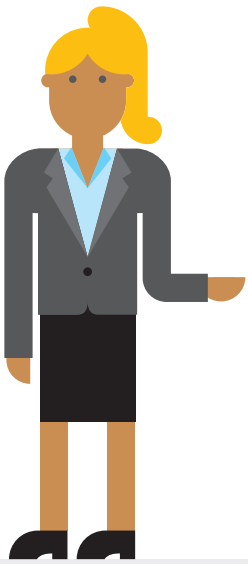
BARCLAYS

Positioned for growth, sharing and success

Barclays PLC

Pillar 3 Report 2017

Contents



See page 202 for an index of all risk disclosures in the Pillar 3 and Annual Reports

A glossary of terms and remuneration disclosures can be found at:
home.barclays/annualreport

Barclays PLC Pillar 3 Report

C.S. Venkatakrishnan
Chief Risk Officer

Tushar Morzaria
Group Finance Director

Capital position and risk management in 2017

Our annual disclosures contain extensive information on risk as well as capital management.

The Pillar 3 report provides a detailed breakdown of Barclays' regulatory capital adequacy and how this relates to Barclays' risk management.

During 2017, Barclays made significant progress towards its strategic objectives with the closure of Non-Core ahead of schedule, as well as the sell down of Barclays' holding in BAGL.

- The fully loaded CET1 ratio increased to 13.3% (2016: 12.4%) principally due to a reduction in risk weighted assets (RWAs) of £52.6bn to £313.0bn. CET1 capital decreased £3.6bn to £41.6bn
- The average UK leverage ratio increased to 4.9% (2016: 4.5%) primarily driven by the issuance of additional tier 1 capital (AT1) securities, the reduction in Non-Core related exposures and due to BAGL's regulatory proportional consolidation
- The CRR leverage ratio decreased to 4.5% (2016: 4.6%) primarily driven by a £1.6bn decrease in fully loaded tier 1 capital to £50.4bn.

Summary of risk profile

This section presents a high-level summary of Barclays' risk profile and its interaction with the Group's risk appetite. Please see page 202 for a comprehensive index of all risk disclosures.

The Board makes use of the Risk Appetite Framework to set appetite, and continuously monitors existing and emerging risks.

The Group sets its risk appetite in terms of performance metrics as well as a set of mandate and scale limits to monitor risks. During 2017, the Group's performance was in line with its risk appetite. The following risk metrics reflect the Group's risk profile:

Key metrics

Common Equity Tier 1 ratio	13.3%	
(see page 19)	2016: 12.4%	
Common Equity Tier 1 capital	£41.6bn	
(see page 19)	2016: £45.2bn	
Risk weighted assets	£313bn	
(see page 26)	2016: £366bn	
Average UK leverage ratio	4.9%	
(see page 31)	2016: 4.5%	
CRR leverage ratio	4.5%	
(see page 31)	2016: 4.6%	
Loan loss rate	57bps	
(see page 131)	2016: 53bps	
Management Value at Risk	£19m	
(see page 95)	2016: £21m	
Liquidity coverage ratio	154%	
(see page 18)	2016: 131%	

Summary of risk profile

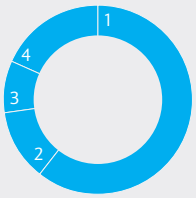
- The fully loaded CET1 ratio increased to 13.3% (2016: 12.4%) principally due to a reduction in risk weighted assets (RWAs) of £52.6bn to £313.0bn. CET1 capital decreased £3.6bn to £41.6bn
- The sell down of Barclays' holding in BAGL to 14.9%, resulting in regulatory proportional consolidation, increased the CET1 ratio by c.60bps with a £31.1bn reduction in RWAs, offset by a £1.8bn reduction due to BAGL minority interests no longer being included in CET1 capital
- Losses in respect of the discontinued operation due to the impairment of Barclays' holding in BAGL allocated to goodwill, and the recycling of the BAGL currency translation reserve losses to the income statement, had no impact on CET1
- The CET1 ratio increased by a further c.50bps as a result of other RWA reductions, excluding the impact of foreign currency movements, including reductions in Non-Core
- Excluding the impacts of BAGL and foreign currency movements, CET1 capital decreased further, as profits relating to continuing operations, after absorbing the net impact of the re-measurement of US DTAs, were offset by the redemption of USD preference shares and the payment of pension deficit reduction contributions in the year
- The average UK leverage ratio increased to 4.9% (2016: 4.5%) primarily driven by the issuance of AT1 securities, the reduction in Non-Core related exposures and due to BAGL's regulatory proportional consolidation.
- The CRR leverage ratio decreased to 4.5% (2016: 4.6%) primarily driven by a £1.6bn decrease in fully loaded Tier 1 capital to £50.4bn.
- Loan impairment charges decreased £19m to £2,333m. Total loans and advances net of impairment decreased by £34.1bn to £415.4bn, including a net £12.7bn decrease in cash collateral and settlement balances and a £21.4bn decrease in other lending, primarily in Coporate and Investment Bank. Overall this resulted in an increase of 4bps in the loan loss rate to 57 bps.
- Average total management value at risk decreased by 10% to £19m (2016: £21m), primarily due to tighter credit spreads.

Another component of the Group's risk appetite is a set of mandate and scale limits to help mitigate concentration risk, keep business activities within this set mandate and allow Barclays to remain of an appropriate scale. During 2017, Barclays has made enhancement in the management of Leveraged Finance lending including a new framework of notional and stress loss limits and triggers to control concentration risk to this higher risk lending segment.

The material existing and emerging risks section on page 121 of the Barclays PLC Annual Report describes the main risks currently faced by the Group.

Please see page 122 for a discussion of risk appetite, and page 121 of the annual report for a discussion of material and emerging risks.

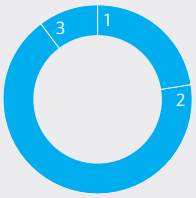
The Pillar 3 report provides detailed regulatory risk measures that reflect the Group's risk profile and strategy. 2017 measures show the progress accomplished in strategically repositioning the Group's risk profile as follows:



RWA	2017	2016
1 Credit risk	**£190.0bn**	£241.5bn
2 Counterparty credit risk	**£38.0bn**	£42.4bn
3 Market risk	**£28.3bn**	£25.0bn
4 Operational risk	**£56.7bn**	£56.7bn

- Credit risk decreased £51.5bn to £190.0bn primarily driven by the proportional consolidation of BAGL, securitisation of corporate loans, the depreciation of period end USD against GBP, the re-measurement of US DTAs as a result of the US Tax Cuts and Jobs Act and the disposal of Non-Core related assets
- Counterparty credit risk decreased £4.4bn to £38.0bn primarily driven by the improvement in modelling of exposures, increase in hedging as well as reductions in Non-Core related assets
- Market risk increased £3.3bn to £28.3bn primarily driven by trading activity
- Operational risk remained unchanged at £56.7bn (2016: £56.7bn)

We hold RWAs for credit (discussed on page 36), market (page 93), and operational (page 118) risks. See pages 28-29 for the main drivers of movements for each of these risk types.



RWA	2017	2016
1 Barclays UK	**£70.9bn**	£67.5bn
2 Barclays International	**£210.3bn**	£212.7bn
3 Head Office	**£31.8bn**	£53.3bn
4 Barclays Non-Core	–	£32.1bn

RWAs decreased 14% to £313.0bn (2016: £365.6bn):

- Barclays UK increased £3.4bn to £70.9bn primarily driven by the reintegration of Non-Core related assets (ESHLA)
- Barclays International decreased £2.4bn to £210.3bn due to the securitisation transactions and the depreciation of period end USD against GBP, the re-measurement of US DTAs as a result of the US Tax Cuts and Jobs Act partially offset by increased trading portfolio and securities financing transaction volume
- Head Office related RWAs decreased £21.5bn to £31.8bn primarily as a result of the proportional consolidation of BAGL offset by the reintegration of Non-Core related assets

Notes on basis of preparation

Pillar 3 report regulatory framework

The Pillar 3 report is prepared in accordance with the Capital Requirements Regulation and Capital Requirements Directive ('CRR' and 'CRD', also known as the 'CRD IV legislative package'). In particular, articles 431 to 455 of the CRR specify the Pillar 3 framework requirements. The CRD IV legislative package came into force on 1 January 2014.

The European Banking Authority (EBA) guidelines on disclosure requirements under Part Eight of the Regulations (EU) No 575/2013 has been fully adopted in this report.

See 'Application of the Basel framework' on page 7 for a more detailed description.

Key changes in the 2017 Pillar 3 report

The report includes 21 new tables to fully implement the European Banking Authority (EBA) guidelines on disclosure requirements under Part Eight of the Regulations (EU) No 575/2013 published in December 2016 which was introduced to improve the Pillar 3 disclosures comparability and consistency across the industry. The new tables cover 4 key areas; linkage between balance sheet and regulatory data, additional granularity of credit risk exposure, additional granularity of impairment information for both regulatory and IFRS impairment and additional granularity of counterparty credit risk especially for collateral and central counterparty exposures.

The report includes the partial early adoption of new tables from the Basel Committee on Banking Supervision (BCBS) Pillar 3 disclosure requirements standard published in March 2017. This is covered by 3 new tables; a summary of key regulatory ratios, Liquidity coverage ratio (LCR) and Prudential valuation adjustment (PVA).

See Appendices G on page 193 for a mapping between regulatory requirements and Pillar 3 disclosures.

Presentation of risk data in the Pillar 3 disclosures vs. the Annual Report and Accounts

This document discloses Barclays' assets in terms of exposures and capital requirements. For the purposes of this document:

Credit losses
Where impairment or losses are disclosed within this document, Barclays has followed the IFRS definitions used in the Annual Report.

Scope of application
Where this document discloses credit exposures or capital requirements, Barclays has followed the scope and application of its Pillar 1 capital adequacy calculations (unless noted otherwise).

Definition of credit exposures

- Credit exposure, or 'Exposure at Default' (EAD) is defined as the estimate of the amount at risk in the event of a default (before any recoveries) or through the decline in value of an asset. This estimate takes account of contractual commitments related to undrawn amounts.
- In contrast, an asset in the Group's balance sheet is reported as a drawn balance only. As such, exposure values in the Pillar 3 report will differ from asset values as per the Annual Report.

Table 5 provides a reconciliation between IFRS and EAD measures. Tables 55, 56 and Appendix B provides a reconciliation between the IFRS impairment provision and the regulatory impairment allowance.

Policy, validation and sign-off

Throughout the year ended 31 December 2017, and to date, Barclays has operated a framework of disclosure controls and procedures to support the appropriateness of the Group's Pillar 3 disclosure.

See Appendix G for a reference to Barclays' compliance with the CRDIV.

Barclays is committed to operating within a strong system of internal controls. A framework of disclosure controls and procedures is in place to support the approval of the Group's external financial disclosures. Specific governance committees are responsible for examining the Group's reports and disclosures so that they have been subject to adequate verification and comply with applicable standards and legislation. These Committees report their conclusions to the Board Audit Committee (BAC) which debates its conclusions and provides further challenge. Finally the Board scrutinises and approves the Pillar 3 disclosures.

This governance process is in place to provide both management and the Board with sufficient opportunity to debate and challenge the Group's disclosures before they are made public.

"*We confirm that Barclays' Pillar 3 disclosures, to the best of our knowledge, comply with Part Eight of the CRR and have been prepared in compliance with Barclays' internal control framework. In addition, we have made every effort to comply with the "EBA's Guidelines on disclosure requirements under Part Eight of Regulation (EU) No 575/2013" dated 14 December 2016, as advised by the EBA under paragraph 2.4 of such Guidelines.*"

C.S Venkatakrishnan
Chief Risk Officer

Tushar Morzaria
Group Finance Director

Scope and application of Basel rules

This section explains the scope of application of Basel rules in relation to capital adequacy.

- Figure 1 shows a representation of Barclays' entities within the scope of regulatory consolidation and how this differs from IFRS consolidation
- Table 1 shows how IFRS balances contribute to the regulatory scope of consolidation on a line-by-line basis
- Tables 2 and 3 show the scope of Barclays' standardised and advanced approches, with, for credit and counterparty credit risks, a description of the main portfolios subject to each approach.
- Table 4 and 5 show the mapping of financial statement categories to regulatory risk types and a reconciliation of financial statement carrying values against regulatory exposures.

Application of the Basel framework

Overview of Pillar 3

Barclays has applied the Basel framework since its implementation. The framework is made up of three pillars:

Pillar 1:
covers the calculation of risk weighted assets for credit risk, counterparty credit risk, market risk and operational risk

Pillar 2:
covers the consideration of whether additional capital is required over and above the Pillar 1 risk calculations. A firm's own internal models and assessments support this process

Pillar 3:
covers external communication of risk and capital information by banks as specified in the Basel rules to promote transparency and good risk management

Pillar 3 requires the disclosure of exposures and associated risk weighted assets for each risk type and approach to calculating capital requirements for Pillar 1.

Distinct regulatory capital approaches are followed for each of the following risk and exposure types:

- credit risk (including certain non-traded equity exposures)
- counterparty credit risk (CCR)
- credit valuation adjustment (CVA)
- market risk
- securitisations
- operational risk.

Approaches to calculating capital requirements under CRD IV

Calculation of capital for credit risk

The credit risk weighted assets calculation is based on an estimate of the Exposure at Default (EAD). In addition, where Barclays has the necessary regulatory permissions, it estimates Probabilities of Default (PD) and Loss Given Default (LGD) (see page 138 and the online glossary for definitions):

- Standardised approach: assesses capital requirements using standard industry-wide risk weightings based on a detailed classification of asset types, ratings and maturity
- Advanced Internal Ratings-Based approach (AIRB): assesses capital requirements using the Group's specific data and internal models to calculate risk weightings. As such internal calculations of PD, LGD and credit conversion factors are used to model risk exposures (AIRB)

See page 36 for more details on capital requirements for credit risk. Also, the Internal Ratings-Based approach to credit risk section on pages 60-64 discusses credit risk modelling in detail.

Calculation of capital requirements for counterparty credit risk

CCR differs from credit risk, above, in how the EAD is calculated and applies to derivative and securities financing transaction (SFT) exposures. It arises where a counterparty default may lead to losses of an uncertain nature as the values of any resulting claims are market driven. This uncertainty is factored into the valuation of the Group's credit exposure arising from such transactions. The Group uses three methods under the regulatory framework to calculate CCR exposure:

- the Mark to Market method (MTM, also known as Current Exposure Method) used for derivatives which is the sum of the current market value of the instrument plus an add-on (dependent on potential future exposure, or PFE) that accounts for the potential change in the value of the contract over its residual maturity
- the Internal Model Method ('IMM'), subject to regulatory approval, allows the use of internal models to calculate an effective expected positive exposure (EEPE), multiplied by a factor stipulated by the regulator called alpha. For Barclays this is set at 1.4. Barclays uses this approach for certain derivatives and SFT exposures
- the Financial Collateral Comprehensive Method (FCCM), which is the net position of SFT exposures after the application of volatility adjustments prescribed by CRR

See page 78 for more details on capital requirements for counterparty credit risk exposures.

Calculation of credit valuation adjustment capital charge

The CVA is the capital charge accounting for potential MTM losses due to credit quality deterioration of a counterparty (that does not necessarily default). Two approaches can be used to calculate the adjustment:

- Standardised approach: takes account of the external credit rating of each counterparty, and incorporates the effective maturity and EAD from the CCR calculation (outlined above)
- Advanced approach: this approach requires the calculation of the charge as; a) a 10-day 99% value at risk (VaR) measure for the current one-year period; and b) the same measure for a stressed period. The sum of the two VaR measures is tripled to yield the capital charge

See page 91 for more details on CVA

Calculation of capital requirements for market risk

Risk weighted assets calculations for market risk assess the losses from movements in the prices of financial assets and liabilities:

- Standardised approach: a calculation is prescribed that depends on the type of contract, the net position at portfolio level, and other inputs that are relevant to the position. For instance, for equity positions a general market risk component captures changes in the market (systematic risk) , while specific market risk is calculated based on features of the specific security (idiosyncratic risk)
- Model-based approach: with their regulator's permission, firms can use proprietary value at risk (VaR) models to calculate capital requirements. Under the Basel framework, stressed VaR, incremental risk charge and all-price risk models must also be used to ensure that sufficient levels of capital are maintained

See page 93 for more details on capital requirements for market risk.

Application of the Basel framework

Calculation of capital requirements for securitisation exposures

A separate regulatory framework exists for the calculation of securitisations risk weighted asset exposures, the scope of which is defined by the CRR. Securitisations give rise to credit, market and other risks. Whilst CRR prescribes a standardised and advanced approach for the calculation of risk weights, Barclays has approval to use, and therefore applies the IRB approach, which includes:

- the Ratings Based Approach, where external ratings are available
- for unrated transactions and where certain criteria are met the 'look through' approach can be used, which considers the risk of the underlying assets
- the Internal Assessment Approach, which is also used for unrated asset backed commercial paper programmes, which applies a similar methodology to rating agency models
- where exposures do not meet one of the above criteria a 1250% risk weight is applied

See page 99 for more details on capital requirements for securitisation exposures.

Calculation of capital requirements for operational risk

Capital set aside for operational risk is deemed to cover the losses or costs resulting from inadequate or failed processes or systems, human factors or due to external events (for example fraud).

To assess capital requirements for operational risk, the following methods apply:

- Standardised approach: the capital requirement is calculated as a percentage of the income, averaged over the last three years. The Group does not use this approach
- Basic Indicator approach (BIA): sets the capital requirement as 15% of the net interest and non-interest income, averaged over the last three years. If the income in any year is negative or zero, that year is not considered in the average
- Advanced Management approach (AMA): under the AMA, and subject to the regulatory approval, the capital requirement is calculated using the Group's own models

Note that only two of the above methods can be used concurrently. Barclays uses the AMA for the majority (94%) of its exposures, and the BIA for the small remaining amount.

See page 118 for more details on capital requirements for operational risk.

Calculation of capital for large exposures

Barclays has not exceeded the large exposure limit set in CRR, and as such no capital charge applies.

Regulatory minimum capital and leverage requirements

Capital

Barclays' end point CET1 regulatory requirement is expected to be 11.4% comprising of a 4.5% Pillar 1 minimum, a 2.5% Capital Conservation Buffer (CCB), a 1.5% Global Systemically Important Institution (G-SII) buffer, a 2.4% Pillar 2A requirement, and an expected 0.5% Countercyclical Capital Buffer (CCyB).

The CCB and the G-SII buffer, determined by the PRA in line with guidance from the Financial Stability Board (FSB), are subject to phased implementation at 25% per annum from 2016 with full effect from 2019. The CCB has been set at 2.5% with 1.25% applicable for 2017. The G-SII buffer was set at 2% with 1% applicable for 2017. On 21 November 2016 the FSB confirmed that the G-SII buffer has been set at 1.5% with 1.1% applicable for 2018. On 21 November 2017 the FSB confirmed that the G-SII buffer will remain at 1.5% applicable for 2019.

