Pillar 3 Report 2017

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Any discrepancies between totals and sums of components within the tables in this report are due to rounding.

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 and its subsidiaries' regulatory capital position and requirements, financial position, future pension funding and contribution requirements, ongoing litigation and regulatory investigations, profitability and financial performance (including financial performance targets), structural reform and the implementation of the UK ring-fencing regime, the implementation of RBS's restructuring and transformation programme, impairment losses and credit exposures under certain specified scenarios, increasing competition from new incumbents and disruptive technologies and RBS's exposure to political risks, 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'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 RBS's actual results are discussed in RBS's UK 2017 Annual Report and Accounts (ARA). The forward-looking statements contained in this document speak only as of the date of this document and RBS 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.

Introduction

Attestation statement

We confirm that the 2017 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 2017 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 2017 Pillar 3 Report was approved by the Board on 22 February 2018.

Ewen Stevenson
Chief Financial Officer
Executive director, RBS Board

David Stephen
Chief Risk Officer
Member, Executive Committee

Presentation of information

Background

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 Capital Requirements Regulation (CRR). RBS's significant subsidiaries at 31 December 2017 were unchanged from 31 December 2016 and were The Royal Bank of Scotland plc (RBS plc), National Westminster Bank Plc (NatWest) and Ulster Bank Ireland Designated Activity Company (UBI DAC). In determining which are its significant subsidiaries for CRR reporting purposes, RBS has considered CRR requirements, including those entities whose total RWAs account for 5% or more of RBS's RWAs.

The disclosures in this report are based on the Capital Requirements Directive (CRD) extant during the reporting periods presented. Therefore disclosures are based on CRR as promulgated by the PRA with effect from 1 January 2014, as well as amendments issued since for RBS, RBS plc and NWB Plc. UBI DAC disclosures are based on 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 Basel III capital proposals through the CRR and the CRD collectively known as CRD IV.

The framework is based on three Pillars:

- Pillar 1 - Minimum capital requirements: defines rules for the capital requirement to absorb losses 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 publish disclosures that allow investors and other market participants to understand their risk profiles.

Pillar 1 - Minimum capital requirements

CRR requires risk-weighted assets (RWAs) to be calculated for credit, counterparty credit, market and operational risks with various approaches available to banks, with differing levels of sophistication. The minimum capital requirement is 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 page 225 of the 2017 ARA for operational risk disclosures.

Pillar 2 - Supervisory review process

Pillar 2 comprises RBS's 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, 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 177 and 226 of the 2017 ARA. Information regarding specific credit risk concentrations, such as sector or geography, is included within Pillar 3. Refer to page 207 of the 2017 ARA for more information on NTIRR and page 220 for 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 is approved by the Board before it is submitted 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 158 of the 2017 ARA for details.

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 the CRD.

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 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

Scope of application

The Royal Bank of Scotland Group plc is the parent entity for all authorised firms in the Group and is subject to consolidated supervision by the PRA. The Pillar 3 disclosures have been prepared in accordance with CRR applicable in the UK as promulgated by the PRA (Central Bank of Ireland definitions for Ulster Bank Ireland Designated Activity Company (UBI DAC, previously Ulster Bank Ireland Limited)).

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.

Solo-consolidation, impediments to the transfer of capital resources and aggregate capital deficiency

Individual entities within RBS apply the provisions in CRR (solo-consolidation permission) in a limited number of cases only. In 2017, The Royal Bank of Scotland plc (RBS plc) and National Westminster Bank Plc (NWB Plc) had no solo-consolidated subsidiaries. Permission is only used where the business of the activities of the entity is an extension of the parent bank's activities undertaken for commercial reasons and solo-consolidation is required to ensure that there are no adverse consequences to the capital ratios.

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

The Basel Committee on Banking Supervision (BCBS) released Part 1 of the revised Pillar 3 framework (RPF) in January 2015. By introducing more specific guidance and prescribed tables and templates, the RPF is regarded by the regulators as a significant step towards enhancing the consistency and comparability of banks' regulatory disclosures.

The RPF did not cover all relevant CRR disclosure requirements; in order to alleviate market pressure relating to these gaps, the European Banking Authority (EBA) issued its Pillar 3 disclosure guidelines relating to Part 1 of the RPF in December 2016. Disclosure requirements relating to capital, leverage and securitisation were not addressed in the 2016 EBA Guidelines and are unchanged from the prior year.

RBS approach

RBS published a significant proportion of the disclosures recommended by the EBA Pillar 3 guidelines in its 2016 Pillar 3 report and 2016 ARA; the full suite is included in the 2017 documents.

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 2017 ARA, available at rbs.com. The 2017 ARA includes a range of risk factors and provides in-depth analysis on the specific risks to which RBS is exposed. These Pillar 3 disclosures provide additional information over and above that contained in the 2017 ARA.

Key metrics for RBS are published as follows:
- Financial performance measures and ratios - Strategic report section on page 5 of the 2017 ARA.
- Key metrics – capital, leverage and liquidity for RBS on page 13.
- Capital and leverage ratios for RBS's significant subsidiaries on page 14.

Certain Pillar 3 disclosures are included elsewhere as follows:
- Remuneration on page 83 of the 2017 ARA.
- Strategic report - Risk overview on page 45 of the 2017 ARA.
- Report of the Board Risk Committee on page 73 of the 2017 ARA.
- Risk management framework on page 150 of the 2017 ARA.
- Capital, liquidity and funding risk on page 161 of the 2017 ARA.
- Credit risk management on page 177 of the 2017 ARA
- Market risk on page 206 of the 2017 ARA.
- Operational risk on page 225 of the 2017 ARA.
- Capital instruments - detailed terms - are found on the RBS Investor Relations website.
- Global Systemically Important Banks (GSIB) indicators at 31 December 2017 will be published on the RBS Investor Relations website in April 2018. 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 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 RBS 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 RBS Group. The RBS 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 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.

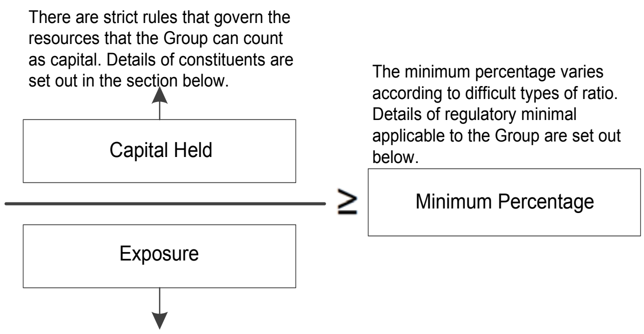
Regulatory vs. risk appetite view

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. This 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).

PRA assesses capital adequacy in the UK banking sector, primarily by comparing a bank's capital resources with its RWAs as well as leverage exposure.

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 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. 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 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.

In addition to capital, other specific loss absorbing instruments including senior notes issued by RBSG 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 of 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.
	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.
	PRA buffer	Captures forward looking risks and potential losses under a severe stress scenario.

These minimum requirements are shown in more detail in the RBS ARA 2017 – Capital, liquidity and funding risk. These ratios apply in full from 1 January 2019. Before this date there are transitional rules in place that mean that the minimum capital requirements that the Group has to comply with are lower although the Group, in line with other UK banks, has been reporting on a fully implemented basis since 2014.

Pillar 1 and system-wide buffer requirements
The Group is subject to system wide minimum capital adequacy ratio requirements that apply to banks under applicable regulation. There are two broad categories of capital requirements:

Category	Description
Minimum capital adequacy ratio	Represents the minimum amount of capital that all banks must hold at all times
Capital buffers	Comprises: • Capital required to be held by banks that may be used in periods of stress. • Capital that is built up in times of excess credit growth in the economy. • Capital held by banks that are deemed to be systemically important.

Pillar 2 requirements
In addition to the minimum Pillar 1 requirements that apply to all banks, the Group may be required to hold additional capital if specified by its regulators. This is captured under the Pillar 2 framework and consists of two components:

- Pillar 2A: covers risks to the Group that are not captured or not fully captured under Pillar 1. For example, pension risk is not captured in Pillar 1; therefore, capital that may need to be held against this risk is assessed under Pillar 2A.
- PRA buffer: covers risks that the Group may become exposed to across a forward-looking planning horizon (for example due to changes to the economic environment).

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 PRA buffer is required to be held if Pillar 1 capital buffers are determined to be insufficient.

The assessment of Pillar 2 requirements is an output from the Group's ICAAP that is described in more detail on page 158 of the 2017 ARA. Pillar 2 also utilises the output of the Group's stress testing exercises which is described in more detail on pages 157 to 160 of the 2017 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 14.

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 14.

For more information regarding the minimum capital and leverage requirements that RBS must meet, refer to the RBS 2017 ARA – Capital, liquidity and funding risk. For minimum capital and leverage requirements that apply to RBS plc, NWB Plc and UBI DAC, refer to the RBS plc 2017 ARA.

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 November 2016, the BoE published its policy statement on its approach to setting MREL.

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:
	  o Two times the applicable leverage ratio requirement for the Group; and
	  o 6.75% of the Group's leverage exposure.

Note:
(1) Excludes buffers. In May 2017 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 24.0% of RWAs by 1 January 2020, rising to 27.8% 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 downstreamed 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 October 2017 the Bank of England issued a consultation on internal MREL. Although the BoE continues to develop its approach to the calibration of MREL within banking groups, the BoE 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 Group is not planning to downstream the proceeds of external MREL issuance prior to the completion of legal entity and business realignment required to implement ring-fencing.

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 October 2017, the PRA issued a consultation paper related to Groups policy and the assessment and mitigation of risks associated with double leverage, with the proposals expected to be fully implemented from 1 January 2019. RBS is actively engaged in the consultation process and intends to incorporate changes into the 2018 ICAAP.

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 is not currently final.

In 2018, the UK, EU and BCBS are expected to further develop prudential regulation to 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.

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.
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.	• Finalisation of Basel 3(2) • Expected implementation date – 1 January 2022.
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.
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 2022. • Mortgage risk weights changes proposed by the PRA for 31 March 2019.
Securitisation RWAs	• Amendment of risk weights for securitisation exposures. • Introduction of Simple, Transparent and Standardised securitisation category.	• Amendments to CRR published in Official Journal on 12 December 2017 (application date 1 January 2019).
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 2021.
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 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.	• CRR 2(1) proposal. • Expected implementation date – 1 January 2022
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 2022.
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 2021.
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. • Changes to the eligible capital composition for Core UK Group exposures to Non-Core Large Exposure Group.	• CRR 2(1) proposal. • Expected implementation date – 1 January 2021. • Consultation published by PRA.

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.

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 Capital Requirements Regulation (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 LCR is being introduced on a phased basis and UK banks are initially required to maintain a minimum 90% LCR by 1 January 2017, rising to 100% on 1 January 2018.

The Basel Committee on Banking Supervision (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 are expected to meet and maintain an NSFR of 100%. In November 2016 the European Commission (EC) included a 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 2017, based on the requirements in Part Eight of CRR and related guideline issued by the EBA in June 2014, are set out on page 32.

KM1: BCBS 2: Key metrics

The table below reflects the key metrics template in the BCBS consolidated Pillar 3 framework published in 2016. Some measures such as the net stable funding ratio (NSFR) are based on RBS's interpretations and application, as reflected in the 2017 and previous ARAs. Capital and leverage ratios presented are based on end point CRR rules.

	31 December 2017	30 September 2017	30 June 2017	31 March 2017	31 December 2016
Capital	£m	£m	£m	£m	£m
Common equity tier 1 (CET1)	31,957	32,558	31,874	31,252	30,623
Tier 1	35,998	36,599	35,915	35,293	34,664
Total capital	42,763	43,440	43,022	42,663	43,825
Risk weighed assets (amounts)	£m	£m	£m	£m	£m
Total risk-weighted assets (RWAs)	200,923	210,643	215,422	221,732	228,220
Risk-based capital ratios as a percentage of RWA	%	%	%	%	%
Common equity tier 1 ratio	15.9	15.5	14.8	14.1	13.4
Tier 1 ratio	17.9	17.4	16.7	15.9	15.2
Total capital ratio	21.3	20.6	20.0	19.2	19.2
Additional CET1 buffer requirements as a percentage of RWA	%	%	%	%	%
Capital conservation buffer requirement	2.5	2.5	2.5	2.5	2.5
Countercyclical buffer requirement	—	—	—	—	—
Bank GSIB and/or DSIB additional requirements	1.0	1.0	1.0	1.0	1.5
Total of CET1 specific buffer requirements	3.5	3.5	3.5	3.5	4.0
CET1 available after meeting the bank's minimum capital requirements	11.4	11.0	10.3	9.6	8.9
Leverage ratio	£m	£m	£m	£m	£m
CRR leverage ratio exposure measure	679,120	691,401	701,795	700,716	683,302
UK leverage ratio exposure measure	587,095	609,276	618,689	622,237	614,602
	%	%	%	%	%
CRR leverage ratio	5.3	5.3	5.1	5.0	5.1
UK leverage ratio	6.1	6.0	5.8	5.7	5.6
Liquidity coverage ratio	%	%	%	%	%
LCR (1)	140	134	127	122	n/a
Net stable funding ratio	%	%	%	%	%
NSFR (2)	132	126	123	120	121

Notes:
(1) LCR values shown are the simple average of the preceding twelve monthly periods ending on the quarterly reporting date as specified in the table. The requirement has been implemented with effect from 2017 reporting periods. Accordingly, the 31 December 2016 ratio is not shown.
(2) The NSFR shown is the spot value as relevant to the reporting period in the table above. BCBS issued its final recommendations for the implementation of the net stable funding ratio in October 2014, proposing an implementation date of 1 January 2018 by which time banks are expected to meet and maintain a ratio of 100%. In November 2016, the European Commission (EC) included a net stable funding ratio of 100% as part of the CRR 2 package of legislative proposals. The timing of a binding NSFR coming into force in the European Union and United Kingdom remains subject to uncertainty. In the meantime, RBS uses the definitions from the BCBS guidelines, and its own interpretations, to calculate the NSFR. RBS's ratio may not be comparable with those of other financial institutions.

Key points

- RBS continued to strengthen and de-risk its capital position and balance sheet throughout 2017 as evidenced by the continuous improvement in capital, leverage, liquidity and funding ratios over the last five quarters.
- These improvements were achieved despite absorbing significant additional legacy litigation and conduct costs, restructuring costs and disposal losses during 2017.

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. End point metrics and measures are also included for RBS.

	2017				2016			
	RBS	RBS plc	NWB Plc	UBI DAC	RBS	RBS plc	NWB Plc	UBI DAC
Capital adequacy ratios - transitional (1)	%	%	%	%	%	%	%	%
CET 1	15.9	14.7	23.5	31.2	13.4	13.1	16.1	29.0
Tier 1	19.7	16.1	23.5	31.2	17.7	14.1	16.1	29.0
Total	23.9	18.7	30.9	33.8	22.9	19.1	23.3	31.9
Capital adequacy ratios - end point								
CET 1	15.9				13.4			
Tier 1	17.9				15.2			
Total	21.3				19.2			
Capital - transitional	£m	£m	£m	£m	£m	£m	£m	£m
CET1	31,957	20,169	13,301	5,481	30,623	23,333	10,393	5,224
Tier 1	39,554	21,966	13,301	5,481	40,419	25,292	10,393	5,224
Total	47,931	25,600	17,536	5,941	52,303	34,151	15,016	5,746
Capital - end point								
CET1	31,957				30,623			
Tier 1	35,998				34,664			
Total	42,763				43,825			
RWAs								
Credit risk (including counterparty risk)								
- credit	144,676	94,259	48,575	16,079	162,162	127,019	56,066	16,263
- counterparty	15,395	13,691	266	321	22,925	21,214	473	505
Market risk	17,012	15,809	136	68	17,438	15,698	676	12
Operational risk	23,840	13,052	7,724	1,101	25,695	14,862	7,209	1,215
	200,923	136,811	56,701	17,569	228,220	178,793	64,424	17,995
CRR leverage - transitional (2)								
Tier 1 capital	39,554	21,966	13,301	5,481	40,419	25,292	10,393	5,224
Exposure	679,120	390,055	213,474	27,857	683,302	447,238	169,586	27,337
Leverage ratio (%)	5.8	5.6	6.2	19.7	5.9	5.7	6.1	19.1
CRR leverage - end point								
Tier 1 capital	35,998				34,664			
Exposure	679,120				683,302			
Leverage ratio (%)	5.3				5.1			
Average Tier 1 capital	36,360				37,959			
Average exposure	692,507				712,145			
Average leverage ratio (%)	5.3				5.3			
UK leverage - end point (3)								
Tier 1 capital	35,998				34,664			
Exposure	587,095				614,602			
Leverage ratio (%)	6.1				5.6			
Average Tier 1 capital	36,360				37,959			
Average exposure	602,984				648,232			
Average leverage ratio (%)	6.0				5.9			
UK GSIB leverage								
CET1 buffer	1,027				807			

Notes:

(1) CRR end-point for UK banks set by the PRA is 10.50% minimum total capital ratio, with a minimum CET1 ratio of 7.00%. The UK countercyclical capital buffer is currently 0.00%; in June 2017 the Financial Policy Committee (FPC) increased the rate to 0.5% effective June 2018; subsequently in November 2017 the FPC announced a further increase to 1.0% effective November 2018. These minimum ratios exclude the G-SIB buffer and any bank specific buffers, including Pillar 2A and PRA buffer. The Central Bank of Ireland (CBI) has set a minimum total capital ratio of 10.50% with a minimum CET1 ratio of 7.00%; the countercyclical buffer is currently 0.00%.

(2) Leverage exposure is broadly aligned to the accounting value of on and off balance sheet exposures but subject to certain adjustments for trading positions, repurchase agreements and off-balance sheet exposures. For further details of minimum leverage ratio requirements, please refer to the RBS 2017 ARA page 164.

(3) The PRA minimum leverage ratio requirement is supplemented with a G-SIB additional leverage ratio buffer, currently 0.175% (£1,027 million) under transitional arrangements (2016 – 0.13125%) increasing to 0.35% (£2,052 million) at the end point.

Key points

RBS

- RBS continued to strengthen and de-risk its capital position; CET1 ratio increased by 250 basis points (40 basis points in Q4 2017) in the year to 15.9% as a result of the £752 million attributable profit despite absorbing significant litigation and conduct costs, restructuring costs and disposal losses. RWAs decreased reflecting run-down of NatWest Markets legacy assets and reductions in other businesses.
- RWAs decreased by £27.3 billion primarily driven by a £16.8 billion decrease in NatWest Markets reflecting reductions in the legacy business as it moved towards closure and lower counterparty credit risk due to exposure reductions and mitigation activities. Additionally, Commercial Banking RWAs decreased by £6.7 billion as a result of active management of the lending book.
- Tier 1 on a transitional basis improved by 200 basis points as the CET1 benefit was partly offset by lower AT1. AT1 on a PRA transitional basis decreased reflecting the annual phasing in of CRR end-point rules and redemptions.
- CRR end-point leverage ratio improved to 5.3%. UK leverage ratio improved from 5.6% to 6.1%, reflecting higher central banks balances that are excluded from the UK framework.
- Average CRR leverage ratio remained constant at 5.3% whilst the average UK leverage ratio increased to 6.0% due to movements in central bank balances. Funded assets in NatWest Markets decreased by £9.8 billion to £118.7 billion in the year.
- The CET1 GSIB leverage buffer requirement of £1,027 million was higher than at 2016 year end, reflecting the higher rate ascribed by the PRA for the UK leverage ratio framework. This requirement is in addition to the minimum leverage ratio of 3.25% (of which 75% to be met by CET 1). RBS's UK leverage ratio of 6.1% is above the minimum requirement.
- The Basel I floor minimum capital requirement (see EU OV1) increased from £0.8 billion to £2.0 billion, principally reflecting £10.7 billion growth in mortgage lending, principally in UK PBB.

RBS plc

- The CET1 ratio increased by 160 basis points to 14.7% partly benefitting from underlying RWA reduction in NatWest Markets and Commercial Banking.
- The impact of the annual phasing in of the CRR end-point rules relating to significant investments was a reduction of 90 basis points in the CET 1 ratio. However, this was partially offset by the ring-fencing related transfers that took place on 1 January 2017. RBSI became a subsidiary of RBSG plc and Lombard and Invoice Finance subsidiaries were transferred to NWB Plc.
- RWAs decreased by £42.0 billion to £136.8 billion, mainly as a result of the CRR phase-in relating to significant investments which reduced standardised credit risk RWAs by £20.1 billion. The remainder of the movement is driven by the reductions in NatWest Markets and Commercial Banking.
- The leverage ratio on a PRA transitional basis decreased to 5.6% as a result of the reduction in capital in that period.

NWB Plc

- The CET1 ratio increased from 16.1% to 23.5%, mainly due to the reduction in significant investments following ring-fencing related transfers. UBI DAC was transferred to NatWest Holdings Limited with effect from 1 January 2017.
- RWAs decreased by £7.7 billion, mainly as a result of phasing-in of CRR end-point rules relating to significant investments.
- The leverage ratio on a PRA transitional basis improved from 6.1% to 6.2%. Whilst the exposure has increased due to higher central bank balances and mortgage growth, the impact of ring-fencing related transfers on CET1 capital has offset this.
- The Basel I floor minimum capital requirement increased from £1.1 billion to £2.1 billion principally reflecting the £10.7 billion growth in mortgage lending.

UBI DAC

- The CET1 ratio increased to 31.2% reflecting higher capital and lower RWAs. UBI DAC paid a dividend of €1.5 billion to its parent company in January 2018, this will reduce its CET1 ratio to 23.6%.
- RWAs decreased by £0.4 billion mainly due to lower exposures.
- The leverage ratio increased due to higher capital.

CAP 2: CAP: 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.

		2017					
		RBS					
CET1 capital: instruments and reserves		PRA transitional £m	CRR prescribed residual amounts £m	Final CRD IV £m	RBS plc £m	NWB Plc £m	UBI DAC £m
1	Capital instruments and the related share premium accounts	12,851	—	12,851	33,416	3,903	4,237
	Of which: ordinary shares	*11,965*	—	*11,965*	*6,609*	*1,678*	*3,188*
2	Retained earnings	13,790	—	13,790	12,139	10,633	1,524
3	Accumulated other comprehensive income (and other reserves)	14,291	—	14,291	(73)	786	—
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	45,482	15,348	5,761
7	Additional value adjustments	(496)	—	(496)	(471)	(1)	—
8	Intangible assets (net of related tax liability)	(6,492)	—	(6,492)	(551)	(490)	(1)
10	Deferred tax assets that rely on future profitability excluding those arising from temporary differences (net of related tax liability)	(849)	—	(849)	(50)	(537)	(259)
11	Fair value reserves related to gains or losses on cash flow hedges	(227)	—	(227)	49	—	—
12	Negative amounts resulting from the calculation of expected loss amounts	(1,286)	—	(1,286)	(579)	(511)	(133)
14	Gains or losses on liabilities valued at fair value resulting from changes in own credit standing	(90)	—	(90)	10	—	(1)
15	Defined-benefit pension fund assets	(287)	—	(287)	(196)	(11)	(49)
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) (negative amount)	—	—	—	(22,539)	(456)	—
22	Amount exceeding the 17.65% threshold (negative amount)	—	—	—	(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 (negative amount)	—	—	—	(983)	—	(43)
26	Regulatory adjustments applied to CET1 in respect of amounts subject to pre-CRR treatment	—	—	—	3,201	—	219
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*	—	—	—	*3,201*	—	*219*
27	Qualifying Additional Tier 1 (AT1) deductions that exceed the AT1 capital of the institution (negative amount)	—	—	—	—	(41)	(13)
28	Total regulatory adjustments to CET1	(9,727)	—	(9,727)	(25,313)	(2,047)	(280)
29	CET1 capital	31,957	—	31,957	20,169	13,301	5,481

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

		2017					
		RBS					
		PRA transitional £m	CRR prescribed residual amounts £m	Final CRD IV £m	RBS plc £m	NWB Plc £m	UBI DAC £m
	AT1 capital: instruments						
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)	—	1,887	140	—
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	1,887	140	—
	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)	—	—	—	(80)	(140)	—
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 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	(10)	—	(10)	(90)	(140)	—
44	AT1 capital	7,597	(3,556)	4,041	1,797	—	—
45	Tier 1 capital (T1 = CET1 + AT1)	39,554	(3,556)	35,998	21,966	13,301	5,481
	T2 capital: instruments and provisions						
46	Capital instruments and the related share premium accounts	6,406	—	6,406	4,134	3,800	473
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)	—	229	612	—
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	4,363	4,412	473
	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)	—	—	—	(719)	(177)	—
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 pre CRR	—	—	—	—	—	—
57	Total regulatory adjustments to T2 capital	(10)	—	(10)	(729)	(177)	(13)
58	T2 capital	8,377	(1,612)	6,765	3,634	4,235	460
59	Total capital (TC = T1 + T2)	47,931	(5,168)	42,763	25,600	17,536	5,941
60	Total risk-weighted assets	200,923	—	200,923	136,811	56,701	17,569

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

	2017					
	RBS					
	PRA transitional £m	CRR prescribed residual amounts £m	Final CRD IV £m	RBS plc £m	NWB Plc £m	UBI DAC £m
Capital ratios and buffers						
61 CET1 (as a percentage of risk exposure amount)	15.9%	—	15.9%	14.7%	23.5%	31.2%
62 T1 (as a percentage of risk exposure amount)	19.7%	—	17.9%	16.1%	23.5%	31.2%
63 Total capital (as a percentage of risk exposure amount)	23.9%	—	21.3%	18.7%	30.9%	33.8%
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*	—	—	—	—	—	—
67 *Of which: systemic risk buffer requirement*	—	—	—	—	—	—
67a *Of which: Global Systemically Important Institution (G-SII) or Other Systemically Important Institution (O-SII) buffer (1)*	*0.5%*	—	*1.0%*	—	—	—
68 CET1 available to meet buffers	11.4%	—	11.4%	10.2%	19.0%	26.7%
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	681	7	—
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	4,294	1,380	5
75 Deferred tax assets arising from temporary differences (amount below 10% threshold, net of related tax liability)	413	—	413	473	527	—
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	588	98	9
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	283	245	92
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)	—	2,502	146	—
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)	—	1,391	613	70
85 Amount excluded from T2 due to cap (excess over cap after redemptions and maturities)	—	—	—	—	386	—

Note:
(1) The UK countercyclical capital buffer is currently 0.00%; in June 2017 the Financial Policy Committee (FPC) increased the rate to 0.5% effective June 2018.

