counterparty credit risk	AIRB		Permanent portfolios		Portfolios subject to an IRB rollout		Total credit and counterparty credit risk	AIRB		Permanent portfolios		Portfolios subject to an IRB rollout	
Exposure class	£m	% of total	£m	% of total	£m	% of total	£m	£m	% of total	£m	% of total	£m	% of total	£m
2017														
Central governments and central banks (1)	154,997	40	61,678	60	93,298	—	21	4,644	78	3,612	22	1,032	—	—
Institutions	25,977	81	21,016	19	4,890	—	71	9,837	93	9,155	7	665	—	17
Corporates	174,549	91	159,127	8	14,571	—	851	90,848	84	75,950	15	14,055	1	843
Specialised lending	*25,430*	*100*	*25,351*	*—*	*79*	*—*	*—*	*17,451*	*100*	*17,372*	*—*	*79*	*—*	*—*
SME	*25,212*	*97*	*24,396*	*3*	*816*	*—*	*—*	*11,979*	*95*	*11,355*	*5*	*624*	*—*	*—*
Other (1)	*123,907*	*87*	*109,380*	*11*	*13,676*	*1*	*851*	*61,418*	*77*	*47,223*	*22*	*13,352*	*1*	*843*
Retail	217,927	93	202,142	7	15,785	—	—	43,029	83	35,838	17	7,191	—	—
Secured by real estate property														
- SME	*1,513*	*92*	*1,389*	*8*	*124*	*—*	*—*	*565*	*89*	*505*	*11*	*60*	*—*	*—*
- non-SME	*174,192*	*93*	*162,871*	*7*	*11,321*	*—*	*—*	*24,036*	*82*	*19,821*	*18*	*4,215*	*—*	*—*
Qualifying revolving	*22,710*	*99*	*22,528*	*1*	*182*	*—*	*—*	*6,169*	*98*	*6,023*	*2*	*146*	*—*	*—*
Other retail														
- SME	*10,379*	*90*	*9,352*	*10*	*1,027*	*—*	*—*	*4,607*	*87*	*3,987*	*13*	*620*	*—*	*—*
- Non-SME	*9,133*	*66*	*6,002*	*34*	*3,131*	*—*	*—*	*7,652*	*72*	*5,502*	*28*	*2,150*	*—*	*—*
Equities (1)	1,511	58	861	41	627	2	23	3,423	57	1,962	42	1,438	1	23
Non-credit obligation assets	8,899	81	7,180	19	1,719	—	—	5,439	87	4,740	13	699	—	—
Total	583,860	78	452,004	22	130,890	—	966	157,220	83	131,257	16	25,080	1	883

Note:
(1) 2017 presentation for STD measures has been revised, see EU CRA for details.

EU CRE: Qualitative disclosures relating to IRB models (credit and counterparty risk)

Advanced IRB models

RBS uses credit risk models not only to calculate RWAs under the IRB approach but also to support risk assessments in the credit approval process as well as ongoing credit risk management, monitoring and reporting.

RBS develops credit risk models for both Retail and Wholesale customers. Retail models are automated and applied across a portfolio of products. Wholesale models rely on the input of customer data as part of the credit risk management process – usually at the time of the customer's annual review – and permit the use of expert judgement overrides, which are subject to Credit Risk approval.

Retail IRB models

Table EU CRE_2a presents an overview of the Retail IRB models used to calculate RWAs for UK and Republic of Ireland Retail customers and small business brands. Most Retail models are statistical models developed using logistic or linear regression techniques.

Probability of default/customer credit grade models

- PD models assess the probability that a customer will fail to honour their credit obligations in the next 12 months.
- RBS assigns each customer account a score and this is used across the businesses to support decision-making and portfolio management. This score is used as an input into the PD model.
- Retail PD models are point-in-time by design, meaning they predict the probability of default under current economic conditions. They are typically developed applying logistic regression techniques using a range of customer and account data across portfolios, as well as data from credit bureaux.
- Different models are developed for different product types, with further distinctions based on other criteria such as whether or not a customer also has a current account with RBS. All Retail PD models produce both a best estimate measure, used for portfolio reporting and forecasting, and a downturn estimate, which is an input to RWA calculations. The downturn estimate is designed to consider normal volatility in actual default rates and is floored at 0.03%, as mandated by regulation.
- To ensure that the Retail PD models remain point-in-time, they are calibrated regularly using observed default data covering the most recent performance period for the underlying portfolio.
- All Retail PD models are regularly monitored for discrimination and stability.

Loss given default models

- LGD models estimate the amount of exposure that will not be recovered by RBS in the event of customer default.
- These models are developed by product type using internal loss data reflecting the collections and recoveries processes. They use a combination of borrower and facility characteristics and take account of credit risk mitigants, including collateral.
- As LGD represents economic loss, the estimate also incorporates the cost of collections and the impact of discounting to account for delays in recovery. In accordance with regulatory requirements, the estimates are calibrated to reflect loss rates expected during an economic downturn.

Exposure at default models

- EAD models estimate the utilisation of a credit facility at the time of a customer's default, recognising that further drawings on unused credit facilities may be made prior to default.
- Historical data on limit utilisation, in the period prior to customer default, is used for estimation and calibration. EAD for revolving products (for example credit cards and current accounts) has a more material anticipation of further drawings.
- As required by regulation, EAD estimates are set to be no lower than the current balance and reflect economic downturn conditions.

EU CRE_2a: Overview of Retail IRB models

Portfolio	RWAs (£m)	Model type	Number of models	IRB exposure class	IRB model segmentation	Model characteristics
Mortgages	18,902	PD	4	Retail – Secured by real estate SME Retail – Secured by real estate non-SME	Separate models are in place for the United Kingdom and Republic of Ireland. Within the United Kingdom, there are separate models for standard and non-standard products.	Key United Kingdom model drivers include the internal behaviour score of the related current account and loan-to-value (LTV).
		LGD	2			For United Kingdom portfolios, LGD is estimated by modelling the probability of possession given default and shortfall given repossession, using key drivers such as LTV. A 10% regulatory LGD floor is applied at portfolio level, with a 5% LGD floor applied at pool level.
		EAD	3			EAD estimate is determined by account limit.
Personal unsecured loans and current accounts	9,276	PD	3	Retail – Other Retail – Qualifying revolving	Product level PD and EAD models are in place, with loans common across all regions and current account models split across the United Kingdom and Republic of Ireland. LGD models are combined across products and split across the United Kingdom and Republic of Ireland.	Model estimates are mainly based on internal behavioural data, with some also using external credit bureau data.
		LGD	2			Models estimate the probability of loss on a defaulted account, which is converted into an LGD estimate.
		EAD	2			Current accounts: A combination of linear regression and average models have been developed using internal data, such as account limit and balance. Loans: EAD estimate is determined by account limit.
Small business loans and current accounts	4,045	PD	2	Retail – Other SME	For PD and EAD, separate models are in place for loans and current accounts, common across all regions. LGD models are split across the United Kingdom and Republic of Ireland.	Model estimates are mainly based on internal behaviour score.
		LGD	2			For unsecured lending the models estimate the probability of loss on a defaulted account which is converted into an LGD estimate. For secured lending the LGD model estimates are based on the estimated recoveries from the liquidation of collateral. Regulatory LGD floors are applied as follows for loans secured by: 1) Residential real estate – 10% 2) Commercial real estate – 15%
		EAD	2			Current accounts: A combination of linear regression and average models have been developed using internal data, such as account limit and balance. Loans: EAD estimate is determined by account balance.
Personal credit cards	3,183	PD	1	Retail – Qualifying revolving	PD, EAD and LGD models developed for use across the retail brands.	Model estimates are based on internal behavioural data.
		LGD	1			Statistical model developed using internal and external data.
		EAD	1			A combination of linear regression and average models has been developed using internal data, such as account limit and balance.
Personal and small business asset finance	631	PD	1	Retail – Other SME Retail – Other non-SME	PD, EAD and LGD models developed for use within the UK Lombard brand.	Statistical model segmented by time on book, customer type and entity type.
		LGD	1			The model is segmented by leased asset type. LGD is based on the difference between the written-down value of the leased asset and EAD.
		EAD	1			EAD for leasing is the present value of lease payments per regulatory requirements.

Credit risk

Wholesale IRB models

Table EU CRE_2b presents the Wholesale IRB models RBS uses to calculate RWAs.

Probability of default/customer credit grade models

- As part of the credit assessment process, RBS assigns each customer a credit grade reflecting the customer's PD. RBS maintains and uses a number of credit grading models which consider risk characteristics relevant to the customer, incorporating both quantitative and qualitative inputs. RBS uses these credit grades in its risk management and measurement frameworks, including credit sanctioning and expected credit loss as well as managing single name concentration risk.
- Different models are developed for different customer types. The most material models (those used for the largest aggregate amounts of exposure) are those applied to medium to large-size corporate customers and bank and sovereign counterparties. In addition, a number of less material models are used, including those for investment funds and quasi-government entities.
- Regulation defines the minimum time series and other attributes of the data used for developing and calibrating models. For the most material models, external data (historical default and rating data from rating agencies and insolvency rates) is referenced for estimation and calibration purposes so that models are based on over 20 years of default experience.
- Most of the less material models are developed for portfolios with low default frequency – where customer loan volumes are lower or borrowers are of higher credit quality. In these cases, as required by the PRA, a specific low-default portfolio approach is applied to produce an appropriately prudent calibration to reflect the potential that future outcomes differ from the very low risk outcomes historically observed.
- The majority of the PD model suite discriminates risk levels well and is stable; current observed default rates are generally lower than model estimates. This reflects prudent calibrations and the combined effect of the models being largely through-the-cycle in nature and above-average credit cycle conditions experienced throughout 2018 for the majority of sectors and regions.
- PDs are floored at 0.03% (except for the sovereign asset class) as mandated by regulation.

Loss given default models

- Models are developed for different customer segments and reflect the recoveries approach applied to each segment.
- Where sufficient internal and external loss data exists, LGD is modelled based on this experience and directly incorporates the impact of credit cycle conditions.
- For low-default portfolios, where loss data is scarce or the effect of credit conditions is only of limited relevance, simple benchmark LGDs are assigned in accordance with the PRA's low-default portfolio framework.
- Updates to the model for the UK mid-corporate portfolio were rolled out from January 2018.

Exposure at default models

- EAD is estimated on a product type basis, with different credit conversion factors (CCFs) – measuring the portion of unused credit facility expected to be further drawn prior to default – assigned to each product. For contingent products, such as trade letters of credit, a "probability of call" multiplier is also applied which reflects the likelihood of pay-out once issued.
- Exposure can be reduced by a netting agreement, subject to meeting standards of legal enforceability.
- Where sufficient internal historical data exists, CCF estimates are developed to reflect economic downturn conditions and are based on limit utilisation in the period prior to customer default.
- For low-default portfolios, where data is scarce, products are rank-ordered and CCFs benchmarked to modelled products or relevant regulatory values.
- The most material product families for EAD are those applying to non-contingent products, in particular loans, overdrafts and revolving credit facilities.

EU CRE_2b: Overview of Wholesale IRB models

Portfolio	RWAs (£m)	Model type	Number of models	IRB exposure class	IRB model segmentation	Model characteristics
Sovereign and quasi-government entities	6,966	PD	4	Central governments and central banks Institutions Corporate - Other	Global PD and LGD models are developed for sovereign and quasi-government type entities.	Sovereign: external rating agency replication model calibrated to the agency long-run average default rates. Local authority, housing association and UK university: expert-driven scorecard models using qualitative and in some cases quantitative inputs.
		LGD	2			Sovereign: an unsecured model calibrated using a logistic regression on a limited dataset of internal and external observations. LGD is floored at 45% in accordance with PRA requirements. Quasi-Government: the model is based on sovereign LGDs or regulatory LGD benchmarks due to its low-default nature.
Financial institutions	15,706	PD	7	Central governments and central banks Institutions Corporate – Other Equity IRB	Global PD and LGD models are developed for bank and non-bank financial institutions (NBFIs).	PD models are developed by counterparty type: Bank and insurance companies: external rating agency replication models calibrated to agency long-run average default rates. Broker dealer: a mix of external rating replication and calibration to internal default rates. Geared investment fund: statistical model which is directly calibrated to internal default experience. Investment fund bridging: expert-driven model using quantitative and qualitative inputs. Hedge fund and managed fund: expert-driven scorecard models based mainly on qualitative inputs, due to their low-default nature.
		LGD	2			Bank models and a single NBFI model are structured as simple decision trees relying on a few regulatory LGD benchmarks, due to low frequency or loss data.
Corporations: Turnover above £50 million	30,756	PD	2	Corporates – Other Equity IRB	PD: global large corporate model is used to grade customers that are externally rated or have a turnover in excess of £500 million. Mid-large corporate model is used to grade customers in key countries (United Kingdom, US & Republic of Ireland) with turnover between £50 million and £500 million, and that are not externally rated. LGD: single global LGD model is used for large and mid-large corporate customers.	Large corporate: external rating agency replication model which is calibrated to external and internal long-run average default data. Mid-large corporate: statistical model which is calibrated to internal long run data.
		LGD	1			Statistical model using a combination of internal and external loss data. Key model drivers are seniority, collateral, industry facility type and a credit cycle index. Lease facilities use secured collateral specific recovery rate models, calibrated to internal loss data. A 35% LGD floor is applied for certain countries due to scarcity of loss data.

Credit risk

EU CRE_2b: Overview of Wholesale IRB models continued

Portfolio	RWAs (£m)	Model type	Number of models	IRB exposure class	IRB model segmentation	Model characteristics
Corporations: Turnover below £50 million	15,153	PD	1	Corporates – SME Corporate – Other Equity IRB	United Kingdom and Republic of Ireland PD and LGD models for corporates with a turnover below £50 million.	For the UK portfolio, a statistical model is used based on long-run internal loss outcomes with key model drivers being security, together with customer and facility attributes. For the RoI portfolio, LGD is based on a framework which uses an unsecured recovery rate model and a suite of secured recovery rate models. The framework accounts for the value of collateral linked to each facility, together with costs and haircuts associated with the recovery of collateral.
		LGD	4			LGD is based on a framework that uses an unsecured recovery rate model and a suite of secured recovery rate models. The framework accounts for the value of collateral linked to each facility, together with costs and haircuts associated with the recovery of collateral.
Shipping	36	PD	1	Corporates – Specialised lending	Global PD and LGD model for ship finance customers meeting the CRR specialised lending definition.	Expert-driven scorecard model based on a mix of qualitative and quantitative inputs.
		LGD	1			Simple model based on benchmarks (which are different for different ship types) calibrated to internal loss data.
Credit risk (excluding counterparty credit risk) EAD model			2	Central governments and central banks Institutions Corporates – SME Corporates – Specialised lending Corporates - Other	Consists of a global wholesale EAD model for banking book portfolios and a specialist EAD model for the RBS Invoice Finance brand.	EAD is modelled by grouping product types (products sharing similar contractual features and expected drawdown behaviour) and calculated based on the assigned CCF. CCFs are estimated either using historical internal data or based on benchmarks when data is scarce.

Credit risk

IRB modelling governance

The governance process for approval and oversight of IRB credit models involves the model developers, an independent model validation function (Model Risk Management) and the users of the model. The process applies increased scrutiny to the more material model risks. Credit risk models are developed and maintained within a framework that includes the following key components:

- A high level policy framework that establishes responsibilities and minimum requirements applying to each stage of the modelling lifecycle:
  - Data sourcing and preparation.
  - Model specification.
  - Model approval.
  - Model implementation.
  - Model monitoring and performance assessment.
- Detailed standards that define the approaches and activities undertaken at each of these stages.
- Defined structure and authorities that approve or oversee each stage.
- Model development teams that are part of the independent risk management function, separate from the functions responsible for originating or renewing exposures.
- An independent model validation function that is organisationally separate from the model development teams.
- All activities are independently reviewed by the dedicated Independent Model Validation team that also undertake a formal annual validation for each model.

The framework aims to ensure RBS model risk is managed appropriately and that the approaches deployed continue to meet both internal and regulatory standards.

The performance of models is tested by monitoring and annual validation. Every model is tested regularly by comparing estimates to outcomes to assess the accuracy of the model. Other statistical tests assess the ability of the models to discriminate risk (i.e. its ability to determine the relative risk level of a particular customer or exposure), the extent to which portfolio composition remains stable and, where relevant, the frequency and magnitude of overrides applied by model users to modelled estimates.

Reports providing the outcome of the monitoring are presented at the appropriate Model Governance Forum for peer and stakeholder review and challenge.

The annual validation report comprises further analyses that consider:

- Ongoing user acceptance and confidence in the model and its performance.
- Movements in the portfolio (both observed and anticipated).
- Other relevant data that might be used to explain or assess model performance.

Where model performance is determined to be outside tolerance as part of the performance monitoring or annual validation, appropriate action may be taken. This may entail recalibration of the model, enhancement (such as by reweighting existing model factors) or redevelopment. Interim adjustments may be applied whilst the remediation activity is undertaken if management believe the underperformance may lead to insufficient capital requirements for the portfolio.

Because IRB models are used in the calculation of credit risk regulatory capital requirements, once they have been approved through internal governance, they need to follow the appropriate regulatory approval or notification process before being implementation.

Independent model validation

All new and changed credit risk models are subject to detailed review by Model Risk Management aimed at providing independent affirmation that the models are appropriate and remain fit for regulatory capital calculations. Model Risk Management's independent review of model redevelopments comprises detailed examination of a number of relevant areas. The following (non-exhaustive) list outlines key areas of focus:

- Conceptual soundness of the methodology.
- Testing the assumptions underlying the model, where feasible, against actual behaviour.
- Checking the accuracy of calculations.
- Comparing outputs with results from alternative methods.
- Testing parameter selection and calibration.
- Measures the appropriateness of any conservatism.
- Back-testing of key model metrics (accuracy, discrimination and stability).
- Sensitivity analysis.

Based on the review and findings from Model Risk Management, the relevant model approver (which may be an individual or forum subject to delegation) will consider whether a model or model change can be approved and whether any conditions need to be imposed, including those relating to the remediation of material issues raised through the review process. If Model Risk Management disagrees with a model approval decision, it may escalate directly to the level of the (delegating) approval authority sitting above.

Model Risk Management provides technical oversight and challenge of model performance monitoring. It also forms part of the Model Governance Forum where these reports are presented. Annual validations are performed by Model Risk Management. The outcomes of these validations are presented at the appropriate governance forum and any actions or issues are progressed and tracked to completion.

Credit risk

Internal Audit

Internal Audit includes within the scope of its assurance work, the modelling and management of the organisation's capital and liquidity risks. Internal Audit is independent from the risk management function, and therefore from those responsible for the development and independent validation activity. Any material gaps in control identified by Internal Audit are escalated through standard board reporting and action plans agreed with those accountable for the activity behind the control.

EAD calculation methods for counterparty credit risk

For counterparty credit risk, RWAs are calculated under the IRB or standardised approaches. The PD and LGD values for the IRB approach are estimated from the above wholesale IRB models, while EAD estimates are calculated using one of the following methods.

Internal model method (IMM)

RBS has permission from the PRA to use an internal model for calculating EADs for certain derivatives.

The IMM calculates EAD as the product of effective expected positive exposure (EEPE) or stressed EEPE, whichever is the higher, and the regulatory prescribed alpha multiplier. The alpha multiplier, which was 1.4 for both 2018 and for 2017, uplifts the EAD. It is indicative of the robustness of an institution's approach and governance framework for managing counterparty credit risk.

In accordance with the CRR requirements, the EAD for over-the-counter derivatives is adjusted for wrong-way risk (for more information on wrong-way risks, refer to page 105), collateral and an increased margin period of risk, when appropriate.

Mark-to-market (mtm) method

For derivatives that fall outside the IMM and for exchange-traded derivatives where RBS does not have permission to use the IMM to calculate EAD for regulatory capital purposes, it calculates counterparty credit risk exposures using the mtm method. Exposure is calculated as the positive mtm value of outstanding contracts plus a potential future exposure. Exposure is adjusted for collateral, including any haircuts applied to collateral in accordance with regulatory requirements.

Financial collateral comprehensive method

RBS uses the financial collateral comprehensive method for calculating EAD on securities financing transactions. Exposure is adjusted for collateral, after volatility adjustments are applied.

CR9: IRB: IRB models back-testing

Probability of default and exposure at default

Wholesale credit grading models are hybrid models. They exhibit a degree of cyclicality that reflects broader credit conditions, but not the full cyclicality of a more point-in-time methodology. In contrast, retail PD models are point-in-time models and estimate the probability of default under current economic conditions, resulting in more variable estimates.

Refer to EU CRE_2: IRB models for more details on the methodology and characteristics of the models.

CR9_a: IRB: IRB models - Estimated probability of default, actual default rates and EAD outcomes versus estimates

The table below shows, across a two-year period, the PD estimated for that year as at the end of the previous year, compared with the actual default rate realised during the year.

- For wholesale exposures, the estimate shown is the averaged obligor PD. For retail exposures, it is the averaged account-level PD.
- Exposures in default at the end of the previous year are excluded from the PD estimates because their probability of default is 100%.
- The default rate is the number of defaults observed during the year, divided by the number of obligors or accounts at the end of the previous year.
- The EAD ratio represents the total EAD estimated at the end of the previous year, against the total actual exposure at the time of default, for the defaulted exposures.

	PD				EAD	
	Estimated at 2017 %	Actual 2018 %	Estimated at 2016 %	Actual 2017 %	Estimated to actual ratio 2018 %	Estimated to actual ratio 2017 %
Retail						
- SME	2.32	1.89	2.34	1.96	114	115
- Secured by real estate non-SME	0.77	0.58	0.88	0.66	103	103
- Qualifying revolving	1.33	1.17	1.40	1.26	115	115
- Other	3.79	4.16	3.35	3.80	109	109
Central governments and central banks	0.46	1.27	0.78	—	—	—
Institutions	0.66	0.20	0.68	—	—	—
Corporates (1)	1.95	1.13	2.06	1.12	118	115
Equities	2.10	—	2.05	—	—	—

Note:

(1) The 2018 EAD ratio reflects an improved reporting approach and the 2017 comparative has been revised.

Key points

- For three of the four retail asset classes, actual default experience in 2018 was below estimated outcomes, as had been the case in the previous year. This reflected estimates lagging actual default experience in an environment where actual default rates are falling.
- The under-estimation in the retail – other asset class decreased compared to the previous year. This class consisted mainly of fixed-rate personal loans in the UK. PD estimates increased year-on-year as regular model calibration reflected higher default rates.
- Across the retail asset classes, EAD ratios were stable year-on-year.
- The PD estimate for central governments and central banks reduced year-on-year, reflecting the exit from higher-risk sovereign exposures. The actual default rate was above the estimate due to a single default.
- For the other wholesale asset classes, estimates were broadly stable compared to 2017 and continued to be above actual outcomes.

Back-testing of PD by exposure band

To enhance disclosure on the PD analysis, the two tables below provide a further breakdown by exposure class and asset quality band: Table EU CR9_a_1 for retail classes and Table EU CR9_a_2 for wholesale classes.

The EU CR9_a tables include the following:

- The PDs estimated for 2018 as at the end of 2017, on both an EAD-weighted and obligor-weighted basis.
- The actual default rates for 2018 and the averaged annual default rates across the five-year period covering 2014-2018 – both on an obligor-weighted basis.
- The number of obligors at 2018 and 2017 year-ends respectively. These numbers differ slightly from the obligor numbers in EU CR6 and EU CCR4 due to the application of specific modelling filters or due to scope differences.
- The total default count in 2018.
- The number of clients defaulting in 2018 that did not have committed facilities granted at the end of 2017. These newly-funded clients are not included in the actual 2018 default rates.

CR9_a_1: IRB models - back-testing of PD by exposure class - Retail – total credit risk

In the table below, defaults are recognised at an individual account level for the retail classes. Obligors therefore relate to accounts in the figures shown in the table and the two terms are equivalent in this context.

			PD estimate at		Defaulted rates actual		Number of obligors		Number of defaulted obligors	
			EAD weighted	Obligor weighted	Obligor weighted	Obligor weighted				
Exposure class	AQ band	PD range	2017 %	2017 %	2018 %	2014-2018 %	2017	2018	All	of which: newly funded obligors during the year
2018										
Retail - SME	AQ01	0% to 0.034%	—	—	—	0.19%	—	—	—	—
Retail - SME	AQ02	0.034% to 0.048%	—	—	—	0.04%	—	389	—	—
Retail - SME	AQ03	0.048% to 0.095%	0.08%	0.08%	0.02%	0.04%	17,899	39,080	3	—
Retail - SME	AQ04	0.095% to 0.381%	0.18%	0.19%	0.15%	0.19%	424,109	438,121	650	—
Retail - SME	AQ05	0.381% to 1.076%	0.76%	0.67%	0.56%	0.56%	310,204	311,848	1,814	85
Retail - SME	AQ06	1.076% to 2.153%	1.41%	1.47%	1.12%	1.29%	228,764	220,391	2,627	73
Retail - SME	AQ07	2.153% to 6.089%	3.28%	3.53%	2.80%	2.69%	220,466	166,566	6,778	609
Retail - SME	AQ08	6.089% to 17.222%	9.63%	9.65%	9.05%	8.74%	63,876	54,133	5,934	155
Retail - SME	AQ09	17.222% to 100%	31.47%	33.64%	25.93%	28.67%	29,392	28,635	7,677	56
Retail - SME	AQ10	100%	N/A	N/A	N/A	N/A	30,250	26,992	N/A	N/A
Total - Retail - SME			2.18%	2.32%	1.89%	2.04%	1,324,960	1,286,155	25,483	978
Retail - Secured by real estate non-SME	AQ01	0% to 0.034%	0.03%	0.03%	0.01%	0.00%	15,357	184	2	1
Retail - Secured by real estate non-SME	AQ02	0.034% to 0.048%	0.04%	0.04%	0.03%	0.07%	3,724	14,612	2	1
Retail - Secured by real estate non-SME	AQ03	0.048% to 0.095%	0.08%	0.08%	0.08%	0.07%	99,944	57,295	84	4
Retail - Secured by real estate non-SME	AQ04	0.095% to 0.381%	0.21%	0.20%	0.16%	0.15%	807,360	769,844	1,290	19
Retail - Secured by real estate non-SME	AQ05	0.381% to 1.076%	0.58%	0.61%	0.34%	0.38%	249,640	341,769	851	11
Retail - Secured by real estate non-SME	AQ06	1.076% to 2.153%	1.37%	1.37%	0.74%	0.69%	32,049	18,152	241	3
Retail - Secured by real estate non-SME	AQ07	2.153% to 6.089%	3.97%	3.88%	3.47%	2.36%	10,880	9,776	379	1
Retail - Secured by real estate non-SME	AQ08	6.089% to 17.222%	11.54%	11.36%	12.48%	10.31%	13,895	12,270	1,744	10
Retail - Secured by real estate non-SME	AQ09	17.222% to 100%	28.85%	28.82%	19.51%	19.46%	13,773	15,984	2,690	3
Retail - Secured by real estate non-SME	AQ10	100%	N/A	N/A	N/A	N/A	30,408	25,271	N/A	N/A
Total - Retail - Secured by real estate non-SME			0.80%	0.77%	0.58%	0.76%	1,277,030	1,265,157	7,283	53

For the note to this table refer to the following page.

CR9_a_1: IRB models - Back-testing of PD by exposure class - Retail - total credit risk *continued*

Exposure class	AQ band	PD range	PD estimate at EAD weighted 2017 %	PD estimate at Obligor weighted 2017 %	Default rates actual Obligor weighted 2018 %	Default rates actual Obligor weighted 2014-2018 %	Number of obligors 2017	Number of obligors 2018	Number of defaulted obligors All	Number of defaulted obligors of which: newly funded obligors during the year
2018										
Retail - Qualifying revolving	AQ01	0% to 0.034%	0.03%	0.03%	0.02%	0.02%	5,672,262	4,794,295	1,330	21
Retail - Qualifying revolving	AQ02	0.034% to 0.048%	0.04%	0.04%	0.06%	0.05%	765,969	1,043,501	483	9
Retail - Qualifying revolving	AQ03	0.048% to 0.095%	0.06%	0.06%	0.08%	0.08%	494,041	1,229,033	452	61
Retail - Qualifying revolving	AQ04	0.095% to 0.381%	0.21%	0.22%	0.17%	0.22%	2,332,095	2,179,987	4,093	29
Retail - Qualifying revolving	AQ05	0.381% to 1.076%	0.63%	0.61%	0.50%	0.50%	4,384,804	4,226,301	22,274	242
Retail - Qualifying revolving	AQ06	1.076% to 2.153%	1.57%	1.56%	1.46%	1.43%	1,745,102	1,809,880	26,345	785
Retail - Qualifying revolving	AQ07	2.153% to 6.089%	3.72%	3.70%	3.02%	2.81%	1,623,629	1,688,421	55,902	6,915
Retail - Qualifying revolving	AQ08	6.089% to 17.222%	9.16%	9.53%	8.47%	7.57%	524,367	501,413	46,596	2,202
Retail - Qualifying revolving	AQ09	17.222% to 100%	35.02%	33.41%	31.05%	28.63%	193,702	169,987	62,870	2,722
Retail - Qualifying revolving	AQ10	100%	N/A	N/A	N/A	N/A	491,282	390,132	N/A	N/A
Total - Retail - Qualifying revolving			1.46%	1.33%	1.17%	1.31%	18,227,253	18,032,950	220,345	12,986
Retail - Other	AQ01	0% to 0.034%	—	—	—	—	—	—	—	—
Retail - Other	AQ02	0.034% to 0.048%	—	—	—	—	—	—	—	—
Retail - Other	AQ03	0.048% to 0.095%	—	—	—	—	—	—	—	—
Retail - Other	AQ04	0.095% to 0.381%	0.30%	0.30%	0.60%	0.56%	9,152	8,075	85	30
Retail - Other	AQ05	0.381% to 1.076%	0.75%	0.73%	0.77%	0.65%	338,636	348,056	3,214	621
Retail - Other	AQ06	1.076% to 2.153%	1.51%	1.55%	1.99%	1.71%	122,638	170,719	2,947	504
Retail - Other	AQ07	2.153% to 6.089%	3.57%	3.64%	4.28%	3.48%	133,660	138,134	7,602	1,883
Retail - Other	AQ08	6.089% to 17.222%	9.38%	9.45%	9.57%	9.24%	57,285	65,125	6,578	1,098
Retail - Other	AQ09	17.222% to 100%	38.63%	40.07%	43.31%	43.15%	28,611	33,614	12,767	375
Retail - Other	AQ10	100%	N/A	N/A	N/A	N/A	83,175	57,836	N/A	N/A
Total - Retail - Other			3.63%	3.79%	4.16%	3.47%	773,157	821,559	33,193	4,511

Note:

(1) Obligor numbers for retail SME reflects an improved reporting approach and the 2017 comparatives have been revised.

Key points

- Observed and estimated default rates were well aligned across AQ bands for all asset classes.
- A significant volume of obligors originating in bands AQ7-AQ9 in the qualifying revolving class subsequently default within the year. These relate to non-packaged accounts in the current account portfolio (i.e. accounts with no borrowing facilities) and tend to be low-value defaults.