On 25 September 2017 the Financial Policy Committee (FPC) reaffirmed that it expects to increase the UK CCyB rate from 0% to 0.5% applicable from 27 June 2018 and to 1% applicable from 28 November 2018. Based on current UK exposures, Barclays' CCyB is expected to be approximately 0.5% from November 2018. Other national authorities also determine the appropriate CCyBs that should be applied to exposures in their jurisdiction however based on current exposures these are not material.

Barclays' Pillar 2A requirement as per the PRA's Individual Capital Guidance (ICG) for Q417 and 2018 is 4.3% of which at least 56.25% needs to be met in CET1 form, equating to approximately 2.4% of RWAs. Certain elements of the Pillar 2A requirement are a fixed quantum whilst others are a proportion of RWAs and are based on a point in time assessment. The Pillar 2A requirement is subject to at least annual review.

For regulatory reporting purposes, BAGL is treated on a proportional consolidation basis based on Barclays' holding in BAGL of 14.9%.

The CRD IV CET1 transitional minimum capital requirement for 2017 is 9.2% which comprised of a 4.5% Pillar 1 minimum, a 2.4% Pillar 2A requirement, a 1.25% CCB, a 1% G-SII buffer and a 0% CCyB.

Leverage

In October 2017, following the FPC recommendation, the PRA increased the minimum requirement for the UK leverage ratio from 3% to 3.25%.

Barclays is subject to a leverage ratio requirement that is implemented on a phased basis, with a transitional requirement of 3.6% as at 31 December 2017; this comprises the 3.25% minimum requirement, a transitional G-SII additional leverage ratio buffer (G-SII ALRB) of 0.35% and a countercyclical leverage ratio buffer (CCLB) which is currently nil. Although the leverage ratio is expressed in terms of tier 1 capital, 75% of the minimum requirement, equating to 2.4375%, needs to be met with CET1 capital. In addition, the G-SII ALRB and CCLB must be covered solely with CET1 capital. The CET1 capital held against the 0.35% transitional G-SII ALRB was £3.4bn. The fully loaded expected end point UK leverage requirement is 4.0%.

Impact of new regulations

Structural reform of banking groups

Recent developments in banking law and regulation in the UK have included legislation designed to ring-fence the retail and smaller business deposit-taking businesses of large banks. The Financial Services (Banking Reform) Act 2013 put in place a framework for this ring-fencing and secondary legislation passed in 2014 elaborated on the operation and application of the ring-fence. Ring-fencing will require, amongst other things, the separation of the retail and smaller business deposit-taking activities of UK banks in the UK and branches of UK banks in the European Economic Area (EEA) into a legally distinct, operationally separate and economically independent entity, which will not be permitted to undertake a range of activities from 1 January 2019. Ring-fencing rules have been published by the PRA, further determining how ring-fenced banks will be permitted to operate. Further rules published by the FCA set out the disclosures that non-ring-fenced banks are required to make to prospective account holders.

Please see page 204 of the Annual Report for a more complete discussion of structural reform.

Application of the Basel framework

IFRS 9 – Financial instruments

IFRS 9 (an accounting standard that covers accounting for financial instruments), which was adopted into EU law by the European Commission in November 2016, came into force on 1 January 2018. In October 2016, the Basel Committee on Banking Supervision (BCBS) issued two documents on the treatment of accounting provisions in the regulatory framework, to take account of the future move to expected credit loss provisioning under IFRS and Financial Accounting Standards Board (FASB) standards. One paper considered transitional arrangements to phase-in the immediate capital impact of the new provisioning standards, while the other discussed more fundamental changes to the recognition of provisions in regulatory capital and changes to the risk weighting framework. The BCBS then published an interim approach (including transitional arrangements) on 29 March 2017, retaining the current regulatory treatment of provisions under the Basel framework for an interim period and proposing to consider more thoroughly the longer term regulatory treatment of provisions. On 28 December 2017, an EU Regulation came into force to provide transitional arrangements for mitigating the impact of the introduction of IFRS 9, in large part, on the potential impact on CET1 capital arising from the expected credit loss accounting measures set out in IFRS 9. The Regulation has applied since 1 January 2018.

Please see page 199 of the Annual Report for a more complete discussion of IFRS 9 Financial instruments

BCBS Standards

In December 2017, the BCBS finalised 'Basel III' (the BCBS international regulatory framework for banks), with the majority of the December 2017 changes expected to be implemented by 1 January 2022, including by regulators in many jurisdictions where Barclays operates.

The BCBS's finalisation of Basel III, noted above, among other things, eliminated model-based approaches for certain categories of risk-weighted assets (RWAs) (for example, operational risk RWAs, CVA volatility and credit risk RWAs for equity exposures), revised the standardised approach's risk weights for a variety of exposure categories, replaced the four current approaches for operational risk (including the advanced measurement approach) with a single standardised measurement approach, established 72.5% of standardised approach RWAs for exposure categories as a floor for RWAs calculated under advanced approaches (referred to as the "output floor"), and for G-SIB introduced a leverage ratio buffer in an amount equal to 50% of the applicable G-SIB buffer used for RWA purposes (meaning, for Barclays, a leverage ratio buffer of 0.75%). The majority of the final Basel III changes are expected to be implemented commencing 1 January 2022, with a five-year phase-in period for the output floor.

In January 2016, the BCBS endorsed a new market risk framework, including rules made as a result of its "fundamental review of the trading book" (FRTB). The implementation of this framework has now been delayed, with the BCBS setting an expected implementation date of 1 January 2022 to allow for a review of the calibration of the framework.

The BCBS also published final standards on the securitisation framework and interest rate risk in the banking book and guidelines on step-in risk. The final standards for measuring and controlling large exposures were published by the BCBS in April 2014 to take effect in 2019. In November 2016 the European Commission adopted a proposal (commonly referred to as CRD V) to begin the legislative process for introducing these standards within the EU. These proposals, if implemented in their current form, would, among other things, implement FRTB by overhauling existing rules relating to standardised and advanced market risk and the rules governing the inclusion of positions in the regulatory trading book. The proposals would also enhance rules for counterparty credit risk, in line with BCBS proposals finalised in 2014, strengthen requirements relating to leverage and large exposures and introduce a net stable funding ratio (NSFR), requiring banks to fund their assets with stable sources of funds. CRD V also proposes to require that where (i) two or more credit institutions or investment firms established in the EU have a common parent undertaking established outside the EU and (ii) the group has been identified as a G-SIB or has entities in the EU (whether subsidiaries or branches) with total assets of at least €30 billion, the group must establish an intermediate parent undertaking, authorised and established in, and subject to the supervision of, an EU member state.

Please see page 199 of the Annual Report for a more complete discussion of prudential developments.

Scope of consolidation

Scope of consolidation

In this report, Barclays PLC is presented on a consolidated basis. All disclosures are published for Barclays PLC for the year ended 31 December 2017. The consolidation basis used is the same as that used for reporting regulatory capital adequacy to the UK Prudential Regulation Authority. This scope of consolidation is similar to that used for statutory accounting reporting for most of the Group's activities, except for:

- subsidiaries engaged in non-financial activities such as insurance and securitisation vehicles that are fully consolidated for statutory purposes but are not consolidated for regulatory purposes (exposures to securitisation vehicles are subject to a specific capital treatment, see page 99 for further details). Entities not consolidated for regulatory purposes are adequately capitalised.
- associates, joint ventures and participations, that are financial in nature and accounted for on an equity basis in the statutory accounts, are consolidated in proportion to the participation for regulatory calculations
- entities that are not financial in nature, as well as private equity investments treated as associates, are accounted for on an equity basis in the statutory accounts, but are deducted from capital for regulatory calculations.

The chart below summarises Barclays' structure with an indication of the sizes of subsidiaries in terms of their respective contribution to total assets.

Barclays also reports on a solo consolidation basis in accordance with its regulatory waiver. The solo consolidation is not reported on a standalone basis in this report.

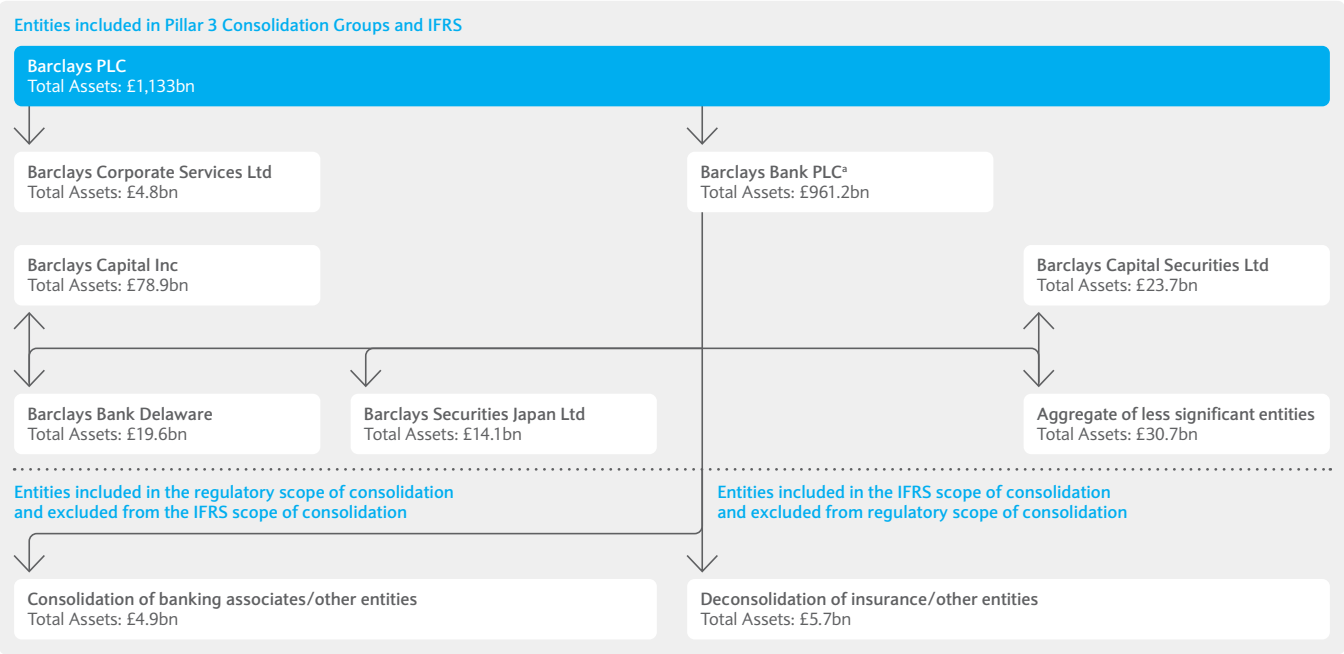
Significant subsidiaries (not wholly owned)

CRD IV regulations require Barclays to prepare its Pillar 3 disclosures at a consolidated Group level. Significant subsidiaries must also report limited Pillar 3 information on their capital resources on a standalone basis. Barclays Bank PLC is the main operating subsidiary of the Group.

The sale of BAGL shares on 1 June 2017, representing 33.7% of BAGL's issues shared capital and a further contribution of 1.5% of BAGL's ordinary shares to a Black Economic Empowerment scheme in Q317, resulted in accounting deconsolidation from the Barclays Group. As at 31 December 2017, for accounting purposes, BAGL is accounted for as an available for sale asset in Barclays financial statements based on a holding of 14.9% of BAGL's issued share capital. For regulatory reporting purposes, BAGL is treated on a proportional consolidated basis based on the same holding.

Please see page 167 for information on transferability of capital between parent and subsidiaries.

Figure 1: Summary of regulatory scope of consolidation as at 31 December 2017



Notes:
a Barclays Bank PLC Total Assets refers to Barclays Bank PLC including branches, excluding its subsidiaries.

Scope of consolidation

Table 1: Barclays PLC balance sheet – statutory versus regulatory view

This table shows the reconciliation between Barclays PLC balance sheet for statutory and regulatory purposes. Please note that the amount shown under the regulatory scope of consolidation is not a risk weighted asset measure; it is based on an accounting measure and cannot be directly reconciled to other tables in this report.

As at 31 December 2017	Accounting balance sheet per published financial statements £m	Deconsolidation of insurance/ other entities £m	Consolidation of banking associates/ other entities £m	Balance sheet per regulatory scope of consolidation £m
Assets				
Cash and balances at central banks	171,082	(96)	11	170,997
Items in the course of collection from other banks	2,153	–	–	2,153
Trading portfolio assets	113,760	–	6,526	120,286
Financial assets designated at fair value	116,281	–	(2,418)	113,863
Derivative financial instruments	237,669	–	(23)	237,646
Financial investments	58,916	(463)	92	58,545
Loans and advances to banks	35,663	–	148	35,811
Loans and advances to customers	365,552	(6,520)	1,095	360,127
Reverse repurchase agreements and other similar secured lending	12,546	–	–	12,546
Prepayments, accrued income and other assets	2,389	1,356	26	3,771
Investments in associates and joint ventures	718	–	(558)	160
Property, plant and equipment	2,572	–	3	2,575
Goodwill and intangible assets	7,849	–	16	7,865
Current tax assets	482	–	(2)	480
Deferred tax assets	3,457	(5)	–	3,452
Retirement benefit assets	966	–	–	966
Assets included in disposal groups classified as held for sale	1,193	–	–	1,193
Total assets	1,133,248	(5,728)	4,916	1,132,436
Liabilities				
Deposits from banks	37,723	(1,039)	1,039	37,723
Items in the course of collection due to other banks	446	–	–	446
Customer accounts	429,121	–	(1,026)	428,095
Repurchase agreements and other similar secured borrowing	40,338	–	–	40,338
Trading portfolio liabilities	37,351	–	4,826	42,177
Financial liabilities designated at fair value	173,718	–	–	173,718
Derivative financial instruments	238,345	–	–	238,345
Debt securities in issue	73,314	(6,361)	–	66,953
Subordinated liabilities	23,826	–	–	23,826
Accruals, deferred income and other liabilities	8,565	1,396	65	10,026
Provisions	3,543	(1)	–	3,542
Current tax liabilities	586	(12)	2	576
Deferred tax liabilities	44	–	–	44
Retirement benefit liabilities	312	–	–	312
Liabilities included in disposal groups classified as held for sale	–	–	–	–
Total liabilities	1,067,232	(6,017)	4,906	1,066,121
Equity				
Called up share capital and share premium	22,045	–	–	22,045
Other equity instruments	8,941	–	–	8,941
Other reserves	5,383	273	16	5,640
Retained earnings	27,536	20	26	27,582
Total equity excluding non-controlling interests	63,905	293	10	64,208
Non-controlling interests	2,111	4	–	2,107
Total equity	66,016	289	10	66,315
Total liabilities and equity	1,133,248	5,728	4,916	1,132,436

Scope of permission for calculation approaches

Scope of permission for calculation approaches

Barclays seeks permission from its regulators to use modelled approaches where possible, to enable risk differentiation.

Barclays has regulatory approval to use its internal credit models in the calculation of the majority of its credit risk and counterparty credit risk exposures. The following table summarises the principal portfolios within Barclays that use the Standardised and Advanced IRB approaches as at 31 December 2017.

Table 2: The scope of the Standardised and IRB approaches for credit and counterparty credit risk excluding CVA

	Credit risk (see Tables 25 & 26)			Counterparty credit risk excl. CVA (see Tables 58 & 59)				
Business as at 31 December 2017	RWA £m	Average risk weight	EAD post-CRM £m	RWA £m	Average risk weight	EAD post-CRM £m	Advanced Internal Ratings Based (IRB) approaches	Standardised approach
Barclays UK	58,766	22%	268,097	–		–	UK managed retail and wholesale portfolios UK cards	Minor UK Cards Portfolio Minor unsecured loan portfolios (closed books in run off) & the UK Wealth Portfolio
Barclays International	118,578	29%	402,245	34,344	32%	107,788	UK Corporate Portfolio Germany retail credit cards Most Investment Bank portfolios	High quality liquidity pool assets, UK asset and sales finance Mainly Non-UK managed retail (including Wealth) and wholesale portfolios (including legacy) US retail credit cards, joint card issuance, partner finance, secure lending, commercial payment and any recent portfolio acquisitions European Corporate Portfolio previously in the Corporate Bank Certain Investment Bank portfolios typically with low or no defaults, or other exposures by exception Certain portfolios typically with low or no defaults, or insufficient historical data
Head Office	12,673	25%	50,684	698	41%	1,691	Small number of portfolios	Small number of portfolios
Group Total	190,017	26%	721,026	35,042	32%	109,479		

Barclays' AIRB roll-out plans are discussed with our regulators and updated on an agreed schedule.

Barclays has permission to use the Internal Model Method (IMM) to calculate its counterparty credit risk exposures. The permission is comprehensive and applies to the majority of its trades and portfolios. Exceptions include certain contracts entered into by Barclays Capital Inc, for instance exchange traded derivatives and margin loans.

Scope of permission for calculation approaches

Table 3: Summary of the scope of application of regulatory methodologies for CVA, market and operational risk

As at 31 December 2017 Risk Type	Risk weighted assets	Scope
Credit value adjustment	3,001	Barclays calculates Credit Valuation Adjustment (CVA) risk for all contracts in scope as defined by article 382 of the Capital Requirements Regulation. Barclays has permission to use an internal model for the specific risk of debt instruments and therefore is allowed to use the Advanced method for CVA for such instruments where applicable. The Standardised method for CVA is used otherwise. Refer to table 71 for further detail on CVA.
Market risk	28,313	As explained on page 153, the risk of loss from changes in the prices of assets in the trading book are captured by a combined RWA calculation for general and specific market risks. The regulatory permission for Barclays to use models considers risk types and legal entities; see table 11 on page 26 for capital requirements related to each approach and risk factor. Barclays has regulatory approval for VaR modelling for general market risk, which is designed to capture the risk of loss arising from changes in market interest rates, along with the risk of losses arising from changes in foreign exchange, commodities and equity market value. The capital charge for specific market risk is designed to protect against losses from adverse movements in the price of an individual security owing to factors related to the individual issuer. Barclays has permission to model specific market risk, including credit spread, migration, and default risks, for certain legal entities and product types. Where the Group does not have permission to use a model (notably in Barclays Capital Inc), the Standardised approach is applied.
Operational risk	56,660	Barclays has regulatory approval to quantify its operational risk capital requirement using the Advanced Measurement Approach (AMA) defined in the CRD IV and Capital Requirements Regulation. Certain acquired businesses which are not within the scope of the AMA approval calculate their operational risk RWAs using the Basic Indicator Approach (BIA). Barclays businesses under the AMA account for account for 94.3% of operational risk RWAs as at 2017 year end.