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

		2016					
		RBS					
		PRA transitional	CRR prescribed residual amounts	Final CRD IV	RBS plc	NWB Plc	UBI DAC
	CET1 capital: instruments and reserves	£m	£m	£m	£m	£m	£m
1	Capital instruments and the related share premium accounts	34,952	—	34,952	33,416	3,904	4,090
	Of which: ordinary shares	*11,823*	—	*11,823*	*6,609*	*1,678*	*3,077*
2	Retained earnings	(5,981)	—	(5,981)	15,706	7,290	1,262
3	Accumulated other comprehensive income (and other reserves)	19,446	—	19,446	479	657	1
4	Public sector capital injections grandfathered until 1 January 2018	—	—	—	—	—	—
5a	Independently reviewed interim net profits net of any foreseeable charge or dividend	—	—	—	—	3,466	—
6	CET1 capital before regulatory adjustments	48,417	—	48,417	49,601	15,317	5,353
7	Additional value adjustments	(532)	—	(532)	(524)	(1)	—
8	Intangible assets (net of related tax liability)	(6,436)	—	(6,436)	(521)	(477)	—
10	Deferred tax assets that rely on future profitability excluding those arising from temporary differences (net of related tax liability)	(906)	—	(906)	(47)	(599)	(250)
11	Fair value reserves related to gains or losses on cash flow hedges	(1,030)	—	(1,030)	(261)	—	—
12	Negative amounts resulting from the calculation of expected loss amounts	(1,371)	—	(1,371)	(642)	(534)	(165)
14	Gains or losses on liabilities valued at fair value resulting from changes in own credit standing	(304)	—	(304)	(152)	—	(3)
15	Defined-benefit pension fund assets	(208)	—	(208)	(198)	(15)	—
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) (negative amount)	—	—	—	(20,433)	(3,019)	—
22	Amount exceeding the 17.65% threshold (negative amount)	—	—	—	(3,250)	(959)	—
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*	—	—	—	*(3,047)*	*(615)*	—
25	*Of which: deferred tax assets arising from temporary differences*	—	—	—	*(203)*	*(344)*	—
25a	Losses for the current financial period (negative amount)	(6,955)	—	(6,955)	(3,474)	—	—
26	Regulatory adjustments applied to CET1 in respect of amounts subject to pre-CRR treatment	(52)	—	(52)	3,234	879	322
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*	*(52)*	—	*(52)*	*3,234*	*879*	*322*
27	Qualifying AT1 deductions that exceed the AT1 capital of the institution (negative amount)	—	—	—	—	(199)	(33)
28	Total regulatory adjustments to CET1	(17,794)	—	(17,794)	(26,268)	(4,924)	(129)
29	CET1 capital	30,623	—	30,623	23,333	10,393	5,224
	AT1 capital: instruments						
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	5,416	(5,416)	—	3,003	175	—
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	339	(339)	—	—	—	—
35	*Of which: instruments issued by subsidiaries subject to phase out*	*339*	*(339)*	—	—	—	—
36	AT1 capital before regulatory adjustments	9,806	(5,755)	4,051	3,003	175	—

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

	2016					
	RBS					
	PRA transitional £m	CRR prescribed residual amounts £m	Final CRD IV £m	RBS plc £m	NWB Plc £m	UBI DAC £m
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)	—	—	—	(1,034)	(175)	—
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)	(1,044)	(175)	—
44 AT1 capital	9,796	(5,755)	4,041	1,959	—	—
45 Tier 1 capital (T1 = CET1 + AT1)	40,419	(5,755)	34,664	25,292	10,393	5,224
T2 capital: instruments and provisions						
46 Capital instruments and the related share premium accounts	6,903	—	6,903	10,932	4,000	508
47 Amount of qualifying items referred to in Article 484 (5) and the related share premium accounts subject to phase out from T2	173	(173)	—	1,239	735	47
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	4,818	(2,550)	2,268	—	—	—
49 *Of which: instruments issued by subsidiaries subject to phase out*	*1,866*	*(1,866)*	—	—	—	—
50 Credit risk adjustments	—	—	—	—	—	—
51 T2 capital before regulatory adjustments	11,894	(2,723)	9,171	12,171	4,735	555
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)	—	—	—	(3,302)	(112)	—
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	—	—	—	—	—	(33)
56c Amount to be deducted from or added to T2 capital with regard to additional filters and deductions required pre CRR	—	—	—	—	—	—
57 Total regulatory adjustments to T2 capital	(10)	—	(10)	(3,312)	(112)	(33)
58 T2 capital	11,884	(2,723)	9,161	8,859	4,623	522
59 Total capital (TC = T1 + T2)	52,303	(8,478)	43,825	34,151	15,016	5,746
60 Total risk-weighted assets	228,220	—	228,220	178,793	64,424	17,995

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

	2016					
	RBS					
	PRA transitional £m	CRR prescribed residual amounts £m	Final CRD IV £m	RBS plc £m	NWB Plc £m	UBI DAC £m
Capital ratios and buffers						
61 CET1 (as a percentage of risk exposure amount)	13.4%	—	13.4%	13.1%	16.1%	29.0%
62 T1 (as a percentage of risk exposure amount)	17.7%	—	15.2%	14.1%	16.1%	29.0%
63 Total capital (as a percentage of risk exposure amount)	22.9%	—	19.2%	19.1%	23.3%	31.9%
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)	5.5%	—	8.5%	5.1%	5.1%	5.1%
65 Of which: capital conservation buffer requirement	*0.6%*	—	*2.5%*	*0.6%*	*0.6%*	*0.6%*
66 Of which: counter cyclical buffer requirement	—	—	—	—	—	—
67 Of which: systemic risk buffer requirement	—	—	—	—	—	—
67a Of which: Global Systemically Important Institution (G-SII) or Other Systemically Important Institution (O-SII) buffer (1)	*0.4%*	—	*1.5%*	—	—	—
68 CET1 available to meet buffers	8.9%	—	8.9%	8.6%	11.6%	24.5%
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)	837	—	837	452	11	—
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)	426	—	426	4,377	1,369	5
75 Deferred tax assets arising from temporary differences (amount below 10% threshold, net of related tax liability)	306	—	306	291	765	1
Available caps on the inclusion of provisions in T2						
76 Credit risk adjustments included in T2 in respect of exposures subject to standardised approach 76 (prior to the application of the cap)	—	—	—	—	—	—
77 Cap on inclusion of credit risk adjustments in T2 under standardised approach	461	—	461	890	191	11
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	752	—	752	336	243	92
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	5,759	(5,759)	—	3,003	175	—
83 Amount excluded from AT1 due to cap (excess over cap after redemptions and maturities)	—	—	—	1,009	164	—
84 Current cap on T2 instruments subject to phase out arrangements	4,035	(4,035)	—	1,669	735	82
85 Amount excluded from T2 due to cap (excess over cap after redemptions and maturities)	—	—	—	—	537	—

Note:
(1) The UK countercyclical capital buffer is currently 0.00%; in June 2017 the Financial Policy Committee (FPC) increased the rate to 0.5% effective June 2018.

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

	2016 (1)	RBS RWAs £m	RBS MCR £m	RBS plc RWAs £m	RBS plc MCR £m	NWB Plc RWAs £m	NWB Plc MCR £m	UBI DAC RWAs £m	UBI DAC MCR £m
1	Credit risk (excluding counterparty credit risk)	158,777	12,702	122,262	9,780	52,818	4,225	16,247	1,300
2	Standardised (STD) approach	35,107	2,808	67,557	5,404	12,640	1,011	841	67
4	Advanced IRB approach (2)	122,336	9,787	54,566	4,365	40,178	3,214	15,406	1,233
5	Equity IRB under the simple risk-weight or the internal model approach (IMA)	1,334	107	139	11	—	—	—	—
6	Counterparty credit risk (CCR)	22,579	1,806	20,903	1,672	468	38	505	40
6a	of which: securities financing transactions	1,581	127	1,024	82	—	—	—	—
7	of which: marked to market	4,438	355	3,366	269	71	6	7	1
10	of which: internal model method (IMM)	11,858	948	11,959	957	391	32	494	39
11	of which: risk exposure amount for contributions to the default fund of a CCP	39	3	24	2	—	—	—	—
12	of which: CVA	4,663	373	4,530	362	6	—	4	—
13	Settlement risk	1	—	1	—	—	—	—	—
14	Securitisation exposures in banking book	1,954	156	1,523	122	316	25	—	—
15	IRB approach	1,943	155	1,512	121	316	25	—	—
17	Internal assessment approach	11	1	11	1	—	—	—	—
19	Market risk	17,438	1,395	15,698	1,256	676	54	12	1
20	STD approach	3,532	283	2,115	169	642	51	12	1
21	IMA	13,906	1,112	13,583	1,087	34	3	—	—
23	Operational risk - STD approach	25,695	2,056	14,862	1,189	7,209	577	1,215	98
27	Amounts below the thresholds for dedication (subject to 250% risk-weight)	1,776	142	3,544	284	2,937	235	16	1
26	Floor adjustment (3)	—	805	—	—	—	1,063	—	—
29	Total	228,220	19,062	178,793	14,303	64,424	6,217	17,995	1,440

Notes:
(1) RWA approaches not used by RBS, such as credit risk Foundation IRB, counterparty credit risk original exposure and STD approach, Securitisation IRB supervisory formula and STD approaches and operational risk basic indicator and AMA approaches are not included in this table.
(2) Of which £752 million RWAs (2016 - £681 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 Basel I capital requirement adjusted for excess expected loss).

OV1_a: RWA bridge between EU OV1 and credit risk

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

	RWAs	
	2017 £m	2016 £m
Credit risk excluding counterparty credit risk (EU OV1 row 1)	140,003	158,777
Securitisations (banking book only)	2,298	1,609
Threshold (EU OV1 row 27)	2,375	1,776
Credit risk including securitisations (EU CR8 row 9)	144,676	162,162
Counterparty risk total (EU OV1 row 6)	14,842	22,579
Less: CVA capital charge (EU OV1 row 12)	(2,556)	(4,663)
Settlement risk (EU OV1)	21	1
Securitisations (banking book only)	532	345
Counterparty risk (EU CCR7 row 9)	12,839	18,262
Total STD (EU OV1 row 2)	22,099	35,107
Threshold (EU OV1 row 2)	2,375	1,776
Total STD credit risk	24,474	36,883
Total AIRB credit risk (EU OV1 row 4)	116,695	122,336
Equity (EU OV1 row 5)	1,209	1,334
Securitisations in credit risk (subset of EU OV1)	2,298	1,609
Total AIRB credit risk (EU CR8)	120,202	125,279

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 relating to 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
2017	14,842	12,006	2,556	280	14,842
2016	22,579	17,680	4,663	236	22,579

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

In the table below, RWAs include securitisations, deferred tax assets and significant investments to align with the capital management approaches of RBS and its segments. There were no acquisitions or disposals of subsidiaries during 2017.

		a			b
		RWAs			
		IRB £m	STD £m	Total RWAs £m	MCR £m
1	At 1 January 2017	125,279	36,883	162,162	12,973
2	Asset size (1)	(5,334)	(4,809)	(10,143)	(812)
3	Asset quality (2)	(2,421)	(6)	(2,427)	(194)
5	Methodology and policy (3)	2,676	(6,954)	(4,278)	(342)
7	Foreign exchange movements (4)	2	(640)	(638)	(51)
9	At 31 December 2017	120,202	24,474	144,676	11,574

Notes:
(1) Organic changes in book size and composition (including the origination of new businesses) and maturing loans and changes due to acquisitions and disposals of portfolios and exposures.
(2) Changes in the assessed quality of assets due to changes in borrower risk, such as rating grade migration or similar effects.
(3) Changes due to methodological changes in calculations driven by regulatory policy changes, including both revisions to existing regulations and new regulations.
(4) Changes arising from foreign currency retranslation movements.

Key points

- Reduced asset size, driven by asset sales, selective disposals (predominantly in the transport sector as RBS continues to manage down its shipping portfolio) and limit reductions in line with RBS's risk reduction strategy;
- Credit quality improvement across the commercial portfolio and RWA reduction initiatives;
- Extended regulatory permission for RBS International to use the IRB approach for the Wholesale portfolio in preparation for ring-fencing; and
- Sterling strengthening against the US dollar and Saudi riyal, which was partly offset by its weakening against the euro.

Refer to the commentary following CR1 for additional details.

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 nor any IMM model updates in 2017. Additionally there were no acquisitions or disposals of subsidiaries during 2017.

		a			b		
		RWAs			MCR		
		IMM £m	Non-IMM £m	Total £m	IMM £m	Non-IMM £m	Total £m
1	At 1 January 2017	11,982	6,278	18,260	959	502	1,461
2	Asset size (1)	(3,823)	(1,098)	(4,921)	(306)	(88)	(394)
3	Credit quality of counterparties (2)	(70)	—	(70)	(6)	—	(6)
7	Foreign exchange movements (3)	(380)	(50)	(430)	(30)	(4)	(34)
9	At 31 December 2017	7,709	5,130	12,839	617	410	1,027

Notes:
(1) Organic changes in book size and composition (including the origination of new businesses) 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 point

- The key driver of the decline in RWAs over the year was a decrease in asset size. This reflected the continued reduction of non-strategic exposures and increased mitigation of exposures through collateralisation in NatWest Markets.

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 IMA methodology or policy changes in 2017. Additionally there were no acquisitions or disposals of subsidiaries during 2017. 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									
		RWAs (1)						STD		Total	
		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 2017	3,710	5,397	2,180	2,619	13,906	1,112	3,532	283	17,438	1,395
2	Movement in risk levels (2)	(941)	(407)	1,535	(234)	(47)	(4)	(538)	(43)	(585)	(47)
3	Model updates/changes (3)	—	—	—	159	159	13	—	—	159	13
8	At 31 December 2017	2,769	4,990	3,715	2,544	14,018	1,121	2,994	239	17,012	1,316

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.

Key point

- RBS's total market risk RWAs decreased moderately over the year, driven by exposures under the standardised approach. The overall decline related to movements in risk levels, with a moderate offsetting increase related to new RNIVs. For more detailed commentary, refer to EU MR1.

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

		2017				2016			
		RBS £m	RBS plc £m	NWB Plc £m	UBI DAC £m	RBS £m	RBS plc £m	NWB Plc £m	UBI DAC £m
LRSum: Summary reconciliation of accounting assets and leverage ratio exposure									
1	Total assets as per published financial statements	738,056	525,889	259,717	26,849	798,656	633,613	228,921	26,291
2	Adjustment for entities which are consolidated for accounting purposes but are outside the scope of regulatory consolidation	6,943	—	—	—	9,157	—	—	—
4	Adjustment for derivative financial instruments	(112,224)	(112,447)	(1,409)	179	(176,384)	(176,226)	(2,012)	126
5	Adjustments for securities financing transactions (SFTs)	2,262	2,958	—	—	2,271	3,809	—	—
6	Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	53,062	33,714	10,466	1,066	58,567	41,375	9,930	1,102
EU-6a	Adjustment for intragroup exposures excluded from the leverage ratio exposure measure in accordance with Article 429 (7) of Regulation (EU) No 575/2013	—	(35,687)	(53,112)	—	—	(31,631)	(62,152)	—
7	Other adjustments	(8,979)	(24,372)	(2,188)	(237)	(8,965)	(23,702)	(5,101)	(182)
8	Total leverage ratio exposure	679,120	390,055	213,474	27,857	683,302	447,238	169,586	27,337
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)	544,092	327,542	257,440	25,568	520,573	350,126	225,839	25,105
2	Asset amounts deducted in determining Tier 1 capital	(9,646)	(24,428)	(2,188)	(237)	(10,493)	(23,726)	(5,101)	(182)
3	Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets)	534,446	303,114	255,252	25,331	510,080	326,400	220,738	24,923
Derivative exposures									
4	Replacement cost associated with all derivatives transactions (i.e. net of eligible cash variation margin)	14,769	15,647	581	441	24,540	27,355	914	769
5	Add-on amounts for PFE associated with all derivatives transactions (mtm method)	49,906	51,928	287	255	65,804	67,407	190	235
6	Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the applicable accounting framework	760	760	—	—	600	600	—	—
7	Deductions of receivable assets for cash variation margin provided in derivatives transactions	(20,025)	(20,021)	—	—	(20,962)	(20,895)	(34)	—
8	Exempted CCP leg of client-cleared trade exposures	(529)	(319)	—	—	(1,032)	(851)	—	—
9	Adjusted effective notional amount of written credit derivatives	16,432	16,432	—	—	16,174	16,088	—	—
10	(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	(12,695)	(12,695)	—	—	(14,527)	(14,454)	—	—
11	Total derivative exposures	48,619	51,732	868	696	70,597	75,250	1,070	1,004

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

		2017				2016			
		RBS £m	RBS plc £m	NWB Plc £m	UBI DAC £m	RBS £m	RBS plc £m	NWB Plc £m	UBI DAC £m
Securities financing transaction exposures									
12	Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	84,705	59,299	—	764	73,515	49,287	—	308
13	Netted amounts of cash payables and cash receivable of gross SFT assets	(43,973)	(25,075)	—	—	(31,728)	(17,252)	—	—
14	Counterparty credit risk exposures for SFT assets	2,262	2,958	—	—	2,271	3,809	—	—
16	Total securities financing transaction exposures	42,994	37,182	—	764	44,058	35,844	—	308
Other off-balance sheet exposures									
17	Off-balance sheet exposures at gross notional amount	156,972	89,231	46,764	3,207	194,232	125,015	48,486	3,840
18	Adjustments for conversion to credit equivalent amounts	(103,910)	(55,517)	(36,298)	(2,141)	(135,665)	(83,640)	(38,556)	(2,738)
19	Other off-balance sheet exposures	53,062	33,714	10,466	1,066	58,567	41,375	9,930	1,102
EU-19a	Exemption of intragroup exposures (solo basis) in accordance with Article 429(7) of Regulation (EU) No 575/2013 (on and off-balance sheet)	—	(35,687)	(53,112)	—	—	(31,631)	(62,152)	—
Capital and total exposures									
20	Tier 1 capital	39,554	21,966	13,301	5,481	40,419	25,292	10,393	5,224
21	Total leverage ratio exposure	679,120	390,055	213,474	27,857	683,302	447,238	169,586	27,337
Leverage ratio		5.8%	5.6%	6.2%	19.7%	5.9%	5.7%	6.1%	19.1%

		2017				2016			
		Leverage ratio exposures							
LRSpl: Split-up of on balance sheet exposures (excluding derivatives, SFTs and exempted exposures)		RBS £m	RBS plc £m	NWB Plc £m	UBI DAC £m	RBS £m	RBS plc £m	NWB Plc £m	UBI DAC £m
EU-1	Total on-balance sheet exposures (excluding derivatives, SFTs, and exempted exposures), of which:	534,446	267,427	202,140	25,331	510,080	294,769	158,586	24,923
EU-2	Trading book exposures	52,575	47,027	7	—	55,036	48,409	223	—
EU-3	Banking book exposures, of which:	481,871	220,400	202,133	25,331	455,044	246,360	158,363	24,923
EU-4	Covered bonds	1,290	1,132	—	—	1,386	1,304	—	—
EU-5	Exposures treated as sovereigns	144,676	101,678	36,148	3,427	115,532	105,989	1,602	3,672
EU-6	Exposures to regional governments, multilateral development bank, international organisations and public sector entities not treated as sovereigns	6,387	4,405	1,297	444	6,842	4,669	1,553	363
EU-7	Institutions	5,552	12,220	1,183	1,495	7,762	18,010	1,834	1,910
EU-8	Secured by mortgages of immovable properties	187,652	44,236	122,139	2,117	175,288	44,184	111,883	1,854
EU-9	Retail exposures	35,676	4,464	13,569	13,450	35,222	4,681	12,737	13,295
EU-10	Corporate	76,508	31,869	17,694	2,112	92,177	41,943	21,227	1,971
EU-11	Exposures in default	6,480	2,586	1,510	1,831	7,812	3,644	1,790	1,789
EU-12	Other exposures (e.g. equity, securitisations, and non-credit obligation assets)	17,650	17,810	8,593	455	13,023	21,936	5,737	69

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 includes 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 on pages 303 and 304 of the 2017 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	2017 £m	2016 £m
RBS - undated loan capital			
US$762 million 7.648% perpetual regulatory (callable quarterly from September 2031)	3 month US$ LIBOR plus 2.5%	571	625
RBS - debt preference shares			
Series F US$156 million 7.65% (callable any time)		—	127
Series H US$242 million 7.25% (callable any time)		—	197
Series L US$751 million 5.75% (callable any time)		—	609
Series 1 US$1,000 million 9.118% (callable any time)		—	54
Series 1 £200 million 7.387% (callable any time)		—	15
NWB Plc - debt preference shares			
Series A £140 million 9% (not callable)		143	143
Series C US$246 million 8.625% (callable quarterly)		—	210
RBS US Capital Trusts - debt trust preferred securities			
US$750 million 6.8% 2042 (callable quarterly)		—	394
US$650 million 6.425% 2043 (callable quarterly from January 2034)	3 month US$ LIBOR plus 1.9425%	407	451
RBS US Capital Trusts - equity trust preferred securities			
£93 million 5.6457% (callable quarterly from June 2017)	3 month LIBOR plus 1.69%	—	93
RBS - paid in equity trades			
CAD321 million 6.666% (callable quarterly from October 2017)	3 month CDOR plus 2.76%	—	156
US$564 million 6.99% (callable quarterly from October 2017)	3 month US$ LIBOR plus 2.67%	—	275
RBS - equity preference shares			
Series S US$661 million 6.6% (callable any time)		321	321
Series U US$1,013 million 7.64% (callable every ten years from September 2017)	3 month US$ LIBOR plus 2.32%	494	494
Series 1 €1,250 million 5.5% (callable quarterly)		859	859
Series 2 €785 million 5.25% (callable quarterly)		512	512
Series 3 €471 million 7.0916% (callable quarterly from September 2017)	3 month EURIBOR plus 2.33%	325	325
Series 1 £54 million floating rate notes (callable quarterly)		54	54

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

Tier 2 capital securities which contain an incentive for the issuer to redeem	Step-up coupon	31 December 2017 £m	31 December 2016 £m
Pillar 1 treatment Tier 2			
RBS plc - undated loan capital			
£51 million floating rate undated subordinated notes (callable every five years from December 2012)	Aggregate of 2.35% and the 5 year UK Gilts yield	—	52
£104 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	117
£35 million 5.5% undated subordinated notes (callable every five years from December 2019)	Aggregate of 1.84% and the 5 year UK Gilts yield	37	38
£21 million 6.2% undated subordinated notes (callable every five years from March 2022)	Aggregate of 2.05% and the 5 year UK Gilts yield	26	27
£16 million 5.625% undated subordinated notes (callable every five years from September 2026)	Aggregate of 2.10% and the 5 year UK Gilts yield	24	25
£19 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			
€100 million floating rate undated step-up notes (callable quarterly)	3 month EURIBOR plus 2.15%	9	9
€178 million floating rate undated subordinated notes (callable quarterly)	3 month EURIBOR plus 2.15%	158	154
£53 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

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.

2017		UK £m	RoI £m	US £m	Sweden £m	Hong Kong £m	Norway £m	Other £m	Total £m
General credit exposures	Exposure value for STD	19,367	724	1,185	80	—	—	12,115	33,471
	Exposure value for IRB	301,047	23,167	10,403	1,379	4	—	33,310	369,310
Trading book	Sum of long and short position of trading book	345	—	—	—	—	—	308	653
	Value of trading book exposure for internal models	359	12	339	102	6	112	7,663	8,593
Securitisation exposures	Exposure value for STD	—	—	—	—	—	—	—	—
	Exposure value for IRB	10,034	168	1,800	—	—	—	1,594	13,596
Own funds	Of which: General credit exposures	7,676	1,265	370	42	—	—	1,971	11,324
	Trading book exposures	84	—	34	7	—	4	177	306
	Securitisation exposures	165	2	15	—	—	—	44	226
	Total	7,925	1,267	419	49	—	4	2,192	11,856
Own funds requirement weights		66.84	10.69	3.53	0.42	—	0.03	18.49	100.00
Countercyclical capital buffer rate		—	—	—	2.00%	1.25%	2.00%	—	0.01%
Total risk exposure (sum of general credit, trading and securitisation)									
RBS plc		115,686	1,058	12,623	1,660	6	112	32,826	163,971
NWB Plc		186,288	159	810	102	—	—	3,301	190,660
UBI DAC		876	22,337	15	23	—	—	115	23,366
Total own fund requirements									
RBS plc		6,251	50	344	101	—	4	1,060	7,810
NWB Plc		3,590	5	23	3	—	—	161	3,782
UBI DAC		40	1,182	1	2	—	—	8	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	RBS plc £m	NWB Plc £m	UBI DAC £m
Total risk exposure amount	200,923	136,811	56,701	17,569
Institution specific countercyclical buffer rate	0.01%	0.03%	—	—
Institution specific countercyclical buffer requirement	18	37	1	1

Note:
(1) The UK countercyclical capital buffer is currently 0.00%; in June 2017 the Financial Policy Committee (FPC) increased the rate to 0.5% effective June 2018. Subsequently in November 2017 the FPC announced a further increase to 1% effective November 2018.