Credit risk

CR9_a_1: IRB models - Back-testing of PD by exposure class - Retail - total credit risk ***continued***

			PD estimate at		Defaulted rates actual		Number of obligors		Number of defaulted obligors	
			EAD weighted	Obligor weighted	Obligor weighted	Obligor weighted				
			2016	2016	2017	2013-2017				of which: newly funded
Exposure class	AQ band	PD range	%	%	%	%	2016	2017	All	obligors during the year
2017										
Retail - SME	AQ01	0% to 0.034%	—	—	—	0.09%	527	—	1	1
Retail - SME	AQ02	0.034% to 0.048%	—	—	—	0.04%	77	—	—	—
Retail - SME	AQ03	0.048% to 0.095%	0.07%	0.07%	0.04%	0.05%	18,236	17,899	8	—
Retail - SME	AQ04	0.095% to 0.381%	0.19%	0.18%	0.18%	0.19%	427,302	424,119	761	—
Retail - SME	AQ05	0.381% to 1.076%	0.67%	0.65%	0.54%	0.55%	328,215	310,221	1,835	57
Retail - SME	AQ06	1.076% to 2.153%	1.51%	1.48%	1.02%	1.27%	214,133	228,769	2,269	77
Retail - SME	AQ07	2.153% to 6.089%	3.41%	3.46%	2.59%	2.67%	217,871	223,440	6,278	644
Retail - SME	AQ08	6.089% to 17.222%	9.85%	9.64%	8.97%	8.49%	63,843	63,899	5,870	142
Retail - SME	AQ09	17.222% to 100%	31.19%	34.61%	30.39%	28.80%	30,831	29,400	9,456	85
Retail - SME	AQ10	100%	—	—	—	—	39,910	30,461	—	—
Total - Retail - SME			1.99%	2.34%	1.96%	2.23%	1,340,945	1,328,208	26,478	1,006
Retail - Secured by real estate non-SME	AQ01	0% to 0.034%	0.03%	0.03%	—	—	56	15,357	—	—
Retail - Secured by real estate non-SME	AQ02	0.034% to 0.048%	0.04%	0.04%	0.02%	0.07%	17,544	3,724	4	1
Retail - Secured by real estate non-SME	AQ03	0.048% to 0.095%	0.08%	0.08%	0.07%	0.06%	111,054	99,944	77	3
Retail - Secured by real estate non-SME	AQ04	0.095% to 0.381%	0.22%	0.22%	0.15%	0.14%	757,765	807,360	1,145	17
Retail - Secured by real estate non-SME	AQ05	0.381% to 1.076%	0.61%	0.62%	0.42%	0.40%	214,159	249,640	900	10
Retail - Secured by real estate non-SME	AQ06	1.076% to 2.153%	1.39%	1.36%	0.66%	0.74%	43,618	32,049	294	4
Retail - Secured by real estate non-SME	AQ07	2.153% to 6.089%	3.96%	3.56%	1.63%	1.95%	24,526	10,880	400	1
Retail - Secured by real estate non-SME	AQ08	6.089% to 17.222%	11.36%	10.97%	11.12%	9.36%	14,277	13,895	1,593	5
Retail - Secured by real estate non-SME	AQ09	17.222% to 100%	26.52%	26.75%	21.81%	20.31%	16,461	13,773	3,593	3
Retail - Secured by real estate non-SME	AQ10	100%	—	—	—	—	36,319	30,408	—	—
Total - Retail - Secured by real estate non-SME			0.88%	0.88%	0.66%	0.90%	1,235,779	1,277,030	8,006	44

Credit risk

CR9_a_1: IRB models - Back-testing of PD by exposure class - Retail - total credit risk *continued*

Exposure class	AQ band	PD range	PD estimate at: EAD weighted 2016 %	PD estimate at: Obligor weighted 2016 %	Default rates actual: Obligor weighted 2017 %	Default rates actual: Obligor weighted 2013-2017 %	Number of obligors: 2016	Number of obligors: 2017	Number of defaulted obligors: All	Number of defaulted obligors: of which: newly funded obligors during the year
2017										
Retail - Qualifying revolving	AQ01	0% to 0.034%	0.03%	0.03%	0.02%	0.02%	5,475,320	5,672,262	1,394	73
Retail - Qualifying revolving	AQ02	0.034% to 0.048%	0.04%	0.04%	0.06%	0.05%	1,027,499	765,971	595	13
Retail - Qualifying revolving	AQ03	0.048% to 0.095%	0.08%	0.08%	0.10%	0.08%	561,598	494,034	583	5
Retail - Qualifying revolving	AQ04	0.095% to 0.381%	0.23%	0.23%	0.26%	0.26%	2,175,704	2,301,059	5,691	95
Retail - Qualifying revolving	AQ05	0.381% to 1.076%	0.62%	0.60%	0.51%	0.52%	4,607,549	4,407,264	23,962	289
Retail - Qualifying revolving	AQ06	1.076% to 2.153%	1.55%	1.53%	1.52%	1.41%	1,751,502	1,742,158	26,970	372
Retail - Qualifying revolving	AQ07	2.153% to 6.089%	3.70%	3.70%	3.08%	2.83%	1,660,588	1,632,419	58,377	7,270
Retail - Qualifying revolving	AQ08	6.089% to 17.222%	9.20%	9.58%	8.84%	7.51%	515,676	526,311	47,831	2,223
Retail - Qualifying revolving	AQ09	17.222% to 100%	35.62%	34.30%	31.43%	28.93%	229,237	194,493	75,864	3,818
Retail - Qualifying revolving	AQ10	100%	—	—	—	—	502,951	491,282	—	—
Total - Retail - Qualifying revolving			1.44%	1.40%	1.26%	1.44%	18,507,624	18,227,253	241,267	14,158
Retail - Other	AQ01	0% to 0.034%	—	—	—	—	—	—	—	—
Retail - Other	AQ02	0.034% to 0.048%	—	—	—	—	—	—	—	—
Retail - Other	AQ03	0.048% to 0.095%	0.09%	0.08%	—	—	10	—	—	—
Retail - Other	AQ04	0.095% to 0.381%	0.32%	0.33%	0.56%	0.49%	27,553	9,152	240	87
Retail - Other	AQ05	0.381% to 1.076%	0.67%	0.63%	0.71%	0.63%	312,410	338,636	2,770	541
Retail - Other	AQ06	1.076% to 2.153%	1.51%	1.46%	2.01%	1.62%	111,260	122,638	2,824	590
Retail - Other	AQ07	2.153% to 6.089%	3.61%	3.58%	4.17%	3.24%	122,158	133,660	6,450	1,353
Retail - Other	AQ08	6.089% to 17.222%	9.79%	10.11%	11.27%	8.96%	45,505	57,285	6,092	962
Retail - Other	AQ09	17.222% to 100%	41.13%	44.73%	48.06%	42.21%	19,549	28,611	9,647	251
Retail - Other	AQ10	100%	—	—	—	—	85,248	83,175	—	—
Total - Retail - Other			3.19%	3.35%	3.80%	3.39%	723,693	773,157	28,023	3,784

CR9_a_2: IRB models - Back-testing of PD by exposure class - Wholesale - total credit risk

				PD estimate at		Default rates actual		Number of obligors		Number of defaulted obligors	
Exposure class	AQ band	PD range	Equivalent S&P Rating	EAD weighted 2017 %	Obligor weighted 2017 %	Obligor weighted 2018 %	Obligor weighted 2014-2018 %	2017 (1)	2018	All	of which: newly funded obligors during the year
2018											
Central governments and central banks	AQ01	0% to 0.034%	AAA to AA	0.01%	0.02%	—	—	52	55	—	—
Central governments and central banks	AQ02	0.034% to 0.048%	AA-	0.04%	0.04%	—	—	1	2	—	—
Central governments and central banks	AQ03	0.048% to 0.095%	A+ to A-	0.06%	0.06%	—	—	12	15	—	—
Central governments and central banks	AQ04	0.095% to 0.381%	BBB+ to BBB-	0.21%	0.17%	—	—	8	7	—	—
Central governments and central banks	AQ05	0.381% to 1.076%	BB+ to BB	0.55%	0.57%	—	—	4	1	—	—
Central governments and central banks	AQ06	1.076% to 2.153%	BB- to B+	1.81%	1.81%	—	—	1	—	—	—
Central governments and central banks	AQ07	2.153% to 6.089%	B	—	—	—	—	—	2	—	—
Central governments and central banks	AQ08	6.089% to 17.222%	B- to CCC+	—	—	—	—	—	—	—	—
Central governments and central banks	AQ09	17.222% to 100%	CCC to CC	28.96%	28.96%	100.00%	20.00%	1	—	1	—
Central governments and central banks	AQ10	100%	D	—	—	—	—	—	1	—	—
Total - Central governments and central banks				0.01%	0.46%	1.27%	0.25%	79	83	1	—
Institutions	AQ01	0% to 0.034%	AAA to AA	0.03%	0.03%	—	—	88	92	—	—
Institutions	AQ02	0.034% to 0.048%	AA-	0.04%	0.04%	—	—	87	70	—	—
Institutions	AQ03	0.048% to 0.095%	A+ to A-	0.07%	0.07%	—	—	106	97	—	—
Institutions	AQ04	0.095% to 0.381%	BBB+ to BBB-	0.13%	0.19%	0.23%	0.08%	433	414	1	—
Institutions	AQ05	0.381% to 1.076%	BB+ to BB	0.55%	0.60%	—	—	177	129	—	—
Institutions	AQ06	1.076% to 2.153%	BB- to B+	1.47%	1.56%	2.44%	0.90%	41	37	1	—
Institutions	AQ07	2.153% to 6.089%	B	2.74%	3.08%	—	0.78%	36	33	—	—
Institutions	AQ08	6.089% to 17.222%	B- to CCC+	10.19%	11.46%	—	4.00%	9	6	—	—
Institutions	AQ09	17.222% to 100%	CCC to CC	28.96%	33.76%	—	—	5	8	—	—
Institutions	AQ10	100%	D	—	—	—	—	1	2	—	—
Total - Institutions				0.13%	0.66%	0.20%	0.15%	983	888	2	—

For the note to this table refer to the following page.

CR9_a_2: IRB models - Back testing of PD by exposure class - Wholesale - total credit risk *continued*

				PD estimate at		Default rates actual		Number of obligors		Number of defaulted obligors	
Exposure class	AQ band	PD range	Equivalent S&P Rating	EAD weighted 2017 %	Obligor weighted 2017 %	Obligor weighted 2017 %	Obligor weighted 2014-2018 %	2017 (1)	2018	All	of which: newly funded obligors during the year
2018											
Corporates	AQ01	0% to 0.034%	AAA to AA	0.03%	0.03%	—	0.01%	2,539	2,918	—	—
Corporates	AQ02	0.034% to 0.048%	AA-	0.04%	0.04%	—	—	412	424	—	—
Corporates	AQ03	0.048% to 0.095%	A+ to A-	0.07%	0.07%	—	—	1,147	1,046	—	—
Corporates	AQ04	0.095% to 0.381%	BBB+ to BBB-	0.19%	0.25%	0.14%	0.09%	7,177	6,943	10	—
Corporates	AQ05	0.381% to 1.076%	BB+ to BB	0.67%	0.70%	0.42%	0.40%	20,427	19,644	88	2
Corporates	AQ06	1.076% to 2.153%	BB- to B+	1.50%	1.53%	0.73%	0.76%	18,835	17,033	143	5
Corporates	AQ07	2.153% to 6.089%	B	3.27%	3.11%	1.96%	1.70%	15,856	13,249	318	7
Corporates	AQ08	6.089% to 17.222%	B- to CCC+	9.75%	10.06%	7.59%	8.33%	2,294	1,940	176	2
Corporates	AQ09	17.222% to 100%	CCC to CC	26.62%	28.22%	10.03%	14.25%	628	585	63	—
Corporates	AQ10	100%	D	—	—	—	—	3,209	2,571	—	—
Total - Corporates				0.79%	1.95%	1.13%	1.34%	72,524	66,353	798	16
Equities	AQ01	0% to 0.034%	AAA to AA	—	—	—	—	—	—	—	—
Equities	AQ02	0.034% to 0.048%	AA-	—	—	—	—	—	—	—	—
Equities	AQ03	0.048% to 0.095%	A+ to A-	—	—	—	—	—	—	—	—
Equities	AQ04	0.095% to 0.381%	BBB+ to BBB-	—	—	—	—	—	—	—	—
Equities	AQ05	0.381% to 1.076%	BB+ to BB	0.40%	0.40%	—	—	1	—	—	—
Equities	AQ06	1.076% to 2.153%	BB- to B+	1.52%	1.32%	—	—	8	10	—	—
Equities	AQ07	2.153% to 6.089%	B	2.50%	2.50%	—	1.12%	20	16	—	—
Equities	AQ08	6.089% to 17.222%	B- to CCC+	—	—	—	4.00%	—	—	—	—
Equities	AQ09	17.222% to 100%	CCC to CC	—	—	—	5.00%	—	—	—	—
Equities	AQ10	100%	D	—	—	—	—	—	1	—	—
Total - Equities				1.67%	2.10%	—	1.10%	29	27	—	—

Note:
(1) Obligor numbers reflect an improved reporting approach and the 2017 comparatives have been revised.

Key point

- PD estimates increased with each AQ band as expected. Actual outcomes typically also increased with each AQ band but this was not always the case for wholesale clients, where sample sizes tend to be small at the AQ band level.

CR9_a_2: IRB models - Back-testing of PD by exposure class - Wholesale - total credit risk *continued*

Exposure class	AQ band	PD range	Equivalent S&P Rating	PD estimate at: EAD weighted 2016 %	PD estimate at: Obligor weighted 2016 %	Default rates actual: Obligor weighted 2017 %	Default rates actual: Obligor weighted 2013-2017 %	Number of obligors: 2016	Number of obligors: 2017	Defaulted obligors: All	Defaulted obligors: of which: newly funded obligors during the year
2017											
Central governments and central banks	AQ01	0% to 0.034%	AAA to AA	0.01%	0.02%	—	—	54	52	—	—
Central governments and central banks	AQ02	0.034% to 0.048%	AA to AA-	0.04%	0.04%	—	—	5	1	—	—
Central governments and central banks	AQ03	0.048% to 0.095%	A+ to A-	0.06%	0.06%	—	—	14	12	—	—
Central governments and central banks	AQ04	0.095% to 0.381%	BBB+ to BBB-	0.21%	0.21%	—	—	11	8	—	—
Central governments and central banks	AQ05	0.381% to 1.076%	BB+ to BB	0.63%	0.66%	—	—	4	4	—	—
Central governments and central banks	AQ06	1.076% to 2.153%	BB- to B+	—	—	—	—	—	1	—	—
Central governments and central banks	AQ07	2.153% to 6.089%	B+ to B	2.50%	2.50%	—	—	1	—	—	—
Central governments and central banks	AQ08	6.089% to 17.222%	B to CCC+	8.78%	8.74%	—	—	4	—	—	—
Central governments and central banks	AQ09	17.222% to 100%	CCC to CC	28.96%	28.96%	—	—	1	1	—	—
Central governments and central banks	AQ10	100%	D	—	—	—	—	—	—	n/a	n/a
Total - Central governments and central banks				0.02%	0.78%	—	—	94	79	—	—
Institutions	AQ01	0% to 0.034%	AAA to AA	0.03%	0.03%	—	—	139	88	—	—
Institutions	AQ02	0.034% to 0.048%	AA to AA-	0.04%	0.04%	—	0.16%	71	87	—	—
Institutions	AQ03	0.048% to 0.095%	A+ to A-	0.07%	0.07%	—	0.06%	91	106	—	—
Institutions	AQ04	0.095% to 0.381%	BBB+ to BBB-	0.14%	0.20%	—	0.04%	508	433	—	—
Institutions	AQ05	0.381% to 1.076%	BB+ to BB	0.53%	0.60%	—	0.15%	208	177	—	—
Institutions	AQ06	1.076% to 2.153%	BB- to B+	1.26%	1.46%	—	1.11%	51	41	—	—
Institutions	AQ07	2.153% to 6.089%	B+ to B	3.02%	2.96%	—	0.79%	42	36	—	—
Institutions	AQ08	6.089% to 17.222%	B to CCC+	8.11%	10.86%	—	4.29%	12	9	—	—
Institutions	AQ09	17.222% to 100%	CCC to D	28.96%	28.96%	—	1.21%	7	5	—	—
Institutions	AQ10	100%		—	—	—	—	4	1	n/a	n/a
Total - Institutions				0.15%	0.68%	—	0.22%	1,133	983	—	—

CR9_a_2: IRB models - Back testing of PD by exposure class - Wholesale - total credit risk *continued*

				PD estimate at		Default rates actual		Number of obligors		Defaulted obligors	
Exposure class	AQ band	PD range	Equivalent S&P Rating	EAD weighted 2016 %	Obligor weighted 2016 %	Obligor weighted 2017 %	Obligor weighted 2013-2017 %	2016	2017	All	of which: newly funded obligors during the year
2017											
Corporates	AQ01	0% to 0.034%	AAA to AA	0.03%	0.03%	0.04%	0.01%	2,773	2,539	1	—
Corporates	AQ02	0.034% to 0.048%	AA to AA-	0.04%	0.04%	0.23%	0.08%	434	412	1	—
Corporates	AQ03	0.048% to 0.095%	A+ to A-	0.07%	0.07%	0.09%	0.06%	1,159	1,147	1	—
Corporates	AQ04	0.095% to 0.381%	BBB+ to BBB-	0.20%	0.25%	0.11%	0.15%	7,124	7,177	10	2
Corporates	AQ05	0.381% to 1.076%	BB+ to BB	0.67%	0.70%	0.58%	0.48%	21,005	20,427	123	2
Corporates	AQ06	1.076% to 2.153%	BB- to B+	1.50%	1.53%	0.69%	0.87%	21,530	18,835	156	7
Corporates	AQ07	2.153% to 6.089%	B+ to B	3.27%	3.09%	1.56%	1.69%	19,166	15,856	310	11
Corporates	AQ08	6.089% to 17.222%	B to CCC+	9.56%	9.88%	7.30%	7.30%	2,973	2,294	219	2
Corporates	AQ09	17.222% to 100%	CCC to D	26.35%	28.07%	9.15%	15.70%	721	628	67	1
Corporates	AQ10	100%		—	—	—	—	4,444	3,209	n/a	n/a
Total - Corporates				0.80%	2.06%	1.12%	1.66%	81,329	72,524	888	25
Equities	AQ01	0% to 0.034%	AAA to AA	—	—	—	—	—	—	—	—
Equities	AQ02	0.034% to 0.048%	AA to AA-	—	—	—	—	—	—	—	—
Equities	AQ03	0.048% to 0.095%	A+ to A-	—	—	—	—	—	—	—	—
Equities	AQ04	0.095% to 0.381%	BBB+ to BBB-	—	—	—	—	—	—	—	—
Equities	AQ05	0.381% to 1.076%	BB+ to BB	—	—	—	—	—	1	—	—
Equities	AQ06	1.076% to 2.153%	BB- to B+	1.31%	1.32%	—	0.51%	15	8	—	—
Equities	AQ07	2.153% to 6.089%	B+ to B	2.51%	2.55%	—	1.12%	22	20	—	—
Equities	AQ08	6.089% to 17.222%	B to CCC+	—	—	—	0.50%	—	—	—	—
Equities	AQ09	17.222% to 100%	CCC to D	—	—	—	8.33%	—	—	—	—
Equities	AQ10	100%		—	—	—	—	1	—	n/a	n/a
Total - Equities				1.62%	2.05%	—	1.22%	38	29	—	—

Credit risk

Loss given default

Both estimated and actual LGDs are EAD-weighted. Corporate exposures where EAD varies more can give rise to significant movements when compared year-on-year.

More generally, differences between estimates and actuals can arise when comparing regulatory capital downturn estimates to actual outcomes that have been realised in non-downturn conditions.

Corporates

In the corporates exposure class, the actual LGD includes all defaulted client cases that closed during the year, excluding disposal and run-off portfolios.

The estimated LGDs are the average pre-default downturn estimates for these defaults, with actual LGDs being the averaged observed outcomes, time-discounted to reflect actual workout periods.

Closure of a defaulted customer case occurs when none of the defined default criteria have been met. This may include instances where debt is repaid, fully or partially written off, or returned to the performing book.

Data for disposed and run-off portfolios has been excluded from the table below for both 2017 and 2018 because the outcomes do not represent expected future model performance, for the following specific reasons:

- Pre-default estimates were assessed on discontinued models.
- Actual LGD outcomes do not reflect normal workout processes.
- Assets do not represent future business.

Central governments and central banks, institutions and equities are not included owing to nil – or very low – volumes of defaults.

Retail

In the retail exposure classes, estimated LGDs relate to loss estimates on defaulted exposures over defined outcome periods, which vary by exposure class, from 36 to 72 months. These periods align with the collections and recoveries process. The actual losses included in the table below relate to the corresponding defaulted exposures, which reached the relevant outcome period during 2018.

CR9_b: IRB: IRB models: Back-testing of LGD by exposure class - total credit risk

	2018		2017	
IRB exposure class	LGD - estimated %	LGD - actual %	LGD - estimated %	LGD - actual %
Retail				
- SME	70.1	58.3	70.7	57.4
- Secured by real estate non-SME (1)	31.3	18.5	35.3	19.7
- Qualifying revolving	75.5	69.0	75.2	70.3
- Other	81.3	75.7	80.1	75.1
Corporates	45.5	36.3	43.3	39.1

Note:
(1) Actual LGD reflects an enhancement for the treatment of cures. The 2017 comparative has been revised.

Key points

- For all retail exposure classes, actual loss experience remained below model estimates.
- In the retail SME and qualifying revolving exposure classes, loss estimates and outcomes were broadly comparable year-on-year.
- In the secured by real estate non-SME exposure class, the decrease in estimated and actual loss was driven by certain high-loss accounts moving outside of the defined outcome period.
- In the corporates exposure class, the year-on-year change between the estimate and actual outcome was due to the inclusion in 2017 of certain higher-loss Ulster Bank loan sales cases.

EU CR9_c: IRB: IRB models - Back-testing of EL by exposure class - total credit risk

	Expected loss estimated for following year at the end of						Impairment (release)/charge for the year	
	2017			2016				
	Non-defaulted (AQ1-AQ9) £m	Defaulted (AQ10) £m	Total £m	Non-defaulted (AQ1-AQ9) £m	Defaulted (AQ10) £m	Total £m	2018 £m	2017 £m
Retail								
- SME (1)	117	252	369	112	372	484	111	77
- Secured by real estate non-SME (1)	225	909	1,134	244	1,089	1,333	58	119
- Qualifying revolving	232	339	571	236	372	608	174	38
- Other non-SME	154	485	639	120	548	668	(21)	20
Central governments and central banks	3	—	3	4	—	4	—	—
Institutions	12	—	12	18	—	18	10	—
Corporates	430	1,736	2,166	516	2,175	2,691	100	319
Equities	9	—	9	10	—	10	—	—
	1,182	3,721	4,903	1,260	4,556	5,816	432	573

Note:
(1) Change in allocation of impairments (£33 million) across Retail sub exposures from Retail SME to Retail Secured by real estate non-SME.

Key point

- The decrease in expected loss estimates reflected a significant fall in corporates and retail defaults driven by improved default rates.

Credit risk

Credit risk (excluding counterparty credit risk)

This section provides more detailed analysis of credit risk exposures (excluding counterparty credit risk).

Risk profile by asset concentrations

EU CRB_B: IRB & STD: Credit risk exposures by exposure class

The table below presents credit risk EAD pre and post CRM on a period end and 12 month average basis, analysed by regulatory approach and exposure class. It excludes counterparty credit risk and securitisations.

	EAD pre CRM		EAD post CRM	
	Period end	Average	Period end	Average
2018	£m	£m	£m	£m
IRB				
Central governments and central banks	54,519	57,616	54,450	57,541
Institutions	12,577	16,504	10,790	14,623
Corporates	142,127	144,360	132,335	135,314
Specialised lending	*18,282*	*19,873*	*18,059*	*19,664*
SME	*21,633*	*21,973*	*21,012*	*21,330*
Other corporate	*102,212*	*102,514*	*93,264*	*94,320*
Retail	204,979	203,649	204,979	203,650
Secured by real estate property - SME	*1,359*	*1,368*	*1,359*	*1,368*
- non-SME	*165,381*	*164,132*	*165,381*	*164,133*
Qualifying revolving	*22,634*	*22,528*	*22,634*	*22,528*
Other retail - SME	*9,118*	*9,274*	*9,118*	*9,274*
- non-SME	*6,487*	*6,347*	*6,487*	*6,347*
Equities	722	791	722	791
Non-credit obligation assets	5,779	5,824	5,779	5,824
Total IRB	420,703	428,744	409,055	417,743
STD				
Central governments and central banks	95,657	95,204	95,595	95,183
Regional governments and local authorities	155	158	155	157
Multilateral development banks	31	30	31	30
Institutions	471	472	510	513
Corporates	11,047	10,759	10,433	10,230
Retail	2,859	3,113	2,836	3,080
Secured by mortgages on immovable property - residential	12,840	12,677	12,840	12,677
- commercial	2,909	2,765	2,885	2,747
Exposures in default	555	777	554	775
Items associated with particularly high risk	28	30	28	30
Covered bonds	137	143	137	143
Equity exposures	705	685	705	685
Other exposures	2,057	2,222	2,057	2,222
Total STD	129,451	129,035	128,766	128,472
Total IRB and STD	550,154	557,779	537,821	546,215

EU CRB_B: IRB & STD: Credit risk exposures by exposure class *continued*

	EAD pre CRM		EAD post CRM	
2017	Period end £m	Average £m	Period end £m	Average £m
IRB				
Central governments and central banks	57,057	51,864	56,990	51,792
Institutions	15,506	17,163	13,672	14,907
Corporates	149,530	152,977	140,976	143,776
Specialised lending	*23,774*	*24,645*	*23,661*	*24,256*
SME	*24,907*	*24,347*	*24,271*	*23,772*
Other corporate	*100,849*	*103,985*	*93,044*	*95,748*
Retail	202,142	200,119	202,142	200,119
Secured by real estate property - SME	*1,389*	*1,395*	*1,389*	*1,395*
- non-SME	*162,871*	*160,609*	*162,871*	*160,609*
Qualifying revolving	*22,528*	*22,957*	*22,528*	*22,957*
Other retail - SME	*9,352*	*9,342*	*9,352*	*9,342*
- non-SME	*6,002*	*5,816*	*6,002*	*5,816*
Equities	861	848	861	848
Non-credit obligation assets	7,180	1,553	7,180	1,553
Total IRB	432,276	424,524	421,821	412,995
STD				
Central governments and central banks (1)	92,807	84,923	92,821	84,923
Regional governments and local authorities	157	179	157	175
Multilateral development banks	30	31	30	31
Institutions	419	528	474	582
Corporates	10,821	16,012	10,477	15,346
Retail	3,071	3,338	3,041	3,312
Secured by mortgages on immovable property - residential	12,798	12,500	12,798	12,496
- commercial	2,522	3,377	2,516	3,364
Exposures in default	980	1,075	978	1,064
Items associated with particularly high risk	34	236	34	236
Covered bonds	159	136	159	136
Equity exposures	650	561	650	561
Other exposures (1)	1,709	7,605	1,709	7,605
Total STD	126,157	130,501	125,844	129,831
Total IRB and STD	558,433	555,025	547,665	542,826

Note:
(1) 2017 presentation for STD measures has been revised, see EU CRA for details.

Credit risk

EU CRB_C: IRB & STD: Credit risk exposures by geographic region

The table below presents credit risk EAD post CRM analysed by geography, split by regulatory approach and exposure class. It excludes counterparty credit risk and securitisations. Geographical analysis is based on country of operation of the customer.

2018	UK £m	RoI £m	Other Western Europe £m	US £m	Rest of world £m	Total £m
IRB						
Central governments and central banks	278	2,499	35,352	11,713	4,608	54,450
Institutions	1,444	33	3,576	4,805	932	10,790
Corporates	100,455	5,423	16,483	7,170	2,804	132,335
Specialised lending	*15,147*	*1,020*	*1,508*	*115*	*269*	*18,059*
SME	*19,672*	*1,250*	*48*	*11*	*31*	*21,012*
Other corporate	*65,636*	*3,153*	*14,927*	*7,044*	*2,504*	*93,264*
Retail	188,455	16,196	145	48	135	204,979
Secured by real estate property - SME	*1,353*	*1*	*2*	*1*	*2*	*1,359*
- non-SME	*150,348*	*15,033*	*—*	*—*	*—*	*165,381*
Qualifying revolving	*21,962*	*373*	*132*	*44*	*123*	*22,634*
Other retail - SME	*8,521*	*587*	*4*	*2*	*4*	*9,118*
- non-SME	*6,271*	*202*	*7*	*1*	*6*	*6,487*
Equities	699	—	10	8	5	722
Non-credit obligation assets	4,632	462	612	11	62	5,779
Total IRB	295,963	24,613	56,178	23,755	8,546	409,055
Proportion	72%	6%	14%	6%	2%	100%
STD						
Central governments and central banks	93,251	—	149	268	1,927	95,595
Regional governments and local authorities	153	2	—	—	—	155
Multilateral development banks	—	—	—	—	31	31
Institutions	31	—	67	5	407	510
Corporates	3,024	665	940	3	5,801	10,433
Retail	2,066	1	69	7	693	2,836
Secured by mortgages on immovable property - residential	10,990	136	262	205	1,247	12,840
- commercial	2,555	16	157	11	146	2,885
Exposures in default	362	16	24	12	140	554
Items associated with particularly high risk	—	—	28	—	—	28
Covered bonds	—	—	137	—	—	137
Equity exposures	549	3	16	99	38	705
Other exposures	1,734	32	69	—	222	2,057
Total STD	114,715	871	1,918	610	10,652	128,766
Proportion	90%	1%	1%	0%	8%	100%
Total IRB and STD	410,678	25,484	58,096	24,365	19,198	537,821
Proportion	75%	5%	11%	5%	4%	100%
Of which: by significant subsidiary (excludes Intra-Group exposures)						
NWB Plc	250,620	279	28,582	12,554	3,213	295,248
RBS plc	91,082	183	2,247	3,870	1,361	98,743
UBIDAC	367	24,480	2,314	292	442	27,895
NWM Plc	9,568	159	13,350	5,402	3,237	31,716

Credit risk

EU CRB_C: IRB & STD: Credit risk exposures by geographic region *continued*

2017	UK £m	RoI £m	Other Western Europe £m	US £m	Rest of world £m	Total £m
IRB						
Central governments and central banks	406	2,411	40,980	8,461	4,732	56,990
Institutions	2,231	28	6,758	3,287	1,368	13,672
Corporates	109,522	5,624	16,670	5,801	3,359	140,976
Specialised lending	*20,330*	*957*	*1,557*	*466*	*351*	*23,661*
SME	*22,855*	*1,295*	*73*	*11*	*37*	*24,271*
Other corporate	*66,337*	*3,372*	*15,040*	*5,324*	*2,971*	*93,044*
Retail	184,659	17,145	146	49	143	202,142
Secured by real estate property - SME	*1,382*	*1*	*3*	*1*	*2*	*1,389*
- non-SME	*146,956*	*15,915*	—	—	—	*162,871*
Qualifying revolving	*21,838*	*385*	*132*	*45*	*128*	*22,528*
Other retail - SME	*8,713*	*628*	*4*	*2*	*5*	*9,352*
- non-SME	*5,770*	*216*	*7*	*1*	*8*	*6,002*
Equities	716	—	130	9	6	861
Non-credit obligation assets	5,952	505	617	27	79	7,180
Total IRB	303,486	25,713	65,301	17,634	9,687	421,821
Proportion	73%	6%	15%	4%	2%	100%
STD						
Central governments and central banks (1)	90,762	2	3	—	2,054	92,821
Regional governments and local authorities	146	2	9	—	—	157
Multilateral development banks	—	—	—	—	30	30
Institutions	5	—	64	1	404	474
Corporates	3,996	554	651	70	5,206	10,477
Retail	2,235	5	70	8	723	3,041
Secured by mortgages on immovable property - residential	10,285	74	233	192	2,014	12,798
- commercial	2,268	8	78	30	132	2,516
Exposures in default	415	43	15	7	498	978
Items associated with particularly high risk	—	—	34	—	—	34
Covered bonds	—	—	159	—	—	159
Equity exposures (2)	588	—	18	28	16	650
Other exposures	1,433	33	41	—	202	1,709
Total STD	112,133	721	1,375	336	11,279	125,844
Proportion	89%	1%	1%	0%	9%	100%
Total IRB and STD	415,619	26,434	66,676	17,970	20,966	547,665
Proportion	76%	5%	12%	3%	4%	100%
Of which: by significant subsidiary (excludes Intra-Group exposures)						
NWB Plc	217,307	138	2,793	842	631	221,711
RBS plc	160,102	703	53,914	16,381	8,241	239,341
UBIDAC	514	24,870	1,522	39	452	27,397

Note:
(1) 2017 presentation for STD measures has been revised, see EU CRA for details.

Key points

- Corporate exposure in specialised lending and SME reduced due to RWA saving initiatives.
- The increase in exposure to the US was driven by lending to US banks and financial institutions.
- UK mortgage exposure increased, with new lending partly offset by redemptions and repayments.

EU CRB_D: IRB& STD: Credit risk exposures by industry sector

The table below presents credit risk EAD post CRM analysed by industry, split by regulatory approach and exposure class. It excludes counterparty credit risk and securitisations. Industry analysis reflects the sector classification used by RBS for risk management purposes.