Linkage between financial statements and regulatory risk

Table 4: LI1– Differences between accounting and regulatory scopes of consolidation and the mapping of financial statement categories with regulatory risk categories[1]

This table shows an outline of the differences in the basis of consolidation for accounting and regulatory purposes. It provides the allocation of the amounts reported under the scope of regulatory consolidation to the different risk categories.

	Carrying values as reported in published financial statements £m	Carrying[2] values under scope of regulatory consolidation £m	Subject to the credit risk framework £m	Subject to the CCR framework £m	Subject[4] to the securitisation framework £m	Subject[3] to the market risk framework £m	Not subject [5,6] to capital requirements or subject to deduction from capital £m
Assets							
Cash and balances at central banks	171,082	170,997	170,997	–	–	–	–
Items in course of collection from other banks	2,153	2,153	2,153	–	–	–	–
Trading portfolio assets	113,760	120,286	1,979	–	765	117,543	–
Financial assets designated at fair value	116,281	113,863	10,434	100,239	–	108,407	–
Derivative financial instruments	237,669	237,646	1,037	236,632	68	236,745	–
Financial investments	58,916	58,545	58,523	–	22	–	–
Loans and advances to banks	35,663	35,811	18,902	12,131	–	3,199	2,300
Loans and advances to customers	365,552	360,127	291,440	41,828	10,230	21,781	18,667
Reverse repurchase agreements and other similar secured lending	12,546	12,546	–	12,546	–	–	–
Prepayments, accrued income and other assets	2,389	3,771	3,771	–	–	–	–
Investments in associates and joint ventures	718	160	160	–	–	–	–
Property, plant and equipment	2,572	2,575	2,575	–	–	–	–
Goodwill and intangible assets	7,849	7,865	–	–	–	–	7,865
Current tax assets	482	480	480	–	–	–	–
Deferred tax assets	3,457	3,452	3,176	–	–	–	276
Retirement benefit assets	966	966	–	–	–	–	966
Non current assets classified as Held for Disposal	1,193	1,193	1,193	–	–	–	–
Total assets	1,133,248	1,132,436	566,820	403,376	11,085	487,675	30,074
Liabilities							
Deposits from banks	37,723	37,723	–	21,532	–	2,386	13,805
Items in course of collection due to other banks	446	446	–	–	–	–	446
Customer accounts	429,121	428,095	–	41,206	–	13,338	373,551
Repurchase agreements and other similar secured borrowing	40,338	40,338	–	21,428	–	–	18,910
Trading portfolio liabilities	37,351	42,177	–	–	–	37,351	4,826
Financial liabilities designated at fair value	173,718	173,718	–	119,542	–	169,350	–
Derivative financial instruments	238,345	238,345	–	236,012	1,193	237,956	–
Debt securities in issue	73,314	66,953	–	–	–	–	66,953
Subordinated liabilities	23,826	23,826	–	–	–	–	23,826
Accruals, deferred income and other liabilities	8,565	10,026	–	–	–	–	10,026
Provisions	3,543	3,542	–	–	–	–	3,542
Current tax liabilities	586	576	–	–	–	–	576
Deferred tax liabilities	44	44	–	–	–	–	44
Retirement benefit liabilities	312	312	–	–	–	–	312
Liabilities included in disposal groups classified as held for sale	–	–	–	–	–	–	–
Total Liabilities	1,067,232	1,066,121	–	439,720	1,193	460,381	516,817

The following points should be considered in conjunction with table LI1:

1 LI1 exclude BAGL, as it is prepared on a financial reporting scope of consolidation. Further information regarding the differences between accounting and regulatory scope of consolidation can be found on page 11.

2 The balances shown in column "Carrying values under scope of regulatory consolidation" do not equal the sum of those in the columns relating to the regulatory framework, as certain assets can be in scope for more than one regulatory framework. As such, assets included in line items for "Financial assets designated at fair value", "Derivative financial instruments", "Loans and advances to customers" and "Loans and advances to banks" can be subject to credit risk, counterparty credit risk and market risk.

3 The column "Subject to market risk framework" is based on trading book asset, as shown in the table "balance sheet split by trading and banking books" see page 94.

4 The column "subject to securitisation framework" includes non-trading book positions only. Trading book securitisation positions are included in the "subject to the market risk framework" column.

5 The column "not subject to capital requirements or subject to capital deduction" includes:
– loans and advances to banks balances: £2.3bn settlement balances that are within the settlement period
– loans and advances to customers: £18.4bn of settlement balances for bonds, foreign exchange and CCP margin for client trades that are within the settlement period

6 For liabilities, balances shown in column "Not subject to capital requirements or subject deduction from capital" are balancing amount so that "Carrying values under scope of regulatory consolidation" at least equals to the sum of those in the columns relating to the regulatory framework.

Information regarding the market risk valuation methodologies, independent price verifications process and procedures for valuation adjustments or reserves can be found in the Management of Market risk section from page 153.

Linkage between financial statements and regulatory risk

Table 5: LI2 – Main sources of differences between regulatory exposure amounts and carrying values in financial statements[1]

This table provides the main sources of differences between the financial statement amounts and the exposure amount used for regulatory purposes as shown in table 4 above.

	Total[2] £m	Subject to the credit risk framework £m	Subject to the CCR framework £m	Subject to the securitisation framework £m
Assets carrying value amount under the scope of regulatory consolidation (as per template EU LI1)	981,281	566,820	403,376	11,085
Liabilities carrying value amount under the regulatory scope of consolidation (as per template EU LI1)	440,913	–	439,720	1,193
Total net amount under the regulatory scope of consolidation	540,368	566,820	(36,344)	9,892
Off-balance-sheet amounts	905,499	133,086	595,147	4,548
Differences in valuations[3]	2,024	765	(196)	1,455
Difference in netting rules	(464,907)	463	(465,144)	(226)
Differences between input balance and modelled regulatory output	14,141	–	14,141	–
Regulatory exclusion –CCP trades for a client where Barclays acts as clearing member on behalf of a counterparty	1,268	–	1,268	–
Credit Enhancement Exposure for Sponsor trades	6,169	–	–	6,169
Exposures of Synthetic Securitisation trades	8,423	–	–	8,423
Other	(748)	(587)	3	(164)
Exposure amounts considered for regulatory purposes	1,012,237	700,547	108,875	30,097

The following points should be considered in conjunction with table LI2:

1 LI2 exclude BAGL as per table 4 - LI1.

2 The total column cannot be directly reconciled back to the carrying values under scope of consolidation shown in table 4 - LI1, as it excludes balances "subject to the market risk framework" and items "not subject to capital requirements or subject to deduction from capital".

3 In line item "off-balance sheet amounts", the amounts shown in the Total column, which relates to exposures pre-CCF, do not equal the sum of the amounts shown in the remaining columns, as these are post-CCF.

Contents

Group capital resources, requirements, leverage and liquidity

This section details Barclays' capital position providing information on capital resources, requirements, leverage and liquidity.

Key metrics in 2017

Fully loaded Common Equity Tier 1 ratio	13.3%
Average UK leverage ratio	4.9%
CRR leverage ratio	4.5%
Liquidity Coverage ratio	154%

Group capital resources, requirements, leverage and liquidity

Table 6: KM1 – Key metrics and movements

This table is presented on a fully loaded basis, showing the key metrics and movements during the year.

		As at December 2017 £m	As at September 2017 £m	As at June 2017 £m	As at March 2017 £m
	Available capital (amounts)				
1	Common Equity Tier 1 (CET1)	**41,565**	42,329	42,834	44,938
2	Tier 1	**50,376**	51,139	50,398	52,961
3	Total capital	**64,646**	65,936	64,709	67,364
	Risk-weighted assets (amounts)				
4	Total risk-weighted assets (RWA)	**313,033**	324,296	327,414	360,878
	Risk-based capital ratios as a percentage of RWA				
5	Common Equity Tier 1 ratio (%)	**13.3%**	13.1%	13.1%	12.5%
6	Tier 1 ratio (%)	**16.1%**	15.8%	15.4%	14.7%
7	Total capital ratio (%)	**20.7%**	20.3%	19.8%	18.7%
	Additional CET1 buffer requirements as a percentage of RWA				
8	Capital conservation buffer requirement (2.5% from 2019) (%)	**2.5%**	2.5%	2.5%	2.5%
9	Countercyclical buffer requirement (%)	**0.0%**	0.0%	0.0%	0.0%
10	Bank G-SIB and/or D-SIB additional requirements (%)	**1.5%**	1.5%	1.5%	1.5%
11	Total of bank CET1 specific buffer requirements (%) (row 8 + row 9 + row 10)	**4.0%**	4.0%	4.0%	4.0%
12	CET1 available after meeting the bank's minimum capital requirements (%)	**8.8%**	8.6%	8.6%	8.0%
	CRR leverage ratio				
13	Total CRR leverage ratio exposure measure	**1,124,521**	1,150,611	1,122,089	1,196,896
14	CRR leverage ratio (%) (row 2 / row 13)	**4.5%**	4.4%	4.5%	4.4%
	Liquidity Coverage Ratio				
15	Total HQLA	**214,637**	214,929	198,588	186,952
16	Total net cash outflows	**139,760**	136,909	133,569	133,177
17	LCR ratio (%)	**154%**	157%	149%	140%

Further detail related to these values can be found in Table 7 to Table 21

The UK leverage ratios are not shown in this table, further information on UK leverage ratios can be found in table 17.

The table is based on BCBS disclosure requirements and does not contain elements subjects to national discretion. The values above are based on CRR requirements.

Group capital resources, requirements, leverage and liquidity

Table 7: Capital resources

This table shows the Group's capital resources. Table 9 presents the components of regulatory capital on both a transitional and fully loaded basis as at 31 December 2017.

Key capital ratios

As at 31 December	2017	2016
Fully Loaded CET1[a, b]	13.3%	12.4%
PRA Transitional Tier 1[c]	17.2%	15.6%
PRA Transitional Total Capital[c]	21.5%	19.6%

Capital resources (audited)

As at 31 December	2017 £m	2016 £m
Total equity (excluding non-controlling interests) per the balance sheet	63,905	64,873
Less: other equity instruments (recognised as AT1 capital)	(8,941)	(6,449)
Adjustment to retained earnings for foreseeable dividends	(392)	(388)
Minority interests (amount allowed in consolidated CET1)	–	1,825
Other regulatory adjustments and deductions		
Additional value adjustments (PVA)	(1,385)	(1,571)
Goodwill and intangible assets	(7,908)	(9,054)
Deferred tax assets that rely on future profitability excluding temporary differences	(593)	(494)
Fair value reserves related to gains or losses on cash flow hedges	(1,161)	(2,104)
Excess of expected losses over impairment	(1,239)	(1,294)
Gains or losses on liabilities at fair value resulting from own credit	83	86
Defined-benefit pension fund assets	(732)	(38)
Direct and indirect holdings by an institution of own CET1 instruments	(50)	(50)
Deferred tax assets arising from temporary differences (amount above 10% threshold)	–	(183)
Other regulatory adjustments	(22)	45
Fully loaded CET1 capital	41,565	45,204
Additional Tier 1 (AT1) capital		
Capital instruments and related share premium accounts	8,941	6,449
Qualifying AT1 capital (including minority interests) issued by subsidiaries	3,538	5,445
Other regulatory adjustments and deductions	(130)	(130)
Transitional AT1 capital	12,349	11,764
PRA transitional Tier 1 capital	53,914	56,968
Tier 2 (T2) capital		
Capital instruments and related share premium accounts	6,472	3,769
Qualifying T2 capital (including minority interests) issued by subsidiaries	7,040	11,366
Other regulatory adjustments and deductions	(251)	(257)
PRA transitional total regulatory capital	67,175	71,846
Total RWAs	313,033	365,649

Notes

a The transitional regulatory adjustments to CET1 capital are no longer applicable resulting in CET1 capital on a fully loaded basis being equal to that on a transitional basis.

b The CRD IV CET1 ratio (FSA October 2012 transitional statement) as applicable to Barclays' Tier 2 Contingent Capital Notes was 13.9% based on £43.5bn of transitional CRD IV CET1 capital and £313bn RWAs.

c The PRA transitional capital is based on the PRA Rulebook and accompanying supervisory statements.

Group capital resources, requirements, leverage and liquidity

Table 8: Summary of movements in capital resources

Movement in PRA transitional total Capital	2017 £m
Opening fully loaded CET1 capital	**45,204**
Loss for the period attributable to equity holders	(1,283)
Own credit relating to derivative liabilities	78
Dividends paid and foreseen	(978)
Decrease in retained regulatory capital generated from earnings	**(2,183)**
Net impact of share schemes	86
Available for sale reserve	438
Currency translation reserve	3
Other reserves	(920)
Decrease in other qualifying reserves	**(393)**
Pensions re-measurements within reserves	53
Defined-benefit pension fund asset deduction	(694)
Net impact of pensions	**(641)**
Minority interests	(1,825)
Additional value adjustments (PVA)	186
Goodwill and intangible assets	1,146
Deferred tax assets that rely on future profitability excluding those arising from temporary differences	(99)
Excess of expected loss over impairment	55
Deferred tax assets arising from temporary differences (amount above 10% threshold)	183
Other regulatory adjustments	(68)
Decrease in regulatory capital due to adjustments and deductions	**(422)**
Closing fully loaded CET1 capital	**41,565**
Opening PRA transitional AT1 capital	**11,764**
Capital instruments and related share premium accounts	2,492
Qualifying AT1 capital (including minority interests) issued by subsidiaries	(1,907)
Increase in AT1 capital	**585**
Closing PRA transitional AT1 capital	**12,349**
Opening PRA transitional T2 capital	**14,878**
Capital instruments and related share premium accounts	2,703
Qualifying T2 capital (including minority interests) issued by subsidiaries	(4,326)
Other regulatory adjustments and deductions	6
Decrease in T2 capital	**(1,617)**
Closing PRA transitional T2 capital	**13,261**
Total PRA transitional regulatory capital	**67,175**

CET1 capital decreased to £41.6bn (2016: £45.2bn) due to the following:

- A £1.3bn loss for the period attributable to equity holders reflecting profit after tax of £1.1bn, including the net tax charge of £0.9bn due to the re-measurement of US DTAs in Q417, offset by £2.3bn of losses in respect of the discontinued operation. The discontinued operation losses, resulting from the impairment of Barclays' holding in BAGL allocated to goodwill and the recycling of BAGL currency translation reserve losses to the income statement, had no impact on CET1 capital with offsetting movements in the goodwill and intangible assets deduction and other qualifying reserves
- A £1.0bn decrease for dividends paid and foreseen
- A £0.4bn increase in the available for sale reserve primarily due to gains from changes in fair value on BAGL's remaining shares held as available for sale
- The currency translation reserve remained in line largely due to the £1.4bn recycling of BAGL losses to the income statement which were offset by a £1.3bn decrease driven by the depreciation of period end USD against GBP
- A £0.9bn decrease in other reserves which included a £0.5bn decrease as a result of USD preference share redemptions and £0.4bn of separation payments in relation to the sale of Barclays' holding in BAGL
- A £0.6bn decrease net of tax as a result of movements relating to pensions. The pension asset capital deduction increase relates to the UK Retirement Fund (UKRF) which is the Group's main pension scheme, moving from a small deficit in December 2016 to a £1.0bn surplus, largely due to payment of deficit contributions
- A £1.8bn decrease due to BAGL minority interests which are no longer eligible as a result of proportional consolidation of BAGL
- A £1.1bn increase due to a reduced goodwill and intangible assets deduction largely as a result of the impairment of Barclays' holding in BAGL allocated to goodwill

Group capital resources, requirements, leverage and liquidity

AT1 capital increased by £0.6bn to £12.3bn (2016: £11.8bn) largely due to two issuances of Fixed Rate Resetting Perpetual Subordinated Contingent Convertible Securities with a principle amount of £2.5bn being offset by £1.3bn redemptions of preference shares and reserve capital instruments and a further decrease of £0.6bn due to BAGL minority interests no longer being eligible as a result of BAGL proportional consolidation.

T2 capital decreased by £1.6bn to £13.3bn (2016: £14.9bn) as new issuances of £2.7bn of qualifying subordinated notes were more than offset by £0.8bn of redemptions of end point non qualifying subordinated notes, £1.9bn additional amortisation of dated instruments and £0.8bn of BAGL minority interests no longer being eligible as a result of BAGL proportional consolidation. Further decreases were as a result of the depreciation of period end USD against GBP.

Table 9: Regulatory capital

This table shows the components of regulatory capital presented on both a transitional and fully loaded basis as at 31 December 2017.

This disclosure has been prepared using the format set out in Annex IV and Annex VI of the final 'Implementing technical standards with regard to disclosure of own funds requirements for institutions' (Commission implementing regulation- EU 1423/2013)

Common Equity Tier 1 (CET1) capital: instruments and reserves				
		31 December 2017 Transitional position £m	Transitional impacts £m	31 December 2017 Fully loaded position £m
1	Capital instruments and the related share premium accounts	22,045	–	22,045
	of which: ordinary shares	*22,045*	–	*22,045*
2	Retained earnings	27,536	–	27,536
3	Accumulated other comprehensive income (and other reserves)	5,383	–	5,383
5a	Independently reviewed interim net profits net of any foreseeable charge or dividend	(392)	–	(392)
	Scope of consolidation adjustment	(22)	–	(22)
6	**Common Equity Tier 1 (CET1) capital before regulatory adjustments**	54,550	–	54,550
	Common Equity Tier 1 (CET1) capital: regulatory adjustments			
7	Additional value adjustments	(1,385)	–	(1,385)
8	Intangible assets (net of related tax liability)	(7,908)	–	(7,908)
10	Deferred tax assets that rely on future profitability excluding those arising from temporary differences (net of related tax liability)	(593)	–	(593)
11	Fair value reserves related to gains or losses on cash flow hedges	(1,161)	–	(1,161)
12	Negative amounts resulting from the calculation of expected losses amounts	(1,239)	–	(1,239)
14	Gains or losses on liabilities at fair value resulting from changes in own credit standing	83	–	83
15	Defined-benefit pension fund assets	(732)	–	(732)
16	Direct and indirect holdings by an institution of own CET1 instruments	(50)	–	(50)
28	**Total regulatory adjustments to Common Equity Tier 1 (CET1)**	(12,985)	–	(12,985)
29	**Common Equity Tier 1 (CET1) capital**	41,565	–	41,565
	Additional Tier 1 (AT1) capital: instruments			
30	Capital instruments and the related share premium accounts	8,941	–	8,941
31	*of which: classified as equity under IFRS*	*8,941*	–	*8,941*
34	Qualifying Tier 1 capital included in consolidated AT1 capital (including minority interests) issued by subsidiaries and held by third parties	3,538	(3,538)	–
35	*of which: instruments issued by subsidiaries subject to phase out*	*4,241*	*(4,241)*	–
36	**Additional Tier 1 (AT1) capital before regulatory adjustments**	12,479	(3,538)	8,941
	Additional Tier 1 (AT1) capital: regulatory adjustments			
37	Direct and indirect holdings by an institution of own AT1 instruments	(130)	–	(130)
43	**Total regulatory adjustments to Additional Tier 1 (AT1) capital**	(130)	–	(130)
44	**Additional Tier 1 (AT1) capital**	12,349	(3,538)	8,811
45	**Tier 1 capital (T1 = CET1 + AT1)**	53,914	(3,538)	50,376

Notes
a Adjustment to retained earnings for foreseeable dividends only.