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 prudent 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 banking books) classified for accounting purposes as fair value through profit or loss, including held for trading and available for sale. The prudent 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.

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 2017 ARA, Financial instruments - valuation on pages 279 to 281.

		a	b	c	d	e	f	g
2017		Interest rates £m	Credit £m	FX £m	XVA (CVA, FVA) (1) £m	Other (2) £m	Less: diversification benefit	Total £m
1	Total adjustment	656	44	14	110	107	(435)	496
2016								
1	Total adjustment	743	121	41	53	59	(485)	532

Notes:
(1) The XVA business primarily manages counterparty (CVA) and funding (FVA) risks including those relating to credit support annexe (CSA) discounting.
(2) Includes equities, commodities, emerging markets and hybrids.

Key point

- Prudential valuation decreased marginally overall, primarily due to portfolio reduction within NatWest Markets legacy business, partially offset by increased concentration and potential exit costs on remaining positions.

EBA asset encumbrance

The values presented below, including totals, are based on a four-point median average across the four quarters in each of 2017 and 2016.

	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
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	
2016				
Equity instruments	77	77	766	652
Debt securities	41,636	41,620	41,247	41,460
Other assets	49,729		742,839	
Total assets of the reporting institution	91,150		785,113	

		Unencumbered
Collateral received	Fair value of encumbered collateral received or own debt securities issued £m	Fair value of collateral received or own debt securities issued available for encumbrance £m
2017		
Equity instruments	—	—
Debt securities	61,516	10,143
Total collateral received by the reporting institution	61,517	10,143
2016		
Equity instruments	1	174
Debt securities	61,412	12,905
Total collateral received by the reporting institution	61,412	13,130

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
2017		
Carrying amount of selected financial liabilities	97,265	112,281
Other sources of encumbrance	60,045	63,844
2016		
Carrying amount of selected financial liabilities	96,521	102,742
Other sources of encumbrance	44,908	46,057

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.

		Total unweighted value (average)				Total weighted value (average)			
		31 December 2017	30 September 2017	30 June 2017	31 March 2017	31 December 2017	30 September 2017	30 June 2017	31 March 2017
	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)					122,900	116,996	111,786	107,845
Cash outflows									
2	Retail deposits and deposits from small business customers	195,615	192,678	189,543	186,523	14,182	13,962	13,871	13,851
3	of which: stable deposits	131,448	130,194	125,633	119,924	6,572	6,510	6,282	5,996
4	of which: less stable deposits	62,349	62,209	63,652	66,356	7,347	7,178	7,331	7,611
5	Unsecured wholesale funding	140,522	140,635	141,806	141,574	59,740	59,725	59,921	59,193
6	Operational deposits (all counterparties) and deposits in networks of cooperative banks	76,953	77,332	79,366	81,043	18,909	19,004	19,566	20,069
7	Non-operational deposits (all counterparties)	62,349	62,158	61,262	59,284	39,611	39,576	39,177	37,877
8	Unsecured debt	1,220	1,146	1,178	1,246	1,220	1,146	1,178	1,246
9	Secured wholesale funding					1,890	1,787	1,860	1,873
10	Additional requirements	84,387	85,318	85,217	85,641	24,146	24,101	24,272	25,085
11	Outflows related to derivative exposures and other collateral requirements	11,054	11,294	11,567	12,555	9,987	9,924	10,210	11,219
12	Outflows related to loss of funding on debt products	74	56	56	56	74	56	56	56
13	Credit and liquidity facilities	73,258	73,968	73,594	73,030	14,084	14,121	14,006	13,810
14	Other contractual funding obligations	21,492	20,052	17,762	14,922	1,125	1,101	1,117	1,080
15	Other contingent funding obligations	53,893	54,748	55,983	57,229	3,701	3,661	3,908	4,193
16	Total cash outflows					104,783	104,337	104,949	105,275
Cash inflows									
17	Secured lending (e.g. reverse repos)	81,876	79,909	78,106	75,705	1,671	1,735	2,151	2,685
18	Inflows from fully performing exposures	15,090	14,924	14,695	14,596	10,481	10,338	10,216	10,113
19	Other cash inflows	13,302	12,419	10,386	7,435	5,031	4,805	4,710	3,548
EU-19a	Difference between total weighted inflows and outflows					—	—	—	—
EU-19b	Excess inflows from a related specialised credit institution					—	—	—	—
20	Total cash inflows	110,268	107,252	103,187	97,735	17,183	16,878	17,078	16,346
EU-20a	Fully exempt inflows	—	—	—	—	—	—	—	—
EU-20b	Inflows subject to 90% cap	—	—	—	—	—	—	—	—
EU-20c	Inflows subject to 75% cap	93,306	89,976	85,883	81,401	17,183	16,878	17,078	16,346
	Total adjusted value								
21	Liquidity buffer					122,900	116,996	111,786	107,845
22	Total net cash outflows					87,600	87,460	87,872	88,929
23	Liquidity coverage ratio (%)					140	134	127	122

Key points

- The increase in the LCR was driven by increased primary liquidity from term funding scheme (TFS) participation, increased deposits in the franchises and Treasury issuance, offset funding maturities and calls of securities. This increase reflected preparations for the settlement of litigation and conduct costs, the rise in the minimum regulatory requirement from 90% to 100% on 1 January 2018 and preparations for ring-fencing.
- RBS is primarily deposit funded from the PBB, CPB and RBSI franchises, where deposits are highly diversified at a customer level. In addition, RBS maintains a presence in short term and long term wholesale funding markets across a diverse range of counterparties, including access to central bank funding facilities.
- Derivatives are utilised by RBS in both providing client solutions and hedging risks; these exposures are closely controlled and monitored. Potential collateral calls associated with the derivatives portfolio are a key component of RBS's liquidity risk management process. For further details on derivative exposures, refer to page 205 of the 2017 Annual Report and Accounts.
- RBS primarily sources funding in sterling, euro and US dollar and maintains a liquidity portfolio in each of these currencies. Currency liquidity mismatch is managed to an internally defined risk limit.
- RBS has five UK licensed deposit-taking banks that comprise the majority of the balance sheet and are regulated on a consolidated basis by the UK via a DoLSub waiver. The liquidity portfolio within the UK DoLSub is centrally managed by RBS Treasury. Please refer to the 2017 Annual Report and Accounts pages 109 and 110 for further information on ring-fencing implications.
- The LCR outflows do not capture liquidity risks such as intra-day liquidity or outflows required to settle litigation and conduct before they are contractually agreed. RBS maintains sufficient liquidity to support its access to payment systems and to settle litigation.

EU LI1: CAP: Accounting and regulatory scopes of consolidation

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

	2017				2016			
	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	98,337	—	946	99,283	74,250	(44)	648	74,854
Loans and advances	380,170	(49)	5,590	385,711	382,088	687	6,397	389,172
Debt securities	78,933	(367)	1,276	79,842	72,522	(577)	1,809	73,754
Equity shares	450	—	140	590	703	—	139	842
Settlement balances	2,517	—	—	2,517	5,526	—	—	5,526
Derivatives	160,843	—	25	160,868	246,981	507	34	247,522
Intangible assets	6,543	—	2	6,545	6,480	—	4	6,484
Property, plant and equipment	4,602	—	104	4,706	4,590	—	111	4,701
Deferred tax	1,740	—	—	1,740	1,803	—	—	1,803
Prepayments, accrued income and other assets	3,726	206	(930)	3,002	3,700	228	(786)	3,142
Assets of disposal groups	195	—	—	195	13	—	—	13
	738,056	(210)	7,153	744,999	798,656	801	8,356	807,813
Of which: By significant subsidiary (includes intra-group exposures)								
RBS plc	525,889	—	—	525,889	633,613	—	—	633,613
NWB Plc	259,717	—	—	259,717	228,702	—	—	228,702
UBI DAC	26,848	—	—	26,848	30,696	—	—	30,696
Liabilities								
Deposits by banks and customer accounts	444,934	78	6,472	451,484	419,524	313	7,478	427,315
Debt securities in issue	30,559	—	355	30,914	27,245	984	383	28,612
Settlement balances	2,844	—	—	2,844	3,645	—	—	3,645
Short positions	28,527	—	—	28,527	22,077	—	—	22,077
Derivatives	154,506	—	15	154,521	236,475	—	24	236,499
Provisions, deferred income and other liabilities	14,149	(288)	318	14,179	19,827	(495)	471	19,803
Retirement benefit liabilities	129	—	—	129	363	—	—	363
Deferred tax	583	—	(8)	575	662	—	—	662
Subordinated liabilities	12,722	—	—	12,722	19,419	—	—	19,419
Liabilities of disposal groups	10	—	—	10	15	—	—	15
	688,963	(210)	7,153	695,906	749,252	802	8,356	758,410
Of which: by significant subsidiary (includes intra-group exposures)								
RBS plc	481,367	—	—	481,367	587,737	—	—	587,737
NWB Plc	244,362	—	—	244,362	213,629	—	—	213,629
UBI DAC	21,164	—	—	21,164	24,208	115	—	24,323
Non-controlling interests	763	—	—	763	795	(1)	—	794
Owners' equity	48,330	—	—	48,330	48,609	—	—	48,609
Total equity	49,093	—	—	49,093	49,404	(1)	—	49,403
Of which: by significant subsidiary:								
RBS plc	44,522	—	—	44,522	45,876	—	—	45,876
NWB Plc	15,355	—	—	15,355	15,072	—	—	15,072
UBI DAC	5,684	—	—	5,684	6,488	(115)	—	6,373

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								
2017	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	98.3	1.0	99.3	—	—	—	—	—	—	99.3	—	99.3
Reverse repurchase agreements and stock borrowing	40.7	—	40.7	—	—	(28.9)	—	—	—	11.8	—	11.8
Loans and advances	339.5	5.6	345.1	(0.3)	3.6	(21.6)	—	—	(10.4)	316.4	74.7	391.1
Debt securities	78.9	0.9	79.8	(27.4)	—	—	—	—	0.2	52.6	—	52.6
Equity shares	0.5	0.1	0.6	—	—	—	—	—	0.1	0.7	—	0.7
Settlement balances	2.5	—	2.5	—	—	—	—	—	(2.5)	—	—	—
Derivatives	160.9	—	160.9	—	0.3	(134.7)	—	—	(1.1)	25.4	—	25.4
Intangible assets	6.5	—	6.5	—	—	—	(6.5)	—	—	—	—	—
Property, plant and equipment	4.6	0.1	4.7	—	—	—	—	0.2	—	4.9	—	4.9
Deferred tax	1.7	—	1.7	—	—	—	(0.9)	—	(0.4)	0.4	—	0.4
Prepayments, accrued income and other assets	3.8	(0.8)	3.0	—	—	—	—	—	(0.8)	2.2	—	2.2
Assets of disposal groups	0.2	—	0.2	—	—	—	—	(0.2)	—	—	—	—
Total assets	738.1	6.9	745.0	(27.7)	3.9	(185.2)	(7.4)	—	(14.9)	513.7	74.7	588.4
Contingent obligations											9.1	9.1
											83.8	597.5

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

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

				Other regulatory adjustments								
2016	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	74.3	0.6	74.9	—	—	—	—	—	1.2	76.1	—	76.1
Reverse repurchase agreements and stock borrowing	41.8	—	41.8	—	—	(24.5)	—	—	(1.0)	16.3	—	16.3
Loans and advances	340.3	7.1	347.4	(0.2)	4.3	(23.7)	—	—	(10.0)	317.8	82.5	400.3
Debt securities	72.5	1.2	73.8	(24.4)	—	—	—	—	(1.6)	47.7	—	47.7
Equity shares	0.7	0.1	0.8	(0.2)	—	—	—	—	0.2	0.8	—	0.8
Settlement balances	5.5	—	5.5	—	—	—	—	—	(5.5)	—	—	—
Derivatives	247.0	0.5	247.5	—	—	(205.4)	—	—	(4.1)	38.1	—	38.1
Intangible assets	6.5	—	6.5	—	—	—	(6.5)	—	—	—	—	—
Property, plant and equipment	4.6	0.1	4.7	—	—	—	—	—	0.1	4.8	—	4.8
Deferred tax	1.8	—	1.8	—	—	—	(0.8)	—	(0.7)	0.3	—	0.3
Prepayments, accrued income and other assets	3.7	(0.6)	3.1	—	0.2	—	—	—	(0.4)	3.0	—	3.0
Total assets	798.7	9.2	807.8	(24.8)	4.5	(253.5)	(7.3)	—	(21.8)	504.8	82.5	587.3
Contingent obligations											9.9	9.9
											92.4	597.2

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 (including counterparty 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 177 of the 2017 ARA.

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.

Presentation of data in the Credit risk section

The EAD figures presented in this document may be either pre or post 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 and investments in subsidiaries.

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.

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) split by customer type and type of risk. This reflects the basis on which these are managed internally. Wholesale customers are managed on an individual basis and grouped by sector cluster. Personal customers are managed on a portfolio basis and grouped into portfolios of similar risk. The table presents exposure at default (EAD) post credit risk mitigation (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
2017	£m	£m	£m	£m	£m	£m	%	%	%
Sector cluster									
Sovereign									
Central banks	37,041	70,730	107,771	1,032	—	1,032	3	—	1
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	93,158	154,185	3,971	176	4,147	7	—	3
Financial institutions (FIs)									
Banks	21,941	647	22,588	8,916	294	9,210	41	45	41
Non-bank FIs (1)	31,906	6,232	38,138	13,147	2,061	15,208	41	33	40
SSPEs (2)	10,146	135	10,281	2,265	126	2,391	22	93	23
Total Fis	63,993	7,014	71,007	24,328	2,481	26,809	38	35	38
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	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 (3)	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	2,349	8,563	4,468	2,882	7,350	72	123	86
Total	465,600	131,880	597,480	134,088	25,983	160,071	29	20	27

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

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

2016	EAD post CRM IRB £m	EAD post CRM STD £m	EAD post CRM Total £m	RWAs IRB £m	RWAs STD £m	RWAs Total £m	RWA density IRB %	RWA density STD %	RWA density Total %
Sector cluster									
Sovereign									
Central banks	34,541	56,193	90,734	1,048	—	1,048	3	—	1
Central governments	22,327	17,712	40,039	2,313	33	2,346	10	—	6
Other sovereign	4,246	461	4,707	1,244	181	1,425	29	39	30
Total sovereign	61,114	74,366	135,480	4,605	214	4,819	8	—	4
Financial institutions (FIs)									
Banks	27,813	963	28,776	13,249	490	13,739	48	51	48
Non-bank FIs (1)	31,056	9,673	40,729	15,469	6,059	21,528	50	63	53
SSPEs (2)	13,029	711	13,740	2,880	840	3,720	22	118	27
Total Fis	71,898	11,347	83,245	31,598	7,389	38,987	44	65	47
Corporates									
Property									
- UK	41,090	4,362	45,452	20,107	4,171	24,278	49	96	53
- RoI	1,215	48	1,263	1,084	49	1,133	89	102	90
- Western Europe	2,866	379	3,245	1,503	373	1,876	52	98	58
- US	332	17	349	184	17	201	55	100	58
- RoW	611	2,174	2,785	422	2,026	2,448	69	93	88
Total property	46,114	6,980	53,094	23,300	6,636	29,936	51	95	56
Natural resources	17,986	558	18,544	7,484	541	8,025	42	97	43
Transport	20,592	1,687	22,279	9,653	1,462	11,115	47	87	50
Manufacturing	18,459	2,142	20,601	8,486	2,059	10,545	46	96	51
Retail and leisure	20,481	4,215	24,696	12,887	4,000	16,887	63	95	68
Services	21,746	1,474	23,220	13,009	1,390	14,399	60	94	62
TMT (3)	7,262	391	7,653	5,133	377	5,510	71	96	72
Total corporates	152,640	17,447	170,087	79,952	16,465	96,417	52	94	57
Personal									
Mortgages									
- UK	140,275	8,713	148,988	9,699	3,373	13,072	7	39	9
- RoI	15,685	20	15,705	9,729	14	9,743	62	70	62
- Western Europe	—	223	223	—	86	86	—	39	39
- US	—	131	131	—	51	51	—	39	39
- RoW	—	1,774	1,774	—	1,249	1,249	—	70	70
Total mortgages	155,960	10,861	166,821	19,428	4,773	24,201	12	44	15
Other personal	29,166	4,131	33,297	11,185	3,020	14,205	38	73	43
Total personal	185,126	14,992	200,118	30,613	7,793	38,406	17	52	19
Other items	—	8,231	8,231	—	6,457	6,457	—	78	78
Total	470,778	126,383	597,161	146,768	38,318	185,086	31	30	31

Notes:
(1) Non-bank financial institutions, such as US agencies, insurance companies, pension funds, hedge and leverage funds, broker-dealers and non-bank subsidiaries of banks.
(2) Securitisation special purpose entities (SSPEs) primarily relate to securitisation related vehicles.
(3) Telecommunications, media and technology.

- EAD post CRM – Overall, total credit risk exposure remained flat during the year. The key downward drivers were asset sales, selective disposals (predominantly in the transport sector as RBS continued to manage down its shipping portfolio) and limit reductions in line with the risk reduction strategy. These were largely offset by an increase in exposures to central governments and central banks as part of liquidity management by Treasury (with an increase in placements to the UK and the Eurozone, mainly in Germany), as well as continued growth in the UK mortgage portfolio, in line with strategy and within risk appetite.
- RWAs – The material decrease was due to the risk reduction strategy, extended regulatory permission for RBS International to use the IRB approach, and RWA reduction initiatives. The increase in exposures to central governments and central banks did not affect RWAs as the majority of these were zero-weighted placements.
- RWA density – The decrease in density reflected the reduction in RWAs and the fact that the increase in exposure largely related to growth in the UK mortgage portfolio, which attracted low RWAs, and zero-weighted placements with central governments and central banks.
- Financial institutions – Both EAD post CRM and RWAs fell materially mainly as a result of reduced exposure to major banks, securitisations (SSPEs) and non-bank financial institutions. A material reduction in RWA density for non-bank financial institutions was mainly due to extended regulatory permission for RBS International to use the IRB approach.
- Property – Both EAD post CRM and RWAs fell in line with strategy. RWA density fell due to RWA reduction initiatives in the commercial real estate sector.
- Counterparty credit risk – Both EAD post CRM and RWAs decreased significantly, largely due to asset reduction. This reflected the continued customer exit strategy and increased mitigation of exposures through collateralisation in NatWest Markets.
- Refer to the Credit risk section of the 2017 ARA for further commentary on exposure movements by sector.

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

The table below analyses 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.

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

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

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

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

	RBS				RBS plc				NWB Plc				UBI DAC			
Credit risk	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
2016																
IRB																
Central governments and central banks	53,426	53,358	3,688	295	46,893	46,893	2,941	235	831	763	21	2	4,056	4,056	414	33
Institutions	18,615	16,084	4,690	375	10,036	9,450	3,052	244	2,533	918	316	25	621	621	162	13
Corporates	156,539	146,789	78,193	6,255	85,640	81,518	42,320	3,386	46,400	40,971	23,391	1,871	5,113	5,026	4,313	345
Specialised lending	*26,138*	*25,195*	*17,459*	*1,396*	*17,610*	*16,678*	*11,207*	*897*	*7,188*	*7,177*	*5,256*	*420*	*1,098*	*1,098*	*839*	*67*
SME	*23,471*	*22,878*	*10,613*	*849*	*5,792*	*5,609*	*2,787*	*223*	*11,526*	*11,168*	*4,912*	*393*	*1,126*	*1,119*	*742*	*59*
Other corporate	*106,930*	*98,716*	*50,121*	*4,010*	*62,238*	*59,231*	*28,326*	*2,266*	*27,686*	*22,626*	*13,223*	*1,058*	*2,889*	*2,809*	*2,732*	*219*
Retail	195,341	195,341	34,709	2,777	41,568	41,568	5,905	472	132,367	132,367	16,438	1,315	16,854	16,855	10,517	841
Secured by real estate property - SME	*1,360*	*1,361*	*462*	*37*	*397*	*397*	*134*	*11*	*965*	*965*	*328*	*26*	—	—	—	—
- non-SME	*155,959*	*155,959*	*19,428*	*1,554*	*33,111*	*33,111*	*2,396*	*191*	*104,859*	*104,859*	*6,648*	*532*	*15,685*	*15,686*	*9,729*	*778*
Qualifying revolving	*23,293*	*23,292*	*6,171*	*494*	*4,854*	*4,854*	*1,547*	*124*	*17,721*	*17,721*	*4,304*	*344*	*361*	*361*	*215*	*17*
Other retail - SME	*9,169*	*9,169*	*3,894*	*312*	*1,852*	*1,852*	*681*	*54*	*5,159*	*5,159*	*1,863*	*149*	*608*	*608*	*434*	*35*
- non-SME	*5,560*	*5,560*	*4,754*	*380*	*1,354*	*1,354*	*1,147*	*92*	*3,663*	*3,663*	*3,295*	*264*	*200*	*200*	*139*	*11*
Equities	781	781	2,015	161	154	154	487	39	4	4	13	1	—	—	—	—
Securitisation	10,685	10,685	1,609	129	8,492	8,492	1,212	97	2,141	2,141	309	25	—	—	—	—
Non-credit obligation assets	1,120	1,120	375	30	—	—	—	—	—	—	—	—	—	—	—	—
Total IRB	436,507	424,158	125,279	10,022	192,783	188,075	55,917	4,473	184,276	177,164	40,488	3,239	26,644	26,558	15,406	1,232
STD																
Central governments and central banks	71,819	71,894	729	58	67,932	68,054	728	58	951	962	1,839	147	1	1	2	—
Regional governments and local authorities	191	190	156	12	10	10	2	—	18	15	3	—	1	1	1	—
Multilateral development banks	33	33	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Institutions	505	558	263	21	43,568	43,568	1,791	143	63,900	63,900	217	17	1,554	1,554	315	25
Corporates	18,053	16,993	16,635	1,331	4,434	3,797	3,584	288	403	379	387	31	293	293	292	23
Retail	3,430	3,408	2,369	190	150	150	87	7	428	428	257	21	14	14	8	1
Secured by mortgages on:																
immovable property - residential	11,829	11,828	5,053	404	1,071	1,071	479	38	3	3	3	—	—	—	—	—
- commercial	3,508	3,483	3,496	280	367	350	364	29	51	50	50	4	4	4	6	1
Exposures in default	1,264	1,255	1,420	114	784	778	857	69	33	33	46	4	15	15	23	2
Items associated with particularly high risk	391	391	587	47	—	—	—	—	—	—	—	—	—	—	—	—
Covered bonds	84	84	17	1	—	—	—	—	—	—	—	—	—	—	—	—
Equity exposures	555	555	1,199	96	16,894	16,894	60,842	4,867	3,407	3,406	11,699	936	5	5	13	1
Other exposures	8,002	8,001	4,959	397	3,453	3,453	2,368	189	2,271	2,271	1,077	86	469	469	197	16
Total STD	119,664	118,673	36,883	2,951	138,663	138,125	71,102	5,688	71,465	71,447	15,578	1,246	2,356	2,356	857	69
Total IRB and STD	556,171	542,831	162,162	12,973	331,446	326,200	127,019	10,161	255,741	248,611	56,066	4,485	29,000	28,914	16,263	1,301

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

	RBS			RBS plc			NWB Plc			UBI DAC		
Counterparty credit risk	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
2016												
IRB												
Central governments and central banks	8,473	570	46	8,473	570	46	—	—	—	—	—	—
Institutions	10,661	8,703	695	10,614	8,623	690	2	1	—	14	9	1
Corporates	26,342	11,872	950	24,596	10,660	852	900	458	37	95	69	5
Specialised lending	*2,282*	*1,699*	*136*	*1,873*	*1,374*	*110*	*146*	*114*	*9*	*75*	*53*	*4*
SME	*207*	*175*	*14*	*115*	*106*	*8*	*89*	*65*	*5*	*3*	*3*	—
Other corporate	*23,853*	*9,998*	*800*	*22,608*	*9,180*	*734*	*665*	*279*	*23*	*17*	*13*	*1*
Securitisation positions	1,144	345	28	805	310	25	42	5	—	—	—	—
Total IRB	46,620	21,490	1,719	44,488	20,163	1,613	944	464	37	109	78	6
STD												
Government and multilateral institutions	2,607	10	1	2,599	9	1	—	—	—	—	—	—
Institutions	3,890	308	25	8,883	601	48	2,167	—	—	875	427	34
Corporates	1,203	1,109	89	524	440	35	9	9	1	—	—	—
Retail	8	6	—	—	—	—	—	—	—	—	—	—
Past due items	2	2	—	1	1	—	—	—	—	—	—	—
Total STD	7,710	1,435	115	12,007	1,051	84	2,176	9	1	875	427	34
Total IRB and STD	54,330	22,925	1,834	56,495	21,214	1,697	3,120	473	38	984	505	40

Key points

Credit risk

- RBS – The increase in EAD post CRM mainly reflected a rise in exposure to central governments and central banks as part of liquidity management by Treasury in RBS plc and NWB Plc, as well as growth in the UK mortgage portfolio in NWB Plc. This was partly offset by portfolio sales, limit reductions and repayments in line with risk reduction strategy in RBS plc. The decrease in RWAs was mainly due to a fall in exposure in line with the risk reduction strategy in RBS plc, extended regulatory permission for RBS International to use the IRB approach, and RWA reduction initiatives in NWB Plc.
- RBS plc – EAD post CRM fell, mainly reflecting a fall in corporate exposure due to further limit reductions and disposals in line with the risk reduction strategy, as well as a decrease in exposure to central governments and central banks and institutions. The decrease in RWAs primarily reflected the phased transition to full capital deduction for equity exposures (refer to the Capital section), which reduced credit risk RWAs under the standardised approach, as well as a decrease in corporate exposure.

NWB Plc – EAD post CRM increased reflecting growth in the UK mortgage portfolio. RWAs decreased, mainly as a result of the phased transition to full capital deduction for equity exposures and RWA reduction initiatives.