	Sovereign			Financial institutions			Corporates							Personal		Other	
2018	Central banks £m	Central governments £m	Other sovereign £m	Banks £m	Non-bank £m	SSPEs £m	Property £m	Natural resources £m	Transport £m	Manufacturing £m	Retail and leisure £m	Services £m	TMT £m	Mortgages £m	Other personal £m	Not allocated £m	Total £m
IRB																	
Central governments and central banks	28,045	22,662	818	2,885	—	—	—	—	—	—	—	40	—	—	—	—	54,450
Institutions	—	—	1,300	9,409	1	—	45	—	31	—	—	4	—	—	—	—	10,790
Corporates	—	105	57	19	21,928	483	35,527	12,076	13,825	12,081	14,634	15,853	5,604	—	140	3	132,335
Specialised lending	—	—	*34*	—	*113*	—	*14,108*	*2,389*	*128*	*130*	*68*	*847*	*238*	—	*4*	—	*18,059*
SME	—	—	—	—	*917*	—	*1,881*	*636*	*2,320*	*4,408*	*4,306*	*5,832*	*705*	—	*7*	—	*21,012*
Other corporate	—	*105*	*23*	*19*	*20,898*	*483*	*19,538*	*9,051*	*11,377*	*7,543*	*10,260*	*9,174*	*4,661*	—	*129*	*3*	*93,264*
Retail	—	—	15	1	119	—	2,366	72	633	2,076	2,311	2,563	223	165,381	29,219	—	204,979
Secured by real estate property - SME	—	—	—	—	*6*	—	*581*	*6*	*67*	*157*	*281*	*232*	*21*	—	*8*	—	*1,359*
-non-SME	—	—	—	—	—	—	—	—	—	—	—	—	—	*165,381*	—	—	*165,381*
Qualifying revolving	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*22,634*	—	*22,634*
Other retail - SME	—	—	*15*	*1*	*113*	—	*1,785*	*66*	*566*	*1,919*	*2,030*	*2,330*	*202*	—	*91*	—	*9,118*
- non-SME	—	—	—	—	—	—	—	—	—	—	—	*1*	—	—	*6,486*	—	*6,487*
Equities	—	—	—	9	686	—	—	—	2	4	—	4	17	—	—	—	722
Non-credit obligation assets	—	20	83	—	38	—	141	31	325	61	140	11	65	—	—	4,864	5,779
Total IRB	28,045	22,787	2,273	12,323	22,772	483	38,079	12,179	14,816	14,222	17,085	18,475	5,909	165,381	29,359	4,867	409,055
STD																	
Central governments and central banks	70,437	24,698	460	—	—	—	—	—	—	—	—	—	—	—	—	—	95,595
Regional governments and local authorities	—	—	153	—	—	—	—	—	—	—	2	—	—	—	—	—	155
Multilateral development banks	—	—	—	31	—	—	—	—	—	—	—	—	—	—	—	—	31
Institutions	—	—	—	471	39	—	—	—	—	—	—	—	—	—	—	—	510
Corporates	—	—	2	10	827	235	2,622	431	824	1,791	1,803	978	192	58	660	—	10,433
Retail	—	—	—	28	3	—	190	39	27	200	11	166	3	45	2,124	—	2,836
Secured by mortgages on																	
immovable property - residential	—	—	—	8	129	5	429	—	—	33	30	22	20	11,637	527	—	12,840
- commercial	—	—	—	14	120	—	1,634	21	24	25	433	317	32	11	254	—	2,885
Exposures in default	—	—	—	—	6	10	23	12	26	43	101	39	9	187	98	—	554
Items associated with particularly high risk	—	—	—	—	—	—	28	—	—	—	—	—	—	—	—	—	28
Covered bonds	—	—	—	—	137	—	—	—	—	—	—	—	—	—	—	—	137
Equity exposures	—	—	—	—	659	—	—	1	21	—	18	—	6	—	—	—	705
Other exposures	—	—	—	—	—	—	51	3	1	6	243	49	—	—	—	1,704	2,057
Total STD	70,437	24,698	615	562	1,920	250	4,977	507	923	2,098	2,641	1,571	262	11,938	3,663	1,704	128,766
Total IRB and STD	98,482	47,485	2,888	12,885	24,692	733	43,056	12,686	15,739	16,320	19,726	20,046	6,171	177,319	33,022	6,571	537,821

Credit risk

EU CRB_D: IRB & STD: Credit risk exposure by industry sector continued

	Sovereign			Financial institutions			Corporates							Personal		Other	
2017	Central banks £m	Central governments £m	Other sovereign £m	Banks £m	Non-bank £m	SSPEs £m	Property £m	Natural resources £m	Transport £m	Manufacturing £m	Retail and leisure £m	Services £m	TMT £m	Mortgages £m	Other personal £m	Not allocated £m	Total £m
IRB																	
Central governments and central banks	34,360	19,320	757	2,521	—	—	—	—	—	—	—	32	—	—	—	—	56,990
Institutions	—	—	2,246	11,351	1	—	47	—	23	—	—	4	—	—	—	—	13,672
Corporates	—	—	78	31	20,781	461	40,193	13,208	15,630	13,133	16,210	15,942	5,134	1	174	—	140,976
Specialised lending	*—*	*—*	*63*	*—*	*105*	*167*	*19,068*	*2,702*	*241*	*163*	*98*	*1,047*	*3*	*—*	*4*	*—*	*23,661*
SME	*—*	*—*	*—*	*—*	*870*	*—*	*2,347*	*766*	*2,776*	*4,737*	*5,116*	*6,968*	*680*	*—*	*11*	*—*	*24,271*
Other corporate	*—*	*—*	*15*	*31*	*19,806*	*294*	*18,778*	*9,740*	*12,613*	*8,233*	*10,996*	*7,927*	*4,451*	*1*	*159*	*—*	*93,044*
Retail	—	—	13	1	125	—	2,406	69	625	2,143	2,282	2,734	224	162,871	28,649	—	202,142
Secured by real estate property - SME	*—*	*—*	*1*	*—*	*6*	*—*	*592*	*5*	*68*	*138*	*292*	*254*	*23*	*—*	*10*	*—*	*1,389*
- non-SME	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*162,871*	*—*	*—*	*162,871*
Qualifying revolving	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*22,528*	*—*	*22,528*
Other retail - SME	*—*	*—*	*12*	*1*	*119*	*—*	*1,814*	*64*	*557*	*2,005*	*1,990*	*2,479*	*201*	*—*	*110*	*—*	*9,352*
- non-SME	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*1*	*—*	*—*	*6,001*	*—*	*6,002*
Equities	—	—	—	8	743	—	—	—	—	85	—	25	—	—	—	—	861
Non-credit obligation assets	—	20	88	85	64	—	165	30	317	49	68	16	65	—	—	6,213	7,180
Total IRB	34,360	19,340	3,182	13,997	21,714	461	42,811	13,307	16,595	15,410	18,560	18,753	5,423	162,872	28,823	6,213	421,821
STD																	
Central governments and central banks (1)	70,770	22,016	35	—	—	—	—	—	—	—	—	—	—	—	—	—	92,821
Regional governments and local authorities	—	—	157	—	—	—	—	—	—	—	—	—	—	—	—	—	157
Multilateral development banks	—	—	—	30	—	—	—	—	—	—	—	—	—	—	—	—	30
Institutions	—	—	—	474	—	—	—	—	—	—	—	—	—	—	—	—	474
Corporates	—	—	2	10	749	32	2,390	489	442	1,682	2,878	1,038	235	43	487	—	10,477
Retail	—	—	—	8	19	—	271	38	26	183	24	29	9	132	2,302	—	3,041
Secured by mortgages on immovable property - residential	—	—	—	4	139	5	408	—	—	25	25	16	21	10,731	1,424	—	12,798
- commercial	—	—	—	13	44	—	1,463	—	2	18	347	288	13	35	293	—	2,516
Exposures in default	—	—	—	—	10	—	63	7	430	14	64	7	2	197	184	—	978
Items associated with particularly high risk	—	—	—	—	—	—	34	—	—	—	—	—	—	—	—	—	34
Covered bonds	—	—	—	—	159	—	—	—	—	—	—	—	—	—	—	—	159
Equity exposures (1)	—	—	—	—	603	—	—	2	—	—	16	2	26	—	—	1	650
Other exposures	—	13	—	—	—	—	44	4	4	3	221	21	—	—	—	1,399	1,709
Total STD	70,770	22,029	194	539	1,723	37	4,673	540	904	1,925	3,575	1,401	306	11,138	4,690	1,400	125,844
Total IRB and STD	105,130	41,369	3,376	14,536	23,437	498	47,484	13,847	17,499	17,335	22,135	20,154	5,729	174,010	33,513	7,613	547,665

Note:
(1) 2017 presentation for STD measures has been revised, see EU CRA for details.

Credit risk

EU CRB_E: IRB & STD: Credit risk exposures by maturity profile

The table below presents credit risk EAD post CRM analysed by residual maturity, split by regulatory approach and exposure class. It excludes counterparty credit risk and securitisations. Exposures with no stated maturity, principally equities, are reported within the > 5 years band.

2018	On demand £m	<=1 year £m	>1 year <= 5 years £m	> 5 years £m	Total £m
IRB					
Central governments and central banks	12,351	22,234	12,704	7,161	54,450
Institutions	5,983	1,474	1,254	2,079	10,790
Corporates	9,224	35,703	65,002	22,406	132,335
Specialised lending	*109*	*4,933*	*9,521*	*3,496*	*18,059*
SME	*2,967*	*4,765*	*8,401*	*4,879*	*21,012*
Other corporate	*6,148*	*26,005*	*47,080*	*14,031*	*93,264*
Retail	25,582	2,580	12,916	163,901	204,979
Secured by real estate property - SME	*157*	*88*	*369*	*745*	*1,359*
- non-SME	*—*	*1,794*	*5,981*	*157,606*	*165,381*
Qualifying revolving	*22,634*	*—*	*—*	*—*	*22,634*
Other retail - SME	*2,785*	*374*	*1,968*	*3,991*	*9,118*
- non-SME	*6*	*324*	*4,598*	*1,559*	*6,487*
Equities	—	—	—	722	722
Non-credit obligation assets	—	130	5,130	519	5,779
Total IRB	53,140	62,121	97,006	196,788	409,055
Proportion	13%	15%	24%	48%	100%
STD					
Central governments and central banks	6,952	4,988	73,071	10,584	95,595
Regional governments and local authorities	16	94	3	42	155
Multilateral development banks	—	—	31	—	31
Institutions	82	13	373	42	510
Corporates	379	1,115	8,220	719	10,433
Retail	771	119	1,534	412	2,836
Secured by mortgages on immovable property - residential	22	285	8,978	3,555	12,840
- commercial	33	139	2,654	59	2,885
Exposures in default	47	127	334	46	554
Items associated with particularly high risk	—	28	—	—	28
Covered bonds	—	16	22	99	137
Equity exposures	—	—	—	705	705
Other exposures	—	22	1,972	63	2,057
Total STD	8,302	6,946	97,192	16,326	128,766
Proportion	6%	5%	76%	13%	100%
Total IRB and STD	61,442	69,067	194,198	213,114	537,821
Proportion	11%	13%	36%	40%	100%
Of which: by significant subsidiary (excludes Intra-Group exposures)					
NWB Plc	28,001	24,656	93,161	149,430	295,248
RBS plc	9,279	7,294	47,289	34,881	98,743
UBIDAC	1,544	4,404	5,649	16,298	27,895
NWM Plc	8,353	9,163	12,284	1,916	31,716

Credit risk

EU CRB_E: IRB & STD: Credit risk exposures by maturity profile *continued*

2017	On demand £m	<=1 year £m	>1 year <= 5 years £m	> 5 years £m	Total £m
IRB					
Central governments and central banks	1,946	38,523	9,103	7,418	56,990
Institutions	4,625	1,705	1,855	5,487	13,672
Corporates	10,070	34,560	70,479	25,867	140,976
Specialised lending	*108*	*5,481*	*13,545*	*4,527*	*23,661*
SME	*3,217*	*5,180*	*9,474*	*6,400*	*24,271*
Other corporate	*6,745*	*23,899*	*47,460*	*14,940*	*93,044*
Retail	25,542	5,013	12,781	158,806	202,142
Secured by real estate property - SME	*156*	*81*	*384*	*768*	*1,389*
- non-SME	*—*	*3,948*	*6,003*	*152,920*	*162,871*
Qualifying revolving	*22,528*	*—*	*—*	*—*	*22,528*
Other retail - SME	*2,853*	*440*	*2,127*	*3,932*	*9,352*
- non-SME	*5*	*544*	*4,267*	*1,186*	*6,002*
Equities	—	—	—	861	861
Non-credit obligation assets	—	130	6,474	576	7,180
Total IRB	42,183	79,931	100,692	199,015	421,821
Proportion	10%	19%	24%	47%	100%
STD					
Central governments and central banks	396	23,136	58,913	10,376	92,821
Regional governments and local authorities	1	99	3	54	157
Multilateral development banks	—	—	30	—	30
Institutions	82	2	335	55	474
Corporates	419	2,102	7,222	734	10,477
Retail	715	302	1,324	700	3,041
Secured by mortgages on immovable property - residential	31	1,128	4,022	7,617	12,798
- commercial	10	81	2,321	104	2,516
Exposures in default	103	301	518	56	978
Items associated with particularly high risk	—	34	—	—	34
Covered bonds	—	40	15	104	159
Equity exposures	—	—	—	650	650
Other exposures	—	33	1,636	40	1,709
Total STD	1,757	27,258	76,339	20,490	125,844
Proportion	1%	22%	61%	16%	100%
Total IRB and STD	43,940	107,189	177,031	219,505	547,665
Proportion	8%	20%	32%	40%	100%
Of which: by significant subsidiary (excludes Intra-Group exposures)					
NWB Plc	27,455	8,683	62,117	123,456	221,711
RBS plc	11,598	71,730	82,537	73,476	239,341
UBIDAC	1,389	4,280	4,402	17,326	27,397

Note:
(1) 2017 presentation for STD measures has been revised, see EU CRA for details.

Credit risk

Risk profile by credit quality

EU CR1_A: IRB and STD: Credit risk exposures by exposure class - Defaulted and non-defaulted split

Securitisations completed in 2018 have been excluded from the following corporates exposure classes in 2018: specialised lending, SME and other corporate. In 2017, they were all excluded from the other corporate exposure class. This applies to EU CR1_A, EU CR3, EU CR6_b, EU CR6_c and EU CR10_a. The table below shows gross carrying values of credit risk exposures and specific credit risk adjustments (SCRA) analysed by credit quality, split by regulatory approach and exposure class. It excludes counterparty credit risk and securitisations. Gross carrying value comprises both on-balance sheet and off-balance sheet exposures including SCRA.

		a	b		c	e	g	a	b		c	e	g
		2018						2017					
		Gross carrying values						Gross carrying values					
	Exposure class	Defaulted exposures(1,2) £m	Non-defaulted exposures £m	Total £m	SCRA (2) £m	Year-to-date Accumulated write-offs £m	Net value £m	Defaulted exposures(1,2) £m	Non-defaulted exposures £m	Total £m	SCRA (2) £m	Year-to-date accumulated write-offs £m	Net value £m
	IRB												
1	Central governments and central banks	2	75,355	75,357	2	—	75,355	—	63,323	63,323	—	—	63,323
2	Institutions	—	19,399	19,399	19	—	19,380	1	20,898	20,899	1	—	20,898
3	Corporates	3,293	181,832	185,125	1,351	537	183,774	3,971	189,393	193,364	1,571	634	191,793
4	*Specialised lending*	1,223	17,568	18,791	333	151	18,458	1,367	23,031	24,398	439	221	23,959
5	*SME*	770	23,517	24,287	361	189	23,926	812	26,647	27,459	346	124	27,113
	Other corporate	1,300	140,747	142,047	657	197	141,390	1,792	139,715	141,507	786	289	140,721
6	Retail	4,305	208,992	213,297	1,976	503	211,321	5,605	205,611	211,216	2,185	544	209,031
8	*Secured by real estate property - SME*	25	1,369	1,394	11	—	1,383	30	1,392	1,422	13	35	1,409
9	*- non-SME*	3,054	162,459	165,513	810	359	164,703	3,997	158,898	162,895	1,059	275	161,836
10	*Qualifying revolving*	601	30,900	31,501	520	10	30,981	690	31,633	32,323	310	66	32,013
12	*Other retail - SME*	260	8,292	8,552	200	10	8,352	325	8,439	8,764	227	125	8,537
13	*- non-SME*	365	5,972	6,337	435	124	5,902	563	5,249	5,812	576	43	5,236
14	Equities	—	740	740	—	—	740	2	865	867	6	—	861
	Non-credit obligation assets	—	4,864	4,864	1	—	4,863	604	5,609	6,213	—	—	6,213
15	Total IRB	7,600	491,182	498,782	3,349	1,040	495,433	10,183	485,699	495,882	3,763	1,178	492,119
37	*Of which: Loans*	7,013	279,053	286,066	3,258	807	282,808	8,762	281,212	289,974	3,684	1,178	286,290
38	*Debt securities*	—	27,881	27,881	3	—	27,878	11	25,402	25,413	1	—	25,412
	Other assets	20	26,239	26,259	1	233	26,258	685	36,462	37,147	71	—	37,076
39	*Off-balance sheet exposures*	567	158,009	158,576	87	—	158,489	725	142,623	143,348	7	—	143,341

For the notes to this table refer to the following page.

Credit risk

EU CR1_A: IRB and STD: Credit risk exposures by exposure class - Defaulted and non-defaulted split *continued*

	2018 a	2018 b	2018	2018 c	2018 e	2018 g	2017 a	2017 b	2017	2017 c	2017 e	2017 g
	Gross carrying values				Year-to-date		Gross carrying values				Year-to-date	
	Defaulted exposures(1,2) £m	Non-defaulted exposures £m	Total £m	SCRA (2) £m	Accumulated write-offs £m	Net value £m	Defaulted exposures(1,2) £m	Non-defaulted exposures £m	Total £m	SCRA (2) £m	Accumulated write-offs £m	Net value £m
STD												
16 Central governments and central banks	—	99,075	99,075	4	—	99,071	—	93,248	93,248	—	—	93,248
17 Regional governments and local authorities	—	377	377	—	—	377	—	432	432	—	—	432
19 Multilateral development banks	—	31	31	—	—	31	—	30	30	—	—	30
21 Institutions	—	973	973	—	—	973	—	683	683	—	—	683
22 Corporates	—	14,359	14,359	63	—	14,296	—	13,596	13,596	10	—	13,586
24 Retail	—	6,347	6,347	29	4	6,318	—	7,542	7,542	1	—	7,541
Secured by mortgages on immovable property:												
26 - residential	—	13,706	13,706	—	—	13,706	—	13,331	13,331	4	—	13,327
27 - commercial	—	3,237	3,237	2	—	3,235	—	2,723	2,723	—	—	2,723
28 Exposures in default	835	—	835	251	449	584	1,417	—	1,417	439	32	978
29 Items associated with particularly high risk	—	77	77	49	—	28	—	74	74	40	1	34
30 Covered bonds	—	136	136	—	—	136	—	159	159	—	—	159
33 Equity exposures	—	705	705	—	—	705	—	651	651	1	—	650
34 Other exposures	—	1,927	1,927	—	—	1,927	—	1,599	1,599	—	—	1,599
35 Total STD	835	140,950	141,785	398	453	141,387	1,417	134,068	135,485	495	33	134,990
37 *Of which: Loans*	*535*	*29,392*	*29,927*	*212*	*452*	*29,715*	*1,191*	*28,648*	*29,839*	*342*	*33*	*29,497*
38 *Debt securities*	—	*24,905*	*24,905*	*2*	—	*24,903*	*20*	*23,399*	*23,419*	*20*	—	*23,399*
Other assets	*273*	*72,430*	*72,703*	*180*	*1*	*72,523*	*188*	*71,266*	*71,454*	*133*	—	*71,321*
39 *Off-balance sheet exposures*	*27*	*14,223*	*14,250*	*4*	—	*14,246*	*18*	*10,755*	*10,773*	—	—	*10,773*
37 Total: Loans	7,548	308,445	315,993	3,470	1,259	312,523	9,953	309,860	319,813	4,026	1,211	315,787
38 Debt securities	—	52,786	52,786	5	—	52,781	31	48,801	48,832	21	—	48,811
Other assets	293	98,669	98,962	181	234	98,781	873	107,728	108,601	204	—	108,397
39 Off-balance sheet exposures	594	172,232	172,826	91	—	172,735	743	153,378	154,121	7	—	154,114
36 Total IRB and STD	8,435	632,132	640,567	3,747	1,493	636,820	11,600	619,767	631,367	4,258	1,211	627,109

Notes:
(1) Defaulted exposures are those with a PD of one and past due exposures of one day or more on the payment of a credit obligation. They differ from accounting values principally due to defaulted exposure in Alawwal Bank and derivative close-out costs.
(2) SCRA in 2018 is based on IFRS 9 which replaced IAS 39. SCRA includes ECL for defaulted and non-defaulted customers and differs from equivalent accounting values principally due to derivative close-out costs and Alawwal Bank balances.

Credit risk

EU CR1_B: IRB and STD: Credit risk exposures by industry sector - Defaulted and non-defaulted split

The table below shows gross carrying values of credit risk exposures and specific credit risk adjustments (SCRA) analysed by credit quality, split by industry. It excludes counterparty credit risk and securitisations. Industry analysis reflects the sector classification used by RBS for risk management purposes. Gross carrying value comprises both on-balance sheet and off-balance sheet exposures including SCRA.

	a	b		c	e	g	a	b		c	e	g
	2018						2017					
	Gross carrying values of						Gross carrying values of					
Industry type	Defaulted exposures(3) £m	Non-defaulted exposures £m	Total exposure £m	Specific credit risk adjustment (4) £m	Year-to-date Accumulated write-offs £m	Net value £m	Defaulted exposures £m	Non-defaulted exposures £m	Total exposure £m	Specific credit risk adjustment (3) £m	Year-to-date Accumulated write-offs £m	Net value £m
Central banks (1)	—	121,859	121,859	3	—	121,856	—	111,209	111,209	—	—	111,209
Central government	2	47,614	47,616	2	—	47,614	—	41,324	41,324	—	—	41,324
Other sovereign	2	5,697	5,699	1	—	5,698	2	6,055	6,057	—	—	6,057
Banks	—	20,328	20,328	2	—	20,326	1	20,223	20,224	—	—	20,224
Non-bank financial institutions (1)	34	34,906	34,940	29	—	34,911	74	31,876	31,950	49	—	31,901
Securitisation entities	12	784	796	1	26	795	30	549	579	20	—	559
Property	1,879	50,634	52,513	747	285	51,766	2,251	54,496	56,747	845	169	55,902
Natural resources	131	19,615	19,746	88	82	19,658	381	21,043	21,424	147	—	21,277
Transport	392	22,198	22,590	187	19	22,403	822	23,508	24,330	259	165	24,071
Manufacturing	260	22,007	22,267	130	20	22,137	256	23,890	24,146	133	25	24,013
Retail and leisure (2)	682	26,602	27,284	400	119	26,884	805	29,552	30,357	445	308	29,912
Services	571	24,741	25,312	279	35	25,033	623	24,392	25,015	268	—	24,747
Telecommunications, media and technology	75	10,317	10,392	31	11	10,361	39	9,878	9,917	27	1	9,890
Mortgages	3,264	175,338	178,602	829	361	177,773	4,226	171,415	175,641	1,090	309	174,551
Other personal	1,131	42,921	44,052	1,018	535	43,034	1,486	43,348	44,834	975	234	43,859
Not allocated (1)	—	6,571	6,571	—	—	6,571	604	7,009	7,613	—	—	7,613
Total	8,435	632,132	640,567	3,747	1,493	636,820	11,600	619,767	631,367	4,258	1,211	627,109

Notes:
(1) 2017 presentation for STD measures has been revised, see EU CRA for details.
(2) Reduction in the STD exposure was a result of refined sector cluster classification.
(3) Defaulted exposures are those with a PD of one and past due exposures of one day or more on the payment of a credit obligation. They differ from accounting values principally due to defaulted exposure in Alawwal Bank and derivative close out costs.
(4) SCRA in 2018 is based on IFRS 9 which replaced IAS 39. SCRA includes ECL for defaulted and non-defaulted customers and differs from equivalent accounting values principally due to derivative close-out costs and Alawwal Bank balances

Credit risk

EU CR1_C: IRB & STD: Credit risk exposures by geographic region – Defaulted and non-defaulted split

The table below shows gross carrying values of credit risk exposures and specific credit risk adjustments (SCRA) analysed by credit quality, split by geography. It excludes counterparty credit risk and securitisations. Geographical analysis is based on the country of operation of the customer. Gross carrying value comprises both on-balance sheet and off-balance sheet exposures including SCRA.

		a	b		c	e	g	a	b		c	e	g
		2018						2017					
		Gross carrying values of			Specific credit risk adjustment (2)	Year-to-date Accumulated write-offs	Net value	Gross carrying values of			Specific credit risk adjustment (2)	Year-to-date Accumulated write-offs	Net value
1	Region	Defaulted exposures £m	Non-defaulted exposures £m	Total exposure £m	£m	£m	£m	Defaulted exposures £m	Non-defaulted exposures £m	Total exposure £m	£m	£m	£m
2	UK (1)	5,032	459,382	464,414	2,393	635	462,021	6,059	460,326	466,385	2,374	894	464,011
3	Republic of Ireland	2,122	24,284	26,406	809	368	25,597	3,249	24,260	27,509	1,151	124	26,358
7	Other Western Europe	755	91,918	92,673	185	81	92,488	1,149	85,474	86,623	282	131	86,341
8	US	20	33,761	33,781	12	8	33,769	82	25,667	25,749	49	6	25,700
10	Rest of world (1)	506	22,787	23,293	348	401	22,945	1,061	24,040	25,101	402	56	24,699
11	Total	8,435	632,132	640,567	3,747	1,493	636,820	11,600	619,767	631,367	4,258	1,211	627,109

Notes:
(1) 2017 presentation for STD measures has been revised, see EU CRA for details.
(2) SCRA in 2018 is based on IFRS 9 which replaced IAS 39. SCRA includes ECL for defaulted and non-defaulted customers and differs from equivalent accounting values principally due to derivative close-out costs and Alawwal Bank balances.

Key points

- The rise in other Western Europe non-defaulted exposure was driven by increased exposure in central banks and central governments due to liquidity management.
- UK defaulted exposure reduced reflecting a combination of business as usual write-offs in addition to debt sale activity in Commercial Banking and UK PBB.
- US non-defaulted exposure increased driven by a rise in nostro exposures with US commercial banks.

Credit risk

EU CR1_D: Ageing of past-due exposure

The table below shows on balance sheet gross carrying values of past due exposures analysed by number of days past due. It includes securitisations and SCRA, but excludes counterparty risk.

			a	b	c	d	e	f
		Gross carrying values						
	2018	NPD £m	≤30 days £m	>30 days ≤60 days £m	>60 days ≤90 days £m	>90 days ≤180 days £m	>180 days ≤1 year £m	>1 year £m
1	Loans (1)	409,743	11,201	1,035	4,615	886	1,111	2,495
2	Debt securities	59,168	—	—	3	—	—	—
3	On balance sheet exposure	468,911	11,201	1,035	4,618	886	1,111	2,495
	2017							
1	Loans (1)		429,483	576	7,239	1,002	1,233	3,071
2	Debt securities		52,359	—	30	—	—	—
3	On balance sheet exposure		481,842	576	7,269	1,002	1,233	3,071

Notes:
(1) Loans include £87 billion of cash at central banks and £13 billion demand deposits in line with FINREP reporting. Other tables in this section such as EU_CR1_A have these balances included within other assets.
(2) In 2017 NPD exposures were included within ≤ 30 days.

EU CR1_E: Non-performing and forborne exposures

The table below shows gross carrying values split by performing, non-performing and forborne exposure. It excludes counterparty credit risk. Gross carrying value comprises both on-balance sheet and off-balance sheet exposures including securitisations and SCRA.

			b	c	d	e	f	g	h	i	j	j	k
		Gross carrying values of performing and non-performing exposures						Accumulated impairment and provisions and negative fair value adjustments due to credit risk				Collaterals and financial guarantees received	
			Performing		non-performing			On performing exposures:		On non-performing exposures:			
	2018	Total £m	Of which: past due >30 days and <=90 days ≤30 days £m	Of which forborne £m	Of which defaulted £m	Of which impaired £m	Of which forborne £m	Total ECL £m	Of which forborne £m	Total ECL £m	Of which forborne £m	On non-performing exposures £m	Of which forborne exposures £m
1	Loans (1)	431,085	1,035	2,629	7,533	7,789	4,696	(1,236)	(65)	(2,416)	(984)	4,365	4,969
2	Debt securities	59,171	—	—	—	3	—	(8)	—	—	—	—	—
3	Off balance sheet	175,123	—	241	574	—	38	(70)	(1)	(9)	—	66	127
	Total	665,379	1,035	2,870	8,107	7,792	4,734	(1,314)	(66)	(2,425)	(984)	4,431	5,096
	2017												
1	Loans (1)	442,604	802	2,524	9,603	7,585	6,689	(473)	(37)	(3,563)	(1,464)	6,104	6,006
2	Debt securities	52,389	—	—	23	30	—	—	—	(28)	—	—	—
3	Off balance sheet	156,243	—	220	736	—	201	—	—	(5)	—	116	116
	Total	651,236	802	2,744	10,362	7,615	6,890	(473)	(37)	(3,596)	(1,464)	6,220	6,122

Note:
(1) Loans include £87 billion of cash at central banks and £13 billion demand deposits in line with FINREP reporting. Other tables in this section such as EU CR1_A have these balances included within other assets.

Credit risk

EU CR2_A: Changes in the stock of general and specific credit risk adjustments

The table below presents the drivers of movements in specific credit risk adjustments held against defaulted or impaired loans, debt securities and contingent liabilities. There is no general credit risk adjustment under RBS's IFRS 9 framework. The table has been prepared on an accounting basis adjusted for regulatory consolidation.

		Accumulated specific credit risk adjustment £m
1	At 1 January 2018	4,714
2	Increases due to amounts set aside for estimated loan losses during the period	231
3	Decreases due to amounts reversed for estimated loan losses during the period	—
4	Decreases due to amounts taken against accumulated credit risk adjustments	(88)
5	Transfers between credit risk adjustments	487
6	Impact of exchange rate differences	—
7	Business combinations, including acquisitions and disposals of subsidiaries	—
8	Other adjustments	(1,608)
9	At 31 December 2018 (1)	3,736
10	Recoveries on credit risk adjustments recorded directly to the statement of profit or loss	n/a
11	Specific credit risk adjustments directly recorded to the statement of profit or loss	n/a

Note:
(1) SCRA includes ECL for defaulted and non-defaulted customers and differs from equivalent accounting values principally due to Alawwal Bank balances.

EU CR2_B: Changes in the stock of defaulted and impaired loans and debt securities

The table below presents the drivers in movements in gross carrying value defaulted exposure held against loans and debt securities. The table has been prepared on an accounting basis adjusted for regulatory consolidation.

	Gross carrying value defaulted exposure £m
At 31 December 2017	10,362
Impact of implementation IFRS9	1,830
At 1 January 2018	12,192
Loans and debt securities that have defaulted or impaired since the last reporting period	3,042
Returned to non-defaulted status	(2,795)
Amounts written-off	(1,478)
Other changes	(2,412)
At 31 December 2018	8,549

Note:
(1) Defaulted exposures include accounting values as well as those relating to Alawwal Bank.

Credit risk

Risk profile by credit risk mitigation techniques

Recognition of credit risk mitigation in the calculation of RWAs

Credit risk mitigation (CRM) is defined as the use of collateral or guarantees to reduce potential loss if a customer fails to settle all or part of its obligations to RBS. The application of CRM depends on which approach (standardised or IRB) is used to calculate RWAs related to a credit exposure.

Recognition of CRM under the standardised approach is carried out in accordance with regulatory requirements and entails the reduction of EAD (netting and financial collateral) or the adjustment of risk-weights (in the case of real estate), third-party guarantees and/or credit derivatives. Under the IRB approach, a wider scope of collateral can be recognised.

Table EU CR3_a indicates how different risk mitigants are incorporated into IRB risk parameters.

EU CRC: IRB and STD: Qualitative disclosures relating to credit risk mitigation

Credit risk mitigation

RBS uses a number of credit risk mitigation approaches. These differ for Wholesale and Personal customers.

Risk mitigation techniques, as set out in credit policies, are used in the management of credit portfolios across RBS, typically to mitigate credit loss in relation to an individual customer, a borrower group or a collection of related borrowers. Where possible, customer credit balances are netted against obligations. Mitigation tools can include structuring a security interest in a physical or financial asset, the use of credit derivatives including credit default swaps, credit-linked debt instruments and securitisation structures, and the use of guarantees and similar instruments (for example, credit insurance) from related and third parties. When seeking to mitigate risk, at a minimum RBS considers the following:

- Suitability of the proposed risk mitigation, particularly if restrictions apply.
- The means by which legal certainty is to be established, including required documentation, supportive legal opinions and the steps needed to establish legal rights.
- Acceptability of the methodologies to be used for initial and subsequent valuation of collateral, the frequency of valuations.
- Actions which can be taken if the value of collateral or other mitigants is less than needed.
- The risk that the value of mitigants and counterparty credit quality will deteriorate simultaneously.
- The need to manage concentration risks arising from collateral types.
- The need to ensure that any risk mitigation remains legally effective and enforceable.

The business and credit teams are supported by specialist in-house documentation teams. RBS uses industry-standard loan and security documentation wherever possible. However, when non-standard documentation is used, external lawyers are employed to review the documentation on a case-by-case basis. Mitigants (including any associated insurance) are monitored throughout the life of the transaction to ensure they perform as anticipated. Similarly, documentation is also monitored to ensure it remains enforceable.

Wholesale

RBS mitigates credit risk relating to Wholesale customers through the use of netting, collateral and market standard documentation, depending on the nature of the counterparty and its assets. The most common types of mitigation are:

- Commercial real estate.
- Other physical assets ─ Including stock, plant, equipment, machinery, vehicles, ships and aircraft. Such assets are suitable collateral only if RBS can identify, locate, and segregate them from other assets on which it does not have a claim. RBS values physical assets in a variety of ways, depending on the type of asset and may rely on balance sheet valuations in certain cases.
- Receivables ─ These are amounts owed to RBS's counterparties by their own customers. Valuation takes into account the quality of the counterparty's receivable management processes and excludes any that are past due.
- Financial collateral ─ Refer to the Counterparty credit risk section on page 105.

All collateral is assessed, case by case, independently of the provider to ensure that it is suitable security for the proposed loan. RBS monitors the value of the collateral and, if there is a shortfall, will review the position, which may lead to seeking additional collateral.

The key sector where RBS provides asset-backed lending is commercial real estate and residential mortgages. The valuation approach is detailed below.

Commercial real estate valuations – RBS has a panel of chartered surveying firms that cover the spectrum of geographic locations and property sectors in which RBS takes collateral. Suitable values for particular assets are contracted through a single service agreement to ensure consistency of quality and advice. Valuations are commissioned when an asset is taken as security; a material increase in a facility is requested; or a default event is anticipated or has occurred. In the UK, an independent third party market indexation is applied to update external valuations once they are more than one year old. Every three years a formal independent valuation is commissioned against property, meeting regulatory requirements. In the Republic of Ireland, assets are revalued in line with the Central Bank of Ireland threshold requirements. This permits indexation for lower-value assets, but demands annual Red Book valuations for distressed higher-value assets.

Personal

RBS takes collateral in the form of residential property to mitigate the credit risk arising from mortgages. RBS values residential property during the loan underwriting process by either appraising properties individually or valuing them collectively using statistically valid models. RBS updates residential property values quarterly using the relevant residential property index, namely:

Region	Index used
UK	Halifax quarterly regional house price index
Northern Ireland	UK House Price Index (published by the Land Registry)
Republic of Ireland	Central Statistics Office residential property price index

Counterparty credit risk

RBS mitigates counterparty credit risk arising from both derivative transactions and repurchase agreements through collateralisation and through the use of market standard documentation, enabling netting.

Amounts owed by RBS to a counterparty are netted against amounts the counterparty owes RBS, in accordance with relevant regulatory and internal policies. However, generally, this is only done if a netting agreement is in place. A legal opinion to the effect that the agreement is enforceable in the relevant jurisdiction is also required.

Collateral may consist of either cash or securities. Additional collateral may be called should the net value of the obligations to RBS rise or should the value of the collateral itself fall. The majority of agreements are subject to daily collateral calls with collateral valued using internal valuation methodologies.

RBS restricts counterparty credit exposures by setting limits that take into account the potential adverse movement of an exposure after adjusting for the impact of netting and collateral (where applicable). For further information on credit risk mitigation, refer to Table EU CR3_a.

Credit risk

EU CR3: IRB: Credit risk mitigation techniques by exposure class

The table below presents net carrying values of credit risk exposures analysed by use of different credit risk mitigation techniques, split by regulatory approach, balance sheet caption and exposure class, as required by the CRR. It excludes counterparty credit risk and securitisations.