Group capital resources, requirements, leverage and liquidity

Table 9: Regulatory capital continued

		31 December 2017 Transitional position £m	Transitional impacts £m	31 December 2017 Fully loaded position £m
	Tier 2 (T2) capital: instruments and provisions			
46	Capital instruments and the related share premium accounts	6,472	–	6,472
48	Qualifying own funds instruments included in consolidated T2 capital (including minority interests) issued by subsidiaries and held by third parties	7,040	1,009	8,049
49	*of which: instruments issued by subsidiaries subject to phase out*	*632*	*(632)*	–
51	**Tier 2 (T2) capital before regulatory adjustments**	13,512	1,009	14,521
	Tier 2 (T2) capital: regulatory adjustments			
52	Direct and indirect holdings by an institution of own T2 instruments and subordinated loans	(250)	–	(250)
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)	(1)	–	(1)
57	**Total regulatory adjustments to Tier 2 (T2) capital**	(251)	–	(251)
58	**Tier 2 (T2) capital**	13,261	1,009	14,270
59	**Total capital (TC = T1 + T2)**	67,175	(2,529)	64,646
60	**Total risk weighted assets**	313,033	–	313,033
	Capital ratios and buffers			
61	Common Equity Tier 1 (as a percentage of risk exposure amount)	13.3%		13.3%
62	Tier 1 (as a percentage of risk exposure amount)	17.2%		16.1%
63	Total capital (as a percentage of risk exposure amount)	21.5%		20.7%
64	Institution specific buffer requirement (CET1 requirement in accordance with article 92 (1) (a) plus capital conservation and countercyclical buffer requirements, plus systemic risk buffer, plus the systemically important institution buffer (G-SII or O-SII buffer) expressed as a percentage of risk exposure amount)	6.8%		8.5%
65	*of which: capital conservation buffer requirement*	*1.3%*		*2.5%*
66	*of which: countercyclical buffer requirement*	*0.0%*		*0.0%*
67a	*of which: Global Systemically Important Institution (G-SII) or Other Systemically Important Institution (O-SII) buffer*	*1.0%*		*1.5%*
68	Common Equity Tier 1 available to meet buffers (as a percentage of risk exposure amount)	8.8%		8.8%
	Amounts below the thresholds for deduction (before risk weighting)			
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)	2,979		2,979
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)	136		136
75	Deferred tax assets arising from temporary differences (amount below 10% threshold, net of related tax liability)	3,026		3,026
	Applicable caps on the inclusion of provisions in Tier 2			
77	Cap on inclusion of credit risk adjustments in T2 under standardised approach	911		911
79	Cap for inclusion of credit risk adjustments in T2 under internal ratings-based approach	913		913
	Capital instruments subject to phase out arrangements (only applicable between 1 Jan 2013 and 1 Jan 2022)			
82	Current cap on AT1 instruments subject to phase out arrangements	4,629		
84	Current cap on T2 instruments subject to phase out arrangements	1,450		

Group capital resources, requirements, leverage and liquidity

Table 10: Summary of terms and conditions of capital resources

This table breaks down the Additional Tier 1 and Tier 2 capital issued by instrument and provides selected key terms and conditions. All Tier 1 capital comprises perpetual instruments with no maturity date. Regulatory capital might differ from the amounts recorded under IFRS due to PRA requirements relating to: capital eligibility criteria; amortisation of principal in the final five years to maturity; and the exclusion of the impact of fair value hedging.

Transitional provisions contained within CRR Article 486 are not applicable on an instrument-by-instrument basis and therefore instruments have been included in their transitional tiers rather than their tiers under fully loaded rules.

Further details on the terms of each instrument of subordinated liabilities can be found on pages 294 to 298 of the 2017 Annual Report and online at barclays/annualreport. The online disclosure has been prepared using the format set out in Annex II of the EBA Commission Implementing Regulation (EU) No 1423/2013 laying down implementing technical standards with regard to disclosure of own funds requirements for institutions.

		Regulatory balance		IFRS balance	
		2017	2016	**2017**	2016
Instrument	Initial call date	**£m**	£m	**£m**	£m
Additional Tier 1 Capital					
Additional Tier 1 Equity Instruments – Barclays PLC					
8.25% Perpetual Subordinated Contingent Convertible Securities (USD 2,000m)	2018	**1,232**	1,232	**1,232**	1232
7.00% Perpetual Subordinated Contingent Convertible Securities	2019	**695**	695	**695**	695
6.625% Perpetual Subordinated Contingent Convertible Securities (USD 1,211m)	2019	711	711	711	711
6.5% Perpetual Subordinated Contingent Convertible Securities (EUR 1,077m)	2019	856	856	856	856
8.0% Perpetual Subordinated Contingent Convertible Securities (EUR 1,000m)	2020	**831**	830	**831**	830
7.875% Perpetual Subordinated Contingent Convertible Securities	2022	**995**	994	**995**	994
7.875% Perpetual Subordinated Contingent Convertible Securities (USD 1,500m)	2022	**1,131**	1,131	**1,131**	1,131
7.25% Perpetual Subordinated Contingent Convertible Securities	2023	**1,245**	–	**1,245**	–
5.875% Perpetual Subordinated Contingent Convertible Securities	2024	**1,245**	–	**1,245**	–
Total Additional Tier 1 Equity Instruments		**8,941**	6,449	**8,941**	6,449
Preference Shares					
Barclays Bank PLC					
6.00% non cumulative callable preference shares	2017	–	203	–	203
4.75% non cumulative callable preference shares	2020	**211**	211	**211**	211
6.278% non cumulative callable preference shares	2034	**318**	318	**318**	318
7.1% non cumulative callable preference shares	Any dividend payment date	–	657	–	657
8.125% non cumulative callable preference shares	Any dividend payment date	**1,309**	1,309	**1,309**	1,309
Absa Bank Limited					
Absa Preference Shares		–	277	–	277
Total Preference Shares		**1,838**	2,975	**1,838**	2,975
Tier One Notes (TONs) – Barclays Bank PLC					
6% Callable Perpetual Core Tier One Notes	2032	**13**	13	**16**	17
6.86% Callable Perpetual Core Tier One Notes (USD 179m)	2032	**132**	145	**197**	232
Total Tier One Notes		**145**	158	**213**	249
Reserve Capital Instruments (RCIs) – Barclays Bank PLC					
7.434% Step-up Callable Perpetual Reserve Capital Instruments (USD 117m)	2017	–	95	–	100
6.3688% Step-up Callable Perpetual Reserve Capital Instruments	2019	**33**	33	**36**	37
14% Step-up Callable Perpetual Reserve Capital Instruments	2019	**2,190**	2,184	**3,142**	3,124
5.3304% Step-up Callable Perpetual Reserve Capital Instruments	2036	**35**	36	**52**	54
Total Reserve Capital Instruments		**2,258**	2,348	**3,230**	3,315

Table 10: Summary of terms and conditions of capital resources continued

Instrument	Initial call date	Regulatory balance 2017 £m	Regulatory balance 2016 £m	IFRS balance 2017 £m	IFRS balance 2016 £m
Tier 2 Capital					
Undated subordinated liabilities – Barclays Bank PLC					
6.375% Undated Subordinated Notes	2017	–	133	–	140
7.7% Undated Subordinated Notes (USD 99m)	2018	72	80	74	84
8.25% Undated Subordinated Notes	2018	140	140	144	148
7.125% Undated Subordinated Notes	2020	158	158	182	193
6.125% Undated Subordinated Notes	2027	34	34	43	45
Junior Undated Floating Rate Notes (USD 38m)	Any interest payment date	28	31	28	31
Undated Floating Rate Primary Capital Notes Series 3	Any interest payment date	21	21	21	21
Bonds – Barclays Bank PLC					
9.25% Perpetual Subordinated Bonds (ex-Woolwich Plc)	2021	75	75	87	91
9% Permanent Interest Bearing Capital Bonds	At any time	39	40	45	47
Loans – Barclays Bank PLC					
5.03% Reverse Dual Currency Undated Subordinated Loan (JPY 8,000m)	2028	53	56	51	54
5% Reverse Dual Currency Undated Subordinated Loan (JPY 12,000m)	2028	79	83	73	77
Total undated subordinated liabilities		699	851	748	931

Table 10: Summary of terms and conditions of capital resources continued

Instrument	Initial call date	Maturity date	Regulatory balance 2017 £m	Regulatory balance 2016 £m	IFRS balance 2017 £m	IFRS balance 2016 £m
Dated subordinated liabilities						
Barclays PLC issued						
2.625% Fixed Rate Subordinated Callable Notes (EUR 1,250m)	2020	2025	**1,107**	1,066	**1,119**	1,084
2% Fixed Rate Subordinated Callable Notes (EUR 1,500m)	2023	2028	**1,324**	–	**1,325**	–
4.375% Fixed Rate Subordinated Notes (USD 1,250m)		2024	**923**	1,017	**947**	1,054
3.75% Fixed Rate Resetting Subordinated Callable Notes (SGD 200m)	2025	2030	**110**	–	**111**	–
5.20% Fixed Rate Subordinated Notes (USD 2,050m)		2026	**1,530**	1,686	**1,439**	1,590
4.836% Fixed Rate Subordinated Callable Notes (USD 2,000m)	2027	2028	**1,478**	–	**1,471**	–
Barclays Bank PLC issued						
6.05% Fixed Rate Subordinated Notes (USD 1,556m)		2017	–	233	–	1,316
Floating Rate Subordinated Notes (EUR 40m)		2018	**4**	10	**36**	34
6% Fixed Rate Subordinated Notes (EUR 1,750m)		2018	**19**	318	**1,643**	1,590
CMS-Linked Subordinated Notes (EUR 100m)		2018	**1**	19	**93**	90
CMS-Linked Subordinated Notes (EUR 135m)		2018	**5**	28	**124**	120
Fixed/Floating Rate Subordinated Callable Notes	2018	2023	–	500	**533**	548
7.75% Contingent Capital Notes (USD 1,000m)	2018	2023	**737**	810	**747**	822
Floating Rate Subordinated Notes (EUR 50m)		2019	**16**	23	**44**	42
5.14% Lower Tier 2 Notes (USD 1,094m)		2020	**451**	752	**841**	956
6% Fixed Rate Subordinated Notes (EUR 1,500m)		2021	**809**	1,096	**1,484**	1,444
9.5% Subordinated Bonds (ex-Woolwich Plc)		2021	**144**	186	**273**	286
Subordinated Floating Rate Notes (EUR 100m)		2021	**57**	76	**88**	85
10% Fixed Rate Subordinated Notes		2021	**1,324**	1,760	**2,261**	2,345
10.179% Fixed Rate Subordinated Notes (USD 1,521m)		2021	**776**	1,153	**1,118**	1,285
Subordinated Floating Rate Notes (EUR 50m)		2022	**37**	43	**44**	43
6.625% Fixed Rate Subordinated Notes (EUR 1,000m)		2022	**751**	853	**1,043**	1,042
7.625% Contingent Capital Notes (USD 3,000m)		2022	**2,163**	2,437	**2,163**	2,390
Subordinated Floating Rate Notes (EUR 50m)		2023	**44**	43	**44**	43
5.75% Fixed Rate Subordinated Notes		2026	**273**	273	**366**	384
5.4% Reverse Dual Currency Subordinated Loan (JPY 15,000m)		2027	**99**	105	**97**	103
6.33% Subordinated Notes		2032	**50**	50	**62**	64
Subordinated Floating Rate Notes (EUR 68m)		2040	**60**	58	**60**	58
Absa Bank Limited issued						
Subordinated Callable Notes (ZAR 1,805m)	2017	2022	–	108	–	–
Subordinated Callable Notes (ZAR 2,007m)	2018	2023	–	120	–	–
8.295% Subordinated Callable Notes (ZAR 1,188m)	2018	2023	–	71	–	–
Barclays Africa Group Limited Issued						
Subordinated Callable Notes (ZAR 370m)	2019	2024	–	22	–	–
10.835% Subordinated Callable Notes (ZAR 130m)	2019	2024	–	8	–	–
Subordinated Callable Notes (ZAR 1,693m)	2020	2025	–	101	–	–
10.05% Subordinated Callable Notes (ZAR 807m)	2020	2025	–	48	–	–
11.365% Subordinated Callable Notes (ZAR 508m)	2020	2025	–	30	–	–
Subordinated Callable Notes (ZAR 437m)	2020	2025	–	26	–	–
11.4% Subordinated Callable Notes (ZAR 288m)	2020	2025	–	17	–	–
Subordinated Callable Notes (ZAR 31m)	2021	2026	–	2	–	–
12.43% Subordinated Callable Notes (ZAR 200m)	2021	2026	–	12	–	–
11.81% Subordinated Callable Notes (ZAR 737m)	2022	2027	–	44	–	–
Subordinated Callable Notes (ZAR 30m)	2022	2027	–	2	–	–
Issuances by other subsidiaries		2018–2019	–	–	**59**	70
Total dated subordinated liabilities			**14,292**	15,206	**19,635**	18,888
Non controlling tier 2 capital – Barclays Bank PLC						
Undated Floating Rate Primary Capital Notes Series 1 (USD 167m)	Any interest payment date		**93**	93	**93**	93
Undated Floating Rate Primary Capital Notes Series 2 (USD 295m)	Any interest payment date		**179**	179	**179**	179
Total non controlling tier 2 capital			**272**	272	**272**	272

Group capital resources, requirements, leverage and liquidity

Table 11: Risk weighted assets by risk type and business

This table shows risk weighted assets by business and risk type.

	Credit risk		Counterparty credit risk				Market risk		Operational risk	Total risk weighted assets
As at 31 December 2017	Std £m	A-IRB £m	Std £m	A-IRB £m	Settlement Risk £m	CVA £m	Std £m	IMA £m	£m	£m
Barclays UK	3,811	54,955	–	–	–	–	–	–	12,167	70,933
Barclays International	49,058	69,520	17,000	17,243	101	2,776	13,313	13,547	27,708	210,266
Head Office[a]	2,907	9,766	65	633	–	225	88	1,365	16,785	31,834
Barclays Group	55,776	134,241	17,065	17,876	101	3,001	13,401	14,912	56,660	313,033
As at 31 December 2016										
Barclays UK	5,592	49,591	47	–	–	–	–	–	12,293	67,523
Barclays International	53,201	82,327	13,515	13,706	30	3,581	9,343	9,460	27,538	212,701
Head Office[a]	9,048	27,122	77	1,157	–	927	482	2,323	12,156	53,292
Total Core	67,841	159,040	13,639	14,863	30	4,508	9,825	11,783	51,987	333,516
Barclays Non-Core	4,714	9,945	1,043	6,081	37	2,235	477	2,928	4,673	32,133
Barclays Group	72,555	168,985	14,682	20,944	67	6,743	10,302	14,711	56,660	365,649

Notes

a Includes Africa Banking RWAs.

For commentary on the movement in risk weighted assets see Table 26, 59, 71, 76 and 92.

Group capital resources, requirements, leverage and liquidity

Table 12: OV1 – of risk weighted assets by risk type and capital requirements

The table shows RWAs, split by risk type and approach. For credit risk, RWAs are shown by credit exposure class.

Please see additional disclosures for each risk type in the Analysis of Credit Risk (page 36), Counterparty Credit Risk (page 78), Market Risk (page 93), Securitisation Exposures (page 99) and Operational Risk sections (page118).

		RWA		Minimum Capital Requirements	Minimum Capital Requirements
		As at 31 December 2017 £m	As at 31 December 2016 £m	As at December 2017 £m	As at December 2016 £m
1	**Credit risk (excluding counterparty credit risk) (CCR)**	**177,869**	225,393	**14,230**	18,032
2	Of which standardised approach	**55,437**	71,264	**4,435**	5,701
3	Of which the foundation IRB (FIRB) approach	**–**	–	**–**	–
4	Of which the advanced IRB (A-IRB) approach	**122,432**	154,129	**9,795**	12,331
5	Of which Equity A-IRB under the Simple risk-weight or the internal models approach	**–**	–	**–**	–
6	CCR	**37,843**	41,978	**3,027**	3,358
7	Of which mark to market	**2,515**	3,839	**201**	307
8	Of which original exposure	**–**	–	**–**	–
9	Of which standardised approach	**–**	–	**–**	–
9a	Of which financial collateral comprehensive method	**9,768**	8,013	**781**	641
10	Of which internal model method	**21,299**	22,080	**1,704**	1,766
11	Of which risk exposure amount for contributions to the default fund of a CCP	**1,261**	1,303	**101**	104
12	Of which CVA	**3,001**	6,743	**240**	539
13	Settlement risk	**101**	67	**8**	5
14	Securitisation exposures in banking book (after cap)	**4,169**	3,937	**333**	315
14a	Of which capital deduction approach (CAPD)	**39**	84	**3**	7
14b	Of which look through approach (KIRB)	**621**	644	**50**	52
15	Of which A-IRB approach	**3,107**	2,754	**249**	220
16	Of which A-IRB supervisory formula approach (SFA)	**–**	–	**–**	–
17	Of which internal assessment approach (IAA)	**401**	455	**32**	36
18	Of which standardised approach	**–**	–	**–**	–
19	Market risk	**28,313**	25,013	**2,265**	2,001
20	Of which the standardised approach	**13,401**	10,302	**1,072**	824
21	Of which IMA	**14,912**	14,711	**1,193**	1,177
22	Large exposures	**–**	–	**–**	–
23	Operational risk	**56,660**	56,660	**4,533**	4,533
24	Of which basic indicator approach	**3,252**	3,252	**260**	260
25	Of which standardised approach	**–**	–	**–**	–
26	Of which advanced measurement approach	**53,408**	53,408	**4,273**	4,273
27	Amounts below the thresholds for deduction (subject to 250% risk weight)	**8,079**	12,601	**646**	1,008
28	Floor Adjustments	**–**	–	**–**	–
29	Total	**313,033**	365,649	**25,043**	29,252

Group capital resources, requirements, leverage and liquidity

Table 13: Movements in risk weighted assets

The below tables show movements in RWAs, split by risk types and macro drivers

Movement analysis of risk weighted assets

	Credit Risk £bn	Counterparty Credit Risk[a] £bn	Market Risk £bn	Operational Risk £bn	Total £bn
As at 1 January 2017	**241.5**	**42.4**	**25**	**56.7**	**365.6**
Book size	(11.0)	(1.2)	5.4	–	(6.8)
Acquisitions and disposals	(31.7)	(1.5)	(1.6)	–	(34.8)
Book quality	(3.5)	0.5	0.1	–	(2.9)
Model updates	(1.4)	–	–	–	(1.4)
Methodology and policy	0.6	(2.2)	(0.6)	–	(2.2)
Foreign exchange movement[b]	(4.5)	–	–	–	(4.5)
As at 31 December 2017	**190.0**	**38.0**	**28.3**	**56.7**	**313.0**

Notes:
a RWAs in relation to default fund contributions are included in counterparty credit risk.
b Foreign exchange movement does not include FX for counterparty risk or market risk.