Counterparty credit risk

- Both EAD post CRM and RWAs fell materially due to the reduction in assets mainly in RBS plc. This reflected continued strategic reductions and increased mitigation of exposures through collateralisation.

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	
Credit risk	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																
IRB																
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 thus reported under counterparty credit risk in regulatory disclosures.

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

Credit risk	UK PBB EAD post CRM £m	UK PBB RWAs £m	Ulster Bank RoI EAD post CRM £m	Ulster Bank RoI RWAs £m	Commercial Banking EAD post CRM £m	Commercial Banking RWAs £m	Private Banking EAD post CRM £m	Private Banking RWAs £m	RBS International EAD post CRM £m	RBS International RWAs £m	NatWest Markets EAD post CRM £m	NatWest Markets RWAs £m	Central items and other EAD post CRM £m	Central items and other RWAs £m	Total EAD post CRM £m	Total RWAs £m
2017																
STD																
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*

Counterparty credit risk	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
2017																
IRB																
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 corporate	—	—	*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.

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

Credit risk	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
2016																
IRB																
Central governments and central banks	7,571	445	8,241	660	18,575	1,088	—	—	2,283	132	15,655	1,298	1,033	65	53,358	3,688
Institutions	1,827	463	1,627	416	7,415	2,083	—	—	539	137	4,428	1,524	248	67	16,084	4,690
Corporates	8,989	6,381	5,132	4,234	117,127	59,633	—	—	485	357	15,030	7,574	26	14	146,789	78,193
Specialised lending	*3,358*	*2,563*	*1,098*	*839*	*16,656*	*11,714*	—	—	—	—	*4,083*	*2,343*	—	—	*25,195*	*17,459*
SME	*3,077*	*1,591*	*1,119*	*742*	*18,536*	*8,152*	—	—	*34*	*93*	*112*	*35*	—	—	*22,878*	*10,613*
Other corporate	*2,554*	*2,227*	*2,915*	*2,653*	*81,935*	*39,767*	—	—	*451*	*264*	*10,835*	*5,196*	*26*	*14*	*98,716*	*50,121*
Retail	176,997	23,355	16,855	10,518	1,467	824	—	—	—	—	22	12	—	—	195,341	34,709
Secured by real estate property																
- SME	*1,361*	*462*	—	—	—	—	—	—	—	—	—	—	—	—	*1,361*	*462*
- non-SME	*140,274*	*9,699*	*15,685*	*9,729*	—	—	—	—	—	—	—	—	—	—	*155,959*	*19,428*
Qualifying revolving	*22,931*	*5,956*	*361*	*215*	—	—	—	—	—	—	—	—	—	—	*23,292*	*6,171*
Other retail - SME	*7,469*	*2,808*	*608*	*434*	*1,078*	*643*	—	—	—	—	*14*	*9*	—	—	*9,169*	*3,894*
- non-SME	*4,962*	*4,430*	*201*	*140*	*389*	*181*	—	—	—	—	*8*	*3*	—	—	*5,560*	*4,754*
Equities (1)	36	102	20	57	452	945	—	—	11	30	257	866	5	15	781	2,015
Securitisation	369	36	204	20	2,401	559	—	—	108	11	7,553	978	50	5	10,685	1,609
Non-credit obligation assets	—	—	—	—	1,120	375	—	—	—	—	—	—	—	—	1,120	375
Total IRB	195,789	30,782	32,079	15,905	148,557	65,507	—	—	3,426	667	42,945	12,252	1,362	166	424,158	125,279

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 thus reported under counterparty credit risk in regulatory disclosures.

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

Credit risk	UK PBB EAD post CRM £m	UK PBB RWAs £m	Ulster Bank RoI EAD post CRM £m	Ulster Bank RoI RWAs £m	Commercial Banking EAD post CRM £m	Commercial Banking RWAs £m	Private Banking EAD post CRM £m	Private Banking RWAs £m	RBS International EAD post CRM £m	RBS International RWAs £m	NatWest Markets EAD post CRM £m	NatWest Markets RWAs £m	Central items and other EAD post CRM £m	Central items and other RWAs £m	Total EAD post CRM £m	Total RWAs £m
2016																
STD																
Central governments and central banks	11,307	93	5,750	51	25,224	223	5,323	113	3,208	54	19,541	179	1,541	16	71,894	729
Regional governments and local authorities	—	—	1	1	15	3	—	—	164	150	10	2	—	—	190	156
Multilateral development banks	—	—	—	—	—	—	—	—	—	—	33	—	—	—	33	—
Institutions	15	3	8	1	63	33	75	17	17	3	378	206	2	—	558	263
Corporates	132	135	486	469	3,516	3,435	1,082	1,068	5,172	5,166	6,604	6,361	1	1	16,993	16,635
Retail	82	59	16	10	1,105	651	1,316	983	104	77	785	589	—	—	3,408	2,369
Secured by mortgages on																
- immovable property - residential	176	102	5	1	128	114	7,640	2,674	2,927	1,219	951	943	1	—	11,828	5,053
- commercial	43	43	5	7	387	401	1,817	1,817	1,228	1,225	3	3	—	—	3,483	3,496
Exposures in default	37	55	28	42	85	118	322	360	87	98	696	747	—	—	1,255	1,420
Items associated with particularly high risk	—	—	—	—	—	—	—	—	—	—	391	587	—	—	391	587
Covered bonds	13	2	7	1	30	5	6	3	4	2	22	4	2	—	84	17
Equity exposures	66	142	36	78	159	341	73	211	19	41	192	360	10	26	555	1,199
Other exposures	3,403	1,693	608	292	1,634	1,111	301	287	175	93	1,869	1,471	11	12	8,001	4,959
Total STD	15,274	2,327	6,950	953	32,346	6,435	17,955	7,533	13,105	8,128	31,475	11,452	1,568	55	118,673	36,883
Total IRB and STD	211,063	33,109	39,029	16,858	180,903	71,942	17,955	7,533	16,531	8,795	74,420	23,704	2,930	221	542,831	162,162

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

Counterparty credit risk	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
2016																
IRB																
Central governments and central banks	—	—	—	—	—	—	—	—	—	—	8,473	570	—	—	8,473	570
Institutions	—	—	14	9	—	—	—	—	—	—	10,647	8,694	—	—	10,661	8,703
Corporates	—	—	95	68	2	2	—	—	17	32	26,228	11,770	—	—	26,342	11,872
Specialised lending	—	—	*75*	*52*	—	—	—	—	—	—	*2,207*	*1,647*	—	—	*2,282*	*1,699*
SME	—	—	*3*	*3*	*1*	*1*	—	—	—	—	*203*	*171*	—	—	*207*	*175*
Other corporates	—	—	*17*	*13*	*1*	*1*	—	—	*17*	*32*	*23,818*	*9,952*	—	—	*23,853*	*9,998*
Securitisation positions	—	—	—	—	—	—	—	—	—	—	1,144	345	—	—	1,144	345
Total IRB	—	—	109	77	2	2	—	—	17	32	46,492	21,379	—	—	46,620	21,490
STD																
Government and multilateral institutions (1)	—	—	—	—	—	—	—	—	—	—	2,607	10	—	—	2,607	10
Institutions	—	—	—	—	—	—	—	—	—	—	3,890	308	—	—	3,890	308
Corporates	—	—	—	—	—	—	14	14	—	—	1,189	1,095	—	—	1,203	1,109
Retail	—	—	—	—	—	—	8	6	—	—	—	—	—	—	8	6
Past due items	—	—	—	—	—	—	1	1	—	—	1	1	—	—	2	2
Total STD	—	—	—	—	—	—	23	21	—	—	7,687	1,414	—	—	7,710	1,435
Total IRB and STD	—	—	109	77	2	2	23	21	17	32	54,179	22,793	—	—	54,330	22,925

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

- UK PBB — EAD post CRM increased, driven by placements to central governments and central banks as well as significant mortgage lending activity. Mortgage underwriting standards are constantly monitored to ensure that they remain adequate in the current market environment and were not weakened to sustain the growth observed during the period. The UK unsecured lending portfolio remained stable, despite an upward trend in the wider UK market. The growth in the unsecured loan portfolio was offset by declines in the credit card and overdraft portfolios.
- Ulster Bank RoI — EAD post CRM rose as a result of increased placements to central governments and central banks.
- Commercial Banking — EAD post CRM increased moderately as placements to central governments and central banks offset reductions in Corporates. RWAs fell mainly due to repayments in the normal course of business and RWA reduction initiatives.
- Private Banking — EAD post CRM and RWAs increased, driven by new residential and commercial mortgage lending.
- RBS International — EAD post CRM remained flat. RWAs fell significantly due to extended regulatory permission to use the IRB approach.
- NatWest Markets — EAD post CRM and RWAs decreased, reflecting reduced placements with central governments and central banks and a fall in lending to corporates.

Counterparty credit risk

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

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.

CRR establishes the standardised approach as the method for banks to calculate RWAs for 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 risk exposures. In 2017, the permission was extended to the RBS International Wholesale portfolio, as part of preparations for ring-fencing.

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 to calculate RWAs:

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

EAD for counterparty credit risk is estimated in accordance with RBS's internal model method permission – refer to page 61.

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 loss/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. An application has been made for RBS Securities Inc. to support the ring-fence 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 such permissions for UK sovereign exposures and intra-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, analysed 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
2017														
Central governments and central banks	154,584	40	61,678	60	92,885	—	21	3,612	100	3,612	—	—	—	—
Institutions	25,977	81	21,016	19	4,890	—	71	9,837	93	9,155	7	665	—	17
Corporates	175,499	91	159,127	9	15,521	—	851	93,223	81	75,950	18	16,430	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	*124,857*	*87*	*109,380*	*12*	*14,626*	*1*	*851*	*63,793*	*74*	*47,223*	*25*	*15,727*	*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	974	89	861	9	90	2	23	2,080	94	1,962	5	95	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

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
2016 (1)														
Central governments and central banks	135,889	46	61,831	54	73,884	—	174	4,284	99	4,257	—	—	1	27
Institutions	31,322	85	26,746	14	4,307	1	269	14,094	95	13,392	4	531	1	171
Corporates														
Specialised lending	*29,064*	*95*	*27,477*	—	*41*	*5*	*1,546*	*20,746*	*92*	*19,158*	—	*41*	*8*	*1,547*
SME	*24,100*	*96*	*23,085*	*3*	*764*	*1*	*251*	*11,743*	*92*	*10,788*	*6*	*713*	*2*	*242*
Other	*144,678*	*85*	*122,568*	*11*	*16,128*	*4*	*5,982*	*82,826*	*73*	*60,120*	*20*	*16,560*	*7*	*6,146*
Retail														
Secured by real estate property														
- SME	*1,380*	*99*	*1,362*	*1*	*18*	—	—	*474*	*97*	*462*	*3*	*12*	—	—
- non-SME	*166,134*	*94*	*155,959*	*6*	*10,175*	—	—	*23,306*	*83*	*19,428*	*17*	*3,878*	—	—
Qualifying revolving	*23,478*	*99*	*23,293*	*1*	*185*	—	—	*6,321*	*98*	*6,171*	*2*	*150*	—	—
Other retail														
- SME	*10,282*	*89*	*9,168*	*11*	*1,114*	—	—	*4,527*	*86*	*3,894*	*14*	*633*	—	—
- Non-SME	*8,908*	*62*	*5,560*	*38*	*3,348*	—	—	*7,329*	*65*	*4,754*	*35*	*2,575*	—	—
Equities	910	86	781	11	103	3	26	2,148	94	2,014	5	108	1	26
Non-credit obligation assets	9,122	12	1,120	87	7,918	1	84	5,334	7	375	91	4,875	2	84
Total	585,267	79	458,950	20	117,985	1	8,332	183,132	79	144,813	16	30,076	5	8,243

Note:

(1) The 2016 transition portfolios data has been restated to include RBS Securities Inc (EAD - £1,307 million; RWAs - £1,394 million).

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 customer data is manually entered into the models as part of the credit risk management process – usually at the time of the customer's annual review – and enables the use of expert judgement overrides, as permitted by regulation.

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 conservative measure, which is an input to RWA calculations. The conservative measure is designed to take account of the 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 quarterly using observed default data covering the most recent performance period for the underlying portfolio.
- All Retail PD models discriminate well and are stable.

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 the 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
Residential mortgages	19,822	PD	4	Retail – Secured by real estate SME Retail – Secured by real estate non-SME	Individual models are developed for the UK and Republic of Ireland, with separate Great Britain and Northern Ireland PD models developed within the UK.	Key model drivers include the internal behaviour score of the related current account and loan-to-value (LTV).
		LGD	2			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	7,947	PD	3	Retail – Qualifying revolving	Individual PD and EAD models are developed for current accounts and loan products, with a single LGD model covering both. A separate student current account model is developed for PD estimation.	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	4,069	PD	2	Retail – Other SME	Individual PD and EAD models are developed for current accounts and loan products with a single LGD model covering both.	Model estimates are mainly based on internal behaviour score.
		LGD	2			Model estimates are based on historical data and account for 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 limit.
Personal credit cards	3,376	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.
						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	650	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.

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 many of its risk management and measurement frameworks, including credit sanctioning and provisioning 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 non-bank financial institutions, public sector entities and specialist corporate sectors such as shipping.
- 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 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 2017 for the majority of sectors and regions.
- The exception to the previous point is the shipping PD model, where observed default rates exceed model estimates. This is a result of the distressed conditions in the shipping sector and RBS's stated intention to exit the ship finance business and that subsequent portfolio experience is not representative of the historical dataset used to develop the model. A remediation plan has been implemented to ensure appropriate capitalisation of the portfolio.
- 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 have been undertaken, with roll-out beginning in early 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 product families with the greatest impact on EAD are those applying to non-contingent products, in particular loans, overdrafts and revolving credit facilities.

EU CRE_2b: Overview of Wholesale IRB models

<table>
<tr><th>Portfolio</th><th>RWAs (£m)</th><th>Model type</th><th>Number of models</th><th>IRB exposure class</th><th>IRB model segmentation</th><th>Model characteristics</th></tr>
<tr><td rowspan="2">Sovereign and quasi-government entities</td><td rowspan="2">5,576</td><td>PD</td><td>4</td><td rowspan="2">Central governments and central banks
Institutions
Corporates – Other</td><td rowspan="2">Global PD and LGD models are developed for sovereign and quasi-government type entities.</td><td>Sovereign: External rating agency replication model calibrated to long-run average default rates. Local Authority, Housing Association and UK University: Expert-driven scorecard models using qualitative and in some cases quantitative inputs.</td></tr>
<tr><td>LGD</td><td>2</td><td>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. LGD floor applied at pool level.</td></tr>
<tr><td rowspan="2">Financial institutions</td><td rowspan="2">15,475</td><td>PD</td><td>7</td><td rowspan="2">Central governments and central banks
Institutions
Corporates – Other
Equity IRB</td><td rowspan="2">Global PD and LGD models are developed for bank and non-bank financial institutions (NBFIs).</td><td>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 agency replication and calibration to internal default rates.
Geared Investment Fund: Merton-like approach 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.</td></tr>
<tr><td>LGD</td><td>2</td><td>Bank models and a single NBFI model are structured as simple decision trees relying on few regulatory LGD benchmarks, due to low frequency of loss data.</td></tr>
</table>

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
Corporates with turnover above £50 million	30,958	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 (UK, US & RoI) with a turnover between £50 million and £500 million, and which 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 rates. Mid-large corporate: Statistical model which is calibrated to internal long-run default 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 also use secured collateral specific secured recovery rate models, as described for Mid-corporate LGD. A 35% LGD floor is applied for certain countries due to scarcity of loss data.
Corporates with turnover below £50 million	17,473	PD	1	Corporates – SME Corporates – Other Equity IRB	United Kingdom and Republic of Ireland PD and LGD models for corporates with a turnover below £50 million.	Statistical rating model which uses qualitative and quantitative inputs to produce a score that is transformed into a PD. Separate long-run average default rate calibrations exist for Great Britain and Ulster Bank customers, based on internal and external data and taking into account differences between industry and sectors.
		LGD	3			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 the collateral.

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
Shipping	44	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) and calibrated to internal loss data.
Credit risk (excluding counterparty credit risk) EAD model			2	Central governments and central banks Institutions Corporates – SME Corporates – Other Corporates – Specialised lending	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 assigned a CCF. CCFs are estimated either using historical internal data or based on benchmarks, when data is scarce.

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 greater scrutiny to the more significant 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.
  - Independent model review.
  - Model approval.
  - Model implementation.
  - Model maintenance – monitoring and annual review.
- 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 (refer below for more information).

The framework aims to ensure that RBS is not exposed to excessive model risk and that the approaches deployed continue to meet both internal and regulatory standards.

The performance of models is tested by monitoring and annual review. 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. their 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 Credit Model Risk Forum for peer and stakeholder review and challenge. A summarised version of these reports is presented to the Risk Models Approval Forum, including any points of escalation.

The annual reviews comprise 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 monitoring or annual review, appropriate action is 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, once they have been approved through internal governance, they need to follow the appropriate regulatory approval or notification process before being implemented.

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 some or all of the following steps, as appropriate:

- Testing and challenging the logical and conceptual soundness of the methodology.
- Testing the assumptions underlying the model, where feasible, against actual behaviour. In its validation report, Model Risk Management will opine on the reasonableness and stability of the assumptions and specify which assumptions, if any, should be routinely monitored in production.
- Testing whether all key appropriate risks have been sufficiently captured.
- Checking the accuracy of calculations.
- Comparing outputs with results from alternative methods.
- Testing parameter selection and calibration.
- Ensuring model outputs are sufficiently conservative in areas where there is significant model uncertainty.
- Confirming the applicability of tests for accuracy and stability; recalculating and ensuring that results are robust.
- Ensuring appropriate sensitivity analysis has been performed and documented.

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.

For model performance monitoring and annual reviews, Model Risk Management contributes to the technical oversight and challenge, and forms part of the Credit Model Risk Forum where these reviews are presented. A separate Model Risk Management review report is produced if there are material points to escalate at the forum. Ongoing use of the model needs to be affirmed by the model approver.

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 2016 and 2017 and uplifts the EAD, 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 103), 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.

EU 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. They estimate the probability of default under current economic conditions, resulting in more variable estimates.

The back-testing tables EU CR9_a and EU CR9_b exclude RBS International data as this entity was subject to standardised capital treatment at the start of the observation period in December 2016. However, the inclusion of RBS International would not have a material impact on the reported numbers.

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

EU 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 2016 %	Actual 2017 %	Estimated at 2015 %	Actual 2016 %	Estimated to actual ratio 2017 %	Estimated to actual ratio 2016 %
Retail						
- SME	2.34	1.96	2.02	2.05	115	116
- Secured by real estate non-SME	0.88	0.66	1.01	0.68	103	103
- Qualifying revolving	1.40	1.26	1.44	1.22	115	115
- Other	3.35	3.80	3.03	3.17	109	110
Central governments and central banks	0.78	—	1.05	—	—	—
Institutions	0.68	—	0.56	0.08	—	—
Corporates	2.06	1.12	2.13	1.27	109	110
Equities	2.05	—	2.13	2.27	—	—

Key points

- For three of the four retail exposure classes, actual default experience in 2017 was below estimated outcomes, as had been the case in the previous year.
- The over-estimation in the Retail - SME class resulted from regular calibrations, aimed at aligning estimates to actual default experience.
- Default rates in the secured by real estate non-SME class were stable year-on-year. Over-estimation declined as regular calibration brought estimates closer to observed default experience.
- The under-estimation in Retail - Other increased compared to the previous year. This class consists mainly of fixed-rate personal loans in the UK. PD estimates increased year-on-year as regular model calibration reflected higher default rates. Any remaining under-estimation will be addressed through future model calibrations.
- In all wholesale exposure classes, actual default experience in 2017 was below estimated outcomes. This had been the case in 2016 with the exception of equities.
- The PD estimate for central governments and central banks fell. This reflected the exit from higher-risk sovereign exposures.
- The PD estimate for institutions rose slightly due to the downgrade of a number of bank counterparties following a model recalibration.
- The over-estimation for corporates reflects the better-than-average credit cycle conditions experienced in the actual outcomes relative to the through-the-cycle credit estimates. Refer to the wholesale models section for further details.
- Across the retail and corporates classes, EAD ratios were stable year-on-year.

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 estimated PDs as at the end of 2016, on both an EAD-weighted and obligor-weighted (mean) basis. The actual default rates for 2017 and the averaged annual default rates across the five-year period covering 2013-2017.
- The actual default rates for 2017 and the averaged annual default rates across the five-year period covering 2013-2017.
- The number of obligors at the 2016 and 2017 year-ends. These numbers differ slightly from the obligor numbers in EU CR6 and EU CCR4 because specific filters are applied for modelling or scope differences (for example, the inclusion or exclusion of counterparty credit risk exposures).
- The total default count in 2017.
- The number of clients defaulting in 2017 that did not have committed facilities granted at the end of 2016. These newly-funded clients are not included in the actual 2017 default rates.

EU 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		Defaulted obligors	
			EAD weighted	Obligor weighted	Obligor weighted	Obligor weighted				
Exposure class	AQ band	PD range	2016 %	2016 %	2017 %	2013-2017 %	2016	2017	All	of which: newly funded 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	0.981% 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	0.981% 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

Note:

(1) The number of obligors for the 2016 Retail - SME exposure class has been updated to reflect 2016 year-end numbers.

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

			PD estimate at		Default rates actual		Number of obligors		Defaulted obligors	
Exposure class	AQ band	PD range	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										
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	1	—	—	—	—	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	0.981% 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

Key points

- Observed and estimate default rates are well aligned across AQ bands for all classes except Retail - Other.
- 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.

EU 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 2015 %	PD estimate at Obligor weighted 2015 %	Defaulted rates actual Obligor weighted 2016 %	Defaulted rates actual Obligor weighted 2012-2016 %	Number of obligors 2015	Number of obligors 2016	Defaulted obligors All	Defaulted obligors of which: newly funded obligors during the year
2016										
Retail - SME	AQ01	0% to 0.034%	—	—	—	—	—	585	6	6
Retail - SME	AQ02	0.034% to 0.048%	0.04%	0.04%	—	0.07%	3,126	79	—	—
Retail - SME	AQ03	0.048% to 0.095%	0.07%	0.07%	0.06%	0.05%	170,008	18,231	110	—
Retail - SME	AQ04	0.095% to 0.381%	0.24%	0.22%	0.27%	0.20%	333,055	427,336	893	6
Retail - SME	AQ05	0.981% to 1.076%	0.66%	0.66%	0.69%	0.58%	317,642	327,923	2,255	59
Retail - SME	AQ06	1.076% to 2.153%	1.49%	1.50%	1.90%	1.30%	220,148	213,885	4,260	77
Retail - SME	AQ07	2.153% to 6.089%	3.46%	3.59%	3.29%	2.74%	165,986	212,918	6,122	659
Retail - SME	AQ08	6.089% to 17.222%	9.97%	10.02%	10.17%	8.54%	54,636	63,676	5,685	126
Retail - SME	AQ09	17.222 % to 100 %	31.45%	33.35%	31.78%	28.87%	25,210	30,874	8,075	64
Retail - SME	AQ10	100%	—	—	—	—	55,332	39,746	—	—
Total - Retail - SME			1.79%	2.02%	2.05%	2.52%	1,345,143	1,335,253	27,406	997
Retail - Secured by real estate non-SME	AQ01	0% to 0.034%	—	—	—	0.00%	—	56	—	—
Retail - Secured by real estate non-SME	AQ02	0.034% to 0.048%	0.05%	0.05%	0.30%	0.06%	993	17,544	3	—
Retail - Secured by real estate non-SME	AQ03	0.048% to 0.095%	0.08%	0.08%	0.07%	0.05%	113,493	111,054	86	1
Retail - Secured by real estate non-SME	AQ04	0.095% to 0.381%	0.22%	0.22%	0.15%	0.14%	685,080	757,765	1,030	9
Retail - Secured by real estate non-SME	AQ05	0.981% to 1.076%	0.59%	0.62%	0.41%	0.38%	210,367	214,159	867	15
Retail - Secured by real estate non-SME	AQ06	1.076% to 2.153%	1.36%	1.40%	0.58%	0.78%	71,516	43,618	421	4
Retail - Secured by real estate non-SME	AQ07	2.153% to 6.089%	3.75%	3.55%	2.47%	2.11%	17,888	24,526	448	7
Retail - Secured by real estate non-SME	AQ08	6.089% to 17.222%	11.11%	10.94%	11.09%	8.78%	15,325	14,277	1,701	2
Retail - Secured by real estate non-SME	AQ09	17.222 % to 100 %	26.13%	26.21%	16.17%	21.90%	20,123	16,461	3,255	1
Retail - Secured by real estate non-SME	AQ10	100%	—	—	—	—	41,375	36,319	—	—
Total - Retail - Secured by real estate non-SME			1.01%	1.01%	0.68%	1.15%	1,176,160	1,235,779	7,811	39

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

			PD estimate at		Default rates actual		Number of obligors		Defaulted obligors	
			EAD weighted 2015	Obligor weighted 2015	Obligor weighted 2016	Obligor weighted 2012-2016				of which: newly funded
Exposure class	AQ band	PD range	%	%	%	%	2015	2016	All	obligors during the year
2016										
Retail - Qualifying revolving	AQ01	0% to 0.034%	0.03%	0.03%	0.02%	0.02%	5,076,049	5,475,320	1,109	57
Retail - Qualifying revolving	AQ02	0.034% to 0.048%	0.04%	0.04%	0.06%	0.04%	1,194,759	1,027,499	682	8
Retail - Qualifying revolving	AQ03	0.048% to 0.095%	0.08%	0.08%	0.08%	0.07%	293,647	561,598	245	—
Retail - Qualifying revolving	AQ04	0.095% to 0.381%	0.24%	0.24%	0.19%	0.25%	2,696,477	2,175,704	5,160	106
Retail - Qualifying revolving	AQ05	0.381% to 1.076%	0.63%	0.61%	0.50%	0.52%	4,938,217	4,607,549	25,121	298
Retail - Qualifying revolving	AQ06	1.076% to 2.153%	1.56%	1.55%	1.49%	1.42%	1,634,148	1,751,502	24,829	486
Retail - Qualifying revolving	AQ07	2.153% to 6.089%	3.72%	3.65%	2.78%	2.87%	1,814,631	1,660,588	56,847	6,369
Retail - Qualifying revolving	AQ08	6.089% to 17.222%	9.16%	9.43%	7.91%	7.40%	631,036	515,676	52,288	2,366
Retail - Qualifying revolving	AQ09	17.222% to 100%	34.98%	34.11%	30.61%	29.25%	225,018	229,237	71,941	3,064
Retail - Qualifying revolving	AQ10	100%	—	—	—	—	555,130	502,951	—	—
Total - Retail - Qualifying revolving			1.49%	1.44%	1.22%	1.57%	19,059,112	18,507,624	238,222	12,754
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%	0.09%	—	—	2	10	—	—
Retail - Other	AQ04	0.095% to 0.381%	0.33%	0.33%	0.76%	0.52%	18,678	27,553	278	136
Retail - Other	AQ05	0.981% to 1.076%	0.65%	0.62%	0.66%	0.63%	305,653	312,410	2,353	344
Retail - Other	AQ06	1.076% to 2.153%	1.51%	1.45%	1.74%	1.55%	105,643	111,260	2,312	476
Retail - Other	AQ07	2.153% to 6.089%	3.67%	3.55%	3.46%	3.10%	118,669	122,158	5,280	1,176
Retail - Other	AQ08	6.089% to 17.222%	9.72%	10.00%	10.24%	8.63%	36,798	45,505	4,450	681
Retail - Other	AQ09	17.222 % to 100 %	40.13%	43.13%	45.47%	41.17%	15,847	19,549	7,374	168
Retail - Other	AQ10	100%	—	—	—	—	99,959	85,248	—	—
Total - Retail - Other			3.03%	3.03%	3.17%	3.49%	701,249	723,693	22,047	2,981

Note:
(1) A minor restatement has been made to the obligor-weighted default rate for the Qualifying revolving class in bands AQ4 -AQ9 for 2016.