The EBA guidelines require net carrying values to be analysed by exposure values of the secured assets, irrespective of the level of collateralisation. For example, two mortgage loans, each of £100,000 but one with property collateral of £50,000 and the other with property collateral of £150,000, would both be reported in the net carrying value secured by collateral column at £100,000. Unsecured exposure represents loans that have no security or collateral attached.

	a	c	d	e		
	Unsecured	Net carrying values secured by				
2018	net carrying value £m	Collateral £m	Guarantees £m	Credit derivatives £m	Total secured £m	Total £m
IRB						
Central governments and central banks	75,230	123	2	—	125	75,355
Institutions	15,976	2,079	1,270	55	3,404	19,380
Corporates	105,323	76,647	1,804	—	78,451	183,774
Specialised lending	*7*	*18,030*	*421*	—	*18,451*	*18,458*
SME	*4,602*	*19,097*	*227*	—	*19,324*	*23,926*
Other corporate	*100,714*	*39,520*	*1,156*	—	*40,676*	*141,390*
Retail	45,235	166,086	—	—	166,086	211,321
Secured by real estate property - SME	—	*1,383*	—	—	*1,383*	*1,383*
- non-SME	—	*164,703*	—	—	*164,703*	*164,703*
Qualifying revolving	*30,981*	—	—	—	—	*30,981*
Other retail - SME	*8,352*	—	—	—	—	*8,352*
- non-SME	*5,902*	—	—	—	—	*5,902*
Equities	740	—	—	—	—	740
Non-credit obligation assets	4,863	—	—	—	—	4,863
Total IRB	247,367	244,935	3,076	55	248,066	495,433
Of which: Loans	*66,502*	*215,137*	*1,114*	*55*	*216,306*	*282,808*
Debt securities	*27,878*	—	—	—	—	*27,878*
Other assets	*25,425*	*829*	*4*	—	*833*	*26,258*
Off-balance sheet exposures	*127,562*	*28,969*	*1,958*	—	*30,927*	*158,489*
Defaulted	*1,344*	*3,816*	*64*	—	*3,880*	*5,224*
STD						
Central governments and central banks	99,071	—	—	—	—	99,071
Regional governments and local authorities	377	—	—	—	—	377
Multilateral development banks	31	—	—	—	—	31
Institutions	973	—	—	—	—	973
Corporates	13,287	955	54	—	1,009	14,296
Retail	6,135	183	—	—	183	6,318
Secured by mortgages on immovable property:						
- residential	—	13,706	—	—	13,706	13,706
- commercial	—	3,235	—	—	3,235	3,235
Exposures in default	580	4	—	—	4	584
Items associated with particularly high risk	28	—	—	—	—	28
Covered bonds	136	—	—	—	—	136
Equity exposures	705	—	—	—	—	705
Other exposures	1,927	—	—	—	—	1,927
Total STD	123,250	18,083	54	—	18,137	141,387
Of which: Loans	*13,681*	*15,981*	*53*	—	*16,034*	*29,715*
Debt securities	*24,903*	—	—	—	—	*24,903*
Other assets	*72,420*	*103*	—	—	*103*	*72,523*
Off-balance sheet exposures	*12,246*	*1,999*	*1*	—	*2,000*	*14,246*
Defaulted	*580*	*4*	—	—	*4*	*584*
Total IRB and STD	370,617	263,018	3,130	55	266,203	636,820
Total: Loans	80,183	231,118	1,167	55	232,340	312,523
Debt securities	52,781	—	—	—	—	52,781
Other assets	97,845	932	4	—	936	98,781
Off-balance sheet exposures	139,808	30,968	1,959	—	32,927	172,735
Defaulted	1,924	3,820	64	—	3,884	5,808

EU CR3: IRB: Credit risk mitigation techniques by exposure class continued

2017	a Unsecured net carrying value £m	c Net carrying values secured by Collateral £m	d Guarantees £m	e Credit derivatives £m	Total secured £m	Total £m
IRB						
Central governments and central banks	63,201	120	2	—	122	63,323
Institutions	15,505	1,987	3,369	37	5,393	20,898
Corporates	109,001	78,517	4,024	251	82,792	191,793
Specialised lending	*3,281*	*20,150*	*528*	*—*	*20,678*	*23,959*
SME	*7,255*	*18,064*	*1,794*	*—*	*19,858*	*27,113*
Other corporate	*98,465*	*40,303*	*1,702*	*251*	*42,256*	*140,721*
Retail	45,786	163,245	—	—	163,245	209,031
Secured by real estate property - SME	*—*	*1,409*	*—*	*—*	*1,409*	*1,409*
Secured by real estate property - non-SME	*—*	*161,836*	*—*	*—*	*161,836*	*161,836*
Qualifying revolving	*32,013*	*—*	*—*	*—*	*—*	*32,013*
Other retail - SME	*8,537*	*—*	*—*	*—*	*—*	*8,537*
- non-SME	*5,236*	*—*	*—*	*—*	*—*	*5,236*
Equities	861	—	—	—	—	861
Non-credit obligation assets	6,213	—	—	—	—	6,213
Total IRB	240,567	243,869	7,395	288	251,552	492,119
Of which: Loans	*67,612*	*215,737*	*2,903*	*38*	*218,678*	*286,290*
Debt securities	*25,245*	*167*	*—*	*—*	*167*	*25,412*
Other assets	*36,269*	*807*	*—*	*—*	*807*	*37,076*
Off-balance sheet exposures	*111,441*	*27,158*	*4,492*	*250*	*31,900*	*143,341*
Defaulted	*2,369*	*4,327*	*102*	*—*	*4,429*	*6,798*
STD						
Central governments and central banks	93,110	—	138	—	138	93,248
Regional governments and local authorities	432	—	—	—	—	432
Multilateral development banks	30	—	—	—	—	30
Institutions	683	—	—	—	—	683
Corporates	12,728	766	92	—	858	13,586
Retail	7,243	298	—	—	298	7,541
Secured by mortgages on immovable property						
- residential	—	13,327	—	—	13,327	13,327
- commercial	—	2,717	6	—	2,723	2,723
Exposures in default	975	2	1	—	3	978
Items associated with particularly high risk	34	—	—	—	—	34
Covered bonds	159	—	—	—	—	159
Equity exposures	650	—	—	—	—	650
Other exposures	1,599	—	—	—	—	1,599
Total STD	117,643	17,110	237	—	17,347	134,990
Of which: Loans	*13,483*	*15,800*	*214*	*—*	*16,014*	*29,497*
Debt securities	*23,399*	*—*	*—*	*—*	*—*	*23,399*
Other assets	*71,268*	*53*	*—*	*—*	*53*	*71,321*
Off-balance sheet exposures	*9,493*	*1,257*	*23*	*—*	*1,280*	*10,773*
Defaulted	*976*	*2*	*1*	*—*	*3*	*979*
Total IRB and STD	358,210	260,979	7,632	288	268,899	627,109
Total: Loans	81,095	231,537	3,117	38	234,692	315,787
Debt securities	48,644	167	—	—	167	48,811
Other assets	107,537	860	—	—	860	108,397
Off-balance sheet exposures	120,934	28,415	4,515	250	33,180	154,114
Defaulted	3,345	4,329	103	—	4,432	7,777

EU CR3_a: IRB: Credit risk mitigation - incorporation within IRB parameters

	LGD	PD	EAD
Real estate (commercial and residential)	✓		
Other physical collateral	✓		
Third party guarantees	✓		
Credit derivatives	✓		
Parental guarantees (connected parties)		✓	
Financial collateral			
- trading book			✓
- non-trading book	✓		
Netting (on and off-balance sheet)			✓
Receivables	✓		
Life policies	✓		
Credit insurance	✓		

EU CR7: IRB: Effect on the RWAs of credit derivatives used as CRM techniques

The table below illustrates the effect of credit derivatives on the calculation of IRB approach capital requirements by IRB exposure class. The table excludes counterparty credit risk and securitisations.

	2018		2017	
	a	b	a	b
Exposures under IRB	Pre-credit derivatives RWAs £m	Actual RWAs £m	Pre-credit derivatives RWAs £m	Actual RWAs £m
Central governments and central banks	3,203	3,203	3,278	3,278
Institutions	3,422	3,374	3,901	3,901
Corporates - SMEs	10,616	10,616	11,252	11,252
Corporates - Specialised lending	11,808	11,808	16,090	16,090
Corporates - Other	41,419	41,419	40,862	40,845
Retail - Secured by real estate SMEs	508	508	504	504
Retail - Secured by real estate non-SMEs	18,902	18,902	19,822	19,822
Retail - Qualifying revolving	5,912	5,912	6,022	6,022
Retail - Other SMEs	3,923	3,923	3,988	3,988
Retail - Other non-SMEs	6,743	6,743	5,501	5,501
Equity IRB	1,590	1,590	1,961	1,961
Other non-credit obligation assets	4,080	4,080	4,740	4,740
Total	112,126	112,078	117,921	117,904

Credit risk

RBS profile by RWA calculation approach

RBS uses the PD/LGD slotting and standardised approaches to calculate RWAs for credit risk exposures.

IRB approach: PD/LGD

CR6_a: IRB: Exposures by exposure class and PD range – Retail

The table below presents the key parameters used for the calculation of capital requirements for credit risk exposures in Retail exposure classes under the IRB approach, split by PD range. It excludes exposures calculated under the supervisory slotting approach, equities under the simple risk-weight approach and non-credit assets. It also excludes counterparty credit risk and securitisations. A maturity adjustment is not a component of the IRB RWA formula for retail exposures and is therefore not reported in this table. Original on-balance sheet gross exposure includes specific credit risk adjustments.

In accordance with regulatory requirements, for defaulted exposures RWAs are calculated as the difference between the LGD for an economic downturn and the best estimate LGD. This is the unexpected loss amount for which capital must be held. Retail EAD models estimate EAD directly, so credit conversion factors (CCF) are not reported in this table for retail exposure classes.

	a	b	d	e	f	g	i	l	j	k	l
2018	PD Range %	Original on-balance sheet gross exposure £m	Off-balance sheet exposures pre CCF £m	EAD post CRM and post CCF £m	Average PD %	Number of obligors	Average LGD %	RWAs £m	RWA density %	Expected loss £m	IFRS 9 ECL Provisions £m
Retail - Secured by real estate SME	0.00 to <0.15	—	52	37	0.11	5,065	52	4	12	—	—
Retail - Secured by real estate SME	0.15 to <0.25	—	—	—	—	—	—	—	—	—	—
Retail - Secured by real estate SME	0.25 to <0.50	8	12	17	0.36	1,692	47	4	22	—	—
Retail - Secured by real estate SME	0.50 to <0.75	183	2	185	0.63	3,338	37	45	24	—	—
Retail - Secured by real estate SME	0.75 to <2.50	779	45	808	1.12	11,607	41	283	35	4	2
Retail - Secured by real estate SME	2.50 to <10.0	232	8	237	4.17	3,377	41	114	48	4	2
Retail - Secured by real estate SME	10.0 to <100.00	47	1	48	22.80	779	42	36	75	5	2
Retail - Secured by real estate SME	100.00 (default)	25	—	27	100.00	541	57	22	81	14	5
Total - Retail - Secured by real estate SME		1,274	120	1,359	4.28	26,399	42	508	37	27	11
Retail - Secured by real estate non-SME	0.00 to <0.15	49,568	3,961	53,643	0.13	437,112	10	1,654	3	8	4
Retail - Secured by real estate non-SME	0.15 to <0.25	555	148	674	0.17	6,620	32	83	12	—	1
Retail - Secured by real estate non-SME	0.25 to <0.50	70,809	8,345	78,597	0.32	595,674	11	5,416	7	31	17
Retail - Secured by real estate non-SME	0.50 to <0.75	16,782	182	17,087	0.60	142,658	19	3,077	18	21	17
Retail - Secured by real estate non-SME	0.75 to <2.50	7,635	120	7,834	1.05	66,411	15	1,635	21	13	12
Retail - Secured by real estate non-SME	2.50 to <10.0	1,579	15	1,601	5.55	13,863	12	695	43	11	14
Retail - Secured by real estate non-SME	10.0 to <100.00	2,756	4	2,780	26.85	22,692	17	2,660	96	128	102
Retail - Secured by real estate non-SME	100.00 (default)	3,044	10	3,165	100.00	25,271	28	3,682	116	587	643
Total - Retail - Secured by real estate non-SME		152,728	12,785	165,381	2.73	1,310,301	12	18,902	11	799	810
Retail - Qualifying revolving	0.00 to <0.15	34	7,239	10,275	0.04	7,840,508	54	177	2	3	4
Retail - Qualifying revolving	0.15 to <0.25	11	24	62	0.17	98,976	59	4	6	—	—
Retail - Qualifying revolving	0.25 to <0.50	927	7,045	2,984	0.34	2,446,246	64	336	11	7	10
Retail - Qualifying revolving	0.50 to <0.75	543	5,504	2,025	0.57	2,190,317	66	351	17	8	15
Retail - Qualifying revolving	0.75 to <2.50	1,709	4,859	3,666	1.38	3,033,279	69	1,293	35	35	56
Retail - Qualifying revolving	2.50 to <10.0	1,940	675	2,806	4.62	1,669,788	74	2,504	89	97	136
Retail - Qualifying revolving	10.0 to <100.00	329	61	476	22.68	363,697	73	929	195	78	78
Retail - Qualifying revolving	100.00 (default)	329	272	340	100.00	390,132	84	318	93	260	221
Total - Retail - Qualifying revolving		5,822	25,679	22,634	2.89	18,032,943	62	5,912	26	488	520

EU CR6_a: IRB: Exposures by exposure class and PD range - Retail *continued*

		a	b	d	e	f	g	i	j	k	l
2018	PD Range %	Original on-balance sheet gross exposure £m	Off-balance sheet exposures pre CCF £m	EAD post CRM and post CCF £m	Average PD %	Number of obligors	Average LGD %	RWAs £m	RWA density %	Expected loss £m	IFRS 9 ECL Provisions £m
Retail - Other SME	0.00 to <0.15	—	672	786	0.11	303,209	56	97	12	1	1
Retail - Other SME	0.15 to <0.25	—	—	—	—	—	—	—	—	—	—
Retail - Other SME	0.25 to <0.50	111	183	452	0.34	247,269	53	109	24	1	—
Retail - Other SME	0.50 to <0.75	987	37	1,099	0.60	106,365	42	292	27	3	1
Retail - Other SME	0.75 to <2.50	4,115	436	4,656	1.23	359,112	49	2,010	43	29	15
Retail - Other SME	2.50 to <10.0	1,377	78	1,537	4.08	162,288	51	905	59	33	16
Retail - Other SME	10.0 to <100.00	280	16	317	22.68	50,528	56	313	99	40	23
Retail - Other SME	100.00 (default)	259	—	271	100.00	25,833	71	197	73	176	144
Total - Retail - Other SME		7,129	1,422	9,118	5.17	1,254,604	50	3,923	43	283	200
Retail - Other non-SME	0.00 to <0.15	1	—	1	0.11	3	76	—	—	—	—
Retail - Other non-SME	0.15 to <0.25	3	—	3	0.18	599	75	1	30	—	—
Retail - Other non-SME	0.25 to <0.50	211	—	214	0.41	22,617	66	97	45	1	1
Retail - Other non-SME	0.50 to <0.75	669	—	678	0.64	111,367	70	436	64	4	4
Retail - Other non-SME	0.75 to <2.50	3,350	—	3,418	1.29	421,464	76	3,211	94	41	44
Retail - Other non-SME	2.50 to <10.0	1,316	—	1,349	5.01	159,209	79	1,797	133	66	52
Retail - Other non-SME	10.0 to <100.00	422	—	434	28.51	56,348	81	882	203	121	53
Retail - Other non-SME	100.00 (default)	365	—	390	100.00	59,311	70	319	82	324	281
Total - Retail - Other non-SME		6,337	—	6,487	9.72	830,918	76	6,743	104	557	435
Total - Retail all portfolios		173,290	40,006	204,979	3.09	21,455,165	22	35,988	18	2,154	1,976

CR6_a: IRB: Exposures by exposure class and PD range - Retail *continued*

2017	PD Range %	a Original on-balance sheet gross exposure £m	b Off-balance sheet exposures pre CCF £m	d EAD post CRM and post CCF £m	e Average PD %	f Number of obligors	g Average LGD %	i RWAs £m	j RWA density %	k Expected loss £m	l IAS 39 provisions £m
Retail - Secured by real estate SME	0.00 to <0.15	—	51	36	0.13	4,932	52	5	13	—	—
Retail - Secured by real estate SME	0.15 to <0.25	—	—	—	—	—	—	—	—	—	—
Retail - Secured by real estate SME	0.25 to <0.50	8	14	19	0.38	1,970	48	4	23	—	—
Retail - Secured by real estate SME	0.50 to <0.75	193	2	194	0.66	3,621	37	48	25	—	—
Retail - Secured by real estate SME	0.75 to <2.50	809	49	840	1.10	12,688	41	289	34	4	2
Retail - Secured by real estate SME	2.50 to <10.0	219	2	222	4.20	3,179	40	103	47	4	—
Retail - Secured by real estate SME	10.0 to <100.00	45	1	46	24.55	806	42	35	75	5	—
Retail - Secured by real estate SME	100.00 (default)	29	—	32	100.00	671	61	20	63	18	11
Total - Retail - Secured by real estate SME		1,303	119	1,389	4.58	27,867	41	504	36	31	13
Retail - Secured by real estate non-SME	0.00 to <0.15	65,222	4,477	69,848	0.13	587,578	9	1,993	3	8	17
Retail - Secured by real estate non-SME	0.15 to <0.25	962	—	963	0.17	8,994	20	76	8	—	3
Retail - Secured by real estate non-SME	0.25 to <0.50	59,131	5,778	64,482	0.32	470,806	12	5,000	8	27	31
Retail - Secured by real estate non-SME	0.50 to <0.75	7,685	311	8,023	0.64	77,766	14	1,115	14	7	11
Retail - Secured by real estate non-SME	0.75 to <2.50	10,595	150	10,915	1.03	97,599	21	2,993	27	23	25
Retail - Secured by real estate non-SME	2.50 to <10.0	1,687	16	1,710	5.25	14,981	12	718	42	11	1
Retail - Secured by real estate non-SME	10.0 to <100.00	2,881	3	2,910	23.60	22,496	19	3,281	113	148	7
Retail - Secured by real estate non-SME	100.00 (default)	3,985	12	4,020	100.00	30,408	32	4,646	116	910	964
Total - Retail - Secured by real estate non-SME		152,148	10,747	162,871	3.23	1,310,628	12	19,822	12	1,134	1,059
Retail - Qualifying revolving	0.00 to <0.15	1	7,106	10,104	0.04	7,771,302	54	166	2	2	—
Retail - Qualifying revolving	0.15 to <0.25	105	168	274	0.16	99,049	64	17	6	—	2
Retail - Qualifying revolving	0.25 to <0.50	927	8,796	3,501	0.37	3,391,929	65	427	12	9	13
Retail - Qualifying revolving	0.50 to <0.75	427	3,602	1,369	0.63	1,393,840	63	243	18	5	5
Retail - Qualifying revolving	0.75 to <2.50	1,575	5,046	3,415	1.40	2,926,162	68	1,216	36	33	17
Retail - Qualifying revolving	2.50 to <10.0	2,050	1,434	2,927	4.67	1,785,308	74	2,635	90	102	20
Retail - Qualifying revolving	10.0 to <100.00	338	59	482	23.18	368,357	73	941	195	80	4
Retail - Qualifying revolving	100.00 (default)	420	270	456	100.00	491,282	81	377	83	340	249
Total - Retail - Qualifying revolving		5,843	26,481	22,528	3.46	18,227,229	62	6,022	27	571	310

Credit risk

CR6_a: IRB: Exposures by exposure class and PD range - Retail *continued*

2017	PD Range %	a Original on-balance sheet gross exposure £m	b Off-balance sheet exposures pre CCF £m	d EAD post CRM and post CCF £m	e Average PD %	f Number of obligors	g Average LGD %	i RWAs £m	j RWA density %	k Expected loss £m	l IAS 39 provisions £m
Retail - Other SME	0.00 to <0.15	—	606	638	0.13	254,981	56	87	14	—	—
Retail - Other SME	0.15 to <0.25	—	46	65	0.15	9,642	58	10	16	—	—
Retail - Other SME	0.25 to <0.50	245	216	628	0.36	271,298	55	163	26	1	—
Retail - Other SME	0.50 to <0.75	1,096	35	1,190	0.62	88,163	43	338	28	3	2
Retail - Other SME	0.75 to <2.50	3,996	451	4,570	1.18	361,098	48	1,905	42	27	10
Retail - Other SME	2.50 to <10.0	1,375	97	1,615	4.08	225,121	51	961	59	34	5
Retail - Other SME	10.0 to <100.00	258	17	299	22.53	53,032	57	299	100	38	1
Retail - Other SME	100.00 (default)	325	—	347	100.00	29,018	72	225	65	235	209
Total - Retail - Other SME		7,295	1,468	9,352	5.83	1,292,353	50	3,988	43	338	227
Retail - Other non-SME	0.00 to <0.15	—	—	—	0.13	3	79	—	—	—	—
Retail - Other non-SME	0.15 to <0.25	1	—	1	0.17	201	75	—	—	—	—
Retail - Other non-SME	0.25 to <0.50	295	—	299	0.42	33,543	66	135	45	1	2
Retail - Other non-SME	0.50 to <0.75	642	—	651	0.63	97,670	70	392	60	3	8
Retail - Other non-SME	0.75 to <2.50	2,779	—	2,835	1.24	367,959	75	2,435	86	27	42
Retail - Other non-SME	2.50 to <10.0	1,215	—	1,244	4.90	152,795	79	1,530	123	48	18
Retail - Other non-SME	10.0 to <100.00	316	—	324	28.77	46,732	80	612	189	75	5
Retail - Other non-SME	100.00 (default)	563	—	648	100.00	84,803	80	397	61	485	501
Total - Retail - Other non-SME		5,811	—	6,002	14.04	783,706	76	5,501	92	639	576
Total - Retail all portfolios		172,400	38,815	202,142	3.71	21,641,783	22	35,837	18	2,713	2,185

EU CR6_b: IRB: Exposures by exposure class and PD range – Wholesale

The table below presents the key parameters used for the calculation of capital requirements for credit risk exposures in Wholesale exposure classes under the IRB approach, split by PD range. It excludes exposures calculated under the supervisory slotting approach, equities under the simple risk-weight approach and non-credit assets. It also excludes counterparty risk and securitisations. The average maturity used in the RWA calculation is capped at five years in accordance with regulatory requirements. The corporates – specialised lending exposure class includes only exposures modelled under the PD/LGD method (relating to shipping). For specialised lending exposures under the supervisory slotting approach, refer to EU CR10_A. Original on-balance sheet gross exposure includes specific credit risk adjustments.

		a	c	d	e	f	g	i	j	k	l	m	n
2018	PD Range %	Original on-balance sheet gross exposure £m	Off-balance sheet exposures pre CCF £m	Average CCF %	EAD post CRM and post CCF £m	Average PD %	Number of obligors	Average LGD %	Average maturity years	RWAs £m	RWA density %	Expected loss £m	IFRS 9 ECL provisions £m
Central governments and central banks	0.00 to <0.15	48,793	26,159	20	54,143	0.01	60	45	1.89	3,078	6	3	2
Central governments and central banks	0.15 to <0.25	295	50	20	305	0.23	4	51	1.15	125	41	—	
Central governments and central banks	0.25 to <0.50	—	—	—	—	-	—	—	—	—	—	—	
Central governments and central banks	0.50 to <0.75	—	—	—	—	—	—	—	—	—	—	—	
Central governments and central banks	0.75 to <2.50	—	—	—	—	—	—	—	—	—	—	—	
Central governments and central banks	2.50 to <10.0	—	—	—	—	2.50	1	50	1.00	—	—	—	
Central governments and central banks	10.0 to <100.00	—	—	—	—	—	—	—	—	—	—	—	
Central governments and central banks	100.00 (default)	2	—	—	2	100.00	1	7	1.00	—	—	—	
Total - Central governments and central banks		49,090	26,209	20	54,450	0.02	66	45	1.89	3,203	6	3	2
Institutions	0.00 to <0.15	5,047	6,848	38	7,560	0.09	286	38	2.34	1,945	26	4	18
Institutions	0.15 to <0.25	1,684	3,613	31	2,833	0.17	147	42	1.26	1,045	37	2	
Institutions	0.25 to <0.50	117	188	23	160	0.39	59	52	1.16	99	62	—	
Institutions	0.50 to <0.75	95	30	30	104	0.64	28	50	0.99	92	89	—	
Institutions	0.75 to <2.50	110	34	27	119	1.64	33	50	1.38	156	131	1	1
Institutions	2.50 to <10.0	4	26	21	10	3.63	55	60	1.01	19	191	—	
Institutions	10.0 to <100.00	3	—	20	4	40.76	90	98	1.15	18	521	1	
Institutions	100.00 (default)	—	—	—	—	—	—	—	—	—	—	—	
Total - Institutions		7,060	10,739	36	10,790	0.16	698	40	2.01	3,374	31	8	19
Corporates - Specialised lending	0.00 to <0.15	—	—	—	—	—	—	—	—	—	—	—	
Corporates - Specialised lending	0.15 to <0.25	—	—	—	—	—	—	—	—	—	—	—	
Corporates - Specialised lending	0.25 to <0.50	—	—	—	—	—	—	—	—	—	—	—	
Corporates - Specialised lending	0.50 to <0.75	—	—	—	—	—	—	—	—	—	—	—	
Corporates - Specialised lending	0.75 to <2.50	14	—	100	12	1.81	19	35	1.37	10	85	—	1
Corporates - Specialised lending	2.50 to <10.0	—	—	—	—	-	—	—	—	—	—	—	
Corporates - Specialised lending	10.0 to <100.00	—	—	—	—	—	—	—	—	—	—	—	
Corporates - Specialised lending	100.00 (default)	26	—	—	26	100.00	1	30	1.00	26	100	4	3
Total - Corporates - Specialised lending		40	—	100	38	68.63	20	31	1.12	36	95	4	4

EU CR6_b: IRB: Exposures by exposure class and PD range - Wholesale *continued*

		a	b	d	e	f	g	i	k	k	l	m	n
2018	PD Range %	Original on-balance sheet gross exposure £m	Off-balance sheet exposures pre CCF £m	Average CCF %	EAD post CRM and post CCF £m	Average PD %	Number of obligors	Average LGD %	Average maturity years	RWAs £m	RWA density %	Expected loss £m	IFRS 9 ECL provisions £m
Corporates - SME	0.00 to <0.15	9	5	71	12	0.11	59	37	3.40	3	23	—	—
Corporates - SME	0.15 to <0.25	276	98	69	344	0.22	1,221	31	3.19	83	24	—	—
Corporates - SME	0.25 to <0.50	2,178	828	58	2,666	0.41	6,777	28	3.15	841	32	3	2
Corporates - SME	0.50 to <0.75	2,335	812	52	2,762	0.64	5,416	29	2.95	1,107	40	5	3
Corporates - SME	0.75 to <2.50	8,102	2,731	49	9,464	1.31	16,010	27	2.70	4,571	48	33	22
Corporates - SME	2.50 to <10.0	3,830	1,151	47	4,416	3.57	7,497	25	2.46	3,103	70	40	20
Corporates - SME	10.0 to <100.00	559	97	59	623	16.25	1,099	25	2.33	582	93	25	5
Corporates - SME	100.00 (default)	713	46	28	725	100.00	1,808	45	2.86	326	45	320	309
Total - Corporates - SME		18,002	5,768	50	21,012	5.41	39,887	28	2.74	10,616	51	426	361
Corporates - Other	0.00 to <0.15	29,596	44,867	44	49,180	0.05	2,388	43	2.79	10,904	22	11	8
Corporates - Other	0.15 to <0.25	6,973	11,689	43	11,993	0.19	1,329	46	2.67	6,051	50	11	10
Corporates - Other	0.25 to <0.50	7,249	7,248	45	10,382	0.38	1,605	42	2.74	6,554	63	16	23
Corporates - Other	0.50 to <0.75	3,805	1,949	48	4,713	0.64	1,451	38	2.61	3,396	72	11	21
Corporates - Other	0.75 to <2.50	8,202	4,773	49	10,489	1.31	8,832	35	2.67	9,065	86	48	48
Corporates - Other	2.50 to <10.0	4,238	2,017	53	5,250	3.37	6,582	30	2.31	4,887	93	53	50
Corporates - Other	10.0 to <100.00	256	175	40	329	17.49	627	32	2.31	529	161	18	9
Corporates - Other	100.00 (default)	897	198	28	928	100.00	860	47	2.15	33	4	448	488
Total - Corporates - Other		61,216	72,916	45	93,264	1.52	23,674	41	2.71	41,419	44	616	657
Equities	0.00 to <0.15	—	—	—	—	—	—	—	—	—	—	—	—
Equities	0.15 to <0.25	—	—	—	—	—	—	—	—	—	—	—	—
Equities	0.25 to <0.50	—	—	—	—	—	—	—	—	—	—	—	—
Equities	0.50 to <0.75	—	—	—	—	—	—	—	—	—	—	—	—
Equities	0.75 to <2.50	139	—	—	139	1.26	11	90	5.00	391	280	2	—
Equities	2.50 to <10.0	72	—	—	55	2.50	17	90	5.00	178	325	1	—
Equities	10.0 to <100.00	—	—	—	—	—	—	—	—	—	—	—	—
Equities	100.00 (default)	—	—	—	—	100.00	1	90	5.00	—	—	—	—
Total - Equities		211	—	—	194	1.62	29	90	5.00	569	293	3	—
Total - Wholesale all portfolios		135,619	115,632	39	179,748	1.45	64,374	41	2.43	59,217	33	1,060	1,043

EU CR6_b: IRB: Exposures by exposure class and PD range - Wholesale *continued*

2017	PD Range %	a Original on-balance sheet gross exposure £m	b Off-balance sheet exposures pre CCF £m	d Average CCF %	e EAD post CRM and post CCF £m	f Average PD %	g Number of obligors	i Average LGD %	j Average maturity years	k RWAs £m	l RWA density %	m Expected loss £m	n IAS 39 provisions £m
Central governments and central banks	0.00 to <0.15	55,115	7,821	20	56,702	0.01	50	46	1.83	3,147	6	3	—
Central governments and central banks	0.15 to <0.25	275	50	20	285	0.23	2	56	1.22	129	45	—	—
Central governments and central banks	0.25 to <0.50	1	—	100	1	0.45	2	56	3.37	1	100	—	—
Central governments and central banks	0.50 to <0.75	—	—	—	—	—	—	—	—	—	—	—	—
Central governments and central banks	0.75 to <2.50	—	—	78	—	1.81	1	100	1.00	—	—	—	—
Central governments and central banks	2.50 to <10.0	—	—	—	—	—	—	—	—	—	—	—	—
Central governments and central banks	10.0 to <100.00	1	1	102	2	28.96	1	9	1.00	1	49	—	—
Central governments and central banks	100.00 (default)	—	—	—	—	—	—	—	—	—	—	—	—
Total - Central governments and central banks		55,392	7,872	20	56,990	0.01	56	46	1.83	3,278	6	3	—
Institutions	0.00 to <0.15	7,057	8,227	56	11,514	0.09	325	34	3.11	2,919	25	4	1
Institutions	0.15 to <0.25	830	2,570	39	1,829	0.17	153	43	1.31	694	38	2	—
Institutions	0.25 to <0.50	170	131	36	206	0.38	72	50	3.03	167	81	—	—
Institutions	0.50 to <0.75	52	92	29	78	0.64	43	58	1.15	82	104	—	—
Institutions	0.75 to <2.50	30	21	27	35	1.05	36	28	1.87	21	59	—	—
Institutions	2.50 to <10.0	4	4	47	6	2.71	53	50	1.81	9	148	—	—
Institutions	10.0 to <100.00	—	18	20	4	11.75	95	46	1.13	9	223	—	—
Institutions	100.00 (default)	—	1	—	—	100.00	1	43	1.39	—	—	—	—
Total - Institutions		8,143	11,064	51	13,672	0.12	778	36	2.85	3,901	29	6	1
Corporates - Specialised lending	0.00 to <0.15	—	—	—	—	—	—	—	—	—	—	—	—
Corporates - Specialised lending	0.15 to <0.25	—	—	—	—	—	—	—	—	—	—	—	—
Corporates - Specialised lending	0.25 to <0.50	1	—	—	—	—	—	—	—	—	—	—	—
Corporates - Specialised lending	0.50 to <0.75	—	—	—	—	0.64	3	50	1.00	—	—	—	—
Corporates - Specialised lending	0.75 to <2.50	23	—	66	23	0.99	8	35	1.95	17	75	—	—
Corporates - Specialised lending	2.50 to <10.0	25	—	—	24	4.86	3	35	1.11	27	115	—	—
Corporates - Specialised lending	10.0 to <100.00	—	—	—	—	—	—	—	—	—	—	—	—
Corporates - Specialised lending	100.00 (default)	50	1	102	50	100.00	8	38	1.38	—	—	20	9
Total - Corporates - Specialised lending		99	1	92	97	53.78	22	36	1.44	44	46	20	9

EU CR6_b: IRB: Exposures by exposure class and PD range - Wholesale *continued*

2017	PD Range %	a Original on-balance sheet gross exposure £m	b Off-balance sheet exposures pre CCF £m	d Average CCF %	e EAD post CRM and post CCF £m	f Average PD %	g Number of obligors	i Average LGD %	j Average maturity years	k RWAs £m	l RWA density %	m Expected loss £m	n IAS 39 Provisions £m
Corporates - SME	0.00 to <0.15	7	3	81	10	0.11	44	20	3.67	1	11	—	—
Corporates - SME	0.15 to <0.25	398	112	66	473	0.22	1,174	39	3.15	167	35	—	—
Corporates - SME	0.25 to <0.50	2,340	813	62	2,850	0.41	6,718	29	3.11	911	32	3	1
Corporates - SME	0.50 to <0.75	2,652	796	59	3,128	0.64	5,434	28	3.04	1,247	40	6	2
Corporates - SME	0.75 to <2.50	9,499	2,754	51	10,956	1.32	16,893	26	2.85	5,359	49	38	10
Corporates - SME	2.50 to <10.0	4,764	1,259	48	5,411	3.54	8,892	23	2.63	2,940	54	43	12
Corporates - SME	10.0 to <100.00	598	116	52	667	16.01	1,261	25	2.51	627	94	26	7
Corporates - SME	100.00 (default)	757	50	29	776	100.00	2,282	46	2.80	—	—	357	314
Total - Corporates - SME		21,015	5,903	53	24,271	5.16	42,698	27	2.85	11,252	46	473	346
Corporates - Other	0.00 to <0.15	26,775	45,687	46	47,747	0.05	2,667	37	2.85	9,040	19	10	2
Corporates - Other	0.15 to <0.25	8,418	12,811	48	14,481	0.19	1,395	45	2.95	7,336	51	12	2
Corporates - Other	0.25 to <0.50	5,744	7,969	47	9,399	0.39	1,981	41	2.79	6,003	64	14	3
Corporates - Other	0.50 to <0.75	2,830	2,951	50	4,291	0.64	1,702	39	2.36	3,232	75	11	2
Corporates - Other	0.75 to <2.50	8,392	4,823	53	10,776	1.28	10,698	36	2.51	9,727	90	50	12
Corporates - Other	2.50 to <10.0	3,281	2,163	58	4,488	3.69	8,044	31	1.95	4,895	109	54	43
Corporates - Other	10.0 to <100.00	382	167	40	451	20.62	709	23	1.78	612	136	24	5
Corporates - Other	100.00 (default)	1,304	354	34	1,411	100.00	1,040	49	2.26	—	—	692	717
Total - Corporates - Other		57,126	76,925	47	93,044	2.07	28,236	38	2.74	40,845	44	867	786
Equities	0.00 to <0.15	—	—	—	—	—	—	—	—	—	—	—	—
Equities	0.15 to <0.25	—	—	—	—	—	—	—	—	—	—	—	—
Equities	0.25 to <0.50	19	—	—	19	0.40	1	90	5.00	37	192	—	—
Equities	0.50 to <0.75	—	—	—	—	—	—	—	—	—	—	—	—
Equities	0.75 to <2.50	175	—	—	176	1.52	8	90	5.00	509	291	3	—
Equities	2.50 to <10.0	64	—	—	63	2.50	22	90	5.00	206	325	1	1
Equities	10.0 to <100.00	—	—	—	—	—	—	—	—	—	—	—	—
Equities	100.00 (default)	2	—	—	—	—	—	—	—	—	—	—	2
Total - Equities		260	—	—	258	1.68	31	90	5.00	752	292	4	3
Total - Wholesale all portfolios		142,035	101,765	46	188,332	1.73	71,821	39	2.49	60,072	32	1,373	1,145

Credit risk

EU CR6_c: IRB: Geographical split of PD and LGD

The table below presents weighted-average PD and LGD for credit risk, analysed by geography, split by exposure class. It excludes exposures calculated under the supervisory slotting approach, equities under the simple risk-weight approach and non-credit assets. It also excludes counterparty credit risk and securitisations.