RWAs decreased £52.6bn to £313.0bn, driven by:

- Book size decreased RWAs £6.8bn primarily due to portfolio rundowns related to Barclays Non-Core, the re-measurement of US DTAs as a result of the US Tax Cuts and Jobs Act and securitisation transactions, partially offset by increased trading activity in investment banking businesses
- Acquisitions and disposals decreased RWAs £34.8bn primarily as a result of the proportional consolidation of BAGL
- Book quality decreased RWAs £2.9bn primarily due to changes in risk profile in Corporate and Investment Bank
- Model updates decreased RWAs £1.4bn primarily due to model changes in Africa Banking prior to the sell down of Barclays' holding in BAGL
- Methodology and policy decreased RWAs £2.2bn primarily due to a revised calculation basis for modelled derivative exposures
- Foreign exchange movements decreased RWAs £4.5bn primarily due to the depreciation of period end USD against GBP.

Tables 14, 15 and 16 below show a subset of the information included in table 13, focused on positions captured under modelled treatment.

Table 14: CR8 - RWA flow statement of credit risk exposures under the AIRB approach

		RWA amount £bn	Capital requirements £bn
1	**As at 1 January 2017**	**169.0**	**13.5**
2	Asset size	(8.4)	(0.7)
3	Asset quality	(3.8)	(0.3)
4	Model updates	(0.9)	(0.1)
5	Methodology and policy	1.0	0.1
6	Acquisitions and disposals	(20.5)	(1.6)
7	Foreign exchange movements	(2.2)	(0.2)
8	Other	–	–
9	**As at 31 December 2017**	**134.2**	**10.7**

Advanced credit risk RWAs decreased RWAs £(34.8)bn to £134.2bn driven by:

- Asset size decreased RWAs by £(8.4)bn primarily due to the re-measurement of US DTAs as a result of the US Tax Cuts and Jobs Act and securitisation of high yield loans, partially offset by increased mortgage lending
- Asset quality decreased RWAs by £(3.8)bn primarily due to changes in risk profile in Corporate and Investment Bank
- Methodology and policy increased RWAs by £1.0bn primarily driven by the implementation of a consistent approach for clients on credit rating agencies watchlist across Corporate and Investment Bank
- Acquisitions and disposals decreased RWAs by £(20.5)bn primarily driven by reduction as a result of the proportional consolidation of BAGL
- FX movements decreased RWAs by £(2.2)bn primarily driven by the depreciation of period end USD against GBP.

Table 15: CCR7 - RWA flow statement of counterparty credit risk exposures under the IMM

The total in this table shows the contribution of IMM exposures to CCR RWAs (under both standardised and AIRB) and will not directly reconcile to CCR AIRB RWAs in table 11.

		RWA amount £bn	Capital requirements £bn
1	**As at 1 January 2017**	22.7	1.8
2	Asset size	(0.5)	–
3	Credit quality of counterparties	0.4	–
4	Model updates (IMM only)	–	–
5	Methodology and policy (IMM only)	(1.2)	(0.1)
6	Acquisitions and disposals	–	–
7	Foreign exchange movements	–	–
8	Other	–	–
9	**As at 31 December 2017**	21.4	1.7

IMM RWAs decreased £(1.3)bn to £21.4bn, driven by:

Methodology and policy decreased RWAs £(1.2)bn primarily due to a revised calculation basis for modelled derivative exposures.

Table 16: MR2-B RWA flow statement of market risk exposures under the IMA

		VaR £bn	SVaR £bn	IRC £bn	Other £bn	Total RWA £bn	Total Capital requirements £bn
1	**As at 1 January 2017**	3.5	6.6	2.1	2.4	14.7	1.2
2	Movement in risk levels	(0.2)	0.7	0.9	(0.1)	1.3	0.1
3	Model updates/changes						
4	Methodology and policy						
5	Acquisitions and disposals	(0.5)	(0.5)			(1.1)	(0.1)
7	Other						–
8	**As at 31 December 2017**	2.8	6.8	3.0	2.3	14.9	1.2

Internal Model Approach RWAs remained broadly flat at £14.9bn. Increases in trading activity were offset by reduction as a result of the proportional consolidation of BAGL.

Basis of preparation for movements in risk weighted assets

This analysis splits RWA movement by credit, counterparty credit, market and operational risk. Seven categories of drivers have been identified and are described below. Not all the drivers are applicable to all risk types, however all categories have been listed below for completeness purposes.

Book size

Credit risk and counterparty risk (inc CVA)
This represents RWA movements driven by changes in the size and composition of underlying positions, measured using EAD values for existing portfolios over the period. This includes, but is not exclusive to:

- new business and maturing loans
- changes in product mix and exposure growth for existing portfolios
- book size reductions owing to risk mitigation and write-offs.

Market risk
This represents RWA movements owing to the changes in trading positions and volumes driven by business activity.

Book quality

Credit risk and counterparty risk (inc CVA)
This represents RWA movements driven by changes in the underlying credit quality and recoverability of portfolios and reflected through model calibrations or realignments where applicable. This includes, but is not exclusive to:

- PD migration and LGD changes driven by economic conditions
- ratings migration for standardised exposures.

Market risk
This is the movement in RWAs owing to changing risk levels in the trading book, caused by fluctuations in market conditions.

Model updates

Credit risk and counterparty risk (inc CVA)
This is the movement in RWAs as a result of both internal and external model updates. This includes, but is not exclusive to:

- updates to existing model inputs driven by both internal and external review
- model enhancements to improve models performance.

Market risk
This is the movement in RWAs reflecting change in model scope, changes to market data levels, volatilities, correlations, liquidity and ratings used as input for the internal modelled RWA calculations.

Methodology and policy

Credit risk and counterparty risk (inc CVA)
This is the movement in RWAs as a result of both internal and external methodology, policy and regulatory changes. This includes, but is not exclusive to:

- updates to RWA calculation methodology, communicated by the regulator
- the implementation of credit risk mitigation to a wider scope of portfolios.

Market risk
This is the movement in RWAs as a result of both internal and external methodology, policy and regulatory changes for market risk.

Acquisitions and disposals

This is the movement in RWAs as a result of the disposal or acquisition of business operations impacting the size of banking and trading portfolios. This includes the impact of the proportional consolidation of BAGL, as well as credit RWA reductions relating to disposals of Non-Core related assets.

Foreign exchange movements

This is the movement in RWAs as a result of changes in the exchange rate between the functional currency of the Barclays business area or portfolio and our presentational currency for consolidated reporting. It should be noted that foreign exchange movements shown in table 13 do not include the impact of foreign exchange for the counterparty credit risk IMM and modelled market risk RWAs.

Other

This is the movement in RWAs driven by items that cannot be reasonably assigned to the other driver categories. In relation to market risk RWAs, this includes changes in measurement that are not driven by methodology, policy or model updates. This category had a nil balance for the year ended 31 December 2017.

Group capital resources, requirements, leverage and liquidity

Leverage ratios and exposures

Barclays is required to disclose an average UK leverage ratio which is based on capital and exposure measures on the last day of each month in the quarter; as well as a UK leverage ratio which is based on the last day of the quarter. Both approaches exclude qualifying claims on central banks from the leverage exposures. Barclays is also required to disclose a Capital Requirements Regulation (CRR) leverage ratio, which is based on the end point CRR definition of tier 1 capital and the CRR definition of leverage exposure.

Effective 1 January 2018, Barclays is required to disclose the average UK leverage ratio on a fully phased basis as outlined by the PRA Supervisory Statement SS45/15 and the updated PRA rulebook. For the purpose of this ratio, on-balance sheet exposures are based on each day in the quarter and off-balance sheet exposures and capital are based on the last day of each month in the quarter.

Table 17: Leverage ratios

Leverage ratios	As at 31.12.17 £bn	As at 31.12.16 £bn
Average UK leverage exposure	**1,045**	1,137
Average fully loaded tier 1 capital	**51.2**	51.6
Average UK leverage ratio	**4.9%**	4.5%
UK leverage ratio	**5.1%**	5.0%
CRR leverage ratio	**4.5%**	4.6%
UK leverage exposure		
Accounting assets		
Derivative financial instruments	**238**	347
Cash collateral	**53**	67
Reverse repurchase agreements and other similar secured lending	**12**	13
Financial assets designated at fair value[a]	**116**	79
Loans and advances and other assets	**714**	707
Total IFRS assets	**1,133**	1,213
Regulatory consolidation adjustments	**8**	(6)
Derivatives adjustments		
Derivatives netting	**(217)**	(313)
Adjustments to cash collateral	**(42)**	(50)
Net written credit protection	**14**	12
Potential Future Exposure (PFE) on derivatives	**120**	136
Total derivatives adjustments	**(125)**	(215)
Securities financing transactions (SFTs) adjustments	**19**	29
Regulatory deductions and other adjustments	**(13)**	(15)
Weighted off-balance sheet commitments	**103**	119
CRR leverage exposure	**1,125**	1,125
Qualifying central bank claims	**(140)**	(75)
UK leverage exposure	**985**	1,050
Fully loaded CET1 capital	**41.6**	45.2
Fully loaded AT1 capital	**8.8**	6.8
Fully loaded tier 1 capital	**50.4**	52.0

Note:
a Included within financial assets designated at fair value are reverse repurchase agreements designated at fair value of £100bn (2016: £63bn)

Group capital resources, requirements, leverage and liquidity

The average UK leverage ratio increased to 4.9% (2016: 4.5%) primarily driven by the issuance of AT1 securities, the reduction in Non-Core related exposures and due to BAGL's regulatory proportional consolidation.

The CRR leverage ratio decreased to 4.5% (2016: 4.6%). The difference between the average UK leverage ratio and the CRR leverage ratio movement is primarily driven by an increase in cash at central banks, which are excluded from the UK leverage ratio calculation. Additionally, the year end fully loaded tier 1 capital is lower than the average due to the re-measurement of US DTAs as a result of the US Tax Cuts and Jobs Act in December.

- Loans and advances and other assets increased £7bn to £714bn. This was primarily due to a £69bn increase in cash and balances at central banks largely driven by an increase in the cash contribution to the Group liquidity pool mainly exempt under UK leverage rules and a £70bn decrease in assets held for sale driven by the sell down of Barclays' holding in BAGL
- Reverse repurchase agreements increased £36bn to £112bn, primarily due to an increase in matched book trading
- Net derivative leverage exposures decreased £33bn to £166bn due to a reduction in interest rate and foreign exchange derivatives, the rundown of Non-Core related assets, a decrease in cash collateral and the depreciation of period end USD and JPY against GBP
- Regulatory consolidation adjustments increased £14bn to £8bn primarily due to the proportional consolidation of BAGL following the sell down of Barclays' holding
- Weighted off balance sheet commitments decreased £16bn to £103bn primarily due to the proportional consolidation of BAGL following the sell down of Barclays' holding.

Group capital resources, requirements, leverage and liquidity

Leverage ratio and exposures

The following leverage tables show the components of the leverage ratio using the CRR definition for the leverage exposure and tier 1 capital, on a fully loaded basis as at 31 December 2017.

This disclosure has been prepared using the format set out in Annex I and Annex II of the final 'Implementing technical standards with regard to disclosure of the leverage ratio for institutions (Commission implementing regulation-EU 2016/200)'.

Table 18: Summary reconciliation of accounting assets and leverage ratio exposures

This table is a summary of the total leverage exposure and comprises of total IFRS assets used for statutory purposes, regulatory consolidation and other leverage adjustments.

		As at 31.12.17 £bn	As at 31.12.16 £bn
1	Total assets as per published financial statements	1,133	1,213
2	Adjustment for entities which are consolidated for accounting purposes but are outside the scope of regulatory consolidation[a]	8	(6)
4	Adjustments for derivative financial instruments	(125)	(215)
5	Adjustments for securities financing transactions SFTs	19	29
6	Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	103	119
7	Other adjustments	(13)	(15)
8	**Total leverage ratio exposure**	1,125	1,125

Note
a Includes the impact of BAGL proportional consolidation for regulatory purposes.

Table 19: Leverage ratio common disclosure

This table shows the leverage ratio calculation and includes additional breakdowns for the leverage exposure measure.

		As at 31.12.17 £bn	As at 31.12.16 £bn
On-balance sheet exposures (excluding derivatives and SFTs)			
1	On-balance sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral)	749	734
2	(Asset amounts deducted in determining tier 1 capital)	(13)	(15)
3	**Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets)**	736	719
Derivative exposures			
4	Replacement cost associated with *all* derivatives transactions (ie net of eligible cash variation margin)	54	72
5	Add-on amounts for PFE associated with *all* derivatives transactions (mark-to-market method)	120	136
7	(Deductions of receivables assets for cash variation margin provided in derivatives transactions)	(33)	(38)
8	(Exempted CCP leg of client-cleared trade exposures)	(1)	–
9	Adjusted effective notional amount of written credit derivatives	278	384
10	(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	(264)	(372)
11	**Total derivative exposures**	154	182
Securities financing transaction exposures			
12	Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	336	264
13	(Netted amounts of cash payables and cash receivables of gross SFT assets)	(223)	(188)
14	Counterparty credit risk exposure for SFT assets	19	29
16	**Total securities financing transaction exposures**	132	105
Other off-balance sheet exposures			
17	Off-balance sheet exposures at gross notional amount	322	350
18	(Adjustments for conversion to credit equivalent amounts)	(219)	(231)
19	**Other off-balance sheet exposures**	103	119
Capital and total exposures			
20	Tier 1 capital	50.4	52.0
21	**Total leverage ratio exposures**	1,125	1,125
Leverage ratio			
22	**Leverage ratio**	4.5%	4.6%
Choice on transitional arrangements and amount of derecognised fiduciary items			
EU-23	Choice on transitional arrangements for the definition of the capital measure		Fully phased in

Group capital resources, requirements, leverage and liquidity

Table 20: Split-up of on balance sheet exposures (excluding derivatives, SFTs, and exempted exposures)

The table shows a breakdown of the on-balance sheet exposures excluding derivatives, SFTs and exempted exposures, by asset class.

		As at 31.12.17 £bn	As at 31.12.16 £bn
EU-1	Total on-balance sheet exposures (excluding derivatives, SFTs, and exempted exposures), of which:	749	734
EU-2	Trading book exposures	149	119
EU-3	Banking book exposures, of which:	600	615
EU-4	Covered bonds	–	–
EU-5	Exposures treated as sovereigns	237	174
EU-6	Exposures to regional governments, MDB, international organisations and PSE NOT treated as sovereigns	1	6
EU-7	Institutions	24	35
EU-8	Secured by mortgages of immovable properties	149	158
EU-9	Retail exposures	57	68
EU-10	Corporate	80	130
EU-11	Exposures in default	6	6
EU-12	Other exposures (eg equity, securitisations, and other non-credit obligation assets)	46	38

Barclays manages the risk of excessive leverage through the Group's Capital Management process which is outlined in the Annual Report. Barclays' leverage exposure is continually monitored against internal targets, which are approved by the Group Executive Committee and take into consideration the risk appetite, growth and strategic aims of the Group. Additionally, agreed leverage exposure limits are regularly monitored against early warning indicators which trigger actions to mitigate risk. The Group's leverage exposure is also subject to regular internal and external stress testing.

Further details on the key movements during the reporting period are disclosed on page 32.

Table 21: LIQ1 – Liquidity Coverage ratio

This table shows the level and components of the Liquidity Coverage Ratio. This disclosure has been prepared in accordance with the requirements set out in the 'Guidelines on LCR disclosure to complement the disclosure of liquidity risk management under Article 435 of Regulation (EU) No 575/2013' as specified in Annexure II which complements Article 435(1)(f) of Regulation (EU) No 575/2013.

Liquidity coverage ratio

	Total unweighted value (average)				Total weighted value (average)			
Number of data points used in calculation of averages	31.12.17 £m 12	30.09.17 £m 12	30.06.17 £m 12	31.03.17 £m 12	31.12.17 £m 12	30.09.17 £m 12	30.06.17 £m 12	31.03.17 £m 12
High-quality liquid assets								
Total high-quality liquid assets (HQLA)					203,944	191,504	175,391	163,994
Cash outflows								
Retail deposits and deposits from small business customers, of which:	193,217	193,467	193,385	190,973	17,232	17,478	17,585	17,455
Stable deposits	102,757	97,627	94,334	91,030	5,138	4,881	4,717	4,551
Less stable deposits	90,460	95,840	99,051	99,943	12,094	12,597	12,868	12,904
Unsecured wholesale funding	154,737	155,724	155,981	155,392	80,825	81,158	81,007	81,193
Operational deposits (all counterparties) and deposits in networks of cooperative banks	27,177	26,679	26,725	26,232	6,678	6,560	6,600	6,501
Non-operational deposits (all counterparties)	123,681	125,926	126,588	126,707	70,268	71,479	71,739	72,239
Unsecured debt	3,879	3,119	2,668	2,453	3,879	3,119	2,668	2,453
Secured wholesale funding					51,642	46,744	41,021	35,186
Additional requirements	184,102	184,322	181,809	171,587	55,124	54,954	53,899	52,415
Outflows related to derivative exposures and other collateral requirements	18,827	16,964	15,004	12,983	18,112	16,273	14,258	12,091
Outflows related to loss of funding on debt products	7,490	6,559	6,381	6,336	7,490	6,559	6,381	6,336
Credit and liquidity facilities	157,785	160,799	160,424	152,268	29,522	32,122	33,260	33,988
Other contractual funding obligations	11,821	12,050	12,788	13,217	917	827	765	784
Other contingent funding obligations	152,396	155,348	156,979	156,250	4,351	5,675	6,622	7,513
Total cash outflows					210,091	206,836	200,899	194,546
Cash inflows								
Secured lending (e.g. reverse repos)	326,599	309,068	294,427	270,657	49,853	48,017	45,483	42,715
Inflows from fully performing exposures	13,920	16,135	18,755	20,119	11,400	13,100	15,076	16,129
Other cash inflows[a]	9,674	9,779	9,765	10,219	5,305	5,523	5,526	5,775
Total cash inflows	350,193	334,982	322,947	300,995	66,558	66,640	66,085	64,619
Fully exempt inflows	–	–	–	–	–	–	–	–
Inflows subject to 90% cap	–	–	–	–	–	–	–	–
Inflows subject to 75% cap	272,374	259,976	251,605	237,818	66,558	66,640	66,085	64,619
Liquidity buffer					203,944	191,504	175,391	163,994
Total net cash outflows					143,533	140,196	134,814	129,927
Liquidity coverage ratio (%)					142%	137%	130%	126%

Note

a Difference between total weighted inflows and total weighted outflows arising from transactions in third countries where there are transfer restrictions or which are denominated in non-convertible currencies.