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

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	51	—	—
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	0.981% 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	—	—	—	—	—	—	—	—
Total - Central governments and central banks				0.02%	0.78%	—	—	94	78	—	—
Institutions	AQ01	0% to 0.034%	AAA to AA	0.03%	0.03%	—	—	139	89	—	—
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	423	—	—
Institutions	AQ05	0.981% to 1.076%	BB+ to BB	0.53%	0.60%	—	0.15%	208	176	—	—
Institutions	AQ06	1.076% to 2.153%	BB- to B+	1.26%	1.46%	—	1.11%	51	42	—	—
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	11	—	—
Institutions	AQ10	100%		—	—	—	—	4	1	—	—
Total - Institutions				0.15%	0.68%	—	0.22%	1,133	980	—	—

EU 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	1,146	1	—
Corporates	AQ04	0.095% to 0.381%	BBB+ to BBB-	0.20%	0.25%	0.11%	0.15%	7,124	7,174	10	2
Corporates	AQ05	0.981% to 1.076%	BB+ to BB	0.67%	0.70%	0.58%	0.48%	21,005	20,431	123	2
Corporates	AQ06	1.076% to 2.153%	BB- to B+	1.50%	1.53%	0.69%	0.87%	21,530	18,838	156	7
Corporates	AQ07	2.153% to 6.089%	B+ to B	3.27%	3.09%	1.56%	1.69%	19,166	15,841	310	11
Corporates	AQ08	6.089% to 17.222%	B to CCC+	9.56%	9.88%	7.30%	7.30%	2,973	2,305	219	2
Corporates	AQ09	17.222 % to 100 %	CCC to D	26.35%	28.07%	9.15%	15.70%	721	636	67	1
Corporates	AQ10	100%		—	—	—	—	4,444	3,197	—	—
Total - Corporates				0.80%	2.06%	1.12%	1.66%	81,329	72,519	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	0.981% to 1.076%	BB+ to BB	—	—	—	—	—	—	—	—
Equities	AQ06	1.076% to 2.153%	BB- to B+	1.31%	1.32%	—	0.51%	15	7	—	—
Equities	AQ07	2.153% to 6.089%	B+ to B	2.51%	2.55%	—	1.12%	22	19	—	—
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	—	—	—
Total - Equities				1.62%	2.05%	—	1.22%	38	26	—	—

Key points

- PD estimates rise with each AQ band as expected. Actual outcomes typically also rise with each AQ band but this is not always the case for wholesale clients, where sample sizes tend to be small at the AQ band level.
- Actual default rates for each exposure class for 2013-2017 were higher than those for 2017.
- A small number of defaults for newly funded obligors occurred. These tended to be for clients with no formal borrowing facilities.

EU 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 2015 %	PD estimate at: Obligor weighted 2015 %	Default rates actual: Obligor weighted 2016 %	Default rates actual: Obligor weighted 2012-2016 %	Number of obligors: 2015	Number of obligors: 2016	Defaulted obligors: All	Defaulted obligors: of which: newly funded obligors during the year
2016											
Central governments and central banks	AQ01	0% to 0.034%	AAA to AA	0.01%	0.01%	—	—	65	53	—	—
Central governments and central banks	AQ02	0.034% to 0.048%	AA to AA-	0.04%	0.04%	—	—	5	5	—	—
Central governments and central banks	AQ03	0.048% to 0.095%	A+ to A-	0.07%	0.07%	—	—	28	14	—	—
Central governments and central banks	AQ04	0.095% to 0.381%	BBB+ to BBB-	0.23%	0.24%	—	—	18	12	—	—
Central governments and central banks	AQ05	0.981% to 1.076%	BB+ to BB	0.45%	0.45%	—	—	5	4	—	—
Central governments and central banks	AQ06	1.076% to 2.153%	BB- to B+	1.81%	1.55%	—	—	4	—	—	—
Central governments and central banks	AQ07	2.153% to 6.089%	B+ to B	2.56%	2.55%	—	—	4	1	—	—
Central governments and central banks	AQ08	6.089% to 17.222%	B to CCC+	7.96%	9.65%	—	—	3	4	—	—
Central governments and central banks	AQ09	17.222 % to 100 %	CCC to CC	28.96%	28.96%	—	—	3	1	—	—
Central governments and central banks	AQ10	100%	D	—	—	—	—	—	—	—	—
Total - Central governments and central banks				0.02%	1.05%	—	—	135	94	—	—
Institutions	AQ01	0% to 0.034%	AAA to AA	0.03%	0.03%	—	—	225	140	—	—
Institutions	AQ02	0.034% to 0.048%	AA to AA-	0.04%	0.04%	—	0.16%	107	71	—	—
Institutions	AQ03	0.048% to 0.095%	A+ to A-	0.06%	0.07%	—	0.06%	142	92	—	—
Institutions	AQ04	0.095% to 0.381%	BBB+ to BBB-	0.14%	0.21%	—	0.14%	491	508	—	—
Institutions	AQ05	0.981% to 1.076%	BB+ to BB	0.34%	0.59%	—	0.15%	197	208	—	—
Institutions	AQ06	1.076% to 2.153%	BB- to B+	1.39%	1.52%	—	1.85%	52	50	—	—
Institutions	AQ07	2.153% to 6.089%	B+ to B	3.38%	3.04%	2.04%	0.78%	49	43	1	—
Institutions	AQ08	6.089% to 17.222%	B to CCC+	7.37%	10.86%	—	7.15%	11	12	—	—
Institutions	AQ09	17.222 % to 100 %	CCC to D	21.92%	25.57%	—	1.21%	5	11	—	—
Institutions	AQ10	100%		—	—	—	—	2	4	—	—
Total - Institutions				0.12%	0.56%	0.08%	0.27%	1,281	1,139	1	—

EU 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 2015 %	Obligor weighted 2015 %	Obligor weighted 2016 %	Obligor weighted 2012-2016 %	2015	2016	All	of which: newly funded obligors during the year
2016											
Corporates	AQ01	0% to 0.034%	AAA to AA	0.03%	0.03%	0.03%	0.01%	3,201	2,774	1	—
Corporates	AQ02	0.034% to 0.048%	AA to AA-	0.04%	0.04%	0.16%	0.03%	638	435	1	—
Corporates	AQ03	0.048% to 0.095%	A+ to A-	0.07%	0.07%	—	0.04%	1,592	1,160	—	—
Corporates	AQ04	0.095% to 0.381%	BBB+ to BBB-	0.20%	0.24%	0.06%	0.17%	8,445	7,124	5	—
Corporates	AQ05	0.981% to 1.076%	BB+ to BB	0.67%	0.70%	0.41%	0.55%	23,529	21,002	96	—
Corporates	AQ06	1.076% to 2.153%	BB- to B+	1.51%	1.54%	0.83%	1.14%	24,000	21,523	208	9
Corporates	AQ07	2.153% to 6.089%	B+ to B	3.28%	3.14%	1.49%	2.28%	22,081	19,168	338	9
Corporates	AQ08	6.089% to 17.222%	B to CCC+	9.90%	9.98%	8.91%	9.40%	4,110	2,982	372	6
Corporates	AQ09	17.222 % to 100 %	CCC to D	26.07%	25.42%	14.35%	20.75%	899	720	129	—
Corporates	AQ10	100%		—	—	—	—	12,766	4,442	—	—
Total - Corporates				0.84%	2.13%	1.27%	2.12%	101,261	81,330	1,150	24
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	0.981% to 1.076%	BB+ to BB	—	—	—	—	—	—	—	—
Equities	AQ06	1.076% to 2.153%	BB- to B+	1.30%	1.32%	—	0.37%	16	12	—	—
Equities	AQ07	2.153% to 6.089%	B+ to B	2.52%	2.60%	3.57%	1.49%	28	21	1	—
Equities	AQ08	6.089% to 17.222%	B to CCC+	—	—	—	5.29%	—	—	—	—
Equities	AQ09	17.222 % to 100 %	CCC to D	—	—	—	20.14%	—	—	—	—
Equities	AQ10	100%		—	—	—	—	1	1	—	—
Total - Equities				1.49%	2.13%	2.27%	2.09%	45	34	1	—

Loss given default

Both estimated and actual LGDs are EAD-weighted, which - for Corporate exposures where EAD varies more - can give rise to significant movements each year.

More generally, differences between estimates and actuals can arise when comparing 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.

Most of the customers included in the table below defaulted over the period 2009-2017.

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 varying workout periods that have applied.

Closure of a defaulted customer case occurs when a debt is repaid, fully or partially written off, or returned to the performing book - or a combination of these outcomes.

Data for disposal and run-off portfolios has been excluded from the table below for both 2016 and 2017 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 go-forward 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 periods ranging from 36 to 72 months. These periods align with the collections and recoveries process. The corresponding actual losses included in the table below relate to the same exposures, with outcomes observed during the relevant reporting period.

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

	2017		2016	
IRB exposure class	LGD - estimated %	LGD - actual %	LGD - estimated %	LGD - actual %
Retail				
- SME (1)	70.7	57.4	71.5	55.7
- Secured by real estate non-SME	35.3	22.9	35.9	20.7
- Qualifying revolving	75.2	70.3	76.0	70.9
- Other	80.1	75.1	79.2	75.3
Corporates	43.3	39.1	33.4	44.0

Note:
(1) 2017 data includes the leasing business (Lombard Asset Finance). 2016 data has been re-stated to facilitate a like-for-like comparison.

Key points

- For all retail exposure classes, actual loss experience remains below downturn estimates.
- In the secured by real estate non-SME class, actual losses increased from the previous year due to debt sales of selected accounts in the UBI DAC mortgage portfolio.
- In the corporates class, for 2017 the actual loss rate dropped below the estimate. The variation year-on-year arises as a result of the weighting on the LGD outcomes.
- The actual losses above the estimated outcome in 2016 were attributable to a small number of cases with high exposures and losses.
- Loss outcomes on a non-EAD-weighted basis were well within estimates in both years.

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	
	2016			2015				
IRB exposure class	Non-defaulted (AQ1-AQ9) £m	Defaulted (AQ10) £m	Total £m	Non-defaulted (AQ1-AQ9) £m	Defaulted (AQ10) £m	Total £m	2017 £m	2016 £m
Retail								
- SME	112	372	484	88	638	726	43	7
- Secured by real estate non-SME	244	1,089	1,333	284	813	1,097	153	(136)
- Qualifying revolving	236	372	608	250	440	690	38	25
- Other non-SME	120	548	668	106	696	802	20	22
Central governments and central banks	4	—	4	6	—	6	—	—
Institutions	18	—	18	13	—	13	—	(9)
Corporates	516	2,175	2,691	568	4,301	4,869	319	801
Equities	10	—	10	13	—	13	—	—
	1,260	4,556	5,816	1,328	6,888	8,216	573	710

Key point

- The decrease in expected loss estimates reflected a significant fall in corporate defaults driven by asset sales, mainly in shipping.

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	
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	92,807	84,714	92,821	84,714
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	1,709	7,814	1,709	7,814
Total STD	126,157	130,501	125,844	129,831
Total IRB and STD	558,433	555,025	547,665	542,826

Credit risk (excluding counterparty credit risk)

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

2016	EAD pre CRM Period end £m	EAD pre CRM Average £m	EAD post CRM Period end £m	EAD post CRM Average £m
IRB				
Central governments and central banks	53,426	62,460	53,358	62,433
Institutions	18,615	18,005	16,084	13,483
Corporates	156,539	173,214	146,789	152,934
Specialised lending	*26,138*	*26,847*	*25,195*	*26,346*
SME	*23,471*	*25,530*	*22,878*	*24,880*
Other corporate	*106,930*	*120,837*	*98,716*	*101,708*
Retail	195,341	189,179	195,341	189,179
Secured by real estate property - SME	*1,360*	*1,302*	*1,361*	*1,302*
- non-SME	*155,959*	*149,798*	*155,959*	*149,798*
Qualifying revolving	*23,293*	*23,433*	*23,292*	*23,433*
Other retail - SME	*9,169*	*9,103*	*9,169*	*9,103*
- non-SME	*5,560*	*5,543*	*5,560*	*5,543*
Equities	781	788	781	788
Non-credit obligation assets	1,120	1,235	1,120	1,235
Total IRB	425,822	444,881	413,473	420,052
STD				
Central governments and central banks	71,819	57,799	71,894	57,951
Regional governments and local authorities	191	210	190	210
Multilateral development banks	33	23	33	33
Institutions	505	581	558	639
Corporates	18,053	19,197	16,993	18,172
Retail	3,430	3,488	3,408	3,422
Secured by mortgages on immovable property - residential	11,829	11,178	11,828	11,177
- commercial	3,508	3,470	3,483	3,456
Exposures in default	1,264	897	1,255	891
Items associated with particularly high risk	391	52	391	52
Covered bonds	84	117	84	117
Collective investments undertakings	—	54	—	54
Equity exposures	555	290	555	290
Other exposures	8,002	8,324	8,001	8,322
Total STD	119,664	105,680	118,673	104,786
Total IRB and STD	545,486	550,561	532,146	524,838

Credit risk (excluding counterparty 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.

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	90,349	2	3	—	2,467	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	51	—	18	28	553	650
Other exposures	1,433	33	41	—	202	1,709
Total STD	111,183	721	1,375	336	12,229	125,844
Proportion	88%	1%	1%	0%	10%	100%
Total IRB and STD	414,669	26,434	66,676	17,970	21,916	547,665
Proportion	76%	5%	12%	3%	4%	100%
Of which: by significant subsidiary (excludes intra-group exposures)						
RBS plc	148,439	703	53,914	16,381	8,241	227,678
NWB Plc	214,851	138	2,793	842	631	219,255
UBI DAC	514	24,865	1,522	39	452	27,392

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

2016	UK £m	RoI £m	Other Western Europe £m	US £m	Rest of world £m	Total £m
IRB						
Central governments and central banks	223	2,406	33,839	11,184	5,706	53,358
Institutions	2,637	80	7,769	3,875	1,723	16,084
Corporates	110,956	5,559	16,428	7,738	6,108	146,789
Specialised lending	*19,867*	*921*	*1,707*	*617*	*2,083*	*25,195*
SME	*21,607*	*1,155*	*61*	*34*	*21*	*22,878*
Other corporate	*69,482*	*3,483*	*14,660*	*7,087*	*4,004*	*98,716*
Retail	178,099	16,869	157	52	164	195,341
Secured by real estate property - SME	*1,354*	*1*	*2*	*1*	*3*	*1,361*
- non-SME	*140,274*	*15,685*	—	—	—	*155,959*
Qualifying revolving	*22,572*	*382*	*144*	*48*	*146*	*23,292*
Other retail - SME	*8,556*	*601*	*4*	*2*	*6*	*9,169*
- non-SME	*5,343*	*200*	*7*	*1*	*9*	*5,560*
Equities	622	—	143	13	3	781
Non-credit obligation assets	407	—	671	—	42	1,120
Total IRB	292,944	24,914	59,007	22,862	13,746	413,473
Proportion	71%	6%	14%	6%	3%	100%
STD						
Central governments and central banks	68,842	110	353	—	2,589	71,894
Regional governments and local authorities	180	1	9	—	—	190
Multilateral development banks	—	—	—	—	33	33
Institutions	28	2	116	19	393	558
Corporates	8,103	532	1,747	188	6,423	16,993
Retail	2,438	5	80	8	877	3,408
Secured by mortgages on immovable property - residential	9,495	27	226	124	1,956	11,828
- commercial	3,049	13	222	58	141	3,483
Exposures in default	479	48	61	9	658	1,255
Items associated with particularly high risk	—	—	—	391	—	391
Covered bonds	—	—	84	—	—	84
Equity exposures	55	—	13	31	456	555
Other exposures	6,645	481	229	184	462	8,001
Total STD	99,314	1,219	3,140	1,012	13,988	118,673
Proportion	84%	1%	3%	1%	11%	100%
Total IRB and STD	392,258	26,133	62,147	23,874	27,734	532,146
Proportion	74%	5%	12%	4%	5%	100%
Of which: by significant subsidiary (excludes intra-group exposures)						
RBS plc	170,578	902	50,279	21,700	11,603	255,062
NWB Plc	175,435	133	1,250	900	689	178,407
UBI DAC	563	24,368	1,816	96	360	27,203

Key points

- The growth in exposure was mainly driven by an increase in UK exposures, in line with strategy and within risk appetite.
- Sovereign exposure in the UK and Western Europe (predominantly Germany) increased and reflected liquidity management transactions.
- Exposure to the US and rest of world decreased given the continued focus on core markets, including exit from the shipping sector in rest of world.

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	
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	70,357	22,016	35	—	—	—	—	—	—	—	—	—	—	—	—	413	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	—	—	—	—	66	—	—	2	—	—	16	2	26	—	—	538	650
Other exposures	—	13	—	—	—	—	44	4	4	3	221	21	—	—	—	1,399	1,709
Total STD	70,357	22,029	194	539	1,186	37	4,673	540	904	1,925	3,575	1,401	306	11,138	4,690	2,350	125,844
Total IRB and STD	104,717	41,369	3,376	14,536	22,900	498	47,484	13,847	17,499	17,335	22,135	20,154	5,729	174,010	33,513	8,563	547,665

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

	Sovereign			Financial institutions			Corporates							Personal		Other	
2016	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	28,433	21,628	545	2,752	—	—	—	—	—	—	—	—	—	—	—	—	53,358
Institutions	—	—	2,513	13,533	1	—	—	—	33	—	—	4	—	—	—	—	16,084
Corporates	—	—	78	2	16,172	940	41,888	12,435	17,333	15,600	17,801	17,731	6,645	—	164	—	146,789
Specialised lending	*—*	*—*	*68*	*—*	*140*	*167*	*19,062*	*2,688*	*1,754*	*109*	*144*	*1,060*	*1*	*—*	*2*	*—*	*25,195*
SME	*—*	*—*	*—*	*—*	*745*	*—*	*2,490*	*634*	*2,534*	*4,649*	*4,776*	*6,496*	*535*	*—*	*19*	*—*	*22,878*
Other corporate	*—*	*—*	*10*	*2*	*15,287*	*773*	*20,336*	*9,113*	*13,045*	*10,842*	*12,881*	*10,175*	*6,109*	*—*	*143*	*—*	*98,716*
Retail	—	—	14	1	116	—	2,389	67	622	2,065	2,216	2,659	230	155,960	29,002	—	195,341
Secured by real estate property - SME	*—*	*—*	*—*	*—*	*5*	*—*	*575*	*6*	*71*	*130*	*291*	*248*	*23*	*—*	*12*	*—*	*1,361*
- non-SME	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*155,959*	*—*	*—*	*155,959*
Qualifying revolving	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*23,292*	*—*	*23,292*
Other retail - SME	*—*	*—*	*14*	*1*	*111*	*—*	*1,814*	*61*	*551*	*1,935*	*1,925*	*2,410*	*207*	*—*	*140*	*—*	*9,169*
- non-SME	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*—*	*1*	*—*	*1*	*5,558*	*—*	*5,560*
Equities	—	—	—	7	718	—	5	4	—	22	—	25	—	—	—	—	781
Non-credit obligation assets	—	19	83	91	71	—	161	32	404	31	149	16	63	—	—	—	1,120
Total IRB	28,433	21,647	3,233	16,386	17,078	940	44,443	12,538	18,392	17,718	20,166	20,435	6,938	155,960	29,166	—	413,473
STD																	
Central governments and central banks	56,051	15,562	—	—	—	—	—	—	—	—	—	—	—	—	—	281	71,894
Regional governments and local authorities	—	—	190	—	—	—	—	—	—	—	—	—	—	—	—	—	190
Multilateral development banks	33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	33
Institutions	—	—	—	505	53	—	—	—	—	—	—	—	—	—	—	—	558
Corporates	—	—	26	184	5,066	29	3,252	498	816	1,860	3,258	990	318	168	528	—	16,993
Retail	—	—	10	—	23	—	280	35	28	161	45	43	11	213	2,559	—	3,408
Secured by mortgages on immovable property - residential	—	—	—	—	25	—	661	—	—	18	188	47	9	10,237	643	—	11,828
- commercial	—	—	—	—	18	—	2,527	—	9	49	377	206	34	30	233	—	3,483
Exposures in default	—	—	—	2	1	—	137	10	607	30	41	52	3	213	159	—	1,255
Items associated with particularly high risk	—	—	—	—	—	391	—	—	—	—	—	—	—	—	—	—	391
Covered bonds	—	—	—	—	84	—	—	—	—	—	—	—	—	—	—	—	84
Equity exposures	—	—	—	—	91	—	—	—	—	1	29	2	5	—	—	427	555
Other exposures	—	12	13	—	—	—	53	4	95	3	278	20	—	—	—	7,523	8,001
Total STD	56,084	15,574	239	691	5,361	420	6,910	547	1,555	2,122	4,216	1,360	380	10,861	4,122	8,231	118,673
Total IRB and STD	84,517	37,221	3,472	17,077	22,439	1,360	51,353	13,085	19,947	19,840	24,382	21,795	7,318	166,821	33,288	8,231	532,146

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.