	Total		UK		RoI		Other Western Europe		US		Rest of World	
	PD	LGD	PD	LGD	PD	LGD	PD	LGD	PD	LGD	PD	LGD
2018	%	%	%	%	%	%	%	%	%	%	%	%
Central governments and central banks	0.02	45	0.01	49	0.06	45	0.01	45	0.01	45	0.11	46
Institutions	0.16	40	0.10	37	4.38	52	0.12	31	0.13	45	0.39	51
Corporates	2.26	39	2.35	37	7.55	37	0.66	45	0.34	46	4.68	46
Specialised lending	*68.63*	*31*	—	—	—	—	—	—	—	—	*68.63*	*31*
SME	*5.41*	*28*	*5.19*	*28*	*7.40*	*28*	*18.35*	*23*	*2.83*	*16*	*46.63*	*54*
Other corporate	*1.52*	*41*	*1.50*	*40*	*7.62*	*41*	*0.60*	*45*	*0.33*	*46*	*3.21*	*46*
Retail	3.09	22	2.16	21	13.87	31	2.64	60	3.20	58	3.37	59
Secured by real estate property - SME	*4.28*	*42*	*4.27*	*42*	*4.78*	*42*	*2.80*	*38*	*15.82*	*38*	*8.81*	*40*
- non SME	*2.73*	*12*	*1.56*	*11*	*14.40*	*28*	—	—	—	—	—	—
Qualifying revolving	*2.89*	*62*	*2.85*	*62*	*5.88*	*72*	*2.15*	*60*	*1.84*	*59*	*2.40*	*59*
Other retail - SME	*5.17*	*50*	*5.17*	*49*	*5.19*	*71*	*3.61*	*49*	*11.45*	*47*	*8.63*	*45*
- non-SME	*9.72*	*76*	*9.57*	*76*	*14.16*	*72*	*11.15*	*74*	*37.76*	*77*	*17.51*	*75*
Equities	1.62	90	1.61	90	—	—	1.48	90	2.22	90	1.63	90
Total	2.32	31	2.20	26	11.16	34	0.20	44	0.14	45	1.62	47
2017												
Central governments and central banks	0.01	46	0.01	48	0.06	45	0.01	45	0.01	45	0.06	52
Institutions	0.12	36	0.08	40	0.22	43	0.11	27	0.12	45	0.16	49
Corporates	2.75	36	2.60	33	5.05	39	2.87	47	0.66	47	6.49	44
Specialised lending	*53.78*	*36*	—	—	—	—	—	—	—	—	*53.78*	*36*
SME	*5.16*	*27*	*4.82*	*27*	*9.69*	*34*	*12.49*	*22*	*10.96*	*32*	*37.87*	*42*
Other corporate	*2.07*	*38*	*1.84*	*35*	*3.27*	*41*	*2.82*	*47*	*0.64*	*47*	*4.56*	*44*
Retail	3.71	22	2.29	21	18.93	33	3.10	60	3.37	58	3.87	59
Secured by real estate property - SME	*4.58*	*41*	*4.58*	*41*	*6.98*	*40*	*4.51*	*39*	*1.79*	*38*	*7.88*	*40*
- non SME	*3.23*	*12*	*1.45*	*10*	*19.67*	*30*	—	—	—	—	—	—
Qualifying revolving	*3.46*	*62*	*3.44*	*62*	*5.66*	*72*	*2.25*	*60*	*2.13*	*59*	*2.48*	*59*
Other retail - SME	*5.83*	*50*	*5.66*	*49*	*8.17*	*71*	*4.59*	*49*	*11.37*	*46*	*11.15*	*46*
- non-SME	*14.04*	*76*	*13.81*	*76*	*19.79*	*71*	*17.89*	*75*	*44.10*	*79*	*21.06*	*75*
Equities	1.68	90	1.62	90	—	—	1.78	90	1.69	90	1.69	90
Total	2.75	30	2.37	25	14.36	35	0.71	44	0.24	46	2.27	49

Key points

- The increase in weighted-average LGDs for UK corporates resulted from revisions to UK mid-corporate and quasi-government LGD models.
- The improvement in weighted-average PD in the Corporate and Retail portfolios was driven by a reduction in defaulted exposure.

EU CR10_A IRB: IRB specialised lending

The table below presents EAD post CRM (exposure amount) for IRB specialised lending exposures subject to the supervisory slotting approach (income-producing real estate and project finance portfolios), analysed by type of lending and regulatory category. It excludes counterparty credit risk and securitisations. For specialised lending exposures under the PD/LGD method (relating to shipping), refer to EU CR6_b.

2018 Regulatory categories	Remaining maturity	On-balance sheet amount £m	Off-balance sheet amount £m	Risk-weight %	Exposure amount £m	RWAs £m	Expected loss £m
1 - Strong	Less than 2.5 years	3,835	788	50	4,276	2,138	—
	Equal to or more than 2.5 years	5,383	1,125	70	6,251	4,375	25
2 - Good	Less than 2.5 years	3,128	524	70	3,609	2,526	14
	Equal to or more than 2.5 years	2,004	243	90	2,223	2,001	18
3 - Satisfactory	Less than 2.5 years	106	13	115	113	130	3
	Equal to or more than 2.5 years	208	4	115	212	244	6
4 - Weak	Less than 2.5 years	43	1	250	45	112	4
	Equal to or more than 2.5 years	78	46	250	98	246	8
5 - Default	Less than 2.5 years	903	21	—	922	—	463
	Equal to or more than 2.5 years	256	20	—	272	—	136
Total		15,944	2,785	—	18,021	11,772	677
2017							
1 - Strong	Less than 2.5 years	4,356	416	50	4,655	2,328	—
	Equal to or more than 2.5 years	7,958	1,184	70	8,678	6,076	35
2 - Good	Less than 2.5 years	4,245	507	70	4,700	3,290	19
	Equal to or more than 2.5 years	3,065	228	90	3,253	2,927	26
3 - Satisfactory	Less than 2.5 years	127	2	115	128	148	4
	Equal to or more than 2.5 years	522	84	115	605	695	17
4 - Weak	Less than 2.5 years	117	12	250	129	323	10
	Equal to or more than 2.5 years	83	45	250	104	259	8
5 - Default	Less than 2.5 years	926	9	—	931	—	468
	Equal to or more than 2.5 years	356	31	—	381	—	190
Total		21,755	2,518	—	23,564	16,046	777

EU CR10_B IRB: IRB equities

The table below presents EAD post CRM (exposure amount) for IRB equity exposures subject to the simple risk-weight approach. It excludes counterparty credit risk and securitisations.

2018	On-balance sheet amount £m	Off-balance sheet amount £m	Risk-weight %	Exposure amount £m	RWAs £m	Capital requirements £m
Exchange-traded equity exposures	3	—	290	3	8	1
Private equity exposures	365	152	190	516	981	78
Other equity exposures	7	1	370	9	32	3
Total	375	153	—	528	1,021	82
2017						
Exchange-traded equity exposures	41	—	290	41	119	10
Private equity exposures	302	248	190	550	1,045	84
Other equity exposures	14	1	370	12	45	4
Total	357	249	—	603	1,209	98

Standardised approach

Calculation of RWAs under the standardised approach

Under the standardised approach, risk-weights are assigned to exposures in accordance with the CRR. For corporates, sovereigns and financial institutions, RBS uses risk-weights based on credit quality steps that are mapped from credit ratings issued by external rating agencies, namely Standard & Poor's (S&P), Moody's and Fitch.

Recognition of credit risk mitigation in the calculation of RWAs

Credit risk mitigation (CRM) is defined as the use of collateral or guarantees to reduce potential loss if a customer fails to settle all or part of its obligations to RBS. The application of CRM depends on which approach (standardised or IRB) is used to calculate RWAs related to a credit exposure.

Recognition of CRM under the standardised approach is carried out in accordance with regulatory requirements and entails the reduction of EAD (netting and financial collateral) or the adjustment of risk-weights (in the case of real estate), third-party guarantees and/or credit derivatives. Under the IRB approach, a wider scope of collateral can be recognised and Table EU CR3_a indicates how different risk mitigants are incorporated into IRB risk parameters.

Credit risk

EU CR4: STD: Exposures and CRM effects

The table below shows the effect of CRM techniques on credit risk exposures under the standardised approach. It shows exposures both pre and post CRM and credit conversion factors (CCF) as well as associated RWAs and RWA density, split by exposure class. It excludes counterparty credit risk and securitisations. Exposure classes with no exposure are excluded from the table below.

		a	b	c	d	e	f
		Exposures pre CCF and CRM		Exposures post CCF and CRM			
	2018	On-balance sheet £m	Off-balance sheet £m	On-balance sheet £m	Off-balance sheet £m	RWA £m	RWA density %
1	Central governments and central banks	95,308	3,701	95,314	281	866	1
2	Regional governments and local authorities	152	226	152	3	138	89
4	Multilateral development banks	31	—	31	—	—	—
6	Institutions	327	646	366	144	221	43
7	Corporates	9,434	4,600	8,852	1,581	9,588	92
8	Retail	2,859	3,459	2,807	29	1,830	65
9	Secured by mortgages on immovable property - residential	12,481	1,224	12,679	161	4,606	36
	- commercial	2,844	367	2,798	87	2,884	100
10	Exposures in default	557	27	552	2	680	123
11	Items associated with particularly high risk	28	—	28	—	42	150
12	Covered bonds	136	—	137	—	27	20
14	Equity exposures	705	—	705	—	1,533	217
16	Other exposures	1,927	—	2,057	—	788	38
17	Total	126,789	14,250	126,478	2,288	23,203	18
	2017						
1	Central governments and central banks	92,647	540	92,812	9	1,039	1
2	Regional governments and local authorities	153	271	153	4	144	92
4	Multilateral development banks	30	—	30	—	—	—
6	Institutions	322	361	377	97	217	46
7	Corporates	9,273	4,053	8,870	1,607	10,158	97
8	Retail	2,966	4,575	2,894	147	2,111	69
9	Secured by mortgages on immovable property - residential	12,616	712	12,614	184	4,926	38
10	- commercial	2,479	243	2,448	68	2,536	101
11	Exposures in default	960	18	973	5	1,102	113
12	Items associated with particularly high risk	34	—	34	—	51	150
13	Covered bonds	159	—	159	—	32	20
15	Equity exposures	650	—	650	—	1,461	225
16	Other exposures	1,599	—	1,709	—	697	41
17	Total	123,888	10,773	123,723	2,121	24,474	19

EU CR5a: CQS mapping to external credit ratings

Under the STD approach, RBS uses credit quality steps (CQS) to calculate the RWAs associated with non-counterparty credit risk exposures. Each rated exposure in the STD portfolio is assigned to one of six CQS. The CQS map to the rating of the three major rating agencies, as shown in the table below. Each CQS is associated with a particular risk-weighting. Each exposure is multiplied by the appropriate risk weighting to calculate the relevant RWA amount. If no external rating is available, RBS assigns the exposure a risk-weighting in line with the CRR.

Credit quality step	Standard & Poor's	Moody's	Fitch
Step 1	AAA to AA-	Aaa to Aa3	AAA to AA-
Step 2	A+ to A-	A1 to A3	A+ to A-
Step 3	BBB+ to BBB-	Baa1 to Baa3	BBB+ to BBB-
Step 4	BB+ to BB-	Ba1 to Ba3	BB+ to BB-
Step 5	B+ to B-	B1 to B3	B+ to B-
Step 6	CCC+ and below	Caa1 and below	CCC+ and below

EU CR5: STD: Credit risk exposure class and risk-weights

The table below analyses credit risk EAD post CRM under the standardised approach by risk-weight, split by exposure class. It excludes counterparty credit risk and securitisations. Exposure classes with no exposure are excluded from the table below.

		Risk-weight																Of which:
	EAD post CRM	0% £m	2% £m	4% £m	10% £m	20% £m	35% £m	50% £m	70% £m	75% £m	100% £m	150% (1) £m	250% £m	370% £m	1,250% £m	Others £m	Deducted £m	Total £m	Unrated £m
	2018																		
1	Central governments and central banks	95,222	—	—	—	29	—	—	—	—	—	—	344	—	—	—	—	95,595	2,019
2	Regional governments and local authorities	2	—	—	—	19	—	—	—	—	134	—	—	—	—	—	—	155	153
3	Multilateral development banks	31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	31	31
4	Institutions	—	—	—	—	247	—	184	—	—	79	—	—	—	—	—	—	510	372
5	Corporates	39	—	—	—	329	—	1,011	—	—	9,002	48	—	—	—	4	—	10,433	7,644
6	Retail	—	—	—	—	220	—	—	—	2,614	1	—	—	—	—	1	—	2,836	—
7	Secured by mortgages on																		
	immovable property - residential	—	—	—	—	—	12,653	—	—	—	187	—	—	—	—	—	—	12,840	12,840
	- commercial	—	—	—	—	—	—	—	—	—	2,851	34	—	—	—	—	—	2,885	2,885
10	Exposures in default	—	—	—	—	—	—	—	—	—	300	254	—	—	—	—	—	554	554
11	Items associated with particularly high risk	—	—	—	—	—	—	—	—	—	—	28	—	—	—	—	—	28	28
12	Covered bonds	—	—	—	—	137	—	—	—	—	—	—	—	—	—	—	—	137	—
14	Equity exposures	—	—	—	—	—	—	—	—	—	153	—	552	—	—	—	—	705	566
15	Other exposures	778	—	—	—	516	—	24	—	—	481	—	—	—	—	258	—	2,057	2,057
16	Total EAD post CRM	96,072	—	—	—	1,497	12,653	1,219	—	2,614	13,188	364	896	—	—	263	—	128,766	29,149
17	EAD pre CRM	96,133	—	—	—	1,497	12,653	1,170	—	2,637	13,786	366	896	—	—	313	—	129,451	29,512
	2017																		
1	Central governments and central banks	92,373	—	—	—	35	—	—	—	—	—	—	413	—	—	—	—	92,821	2,012
2	Regional governments and local authorities	—	—	—	—	16	—	—	—	—	141	—	—	—	—	—	—	157	139
3	Public sector entities	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4	Multilateral development banks	30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	30	30
5	International organisations	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6	Institutions	—	—	—	—	223	—	129	—	—	80	—	—	—	—	42	—	474	349
7	Corporates	4	—	—	—	325	—	133	—	—	9,858	154	—	—	—	3	—	10,477	9,999
8	Retail	—	—	—	—	—	—	—	—	2,657	—	—	—	—	—	384	—	3,041	—
9	Secured by mortgages on																		
	immovable property - residential	—	—	—	—	—	11,766	—	—	845	186	1	—	—	—	—	—	12,798	12,798
	- commercial	—	—	—	—	—	—	—	—	—	2,458	58	—	—	—	—	—	2,516	2,516
10	Exposures in default	1	—	—	—	—	—	—	—	—	694	235	—	—	—	48	—	978	978
11	Items associated with particularly high risk	—	—	—	—	—	—	—	—	—	—	34	—	—	—	—	—	34	34
12	Covered bonds	—	—	—	—	159	—	—	—	—	—	—	—	—	—	—	—	159	104
14	Equity exposures	—	—	—	—	—	—	—	—	—	109	—	541	—	—	—	—	650	16
15	Other exposures	68	—	—	—	1,113	—	27	—	—	454	—	—	—	—	47	—	1,709	1,696
16	Total EAD post CRM	92,476	—	—	—	1,871	11,766	289	—	3,502	13,980	482	954	—	—	524	—	125,844	30,671
17	EAD pre CRM	92,476	—	—	—	1,871	11,766	275	—	3,532	14,320	484	954	—	—	479	—	126,157	31,173

Note:
(1) Credit risk EAD post CRM with a 150% risk-weight relates to legacy assets.

Counterparty credit risk

Counterparty credit risk

EU CCRA: CCR: General qualitative information

Definition and framework

Counterparty credit risk relates to derivative contracts (including over-the-counter (OTC) derivatives and exchange-traded derivatives), securities financing transactions (SFTs), and long settlement transactions in either the trading or the non-trading book. It is the risk of loss arising from a default of a counterparty before the final settlement of the transaction's cash flows, which vary in value by reference to a market factor, such as an interest rate, exchange rate or asset price.

Counterparty credit risk is covered by RBS's credit risk framework. Refer to the Credit risk section in the 2018 ARA for more information.

A number of specific policies apply to derivatives including those transacted with central counterparties (CCPs) and SFTs. These include policies that address documentation and collateral requirements, product-specific requirements (for example, securities financing) and counterparty specific requirements (for example, hedge funds).

Counterparty credit limit setting

Counterparty credit limits are established through the credit risk management framework. Limits are based on the credit quality of the counterparty and the appetite for the maximum potential future exposure of transactions, based on 95th percentile confidence levels. The utilisations recorded against the limits also reflect the nature of the relevant documentation and the anticipated close-out periods in the event of default.

For CCPs, utilisations are calculated in the same way as for other collateralised counterparties, and a credit limit is set. Additional limits are set to cover initial margin posted to the CCP, default fund contributions and other contingent liabilities. Stress testing is used to assess contingent liabilities such as additional default fund contributions.

Counterparty credit risk management

The credit policy framework governs counterparty credit risk management requirements. Industry standard documentation (for example, International Swaps and Derivatives Association master agreements for derivatives and Global Master Repurchase Agreements for SFTs) is executed with clients prior to trading. Exceptions to this require specific approval from a senior credit risk officer. The policy framework establishes approval authorities for documentation requirements under collateral agreements including: collateral threshold amounts; minimum transfer amounts; minimum haircuts; collateral eligibility criteria; and collateral call frequency.

Where netting is not enforceable, exposures are shown gross, and where netting and collateral enforceability criteria are not fulfilled, exposure is assumed to be uncollateralised. The framework also includes a formal escalation policy for counterparty collateral disputes and unpaid collateral calls.

Collateral required in the event of a credit rating downgrade

RBS calculates the additional collateral and other liquidity impacts that would contractually arise in the event of its credit ratings being downgraded. This is undertaken on a daily basis for Treasury and liquidity management purposes. As at 31 December 2018, a simultaneous one-notch long-term and associated short-term downgrade in the credit ratings of all rated entities within RBSG by all major ratings agencies would have required the Group to post estimated additional collateral of £0.5 billion, without taking mitigating management actions into account. A two-notch downgrade would have required £1.7 billion.

Credit valuation adjustments (CVAs)

The counterparty exposure management team charges the relevant trading desk a credit premium at the inception of a trade, in exchange for taking on the credit risk over the life of the transaction. The team may then hedge the default risk using credit derivatives sourced from third party providers. CVA sensitivities may be hedged using a combination of credit derivatives, interest rate derivatives, foreign exchange derivatives and other instruments.

RBS calculates a regulatory CVA capital charge. The purpose of this charge is to improve the resilience of banks to potential mark-to-market losses associated with deterioration in the creditworthiness of counterparties in non-cleared derivative trades. Under CRR rules, the charge is calculated using either the advanced approach or the standardised approach. As RBS has regulatory approval to use an internal model to calculate counterparty credit risk capital and permission to use an internal value-at-risk model for the specific risk of debt instruments, the advanced approach is used where possible. For products that fall outside the model permissions, the standardised approach, which is based on the external credit rating of the counterparty, is used.

Wrong-way risk

Wrong-way risk represents the risk of loss that arises when the risk factors driving the exposure to a counterparty are positively correlated with the probability of default of that counterparty, i.e. the size of the exposure increases at the same time as the risk of the counterparty being unable to meet that obligation increases.

In addition to its usual credit approval and credit authority policies, RBS also manages its exposure to wrong-way risk through a dedicated policy that establishes a framework incorporating approvals, controls, limits and regular monitoring, where appropriate.

Under the framework, enhanced transaction approval is required and limits are set to constrain wrong-way risk arising through currency exposure to countries classified as high-risk under the internal Watchlist process. The reporting process includes a monthly review of wrong-way risks arising either from such currency exposure or through reverse repos, credit derivatives and equity trades.

The framework distinguishes between specific wrong-way risk (where the risk factor driving the exposure is specific to the counterparty) and general wrong-way risk (where the risk factor driving the exposure is not specific to the counterparty but still positively correlated with its probability of default, for instance country or currency related factors).

Counterparty credit risk

EU CCR1: CCR: Analysis of exposure by EAD calculation approach

The table below presents the methods used to calculate counterparty credit risk exposure and RWAs. It excludes credit valuation adjustment charges, securitisations and exposures cleared through a CCP.

	a	b	c	d	e	f	g
2018	Notional £m	Replacement cost/current market value £m	Potential future exposure £m	EEPE (1) £m	Multiplier	EAD post-CRM £m	RWA £m
1 Mark-to-market method	n/a	5,058	2,848	n/a	n/a	3,824	2,208
2 Original exposure	—	n/a	n/a	n/a	n/a	—	—
3 Standardised approach	n/a	—	n/a	n/a	n/a	—	—
4 Internal model method (for derivatives)	n/a	n/a	n/a	10,978	1.4	15,369	6,951
5 *of which: Securities financing transactions*	*n/a*	*n/a*	—	—	*n/a*	—	—
6 *of which: Derivatives and long settlement transactions*	*n/a*	*n/a*	*n/a*	*10,978*	*1.4*	*15,369*	*6,951*
7 *of which: From contractual cross product netting*	*n/a*	*n/a*	—	—	*n/a*	—	—
8 Financial collateral simple method (for SFTs)	n/a	n/a	n/a	n/a	n/a	—	—
9 Financial collateral comprehensive method (for SFTs)	n/a	n/a	n/a	n/a	n/a	6,115	1,211
10 VaR for SFTs	n/a	n/a	n/a	n/a	n/a	—	—
11 Total	n/a	n/a	n/a	n/a	n/a	25,308	10,370
2017							
1 Mark-to-market method	n/a	11,367	2,917	n/a	n/a	5,949	3,128
2 Original exposure	—	n/a	n/a	n/a	n/a	—	—
3 Standardised approach	n/a	—	n/a	n/a	—	—	—
4 Internal model method (for derivatives)	n/a	n/a	—	11,775	1.4	16,485	7,447
5 *of which: Securities financing transactions*	*n/a*	*n/a*	—	—	—	—	—
6 *of which: Derivatives and long settlement transactions*	*n/a*	*n/a*	—	*11,775*	*1.4*	*16,485*	*7,447*
7 *of which: From contractual cross product netting*	*n/a*	*n/a*	—	—	—	—	—
8 Financial collateral simple method (for SFTs)	n/a	n/a	n/a	n/a	n/a	—	—
9 Financial collateral comprehensive method (for SFTs)	n/a	n/a	n/a	n/a	n/a	9,603	1,431
10 VaR for SFTs	n/a	n/a	n/a	n/a	n/a	—	—
11 Total	n/a	n/a	n/a	n/a	n/a	32,037	12,006

Note:
(1) This contains the higher of (i) effective EPE calculated using current market data and (ii) effective EPE using a stress calibration. The higher of those two EEPE measures is used for the calculation of RWAs as prescribed by article 284(3).

Key points

- The decrease in RWAs was due to a reduction in asset size, which reflected trade novations and maturing transactions, and the approval of the AIRB waiver for NWMSI.
- The reduction in EAD mainly reflected a change in SFT treatment for pledges to central banks and trade novations in both OTC derivatives and SFTs.
- The fall in replacement cost under the mark-to-market method reflected collateralised trades with a significant positive net mark-to-market value moving into the IMM.

IRB Approach PD & LGD approach

EU CCR4: CCR IRB: Exposures by portfolio and PD scale

The table below presents a detailed view of counterparty credit risk positions subject to the IRB approach by exposure class and PD scale. It excludes CVA charges, securitisations and exposures cleared through a CCP. Counterparty credit risk exposures are managed on a portfolio basis, hence, it is not meaningful to report valuation adjustments and provisions at the regulatory exposure class level.

		a	b	c	d	e	f	g
2018	PD scale	EAD post CRM and post-CCF £m	Average PD %	Number of obligors	Average LGD %	Average maturity Years	RWAs £m	RWA density %
Central governments and central banks	0.00 to <0.15	1,421	0.02	29	46	3.30	203	14
Central governments and central banks	0.15 to <0.25	—	0.23	1	45	5.00	—	174
Central governments and central banks	0.25 to <0.50	5	0.32	2	45	1.00	2	43
Central governments and central banks	0.50 to <0.75	—	—	—	—	—	—	—
Central governments and central banks	0.75 to <2.50	—	—	—	—	—	—	—
Central governments and central banks	2.50 to <10.00	28	5.12	1	79	5.00	93	337
Central governments and central banks	10.00 to <100.00	—	—	—	—	—	—	—
Central governments and central banks	100.00 (Default)	—	—	—	—	—	—	—
Total - Central governments and central banks		1,454	0.12	33	47	3.32	298	20
Institutions	0.00 to <0.15	3,009	0.10	135	45	2.55	1,226	41
Institutions	0.15 to <0.25	4,257	0.18	160	47	2.52	2,539	60
Institutions	0.25 to <0.50	450	0.40	106	47	1.98	349	78
Institutions	0.50 to <0.75	92	0.64	31	52	2.28	92	100
Institutions	0.75 to <2.50	117	1.36	45	53	1.39	141	121
Institutions	2.50 to <10.00	177	5.05	11	45	0.14	273	154
Institutions	10.00 to <100.00	—	—	—	—	—	—	—
Institutions	100.00 (Default)	36	100.00	1	45	2.78	—	—
Total - Institutions		8,138	0.73	489	46	2.43	4,620	57
Corporates - SME	0.00 to <0.15	—	—	—	—	—	—	—
Corporates - SME	0.15 to <0.25	2	0.22	21	42	1.00	—	24
Corporates - SME	0.25 to <0.50	16	0.42	156	37	1.55	6	37
Corporates - SME	0.50 to <0.75	34	0.64	152	47	1.14	18	52
Corporates - SME	0.75 to <2.50	32	1.39	414	34	2.60	21	66
Corporates - SME	2.50 to <10.00	14	3.55	168	31	2.37	11	73
Corporates - SME	10.00 to <100.00	—	15.64	13	41	1.18	—	125
Corporates - SME	100.00 (Default)	4	100.00	16	36	4.17	—	—
Total - Corporates - SME		102	4.79	940	39	1.94	56	55

EU CCR4: CCR IRB: Exposures by portfolio and PD scale *continued*

2018	PD scale	a EAD post CRM and post-CCF £m	b Average PD %	c Number of obligors	d Average LGD %	e Average maturity Years	f RWAs £m	g RWA density %
Corporates - Specialised lending	Strong	633	—	240	—	4.53	431	68
Corporates - Specialised lending	Good	298	—	111	—	4.70	266	89
Corporates - Specialised lending	Satisfactory	19	—	10	—	4.30	22	115
Corporates - Specialised lending	Weak	4	—	5	—	3.49	9	250
Corporates - Specialised lending	Default	12	—	7	—	3.33	—	—
Total - Corporates - Specialised lending (1)		965	—	373	—	4.56	728	75
Corporates - Other	0.00 to <0.15	9,522	0.05	3,039	43	2.51	1,827	19
Corporates - Other	0.15 to <0.25	2,581	0.20	375	49	2.77	1,581	61
Corporates - Other	0.25 to <0.50	576	0.37	311	60	1.87	437	76
Corporates - Other	0.50 to <0.75	183	0.64	99	46	1.99	154	84
Corporates - Other	0.75 to <2.50	345	1.29	242	35	3.67	303	88
Corporates - Other	2.50 to <10.00	78	3.16	143	48	1.38	102	131
Corporates - Other	10.00 to <100.00	8	16.37	13	50	2.23	18	235
Corporates - Other	100.00 (Default)	—	100.00	1	50	1.00	—	—
Total - Corporates - Other		13,294	0.16	4,223	45	2.55	4,423	33
Total - Wholesale all portfolios		23,953	0.38	6,058	45	2.63	10,125	42

Note:
(1) For these specialised lending exposures, the supervisory slotting method is used to calculate RWAs, rather than the PD/LGD method.

EU CCR4: CCR IRB: Exposures by portfolio and PD scale *continued*

		a	b	c	d	e	f	g
2017	PD scale	EAD post CRM and post-CCF £m	Average PD %	Number of obligors	Average LGD %	Average maturity Years	RWAs £m	RWA density %
Central governments and central banks	0.00 to <0.15	4,679	0.01	31	45	1.84	328	7
Central governments and central banks	0.15 to <0.25	6	0.16	4	45	4.96	4	64
Central governments and central banks	0.25 to <0.50	2	0.45	1	47	0.36	1	47
Central governments and central banks	0.50 to <0.75	—	—	—	—	—	—	—
Central governments and central banks	0.75 to <2.50	1	0.91	1	45	0.04	1	62
Central governments and central banks	2.50 to <10.00	—	—	—	—	—	—	—
Central governments and central banks	10.00 to <100.00	—	—	—	—	—	—	—
Central governments and central banks	100.00 (Default)	—	—	—	—	—	—	—
Total - Central governments and central banks		4,688	0.01	37	45	1.84	334	7
Institutions	0.00 to <0.15	3,802	0.10	140	45	2.76	1,471	39
Institutions	0.15 to <0.25	3,001	0.17	181	46	2.97	1,891	63
Institutions	0.25 to <0.50	357	0.40	102	48	2.11	294	82
Institutions	0.50 to <0.75	99	0.64	54	60	2.28	118	119
Institutions	0.75 to <2.50	57	1.30	46	50	2.50	78	137
Institutions	2.50 to <10.00	28	2.77	15	37	3.20	34	122
Institutions	10.00 to <100.00	—	—	—	—	—	—	—
Institutions	100.00 (Default)	—	—	—	—	—	—	—
Total - Institutions		7,344	0.17	538	46	2.81	3,886	53
Corporates - SME	0.00 to <0.15	1	0.11	1	100	1.00	1	29
Corporates - SME	0.15 to <0.25	2	0.20	20	77	1.84	1	45
Corporates - SME	0.25 to <0.50	14	0.40	177	63	1.58	8	58
Corporates - SME	0.50 to <0.75	20	0.64	186	54	1.32	13	64
Corporates - SME	0.75 to <2.50	57	1.19	482	48	2.86	52	92
Corporates - SME	2.50 to <10.00	29	3.38	238	35	2.85	25	87
Corporates - SME	10.00 to <100.00	1	16.48	26	30	1.39	1	91
Corporates - SME	100.00 (Default)	1	100.00	24	32	1.98	—	—
Total - Corporates - SME		125	2.67	1,154	48	2.42	101	81

EU CCR4: CCR IRB: Exposures by portfolio and PD scale *continued*

2017	PD scale	a EAD post CRM and post-CCF £m	b Average PD %	c Number of obligors	d Average LGD %	e Average maturity Years	f RWAs £m	g RWA density %
Corporates - Specialised lending	Strong	1,236	—	312	—	4.58	850	69
Corporates - Specialised lending	Good	342	—	136	—	4.53	304	89
Corporates - Specialised lending	Satisfactory	91	—	14	—	4.49	104	115
Corporates - Specialised lending	Weak	9	—	4	—	2.26	23	250
Corporates - Specialised lending	Default	12	—	11	—	3.56	—	—
Total - Corporates - Specialised lending (1)		1,690	—	477	—	4.54	1,281	76
Corporates - Other	0.00 to <0.15	11,826	0.05	2,477	39	2.70	2,182	18
Corporates - Other	0.15 to <0.25	3,285	0.19	401	48	3.09	2,053	62
Corporates - Other	0.25 to <0.50	606	0.40	297	57	2.26	477	79
Corporates - Other	0.50 to <0.75	209	0.64	139	48	1.21	155	74
Corporates - Other	0.75 to <2.50	344	1.25	258	37	3.58	311	90
Corporates - Other	2.50 to <10.00	60	3.34	144	46	1.28	75	126
Corporates - Other	10.00 to <100.00	4	27.85	8	34	4.76	9	215
Corporates - Other	100.00 (Default)	2	100.00	4	51	1.14	—	—
Total - Corporates - Other		16,336	0.16	3,728	42	2.76	5,262	32
Total - Wholesale all portfolios		30,183	0.14	5,934	43	2.73	10,864	36

Note:
(1) For these specialised lending exposures, the supervisory slotting method is used to calculate RWAs, rather than the PD/LGD method.