Group capital resources, requirements, leverage and liquidity

As at 31 December 2017, the Group LCR was 154% (2016:131%). The average LCR for the 12 months to December 2017 increased to 142%, as growth in the liquidity buffer exceeded growth in stresses. This reflects the Group strengthening its liquidity position during the year.

The Group continued to maintain surpluses to its internal and regulatory liquidity requirements. Growth in average liquidity buffer during the year is largely driven by net deposit growth, the unwind of legacy Non-Core portfolios, money market borrowing and drawdown from the Bank of England Term Funding Scheme. The average liquidity coverage ratio has increased over the year, as growth in the liquidity buffer exceeded the overall growth in stresses, arising largely from business growth and regulatory changes. Regulatory methodology changes during the year included the implementation of the Historical Look Back Approach (HLBA), in February 2017, to assess potential derivative collateral outflows in a stress.

The composition of the liquidity pool is subject to limits set by the Board and the independent liquidity risk, credit risk, and market risk functions. In addition, the investment of the liquidity pool is monitored for concentration risk by issuer, currency and asset type. Given the incremental returns generated by these highly liquid assets, the risk and reward profile is continuously managed.

The liquidity buffer is well diversified by major currency and the Group monitors LCR stresses by major currency. The level of buffer in the relevant currency to support the underlying stresses is subject to limits set by the liquidity risk function.

The Group manages the liquidity pool on a centralised basis. A significant portion of the liquidity pool was located in Barclays Bank PLC and was available to meet liquidity needs across the Group. The residual liquidity pool is held predominantly within Barclays Capital Inc. (BCI), a subsidiary of Barclays Bank PLC. The portion of the liquidity pool outside of Barclays Bank PLC is held against entity-specific stressed outflows and regulatory requirements. To the extent the use of this portion of the liquidity pool is restricted due to regulatory requirements, it is assumed to be unavailable to the rest of the Group.

The primary funding source of the Group consists of the strong deposit franchise within Barclays UK and Barclays International. Issuances to meet Minimum Requirements for Own Funds and Eligible Liabilities (MREL) raised by Barclays PLC also provide a long term stable source of funding. The Group also maintains access to a diverse sources of wholesale funds in major currencies, geographies and distribution channels and includes money markets, certificate of deposits, commercial paper, and medium term issuances (including structured notes). The Group also supports various central bank monetary initiatives including participation in the Bank of England's Term Funding Scheme.

Table 22: PV1 – Prudent valuation adjustment

This table below provides a granular breakdown of the Prudent Valuation Adjustment (PVA) reported by Barclays. PVA is a Common Equity Tier 1 capital deduction.

EU CRR Articles 34 &105 define regulatory principles that are applied to all fair valued assets and liabilities in order to determine a prudent valuation. The Prudent Valuation Adjustment (PVA) is the difference between the financial statement fair valuation and the prudent valuation.

		Equity £m	Interest rates £m	FX £m	Credit £m	Commodities £m	Total £m	Of which in the trading book £m	Of which in the banking book[a] £m
As at December 2017									
1	Closeout uncertainty[b], of which	355	290	35	286	–	966	906	60
2	Mid-market value[c, d]	233	196	20	159	–	608	549	59
3	Closeout cost[e]	13	64	3	20	–	100	99	1
4	Concentration	109	30	12	107	–	258	258	–
5	Early termination	–	–	–	–	–	–	–	–
6	Model risk	30	23	1	7	–	61	61	–
7	Operational risk	–	–	–	–	–	–	–	–
8	Investing and funding costs	–	69	–	235	–	304	90	214
9	Unearned credit spreads	–	–	–	–	–	–	–	–
10	Future administrative costs	8	22	8	16	–	54	54	–
11	Other	–	–	–	–	–	–	–	–
12	**Total adjustment**	393	404	44	544	–	1,385	1,111	274
As at December 2016									
1	Closeout uncertainty[b], of which:	332	354	50	256	19	1,011	969	42
2	Mid-market value[c, d]	235	220	27	142	15	639	603	36
3	Closeout cost[e]	13	74	3	16	1	107	101	6
4	Concentration	84	60	20	98	3	265	265	–
5	Early termination	–	–	–	–	–	–		–
6	Model risk	24	23	4	8	1	60	60	–
7	Operational risk	–	–	–	–	–	–		–
8	Investing and funding costs	–	123	–	300	–	423	150	273
9	Unearned credit spreads	–	–	–	–	–	–		–
10	Future administrative costs	8	47	9	11	2	77	77	–
11	Other	–	–	–	–	–	–	–	–
12	**Total adjustment**	364	547	63	575	22	1,571	1,256	315

Notes

a Barclays' implementation of PVA means that amounts cannot be easily classified as banking book or trading book. In the tables above we have assumed that the most material contributor to banking book PVA is a portfolio of longer dated non-asset backed loans made to Education, Social Housing and Local Authority (ESHLA) counterparties. The ESHLA PVA numbers are presented in the "Credit" column of the table.

b A diversification reduction factor of 50% is applied to uncertainty after all offsets, where allowed by EU CRR.

c The balances under mid-market value relate primarily to the market price uncertainty in the trading portfolios.

d Regulatory exclusions / offsets have been applied to mid-market value.

e In the tables above unearned credit spread uncertainty is included in closeouts uncertainty

Analysis of credit risk

This section details Barclays' credit risk profile, focusing on regulatory measures such as exposure at default and risk weighted assets. The risk profile is analysed by business segment, country and industry concentrations, residual maturities, probabilities of default and actual losses.

Key Metrics

Risk weighted assets for credit risk reduced in the year

Total RWA -£51.5bn

Driven by:

-£28.3bn

Driven by the proportional consolidation of BAGL

-£5.9bn

Driven by the securitisation of corporate loans

-£4.5bn

Driven by the depreciation of period end USD against GBP

-£3.5bn

Primarily driven by the re-measurement of US DTAs as a result of the US Tax Cuts and Job Act

-£3.5bn

Primarily driven by improved book quality

-£2.4bn

Driven by the disposal of Non-Core related assets

Analysis of capital requirements and exposures for credit risk

Table 23: Credit risk exposures – Note on pre- and post- credit risk mitigation (CRM) EAD

This table summarises credit risk information presented in the rest of this report and shows exposure at default pre- and post-CRM, and the associated capital requirements. In accordance with regulatory requirements, credit mitigation is either reflected in regulatory measures for exposure at default (EAD), or in the risk inputs: probability of default (PD) and loss given default (LGD). For the majority of Barclays' exposures, in particular mortgages and those under the AIRB treatment, the impact of CRM is primarily reflected in the PD or LGD rather than EAD measures.

RWAs and post-CRM exposures are analysed by business on pages 40 to 43. Pre-CRM exposures are further analysed by geography on page 44, industry on page 46 and residual maturity on page 48. Information on the impact of CRM on EAD is set out on pages 52 to 53.

Credit exposure class	EAD pre-CRM[a]		EAD post-CRM[a]		Capital Requirements		
As at 31 December 2017	Year end £m	Average[b] £m	Year end £m	Average[b] £m	RWA £m	Average RWA[b] £m	Capital reqs £m
Standardised approach							
Central governments or central banks	170,016	156,468	170,016	156,357	408	1,213	33
Regional governments or local authorities	594	791	580	786	9	8	1
Public sector entities	347	339	347	332	105	104	8
Multilateral development banks	3,863	4,805	3,863	4,805	–	–	–
International organisations	981	1,235	981	1,235	–	–	–
Institutions	4,523	5,278	4,472	5,247	1,602	1,737	128
Corporates	35,032	37,042	23,796	25,969	22,575	24,754	1,807
Retail	28,776	28,618	28,130	27,947	21,086	20,959	1,687
Secured by mortgages	8,905	10,078	8,905	10,078	3,712	4,195	297
Exposures in default	2,320	2,260	2,296	2,229	2,773	2,726	222
Items associated with high risk	1,741	1,868	1,627	1,752	2,553	2,735	204
Covered bonds	–	104	–	104	–	47	–
Securitisation positions	–	–	–	–	–	–	–
Collective investment undertakings	–	1	–	1	–	1	–
Equity positions	38	150	38	150	94	344	8
Other items	4,282	3,880	4,282	3,880	859	903	69
Total Standardised Approach Credit Risk Exposure	261,418	252,917	249,333	240,872	55,776	59,726	4,464
Advanced IRB approach							
Central governments or central banks	89,242	79,758	89,096	79,613	3,563	3,723	285
Institutions	24,172	23,150	23,535	22,512	6,898	6,808	552
Corporates	117,737	138,791	111,184	132,239	55,612	65,678	4,449
Retail	–	–	–	–	–	–	–
– Small and medium-sized enterprises (SMEs)	9,221	8,932	9,221	8,932	3,881	3,927	310
– Secured by mortgages on immovable property	148,764	150,317	148,764	150,317	20,033	20,983	1,603
– Qualifying revolving retail	43,956	44,733	43,956	44,733	20,009	20,391	1,601
– Other retail	6,948	8,121	6,948	8,121	6,639	7,758	531
Equity	–	–	–	–	–	–	–
Securitisation positions	29,926	25,799	29,926	25,799	4,068	3,272	325
Non-credit obligation assets	9,062	10,398	9,062	10,398	13,538	16,247	1,083
Total advanced IRB credit risk exposure	479,028	489,999	471,692	482,664	134,241	148,787	10,739
Total credit exposure	740,446	742,916	721,025	723,536	190,017	208,513	15,203

Notes
a Collateral and guarantees for advanced IRB are not included within EAD as these are incorporated in loss given default (LGD) calculations.
b Averages are calculated from the past four quarters. This is to show intra-year fluctuations.

Analysis of credit risk

Table 23: Credit risk exposures – Note on pre- and post- credit risk mitigation (CRM) EAD continued

	EAD pre-CRM		EAD post-CRM		Capital Requirements		
As at 31 December 2016	Year end £m	Average £m	Year end £m	Average £m	RWA £m	Average RWA £m	Capital £m
Standardised approach							
Central governments or central banks	100,736	113,470	100,323	113,348	2,754	2,725	220
Regional governments or local authorities	620	486	547	486	13	33	1
Public sector entities	572	440	572	435	285	159	23
Multilateral development banks	5,884	5,372	5,884	5,372	–	–	–
International organisations	1,884	2,326	1,884	2,326	–	–	–
Institutions	8,425	7,190	8,425	7,144	2,391	2,163	191
Corporates	43,725	49,387	32,755	37,131	30,468	31,704	2,437
Retail	32,096	30,096	31,413	29,377	23,559	22,020	1,885
Secured by mortgages	12,407	13,315	12,407	13,315	4,965	5,396	397
Exposures in default	2,625	2,493	2,587	2,448	3,272	3,056	262
Items associated with high risk	1,827	1,833	1,737	1,752	2,648	2,787	212
Covered bonds	100	430	100	430	20	86	2
Securitisation positions	–	–	–	–	–	–	–
Collective investment undertakings	1	1	1	1	1	1	–
Equity positions	475	497	475	497	1,102	1,148	88
Other items	3,922	3,456	3,922	3,456	1,077	844	86
Total Standardised Approach Credit Risk Exposure	215,299	230,792	203,032	217,518	72,555	72,122	5,804
Advanced IRB approach							
Central governments or central banks	66,573	40,494	66,520	40,353	5,646	4,298	452
Institutions	24,645	29,024	23,689	28,241	6,539	7,135	523
Corporates	164,018	162,217	157,568	155,614	76,356	76,443	6,108
Retail	–	–	–	–	–	–	–
Small and medium-sized enterprises (SMEs)	9,125	8,815	9,125	8,815	4,245	4,041	340
Secured by mortgages on immovable property	156,254	157,056	156,255	157,056	23,677	24,445	1,894
Qualifying revolving retail	46,074	45,902	46,074	45,902	20,323	20,008	1,626
Other retail	10,828	10,169	10,828	10,169	9,975	9,582	798
Equity	–	–	–	–	–	–	–
Securitisation positions	29,131	21,424	29,131	21,424	3,546	2,972	284
Non-credit obligation assets	12,297	11,553	12,297	11,553	18,678	17,620	1,494
Total advanced IRB credit risk exposure	518,945	486,654	511,487	479,127	168,985	166,544	13,519
Total credit exposure	734,244	717,446	714,519	696,645	241,540	238,666	19,323

The key movements by business are shown in Table 25 and Table 26 while further details are provided on Table 27 to 50.

Exposure at default pre-CRM increased by £6.2bn to £740.4bn, primarily driven by:

- Central governments or central banks exposure increase as the Group strengthened its liquidity position, offset by
- Corporates exposure decrease, mainly driven by the proportional consolidation of BAGL, depreciation of period end USD against GBP, the disposal of Non-Core related assets and reduction in corporate lending
- Retail exposure decrease mainly driven by the proportional consolidation of BAGL.

Analysis of credit risk

Table 24: CRB-B Total and average net amount of exposures

This table provides the total and the average amount of net exposures over the period by exposure class

The "Net value of exposure" column represents gross exposures pre-CRM and CCF.

		Net value of exposures as at 31 December 2017 £m	Average[a] net exposures as at 31 December 2017 £m	Net value of exposures as at 31 December 2016 £m	Average [a] net exposures as at the 31 December 2016 £m
1	Central governments or central banks	89,273	80,271	66,387	40,306
2	Institutions	27,301	24,781	25,990	28,837
3	Corporates	171,450	201,382	233,824	228,794
4	Of Which: Specialised Lending	6,799	9,558	10,199	11,298
5	Of Which: SMEs	20,648	22,055	25,329	25,966
6	Retail	237,808	242,330	254,568	254,198
7	Secured by real estate property	151,112	153,138	159,638	160,414
8	Of Which: SME	–	–	–	–
9	Of Which: Non-SMEs	151,112	153,138	159,638	160,414
10	Qualifying Revolving	71,998	72,962	75,115	74,910
11	Other Retail	14,697	16,252	19,816	18,874
12	Of Which: SME	7,767	8,172	9,083	8,788
13	Of Which: Non-SMEs	6,930	8,080	10,733	10,086
14	Equity	–	–	–	–
15	**Total IRB Approach**	525,832	548,764	580,769	552,135
16	Central governments or central banks	166,932	155,163	99,601	111,840
17	Regional governments or local authorities	666	854	611	538
18	Public sector entities	389	364	661	468
19	Multilateral development banks	3,863	4,805	5,884	5,372
20	International organisations	981	1,235	1,884	2,326
21	Institutions	5,096	5,746	10,508	9,518
22	Corporates	52,565	54,462	62,719	70,455
23	Of Which: SMEs	5,666	6,679	8,152	7,463
24	Retail	105,240	105,244	110,088	104,702
25	Of Which: SMEs	3,421	3,345	3,361	4,231
26	Secured by mortgages on immovable property	8,924	10,094	12,428	13,376
27	Of Which: SMEs	492	436	271	297
28	Exposures in default	2,359	2,382	2,784	2,573
29	Items associated with particularly high risk	1,762	1,939	1,927	2,034
30	Covered bonds	–	104	100	430
31	Claims on institutions and corporates with a short-term credit assessment	–	–	–	–
32	Collective investments undertakings	–	1	1	1
33	Equity exposures	38	150	475	499
34	Other exposures	4,282	3,880	3,922	3,456
35	Total standardised approach	353,097	346,423	313,593	327,588
36	**Total**	878,929	895,186	894,362	879,723

Note

a Averages are calculated from the past four quarters. This is to show intra-year fluctuations.

This table includes exposures subject to the IRB and Standardised approach. For details of key movements within these exposure classes please see Table 23.

Analysis of credit risk

Credit risk exposures

The following tables analyse credit risk exposures and risk weighted assets.

Table 25: Detailed view of exposure at default, post-CRM by business

This table shows exposure at default post-CRM by business and credit exposure class for credit risk.

EAD post-CRM credit exposure class				
As at 31 December 2017	Barclays UK £m	Barclays International £m	Head Office £m	Total £m
Credit risk				
Standardised approach				
Central governments or central banks	22,810	119,322	27,884	170,016
Regional governments or local authorities	95	484	–	579
Public sector entities	–	330	17	347
Multilateral development banks	666	3,197	–	3,863
International organisations	172	809	–	981
Institutions	586	3,724	162	4,472
Corporates	403	22,737	656	23,796
Retail	1,461	26,228	441	28,130
Secured by mortgages	2,890	5,939	77	8,906
Exposures in default	493	1,647	156	2,296
Items associated with high risk	67	742	818	1,627
Covered bonds	–	–	–	–
Securitisation positions	–	–	–	–
Collective investment undertakings	–	–	–	–
Equity positions	–	–	38	38
Other items	1,765	2,367	150	4,282
Total Standardised approach credit risk exposure	31,408	187,526	30,399	249,333
Advanced IRB approach				
Central governments or central banks	15,066	73,378	652	89,096
Institutions	8,173	15,168	194	23,535
Corporates	18,541	88,766	3,877	111,184
Retail				
– Small and medium-sized enterprises (SMEs)	8,931	75	215	9,221
– Secured by mortgages on immovable property	137,186	–	11,577	148,763
– Qualifying revolving retail	39,572	3,857	527	43,956
– Other retail	6,168	–	781	6,949
Equity	–	–	–	–
Securitisation positions	1,676	28,227	23	29,926
Non-credit obligation assets	1,377	5,248	2,437	9,062
Total Advanced IRB credit risk exposure	236,690	214,719	20,283	471,692
Total credit risk exposure	268,098	402,245	50,682	721,025

Analysis of credit risk

Table 25: Detailed view of exposure at default, post-CRM by business continued

As at 31 December 2016	Barclays UK £m	Barclays International £m	Head Office £m	Total Core £m	Barclays Non-Core £m	Total £m
Credit risk						
Standardised approach						
Central governments or central banks	28,118	58,951	6,326	93,395	6,928	100,323
Regional governments or local authorities	169	329	11	509	38	547
Public sector entities	151	228	175	554	18	572
Multilateral development banks	1,896	3,439	126	5,461	423	5,884
International organisations	605	1,104	40	1,749	135	1,884
Institutions	1,907	5,925	181	8,013	412	8,425
Corporates	559	27,490	3,334	31,383	1,372	32,755
Retail	1,777	27,112	2,068	30,957	456	31,413
Secured by mortgages	6,136	5,486	203	11,825	582	12,407
Exposures in default	577	1,565	189	2,331	256	2,587
Items associated with high risk	33	521	271	825	912	1,737
Covered bonds	1	2	–	3	97	100
Securitisation positions	–	–	–	–	–	–
Collective investment undertakings	–	–	–	–	1	1
Equity positions	–	–	334	334	141	475
Other items	1,690	1,899	278	3,867	55	3,922
Total Standardised approach credit risk exposure	43,619	134,051	13,536	191,206	11,826	203,032
Advanced IRB Approach						
Central governments or central banks	19,000	36,767	6,054	61,821	4,699	66,520
Institutions	1,676	11,006	1,305	13,987	9,702	23,689
Corporates	6,509	121,556	20,586	148,651	8,917	157,568
Retail						
– Small and medium-sized enterprises (SMEs)	7,231	157	1,737	9,125	–	9,125
– Secured by mortgages on immovable property	130,914	–	15,227	146,141	10,114	156,255
– Qualifying revolving retail	39,245	3,497	3,332	46,074	–	46,074
– Other retail	5,987	–	4,841	10,828	–	10,828
Equity	–	–	–	–	–	–
Securitisation positions	1,576	25,313	422	27,311	1,820	29,131
Non-credit obligation assets	1,777	7,476	2,548	11,801	496	12,297
Total Advanced IRB credit risk exposure	213,915	205,772	56,052	475,739	35,748	511,487
Total credit risk exposure	**257,534**	**339,823**	**69,588**	**666,945**	**47,574**	**714,519**

Exposure at default post-CRM increased by £6.5bn to £721.0bn. The key movements by business were as follows:

- Barclays UK increased by £10.6bn to £268.1bn, primarily driven by the reintegration of Non-Core related assets (ESHLA), partially offset by reduction in cash held at central banks
- Barclays International increased by £62.4bn to £402.2bn, primarily driven by cash held at central banks as the Group strengthened its liquidity position, offset by reduction in corporate lending and the depreciation of period end USD against GBP
- Head Office related exposures decreased by £18.9bn to £50.7bn, primarily driven by the proportional consolidation of BAGL, offset by the reintegration of Non-Core related assets
- Barclays Non-Core related assets have been rundown, with the remaining assets reintegrated into Core businesses as at 1 July 2017.