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)					
RBS plc	11,598	71,257	82,537	62,286	227,678
NWB Plc	27,455	8,156	62,117	121,527	219,255
UBI DAC	1,389	4,280	4,402	17,321	27,392

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

2016	On demand £m	<=1 year £m	>1 year <= 5 years £m	> 5 years £m	Total £m
IRB					
Central governments and central banks	7,126	26,506	10,480	9,246	53,358
Institutions	6,472	2,548	1,706	5,358	16,084
Corporates	10,842	29,273	75,795	30,879	146,789
Specialised lending	*151*	*4,111*	*15,639*	*5,294*	*25,195*
SME	*3,345*	*4,540*	*8,336*	*6,657*	*22,878*
Other corporate	*7,346*	*20,622*	*51,820*	*18,928*	*98,716*
Retail	26,358	3,248	12,462	153,273	195,341
Secured by real estate property - SME	*161*	*82*	*345*	*773*	*1,361*
- non-SME	—	*2,051*	*6,043*	*147,865*	*155,959*
Qualifying revolving	*23,292*	—	—	—	*23,292*
Other retail - SME	*2,899*	*498*	*2,112*	*3,660*	*9,169*
- non-SME	*6*	*617*	*3,962*	*975*	*5,560*
Equities	—	—	—	781	781
Non-credit obligation assets	—	116	536	468	1,120
Total IRB	50,798	61,691	100,979	200,005	413,473
Proportion	12%	15%	24%	49%	100%
STD					
Central governments and central banks	729	29,527	33,809	7,829	71,894
Regional governments and local authorities	17	120	2	51	190
Multilateral development banks	—	—	33	—	33
Institutions	136	69	300	53	558
Corporates	934	6,435	9,023	601	16,993
Retail	794	726	1,149	739	3,408
Secured by mortgages on immovable property - residential	39	1,689	4,114	5,986	11,828
- commercial	24	1,071	2,283	105	3,483
Exposures in default	64	380	752	59	1,255
Items associated with particularly high risk	—	—	391	—	391
Covered bonds	—	24	60	—	84
Equity exposures	—	—	—	555	555
Other exposures	—	34	7,927	40	8,001
Total STD	2,737	40,075	59,843	16,018	118,673
Proportion	2%	34%	51%	13%	100%
Total IRB and STD	53,535	101,766	160,822	216,023	532,146
Proportion	10%	19%	30%	41%	100%
Of which: by significant subsidiary (excludes intra-group exposures)					
RBS plc	19,410	68,214	101,111	66,327	255,062
NWB Plc	29,010	6,351	27,266	115,779	178,406
UBI DAC	1,390	4,314	4,346	17,153	27,203

Risk profile by credit quality

EU CR1_A: IRB & STD: Credit risk exposures by exposure class - 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 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
		2017						2016					
		Gross carrying values				Year-to-date		Gross carrying values				Year-to-date	
	Exposure class	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
	IRB												
1	Central governments and central banks	—	63,323	63,323	—	—	63,323	—	79,374	79,374	—	—	79,374
2	Institutions	1	20,898	20,899	1	—	20,898	1	24,420	24,421	1	—	24,420
3	Corporates	*3,971*	*189,393*	*193,364*	*1,571*	*634*	*191,793*	*4,518*	*196,273*	*200,791*	*2,063*	*2,785*	*198,728*
4	*Specialised lending*	*1,367*	*23,031*	*24,398*	*439*	*221*	*23,959*	*2,051*	*23,857*	*25,908*	*751*	*481*	*25,157*
5	*SME*	*812*	*26,647*	*27,459*	*346*	*124*	*27,113*	*1,002*	*24,965*	*25,967*	*435*	*140*	*25,532*
	Other corporate	1,792	139,715	141,507	786	289	140,721	1,465	147,451	148,916	877	2,164	148,039
6	Retail	*5,605*	*205,611*	*211,216*	*2,185*	*544*	*209,031*	*6,360*	*201,234*	*207,594*	*2,405*	*865*	*205,189*
8	*Secured by real estate property - SME*	*30*	*1,392*	*1,422*	*13*	—	*1,409*	*39*	*1,351*	*1,390*	*20*	—	*1,370*
9	*- non-SME*	*3,997*	*158,898*	*162,895*	*1,059*	*310*	*161,836*	*4,444*	*151,713*	*156,157*	*1,093*	*468*	*155,064*
10	*Qualifying revolving*	*690*	*31,633*	*32,323*	*310*	*66*	*32,013*	*786*	*35,339*	*36,125*	*351*	*207*	*35,774*
12	*Other retail - SME*	*325*	*8,439*	*8,764*	*227*	*125*	*8,537*	*471*	*8,090*	*8,561*	*294*	*99*	*8,267*
13	*- non-SME*	563	5,249	5,812	576	43	5,236	620	4,741	5,361	647	91	4,714
14	Equities	2	865	867	6	—	861	27	805	832	52	—	780
	Non-credit obligation assets	604	5,609	6,213	—	—	6,213	—	—	—	—	—	—
15	Total IRB	10,183	485,699	495,882	3,763	1,178	492,119	10,906	502,106	513,012	4,521	3,650	508,491
37	*Of which: Loans*	*8,762*	*281,212*	*289,974*	*3,684*	*1,178*	*286,290*	*9,902*	*278,869*	*288,771*	*4,261*	*3,648*	*284,510*
38	*Debt securities*	*11*	*25,402*	*25,413*	*1*	—	*25,412*	*129*	*28,140*	*28,269*	*23*	—	*28,246*
	Other assets	*685*	*36,462*	*37,147*	*71*	—	*37,076*	*205*	*20,953*	*21,158*	*234*	*2*	*20,924*
39	*Off-balance sheet exposures*	725	142,623	143,348	7	—	143,341	670	174,144	174,814	3	—	174,811

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

	a	b		c	e	g	a	b		c	e	g
	2017						2016					
	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	—	93,248	93,248	—	—	93,248	—	72,357	72,357	—	—	72,357
17 Regional governments and local authorities	—	432	432	—	—	432	—	447	447	—	—	447
19 Multilateral development banks	—	30	30	—	—	30	—	33	33	—	—	33
21 Institutions	—	683	683	—	—	683	—	754	754	—	—	754
22 Corporates	—	13,596	13,596	10	—	13,586	—	22,153	22,153	11	—	22,142
24 Retail	—	7,542	7,542	1	—	7,541	—	7,589	7,589	1	—	7,588
Secured by mortgages on:												
26 immovable property - residential	—	13,331	13,331	4	—	13,327	—	12,483	12,483	3	—	12,480
27 immovable property - commercial	—	2,723	2,723	—	—	2,723	—	3,800	3,800	1	—	3,799
28 Exposures in default	1,417	—	1,417	439	32	978	1,801	—	1,801	523	47	1,278
29 Items associated with particularly high risk	—	74	74	40	1	34	—	391	391	—	—	391
30 Covered bonds	—	159	159	—	—	159	—	82	82	—	—	82
33 Equity exposures	—	651	651	1	—	650	—	132	132	3	—	129
34 Other exposures	—	1,599	1,599	—	—	1,599	—	7,783	7,783	—	—	7,783
35 Total STD	1,417	134,068	135,485	495	33	134,990	1,801	128,004	129,805	542	47	129,263
37 *Of which: Loans*	*1,191*	*28,648*	*29,839*	*342*	*33*	*29,497*	*1,597*	*34,495*	*36,092*	*417*	*46*	*35,675*
38 *Debt securities*	*20*	*23,399*	*23,419*	*20*	—	*23,399*	—	*15,630*	*15,630*	—	—	*15,630*
Other assets	*188*	*71,266*	*71,454*	*133*	—	*71,321*	*179*	*63,486*	*63,665*	*125*	*1*	*63,540*
39 *Off-balance sheet exposures*	*18*	*10,755*	*10,773*	—	—	*10,773*	*25*	*14,393*	*14,418*	—	—	*14,418*
37 Total: Loans	9,953	309,860	319,813	4,026	1,211	315,787	11,499	313,364	324,863	4,678	3,694	320,185
38 Debt securities	31	48,801	48,832	21	—	48,811	129	43,770	43,899	23	—	43,876
Other assets	873	107,728	108,601	204	—	108,397	384	84,439	84,823	359	3	84,464
39 Off-balance sheet exposures	743	153,378	154,121	7	—	154,114	695	188,537	189,232	3	—	189,229
36 Total all exposures	11,600	619,767	631,367	4,258	1,211	627,109	12,707	630,110	642,817	5,063	3,697	637,754

Notes:
(1) Defaulted exposures are those with a PD of 1 and past due exposures of one day or more on the payment of a credit obligation.
(2) SCRA includes provisions for defaulted and non-defaulted (latent) customers and differs from equivalent accounting values principally relating to derivative close-out costs and Alawwal Bank balances.

EU CR1_B: IRB & 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
	2017						2016					
	Gross carrying values of			Specific credit risk adjustment	Year-to-date Accumulated write-offs	Net value	Gross carrying values of			Specific credit risk adjustment	Year-to-date Accumulated write-offs	Net value
Industry type	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
Central banks	—	110,796	110,796	—	—	110,796	—	107,407	107,407	—	—	107,407
Central government	—	41,324	41,324	—	—	41,324	—	39,499	39,499	—	—	39,499
Other sovereign	2	6,055	6,057	—	—	6,057	1	6,920	6,921	—	—	6,921
Banks	1	20,223	20,224	—	—	20,224	13	23,775	23,788	13	1	23,775
Non-bank financial institutions	74	31,339	31,413	49	—	31,364	367	31,956	32,323	319	3	32,004
Securitisation entities	30	549	579	20	—	559	122	1,272	1,394	16	—	1,378
Property	2,251	54,496	56,747	845	169	55,902	2,264	58,284	60,548	918	1,639	59,630
Natural resources	381	21,043	21,424	147	—	21,277	552	20,832	21,384	240	—	21,144
Transport	822	23,508	24,330	259	165	24,071	1,593	25,252	26,845	480	302	26,365
Manufacturing	256	23,890	24,146	133	25	24,013	272	27,947	28,219	131	89	28,088
Retail and leisure	805	29,552	30,357	445	308	29,912	498	32,032	32,530	410	939	32,120
Services	623	24,392	25,015	268	—	24,747	644	25,867	26,511	292	1	26,219
Telecommunications, media and technology	39	9,878	9,917	27	1	9,890	54	11,747	11,801	33	—	11,768
Mortgages	4,226	171,415	175,641	1,090	309	174,551	4,695	163,838	168,533	1,134	468	167,399
Other personal	1,486	43,348	44,834	975	234	43,859	1,632	45,958	47,590	1,064	254	46,526
Not allocated	604	7,959	8,563	—	—	8,563	—	7,524	7,524	13	1	7,511
Total	11,600	619,767	631,367	4,258	1,211	627,109	12,707	630,110	642,817	5,063	3,697	637,754

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 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
		2017						2016					
		Gross carrying values of			Specific credit risk adjustment	Year-to-date Accumulated write-offs	Net value	Gross carrying values of			Specific credit risk adjustment	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	6,059	459,376	465,435	2,374	894	463,061	6,483	440,511	446,994	2,660	1,406	444,334
3	Republic of Ireland	3,249	24,260	27,509	1,151	124	26,358	3,043	24,032	27,075	1,244	1,932	25,831
7	Other Western Europe	1,149	85,474	86,623	282	131	86,341	1,141	86,071	87,212	475	170	86,737
8	US	82	25,667	25,749	49	6	25,700	238	47,939	48,177	88	5	48,089
10	Rest of world	1,061	24,990	26,051	402	56	25,649	1,802	31,557	33,359	596	184	32,763
11	Total	11,600	619,767	631,367	4,258	1,211	627,109	12,707	630,110	642,817	5,063	3,697	637,754

Key point

- Overall, defaulted exposure as well as specific credit risk adjustments fell, driven by asset sales mainly in the shipping portfolio.

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 RWA 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 concentrations 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:

- The 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.
- The acceptability of the methodologies to be used for initial and subsequent valuation of collateral, the frequency of valuations and the advance rates given.
- The 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 may 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. Their 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 103.

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. 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 a year old.

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.

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

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 and exposure class. 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.

2017	Unsecured net carrying value £m	Net carrying values secured by: Collateral £m	Guarantees £m	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*
Of which: Debt securities	*25,245*	*167*	—	—	*167*	*25,412*
Of which: Other assets	*36,269*	*807*	—	—	*807*	*37,076*
Of which: Off-balance sheet exposures	*111,441*	*27,158*	*4,492*	*250*	*31,900*	*143,341*
Of which: 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
Total IRB and STD	358,210	260,979	7,632	288	268,899	627,109
Of which: Loans	*13,483*	*15,800*	*214*	—	*16,014*	*29,497*
Of which: Debt securities	*23,399*	—	—	—	—	*23,399*
Of which: Other assets	*71,268*	*53*	—	—	*53*	*71,321*
Of which: Off-balance sheet exposures	*9,493*	*1,257*	*23*	—	*1,280*	*10,773*
Of which: defaulted	*976*	*2*	*1*	—	*3*	*979*
Total Loans	81,095	231,537	3,117	38	234,692	315,787
Total Debt securities	48,644	167	—	—	167	48,811
Total Other Assets	107,537	860	—	—	860	108,397
Total Off-balance sheet exposures	120,934	28,415	4,515	250	33,180	154,114
Total all exposures	358,210	260,979	7,632	288	268,899	627,109
Of which: defaulted	*3,345*	*4,329*	*103*	—	*4,432*	*7,777*

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

2016	Unsecured net carrying value £m	Net carrying values secured by: Collateral £m	Guarantees £m	Credit derivatives £m	Total secured £m	Total £m
IRB						
Central governments and central banks	79,249	121	2	—	123	79,372
Institutions	18,894	2,272	3,253	—	5,525	24,419
Corporates	122,097	71,689	4,323	619	76,631	198,728
Specialised lending	*2,718*	*21,712*	*728*	—	*22,440*	*25,158*
SME	*6,868*	*17,194*	*1,469*	—	*18,663*	*25,531*
Other corporate	*112,511*	*32,783*	*2,126*	*619*	*35,528*	*148,039*
Retail	48,755	156,435	—	—	156,435	205,190
Secured by real estate property - SME	—	*1,370*	—	—	*1,370*	*1,370*
- non-SME	—	*155,065*	—	—	*155,065*	*155,065*
Qualifying revolving	*35,774*	—	—	—	—	*35,774*
Other retail - SME	*8,267*	—	—	—	—	*8,267*
- non-SME	*4,714*	—	—	—	—	*4,714*
Equities	781	—	—	—	—	781
Total IRB	269,776	230,517	7,578	619	238,714	508,490
Of which: Loans	*79,595*	*202,333*	*2,582*	—	*204,915*	*284,510*
Of which: Debt securities	*28,078*	*167*	—	—	*167*	*28,245*
Of which: Other assets	*19,984*	*940*	—	—	*940*	*20,924*
Of which: Off-balance sheet exposures	*142,119*	*27,077*	*4,996*	*619*	*32,692*	*174,811*
Of which: defaulted	*1,813*	*4,835*	*146*	—	*4,981*	*6,794*
STD						
Central governments and central banks	72,206	—	151	—	151	72,357
Regional governments and local authorities	447	—	—	—	—	447
Multilateral development banks	33	—	—	—	—	33
Institutions	754	—	—	—	—	754
Corporates	20,830	1,092	220	—	1,312	22,142
Retail	7,337	251	—	—	251	7,588
Secured by mortgages on immovable property						
- residential	—	12,479	2	—	12,481	12,481
- commercial	—	3,792	7	—	3,799	3,799
Exposures in default	1,211	67	1	—	68	1,279
Items associated with particularly high risk	391	—	—	—	—	391
Covered bonds	82	—	—	—	—	82
Equity exposures	129	—	—	—	—	129
Other exposures	7,782	—	—	—	—	7,782
Total STD	111,202	17,681	381	—	18,062	129,264
Total IRB and STD	380,978	248,198	7,959	619	256,776	637,754
Of which: Loans	*19,293*	*16,046*	*337*	—	*16,383*	*35,676*
Of which: Debt securities	*15,631*	—	—	—	—	*15,631*
Of which: Other assets	*63,486*	*53*	—	—	*53*	*63,539*
Of which: Off-balance sheet exposures	*12,792*	*1,582*	*44*	—	*1,626*	*14,418*
Of which: defaulted	*1,211*	*66*	*1*	—	*67*	*1,278*
Total Loans	98,888	218,379	2,919	—	221,298	320,186
Total Debt securities	43,709	167	—	—	167	43,876
Total Other Assets	83,470	993	—	—	993	84,463
Total Off-balance sheet exposures	154,911	28,659	5,040	619	34,318	189,229
Total all exposures	380,978	248,198	7,959	619	256,776	637,754
Of which: defaulted	*3,024*	*4,901*	*147*	—	*5,048*	*8,072*

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

	2017	
Exposures under IRB	Pre-credit derivatives RWAs £m	Actual RWAs £m
Central governments and central banks	3,278	3,278
Institutions	3,901	3,901
Corporates - SMEs	11,252	11,252
Corporates - Specialised lending	16,090	16,090
Corporates - Other	40,862	40,845
Retail - Secured by real estate SMEs	504	504
Retail - Secured by real estate non-SMEs	19,822	19,822
Retail - Qualifying revolving	6,022	6,022
Retail - Other SMEs	3,988	3,988
Retail - Other non-SMEs	5,501	5,501
Equity IRB	1,961	1,961
Other non-credit obligation assets	4,740	4,740
Total	117,921	117,904

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

EU 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.

2017	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	Provisions £m
IRB											
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	
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	
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	
Retail - Secured by real estate non-SME	0.15 to <0.25	962	—	963	0.17	8,994	20	76	8	—	
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	
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	
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	
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	
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	
Retail - Secured by real estate non-SME	100.00 (default)	3,985	12	4,020	100.00	30,408	32	4,646	116	910	
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	—	
Retail - Qualifying revolving	0.25 to <0.50	927	8,796	3,501	0.37	3,391,929	65	427	12	9	
Retail - Qualifying revolving	0.50 to <0.75	427	3,602	1,369	0.63	1,393,840	63	243	18	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	
Retail - Qualifying revolving	2.50 to <10.0	2,050	1,434	2,927	4.67	1,785,308	74	2,635	90	102	
Retail - Qualifying revolving	10.0 to <100.00	338	59	482	23.18	368,357	73	941	195	80	
Retail - Qualifying revolving	100.00 (default)	420	270	456	100.00	491,282	81	377	83	340	
Total - Retail - Qualifying revolving		5,843	26,481	22,528	3.46	18,227,229	62	6,022	27	571	310

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

2017	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	Provisions £m
IRB											
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	
Retail - Other SME	0.75 to <2.50	3,996	451	4,570	1.18	361,098	48	1,905	42	27	
Retail - Other SME	2.50 to <10.0	1,375	97	1,615	4.08	225,121	51	961	59	34	
Retail - Other SME	10.0 to <100.00	258	17	299	22.53	53,032	57	299	100	38	
Retail - Other SME	100.00 (default)	325	—	347	100.00	29,018	72	225	65	235	
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	
Retail - Other non-SME	0.50 to <0.75	642	—	651	0.63	97,670	70	392	60	3	
Retail - Other non-SME	0.75 to <2.50	2,779	—	2,835	1.24	367,959	75	2,435	86	27	
Retail - Other non-SME	2.50 to <10.0	1,215	—	1,244	4.90	152,795	79	1,530	123	48	
Retail - Other non-SME	10.0 to <100.00	316	—	324	28.77	46,732	80	612	189	75	
Retail - Other non-SME	100.00 (default)	563	—	648	100.00	84,803	80	397	61	485	
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

Note:
(1) Retail EAD models estimate EAD directly, so credit conversion factors (CCF) are not reported in this table for retail exposure classes.

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

2016	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	Provisions £m
IRB											
Retail - Secured by real estate SME	0.00 to <0.15	—	50	35	0.12	5,305	53	4	12	—	
Retail - Secured by real estate SME	0.25 to <0.50	56	13	66	0.37	2,529	42	13	20	—	
Retail - Secured by real estate SME	0.50 to <0.75	592	12	599	0.61	9,658	37	142	24	1	
Retail - Secured by real estate SME	0.75 to <2.50	379	41	407	1.29	7,554	45	163	40	2	
Retail - Secured by real estate SME	2.50 to <10.0	165	3	168	4.24	2,614	41	81	48	3	
Retail - Secured by real estate SME	10.0 to <100.00	39	1	39	24.30	764	43	30	77	4	
Retail - Secured by real estate SME	100.00 (default)	39	—	47	100.00	935	64	29	62	28	
Total - Retail - Secured by real estate SME		1,270	120	1,361	5.33	29,359	42	462	34	38	20
Retail - Secured by real estate non-SME	0.00 to <0.15	54,041	4,773	58,951	0.12	475,722	9	1,578	3	7	
Retail - Secured by real estate non-SME	0.15 to <0.25	815	19	835	0.18	9,190	26	83	10	—	
Retail - Secured by real estate non-SME	0.25 to <0.50	58,324	7,814	65,487	0.32	466,943	11	4,510	7	24	
Retail - Secured by real estate non-SME	0.50 to <0.75	12,692	80	12,900	0.61	103,478	19	2,318	18	15	
Retail - Secured by real estate non-SME	0.75 to <2.50	7,970	179	8,251	1.14	96,808	20	2,273	28	18	
Retail - Secured by real estate non-SME	2.50 to <10.0	1,770	21	1,802	5.36	23,311	12	767	43	12	
Retail - Secured by real estate non-SME	10.0 to <100.00	3,214	3	3,254	22.94	24,688	21	3,988	123	168	
Retail - Secured by real estate non-SME	100.00 (default)	4,431	13	4,479	100.00	36,306	31	3,911	87	1,089	
Total - Retail - Secured by real estate non-SME		143,257	12,902	155,959	3.70	1,236,446	12	19,428	12	1,333	1,094
Retail - Qualifying revolving	0.00 to <0.15	108	7,695	10,618	—	7,730,969	54	184	2	3	
Retail - Qualifying revolving	0.15 to <0.25	235	401	715	0.23	475,976	66	59	8	1	
Retail - Qualifying revolving	0.25 to <0.50	765	7,958	2,804	0.38	2,693,617	63	335	12	7	
Retail - Qualifying revolving	0.50 to <0.75	448	6,592	1,749	0.61	1,963,394	68	327	19	7	
Retail - Qualifying revolving	0.75 to <2.50	1,589	5,573	3,479	1.39	2,918,641	70	1,254	36	34	
Retail - Qualifying revolving	2.50 to <10.0	2,057	1,529	2,912	4.59	1,787,452	75	2,608	90	100	
Retail - Qualifying revolving	10.0 to <100.00	330	60	493	23.82	422,926	72	962	195	84	
Retail - Qualifying revolving	100.00 (default)	474	311	523	100.00	502,949	78	442	85	372	
Total - Retail - Qualifying revolving		6,006	30,119	23,293	3.64	18,495,924	62	6,171	26	608	351

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

2016	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	Provisions £m
IRB											
Retail - Other SME	0.00 to <0.15	—	525	532	0.12	255,039	53	64	12	—	
Retail - Other SME	0.15 to <0.25	36	58	144	0.18	14,573	66	28	20	—	
Retail - Other SME	0.25 to <0.50	522	229	908	0.36	256,681	49	207	23	2	
Retail - Other SME	0.50 to <0.75	2,289	140	2,458	0.62	137,965	40	651	26	6	
Retail - Other SME	0.75 to <2.50	2,399	353	2,915	1.36	342,765	53	1,394	48	21	
Retail - Other SME	2.50 to <10.0	1,172	102	1,408	4.27	204,719	57	934	66	34	
Retail - Other SME	10.0 to <100.00	248	17	295	21.89	54,614	59	302	102	38	
Retail - Other SME	100.00 (default)	471	—	509	100.00	38,123	73	314	62	345	
Total - Retail - Other SME		7,137	1,424	9,169	7.55	1,304,479	51	3,894	42	446	294
Retail - Other non-SME	0.00 to <0.15	66	—	66	0.12	1,793	33	7	10	—	
Retail - Other non-SME	0.15 to <0.25	9	—	9	0.20	976	77	3	33	—	
Retail - Other non-SME	0.25 to <0.50	504	—	513	0.41	82,246	70	243	47	1	
Retail - Other non-SME	0.50 to <0.75	1,051	—	1,069	0.61	197,717	73	659	62	5	
Retail - Other non-SME	0.75 to <2.50	1,855	—	1,893	1.34	196,419	77	1,707	90	20	
Retail - Other non-SME	2.50 to <10.0	1,007	—	1,030	4.61	129,961	78	1,241	121	37	
Retail - Other non-SME	10.0 to <100.00	248	—	255	27.71	38,697	79	474	186	56	
Retail - Other non-SME	100.00 (default)	620	—	725	100.00	87,058	80	420	58	549	
Total - Retail - Other non-SME		5,360	—	5,560	15.78	734,867	76	4,754	86	668	646
Total - Retail all portfolios		163,030	44,565	195,342	4.23	21,801,075	22	34,709	18	3,093	2,405

Note:
(1) Retail EAD models estimate EAD directly, so credit conversion factors (CCF) are not reported in this table for retail exposure classes.

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 as per 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.