Key points

- The overall reduction in RWAs and EAD is explained in the commentary on EU CCR1.
- The reduction in RWAs and EAD for central governments and central banks additionally reflected the change in treatment for pledges.
- The increase for institutions was driven by NWMSI moving to the AIRB approach, which is also reflected in the decrease in the 100% risk-weight band in EU CCR3.

Counterparty credit risk

EU CCR3: CCR STD: Exposures by regulatory portfolio and risk-weight

		Risk-weight							
	Exposure class	0% £m	2% £m	20% £m	50% £m	75% £m	100% £m	Total £m	Of which: Unrated £m
	2018								
1	Central governments and central banks	1,019	—	—	—	—	—	1,019	—
2	Regional government and local authorities	—	—	15	—	—	—	15	—
6	Institutions	—	3,756	1,278	30	—	—	5,065	—
7	Corporates	—	—	60	12	—	202	275	30
8	Retail	—	—	—	—	7	—	7	—
11	Total	1,019	3,756	1,354	43	7	202	6,381	30
	2017								
1	Central governments and central banks	542	—	1	—	—	—	543	—
2	Regional government and local authorities	—	—	50	—	—	—	50	—
6	Institutions	—	3,120	902	34	—	—	4,056	—
7	Corporates	—	—	14	11	—	1,078	1,103	97
8	Retail	—	—	—	—	6	—	6	—
11	Total	542	3,120	967	45	6	1,078	5,758	97

Key points

- Total exposures under the standardised approach increased, primarily in the 2% band. This reflected a rise in trading activity with CCPs.
- The increase in the 0% band reflected fluctuations in exposures to central banks.
- The decrease in the 100% band was driving by NWMSI moving to the standardised approach, which is also reflected in the increase in the institutions class in EU CCR4.

EU CCR2: CCR: Credit valuation adjustment capital charge

The table below presents the CVA charge split by approach.

		2018		2017	
		a	b	a	b
		Exposure amount £m	RWAs £m	Exposure amount £m	RWAs £m
	Total portfolios subject to the advanced CVA capital charge	7,817	1,912	7,227	1,863
1	(i) VaR component (including the multiplier)	—	245	—	425
2	(ii) Stressed VaR component (including the multiplier)	—	1,668	—	1,439
3	All portfolios subject to the standardised CVA capital charge	1,782	543	2,233	692
EU4	Based on original exposure method	—	—	—	—
5	Total	9,599	2,456	9,460	2,556

Key points

- The rise relating to the advanced charge reflected an increase in the CVA multiplier, in line with the increase in the market risk capital multiplier for NatWest Markets Plc (refer to Tables EU MR2_B and MR4).
- The decrease relating to the standardised charge reflected trade novations and maturing transactions.

Counterparty credit risk

EU CCR5_A: Impact of netting and collateral held on exposure values

		a	b	c	d	e
	2018	Gross positive fair value £m	Netting benefits £m	Netted current credit exposure £m	Collateral held £m	Net credit exposure £m
1	Derivatives	76,652	58,980	17,671	15,520	6,961
2	SFTs	166,337	—	166,337	163,448	7,171
4	Total	242,988	58,980	184,008	178,968	14,132
	2017					
1	Derivatives	197,187	158,300	38,887	34,716	9,565
2	SFTs	197,972	—	197,972	193,383	8,782
4	Total	395,159	158,300	236,859	228,099	18,347

Key points

- Derivative exposure declined, reflecting trade novations and maturing transactions. The decrease in gross positive fair value for derivatives reflected trade compressions.
- SFT exposure decreased in line with the movement seen in Table EU CCR1.

EU CCR6: CCR: Credit derivatives

As part of its strategy to manage credit risk concentrations, RBS buys credit derivative products. The counterparties from which this protection is bought are subject to standard credit risk analysis. Eligibility criteria apply: credit protection bought from the same counterparty group as the reference entity is not eligible in cases where double default applies under the relevant regulation. The table below presents credit derivatives bought and sold by notional and fair values.

	2018		2017	
	a	b	a	b
Notionals	Protection bought £m	Protection sold £m	Protection bought £m	Protection sold £m
Single-name credit default swaps	6,719	4,772	10,260	8,552
Index credit default swaps	2,402	1,246	11,428	7,481
Total return swaps	472	90	676	267
Other credit derivatives (1)	—	—	15	15
Total notionals	9,593	6,108	22,379	16,315
Of which: Own credit portfolio - notionals (2)	151	12	355	—
Fair values				
Positive fair value (asset)	263	39	203	285
Negative fair value (liability)	(66)	(156)	(435)	(127)

Notes:
(1) Credit derivatives are used for internal hedging and client transactions.
(2) Own credit portfolio consists of trades held in the regulatory banking book used for hedging and credit management. Fair values are not material. Intermediation activities cover all other credit derivatives.

Key point

- Overall, credit default swap notionals and fair values declined, in line with the reduction in trade count through maturing transactions.

Counterparty credit risk

EU CCR8: CCR: Exposures (EAD post CRM) to central counterparties

The table below presents counterparty credit risk exposures to CCPs including default fund contributions. A qualifying CCP (QCCP) means a CCP that has been either authorised or recognised in accordance with the relevant regulation. In the table below rows with nil reportable values are excluded.

		2018		2017	
		a EAD post-CRM £m	b RWA £m	a EAD post-CRM £m	b RWA £m
1	Exposures to QCCPs (total)	n/a	385	n/a	280
2	Exposures for trades at QCCPs (excluding OTC initial margin and default fund contributions)	4,362	316	3,605	159
	Of which:				
3	(i) OTC derivatives	1,250	250	535	95
4	(ii) Exchange-traded derivatives including initial margin	688	17	849	20
5	(iii) Securities financing transactions	2,424	48	2,221	44
8	Non-segregated initial margin	664	13	300	60
9	Pre-funded default fund contributions	256	56	254	61

Key points

- EAD and RWAs rose, in line with an increase in clearing activity with QCCPs.
- For non-segregated initial margin, while RWAs decreased, reported exposure increased. This reflected different regulatory treatment on either side of the ring-fence.

Market risk

EU MRA: MR: Qualitative information related to market risk

Definition and framework

Within trading books, traded market risk is the risk arising from changes in fair value on positions, assets, liabilities or commitments as a result of fluctuations in market prices.

The majority of traded market risk exposure arises from trading activities in NatWest Markets. The primary objective of these activities is to provide a range of financing, risk management and investment services to clients – including major corporations and financial institutions around the world. From a market risk perspective, activities are focused on: currencies; rates; securitised products; and traded credit.

Market risk governance and management

Responsibility for identifying, measuring, monitoring and controlling market risk arising from trading activities lies with the relevant trading business. Oversight is provided by the Traded Market Risk function.

For more information on the governance and management, mitigation, monitoring and reporting of traded market risk as well as disclosures relating to non-traded market risk, refer to the Market risk section of the 2018 ARA.

EU MRB_A: MR: Qualitative information – position risk

Inclusion of exposures in trading book

The Trading Book Policy sets out the principles and criteria for identifying and classifying trading book positions for the purpose of regulatory capital and market risk and credit risk measurement. The policy also stipulates the control requirements for the management and regular monitoring of the trading book status of positions and the procedures for escalation where necessary. Key criteria for determining trading book status set within the policy include considerations such as whether positions are transferable or comprise hedgeable financial instruments held with the intent to trade or in a hedging relationship with other trading book positions.

Trading book positions must be valued by marking them to market or to model on a daily basis. They are subject to market risk-based rules, with market risk capital requirements calculated either by using internal models where regulatory approval has been received or otherwise by using the non-modelled, or standardised, approach. Where the criteria set out in the policy are not met, positions are classified as non-trading book exposure and capitalised as outlined on page 116.

EU MRB_B: MR: Qualitative disclosure on use of internal model approach

Calculation of market risk capital requirements

As noted above, RBS uses two broad methodologies to calculate its market risk capital charge: (i) the standardised or non-modelled approach, whereby regulator-prescribed rules are applied, and (ii) the internal model approach (IMA), where, subject to regulatory approval, a model such as Value-at-risk (VaR) is used to calculate the capital charge.

RBS has IMA permission from the PRA for the following material legal entities: NWM Plc and NWB Plc.

Under the IMA, the following measures are used to calculate the capital charge: VaR, stressed VaR (SVaR), the incremental risk charge (IRC) and Risks not in VaR (RNIVs). RBS does not use the comprehensive risk measure.

Apart from NWM Plc, NWM Securities Inc. is the major contributor to market risk capital requirements in RBS and is therefore included in this section, although it is not otherwise considered a significant subsidiary. The market risk capital charge for NWM Securities Inc. is fully calculated under the standardised approach.

Regulatory VaR

VaR is a statistical estimate of the potential change in the market value of a portfolio (and, thus, the impact on the income statement) over a specified time horizon at a given confidence level.

The regulatory VaR model is based on a historical simulation, utilising market data from the previous 500 days on an equally weighted basis. It assumes a time horizon of ten trading days and a confidence level of 99%.

It differs from the internal VaR model in that it takes into account only products, locations and legal entities covered by the regulator's IMA permission. In addition, regulatory VaR is based on a directly modelled ten-day holding period, rather than the one-day holding period on which internal VaR is based. The PRA approval covers general market risk in interest rate, foreign exchange, equity and commodity products and specific market risk in interest rate and equity products.

The performance and adequacy of the VaR model are tested on a regular basis through the following processes:

- Back-testing – Regulatory and internal back-testing is conducted on a daily basis. (For information on regulatory back-testing, refer to page 119. For information on internal back-testing, refer to page 158 of the 2018 ARA.)
- Ongoing model validation – VaR model performance is assessed both regularly and on an ad-hoc basis if market conditions or the portfolio profile change significantly.
- Model Risk Management review – As part of the model lifecycle, all risk models (including the VaR model) are independently reviewed to ensure that the model is still fit for purpose given current market conditions and the portfolio profile (refer to page 93 of the 2018 ARA).

Regulatory stressed VaR (SVaR)
As with VaR, the SVaR technique produces estimates of the potential change in the market value of a portfolio, over a specified time horizon, at a given confidence level. SVaR is a VaR-based measure using historical data from a one-year period of stressed market conditions.

A simulation of 99% VaR is run on the current portfolio for each 250-day period from 2005 to the current VaR date, moving forward one day at a time. The SVaR is the worst VaR outcome of the simulated results.

This is in contrast with VaR, which is based on a rolling 500-day historical data set. A time horizon of ten trading days is assumed with a confidence level of 99%.

RBS's SVaR model has also been approved by the PRA for use in the capital requirement calculation. The distinction between regulatory SVaR and internal SVaR is the same as that between regulatory VaR and internal VaR.

Risk factors
The VaR model captures the potential impact of the following key risk factors:

- Interest rate risk – the risk that a position's fair value will alter due to a change in the absolute level of interest rates, in the spread between two rates, in the shape of the yield curve or in any other interest rate relationship.
- Credit spread risk – the risk that the value of a position will alter due to changes in the real or market-perceived ability of a borrower to pay related cash flows or obligations.
- Foreign currency price risk – the risk that the fair value of a position will alter due to a change in foreign currency or gold rates.
- Equity price risk – the risk that the fair value of a position will alter due to a change in equity prices.
- Commodity price risk – the risk that the fair value of a position will alter due to a change in commodity prices.

When simulating potential movements in risk factors, a combination of absolute and relative returns is used, depending on the risk factor.

General and specific risks
The market risks subject to capital requirements under Pillar 1 are primarily interest rate and credit spread risks in the trading book and foreign exchange risk in both the trading and non-trading books. Interest rate risk is split between general and specific risks. General risks represent market risks due to a move in a market as a whole, such as a main index or yield curve, while specific risks represent market risks arising from events particular to an underlying issuer.

The aggregation approach taken for general and specific risks is as follows:

- General risks are aggregated at the simulation level, adding P&L forecasts generated by the VaR model before statistics such as VaR and SVaR are extracted.
- Specific interest rate risks have both a systematic component and an idiosyncratic component. The systematic component captures the risk in market movements of credit spreads (across sectors, geographic locations and ratings) while the idiosyncratic component captures the credit spread variability of the underlying entity. The systematic components of specific interest rate risks are aggregated at the simulation level, while the idiosyncratic components are calculated as a standalone charge.

VaR and SVaR capture general and specific risks using a single model but not risks arising from the impact of defaults and rating changes associated with traded credit products and their derivatives. For these risks, two product-dependent approaches are used:

- The incremental risk charge model (see below) captures risks arising from rating migration and default events for the more liquid traded credit instruments and their derivatives.
- Securitisation and re-securitisation risks in the trading book are treated with the non-trading book non-modelled capitalisation approach.

VaR limitations
Historical VaR and RBS's implementation of this risk measurement methodology have a number of known limitations, as summarised below, and VaR should be interpreted in light of these. RBS's approach is to supplement VaR with other risk metrics that address these limitations to ensure appropriate coverage of all material market risks.

Historical simulation VaR may not provide the best estimate of future market movements. It can only provide a forecast of portfolio losses based on events that occurred in the past. The RBS model uses the previous 500 days of data; this period represents a balance between model responsiveness to recent shocks and risk factor data coverage.

Market data time series are updated on a daily basis, with a ten-working-day time lag. The use of a 99% confidence level VaR statistic does not provide information about losses beyond this level, usually referred to as 'tail' risks. These risks are more appropriately assessed using measures such as SVaR and stress testing.

Finally, where market data time series are not appropriate (due to poor quality or a lack of liquidity in the market), RBS uses proxy time series or excludes the risk factor from its VaR model and capitalises the risk through its RNIV framework.

Risks not in VaR (RNIV)
The RNIV framework is used to identify and quantify market risks that are inadequately captured by the internal VaR and SVaR models.

The need for an RNIV calculation is typically identified in one of the following three circumstances: (i) as part of the New Product Risk Assessment process, when a risk manager determines that the associated risk is not adequately captured by the VaR model or system; (ii) when risks are mapped to time series that are deemed to be inadequate (for example, due to data quality problems or proxy series usage); or (iii) as a result of a recommendation made during the ongoing model validation or by Model Risk Management during its annual review of the VaR model.

RNIVs that are related specifically to instruments that have level 3 valuation hierarchy assumptions (refer to the 2018 ARA, page 212) are mainly included in the following categories: proxied sensitivities or risk factors, higher-order sensitivity terms, and static pricing parameters.

RBS adopts two approaches for the quantification of RNIVs:
- Under the VaR/SVaR approach, two values are calculated: (i) the VaR RNIV; and (ii) the SVaR RNIV.
- Under the stress-scenario approach, an assessment of ten-day extreme, but plausible, market moves is used in combination with position sensitivities to give a stress-type loss number – the stress-based RNIV value.

Incremental risk charge (IRC)
The IRC model quantifies the impact of rating migration and default events on the market value of instruments with embedded credit risk (in particular, bonds and credit default swaps) that are held in the trading book. It further captures basis risk between different instruments, maturities and reference entities. Following the internal ratings-based approach for credit risk, the IRC is calculated over a one-year capital horizon with a 99.9% confidence level. The dependency of positions is modelled using a single-factor Gaussian copula.

The IRC is mainly driven by three-month credit rating transition, default and correlation parameters. The portfolio impact of correlated defaults and rating changes is assessed by observing changes in the market value of positions using stressed recovery rates and modelled credit spread changes. Revaluation matrices are used to capture any non-linear behaviour.

The transition matrix is estimated using Moody's history of issuer ratings.

The average liquidity horizon by position (weighted by materiality) at 31 December 2018 was 3.2 months (2017 – 3.2 months). The horizon is determined based on issuer liquidity, position concentration, product type and maturity.

Calculation of regulatory capital for non-trading book exposures
Market risk exposures in the non-trading book that are not captured under Pillar 1 are capitalised through the Internal Capital Adequacy Assessment Process (ICAAP). This covers gap risk, basis risk, credit spread risk, pipeline risk, structural foreign exchange risk, prepayment risk and accounting volatility risk. A combination of value-based and earnings-based measures are used in the ICAAP.

The total non-traded market risk capital requirement is determined by adding the different charges for each sub risk type. The ICAAP methodology captures at least ten years of historical volatility and is produced to a 99% confidence level. Methodologies are reviewed by Model Risk Management and results are approved by the NWM Plc Board.

Market risk

EU MR1: MR IMA and STD: RWAs and MCR - RBS and significant subsidiaries

The following table presents market risk RWAs and MCR by calculation method and type of risk for RBS and significant subsidiaries.

		RBS		NWB Plc		RBS plc		NWM Plc		NWM Securities Inc	
		a	b	a	b	a	b	a	b	a	b
		RWAs	MCR	RWAs	MCR	RWAs	MCR	RWAs	MCR	RWAs	MCR
	2018	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
	STD	1,848	148	36	3	23	2	1,211	97	407	33
1	Interest rate position risk (outright products)	959	77	—	—	—	—	531	42	407	33
2	Equity position risk (outright products)	—	—	—	—	—	—	—	—	—	—
3	Foreign exchange position risk (outright products)	250	20	36	3	23	2	40	3	—	—
4	Commodity position risk (outright products)	—	—	—	—	—	—	—	—	—	—
6	Option position risk (delta-plus approach)	—	—	—	—	—	—	—	—	—	—
8	Securitisation positions	639	51	—	—	—	—	640	52	—	—
	Internal model approach	12,989	1,039	14	1	—	—	12,895	1,032	—	—
	VaR	2,028	162	3	—	—	—	1,996	160	—	—
	SVaR	5,272	421	11	1	—	—	5,210	417	—	—
	Incremental risk charge	2,732	219	—	—	—	—	2,732	219	—	—
	Other (RNIV)	2,957	237	—	—	—	—	2,957	236	—	—
	Of which: VaR-based RNIV	417	33	—	—	—	—	417	33	—	—
	Of which: SVaR-based RNIV	1,171	94	—	—	—	—	1,171	94	—	—
	Of which: Stress RNIV	1,369	110	—	—	—	—	1,369	109	—	—
	Total	14,837	1,187	50	4	23	2	14,106	1,129	407	33

		RBS		NWB Plc		NWM Plc		NWM Securities Inc	
		a	b	a	b	a	b	a	b
		RWAs	MCR	RWAs	MCR	RWAs	MCR	RWAs	MCR
	2017	£m	£m	£m	£m	£m	£m	£m	£m
	STD	2,994	240	135	11	2,090	167	681	55
1	Interest rate position risk (outright products)	1,151	92	19	2	438	35	680	55
2	Equity position risk (outright products)	—	—	—	—	—	—	—	—
3	Foreign exchange position risk (outright products)	813	66	116	9	623	50	—	—
4	Commodity position risk (outright products)	—	—	—	—	—	—	—	—
6	Option position risk (delta-plus approach)	1	—	—	—	—	—	1	—
8	Securitisation positions	1,029	82	—	—	1,029	82	—	—
	Internal model approach	14,018	1,121	1	—	13,719	1,098	—	—
	VaR	2,769	222	—	—	2,639	211	—	—
	SVaR	4,990	398	1	—	4,821	386	—	—
	Incremental risk charge	3,715	297	—	—	3,715	297	—	—
	Other (RNIV)	2,544	204	—	—	2,544	204	—	—
	Of which: VaR-based RNIV	303	24	—	—	303	24	—	—
	Of which: SVaR-based RNIV	658	53	—	—	658	53	—	—
	Of which: Stress RNIV	1,583	127	—	—	1,583	127	—	—
	Total	17,012	1,361	136	11	15,809	1,265	681	55

Note:
(1) UBIDAC's market risk capital requirements are not material (£4 million).

Key points

RBS

- RBS's total market risk RWAs decreased over the period. The majority of the exposure related to NatWest Markets Plc.

NWB Plc

- The RWA decline was mainly driven by a lower US dollar open position, reflecting the final settlement reached with the US Department of Justice and a refinement to the calculation process for the banking book foreign exchange charge. The decrease in interest rate position risk RWAs to below £1 million reflected the transfer of loans to NatWest Markets Plc under the Ring-Fencing Transfer Scheme.

RBS plc

- Market risk RWAs for this entity, which relate solely to the banking book foreign exchange charge, were reported for the first time as at 30 June 2018 following completion of the Ring-Fencing Transfer Scheme. Since 30 June 2018, banking book foreign exchange RWAs have decreased reflecting a refinement to the calculation process.

NWM Plc

- The movements primarily relate to the IMA, refer to EU MR2_B for commentary.

NWM Securities Inc

- The RWA decline was driven by a reduction in interest rate position risk due to reduced exposures.

Market risk

EU MR2_A: MR IMA: RWAs and MCR

The following table presents market risk RWAs and MCR by component under the internal model approach.

		2018		2017	
		a RWAs £m	b MCR £m	a RWAs £m	b MCR £m
1	VaR (higher of a and b)	2,028	162	2,769	222
a	Period end VaR	675	54	750	60
b	Average of the daily VaR for preceding 60 business days x multiplication factor	2,028	162	2,769	222
2	SVaR (higher of a and b)	5,272	421	4,990	398
a	Period end SVaR	2,010	161	1,839	147
b	Average of the SVaR for preceding 60 business days x multiplication factor	5,272	421	4,990	398
3	Incremental risk charge (higher of a and b)	2,732	219	3,715	297
a	Period end IRC value	2,640	211	3,715	297
b	Average IRC over preceding 60 business days	2,732	219	3,400	272
5	Other (RNIV at period end)	2,957	237	2,544	204
6	Total	12,989	1,039	14,018	1,121

Key point

- Refer to the commentary below Table EU MR2_B.

EU MR3: MR IMA: IMA values for trading portfolios - RBS and significant subsidiaries

The following table presents the minimum, maximum, average and period end values, over the reporting period, derived from the models approved under the IMA for use in calculating market risk capital requirements and RWAs, for RBS and NWM Plc (being the only material significant subsidiary). The reported values do not include any capital multipliers or other additional capital charges that may be applied at the supervisor's discretion.

		2018		2017	
		RBS £m	NWM Plc £m	RBS £m	NWM Plc £m
	VaR (10 day 99%)				
1	Maximum value	112	110	84	81
2	Average value	62	61	54	53
3	Minimum value	44	42	40	37
4	Period end	54	53	60	58
	SVaR (10 day 99%)				
5	Maximum value	359	356	155	154
6	Average value	174	172	126	124
7	Minimum value	103	101	85	83
8	Period end	161	159	147	144
	IRC (99.9%)				
9	Maximum value	281	281	297	297
10	Average value	212	212	228	228
11	Minimum value	157	157	164	164
12	Period end	211	211	297	297

Key points

- The movements in VaR, SVaR and IRC values for RBS and NatWest Markets Plc were broadly in line with the trends in market risk capital requirements under the internal model approach, as presented in EU MR2_A.
- For NWB Plc, capital requirements under the internal model approach are below £1 million.

Market risk

VaR back-testing

Back-testing is the main approach employed to assess the ongoing performance of the VaR model. This approach counts the number of days when a loss exceeds the corresponding daily VaR estimate, measured at a 99% confidence level.

Two types of profit and loss (P&L) are used in back-testing comparisons: Actual P&L and Hypothetical (Hypo) P&L.

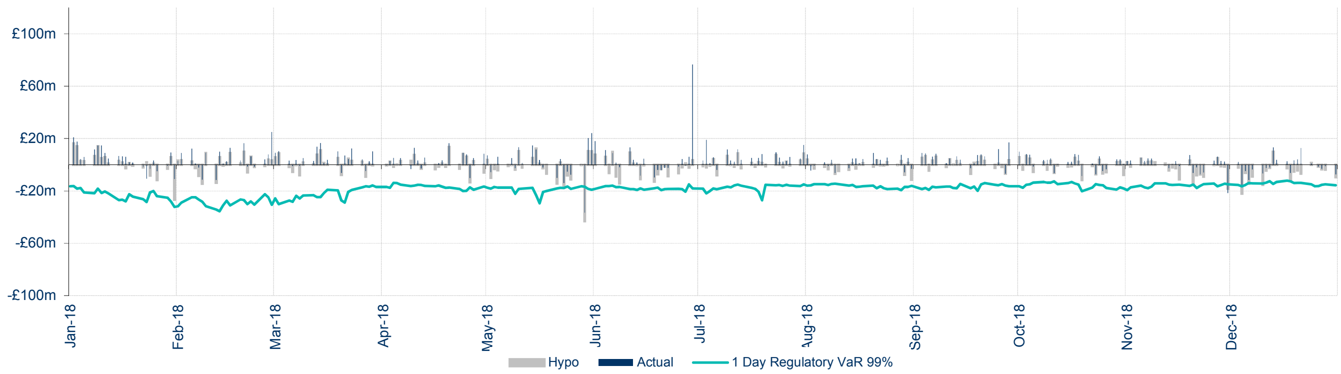
The Actual P&L for a particular business day is the firm's actual P&L for that day in respect of the trading activities within the scope of the firm's regulatory VaR model. It includes intraday activities, adjusted by stripping out fees and commissions, brokerage, and additions to and releases from reserves that are not directly related to market risk.

The Hypo P&L is the firm's Actual P&L excluding any intraday activities.

A portfolio is said to produce a back-testing exception when the Actual or Hypo P&L exceeds the VaR level on a given day. Such an event may be caused by a large market movement or may highlight issues such as missing risk factors or inappropriate time series. Any such issues identified are analysed and addressed by taking appropriate remediation or development action. RBS monitors both Actual and Hypo back-testing exceptions.

EU MR4: 1-day 99% regulatory VaR vs. Actual and Hypo P&L

The graph below presents 1-day 99% regulatory VaR compared with Actual and Hypo P&L for NatWest Markets Plc, RBS's largest legal entity by market risk RWAs and positions.



MR4_A: Regulatory VaR model back-testing exceptions

The table below shows regulatory back-testing exceptions for the 250-business-day period to 31 December 2018 for one-day 99% traded regulatory VaR compared with Actual and Hypo P&L for the legal entities approved by the PRA.

	Back-testing exceptions	
	Actual	Hypo
NatWest Markets Plc	3	5
NatWest Bank Plc	2	1

Key points

- Statistically RBS would expect to see back-testing exceptions 1% of the time over a period of 250 business days. A VaR model recording four or fewer exceptions in a continuous 250-day period is regarded as satisfactory. A model recording five or more exceptions is regarded as having potential issues regarding its quality or accuracy.
- In NatWest Markets Plc, the back-testing exceptions in May and December 2018 were mainly driven by losses in the Rates portfolio as a result of adverse market moves in interest rates and inflation. The exception in November 2018 was mainly driven by a sterling inflation curve re-mark in the Rates portfolio.
- In NatWest Bank Plc, the back-testing exceptions were driven by the US dollar appreciating against sterling.

Securitisation

Securitisation

SECA: SEC qualitative disclosures

Framework, roles and definitions

This section presents descriptive information on RBS's securitisation activities and related risk management processes and accounting policies, followed by quantitative disclosures on its exposures to securitisations.

Definitions

Securitisation and special purpose entities

The CRR defines a securitisation as a transaction or scheme where the credit risk of an exposure or pool of exposures is tranched, where the payments arising from the transaction or scheme are dependent upon the performance of the underlying exposure(s) and where the subordination of tranches determines the distribution of losses during the ongoing life of the transaction or scheme.

Securitisations can broadly take two forms: traditional and synthetic. In traditional securitisations, the originator transfers ownership of the underlying exposure(s) to a securitisation special purpose entity (SSPE), putting the asset(s) beyond the reach of the originator and its creditors. The purchase of the underlying exposure(s) by the SSPE is funded by the issuance of securities. In synthetic securitisations, the originator retains ownership of the underlying exposure(s) but transfers the associated credit risk to another entity through the use of guarantees or credit derivatives.

SSPEs are set up for a specific limited purpose to facilitate a securitisation transaction. They do not provide a commercial service or employ staff. They may take a variety of legal forms, such as trusts, partnerships and companies. Their activities are limited to those appropriate to carrying out a securitisation and their structure is intended to isolate the obligations of the SSPE from those of the originator institution and to ensure that the holders of the beneficial interests have the right to pledge or exchange those interests without restriction. Typically, their share capital is held ultimately by charitable trusts.

Although SSPEs are frequently used, they are not necessarily required for all securitisation structures.

The following definitions are used in these Pillar 3 disclosures:

Trading book – The trading book consists of positions in financial instruments and commodities held either with the intent to trade or in order to hedge other elements of the trading book. To be eligible for trading book capital treatment, financial instruments must either be free of any covenants restricting their tradability or be able to be hedged.

Non-trading book – The non-trading book consists of positions, exposures, assets and liabilities that are not in the trading book. It is also referred to as the 'banking book'. In this section, the counterparty credit risk arising from derivative trades associated with SSPEs is captured in the non-trading book disclosures, including in situations where the derivative attracts market risk in the trading book.

Securitisation position – Any exposure to a securitisation that falls within the scope of regulatory treatment (further details on page 125). This includes not only exposures arising from the purchase or retention of the securities issued by an SSPE but also loans and liquidity facilities to securitisations, and the counterparty credit risk exposure of derivative positions transacted with a SSPE.

Re-securitisation – A securitisation in which the underlying asset or pool of assets comprises at least one securitisation position.

Securitised exposure – An asset or pool of assets that is securitised by way of a traditional or synthetic securitisation.

Significant risk transfer assessment – An assessment prescribed by the CRR and designed to determine whether or not a securitisation structure transfers significant risk on the underlying assets to a party or parties other than the originator.

Term securitisation – A securitisation vehicle funding a pool of assets through the issuance of long-term securities. A term securitisation may hold the assets of one or more originators.

Asset-backed commercial paper (ABCP) conduit – A securitisation vehicle funding a pool of assets through the issuance of predominantly short-term securities (namely commercial paper). A conduit may hold the assets of one or more originators (referred to as a single-seller or multi-seller conduit, respectively).

Objectives and roles

By participating in securitisation activity, RBS aims to achieve one or both of the following objectives, either for its own purposes or for customers:

- To diversify sources of funding; and
- To facilitate prudential balance sheet and risk management.

In doing so, RBS may incur a range of risks, including credit, market, liquidity and funding, legal, regulatory and reputational risks; for which it must hold regulatory capital. For details of CRR rules governing the calculation of regulatory capital required in respect of securitisations, refer to page 125.

RBS may play one or more of the following roles in a securitisation transaction:

Originator – To diversify its sources of funding and manage its balance sheet, RBS securitises assets it has purchased or originated. As an originator RBS may be exposed to credit risk and market risk on the underlying assets, particularly if the structure of the transaction does not transfer these risks to third parties. Even if these risks have been transferred, it may nevertheless be exposed to credit and market risks to the extent it retains exposure to the securitisation, for example, by providing the SSPE with a liquidity facility or entering into derivative transactions.

Investor – To generate financial returns, RBS may:

- Purchase securities issued by a SSPE;
- Enter into derivative transactions with a SSPE; or
- Lend to an SSPE, often by providing a liquidity facility that the SSPE can use if it is unable to issue securities, particularly commercial paper.

Securitisation

To generate additional fee income, RBS may play other roles as well:

Sponsor – RBS may establish and manage a term securitisation that purchases bonds or other financial assets from third parties. It may do so on its own account or on behalf of its customers. Additionally, it historically established and managed ABCP conduits. In its role as sponsor, it is particularly exposed to credit and liquidity risk.

Arranger – RBS may structure a securitisation transaction, drafting the documentation that governs the behaviour of the SSPE, and then sell the securities issued by the SSPE to investors. It may act as arranger for securitisation transactions it originates or, alternatively, for securitisation transactions originated by its customers, principally financial institutions and large corporates.

Manager – RBS may manage and service the asset pool of the securitisation as required by the terms of the transaction.

Underwriter – RBS may underwrite the securities issued by a SSPE. The associated securitisation transaction may be originated by RBS or its customers.

Other administrative roles – As a ‘contractual party’, RBS may do any of the following, alone or in combination:

- Hold the bank account of a SSPE on its own books;
- Monitor the credit quality of the underlying assets on behalf of investors;
- Report on the performance of the SSPE to investors; and
- Make payments to investors on behalf of the SSPE.

Information relating to the significant roles performed by RBS (investor, originator, sponsor) is contained in the tables within this section.

Risk management

As noted above, acting as an originator, sponsor or investor in a securitisation transaction may give rise to both credit and market risk. RBS may also incur other types of risk in the course of its exposure to securitisation activity.

All such risks are described in the table below, along with details of how they are monitored and managed.

Securitisation

Types of risk	Definition and how the risk may arise	How RBS monitors and manages the risk
Credit risk	The risk of loss arising from the failure of a customer or counterparty (or, in the case of a securitisation, an SSPE) to meet its obligations to settle outstanding amounts. Securitisation may expose RBS to credit risk for any of several reasons. If RBS invests in an SSPE by purchasing or (in the case of a securitisation it has originated) retaining the bonds it issues, conducting derivative transactions with it or lending to it, RBS is exposed to the risk that the SSPE will fail to meet its obligations to settle outstanding amounts to RBS. This may happen because cash flows generated by the underlying assets are insufficient to repay creditors, including bondholders, derivative counterparties or lenders, or in the event of a third party, such as a bank account provider or derivative counterparty, defaulting on its obligation to the SSPE. The SSPE pays principal and interest to creditors in order of seniority, with the most senior paid first. When RBS originates a securitisation transaction, if the securitisation structure does not substantially transfer the economic risks of the underlying assets, including credit risk, to a third party, it is exposed to credit risk on those assets just as it would be if the securitisation had never taken place. Credit risk is heightened if the assets in the SSPE are not diversified by sector, geography or borrower.	RBS's overall exposure to third party securitisation is governed by its sector concentration framework. If it retains or purchases bonds issued by an SSPE, conducts derivative transactions with it or lends to it, RBS monitors the performance of the vehicle in part by reviewing information provided by the trustee as well as by rating agencies or other third parties. As an originator, if the securitisation structure does not transfer substantial credit risk to a third party, RBS manages it as if the securitisation had never taken place. RBS has credit limits in place and monitors SSPE positions with third party bank account providers for own asset securitisations which generate a credit risk exposure for RBS. RBS may seek to mitigate credit risk arising from the purchase (or retention) of bonds issued by an SSPE through the use of unfunded protection, usually credit default swaps, but also guarantees. It hedges the risk associated with purchased bonds, which are generally held in the trading book, as appropriate. It does not usually hedge the credit risk associated with retained bonds, which are generally held in the non-trading book.
Traded market risk	Traded market risk is the risk arising from changes in fair value on positions, assets, liabilities or commitments in trading portfolios as a result of fluctuations in market prices.	RBS manages this risk in accordance with its policy on market risk. Re-securitisation exposures are subject to individual scrutiny. For further information, refer to *Risk monitoring and mitigation* in the Traded market risk 2018 ARA.
Non-traded market risk	Non-traded market risk is the risk to the value of assets or liabilities outside the trading book, or the risk to income, that arises from changes in market prices such as interest rates, foreign exchange rates and equity prices, or from changes in managed rates.	RBS manages this risk in accordance with its policy on non-traded market risk, including structural interest rate risk. For further information, refer to *Risk monitoring and mitigation* in the Non-traded market risk section of the 2018 ARA.
Liquidity and funding risk	Liquidity risk is the risk of being unable to meet financial obligations as and when they fall due. Funding risk is the risk of not maintaining a diversified, stable and cost-effective funding base. RBS may sponsor securitisations and, as sponsor, may provide liquidity facilities to the SSPE. If the SSPE utilises these facilities, RBS will need to fund them, giving rise to the risk that it will not be able to do so.	RBS manages these risks in accordance with its policy on liquidity and funding risk. For further information, refer to *Liquidity management* and *Funding risk management* in the Capital, liquidity and funding risk section of the 2018 ARA.