Analysis of credit risk

Table 26: Detailed view of credit risk RWAs by business

This table shows RWAs for credit risk by business, broken down by credit exposure class for credit risk in the banking book.

Risk weighted assets credit exposure class				
As at 31 December 2017	Barclays UK £m	Barclays International £m	Head Office £m	Total £m
Credit risk				
Standardised approach				
Central governments or central banks	–	3	405	408
Regional governments or local authorities	–	9	–	9
Public sector entities	–	88	17	105
Multilateral development banks	–	–	–	–
International organisations	–	–	–	–
Institutions	112	1,452	38	1,602
Corporates	410	21,606	559	22,575
Retail	1,095	19,765	226	21,086
Secured by mortgages	1,140	2,527	45	3,712
Exposures in default	627	1,946	200	2,773
Items associated with high risks	101	1,178	1,274	2,553
Covered bonds	–	–	–	–
Securitisation positions	–	–	–	–
Collective investment undertakings	–	–	–	–
Equity positions	–	–	94	94
Other items	326	484	49	859
Total Standardised approach credit risk exposure	3,811	49,058	2,907	55,776
Advanced IRB approach				
Central governments or central banks	567	2,909	87	3,563
Institutions	2,612	4,186	100	6,898
Corporates	5,387	48,057	2,168	55,612
Retail				
– Small and medium-sized enterprises (SMEs)	3,729	29	123	3,881
– Secured by mortgages on immovable property	16,327	–	3,706	20,033
– Qualifying revolving retail	18,190	1,528	291	20,009
– Other retail	6,121	–	518	6,639
Equity	–	–	–	–
Securitisation positions	171	3,893	4	4,068
Non-credit obligation assets	1,851	8,918	2,769	13,538
Total Advanced IRB credit risk exposure	54,955	69,520	9,766	134,241
Total credit risk weighted assets	58,766	118,578	12,673	190,017

Analysis of credit risk

Table 26 Detailed view of credit risk RWAs by business continued

Risk weighted assets credit exposure class

As at 31 December 2016	Barclays UK £m	Barclays International £m	Head Office £m	Total Core £m	Barclays Non-Core £m	Total £m
Credit risk						
Standardised approach						
Central governments or central banks	75	47	1,964	2,086	668	2,754
Regional governments or local authorities	–	13	–	13	–	13
Public sector entities	30	76	175	281	4	285
Multilateral development banks	–	–	–	–	–	–
International organisations	–	–	–	–	–	–
Institutions	376	1,755	143	2,274	117	2,391
Corporates	539	25,376	3,432	29,347	1,121	30,468
Retail	1,333	20,333	1,551	23,217	342	23,559
Secured by mortgages	2,264	2,334	152	4,750	215	4,965
Exposures in default	662	2,047	239	2,948	324	3,272
Items associated with high risk	49	682	402	1,133	1,515	2,648
Covered bonds	–	1	–	1	19	20
Securitisation positions	–	–	–	–	–	–
Collective investment undertakings	–	–	–	–	1	1
Equity positions	–	–	736	736	366	1,102
Other items	264	537	254	1,055	22	1,077
Total Standardised approach credit risk exposure	5,592	53,201	9,048	67,841	4,714	72,555
Advanced IRB approach	–	–	–	–	–	–
Central governments or central banks	1,049	2,166	2,150	5,365	281	5,646
Institutions	185	2,836	467	3,488	3,051	6,539
Corporates	3,549	59,817	11,119	74,485	1,871	76,356
Retail						
– Small and medium-sized enterprises (SMEs)	3,227	54	964	4,245	–	4,245
– Secured by mortgages on immovable property	16,043	–	4,012	20,055	3,622	23,677
– Qualifying revolving retail	17,052	1,472	1,799	20,323	–	20,323
– Other retail	6,479	–	3,496	9,975	–	9,975
Equity	–	–	–	–	–	–
Securitisation positions	192	3,063	44	3,299	247	3,546
Non-credit obligation assets	1,815	12,919	3,071	17,805	873	18,678
Total Advanced IRB credit risk exposure	49,591	82,327	27,122	159,040	9,945	168,985
Total credit risk weighted assets	55,183	135,528	36,170	226,881	14,659	241,540

Risk weighed assets decreased by £51.5bn to £190.0bn. The key movements by business were as follows:

- Barclays UK increased £3.6bn to £58.8bn primarily driven by the reintegration of Non-Core related assets (ESHLA)
- Barclays International decreased £16.9bn to £118.6bn primarily driven by the securitisation of corporate loans, the re-measurement of US DTAs as a result of the US Tax Cuts and Jobs Act, the depreciation of period end USD against GBP and reduction in corporate lending
- Head Office related assets decreased £23.5bn to £12.7bn primarily driven by the proportional consolidation of BAGL, offset by reintegration of Non-Core related assets
- Barclays Non-Core related assets have been rundown with the remaining assets reintegrated into Core businesses as at 1st July 2017.

Analysis of credit risk

Table 27: CRB-C Geographic analysis of credit exposure

This table shows exposure at default pre-CCF and CRM, broken down by credit exposure class and geographic location of the counterparty.

	As at 31 December 2017	United Kingdom £m	Europe £m	France £m	Germany £m	Italy £m	Luxembourg £m	Switzerland £m	Americas £m	United States £m	Africa and Middle East £m	South Africa £m	Asia £m	Japan £m	Total
1	Central governments or central banks	982	16,116	–	–	–	–	15,648	65,357	65,262	778	759	6,040	3,625	89,273
2	Institutions	13,792	3,894	2,112	356	6	293	89	5,831	4,961	662	145	3,122	2,170	27,301
3	Corporates	73,443	20,664	3,554	4,491	901	1,466	1,091	71,522	66,957	4,436	3,990	1,385	446	171,450
4	Retail	219,043	14,686	1	5,494	9,182	–	5	4	3	4,074	4,073	1	–	237,808
5	Equity	–	–	–	–	–	–	–	–	–	–	–	–	–	–
6	**Total IRB approach**	307,260	55,360	5,667	10,341	10,089	1,759	16,833	142,714	137,183	9,950	8,967	10,548	6,241	525,832
7	Central governments or central banks	103,013	58,726	17,646	34,155	1,047	–	505	3,932	3,924	1,187	170	74	22	166,932
8	Regional governments or local authorities	104	543	–	543	–	–	–	19	19	–	–	–	–	666
9	Public sector entities	55	177	24	–	3	–	–	45	26	17	–	95	–	389
10	Multilateral development banks	135	2,788	163	–	–	2,512	–	596	181	114	–	230	–	3,863
11	International organisations	–	981	–	–	–	981	–	–	–	–	–	–	–	981
12	Institutions	809	547	157	2	83	15	124	951	839	158	–	2,631	65	5,096
13	Corporates	16,255	11,631	2,136	1,561	1,531	734	663	18,673	14,539	2,994	107	3,012	76	52,565
14	Retail	13,620	5,002	125	1,516	14	33	58	85,737	85,390	840	176	41	–	105,240
15	Secured by mortgages on immovable property	5,733	1,927	662	41	43	175	96	752	69	394	21	118	7	8,924
16	Exposures in default	1,286	446	116	9	89	33	98	522	386	86	4	19	–	2,359
17	Items associated with particularly high risk	958	112	14	6	11	4	–	672	415	3	3	17	–	1,762
18	Covered bonds	–	–	–	–	–	–	–	–	–	–	–	–	–	–
19	Claims on institutions and corporates with a short-term credit assessment	–	–	–	–	–	–	–	–	–	–	–	–	–	–
20	Collective investment undertakings	–	–	–	–	–	–	–	–	–	–	–	–	–	–
21	Equity positions	–	–	–	–	–	–	–	–	–	38	38	–	–	38
22	Other items	2,950	1,263	–	–	28	2	71	–	–	50	7	19	–	4,282
23	**Total Standardised approach**	144,918	84,143	21,043	37,833	2,849	4,489	1,615	111,899	105,788	5,881	526	6,256	170	353,097
24	**Total**	452,178	139,503	26,710	48,174	12,938	6,248	18,448	254,613	242,971	15,831	9,493	16,804	6,411	878,929

Analysis of credit risk

Table 27: CRB-C Geographic analysis of credit exposure continued

	As at 31 December 2016	United Kingdom £m	Europe £m	France £m	Germany £m	Italy £m	Luxembourg £m	Switzerland £m	Americas £m	United States £m	Africa and Middle East £m	South Africa £m	Asia £m	Japan £m	Total
1	Central governments or central banks	941	17,879	–	–	67	–	17,350	31,429	31,273	4,970	4,802	11,168	9,298	66,387
2	Institutions	14,295	4,824	2,026	354	4	205	189	2,379	1,768	1,392	1,000	3,100	2,316	25,990
3	Corporates	83,214	28,249	4,623	5,371	1,384	2,304	1,488	94,650	87,861	25,458	23,976	2,253	425	233,824
4	Retail	212,561	15,061	1	5,061	9,987	–	5	6	4	26,938	26,938	2	–	254,568
5	Equity	–	–	–	–	–	–	–	–	–	–	–	–	–	–
6	**Total IRB approach**	311,011	66,013	6,650	10,786	11,442	2,509	19,032	128,464	120,906	58,758	56,715	16,523	12,039	580,769
7	Central governments or central banks	50,098	40,444	4,752	30,088	928	–	928	4,313	4,247	4,695	1,106	51	13	99,601
8	Regional governments or local authorities	76	525	4	521	–	–	–	10	10	–	–	–	–	611
9	Public sector entities	124	177	24	–	–	3	–	81	81	175	–	104	–	661
10	Multilateral development banks	80	3,978	51	–	–	3,826	–	1,385	1,297	203	–	238	–	5,884
11	International organisations	–	1,884	–	–	–	1,884	–	–	–	–	–	–	–	1,884
12	Institutions	2,457	2,491	287	1,623	80	18	152	1,908	1,753	202	1	3,450	84	10,508
13	Corporates	18,450	13,273	2,663	1,898	1,696	876	1,279	19,758	15,271	7,824	42	3,414	126	62,719
14	Retail	14,390	4,942	240	1,375	259	37	59	87,125	86,815	3,531	1,206	100	1	110,088
15	Secured by mortgages on immovable property	7,695	2,324	951	76	103	170	137	1,656	992	586	20	167	7	12,428
16	Exposures in default	1,146	552	119	8	174	25	82	788	547	270	38	28	–	2,784
17	Items associated with particularly high risk	707	159	14	64	10	–	–	1,014	755	3	3	44	2	1,927
18	Covered bonds	–	100	95	–	–	–	5	–	–	–	–	–	–	100
19	Claims on institutions and corporates with a short-term credit assessment	–	–	–	–	–	–	–	–	–	–	–	–	–	–
20	Collective investment undertakings	–	–	–	–	–	–	–	–	–	1	–	–	–	1
21	Equity positions	38	91	–	–	–	–	–	–	–	346	333	–	–	475
22	Other items	3,138	510	–	–	38	–	1	–	–	274	1	–	–	3,922
23	**Total Standardised approach**	98,399	71,450	9,200	35,653	3,288	6,839	2,643	118,038	111,768	18,110	2,750	7,596	233	313,593
24	**Total**	**409,410**	**137,463**	**15,850**	**46,439**	**14,730**	**9,348**	**21,675**	**246,502**	**232,674**	**76,868**	**59,465**	**24,119**	**12,272**	**894,362**

Exposures at default pre-CCF and CRM decreased by £15.4bn to £878.9bn. The key movements by geographical area were as follows:

- United Kingdom increased by £42.8bn to £452.2bn primarily driven by an increase in cash held at the central bank as the Group strengthened its liquidity position and increased exposure to the Bank of England Term Funding Scheme, offset by a reduction in corporate lending
- Africa and Middle East decreased by £61.0bn to £15.8bn primarily driven by the proportional consolidation of BAGL
- Americas increased by £8.1bn to £254.6bn primarily driven by an increase in cash held at the central bank as the Group strengthened its liquidity position, offset by the depreciation of period end USD against GBP and reduction in corporate in lending
- Asia decreased by £7.3bn to £16.8bn primarily driven by a reduction of Japanese central bank balances and Japanese government bonds
- Europe increased by £2.0bn to £139.5bn primarily driven by an increase in cash held at the central bank as the Group strengthened its liquidity position offset by the disposal of Non-Core related exposures.

Analysis of credit risk

Table 28: CRB-D Concentration of exposures by industry

This table shows exposure at default pre-CCF and CRM, broken down by credit exposure class and the industrial sector associated with the obligor or counterparty.

		Agriculture, forestry and fishing	Mining and quarrying	Manufacturing	Electricity, gas, steam and air conditioning supply	Water supply	Construction	Wholesale and retail trade	Transport and storage	Accommodation and food service activities	Information and communication	Real estate activities	Professional, scientific and technical activities	Administrative and support service activities	Public administration and defence, compulsory social security	Education	Human health services and social work activities	Arts, entertainment and recreation	Other services	Total
As at 31 December 2017		£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
1	Central Governments or central banks	–	–	–	–	–	–	–	–	–	–	–	–	–	89,060	156	2	–	55	89,273
2	Institutions	–	–	31	1,263	362	43	–	347	–	–	47	102	1	132	9,810	4,025	45	11,093	27,301
3	Corporates	3,484	10,127	33,356	12,036	1,349	4,685	13,168	8,871	3,731	6,017	27,543	13,340		7,058	885	6,810	2,917	16,073	171,450
4	Retail	1,775	5	360	5	1	457	1,246	168	560	31	1,322	588	–	545	74	388	181	230,102	237,808
5	Equity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
6	**Total IRB Approach**	5,259	10,132	33,747	13,304	1,712	5,185	14,414	9,386	4,291	6,048	28,912	14,030	1	96,795	10,925	11,225	3,143	257,323	525,832
7	Central governments or central banks	–	–	337	–	–	–	70	–	–	–	–	–	85	159,854	187	–	–	6,399	166,932
8	Regional governments or local authorities	–	–	–	9	–	–	–	–	–	–	–	–	–	24	557	–	–	76	666
9	Public sector entities	–	1	–	71	25	–	23	1	–	–	–	–	1	150	–	68	–	49	389
10	Multilateral development banks	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,863	3,863
11	International organisations	–	–	–	–	–	–	–	–	–	–	–	–	981	–	–	–	–	–	981
12	Institutions	–	–	17	–	–	–	4	–	–	–	–	–	2	–	11	26	–	5,036	5,096
13	Corporates	41	2,486	8,031	1,049	210	856	4,794	1,904	275	533	1,474	2,711	318	4,396	15	172	470	22,830	52,565
14	Retail	12	–	16	186	–	27	12	1	5	–	118	47	73	4	–	4	2	104,733	105,240
15	Secured by mortgages on immovable property	69	–	12	–	–	5	59	9	144	–	468	266	5	25	1	87	12	7,762	8,924
16	Exposures in default	105	34	49	33	1	1	176	12	38	11	199	75	18	153	4	70	28	1,352	2,359
17	Items associated with particularly high risk	–	425	19	29	4	14	59	–	–	1	1	22	–	10	31	–	5	1,142	1,762
18	Covered bonds	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
19	Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
20	Collective investments undertakings (CIU)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
21	Equity exposures	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	37	38
22	Other exposures	–	1	6	4	1	13	19	15	–	32	–	17	–	15	4	11	1	4,143	4,282
23	**Total Standardised approach**	227	2,947	8,487	1,381	241	916	5,216	1,942	462	577	2,260	3,138	1,484	164,631	810	438	518	157,422	353,097
24	**Total**	5,486	13,079	42,234	14,685	1,953	6,101	19,630	11,328	4,753	6,625	31,172	17,168	1,485	261,426	11,735	11,663	3,661	414,745	878,929