2017	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	Provisions £m
IRB													
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	
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	
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 %	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	Provisions £m
IRB													
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	
Corporates - SME	0.50 to <0.75	2,652	796	59	3,128	0.64	5,434	28	3.04	1,247	40	6	
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	
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	
Corporates - SME	10.0 to <100.00	598	116	52	667	16.01	1,261	25	2.51	627	94	26	
Corporates - SME	100.00 (default)	757	50	29	776	100.00	2,282	46	2.80	—	—	357	
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	
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	
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	
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	
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	
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	
Corporates - Other	10.0 to <100.00	382	167	40	451	20.62	709	23	1.78	612	136	24	
Corporates - Other	100.00 (default)	1,304	354	34	1,411	100.00	1,040	49	2.26	—	—	692	
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	
Equities	10.0 to <100.00	—	—	—	—	—	—	—	—	—	—	—	
Equities	100.00 (default)	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

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

2016	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	Provisions £m
IRB													
Central governments and central banks	0.00 to <0.15	47,016	31,534	20	52,781	—	64	46	2.02	3,420	6	3	
Central governments and central banks	0.15 to <0.25	511	170	20	545	0.23	3	56	1.00	234	43	1	
Central governments and central banks	0.25 to <0.50	3	6	21	4	0.32	2	63	1.95	3	75	—	
Central governments and central banks	0.50 to <0.75	50	7	21	19	0.64	2	55	3.75	22	116	—	
Central governments and central banks	2.50 to <10.0	2	—	—	2	7.24	3	3	1.00	—	—	—	
Central governments and central banks	10.0 to <100.00	4	11	29	7	23.21	3	28	1.00	9	123	—	
Total - Central governments and central banks		47,586	31,728	20	53,358	—	77	46	2.01	3,688	7	4	—
Institutions	0.00 to <0.15	7,512	7,772	57	11,790	0.09	347	35	3.01	3,002	25	4	
Institutions	0.15 to <0.25	2,706	3,764	31	3,886	0.17	178	43	1.16	1,346	35	3	
Institutions	0.25 to <0.50	179	286	32	256	0.35	94	53	2.70	213	83	—	
Institutions	0.50 to <0.75	103	46	26	115	0.64	40	50	1.24	89	77	—	
Institutions	0.75 to <2.50	19	21	44	27	1.07	44	34	2.58	23	86	—	
Institutions	2.50 to <10.0	7	8	33	9	2.91	35	55	1.49	15	160	—	
Institutions	10.0 to <100.00	—	3	20	1	27.39	17	60	1.00	2	347	—	
Institutions	100.00 (default)	—	1	—	—	100.00	3	28	1.84	—	—	—	
Total - Institutions		10,526	11,901	48	16,084	0.12	758	37	2.55	4,690	29	7	—
Corporates - Specialised lending	0.15 to <0.25	6	—	—	6	0.23	1	35	1.70	2	35	—	
Corporates - Specialised lending	0.25 to <0.50	61	—	—	60	0.34	6	33	2.95	31	52	—	
Corporates - Specialised lending	0.50 to <0.75	399	3	54	400	0.64	50	36	2.14	266	66	1	
Corporates - Specialised lending	0.75 to <2.50	445	1	102	443	1.13	51	37	2.13	379	86	2	
Corporates - Specialised lending	2.50 to <10.0	91	—	102	90	4.64	12	38	2.15	121	136	2	
Corporates - Specialised lending	10.0 to <100.00	56	—	101	55	11.66	7	36	2.41	97	177	2	
Corporates - Specialised lending	100.00 (default)	454	82	102	537	100.00	56	51	2.66	—	—	275	
Total - Corporates - Specialised lending		1,512	86	100	1,591	34.93	183	41	2.35	896	56	282	154

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

2016	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	Provisions £m
IRB													
Corporates - SME	0.00 to <0.15	1	12	35	6	0.11	25	44	3.22	2	28	—	
Corporates - SME	0.15 to <0.25	407	109	64	477	0.22	1,115	39	3.34	181	38	—	
Corporates - SME	0.25 to <0.50	1,999	750	60	2,454	0.41	6,658	31	3.26	871	35	3	
Corporates - SME	0.50 to <0.75	2,090	766	58	2,539	0.64	5,368	29	2.93	1,028	41	5	
Corporates - SME	0.75 to <2.50	9,377	2,784	53	10,892	1.33	17,839	26	2.91	5,357	49	38	
Corporates - SME	2.50 to <10.0	4,341	1,212	48	4,978	3.61	9,148	23	2.68	2,618	53	41	
Corporates - SME	10.0 to <100.00	515	103	49	574	15.43	1,275	26	2.51	556	97	22	
Corporates - SME	100.00 (default)	936	58	34	958	100.00	3,085	45	3.09	—	—	434	
Total - Corporates - SME		19,666	5,794	53	22,878	6.12	44,513	27	2.91	10,613	46	543	435
Corporates - Other	0.00 to <0.15	24,201	44,263	43	43,293	0.06	2,743	37	3.15	8,939	21	9	
Corporates - Other	0.15 to <0.25	8,639	11,225	43	13,373	0.19	1,340	44	2.97	6,717	50	11	
Corporates - Other	0.25 to <0.50	8,643	10,657	48	13,696	0.39	1,994	43	2.91	9,382	69	23	
Corporates - Other	0.50 to <0.75	3,253	2,392	46	4,333	0.64	1,634	42	2.55	3,437	79	12	
Corporates - Other	0.75 to <2.50	12,365	6,394	52	15,628	1.30	13,181	35	2.75	13,661	87	71	
Corporates - Other	2.50 to <10.0	4,999	2,769	53	6,415	3.49	11,495	32	2.47	7,231	111	77	
Corporates - Other	10.0 to <100.00	552	196	45	641	18.37	1,015	22	2.02	754	118	32	
Corporates - Other	100.00 (default)	1,285	179	24	1,337	100.00	1,481	59	2.12	—	—	695	
Total - Corporates - Other		63,937	78,075	45	98,716	2.04	34,883	39	2.94	50,121	51	930	877
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	170	—	—	170	1.31	15	90	5.00	480	281	2	
Equities	2.50 to <10.0	63	—	—	62	2.51	23	90	5.00	201	326	1	
Equities	10.0 to <100.00	—	—	—	—	—	—	—	—	—	—	—	
Equities	100.00 (default)	2	—	—	—	100.00	1	90	5.00	—	—	—	
Total - Equities		235	—	—	232	1.65	39	90	5.00	681	293	3	3
Total - Wholesale all portfolios		143,462	127,584	40	192,859	2.07	80,453	39	2.64	70,689	37	1,769	1,469

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	
2017	PD %	LGD %	PD %	LGD %	PD %	LGD %	PD %	LGD %	PD %	LGD %	PD %	LGD %
IRB												
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 IRB	2.75	30	2.37	25	14.36	35	0.71	44	0.24	46	2.27	49
2016												
IRB												
Central governments and central banks	0.02	46	0.01	50	0.06	45	0.01	45	0.01	45	0.08	51
Institutions	0.12	37	0.08	40	0.29	49	0.12	29	0.13	45	0.17	52
Corporates	3.22	37	2.52	33	7.57	43	2.10	48	2.58	48	14.70	44
Specialised lending	*34.93*	*41*	*1.81*	*50*	—	—	—	—	—	—	*34.93*	*41*
SME	*6.12*	*27*	*5.44*	*27*	*17.06*	*38*	*14.21*	*31*	*20.04*	*24*	*57.04*	*37*
Other corporate	*2.04*	*39*	*1.62*	*35*	*4.42*	*45*	*2.05*	*48*	*2.50*	*48*	*6.44*	*44*
Retail	4.23	22	2.82	21	19.18	33	3.39	61	3.17	59	4.09	60
Secured by real estate property - SME	*5.33*	*42*	*5.33*	*42*	*11.86*	*40*	*6.02*	*38*	*1.03*	*37*	*5.47*	*39*
- non SME	*3.70*	*12*	*1.90*	*10*	*19.81*	*30*	—	—	—	—	—	—
Qualifying revolving	*3.64*	*62*	*3.62*	*62*	*5.99*	*71*	*2.31*	*60*	*2.03*	*59*	*2.53*	*60*
Other retail - SME	*7.55*	*51*	*7.35*	*50*	*10.27*	*72*	*13.26*	*52*	*7.73*	*49*	*11.64*	*46*
- non-SME	*15.78*	*76*	*15.53*	*76*	*21.67*	*70*	*18.82*	*75*	*47.25*	*79*	*25.21*	*75*
Equities	1.65	90	1.84	90	—	—	1.36	90	1.83	90	11.44	90
Total IRB	3.17	31	2.69	25	14.95	36	0.59	44	0.86	46	6.65	48

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. Note: For specialised lending exposures under the PD/LGD method (relating to shipping), refer to EU CR6_b.

Regulatory categories	Remaining maturity	On-balance sheet amount £m	Off-balance sheet amount £m	Risk-weight %	Exposure amount £m	RWAs £m	Expected loss £m
2017							
IRB							
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
2016							
IRB							
1 - Strong	Less than 2.5 years	3,034	404	50	3,304	1,652	—
	Equal to or more than 2.5 years	8,001	1,069	70	8,723	6,106	35
2 - Good	Less than 2.5 years	4,029	678	70	4,607	3,225	18
	Equal to or more than 2.5 years	4,092	216	90	4,238	3,814	34
3 - Satisfactory	Less than 2.5 years	202	8	115	210	241	6
	Equal to or more than 2.5 years	658	103	115	753	866	21
4 - Weak	Less than 2.5 years	117	4	250	120	301	10
	Equal to or more than 2.5 years	117	26	250	143	358	11
5 - Default	Less than 2.5 years	996	13	—	1,007	—	506
	Equal to or more than 2.5 years	490	16	—	500	—	249
Total		21,736	2,537	—	23,605	16,563	890

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.

2017	On-balance sheet amount £m	Off-balance sheet amount £m	Risk-weight %	Exposure amount £m	RWAs £m	Capital requirements £m
IRB						
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
2016						
IRB						
Exchange-traded equity exposures	57	—	290	57	167	13
Private equity exposures	261	124	190	360	685	55
Other equity exposures	151	5	370	131	482	39
Total	469	129	—	548	1,334	107

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 RWA 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.

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 before and after 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.

	Exposures before CCF and CRM		Exposures post CCF and CRM			
2017	On-balance sheet £m	Off-balance sheet £m	On-balance sheet £m	Off-balance sheet £m	RWA £m	RWA density %
Central governments and central banks	92,647	540	92,812	9	1,039	1%
Regional governments and local authorities	153	271	153	4	144	92%
Multilateral development banks	30	—	30	—	—	—
Institutions	322	361	377	97	217	46%
Corporates	9,273	4,053	8,870	1,607	10,158	97%
Retail	2,966	4,575	2,894	147	2,111	69%
Secured by mortgages on immovable property - residential	12,616	712	12,614	184	4,926	38%
- commercial	2,479	243	2,448	68	2,536	101%
Exposures in default	960	18	973	5	1,102	113%
Items associated with particularly high risk	34	—	34	—	51	150%
Covered bonds	159	—	159	—	32	20%
Equity exposures	650	—	650	—	1,461	225%
Other exposures	1,599	—	1,709	—	697	41%
Total STD	123,888	10,773	123,723	2,121	24,474	19%
2016						
Central governments and central banks	71,445	852	71,848	46	729	—
Regional governments and local authorities	184	260	186	4	156	82%
Multilateral development banks	33	—	33	—	—	—
Institutions	390	364	442	116	263	47%
Corporates	14,652	7,314	13,738	3,255	16,635	98%
Retail	3,308	4,280	3,383	25	2,369	70%
Secured by mortgages on immovable property - residential	11,598	884	11,694	134	5,053	43%
- commercial	3,341	439	3,317	166	3,496	100%
Exposures in default	1,254	25	1,250	5	1,420	113%
Items associated with particularly high risk	391	—	391	—	587	150%
Covered bonds	82	—	84	—	17	20%
Equity exposures	129	—	555	—	1,199	216%
Other exposures	7,781	—	8,001	—	4,959	62%
Total STD	114,588	14,418	114,922	3,751	36,883	31%

Key point

- On-balance sheet exposure increased, largely reflecting the rise in exposure to central governments and central banks as part of ongoing liquidity management by Treasury and growth in UK mortgages in Private Banking. This was partly offset by the permission to move the RBS International portfolio to the IRB approach and change in approach for other exposures. RWAs also fell significantly as a result of the regulatory permission.

Table EU CR5a presents the mapping from external credit rating to credit quality step.

For real estate lending, risk-weights are based on the loan-to-value of the exposure. For all other assets, including retail and equities, set risk-weights are assigned based on the exposure class.

EU CR5a: CQS mapping to external credit ratings

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

Credit risk (excluding counterparty credit risk)

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.

	Risk-weight																	Of which:
	0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150% (1)	250%	370%	1,250%	Others	Deducted	Total	Unrated (2)
EAD post CRM	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
2017																		
Central governments and central banks	92,373	—	—	—	35	—	—	—	—	—	—	413	—	—	—	—	92,821	2,012
Regional governments and local authorities	—	—	—	—	16	—	—	—	—	141	—	—	—	—	—	—	157	139
Multilateral development banks	30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	30	30
Institutions	—	—	—	—	223	—	129	—	—	80	—	—	—	—	42	—	474	349
Corporates	4	—	—	—	325	—	133	—	—	9,858	154	—	—	—	3	—	10,477	9,999
Retail	—	—	—	—	—	—	—	—	2,657	—	—	—	—	—	384	—	3,041	—
Secured by mortgages on																		
immovable property - residential	—	—	—	—	—	11,766	—	—	845	186	1	—	—	—	—	—	12,798	12,798
- commercial	—	—	—	—	—	—	—	—	—	2,458	58	—	—	—	—	—	2,516	2,516
Exposures in default	1	—	—	—	—	—	—	—	—	694	235	—	—	—	48	—	978	978
Items associated with particularly high risk	—	—	—	—	—	—	—	—	—	—	34	—	—	—	—	—	34	34
Covered bonds	—	—	—	—	159	—	—	—	—	—	—	—	—	—	—	—	159	104
Equity exposures	—	—	—	—	—	—	—	—	—	109	—	541	—	—	—	—	650	16
Other exposures	68	—	—	—	1,113	—	27	—	—	454	—	—	—	—	47	—	1,709	1,696
Total STD	92,476	—	—	—	1,871	11,766	289	—	3,502	13,980	482	954	—	—	524	—	125,844	30,671
EAD pre CRM	92,476	—	—	—	1,871	11,766	275	—	3,532	14,320	484	954	—	—	479	—	126,157	31,173
2016																		
Central governments and central banks	71,480	—	—	—	133	—	—	—	—	—	—	281	—	—	—	—	71,894	2,312
Regional governments and local authorities	—	—	—	—	41	—	2	—	—	147	—	—	—	—	—	—	190	146
Multilateral development banks	33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	33	33
Institutions	—	—	—	—	271	—	157	—	—	130	—	—	—	—	—	—	558	350
Corporates	59	—	—	—	239	—	134	—	—	16,535	26	—	—	—	—	—	16,993	16,650
Retail	1	—	—	—	9	—	—	—	3,398	—	—	—	—	—	—	—	3,408	—
Secured by mortgages on																		
immovable property - residential	—	—	—	—	—	10,409	—	—	—	1,419	—	—	—	—	—	—	11,828	11,827
- commercial	—	—	—	—	—	—	—	—	—	3,448	35	—	—	—	—	—	3,483	3,483
Exposures in default	—	—	—	—	—	—	—	—	—	927	328	—	—	—	—	—	1,255	1,254
Items associated with particularly high risk	—	—	—	—	—	—	—	—	—	—	391	—	—	—	—	—	391	391
Covered bonds	—	—	—	—	84	—	—	—	—	—	—	—	—	—	—	—	84	84
Equity exposures	—	—	—	—	—	—	—	—	—	126	—	429	—	—	—	—	555	29
Other exposures	2,168	—	—	—	974	—	36	—	—	4,714	—	—	—	—	109	—	8,001	7,989
Total STD	73,741	—	—	—	1,751	10,409	329	—	3,398	27,446	780	710	—	—	109	—	118,673	44,548
EAD pre CRM	73,689	—	—	—	1,751	10,409	280	—	3,420	28,451	795	710	—	—	159	—	119,664	45,861

Notes:
(1) Credit risk EAD post CRM with a 150% risk-weight relates to legacy assets.
(2) Unrated exposures (except central governments and central banks) relate to exposures in Private Banking.

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 customer 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 2017 ARA for more information.

However, a number of specific policies apply to derivatives including those transacted with central counterparties (CCPs) and SFTs. These include policies that address documentation requirements, product-specific requirements (for example, futures, credit derivatives and securities lending), counterparty specific requirements (for example, hedge funds and pension funds), margin trading, collateral and custodians.

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 projected 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. However, additional limits are set to cover initial margin posted to the CCP, default fund contributions and other contingent liabilities.

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 for clients prior to trading. Exceptions to this require specific approval from a senior credit risk officer. The legal and administrative capacity of counterparties to enter into legal agreements, including collateral agreements (such as a credit support annex) is assessed. The policy framework establishes minimum 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 it would be required to post in the event of its credit ratings being downgraded by one or two notches. This is undertaken on a daily basis for treasury and liquidity management purposes. Refer to page 390 of the 2017 ARA for more information.

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 risks

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).

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

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

	a	b	c	d	e	f	g
2017	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	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 *Securities financing transactions*	*n/a*	*n/a*	—	—	—	—	—
6 *Derivatives and long settlement transactions*	*n/a*	*n/a*	—	*11,775*	*1.4*	*16,485*	*7,447*
7 *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
2016							
1 Mark-to-market method	n/a	13,945	4,175	n/a	n/a	8,183	4,410
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	—	19,239	1.4	26,934	11,727
5 *Securities financing transactions*	*n/a*	*n/a*	—	—	—	—	—
6 *Derivatives and long settlement transactions*	*n/a*	*n/a*	—	*19,239*	*1.4*	*26,934*	*11,727*
7 *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	14,383	1,543
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	49,500	17,680

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 key driver of the decline in EAD post CRM and RWAs over the year was decreased asset size. This reflected continued reduction of non-strategic exposures and increased mitigation of exposures through collateralisation in NatWest Markets.
- The decrease in EAD post CRM for SFTs largely reflected a reduction in pledges of collateral to central banks. Excluding such pledges, there was a moderate increase in EAD post CRM for SFTs.

Risk profile by RWA calculation approach

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.

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	EAD post CRM and post-CCF £m	Average PD %	Number of obligors	Average LGD %	Average maturity Years	RWAs £m	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.

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

2016	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	8,456	0.01	31	45	1.72	555	7
Central governments and central banks	0.15 to <0.25	9	0.22	4	45	4.01	6	65
Central governments and central banks	0.25 to <0.50	5	0.45	1	45	0.57	2	47
Central governments and central banks	0.50 to <0.75	—	—	—	—	—	—	—
Central governments and central banks	0.75 to <2.50	3	0.91	1	45	0.05	2	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		8,473	0.01	37	45	1.72	565	7
Institutions	0.00 to <0.15	4,995	0.10	162	47	2.44	2,065	41
Institutions	0.15 to <0.25	4,422	0.17	216	49	2.81	2,810	64
Institutions	0.25 to <0.50	897	0.41	159	58	1.77	817	91
Institutions	0.50 to <0.75	158	0.64	66	67	3.63	206	130
Institutions	0.75 to <2.50	131	1.20	56	52	3.17	192	147
Institutions	2.50 to <10.00	56	3.21	16	49	1.79	84	151
Institutions	10.00 to <100.00	1	—	2	45	2.19	1	229
Institutions	100.00 (Default)	1	100.00	1	56	1.92	—	—
Total - Institutions		10,661	0.19	678	49	2.56	6,175	58
Corporates - SME	0.00 to <0.15	—	—	—	—	—	—	—
Corporates - SME	0.15 to <0.25	9	0.22	24	29	1.23	2	19
Corporates - SME	0.25 to <0.50	55	0.44	209	55	3.25	41	73
Corporates - SME	0.50 to <0.75	16	0.64	203	56	1.96	12	75
Corporates - SME	0.75 to <2.50	86	1.25	614	49	2.79	82	95
Corporates - SME	2.50 to <10.00	35	3.71	269	34	2.60	30	86
Corporates - SME	10.00 to <100.00	2	15.17	32	36	1.66	3	122
Corporates - SME	100.00 (Default)	4	100.00	30	29	2.29	—	—
Total - Corporates - SME		207	3.39	1,381	47	2.73	170	81

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

2016	PD Scale	EAD post CRM and post-CCF £m	Average PD %	Number of obligors	Average LGD %	Average maturity Years	RWAs £m	RWA density %
Corporates - Specialised lending	Strong	1,728	n/a	339	n/a	3.60	1,215	70
Corporates - Specialised lending	Good	399	n/a	238	n/a	4.49	321	80
Corporates - Specialised lending	Satisfactory	118	n/a	28	n/a	4.45	130	110
Corporates - Specialised lending	Weak	8	n/a	11	n/a	4.45	21	250
Corporates - Specialised lending	Default	28	n/a	21	n/a	3.62	—	—
Total - Corporates - Specialised lending (1)		2,281	n/a	637	n/a	3.80	1,687	74
Corporates - Other	0.00 to <0.15	16,746	0.06	2,810	37	3.07	3,461	21
Corporates - Other	0.15 to <0.25	5,358	0.19	424	48	2.53	3,052	57
Corporates - Other	0.25 to <0.50	834	0.38	353	55	2.08	642	77
Corporates - Other	0.50 to <0.75	343	0.64	140	47	1.23	255	74
Corporates - Other	0.75 to <2.50	391	1.24	359	31	3.26	270	69
Corporates - Other	2.50 to <10.00	175	3.25	234	50	2.47	267	153
Corporates - Other	10.00 to <100.00	1	11.62	20	40	1.69	3	200
Corporates - Other	100.00 (Default)	6	100.00	12	21	1.04	—	—
Total - Corporates - Other		23,854	0.18	4,352	41	2.89	7,950	33
Total - Wholesale all portfolios		45,476	0.17	7,085	43	2.64	16,547	36

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

Key point

- The key driver of the decline in EAD post CRM and RWAs was decreased asset size. This reflected continued reduction of non-strategic exposures and increased mitigation of exposures through collateralisation in NatWest Markets.

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

	Exposure class	Risk-weight 0% £m	20% £m	50% £m	75% £m	100% £m	Total £m	Of which: Unrated £m
	2017							
1	Central governments and central banks	542	1	—	—	—	542	—
2	Regional government and local authorities	—	50	—	—	—	50	—
3	Public sector entities	—	—	—	—	—	—	—
4	Multilateral development banks	—	—	—	—	—	—	—
5	Internal organisations	—	—	—	—	—	—	—
6	Institutions	—	117	34	—	—	151	—
7	Corporates	—	14	11	—	1,078	1,104	97
8	Retail	—	—	—	6	—	6	—
10a	Secured by mortgages on immovable property	—	—	—	—	—	—	—
10b	Exposures in default	—	—	—	—	—	—	—
10c	Higher-risk categories	—	—	—	—	—	—	—
10d	Covered bonds	—	—	—	—	—	—	—
9	Institutions and corporates with a short-term credit assessment	—	—	—	—	—	—	—
10e	Collective investment undertakings	—	—	—	—	—	—	—
10f	Equity	—	—	—	—	—	—	—
10	Other items	—	—	—	—	—	—	—
11	Total	542	182	46	6	1,078	1,853	97
	2016							
1	Central governments and central banks	2,555	—	—	—	—	2,555	—
2	Regional government and local authorities	—	51	—	—	—	51	—
3	Public sector entities	—	—	—	—	—	—	—
4	Multilateral development banks	—	—	—	—	—	—	—
5	Internal organisations	—	—	—	—	—	—	—
6	Institutions	—	172	33	—	—	205	—
7	Corporates	—	73	159	—	971	1,203	87
8	Retail	—	—	—	8	—	8	—
10a	Secured by mortgages on immovable property	—	—	—	—	—	—	—
10b	Exposures in default	—	—	—	—	2	2	—
10c	Higher-risk categories	—	—	—	—	—	—	—
10d	Covered bonds	—	—	—	—	—	—	—
9	Institutions and corporates with a short-term credit assessment	—	—	—	—	—	—	—
10e	Collective investment undertakings	—	—	—	—	—	—	—
10f	Equity	—	—	—	—	—	—	—
10	Other items	—	—	—	—	—	—	—
11	Total	2,555	295	192	8	973	4,024	87

Key point

- Total exposures under the standardised approach declined, primarily in the 0% band, reflecting fluctuations in exposure to central banks. The maturing of transactions in the 20% band and the close-out of a transaction in the 50% band also contributed.

EU CCR2: CCR: Credit valuation adjustment capital charge

The table below presents the CVA charge broken down by approach.

		2017		2016	
		a	b	a	b
		Exposure amount £m	RWAs £m	Exposure amount £m	RWAs £m
	Total portfolios subject to the advanced CVA capital charge	7,227	1,863	12,749	3,560
1	(i) VaR component (including the 3x multiplier)	—	425	n/a	686
2	(ii) Stressed VaR component (including the 3x multiplier)	—	1,439	n/a	2,874
3	All portfolios subject to the standardised CVA capital charge	2,233	692	2,942	1,103
5	Total	9,460	2,556	15,691	4,663

Key point

- The CVA capital charge fell in line with the decline in exposure to counterparties subject to the charge.

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

2017	Gross positive fair value £m	Netting benefits £m	Netted current credit exposure £m	Collateral held £m	Net credit exposure £m
Derivatives	197,187	158,300	38,887	34,716	9,565
SFTs	197,972	—	197,972	193,383	8,782
Total	395,159	158,300	236,859	228,099	18,347
2016					
Derivatives	311,748	253,316	58,432	50,829	16,206
SFTs	162,127	—	162,127	159,950	7,882
Total	473,875	253,316	220,559	210,779	24,088

Key points

- The decline in net credit exposure for derivatives was in line with the reductions explained in the preceding tables.
- Net credit exposure for SFTs excludes pledges of collateral to central banks. The moderate increase was in line with the movement commented on in EU CCR1.

Credit derivatives

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.

	2017		2016	
Notionals	Protection bought £m	Protection sold £m	Protection bought £m	Protection sold £m
Single-name credit default swaps	10,260	8,552	15,781	11,016
Index credit default swaps	11,428	7,481	5,820	3,020
Total return swaps	676	267	743	171
Other credit derivatives (1)	15	15	3,993	1,639
Total notionals	22,379	16,315	26,337	15,846
Of which: Own credit portfolio - notionals (2)	355	—	744	—
Fair values				
Positive fair value (asset)	203	285	487	118
Negative fair value (liability)	(435)	(127)	(227)	(336)

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 points

- Overall credit derivative notionals decreased due to legacy asset disposals.
- This was partly offset by some new positions, including rebalancing between single-name and index credit default swaps as part of NatWest Markets' implementation of ring-fencing strategy.
- The fair values on credit derivatives reflected residual positions post legacy disposals and year-on-year movements were generally offset by opposite movements on hedged instruments.

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.

	2017		2016	
	EAD post-CRM £m	RWA £m	EAD post-CRM £m	RWA £m
Exposures to QCCPs (total)	n/a		n/a	
Exposures for trades at QCCPs (excluding OTC initial margin and default fund contributions)	3,605	159	3,033	130
Of which:				
(i) OTC derivatives	535	95	420	71
(ii) Exchange-traded derivatives including initial margin	849	20	721	21
(iii) Securities financing transactions	2,221	44	1,892	38
(iv) Netting sets where cross-product netting has been approved	—	—	—	—
Segregated initial margin	—	—	—	—
Non-segregated initial margin	300	60	333	67
Pre-funded default fund contributions	254	61	253	38
Alternative calculation of own funds requirements for exposures	—	—	—	—
Exposures to non-QCCPs (total)	n/a	—	n/a	—
Exposures for trades at non-QCCPs (excluding initial margin and default fund contributions)	—	—	—	—
Of which:				
(i) OTC derivatives	—	—	—	—
(ii) Exchange-traded derivatives including initial margin	—	—	—	—
(iii) Securities financing transactions	—	—	—	—
(iv) Netting sets where cross-product netting has been approved	—	—	—	—
Segregated initial margin	—	—	—	—
Non-segregated initial margin	—	—	—	—
Pre-funded default fund contributions	—	—	—	—
Alternative calculation of own funds requirements for exposures	—	—	—	—

Key point

- Clearing activity with qualified clearing houses increased across all categories, resulting in a proportional rise in RWAs. The increase was also partially due to a relative increase in the risk weight applied to the pre-funded default fund contributions.

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 in NatWest Markets. The primary objective of RBS's trading activities is to provide a range of financing, risk management and investment services to its customers – including major corporations and financial institutions around the world. From a market risk perspective, the trading activities are focused on the following markets: currencies; rates; securitised products; and traded credit.

Market risk governance and management

Responsibility for identifying, measuring, monitoring and controlling the market risk arising from trading activities lies with the relevant trading business, with second-line-of-defence oversight 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 2017 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 according to rules outlined on page 213 in the 2017 ARA.