Securitisation

Types of risk	Definition and how the risk may arise	How RBS monitors and manages the risk
Legal risk	The risk that RBS will incur losses as a result of the failure of the documentation relating to a securitisation to perform as expected or as a result of investors asserting that RBS made inadequate disclosures or conducted inadequate due diligence in relation to the relevant credit exposures. Legal risk is elevated if the parties to the transaction are located in different jurisdictions, as documentation effective in one jurisdiction may not be effective in another. Additional losses may arise as a result of costs incurred by the parties in an effort to address documentary shortcomings. This risk is heightened in the case of re-securitisations, as RBS needs to gather information surrounding each of the original transactions, together with an understanding of their interaction within the re-securitisation.	RBS has specific processes and controls in place designed to ensure adequate due diligence is undertaken and appropriate disclosures are made in relation to the relevant offerings. In relation to documentation, distribution of securities and compliance with relevant laws and regulations, RBS works with experienced internal and external counsel to ensure all reasonable steps are taken to ensure documentation standards are satisfactory and applicable laws and regulations in all relevant jurisdictions are complied with.
Compliance & conduct risk	Compliance risk is the risk that the behaviour of RBS towards customers fails to comply with laws, regulations, rules standards and codes of conduct. Conduct risk is the risk that the conduct of RBS and its subsidiaries and its staff towards customers – or in the markets in which it operates – leads to unfair or inappropriate customer outcomes and results in reputational damage, financial loss or both. Compliance and conduct risks exist across all stages of RBS's relationships with its customers and arise from a variety of activities including product design, marketing and sales, complaint handling, staff training, and handling of confidential insider information.	Well established policies and supporting processes are in place to ensure timely identification of, and effective responses to, changes in official sector requirements, laws, regulations and major industry standards affecting RBS. This risk falls under the governance of the Mandatory Change Advisory Committee, which meets monthly with representatives from all franchises and functions. For further information, refer to page 160 of the 2018 ARA.
Reputational risk	The risk to RBS's public image from a failure to meet stakeholders' expectations in relation to performance, conduct or business profile. Stakeholders include customers, investors, employees, suppliers, government, regulators, special interest and consumer groups, media and the general public. Reputational risk can arise from the conduct of employees; activities of customers and the sectors and countries in which they operate; provision of products and transactions; as well as operations and infrastructure.	RBS manages reputational risk in accordance with its reputational risk management framework. For further information, refer to page 164 of the 2018 ARA.
Operational risk	The risk of loss resulting from inadequate or failed internal processes, people and systems, or external events. This risk arises from day-to-day operations and is relevant to every aspect of the business.	RBS manages operational risk in accordance with its operational risk management framework. For further information, refer to page 161 of the 2018 ARA.

Securitisation

Regulatory treatment

RBS determines the regulatory capital required for exposures related to its securitisation activities in accordance with the CRR. In so doing, with respect to each securitisation transaction, it considers on an ongoing basis:

- The effectiveness of the originated securitisation structure in achieving risk transfer; and
- Whether the securitisation positions it holds relate to the trading or non-trading book.

In instances where it is an originator, RBS carries out a significant risk transfer assessment to evaluate whether the securitisation structure transfers significant credit risk associated with the underlying assets to the holders of the securitisation positions and that the reduction in capital requirements is commensurate with the reduction in risk.

If significant risk transfer is achieved, RBS does not hold any capital against the underlying assets. However, if it is not achieved, capital must be held against the underlying assets as if the securitisation had never taken place.

As noted earlier, RBS may play several roles in respect of securitisations. Of these, three may result in RBS holding securitisation positions in connection with which a capital charge is required: originator; sponsor; or investor.

In the case of securitisation positions related to the trading book, RBS calculates regulatory capital needed for specific and general market risks (refer to page 151 of the 2018 ARA). In the case of securitisation positions in the non-trading book, RBS calculates regulatory capital for credit risk. Depending on the nature of the instrument there may also be capital requirements for counterparty credit risk.

Calculation of risk-weighted exposures

The regulatory framework for securitisation allows RWA calculation using either the standardised or the IRB approach. The choice of approach depends on the credit framework adopted by the firm under Pillar 1 for the underlying portfolio of securitised exposures. As at 31 December 2018, all of the securitisation positions held by RBS were subject to the IRB approach.

RBS categorises securitised exposures according to risk-weight bands when calculating RWAs. Under the CRR, unrated positions are classified under the highest risk-weight band: 1,250%. Risk-weight bands are shown in Tables SEC 2 and SEC 3.

The IRB method used by RBS is the ratings based approach (RBA).

When assessing debt issued by SSPEs under the RBA, RBS recognises ratings issued by Standard & Poor's, Moody's, Fitch, DBRS or ARC Ratings. Most transactions are rated by two or more of these rating agencies, which are formally classified as external credit assessment institutions (ECAIs).

When assessing unrated exposures funded through an ABCP conduit, (whether a legacy RBS-sponsored conduit or an ABCP conduit sponsored by other institutions), RBS is permitted to use the Internal Assessment Approach (IAA) under its IRB waiver. The IAA is explained in more detail below.

Under the RBA (including the IAA), ECAI ratings are mapped to the corresponding credit quality step (CQS) in order to determine the risk weights for the facilities relating to each transaction. The mapping used is shown in Table EU CR5a in the Credit risk section.

More details on RBS's use of the IAA are provided below.

Summary of Internal Assessment Approach

Where an ABCP conduit is rated by an approved ECAI, the IAA permits RBS to calculate and assign internal credit grades and implied ratings based on published rating agency methodologies for the relevant asset class.

The assessment methodology must be that of one of the ECAIs that provides a rating to the ABCP conduit. The methodology selected need not be publicly available if RBS can demonstrate that, due to specific features of the securitisation, there is not yet an appropriate publicly available ECAI methodology.

The sponsoring business for the underlying transaction is required to model the transaction using an assessment methodology in line with the above. The modelling analysis is completed, refreshed or reviewed, as appropriate, as part of the credit application process/ongoing transaction surveillance. The credit risk assessment of the transaction which takes place both at inception and as part of ongoing review considers the appropriateness of the IAA, the assumptions used and the proposed implied rating.

Securitisation

Summary of accounting policies including derecognition

Accounting assessment takes place at the time of closing a transaction and under accounting rules, depends on a securitisation's residual risk. By contrast, significant risk transfer assessments take place at regular intervals. The resulting capital calculations can differ depending on the change in residual risk over time.

Recognition of sales

Securitisation vehicles are assessed for consolidation in accordance with RBS's published accounting policy *Basis of Consolidation* (refer to page 182 of the 2018 ARA). The transfer of assets to a securitisation vehicle is treated as a sale if the securitised assets are derecognised from the consolidated balance sheet in accordance with RBS's published accounting policy *Derecognition* (refer to page 185 of the 2018 ARA).

RBS applies its accounting policies *Provisions; Loan commitments; and Financial guarantee contracts* (set out on pages 184 and 185 of the 2018 ARA) to contractual commitments, such as liquidity lines, that could require it to provide financial support for securitised assets.

Key assumptions for valuing securitisation positions

Securitisation positions are valued using external information, such as market data for recent transactions, price information from third-party managers and advisors, and asset performance data provided to all bond holders at interest payment dates.

Synthetic securitisations

Synthetic securitisations are assessed using the same approach as non-synthetic securitisations. Any derivatives are treated in accordance with RBS's published accounting policy *Derivatives and hedging* (refer to pages 185 of the 2018 ARA).

Assets awaiting securitisation

Financial assets are valued using RBS's accounting policy for financial instruments (refer to page 184 of the 2018 ARA). At both 31 December 2018 and 31 December 2017, no assets were categorised as awaiting securitisation.

Implicit support

RBS has not provided support to any securitisation transactions beyond its contractual obligations.

Securitisation and re-securitisation exposures

Additional information detailing accounting policies and treatment of securitisations and re-securitisations can be found on page 185 of the 2018 ARA.

Types of transactions

In the role of originator, RBS securitises a variety of assets which typically include the following:

Residential mortgages and commercial real estate loans - RBS securitises residential mortgages and commercial real estate loans that it originates itself. Mortgages and real estate loans are assigned to SSPEs, which fund themselves principally through the issue of floating rate notes.

Other loan types - RBS selectively securitises other loans that it originates, principally those to corporates and small and medium-sized enterprises.

SSPEs used by RBS

SSPEs used by RBS hold either the securitised assets themselves (traditional securitisations) or a package of other assets economically equivalent to those assets (synthetic securitisations).

At 31 December 2018, RBS sponsored one remaining multi-seller commercial paper conduit programme, Thames Asset Global Securitization (TAGS). RBS provides programme-wide credit enhancement and liquidity facilities to TAGS. During 2018, TAGS issued no commercial paper to external parties.

The transactions in which RBS acts as a swap counterparty, has originated all the assets and continues to administer the associated SSPEs comprise the following:

- Ardmore & Dunmore (Irish residential mortgages SSPEs);
- Epic (commercial real estate SSPEs); and
- Talisman (commercial real estate SSPEs).

Following synthetic securitisations in 2016 and 2017 primarily of loans to corporates or SMEs, in 2018, RBS completed a synthetic securitisation of commercial mortgages of £1.7 billion. No gain or loss was recognised on the transfer of these assets.

Notes on the following tables

Tables SEC 1 to SEC 4 show total securitisation positions, as discussed under Regulatory treatment of securitisation on page 124. The exposures included those retained from RBS's own securitised assets, investments in SSPE notes, credit lines to SSPEs and derivative transactions with SSPEs.

The term 'exposure amount' used in the following tables refers to EAD, which is calculated according to CRR rules.

Exposure amount is shown along with other measures in Tables SEC 1 and SEC 2. Tables SEC 3 and SEC 4 show exposure amounts exclusively.

Securitisation

Securitisation exposures: retained and purchased

SEC 1: Exposure, RWAs and MCR by regulatory approach

The following table shows exposures, RWAs, MCR and capital deductions.

	Aggregate amounts of securitisation positions retained or purchased				Of which, re-securitisation positions retained or purchased			
2018 - non-trading book	Exposure amount £m	RWAs £m	MCR £m	Of which: deduction from capital £m	Exposure amount £m	RWAs £m	MCR £m	Of which : deduction from capital £m
IRB	14,918	2,970	238	—	—	—	—	—
2017 - non-trading book								
IRB	13,596	2,830	226	—	—	—	—	—
2018 - trading book								
IRB	549	639	51	—	11	74	6	—
2017 - trading book								
IRB	884	1,029	82	—	131	212	17	—

Key points

Non-trading book

- The increases in exposure and RWAs was primarily driven by the completion of a commercial mortgages synthetic securitisation and customer loans.
- The total exposure amount included EAD of £0.8 billion (2017 – £1.0 billion) and RWAs of £0.4 billion (2017 – £0.5 billion) related to counterparty credit risk associated with derivative trades. Within this, residential mortgages accounted for EAD of £0.4 billion (2017 – £0.6 billion) and RWAs of £0.3 billion (2017 – £0.4 billion). The relevant market risk is captured in the trading book.

Trading book

- The decrease in exposure and RWAs reflected the continued strategy of creating capacity by closing positions in capital-intensive assets.

Securitisation

SEC 2: Exposure and MCR by regulatory approach and risk-weightings

The following table shows exposures and MCR according to risk-weight bands. Unrated positions are included within the 1,250% band.

	Aggregate amounts of securitisation positions retained or purchased		Of which, re-securitisation positions retained or purchased	
	Exposure amount	Minimum capital requirements	Exposure amount	Minimum capital requirements
Risk-weight bands	Total (IRB) £m	Total (IRB) £m	Total (IRB) £m	Total (IRB) £m
2018 - non-trading book				
≤ 10%	10,519	63	—	—
> 10% ≤ 20%	2,722	32	—	—
> 20% ≤ 50%	1,140	38	—	—
> 50% ≤ 100%	282	12	—	—
> 100% ≤ 350%	143	30	—	—
> 350% ≤ 650%	64	23	—	—
1,250%	48	40	—	—
	14,918	238	—	—
2017 - non-trading book				
≤ 10%	9,460	57	—	—
> 10% ≤ 20%	2,692	34	—	—
> 20% ≤ 50%	739	24	—	—
> 50% ≤ 100%	409	32	—	—
> 100% ≤ 350%	140	30	—	—
> 350% ≤ 650%	26	9	—	—
1,250%	130	40	—	—
	13,596	226	—	—
2018 - trading book				
≤ 10%	316	2	—	—
> 10% ≤ 20%	120	2	—	—
> 20% ≤ 50%	17	—	5	—
> 50% ≤ 100%	40	3	—	—
> 100% ≤ 350%	1	—	—	—
> 350% ≤ 650%	21	9	—	—
1,250%	34	35	6	6
	549	51	11	6
2017 - trading book				
≤ 10%	181	1	—	—
> 10% ≤ 20%	179	3	3	—
> 20% ≤ 50%	299	9	15	—
> 50% ≤ 100%	32	2	1	—
> 100% ≤ 350%	8	2	2	—
> 350% ≤ 650%	42	16	—	—
1,250%	143	49	110	17
	884	82	131	17

Securitisation

SEC 3: Exposure by risk-weightings by underlying exposure type

The following table shows exposures by underlying exposure type and risk-weight bands. Unrated positions are included within the 1,250% band.

Risk-weight bands	Residential mortgages £m	Commercial mortgages £m	Credit card receivables £m	Leasing £m	Loans to corporates or SMEs £m	Consumer loans £m	Trade receivables £m	Auto receivables £m	Re-securitisation £m	Other assets £m	Total £m
2018 - non-trading book											
≤ 10%	2,830	1,495	391	299	3,482	288	—	1,734	—	—	10,519
> 10% ≤ 20%	1,148	438	—	12	478	36	—	90	—	520	2,722
> 20% ≤ 50%	354	192	—	—	293	—	—	—	—	301	1,140
> 50% ≤ 100%	4	127	—	—	80	71	—	—	—	—	282
> 100% ≤ 350%	1	—	—	—	142	—	—	—	—	—	143
> 350% ≤ 650%	—	8	—	—	56	—	—	—	—	—	64
1,250%	23	2	—	—	13	4	—	—	—	6	48
	4,360	2,262	391	311	4,544	399	—	1,824	—	827	14,918
2017 - non-trading book											
≤ 10%	3,231	58	382	222	3,254	85	—	2,169	—	59	9,460
> 10% ≤ 20%	1,145	433	—	—	469	44	—	184	—	417	2,692
> 20% ≤ 50%	78	11	—	—	294	—	—	—	—	356	739
> 50% ≤ 100%	52	246	—	—	110	—	—	—	—	1	409
> 100% ≤ 350%	—	—	—	—	140	—	—	—	—	—	140
> 350% ≤ 650%	—	5	—	—	21	—	—	—	—	—	26
1,250%	115	3	—	—	6	—	—	—	—	6	130
	4,621	756	382	222	4,294	129	—	2,353	—	839	13,596
2018 - trading book											
≤ 10%	141	—	7	—	29	2	—	8	1	128	316
> 10% ≤ 20%	79	—	1	—	17	—	—	1	—	22	120
> 20% ≤ 50%	3	5	—	—	—	2	—	—	5	2	17
> 50% ≤ 100%	5	8	1	—	6	—	—	—	—	20	40
> 100% ≤ 350%	—	1	—	—	—	—	—	—	—	—	1
> 350% ≤ 650%	6	2	—	—	10	—	—	—	—	3	21
1,250%	9	2	—	—	6	—	—	—	5	2	34
	243	18	9	—	68	4	—	9	11	187	549
2017 - trading book											
≤ 10%	119	—	—	—	51	—	—	6	—	5	181
> 10% ≤ 20%	81	—	—	—	31	6	—	—	3	58	179
> 20% ≤ 50%	2	31	—	—	—	—	—	—	15	251	299
> 50% ≤ 100%	4	2	—	—	16	—	—	—	1	9	32
> 100% ≤ 350%	—	—	—	—	—	—	—	—	2	6	8
> 350% ≤ 650%	7	3	—	—	27	5	—	—	—	—	42
1,250%	10	2	—	—	19	—	—	—	111	1	143
	223	38	—	—	144	11	—	6	132	330	884

Note:
(1) Other assets include assets which cannot be classified in the specific asset classifications and may straddle asset type classifications.

Securitisation

Securitisation exposures: retained and purchased

SEC 4: Exposures by role, by on and off-balance sheet

The following table shows underlying exposures by:

- The role of RBS;
- On and off-balance sheet categories; and
- Underlying exposure type.

The off-balance sheet category represents the part of a liquidity facility that has not been utilised (undrawn) and derivative exposures.

	As originator		As sponsor		As investor		Total	
Underlying exposure type	On-balance sheet (1) £m	Off-balance sheet £m	On-balance sheet £m	Off-balance sheet £m	On-balance sheet £m	Off-balance sheet £m	On-balance sheet £m	Off-balance sheet £m
2018 - non-trading book								
Residential mortgages	—	—	—	—	3,271	1,089	3,271	1,089
Commercial mortgages	1,685	—	—	—	301	276	1,986	276
Credit card receivables	—	—	—	—	—	391	—	391
Leasing	—	—	—	—	280	31	280	31
Loans to corporates or SMEs	4,140	—	—	—	390	14	4,530	14
Consumer loans	—	—	18	12	329	40	347	52
Auto receivables	—	—	—	—	1,454	370	1,454	370
Other assets	—	—	—	—	658	169	658	169
	5,825	—	18	12	6,683	2,380	12,526	2,392
2017 - non-trading book								
Residential mortgages	—	—	—	—	2,806	1,815	2,806	1,815
Commercial mortgages	—	—	—	—	442	314	442	314
Credit card receivables	—	—	—	—	12	370	12	370
Leasing	—	—	—	—	222	—	222	—
Loans to corporates or SMEs	4,199	—	—	—	88	7	4,287	7
Consumer loans	—	—	71	13	45	—	116	13
Auto receivables	—	—	—	—	1,095	1,258	1,095	1,258
Other assets	—	—	—	—	583	256	583	256
	4,199	—	71	13	5,293	4,020	9,563	4,033
2018 - trading book								
Residential mortgages	—	—	—	—	238	5	238	5
Commercial mortgages	—	—	—	—	18	—	18	—
Credit card receivables	—	—	—	—	9	—	9	—
Loans to corporates or SMEs	—	—	—	—	68	—	68	—
Consumer loans	—	—	—	—	4	—	4	—
Auto receivables	—	—	—	—	9	—	9	—
Re-securitisations	—	—	—	—	11	—	11	—
Other assets	—	—	—	—	184	3	184	3
	—	—	—	—	541	8	541	8
2017 - trading book								
Residential mortgages	—	—	—	—	216	7	216	7
Commercial mortgages	—	—	—	—	38	—	38	—
Loans to corporates or SMEs	3	—	—	—	141	—	144	—
Consumer loans	—	—	—	—	11	—	11	—
Auto receivables	—	—	—	—	6	—	6	—
Re-securitisations	7	—	—	—	28	97	35	97
Other assets	—	—	—	—	330	—	330	—
	10	—	—	—	770	104	780	104

Note:
(1) The synthetic securitisations which RBS has originated have been presented as on-balance sheet in SEC 4 to reflect that for accounting purposes RBS retains the balances on-balance sheet.

Securitisation

Securitisation exposures: retained and purchased

SEC 5: Exposures subject to market risk capital requirements

The following table shows trading book exposures subject to securitisation specific market risk capital regulations.

Underlying portfolio	Exposure amount Traditional £m	Minimum capital requirement Traditional £m
2018 - trading book		
Residential mortgages	243	14
Commercial mortgages	18	3
Credit card receivables	9	—
Loans to corporates or SMEs	68	12
Consumer loans	4	—
Auto receivables	9	—
Re-securitisations	11	6
Other assets	187	16
	549	51
2017 - trading book		
Residential mortgages	223	16
Commercial mortgages	38	4
Credit card receivables	—	—
Loans to corporates or SMEs	144	31
Consumer loans	11	2
Auto receivables	6	—
Re-securitisations	132	17
Other assets	330	12
	884	82

Securitisation

Securitisation outstanding amounts

SEC 6: Securitisation positions retained from origination and sponsorship - outstanding and past due

The following table shows outstanding and related past due exposures pertaining to RBS's retained positions where RBS was the originator or sponsor. Where the originated securitisation was through a joint venture or through similar arrangements, the entire asset pool information is also disclosed separately below.

	Total		Non-trading exposures					Trading exposures				Memorandum: Entire asset pool	
			Originator		Sponsor			Originator					
2018	Exposures £m	Of which past due £m	Traditional £m	Synthetic £m	Traditional £m	Total £m	Of which past due £m	Traditional £m	Synthetic £m	Total £m	Of which past due £m	Exposures £m	Of which past due £m
Residential mortgages	—	—	—	—	—	—	—	—	—	—	—	—	—
Commercial mortgages	1,685	—	—	1,685	—	1,685	—	—	—	—	—	1,685	—
Loans to corporates or SMEs	4,170	—	—	4,170	—	4,170	—	—	—	—	—	4,170	—
Other assets	—	—	—	—	—	—	—	—	—	—	—	—	—
	5,855	—	—	5,855	—	5,855	—	—	—	—	—	5,855	—
2017													
Residential mortgages	7	—	—	—	7	7	—	—	—	—	—	—	—
Commercial mortgages	—	—	—	—	—	—	—	—	—	—	—	—	—
Loans to corporates or SMEs	4,241	—	—	4,229	12	4,241	—	—	—	—	—	4,229	—
Other assets	5	—	—	—	5	5	—	—	—	—	—	—	—
	4,253	—	—	4,229	24	4,253	—	—	—	—	—	4,229	—

Notes:
(1) For securitisations where RBS acted as investor, as disclosed in Table SEC 4, information on underlying assets is not readily available and therefore excluded in the table above.
(2) Outstanding and related past due exposures are based on pool amounts – which are sourced from investor reports. RBS does not hold this information in its internal systems.
(3) None of the retained positions in 2018 relating to originated securitisations were part of a joint venture. Therefore, the outstanding amount for the entire asset pool is the same as the RBS share.

Key point

- Refer to the comments under SEC 1. Commercial mortgages exposure increased due to securitisation activity undertaken to increase lending capacity.

Securitisation minimum capital requirement

SEC 7: Securitisation positions in the trading book

The following table shows the capital requirement for trading book securitisation positions by rating.

	Ratings							
2018	AAA £m	AA £m	A £m	BBB £m	Non-investment grade £m	Unrated £m	Total (1) £m	Non-modelled PRR (2) %
Trading book securitisation MCR	2	1	1	3	27	17	51	0.3
2017								
Trading book securitisation MCR	2	1	2	10	44	23	82	0.3

Notes:
(1) Includes both long and short positions.
(2) Percentage of total non-modelled position risk requirement (PRR).

Appendix 1 - CRR roadmap

The following table provides a reference signposting for part 8 of the Capital Requirements Regulation (CRR) covering Pillar 3 disclosures.

CRR ref	High-level summary	Compliance reference
Scope of disclosure requirements		
431 (1)	Requirement to publish Pillar 3 disclosures.	RBS publishes Pillar 3 disclosures as required.
431 (2)	Firms with permission to use specific operational risk methodologies must disclose operational risk information.	ARA: Capital and risk management - Operational risk section.
431 (3)	Institution must have a policy covering frequency of disclosures. Their verification, comprehensiveness and appropriateness.	RBS has a Pillar 3 policy.
431 (4)	Explanation of ratings decision upon request.	An explanation of rating decisions is provided within the ARA: Capital and risk management. If requested, RBS provides an explanation in writing on rating decisions to SMEs and other corporate applicants.
CRR 432: Non-material, proprietary or confidential information		
432 (1)	Institutions may omit information that is not material if certain conditions are respected.	RBS complies with all relevant disclosure requirements.
432 (2)	Institutions may omit information that is proprietary or confidential if certain conditions are respected.	RBS does not omit any information on the grounds that it may be proprietary or confidential.
432 (3)	Where 432 (1) and (2) apply this must be stated in the disclosures, and more general information must be disclosed.	N/A
432 (4)	Use of 432 (1) or (2) is without prejudice to scope of liability for failure to disclose material information.	N/A
CRR 433: Frequency of disclosure		
433	Disclosures must be published once a year at a minimum, and more frequently if necessary.	Required disclosures are published annually at a minimum, with quarterly disclosures for key elements and metrics including Own Funds, RWA, Capital Requirements and Leverage.
CRR 434: Means of disclosures		
434 (1)	To include all disclosures in one appropriate medium, or provide clear cross-references.	Majority of the disclosure requirements are covered by the Pillar 3 Report. Other disclosures including certain qualitative requirements are covered within the ARA. Signposting is used to direct users to relevant pages or sections.
434 (2)	Disclosures made under other requirements (e.g. accounting) can be used to satisfy Pillar 3 if appropriate.	This reference guide sets out the cross-references.
CRR 435: Risk management objectives and policies		
435 (1)	Disclose information on:	
435 (1) (a)	The strategies and processes to manage those risks.	ARA: Corporate governance – Report of the Board Risk Committee. Additional information on risk strategies and management processes found throughout this document and specifically ARA: Capital and risk management section.
435 (1) (b)	Structure and organisation of risk management function.	ARA: Capital and risk management – Risk management framework. Additional information on risk management structure processes found throughout this document, and specifically ARA: Capital and risk management section.

Appendix 1 - CRR roadmap

CRR ref	High-level summary	Compliance reference
CRR 435: Risk management objectives and policies		
435 (1) (c)	Risk reporting and measurement systems.	ARA: Capital and risk management - Institutional risk management framework. Additional information on the scope and nature of risk reporting and measurement systems found throughout this document, and specifically ARA: Capital and risk management section.
435 (1) (d)	Hedging and mitigating risk - policies and processes.	ARA: Capital and risk management - Risk management framework; Credit risk; Non-traded market risk; Pension risk, pages; Operational risk; and, Accounting policies, Derivatives and Hedging.
435 (1) (e)	adequacy of risk management arrangements.	ARA: Corporate Governance – Report of the Group Audit Committee and Board Risk Committee.
435 (1) (f)	concise risk statement approved by the Board	ARA: Strategic Report - Risk overview.
435 (2)	Information on governance arrangements, including information on Board composition and recruitment, and risk committees.	Refer to sub-articles below.
435 (2) (a)	Number of directorships held by directors.	ARA: Corporate governance – Our Board.
435 (2) (b)	Recruitment policy of the Board, their experience and expertise.	ARA: Corporate governance – Report of the Group Nominations and Governance Committee rbs.com/about/board-and-governance.html
435 (2) (c)	Policy on diversity of Board membership and results against targets.	ARA: Corporate governance – Report of the Group Nominations and Governance Committee.
435 (2) (d)	Disclosure of whether a dedicated risk committee is in place, and number of meeting in the year.	ARA: Corporate governance – Report of the Board Risk Committee.
435 (2) (e)	Description of information flow risk to Board.	ARA: Report on the Board Risk Committee & Capital and risk management.
CRR 436: Scope of application		
436	See sub paragraphs below.	
436 (a)	Name of institution.	The Royal Bank of Scotland Group plc and its consolidated subsidiaries.
436 (b)	Difference in basis of consolidation for accounting and prudential purposes, naming entities that are:	EU LI1, CAP 2 & Consolidation. ARA: Note 6 Investments in Group undertakings and Note 10 Related undertakings.
436 (b) (i)	Fully consolidated;	
436 (b) (ii)	Proportionally consolidated;	
436 (b) (iii)	Deducted from own funds;	
436 (b) (iv)	Neither consolidated nor deducted.	
436 (c)	Impediments to transfer of funds between parent and subsidiaries.	There are no such impediments. Refer to Pillar 3 – Presentation of information.
436 (d)	Capital shortfalls in any subsidiaries outside of scope of consolidation.	Entities outside the scope of consolidation are appropriately capitalised.
436 (e)	Making use of articles on derogations from a) prudential requirements or b) liquidity requirements for individual subsidiaries/entities.	N/A

Appendix 1 - CRR roadmap

CRR ref	High-level summary	Compliance reference
CRR 437: Own funds		
437 (1)	Requirement to disclosure following information regarding own funds:	
437 (1) (a)	Reconciliation of regulatory values for Common Equity Tier 1 items, Additional Tier 1 items, Tier 2 items and filters and deductions to statutory balance sheet;	EU LI1 & CAP 2.
437 (1) (b)	Description of the main features of Capital Instruments issued by institution;	Pillar 3 Capital Instruments Common Disclosure template available on RBS Investor Relations website. www.investors.rbs.com
437 (1) (c)	Full terms and conditions of Capital Instruments issued by institution;	Pillar 3 Capital Instruments Common Disclosure template available on RBS Investor Relations website. www.investors.rbs.com
437 (1) (d)	Disclosure of the nature and amounts of the following:	CAP 2.
437 (1) (d) (i)	each prudential filter applied;	
437 (1) (d) (ii)	each capital deduction applied;	
437 (1) (d) (iii)	items not deducted from capital;	
437 (1) (e)	a description of all restrictions applied to the calculation of own funds in accordance with this Regulation and the instruments, prudential filters and deductions to which those restrictions apply;	CAP 2.
437 (1) (f)	where institutions disclose capital ratios calculated using elements of own funds determined on a different basis.	N/A
437 (2)	EBA shall develop draft implementing technical standards to specify uniform templates for disclosure.	EBA published technical standards introducing Common Disclosure Templates for Own Funds; available on CAP 2.
CRR 438: Capital requirements		
438	See sub paragraphs below.	
438 (a)	Summary of institution's approach to assessing adequacy of capital levels.	Pillar 3 - Presentation of Information & ARA: Capital and risk management - Risk management framework.
438 (b)	Result of ICAAP on demand from authorities.	N/A
438 (c)	Capital requirement amounts for credit risk for each Standardised approach exposure class.	CR2.
438 (d)	Capital requirements amounts for credit risk for each Internal Ratings Based Approach exposure class.	CR2, EU OV1 & CR10-B & EU CR8.
438 (d) (i)		
438 (d) (ii)		
438 (d) (iii)		
438 (d) (iv)		
438 (e)	Capital requirements amounts for market risk or settlement risk, or large exposures where they exceed limits.	EU OV1 & EU MR1.
438 (f)	Capital requirement amounts for operational risk, separately for the basic indicator approach, the Standardised approach, and the advanced measurement approaches as applicable.	RBS uses Standardised approach; EU OV1 includes operational risk capital requirements.
438 (endnote)	Requirement to disclose specialised lending exposures and equity exposures in the banking book falling under the simple risk weight approach.	EU CR10.

Appendix 1 - CRR roadmap

CRR ref	High-level summary	Compliance reference
CRR 439: Exposure to counterparty credit risk		
439	See sub paragraphs below.	
439 (a)	Description of process to assign internal capital and credit limits to CCR exposures.	CCR - EAD calculation methods for counterparty credit risk & counterparty credit limit setting.
439 (b)	Discussion of process to secure collateral and establishing reserves.	CCR – Counterparty credit risk management & Credit Valuation Adjustments & ARA: Notes to Consolidated Accounts 12 Financial Instruments – valuation.
439 (c)	Discussion of management of wrong-way exposures	CCR – Wrong-way risks.
439 (d)	Disclosure of collateral to be provided (outflows) in the event of a ratings downgrade.	EAD calculation methods for counterparty credit risk & Counterparty credit limit setting.
439 (e)	Derivation of net derivative credit exposure.	EU CCR5_A
439 (f)	Exposure values for mark-to-market, original exposure, standardised and internal model methods.	EU CCR1, EU CCR2 & EU CCR8.
439 (g)	Notional value of credit derivative hedges and current credit exposure by type of exposure.	EU_CCR6.
439 (h)	Notional amounts of credit derivative transactions for own credit, intermediation, bought and sold, by product type.	EU_CCR6.
439 (i)	Estimate of alpha, if applicable.	EAD calculation methods for counterparty credit risk.
CRR 440: Capital buffers		
440 (1)	See sub paragraphs below.	N/A
440 (1) (a)	Geographical distribution of relevant credit exposures.	CAP 5a.
440 (1) (b)	Amount of the institution specific countercyclical capital buffer.	CAP 5b.
440 (2)	EBA will issue technical implementation standards related to 440 (1).	RBS follows the current standards.
CRR 441: Indicators of global systemic importance		
441 (1)	Disclosure of the indicators of global systemic importance.	GSIB indicators as of and for the year ended 31 December 2018 will be published in April 2019 on www.investors.rbs.com.
441 (2)	EBA will issue technical implementation standards related to 441 (1).	RBS follows the current standards.
CRR 442: Credit risk adjustments		
442	See sub paragraphs below.	
442 (a)	Disclosure of bank's definitions of past due and impaired.	ARA: Capital and Risk Management- Key IFRS 9 terms and differences to current accounting framework and regulatory framework.
442 (b)	Approaches for calculating credit risk adjustments.	ARA: Accounting policies 14: Impairments
442 (c)	Disclosure of EAD by exposure class.	EU CRB_B.
442 (d)	Disclosures of EAD by geography and exposure class.	EU CRB_C.
442 (e)	Disclosures of EAD by industry and exposure class.	EU CRB_D.
442 (f)	Disclosures of EAD by residual maturity and exposure class.	EU CRB_E.
442 (g) 442 (g) (i) 442 (g) (ii) 442 (g) (iii)	Breakdown of impaired, past due, specific and general credit adjustments, and impairment charges for the period, by exposure class or counterparty type.	EU CR1_A, EU CR1_B, EU CR1_C, EU CR1_D, EU CR1_E & EU CR2_A. ARA: Capital and risk management - Segmental loans and impairment.
442 (h)	Impaired, past due exposures, by geographical area, and amounts of specific and general impairment for each geography.	EU CR1_C. ARA: Capital and risk management - Segmental loans and impairment.
442 (i) 442 (i) (i- iv)	Reconciliation of changes in specific and general credit risk adjustments.	EU CR2-A.
442 Endnote	Specific credit risk adjustments recorded to income statement are disclosed separately.	EU CR2-A

Appendix 1 - CRR roadmap

CRR ref	High-level summary	Compliance reference
CRR 443: Unencumbered assets		
443	Disclosures on unencumbered assets.	EBA Asset Encumbrance.
CRR 444: Use of ECAIs		
444	See sub paragraphs below.	
444 (a)	Names of the ECAIs used in the calculation of Standardised approach RWAs, and reasons for any changes.	Credit risk: Standardised approach.
444 (b)	Exposure classes associated with each ECAI.	Credit risk: Standardised approach.
444 (c)	Process for translating external ratings into credit quality steps.	Credit risk: Standardised approach.
444 (d)	Mapping of external rating to credit quality steps.	EU_CR5a.
444 (e)	Exposure value pre and post-credit risk mitigation, by CQS.	Majority of exposure where ECAI ratings are used to calculate the risk-weight are within central governments and banks exposure class. Refer to EU CR5 and EU_CCR3 for risk-weights.
CRR 445: Exposure to market risk		
445	Disclosure of position risk, large exposures exceeding limits, FX, settlement and commodities risk.	EU_MR1 for Specific Interest Rate Risk of Securitisation Positions; and, Market Risk components including position risk, foreign exchange risk and IMM. Settlement Risk and Large Exposures are included within EU_OV1.
CRR 446: Operational risk		
446	Scope of approaches used to calculate operational risk.	RBS uses the standardised approach, refer to EU OV1 and ARA: Capital and risk management - Operational risk.
CRR 447: Exposures in equities not included in the trading book		
447		
447 (a)	Differentiation between exposures based on their objectives, and an overview of the accounting techniques and valuation methodologies used.	ARA: Capital and risk management - Credit risk - Non-traded market risk. For further detail on accounting refer to ARA: Accounting policies 13 - Financial Instruments.
447 (b)	Comparison between the balance sheet value, fair value and market price where materially different.	ARA: Capital and risk management - Credit risk - Non-traded market risk - Equity Risk table.
447 (c)	The types, nature and amounts of exchange-traded exposures, private equity exposures in sufficiently diversified portfolios, and other exposures.	ARA: Capital and risk management - Credit risk - Non-traded market risk - Equity Risk table.
447 (d)	The cumulative realised gains or losses arising from sales and liquidations in the period.	
447 (e)	The total unrealised gains or losses, the total latent revaluation gains or losses, and any of these amounts included in the original or additional own funds.	
CRR 448: Exposure to interest rate risk on positions not included in the trading book		
448		
448 (a)	For Non-Traded Interest Rate Risk, the nature and frequency of measurement.	ARA: Capital and risk management - Non-Traded Market Risk - Interest rate risk.
448 (b)	The variation in earnings, economic value or other relevant measure used by the management for upward and downward rate shocks according to management's method for measuring the interest rate risk, broken down by currency.	ARA: Capital and risk management - Non-Traded Market Risk - Interest rate risk.

Appendix 1 - CRR roadmap

CRR ref	High-level summary	Compliance reference
CRR 449: Exposure to securitisation positions		
449	Exposure to securitisations positions.	RBS has no correlation trading portfolio.
449 (a)	Objectives in relation to securitisation activity.	Securitisation – Objectives and roles.
449 (b)	Nature of other risks in securitised assets, including liquidity.	Securitisation – Risk management.
449 (c)	Risks in re-securitisation activity stemming from seniority of underlying securitisations and ultimate underlying assets.	Securitisation – Risk management.
449 (d)	The roles played by institutions in the securitisation process.	Securitisation – Objectives and roles.
449 (e)	Indication of the extent of involvement in these roles.	Securitisation – Objectives and roles. SEC 4.
449 (f)	Processes in place to monitor changes in credit and market risks of securitisation exposures, and how the processes differ for re-securitisation exposures.	Securitisation – Risk management.
449 (g)	Description of the institution's policies with respect to hedging and unfunded protection, and identification of material hedge counterparties.	Securitisation – Risk management.
449 (h)	Approaches to calculation of RWA for securitisations mapped to types of exposures.	Securitisation – Calculation of risk-weighted exposures.
449 (i)	Types of SSPEs used to securitise third-party exposures, and list of SSPEs.	Securitisation – SSPEs used by RBS SEC 4 & SEC 6.
449 (j) 449 (j) (i) 449 (j) (ii) 449 (j) (iii) 449 (j) (iv) 449 (j) (v)	Summary of accounting policies for securitisations.	Securitisation – Summary of accounting policies.
449 (k)	Names of ECAIs used for securitisations.	Securitisation – Calculation of risk-weighted exposures.
449 (l)	Full description of Internal Assessment Approach.	Securitisation – Summary of Internal Assessment Approach.
449 (m)	Explanation of changes in quantitative disclosures.	SEC 1 & SEC 6.
449 (n)	Banking and trading book securitisation exposures:	
449 (n) (i)	Amount of outstanding exposures securitised;	SEC 6.
449 (n) (ii)	On balance sheet securitisation retained or purchased, and off-balance sheet exposures;	SEC 4.
449 (n) (iii)	Amount of assets awaiting securitisation;	Securitisation - Assets awaiting securitisation.
449 (n) (iv)	Early amortisation treatment; aggregate drawn exposures, capital requirements;	RBS has no securitisation positions treated subject to early amortisation treatment.
449 (n) (v)	Deducted or 1,250%-weighted securitisation positions;	SEC 1, SEC 2 & SEC 3.
449 (n) (vi)	Amount of exposures securitised and recognised gains or losses on sales.	SEC 1.
449 (o)	Banking and trading book securitisations by risk band:	
449 (o) (i)	Retained and purchased exposure and associated capital requirements, broken down by risk-weight bands;	SEC 1 & SEC 2.
449 (o) (ii)	Retained and purchased re-securitisation exposures before and after hedging and insurance; exposure to financial guarantors broken down by guarantor credit worthiness.	SEC 1.
449 (p)	Impaired assets and recognised losses related to banking book securitisations, by exposure type.	SEC 6.
449 (q)	Exposure and capital requirements for trading book securitisations, separately into traditional.	SEC 5.
449 (r)	Whether the institution has provided non-contractual financial support to securitisation vehicles.	Securitisation – Implicit support.

Appendix 1 - CRR roadmap

CRR ref	High-level summary	Compliance reference
RR 450: Remuneration policy		
450	Remuneration	ARA: Governance - Directors' remuneration report and Other remuneration disclosures. Further detail on compliance with CRD IV and remuneration from rbs.com/rbs/about/board-and-governance.html
CRR 451: Leverage		
451 (1)	See sub paragraphs below.	
451 (1) (a)	Leverage ratio, and breakdown of total exposure measure,	CAP 3.
451 (1) (b)	including reconciliation to financial statements, and	CAP 3.
451 (1) (c)	derecognised fiduciary items.	N/A
451 (1) (d)	Description of the risk management approach to mitigate excessive leverage.	ARA: Capital and risk management – Capital Management.
451 (1) (e)	Factors that impacted the leverage ratio during the year.	Capital, liquidity and funding – Key points.
451 (2)	EBA to publish implementation standards for points above.	RBS follows the current standards.
451 (2)		
451 (2)		
CRR 452: Use of the IRB Approach to credit risk		
452	See sub paragraphs below.	
452 (a)	Permission for use of the IRB approach from authority.	EU CRE_1: IRB Models.
452 (b)	Explanation of:	
452 (b) (i)	Internal rating scales, mapped to external ratings;	EU CR9_A_2 & ARA: Capital and risk management - Credit Risk. Asset quality.
452 (b) (ii)	Use of internal ratings for purposes other than capital requirement calculations;	EU CRE: Qualitative disclosures relating to IRB models.
452 (b) (iii)	Management and recognition of credit risk mitigation;	Credit risk – Risk profile by credit risk mitigation technique.
452 (b) (iv)	Controls around ratings systems.	Credit risk – IRB modelling governance & Independent model validation.
452 (c) 452 (c) (i) 452 (c) (ii) 452 (c) (iii) 452 (c) (iv)	Ratings processes for each IRB asset class.	EU CRE: Qualitative disclosures relating to IRB models (credit and counterparty risk), including EU CRE_2a & EU CRE_2b.
452 (d)	Exposure values by IRB exposure class, separately for Advanced and Foundation IRB.	CR2 and numerous other tables throughout the report.
452 (e)	Disclosure by exposure classes, separately by obligor grade:	EU CR6_b & EU_CCR4.
452 (e) (i)	Total exposure, separating drawn and undrawn exposure	EU CR6_b & EU_CCR4.
452 (e) (ii)	Exposure-weighted average risk weight	EU CR6_b & EU_CCR4.
452 (e) (iii)	Undrawn commitments and the exposure-weighted average Credit Conversion Factor (CCF)	EU CR6_b.
452 (f)	The requirements laid out in 452(e) for the Retail exposure class.	EU CR6_a.
452 (g)	Actual specific credit risk adjustments by exposure class.	EU_CR6_a & EU_CR6_b.
452 (h)	Commentary on drivers of losses in preceding period.	EU CR9, EU CR9_A, EU CR9_B. & EU CR9_C.
452 (i)	Predicted against actual losses for sufficient period, and historical analysis to help assess the performance of the rating system over a sufficient period.	EU_CR9_a; EU_CR9_a_1; EU_CR9_a_2; EU_CR9_b; EU_CR9_c.
452 (j) 452 (j) (i) 452 (j) (ii)	For all IRB exposure classes, where applicable, PD and LGD by each country where the bank operates.	EU_CR6_C.

Appendix 1 - CRR roadmap

CRR ref	High-level summary	Compliance reference
CRR 453: Use of credit risk mitigation techniques		
453	See sub paragraphs below.	
453 (a)	Use of on and off-balance sheet netting.	EU CRC: IRB and STD: Qualitative disclosures relating to credit risk mitigation. Wholesale IRB models - Exposure at default models. EU LI2.
453 (b)	How collateral valuation is managed.	EU CRC: IRB and STD: Qualitative disclosures relating to credit risk mitigation.
453 (c)	Description of types of collateral used by RBS.	EU CRC: IRB and STD: Qualitative disclosures relating to credit risk mitigation.
453 (d)	Guarantor and credit derivative counterparty, creditworthiness.	Recognition of credit risk mitigation in the calculation of RWAs.
453 (e)	Market or credit risk concentrations within risk mitigation exposures.	EU CRC: IRB and STD: Qualitative disclosures relating to credit risk mitigation.
453 (f)	Standardised or Foundation IRB approach, exposure value covered by eligible collateral.	EU_CR4.
453 (g)	Exposures covered by guarantees, credit derivatives or collateral.	EU_CR3.
CRR 454: Use of the Advanced Measurement Approaches to operational risk		
454	Description of the use of insurance or other risk transfer mechanisms to mitigate operational risk.	N/A
CRR 455: Use of Internal Market Risk Models		
455		
455(a)	See sub paragraphs below.	
455(a)(i)	Characteristics of the market risk models.	EU MRB_B: MR: Qualitative disclosure on use of internal model approach.
455 (a) (ii)	Methodology for all-price risk measure and incremental risk charge.	EU MRB_B: MR: Qualitative disclosure on use of internal model approach.
455 (a) (iii)	Descriptions of stress tests applied to the portfolios.	ARA: Capital and risk management - Stress testing in Market Risk.
455 (a) (iv)	Methodology for back-testing and validating the models.	EU MR4_A; ARA: Capital and risk management: Traded market risk.
455 (b)	Scope of permission for use of the models.	EU MRB_B: MR: Qualitative disclosure on use of internal model approach.
455 (c)	Policies and processes to determine trading book classification, and to comply with prudential valuation requirements.	EU MRB_A: MR: Qualitative information. PV1.
455 (d)	High/Low/Mean values over the year of VaR, SVaR, all-price risk measure and incremental risk charge.	
455 (d) (i)		EU_MR3.
455 (d) (ii)		EU_MR3.
455 (d) (iii)		EU_MR3.
455 (e)	The elements of the own fund calculation.	EU_MR2_A.
455 (f)	Weighted average liquidity horizons of portfolios covered by models.	EU MRB_B: MR: Qualitative disclosure on use of internal model approach.
455 (g)	Comparison of end-of-day VaR measures compared with one-day changes in portfolio's value.	EU_MR4.

Appendix 2 - Key terms and glossary

Acronyms

ABCP	Asset-backed commercial paper
AIRB	Advanced internal ratings based
AT1	Additional Tier 1
ARA	Annual Report and Accounts
AQ	Asset quality
CCF	Credit conversion factor
CCP	Central counterparty
CCR	Counterparty credit risk
CET1	Common Equity Tier 1
CQS	Credit quality steps
CRD	Capital Requirements Directive
CRM	Credit risk mitigation
CRR	Capital Requirements Regulation
CVA	Credit valuation adjustment
EAD	Exposure at default
EBA	European Banking Authority
EC	European Commission
ECAI	External credit assessment institution
EEPE	Effective expected positive exposure
EL	Expected loss
EPE	Expected positive exposure
EU	European Union
EURIBOR	Euro Interbank Offered Rate
FI	Financial institution
FVA	Funding valuation adjustment
GSIB	Global Systemically Important Bank
IAA	Internal assessment approach
ICAAP	Internal capital adequacy assessment process
IFRS	International Financial Reporting Standard
IMA	Internal model approach
IMM	Internal model method
IRB	Internal ratings based
IRC	Incremental risk charge
LCR	Liquidity coverage ratio
LGD	Loss given default
LIBOR	London Interbank Offered Rate
LTV	Loan-to-value
MCR	Minimum capital requirements
MTM	Mark-to-market
NSFR	Net stable funding ratio
NTIRR	Non-traded interest rate risk
NWB Plc	National Westminster Bank Plc
NWM Plc	NatWest Markets Plc
NWMSI	NatWest Markets Securities Inc
OTC	Over-the-counter
PBB	Personal & Business Banking
PD	Probability of default
PFE	Potential future exposure
PRA	Prudential Regulation Authority
QCCP	Qualifying central counterparty
RBA	Ratings based approach
RBS	The Royal Bank of Scotland Group plc and its subsidiaries
RBSG	The Royal Bank of Scotland Group plc
RBS plc	The Royal Bank of Scotland plc
REIL	Risk elements in lending
RNIV	Risks not in VaR
RoI	Republic of Ireland
RoW	Rest of the World
RWAs	Risk-weighted assets
S&P	Standard & Poor's
SCRA	Specific credit risk adjustments
SFTs	Securities financing transactions
SME	Small and medium-sized enterprise
SSPE	Securitisation special purpose entity
STD	Standardised
SVaR	Stressed value-at-risk
T2	Tier 2
TAGS	Thames Asset Global Securitization
TMT	Telecommunications, media, technology
UBI DAC	Ulster Bank Ireland Designated Activity Company
UK	United Kingdom
US	United States of America
VaR	Value-at-risk

Appendix 2 - Key terms and glossary

Key terms

Also refer to rbs.com

Additional Tier 1 Capital (AT1) - a level of regulatory capital as defined within EU under CRD IV, typically non-cumulative perpetual capital instruments and related share premium. AT1 instruments include a write-down or conversion feature, usually based on a trigger event if Common Equity Tier 1 falls below a certain level.

Alpha - in the context of regulatory capital for counterparty credit risk, under the internal model method, alpha is a multiplier applied to the effective expected positive exposure (EPE) to determine the exposure at default. Alpha may be set using an own estimate with a floor of 1.2. It accounts for the extra capital needed for derivatives, compared to loans with the same EPE, to reflect the additional risks.

Asset-backed commercial paper (ABCP) - a form of asset-backed security generally issued by a commercial paper conduit.

Asset quality (AQ) band - probability of default banding for all counterparties on a scale of 1 to 10.

Back-testing - statistical techniques that assess the performance of a model, and how that model would have performed had it been applied in the past.

Basel III - in December 2010, the Basel Committee on Banking Supervision issued final rules: 'Basel III: A global regulatory framework for more resilient banks and banking systems' and 'Basel III: International framework for liquidity risk measurement, standards and monitoring'.

Central counterparty (CCP) default fund - a mechanism that allows the sharing (mutualisation) of losses among the central counterparty's clearing members. It is used where the losses incurred by the CCP following the default of a clearing member are greater than the margins and default fund contributions provided by that clearing member and any other defence the CCP may use before recurring to the default fund contributions of the remaining clearing members. In view of this, the risk of loss associated with exposures from default fund contributions is higher than that associated with trade exposures. Therefore, this type of exposures should be subject to a higher own funds requirement.

Commercial paper conduit - a structured entity that issues commercial paper and uses the proceeds to purchase or fund a pool of assets. The commercial paper is secured on the assets and is redeemed either by further commercial paper issuance, repayment of assets or liquidity drawings.

Common Equity Tier 1 (CET1) capital - the highest quality form of regulatory capital under Basel III comprising common shares issued and related share premium, retained earnings and other reserves excluding the cash flow hedging reserve, less specified regulatory adjustments.

Counterparty credit risk (CCR) - the risk that a counterparty defaults before the maturity of a derivative or sale and repurchase contract. In contrast to credit risk, the exposure to counterparty credit risk varies by reference to a market factor (e.g. interest rate, exchange rate, asset price).

CRD IV - the European Union has implemented the Basel III capital proposals through the Capital Requirements Regulation and the Capital Requirements Directive (CRD), collectively known as CRD IV. CRD IV was implemented on 1 January 2014. The European Banking Authority's technical standards are still to be finalised through adoption by the European Commission and implemented within the UK.

Credit conversion factor (CCF) - the CCF is an estimate of the proportion of undrawn commitments that will be drawn at the point of default. It is used in determining EAD and reflects the assumption that drawn balance at default might be greater than the current balance.

Credit default swap - a contract where the protection seller receives premium or interest-related payments in return for contracting to make payments to the protection buyer upon a defined credit event in relation to a reference financial asset or portfolio of financial assets. Credit events usually include bankruptcy, payment default and rating downgrades.

Credit grade - a rating that represents an assessment of the creditworthiness of a customer. It is a point on a scale representing the probability of default of a customer.

Credit quality step (CQS) - a grade on the PRA credit quality assessment scale based on the credit ratings of external credit assessment institutions. It is used to assign risk weights under the standardised approach to credit risk.

Credit risk - the risk of financial loss due to the failure of a customer, or counterparty, to meet its obligation to settle outstanding amounts.

Credit risk mitigation (CRM) - reducing the credit risk of an exposure by application of techniques such as netting, collateral, guarantees and credit derivatives.

Credit spread - the yield spread between securities with the same currency and maturity structure but with different associated credit risks, with the yield spread rising as the credit rating worsens. It is the premium over the benchmark or risk-free rate required by the market to take on a lower credit quality.

Credit valuation adjustment (CVA) capital charge - the purpose of this charge is to improve the resilience of banks to potential mark-to-market losses associated with deterioration in the creditworthiness of counterparties in non-cleared derivative trades. Under CRR rules, the charge is calculated using either the advanced approach or the standardised approach.

Defaulted assets (AQ10) - assets with a PD of 100%.

Appendix 2 - Key terms and glossary

Key terms continued

Effective expected positive exposure (EEPE) - a measure used to determine EAD for OTC derivatives under the internal model method. It is calculated as the weighted average of non-decreasing expected positive exposures. The weight of each exposure is calculated as a percentage of total expected exposure over the relevant period. When calculating the minimum capital requirement, the average is taken over the first year.

Expected loss (EL, a regulatory measure) - is the product of the regulatory credit exposure, the probability of default over the next 12 months, averaged through an economic cycle, and the downturn loss given default. It is applied to exposures whether performance is recognised in income or reserves. Credit exposures include all financial assets and customer facilities and are subject to regulatory overlays.

Exposure - a claim, contingent claim or position which carries a risk of financial loss.

Exposure at default (EAD) - an estimate of the extent to which RBS will be exposed under a specific facility, in the event of the default of a counterparty.

EAD pre CRM/EAD post CRM - Credit risk mitigation (CRM) is defined as the use of collateral or guarantees to reduce potential loss if a customer fails to settle all or part of its obligations to RBS. The application of CRM depends on the approach (STD or IRB) governing capital calculation related to a credit exposure. (Refer to Table EU CR3_A for details of how different risk mitigants are incorporated into IRB risk parameters.)

EAD figures may be either pre or post CRM, and are labelled accordingly.

Credit risk EAD pre CRM:
- STD approach - EAD before legally enforceable netting, collateral and guarantees.
- IRB approach - EAD before legally enforceable netting only.

- Credit risk EAD post CRM:
- STD approach - EAD after legally enforceable netting, collateral and guarantees.
- IRB approach - EAD after legally enforceable netting only.

Counterparty credit risk EAD post CRM for derivatives and securities financing transactions, under both the STD and IRB approaches, is EAD after legally enforceable netting and collateral.

Exposure class - exposures are assigned to classes defined under CRR, namely article 147 for the advanced IRB approach and article 112 for the standardised approach. This classification is required by the regulatory framework when calculating the capital requirements of banks.

Exposure-weighted average LGD (for each AQ band) - calculated by multiplying the EAD of each position by the associated LGD, giving an LGD-weighted EAD value for each position. LGD-weighted EADs for each position are added together for the whole AQ band, and the final sum is divided by the total EAD for the AQ band to arrive at an exposure-weighted average LGD for each AQ band.

Exposure-weighted average PD (for each AQ band) - calculated by multiplying the EAD of each position by the associated PD, giving a PD-weighted EAD for each position. PD-weighted EADs for each position are added together for the whole AQ band, and the final sum is divided by the total PD for the AQ band to arrive at an exposure-weighted average PD for each AQ band.

Fair value - the amount for which an asset could be exchanged or a liability settled, between knowledgeable and willing parties in an arm's length transaction.

Geographical region - the numbers are reported by country of operation of the obligor, except exposures to governments and individuals which are shown by country of residence. The country of operation is the country where the main operating assets of a legal entity are held, or where its main cash flows are generated, taking account of the entity's dependency on subsidiaries' activities. Rest of the World (RoW) includes exposures to supranationals and ocean-going vessels.

Guarantees - an agreement by a third party to cover the potential loss to RBS should a specified counterparty default on its commitments.

Haircut - a downward adjustment to collateral value to reflect its nature and any currency or maturity mismatches between the collateral and the exposure it secures.

Income-producing real estate - comprises real estate exposures that meet the following CRR criteria for specialised lending exposures: (i) the exposure is to an entity that was created specifically to finance and/or operate physical assets; (ii) the contractual arrangements give the lender a substantial degree of control over the assets and the income that they generate; and (iii) 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. It therefore constitutes a sub-set of RBS's overall exposure to commercial real estate.

Incremental risk charge (IRC) - the IRC model quantifies the impact of rating migration and default events on the market value of instruments with embedded credit risk (in particular, bonds and credit default swaps) that are held in the trading book. It further captures basis risk between different instruments, maturities and reference entities.

Interest rate risk - the adverse impact on the value or interest income of a financial asset arising from changes in interest rates.

Internal Capital Adequacy Assessment Process (ICAAP) – RBS's own assessment, as part of CRR requirements, of its risks, how it intends to mitigate those risks and how much current and future capital is necessary having considered other mitigating factors.

Internal model method (IMM) - in the context of counterparty credit risk, the IMM is the most risk-sensitive and sophisticated approach to calculating EAD out of the three methods available under CRR. Under the IMM firms may use their internal model which should be aligned to the firm's internal risk management practices. EAD is calculated as the product of alpha and EPE.

Appendix 2 - Key terms and glossary

Key terms continued

Internal ratings based approach (IRB) - a method of estimating the amount of credit risk taken by a bank. Under IRB a bank may use internal estimates to generate risk components for use in the calculation of its credit risk regulatory capital requirements. There are two approaches: foundation and advanced (including retail).

Latent loss provisions - loan impairment provisions held against impairments in the performing loan portfolio that have been incurred as a result of events occurring before the balance sheet date but which have not been identified as impaired at the balance sheet date.

Liquidity coverage ratio (LCR) - the ratio of the stock of high quality liquid assets to expected net cash outflows over the following 30 days. High quality liquid assets should be unencumbered, liquid in markets during a time of stress and, ideally, central bank eligible.

Loss given default (LGD) - an estimate of the amount that will not be recovered by RBS in the event of default, plus the cost of debt collection activities and the delay in cash recovery.

Margin period of risk - the time period from the last exchange of collateral covering a netting set of transactions with a defaulting counterparty until that counterparty is closed out and the resulting market risk is re-hedged.

Mark-to-market (mtm) - the adjustment in the value of an asset or liability to reflect any change in market prices.

Mark-to-market method - in the context of counterparty credit risk, the mtm method is the simplest of three methods used to determine exposure values. The exposure value is calculated as the mtm value plus the potential future exposure (PFE) value, where the PFE is a percentage of the notional value of the contract. The percentage to be applied varies by product and maturity.

Minimum capital requirements (MCR) - the minimum amount of regulatory capital that a financial institution must hold to meet the Pillar 1 requirements for credit, market and operational risk.

Netting - the process by which the value of assets taken from a given counterparty is offset by the value of assets given to the same counterparty, thereby reducing the exposure of one party to the other to the difference between the two.

Net stable funding ratio (NSFR) - the ratio of available stable funding to required stable funding over a one year time horizon, assuming a stressed scenario. Available stable funding includes items such as equity capital, preferred stock with a maturity of over one year and liabilities with an assessed maturity of over one year.

Non-traded market risk - non-traded market risk is the risk to the value of assets or liabilities outside the trading book, or the risk to income, that arises from changes in market prices such as interest rates, foreign exchange rates and equity prices, or from changes in managed rates.

Non-trading book - positions, exposures, assets and liabilities that are not in the trading book. It is also referred to as “banking book”.

Operational risk - the risk of loss resulting from inadequate or failed processes, people, systems or from external events.

Over-the-counter derivatives - derivatives with tailored terms and conditions negotiated bilaterally, in contrast to exchange traded derivatives which have standardised terms and conditions.

Pillar 1 - the part of CRD IV that sets out the process by which regulatory capital requirements should be calculated for credit, market and operational risk.

Pillar 2 - Pillar 2 is intended to ensure that firms have adequate capital to support all the relevant risks in their business and is divided into capital held against risks not captured or not fully captured by the Pillar 1 regulations (Pillar 2A) and risks to which a firm may become exposed over a forward-looking planning horizon (Pillar 2B). Capital held under Pillar 2A, in addition to the Pillar 1 requirements, is the minimum level of regulatory capital a bank should maintain at all times to cover adequately the risks to which it is or might be exposed, and to comply with the overall financial adequacy rules. Pillar 2B is a capital buffer which helps to ensure that a bank can continue to meet minimum requirements during a stressed period, and is determined by the PRA evaluating the risks to which the firm may become exposed (e.g. due to changes to the economic environment) during the supervisory review and evaluation process. All firms will be subject to a PRA buffer assessment and the PRA will set a PRA buffer only if it judges that the CRD IV buffers are inadequate for a particular firm given its vulnerability in a stress scenario, or where the PRA has identified risk management and governance failings, which the CRD IV buffers are not intended to address.

Pillar 3 - the part of CRD IV that sets out the information banks must disclose about their risks, the amount of capital required to absorb them, and their approach to risk management. The aim is to strengthen market discipline.

Point-in-time - an assessment of PD or a rating system based on a view of a counterparty's current rather than future financial situation given economic conditions. This differs from a through-the-cycle approach, which considers performance over the duration of an economic cycle.

Position risk requirement - a capital requirement applied to a position treated under Part Three, Title 1, Chapter 3 (Market risk) as part of the calculation of the market risk capital requirement.

Potential future exposure - is a measure of counterparty risk/credit risk. It is calculated by evaluating existing trades done against the possible market prices in future during the lifetime of the transactions.

Probability of default (PD) - the likelihood that a customer will fail to make full and timely repayment of credit obligations over a one year time horizon.

Prudential Regulation Authority (PRA) - the statutory body responsible, from 1 April 2013, for the prudential supervision of banks, building societies, insurers and a small number of significant investment firms in the UK. The PRA is a subsidiary of the Bank of England.

Appendix 2 - Key terms and glossary

Key terms continued

Repo - refer to sale and repurchase agreements.

Re-securitisations - securitisations in which the underlying pools of assets are themselves bonds issued by securitisation SSPEs.

Residential mortgage-backed securities - asset-backed securities for which the underlying asset portfolios are residential mortgages.

Residual maturity - the remaining time in years that a borrower is permitted to take to fully discharge their contractual obligation (principal, interest and fees) under the terms of a loan agreement. Exposures are classified using maturity bands in line with contractual maturity.

Reverse repurchase agreement (reverse repo) - refer to sale and repurchase agreements.

Risk-weighted assets (RWAs) - assets adjusted for their associated risks using weightings established in accordance with the Basel Capital Accord as implemented by the PRA. Certain assets are not weighted but deducted from capital.

Risks not in VaR (RNIVs) - the RNIV framework is used to identify and quantify market risks that are inadequately captured by the internal VaR and SVaR models.

RWA density - RWAs as a percentage of EAD post CRM.

Sale and repurchase agreements - in a sale and repurchase agreement one party, the seller, sells a financial asset to another party, the buyer, at the same time the seller agrees to reacquire and the buyer to resell the asset at a later date. From the seller's perspective such agreements are repurchase agreements (repos) and from the buyer's reverse repurchase agreements (reverse repos).

Securitisation - a process by which assets or cash flows are transformed into transferable securities. The underlying assets or cash flows are transferred by the originator or an intermediary, typically an investment bank, to a structured entity which issues securities to investors. Asset securitisations involve issuing debt securities (asset-backed securities) that are backed by the cash flows of income generating assets (ranging from credit card receivables to residential mortgage loans).

Securitisation position - refers to any exposures RBS may have to a securitisation. These include not only the securities issued by an SSPE, but also loans, liquidity facilities and derivatives transacted with an SSPE.

Securitisation special purpose entity (SSPE) - an entity that has been designed such that voting or similar rights are not the dominant factor in deciding who controls the entity, for example when any voting rights relate to administrative tasks only and the relevant activities are directed by means of contractual arrangements. SSPEs are usually established for a specific limited purpose, they do not carry out a business or trade and typically have no employees. They may take a variety of legal forms - trusts, partnerships and companies - and fulfil many different functions.

Securitised exposure - an asset, or a pool of assets, that has been securitised, via either a traditional securitisation or a synthetic securitisation. See traditional securitisation and synthetic securitisation below.

Standard industrial classification - a classification of businesses by type or economic activity. It is applied by international government agencies to provide a framework for the collection, tabulation, presentation and analysis of data related to industry sectors, and its use promotes uniformity.

Standardised (STD) approach - a method used to calculate credit risk capital requirements under Pillar 1 of Basel III. In this approach the risk-weights used in the capital calculation are determined by regulators. For operational risk, capital requirements are determined by multiplying three years' historical gross income by a percentage determined by the regulator. The percentage ranges from 12% to 18%, depending on the type of underlying business being considered.

Stress testing - a technique used to evaluate the potential effects on an institution's financial condition of an exceptional but plausible event and/or movement in a set of financial variables.

Stressed value-at-risk (SVaR) - a VaR measure using historical data from a one year period of stressed market conditions. For the purposes of calculating regulatory stressed VaR, a time horizon of ten trading days is assumed at a confidence level of 99% (Refer to VaR definition below).

Supervisory slotting approach - a method of calculating regulatory capital, specifically for lending exposures in project finance and income producing real estate, where the PD estimates do not meet the minimum internal ratings based standards. Under this approach, RBS classifies exposures from 1 to 5, where 1 is strong and 5 is default. Specific risk-weights are assigned to each classification.

Synthetic securitisation - a securitisation process in which the originator retains ownership of the underlying exposure(s), but transfers the associated credit risk to another entity through the use of guarantees or credit derivatives.

Through-the-cycle – PD models that reflect a long run average view of default levels. Also refer to point-in-time.

Tier 1 capital - a component of regulatory capital, comprising Common Equity Tier 1 and Additional Tier 1.

Tier 1 capital ratio - Tier 1 capital as a percentage of risk-weighted assets.

Tier 2 capital - qualifying subordinated debt and other Tier 2 securities in issue, eligible collective impairment allowances less certain regulatory deductions.

Traded market risk - traded market risk is the risk arising from changes in fair value on positions, assets, liabilities or commitments in trading portfolios as a result of fluctuations in market prices.

Appendix 2 - Key terms and glossary

Key terms continued

Trading book - a trading book consists of positions in financial instruments and commodities held either with the intent to trade, or in order to hedge other elements of the trading book. To be eligible for trading book capital treatment, financial instruments must either be free of any restrictive covenants on their tradability, or able to be hedged.

Traditional securitisation - securitisation in which the originator transfers ownership of the underlying exposure(s) to an SSPE, putting the asset(s) beyond the reach of the originator and its creditors.

Undrawn commitments - assets/liabilities that have been committed but not yet transacted. In terms of credit risk, these are obligations to make loans or other payments in the future.

Western Europe excluding the UK - Andorra, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Liechtenstein, Luxembourg, Malta, Monaco, the Netherlands, Norway, Portugal, San Marino, Spain, Sweden, Switzerland and the Vatican City State (Holy See).

Wrong-way risk - the risk of loss when the risk factors driving the exposure to a counterparty or customer are positively correlated with the creditworthiness of that counterparty i.e. the size of the exposure increases at the same time as the risk of the counterparty or customer being unable to meet that obligation, increases.

Value-at-risk (VaR) - a technique that produces estimates of the potential loss in the market value of a portfolio over a specified time period at a given confidence level.