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: RBS plc and NatWest 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 RBS plc, RBSSI 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 capital charge for RBSSI is fully calculated under the standardised approach. UBI DAC's market risk capital requirements are not material (£5 million).

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 118. For information on internal back-testing, refer to page 217 of the 2017 ARA.)
- Ongoing model validation – VaR model performance is assessed both regularly and on an ad-hoc basis if market conditions or book constitution 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 book constitution (refer to page 156 of the 2017 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.

The risk system simulates 99% VaR 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 – which is the risk that a position's fair value will change 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 – which is the risk that the value of a position will change due to changes in the real or market-perceived ability of a borrower to pay related cash flows or obligations.
- Foreign currency price risk – which is the risk that the fair value of a position will change due to the change in foreign currency rates, including gold.
- Equity price risk – which is the risk that the fair value of a position will change due to the change in equity prices.
- Commodity price risk - which is the risk that the fair value of a position will change due to the 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, credit spread and equity risks in the trading book and foreign exchange and commodity risks in both the trading and non-trading books. Interest rate and equity risks are 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 equity risks are aggregated with general risks using the simulation-level approach.
- 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 2017 ARA, page 282) 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 2017 was 3.2 months (2016 – 3.2 months). The horizon is determined based on issuer liquidity, position concentration, product type and maturity.

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		RBS plc		NWB Plc		RBSSI	
		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	239	2,090	167	135	11	681	55
1	Interest rate position risk (outright products)	1,151	92	438	35	19	2	680	54
2	Equity position risk (outright products)	—	—	—	—	—	—	—	—
3	Foreign exchange position risk (outright products)	812	65	624	50	115	9	—	—
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	13,719	1,097	2	—	—	—
	VaR	2,769	222	2,639	211	—	—	—	—
	SVaR	4,990	398	4,820	386	1	—	—	—
	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	15,809	1,265	136	11	681	55
	2016								
	STD	3,532	283	2,115	169	642	51	722	58
1	Interest rate position risk (outright products)	1,273	103	348	28	196	16	712	57
2	Equity position risk (outright products)	—	—	—	—	—	—	—	—
3	Foreign exchange position risk (outright products)	1,078	86	597	48	446	35	—	—
4	Commodity position risk (outright products)	10	1	—	—	—	—	10	1
5	Option position risk (delta-plus approach)	3	—	2	—	—	—	—	—
8	Securitisation positions	1,168	93	1,168	93	—	—	—	—
	Internal model approach	13,906	1,112	13,583	1,087	34	3	—	—
	VaR	3,710	297	3,597	288	11	1	—	—
	SVaR	5,397	431	5,189	415	23	2	—	—
	Incremental risk charge	2,180	174	2,178	174	—	—	—	—
	Other (RNIV)	2,619	210	2,619	210	—	—	—	—
	of which: VaR-based RNIV	*426*	*34*	*426*	*34*	—	—	—	—
	of which: SVaR-based RNIV	*718*	*57*	*718*	*57*	—	—	—	—
	of which: Stress RNIV	*1,475*	*119*	*1,475*	*119*	—	—	—	—
	Total	17,438	1,395	15,698	1,256	676	54	722	58

Key points

RBS

- RBS's total market risk RWAs decreased moderately over the year, driven by a decline in exposures under the standardised approach in NWB Plc.

RBS plc

- Total RWAs related to the internal model approach were broadly unchanged, with a decline in the VaR and SVaR based requirements being offset by an increase in the incremental risk charge.
- The VaR and SVaR decline primarily reflected the continued reduction in run-down positions throughout the year. The increase in the incremental risk charge mainly reflected an increase in eurozone government and corporate bond exposure.
- RWAs related to the standardised approach were broadly unchanged.

NWB Plc

- The RWA decline mainly reflected a lower banking book foreign exchange charge.

RBSSI

- RWAs were broadly unchanged.

EU MR2_A: MR IMA: RWAs and MCR

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

		2017		2016	
		a	b	a	b
		RWAs £m	MCR £m	RWAs £m	MCR £m
1	VaR (higher of a and b)	2,769	222	3,710	297
a	Period end VaR	750	60	1,538	123
b	Average of the daily VaR for preceding 60 business days x multiplication factor	2,769	222	3,710	297
2	SVaR (higher of a and b)	4,990	398	5,397	431
a	Period end SVaR	1,839	147	3,566	285
b	Average of the SVaR for preceding 60 business days x multiplication factor	4,990	398	5,397	431
3	Incremental risk charge (higher of a and b)	3,715	297	2,180	174
a	Period end IRC value	3,715	297	1,953	156
b	Average IRC over preceding 60 business days	3,400	272	2,180	174
5	Other (RNIV at period end)	2,544	204	2,619	210
6	Total	14,018	1,121	13,906	1,112

Key point

- Refer to the commentary on the internal model approach below Table EU MR1.

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 significant subsidiaries. The reported values do not include any capital multipliers or other additional capital charges that may be applied at the supervisor's discretion.

		2017			2016		
		RBS £m	RBS plc £m	NWB Plc £m	RBS £m	RBS plc £m	NWB Plc £m
	VaR (10 day 99%)						
1	Maximum value	84	81	—	122	117	2
2	Average value	54	53	—	90	85	1
3	Minimum value	40	37	—	56	50	—
4	Period end	60	58	—	112	111	—
	SVaR (10 day 99%)						
5	Maximum value	155	154	—	156	146	5
6	Average value	126	124	—	137	121	2
7	Minimum value	85	83	—	112	95	—
8	Period end	147	144	—	149	146	—
	IRC (99.9%)						
9	Maximum value	297	297	—	341	310	—
10	Average value	228	228	—	244	218	—
11	Minimum value	164	164	—	156	148	—
12	Period end	297	297	—	156	156	—

Note:
(1) Maximum, average, minimum values are, respectively, the maximum, average and minimum values of the month-end values over the reporting period.

Key points

- The movements in VaR, SVaR and IRC values for RBS and RBS plc were 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 have fallen to values below £1 million.

VaR back-testing

The main approach employed to assess the ongoing performance of the VaR model is back-testing, which 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.

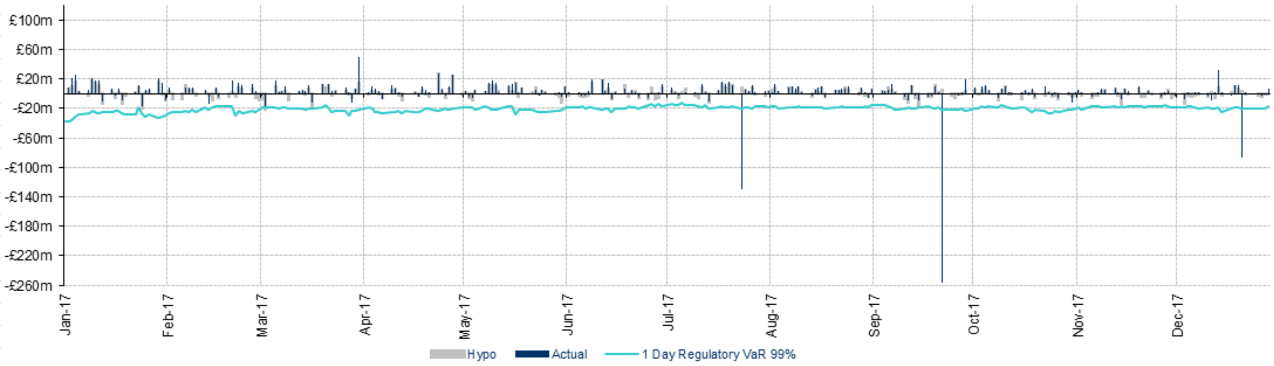
The Actual P&L for a particular business day is the firm's actual P&L for that day in respect of the trading activities within the scope of the firm's regulatory VaR model, including any intraday activities, adjusted by stripping out fees and commissions, brokerage, and additions to and releases from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

The Hypo P&L reflects the firm's Actual P&L excluding any intra-day 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 through 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 vs. Actual and Hypo P&L for RBS plc, RBS's largest legal entity by market risk RWAs and positions.



Key points

- The exception in March 2017 was driven by a loss in the legacy portfolio in NatWest Markets as a result of adverse market moves in interest rates and inflation.
- The exceptions in July, September and December resulted from disposal losses and other adjustments in the legacy portfolio in NatWest Markets.

EU MR4_A: Regulatory VaR model back-testing exceptions

The table below shows regulatory back-testing exceptions for a period of 250 business days for 1-day 99% traded regulatory VaR vs. Actual and Hypo P&L for the legal entities approved by the PRA.

	Back-testing exceptions (from 16 January 2017)	
	Actual	Hypo
Description		
The Royal Bank of Scotland plc	4	1
National Westminster Bank Plc	4	4

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.
- The back-testing exceptions that occurred in RBS plc are detailed under EU MR4 above.
- The back-testing exceptions in NWB Plc were driven by adverse market moves and technical issues. Given that RWAs for NWB Plc are very low in comparison to RBS plc, small losses can result in back-testing exceptions for this entity.

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 123). 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 123.

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.

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.

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	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 fluctuation 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 page 214 of the 2017 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 outcome, 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 page 206 of the 2017 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 page 161 of the 2017 ARA.

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.
Conduct risk	The risk that the behaviour of RBS 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. The damage or loss may be the result of a failure to comply with (or adequately plan for changes to) relevant official sector policy, laws, regulations, or major industry standards, or of failing to meet customers' or regulators' expectations.	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 223 of the 2017 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 228 of the 2017 ARA.
Operational risk	The risk of loss resulting from inadequate or failed internal processes, people and systems, or external events.	RBS manages operational risk in accordance with its operational risk management framework. For further information, refer to page 225 of the 2017 ARA.

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 220 of the 2017 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 2017, 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 251 of the 2017 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 257 of the 2017 ARA).

RBS applies its accounting policies *Provisions; Loan commitments; and Financial guarantee contracts* (set out on pages 254 and 257 of the 2017 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 258 of the 2017 ARA).

Assets awaiting securitisation

Financial assets are valued using RBS's accounting policy for financial assets (refer to pages 255 and 256 of the 2017 ARA). At both 31 December 2017 and 31 December 2016, 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 258 of the 2017 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.

Credit card receivables - In the UK, RBS securitises credit card receivables that it originates itself. Noteholders have a proportionate interest in a pool of credit card receivables that are assigned by RBS to a receivables trust.

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 2017, 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 2017, 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:

- Celtic (Irish residential mortgages SSPEs);
- Epic (commercial real estate SSPEs); and
- Talisman (commercial real estate SSPEs).

The last remaining Arran UK residential mortgages transaction was called on 20 January 2017.

Following a synthetic securitisation in 2016 of £433 million of loans to corporates or SMEs, in 2017 RBS completed another synthetic securitisation of loans to corporates or SMEs of £4.7 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 123. 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 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			
	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
2017 - non-trading book								
IRB	13,596	2,830	226	—	—	—	—	—
2016 - non-trading book								
IRB	11,829	1,954	156	—	1	11	1	—
2017 - trading book								
IRB	884	1,029	82	—	131	212	17	—
2016 - trading book								
IRB	582	1,168	93	—	115	356	29	—

Key points

Overview

- Total exposure for retained or purchased securitisation positions increased in both the non-trading book and more moderately in the trading book in 2017. The non-trading book increase was primarily attributable to risk distribution activity undertaken by RBS to increase capacity to lend to SMEs.

Non-trading book - IRB approach

- Excluding the risk distribution activity, there was a decrease in exposure driven by residential mortgages, auto receivables and leasing.
- The rise in RWAs reflected transactions undertaken to support risk distribution activity, partially offset by reductions attributed to asset run-downs.

- The total exposure amount included EAD of £1.0 billion (2016 - £1.1 billion) and RWAs of £0.5 billion (2016 - £0.3 billion) related to counterparty credit risk associated with derivative trades. Within this, residential mortgages accounted for EAD of £0.6 billion (2016 - £0.7 billion) and RWAs of £0.4 billion (2016 - £0.2 billion). The relevant market risk is captured in the trading book.

Trading book - IRB approach

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

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
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	—	—
2016 - non-trading book				
≤ 10%	8,558	52	—	—
> 10% ≤ 20%	2,280	29	—	—
> 20% ≤ 50%	557	16	—	—
> 50% ≤ 100%	346	22	—	—
> 100% ≤ 350%	—	—	—	—
> 350% ≤ 650%	42	—	—	—
1,250%	46	37	1	1
	11,829	156	1	1
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
2016 - trading book				
≤ 10%	186	1	—	—
> 10% ≤ 20%	139	2	—	—
> 20% ≤ 50%	109	3	65	2
> 50% ≤ 100%	20	1	1	—
> 100% ≤ 350%	3	1	—	—
> 350% ≤ 650%	35	15	—	—
1,250%	90	70	49	27
	582	93	115	29

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
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
2016 - non-trading book											
≤ 10%	4,440	78	418	395	427	96	—	2,536	—	168	8,558
> 10% ≤ 20%	753	371	18	241	—	50	—	592	—	255	2,280
> 20% ≤ 50%	69	23	—	107	7	—	—	—	—	351	557
> 50% ≤ 100%	82	262	—	—	—	—	—	—	—	2	346
> 100% ≤ 350%	—	—	—	—	—	—	—	—	—	—	—
> 350% ≤ 650%	42	—	—	—	—	—	—	—	—	—	42
1,250%	18	13	—	—	8	—	—	—	1	6	46
	5,404	747	436	743	442	146	—	3,128	1	782	11,829
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
2016 - trading book											
≤ 10%	106	—	—	—	55	—	—	25	—	—	186
> 10% ≤ 20%	125	—	—	—	8	—	—	6	—	—	139
> 20% ≤ 50%	8	20	—	—	2	—	—	—	65	14	109
> 50% ≤ 100%	1	6	—	—	11	—	—	—	1	1	20
> 100% ≤ 350%	—	3	—	—	—	—	—	—	—	—	3
> 350% ≤ 650%	4	—	—	—	31	—	—	—	—	—	35
1,250%	11	13	—	—	16	—	—	—	49	1	90
	255	42	—	—	123	—	—	31	115	16	582

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

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 £m	Off-balance sheet £m	On-balance sheet £m	Off-balance sheet £m	On-balance sheet (1) £m	Off-balance sheet £m	On-balance sheet £m	Off-balance sheet £m
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	88	4,206
Consumer loans	—	—	71	13	45	—	116	13
Trade receivables	—	—	—	—	—	—	—	—
Auto receivables	—	—	—	—	1,095	1,258	1,095	1,258
Re-securitisations	—	—	—	—	—	—	—	—
Other assets	—	—	—	—	583	256	583	256
	—	4,199	71	13	5,293	4,020	5,364	8,232
2016 - non-trading book								
Residential mortgages	—	—	—	—	2,483	2,921	2,483	2,921
Commercial mortgages	6	—	—	—	471	270	477	270
Credit card receivables	—	—	—	—	30	406	30	406
Leasing	—	—	—	—	704	39	704	39
Loans to corporates or SMEs	2	379	—	—	54	7	56	386
Consumer loans	—	—	72	13	61	—	133	13
Trade receivables	—	—	—	—	—	—	—	—
Auto receivables	—	—	—	—	2,156	972	2,156	972
Re-securitisations	—	—	—	—	—	1	—	1
Other assets	—	—	—	—	448	334	448	334
	8	379	72	13	6,407	4,950	6,487	5,342
2017 - trading book								
Residential mortgages	—	—	—	—	216	7	216	7
Commercial mortgages	—	—	—	—	38	—	38	—
Credit card receivables	—	—	—	—	—	—	—	—
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
2016 - trading book								
Residential mortgages	—	—	—	—	246	9	246	9
Commercial mortgages	—	—	—	—	42	—	42	—
Loans to corporates or SMEs	3	—	—	—	114	6	117	6
Auto receivables	—	—	—	—	31	—	31	—
Re-securitisations	1	—	—	—	90	24	91	24
Other assets	—	—	—	—	15	1	15	1
	4	—	—	—	538	40	542	40

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
2017 - trading book		
Residential mortgages	223	16
Commercial mortgages	38	4
Loans to corporates or SMEs	144	31
Consumer loans	11	2
Auto receivables	6	—
Re-securitisations	132	17
Other assets	330	12
	884	82
2016 - trading book		
Residential mortgages	255	17
Commercial mortgages	42	15
Loans to corporate or SMEs	123	30
Auto receivables	31	—
Re-securitisations	115	29
Other assets	16	2
	582	93

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					
	Exposures	Of which past due	Traditional	Synthetic	Traditional	Total	Of which past due	Traditional	Synthetic	Total	Of which past due	Exposures	Of which past due
2017	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
Residential mortgages	7	—	—	—	7	7	—	—	—	—	—	—	—
Commercial mortgages	—	—	—	—	—	—	—	—	—	—	—	—	—
Loans to corporates or SMEs	4,241	—	—	4,229	12	4,241	—	—	—	—	—	4,229	—
Consumer loans	—	—	—	—	—	—	—	—	—	—	—	—	—
Other assets	5	—	—	—	5	5	—	—	—	—	—	—	—
	4,253	—	—	4,229	24	4,253	—	—	—	—	—	4,229	—
2016													
Residential mortgages	321	—	—	—	9	9	—	312	—	312	—	312	—
Commercial mortgages	222	222	222	—	—	222	222	—	—	—	—	222	222
Loans to corporates or SMEs	768	3	127	433	42	602	2	166	—	166	1	726	3
Consumer loans	120	—	—	—	120	120	—	—	—	—	—	—	—
Other assets	8	—	—	—	8	8	—	—	—	—	—	—	—
	1,439	225	349	433	179	961	224	478	—	478	1	1,260	225

Key point

- Refer to comments under SEC 1. Loans to corporates or SMEs exposure increased due to securitisation activity undertaken to increase capacity to lend to SMEs. Remaining variances to 2016 were driven by a number of RBS originated transactions being excluded due to note redemptions and immaterial holdings.

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 at 31 December 2017 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.

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							
	AAA	AA	A	BBB	Non-investment grade	Unrated	Total (1)	Non-modelled PRR (2)
2017	£m	£m	£m	£m	£m	£m	£m	%
Trading book securitisation MCR	2	1	2	10	44	23	82	0.3
2016								
Trading book securitisation MCR	3	1	2	2	57	28	93	0.3

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

Appendix 1 - CRR roadmap

For tables included in this roadmap, also refer to related key points.

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 - pages 225-227.
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 cross-references as does Basis of Disclosure.
CRR 435: Risk management objectives and policies		
435 (1)	Disclose information on:	
435 (1) (a)	The strategies and processes to manage those risks	Overview of risk strategies - ARA: Governance report - Report of the Board Risk Committee pages 73-80. 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 - Institutional risk management framework pages 150-161. Additional information on risk management structure processes found throughout this document, and specifically ARA:Capital and risk management section.

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 - pages 150-160. 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 - Institutional risk management framework pages 150-160; Credit risk, pages 177-182 Structural hedging page 209; Pension risk, pages 220-222; Operational risk, pages 225-227; Accounting policy: 23, Derivatives and Hedging page 258.
435 (1) (e)	adequacy of risk management arrangements.	ARA: Report of the Group Audit Committee pages 65-72 and Board Risk Committee pages 73-80.
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: Governance pages 51-56.
435 (2) (b)	Recruitment policy of the Board, their experience and expertise.	Annual Report: Governance report page 64. rbs.com/about/board-and-governance.html
435 (2) (c)	Policy on diversity of Board membership and results against targets.	Annual Report: Governance report page 64; rbs.com/about/board-and-governance.html
435 (2) (d)	Disclosure of whether a dedicated risk committee is in place, and number of meeting in the year.	Overview of risk strategies - ARA: Governance report - Report of the Board Risk Committee pages 73-80.
435 (2) (e)	Description of information flow risk to Board.	ARA: Report on the Board Risk Committee pages 73-80 & Capital and risk management - pages 152-153.
CRR 436: Scope of application		
436	See sub paragraphs below.	
436 (a)	Name of institution. Page 5.	The Royal Bank of Scotland Group plc and its consolidated subsidiaries - page 4.
436 (b)	Difference in basis of consolidation for accounting and prudential purposes, naming entities that are:	EU LI1, CAP 2 & page 5; ARA: Note 7 Investments in Group undertakings page 340 and Note 15 Related undertakings pages 344-356.
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 page 6.
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.	Pages 7-10 & ARA: Capital and risk management section pages 150-164.
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_A.
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.	Pages 61 & 103.
439 (b)	Discussion of process to secure collateral and establishing reserves.	Page 103 & ARA: Notes to Consolidated Accounts – Financial Instruments – valuation pages 279-289.
439 (c)	Discussion of management of wrong-way exposures	Page 103.
439 (d)	Disclosure of collateral to be provided (outflows) in the event of a ratings downgrade.	ARA page 392.
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.	Page 61.
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 2017 will be published in April 2018 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 -Impairments page 182; Past due defined in Glossary page 413.
442 (b)	Approaches for calculating credit risk adjustments.	ARA: Capital and risk management - Impairments page 182. Accounting policy 15: Impairment of financial assets pages 255-256.
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.	Impaired - EU CR1_A - EU CR1_C. Past Due - ARA : Capital and risk management - Credit Risk: balance sheet analysis pages 198-201.
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 - Credit Risk: balance sheet analysis page 200.
442 (i) 442 (i) (i- iv)	Reconciliation of changes in specific and general credit risk adjustments.	ARA: Capital and risk management - Credit Risk: balance sheet analysis page 201.
442 Endnote	Specific credit risk adjustments recorded to income statement are disclosed separately.	ARA: Capital and risk management - Credit Risk: balance sheet analysis page 201.

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.	Page 100
444 (b)	Exposure classes associated with each ECAI.	Page 100
444 (c)	Process for translating external ratings into credit quality steps.	Page 100
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 – Pages 225-227.
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 - Balance sheet analysis page 203. For further detail on accounting techniques refer to ARA: Accounting policy 14 - Financial assets page 257.
447 (b)	Comparison between the balance sheet value, fair value and market price where materially different.	ARA: Capital and risk management - Credit risk - Balance sheet analysis page 213.
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 - Market risk - Equity Risk page 215.
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 - Interest rate risk pages 210-212.
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 - Interest rate risk page 212.

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.	Pages 120-121.
449 (b)	Nature of other risks in securitised assets, including liquidity.	Pages 121-122.
449 (c)	Risks in re-securitisation activity stemming from seniority of underlying securitisations and ultimate underlying assets.	Pages 121-122.
449 (d)	The roles played by institutions in the securitisation process.	Pages 120-12.
449 (e)	Indication of the extent of involvement in these roles.	Page 121. 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.	Pages 122-123.
449 (g)	Description of the institution's policies with respect to hedging and unfunded protection, and identification of material hedge counterparties.	Pages 123-124.
449 (h)	Approaches to calculation of RWA for securitisations mapped to types of exposures.	Page 123.
449 (i)	Types of SSPEs used to securitise third-party exposures, and list of SSPEs.	Pages 120-125 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.	Page 124.
449 (k)	Names of ECAIs used for securitisations.	Page 123.
449 (l)	Full description of Internal Assessment Approach.	Page 123.
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;	Page 125.
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.	Page 125.
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.	Page 124.

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 pages 84-105. Further detail on compliance with CRD IV and remuneration from rbs.com/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, liquidity and funding risk page 162
451 (1) (e)	Factors that impacted the leverage ratio during the year.	Page 15.
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.	Page 51.
452 (b)	Explanation of:	
452 (b) (i)	Internal rating scales, mapped to external ratings;	Page 56. EU CR9_A_2 & ARA: Capital and risk management - Credit Risk page 194.
452 (b) (ii)	Use of internal ratings for purposes other than capital requirement calculations;	Page 56.
452 (b) (iii)	Management and recognition of credit risk mitigation;	Page 85.
452 (b) (iv)	Controls around ratings systems.	Page 60.
452 (c)	Ratings processes for each IRB asset class.	Pages 54-61 including EU CRE_2a & EU CRE_2b.
452 (c) (i)		
452 (c) (ii)		
452 (c) (iii)		
452 (c) (iv)		
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)	For all IRB exposure classes, where applicable, PD and LGD by each country where the bank operates.	EU_CR6_C.
452 (j) (i)		
452 (j) (ii)		

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 LI2, page 85.
453 (b)	How collateral valuation is managed.	Page 85.
453 (c)	Description of types of collateral used by RBS.	Pages 85-86.
453 (d)	Guarantor and credit derivative counterparty, creditworthiness.	Page 85.
453 (e)	Market or credit risk concentrations within risk mitigation exposures.	Page 85.
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.	Pages 113-115.
455 (a) (ii)	Methodology for all-price risk measure and incremental risk charge.	Pages 113-115.
455 (a) (iii)	Descriptions of stress tests applied to the portfolios.	ARA: Capital and risk management - Page 159 - 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 pages 214-219.
455 (b)	Scope of permission for use of the models.	Page 113.
455 (c)	Policies and processes to determine trading book classification, and to comply with prudential valuation requirements.	PV1 & page 113.
455 (d)	High/Low/Mean values over the year of VaR, SVaR, all-	
455 (d) (i)	price risk measure and incremental risk charge.	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.	Page 115.
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
CDOR	Canadian Dollar Offered Rate
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
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
RBSSI	RBS Securities Inc.
REIL	Risk elements in lending
RNIV	Risks not in VaR
RoI	Republic of Ireland
RoW	Rest of the World
RPF	Revised Pillar 3 framework
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

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Appendix 2 - Key terms and glossary

Key terms
Also refer to pages 408 to 415 of the 2017 ARA.

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.

Key terms continued

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

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, 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 the bank 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.

Appendix 2 - Key terms and glossary

Key terms continued

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.

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.

Market risk - the risk of loss arising from fluctuations in interest rates, credit spreads, foreign currency rates, equity prices, commodity prices and other risk-related factors such as market volatilities that may lead to a reduction in earnings, economic value or both.

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-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.

Key terms continued

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.

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 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, either via 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, the bank 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.

Key terms continued

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.

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.