Analysis of credit risk

Table 28: Concentration of exposures by industry continued

	As at 31 December 2016	Agriculture, forestry and fishing £m	Mining and quarrying £m	Manufacturing £m	Electricity, gas, steam and air conditioning supply £m	Water supply £m	Construction £m	Wholesale and retail trade £m	Transport and storage £m	Accommodation and food service activities £m	Information and communication £m	Real estate activities £m	Professional, scientific and technical activities £m	Administrative and support service activities £m	Public administration and defence, compulsory social security £m	Education £m	Human health services and social work activities £m	Arts, entertainment and recreation £m	Other services £m	Total £m
1	Central Governments or central banks	–	–	14	–	–	–	–	–	–	463	–	–	–	65,821	69	20	–	–	66,387
2	Institutions	–	–	–	122	205	–	–	65	–	–	–	58	–	321	7,548	3,833	2	13,836	25,990
3	Corporates	6,060	14,653	44,162	16,982	1,495	5,559	15,490	9,688	4,807	10,770	33,635	13,894	3	12,792	3,315	7,558	2,955	30,006	233,824
4	Retail	1,476	623	454	6	1	541	1,171	242	580	22	1,419	625	–	1,615	71	383	147	245,192	254,568
5	Equity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
6	**Total IRB Approach**	7,536	15,276	44,630	17,110	1,701	6,100	16,661	9,995	5,387	11,255	35,054	14,577	3	80,549	11,003	11,794	3,104	289,034	580,769
7	Central governments or central banks	–	–	2,789	–	–	–	504	–	–	–	–	–	588	88,680	294	–	–	6,746	99,601
8	Regional governments or local authorities	–	–	–	10	–	–	–	–	–	–	1	–	–	525	2	–	–	73	611
9	Public sector entities	–	–	2	77	39	–	–	1	–	–	–	–	7	150	86	146	–	153	661
10	Multilateral development banks	–	–	–	–	–	–	–	–	–	–	–	–	88	–	–	–	–	5,796	5,884
11	International organisations	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1,884	1,884
12	Institutions	–	–	29	–	–	–	29	–	–	–	–	–	15	45	4	3	–	10,383	10,508
13	Corporates	2,342	393	9,503	914	227	904	6,456	2,188	315	781	2,048	2,675	1,180	5,029	21	263	408	27,072	62,719
14	Retail	1	1	20	672	–	162	14	2	1	–	542	30	467	4	–	2	–	108,170	110,088
15	Secured by mortgages on immovable property	16	25	25	1	–	8	17	4	67	–	688	276	35	35	11	80	15	11,125	12,428
16	Exposures in default	41	60	71	42	4	5	96	66	118	12	302	89	114	66	–	–	5	1,693	2,784
17	Items associated with particularly high risk	–	408	14	17	19	–	66	28	–	–	243	94	–	34	15	–	6	983	1,927
18	Covered bonds	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	100	100
19	Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
20	Collective investments undertakings(CIU)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1
21	Equity exposures	–	–	3	–	–	–	–	–	–	–	–	–	7	–	–	–	–	465	475
22	Other exposures	6	–	17	6	1	6	63	60	3	151	24	15	119	41	8	20	3	3,379	3,922
23	**Total Standardised approach**	2,406	887	12,473	1,739	290	1,085	7,245	2,349	504	944	3,848	3,179	2,620	94,609	441	514	437	178,023	313,593
24	**Total**	**9,943**	**16,162**	**57,103**	**18,849**	**1,991**	**7,185**	**23,906**	**12,344**	**5,891**	**12,198**	**38,902**	**17,755**	**2,624**	**175,157**	**11,443**	**12,308**	**3,542**	**467,059**	**894,362**

Exposures at default pre-CCF and CRM decreased by £15.4bn to £878.9bn. The key movements by industry sector were as follows:

- Manufacturing decreased £14.9bn to £42.2bn driven by the proportional consolidation of BAGL, the depreciation of period end USD against GBP and reduction in corporate lending
- Other Services decreased by £52.3bn to £414.7bn primarily driven by the proportional consolidation of BAGL, disposals of Non-Core exposures, the depreciation of period end USD against GBP and reduction in corporate lending
- Public administration and defence, compulsory social security increased by £86.2bn to £261.4bn primarily driven by an increase in cash held at Central Banks as the Group strengthened its liquidity position.

Analysis of credit risk

Table 29: CRB-E Residual maturity analysis of credit exposures

This table shows exposure at default pre-CCF and CRM, broken down by credit exposure class and residual maturity. Residual maturity is the remaining number of years before an obligation becomes due according to the existing terms of the agreement.

		Net Exposure Value					
As at December 2017		On Demand £m	< = 1 year £m	> 1 year < = 5 years £m	> 5 years £m	No stated maturity £m	Total £m
1	Central Governments or central banks	72,059	4,836	5,200	7,178	–	**89,273**
2	Institutions	3,786	5,464	7,523	10,528	–	**27,301**
3	Corporates	16,941	22,225	106,639	25,645	–	**171,450**
4	Retail	74,595	2,999	15,906	144,308	–	**237,808**
5	Equity	–	–	–	–	–	–
6	**Total IRB Approach**	167,381	35,524	135,268	187,659	–	**525,832**
7	Central governments or central banks	93,246	42,121	14,417	17,092	56	**166,932**
8	Regional governments or local authorities	70	43	533	20	–	**666**
9	Public sector entities	49	71	211	58	–	**389**
10	Multilateral development banks	–	502	2,431	930	–	**3,863**
11	International organisations	–	–	594	387	–	**981**
12	Institutions	156	4,528	210	202	–	**5,096**
13	Corporates	6,619	19,070	17,774	9,085	17	**52,565**
14	Retail	73,995	24,571	4,467	2,129	78	**105,240**
15	Secured by mortgages on immovable property	12	1,344	2,749	4,798	21	**8,924**
16	Exposures in default	94	1,042	968	255	–	**2,359**
17	Items associated with particularly high risk	–	407	456	–	899	**1,762**
18	Covered bonds	–	–	–	–	–	–
19	Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	–
20	Collective investments undertakings	–	–	–	–	–	–
21	Equity exposures	–	–	38	–	–	**38**
22	Other exposures	997	313	87	1,983	902	**4,282**
23	**Total standardised approach**	175,238	94,012	44,935	36,939	1,973	**353,097**
24	**Total**	**342,619**	**129,536**	**180,203**	**224,598**	**1,973**	**878,929**

Analysis of credit risk

Table 29: CRB-E Residual maturity analysis of credit exposures continued

		Net Exposure Value					
	As at December 2016	On Demand £m	< = 1 year £m	> 1 year < = 5 years £m	> 5 years £m	No stated maturity £m	Total £m
1	Central Governments or central banks	44,331	3,776	16,120	2,160	–	**66,387**
2	Institutions	3,865	6,029	5,755	10,341	–	**25,990**
3	Corporates	18,913	34,173	151,002	29,736	–	**233,824**
4	Retail	74,253	7,766	20,288	152,261	–	**254,568**
5	Equity	–	–	–	–	–	–
6	**Total IRB Approach**	141,362	51,744	193,165	194,498	–	**580,769**
7	Central governments or central banks	31,033	39,453	15,629	13,429	57	**99,601**
8	Regional governments or local authorities	65	13	511	22	–	**611**
9	Public sector entities	1	313	276	71	–	**661**
10	Multilateral development banks	–	298	3,847	1,739	–	**5,884**
11	International organisations	–	1,479	405	–	–	**1,884**
12	Institutions	604	7,924	1,392	588	–	**10,508**
13	Corporates	7,150	20,927	23,194	10,432	1,016	**62,719**
14	Retail	77,165	23,425	5,376	2,205	1,917	**110,088**
15	Secured by mortgages on immovable property	85	1,710	3,324	7,220	89	**12,428**
16	Exposures in default	127	1,561	736	260	100	**2,784**
17	Items associated with particularly high risk	30	399	305	4	1,189	**1,927**
18	Covered bonds	–	–	100	–	–	**100**
19	Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	–
20	Collective investments undertakings	1	–	–	–	–	**1**
21	Equity exposures	–	–	475	–	–	**475**
22	Other exposures	1,252	293	98	1,096	1,183	**3,922**
23	**Total standardised approach**	117,513	97,795	55,668	37,066	5,551	**313,593**
24	**Total**	**258,875**	**149,539**	**248,833**	**231,564**	**5,551**	**894,362**

Exposures at default pre-CCF and CRM decreased by £15.4n to £878.9bn. The key movements by residual maturity were as follows:

- On demand exposures increased £83.7bn to £342.6bn primarily driven by an increase in cash held at the Central Bank as the Group strengthened its liquidity position.
- Exposures with residual maturity of less than 1 year decreased £20.0bn to £129.5bn primarily driven by the depreciation of period end USD against GBP and reduction in corporate lending
- Exposures with a residual maturity of between 1 and 5 years decreased £68.6bn to £180.2bn primarily driven by the proportional consolidation of BAGL, the depreciation of period end USD against GBP and reduction in corporate lending.

Credit risk mitigation

Barclays employs a range of techniques and strategies to actively mitigate credit risks. Within the regulatory framework this is commonly referred to as credit risk mitigation (CRM) and is fully discussed on pages 147 of this document. In the case of collateral, the recognition of the mitigant is reflected through regulatory calculations in several different ways. This is dependent on the nature of the collateral and the underlying approach applied to the exposure.

Table 30: Exposures covered by guarantees and credit derivatives

This table shows the proportion of credit risk exposures, covered by funded credit protection and unfunded credit protection in the form of guarantees or credit derivatives.

Under the Standardised approach, the risk weight of the underlying exposure covered is substituted by that of the credit protection provider – generally a central government or institution. Any uncovered exposure is risk weighted using the normal framework. The below table has been populated post-substitution effect for Standardised approach.

Under the Advanced approach, Barclays typically recognises eligible collateral by reducing the modelled downturn loss given default (LGD) metric. The below table represents exposures covered by eligible collateral for Advanced calculations.

Financial collateral includes, but is not exclusive of, cash, debt securities, equities and gold, that can be used to directly reduce credit exposures subject to the Standardised approach. The impact of financial collateral CRM can be observed on pages 37 and 38, as a component of the difference between EAD pre-CRM and EAD-post-CRM.

Credit exposure class	Exposures covered by unfunded credit protection		Exposures covered by funded credit protection
	Standardised £m	Advanced IRB £m	Advanced IRB £m
As at 31 December 2017			
Central governments or central banks	–	213	146
Institutions	–	1,381	759
Corporates	65	4,329	31,398
Retail	–	4,379	410,476
Exposures in default	–	–	–
Items associated with high risk	–	–	–
Securitisation positions	–	–	–
Non-credit obligation assets	–	–	–
Total	65	10,302	442,779

Credit exposure class	Exposures covered by unfunded credit protection		Exposures covered by funded credit protection
	Standardised £m	Advanced IRB £m	Advanced IRB £m
As at 31 December 2016			
Central governments or central banks	–	334	117
Institutions	1,561	1,094	1,169
Corporates	520	7,445	42,116
Retail	–	4,559	437,457
Exposures in default	–	–	–
Items associated with high risk	75	–	–
Equity	–	–	–
Securitisation positions	–	–	–
Non-credit obligation assets	–	–	–
Total	2,156	13,432	480,859

The exposures covered by funded credit protection decreased £43.3bn to £453.1bn primarily driven by the proportional consolidation of BAGL.

Analysis of credit risk

Table 31: CR3 – CRM techniques

This table shows the use of CRM techniques broken down by loans and debt securities. This table includes unsecured and secured exposures including collateral, financial guarantees and credit derivatives for both Standardised and Internal rating based approach.

As at December 2017	Exposures unsecured – Carrying amount £m	Exposures to be secured £m	Exposures secured by collateral £m	Exposures secured by financial guarantees £m	Exposures secured by credit derivatives £m
1 Total loans	**407,546**	**207,808**	**203,120**	**4,402**	**286**
2 Total debt securities	**44,723**	**1,340**	**–**	**1,340**	**–**
3 **Total exposures**	**452,269**	**209,148**	**203,120**	**5,742**	**286**
4 Of which defaulted	**5,546**	**3,417**	**3,407**	**10**	**–**
As at December 2016					
1 Total loans	465,811	241,816	235,930	5,289	597
2 Total debt securities	24,179	–	–	–	–
3 **Total exposures**	489,990	241,816	235,930	5,289	597
4 Of which defaulted	5,955	4,976	4,964	12	–

- The total unsecured and secured exposure decreased £70.4bn to £661.4bn primarily driven by the proportional consolidation of BAGL and depreciation of period end USD against GBP
- Exposures secured by collateral decreased by £32.8bn to £203.1bn primarily due to the proportional consolidation of BAGL, partially offset by increased mortgage lending during the year.

Analysis of credit risk

Table 32: CR4 Standardised approach - CCF and CRM effects

This table shows the impact of CCF and CRM on "on balance sheet" and "off-balance sheet" exposure values, broken down by credit exposure class. This table includes exposures subject to the Standardised approach only.

The term 'before CCF and CRM' means the original gross exposures before the application of credit conversion factor and before the application of risk mitigation techniques.

		Exposures before CCF and CRM		Exposures post-CCF and CRM		RWA and RWA density	
		On-balance sheet amount £m	Off-balance sheet amount £m	On-balance sheet amount £m	Off-balance sheet amount £m	RWA £m	RWA density £m
	As at 31 December 2017						
1	Central governments or central banks	139,280	27,652	139,342	30,674	408	0%
2	Regional governments or local authorities	577	89	576	3	9	2%
3	Public sector entities	336	53	336	11	105	30%
4	Multilateral development banks	3,863	–	3,863	–	–	0%
5	International Organisations	981	–	981	–	–	0%
6	Institutions	3,942	1,154	3,902	570	1,602	36%
7	Corporates	21,208	31,356	14,047	9,749	22,575	95%
8	Retail	28,592	76,648	27,982	148	21,086	75%
9	Secured by mortgages on immovable property	8,889	36	8,889	17	3,712	42%
10	Exposures in default	2,255	104	2,231	65	2,773	121%
11	Items associated with particularly high risk	1,629	132	1,516	111	2,553	157%
12	Covered Bonds	–	–	–	–	–	0%
13	Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	0%
14	Claims in the form of CIU	–	–	–	–	–	0%
15	Equity exposures	38	–	38	–	94	250%
16	Other items	4,282	–	4,282	–	859	20%
17	**Total**	215,872	137,224	207,985	41,348	55,776	22%
	As at 31 December 2016						
1	Central governments or central banks	98,612	989	100,146	177	2,754	3%
2	Regional governments or local authorities	539	72	540	7	13	2%
3	Public sector entities	468	193	468	104	285	50%
4	Multilateral development banks	5,884	–	5,884	–	–	0%
5	International Organisations	1,884	–	1,884	–	–	0%
6	Institutions	9,542	966	8,042	383	2,391	28%
7	Corporates	29,520	33,199	21,712	11,043	30,468	93%
8	Retail	31,906	78,184	31,269	144	23,559	75%
9	Secured by mortgages on immovable property	12,344	84	12,344	63	4,965	40%
10	Exposures in default	2,467	317	2,430	157	3,272	126%
11	Items associated with particularly high risk	1,850	77	1,707	30	2,648	152%
12	Covered Bonds	100	–	100	–	20	20%
13	Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	0%
14	Claims in the form of CIU	1	–	1	–	1	100%
15	Equity exposures	475	–	475	–	1,102	232%
16	Other items	3,922	–	3,922	–	1,077	27%
17	**Total**	199,514	114,081	190,924	12,108	72,555	36%

Further information about the key drivers for pre-CCF and CRM exposures, post-CCF and CRM exposures and RWAs is provided in tables 23, 25 and 26.

Additionally, off-balance sheet exposures have increased primarily due to Barclays' drawdown of the Term Funding Scheme with the Bank of England.

Table 33: CR7– Effect on RWA of credit derivatives used as CRM techniques (IRB)

This table shows the effect of credit derivatives on the IRB approach to capital requirements' calculations. It assumes the absence of recognition of credit derivative as a CRM technique (pre – credit derivatives RWAs).

		Pre-credit derivatives RWAs		Actual RWAs	
		As at December 2017 £m	As at December 2016 £m	**As at December 2017 £m**	As at December 2016 £m
1	**Exposures under Foundation IRB**	–	–	–	–
2	Central governments and central banks	–	–	–	–
3	Institutions	–	–	–	–
4	Corporates – SME	–	–	–	–
5	Corporates – Specialised Lending	–	–	–	–
6	Corporates – Other	–	–	–	–
7	**Exposures under Advanced IRB**	**130,253**	165,601	**130,173**	165,439
8	Central governments and central banks	**3,563**	5,646	**3,563**	5,646
9	Institutions	**6,901**	6,539	**6,898**	6,539
10	Corporates – SME	**9,868**	13,108	**9,868**	13,108
11	Corporates – Specialised Lending	**4,241**	6,591	**4,241**	6,591
12	Corporates – Other	**41,580**	56,819	**41,503**	56,657
13	Retail – Secured by real estate SME	–	–	–	–
14	Retail – Secured by real estate non-SME	**20,033**	23,677	**20,033**	23,677
15	Retail – Qualifying revolving	**20,009**	20,323	**20,009**	20,323
16	Retail – Other SME	**3,881**	4,245	**3,881**	4,245
17	Retail – Other non-SME	**6,639**	9,975	**6,639**	9,975
18	Equity IRB	–	–	–	–
19	Other non credit-obligation assets	**13,538**	18,678	**13,538**	18,678
20	**Total**	**130,253**	165,601	**130,173**	165,439

The decrease in pre-credit derivative RWAs is consistent with the movement in RWA by business shown in table 26.

Credit quality analysis of Standardised exposures

Credit rating agencies

Under the Standardised approach, ratings assigned by External Credit Assessment Institutions (ECAIs) are used in the calculation of RWAs. The PRA determines which agencies may be used to determine the correct risk weight. Barclays uses ratings assigned by the following agencies for credit risk calculations:

- Standard & Poor's
- Moody's
- Fitch

These ratings are used in the calculation of risk weights for the central governments and central banks, institutions and corporate exposure classes[a].

Rated and unrated counterparties

The following section summarises the rules governing standardised calculations.

Each exposure must be assigned to one of six credit quality steps if a rating is available, as defined in the table below[b]. After assignment to a quality step, exposure class and maturity are then used to determine the risk weight percentage. Exposures cannot be assigned a risk weight lower than that of the sovereign risk of the country in which the asset is located. The following table is a simplified version of the risk weight allocation process.

Where a credit rating is not available, a default treatment is applied as specified by regulatory guidance. In most cases this default risk weight equates to that which is applied to credit quality step 3.

Table 34: Relationship of long-term external credit ratings to credit quality steps under the Standardised approach

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

Table 35: Credit quality steps and risk weights under the standardised approach

This table shows the prescribed risk weights associated with credit quality steps.

Credit Quality Step		Institution (includes banks)			
		Sovereign method	Credit assessment method		
	Corporates	Credit assessment method	Maturity > 3 months	Maturity 3 months or less	Central governments or central banks
Credit Quality Step 1	20%	20%	20%	20%	0%
Credit Quality Step 2	50%	50%	50%	20%	20%
Credit Quality Step 3	100%	100%	50%	20%	50%
Credit Quality Step 4	100%	100%	100%	50%	100%
Credit Quality Step 5	150%	100%	100%	50%	100%
Credit Quality Step 6	150%	150%	150%	150%	150%

Exposures to international organisations are generally assigned a risk weight of 0%.

If considered fully and completely secured by residential or commercial property, a retail exposure is assigned a risk weight of 35% or 50% respectively. If only partially secured, a more complex framework is applied. Other retail exposures are generally assigned a risk weight of 75%.

The unsecured portion of a past due exposure is assigned a risk weight of either 150% or 100%, depending on the specific credit risk adjustments recognised.

Items of high risk are assigned a risk weight of 150%, whereas Equity positions not subject to threshold calculations are generally assigned a risk weight of 100%.

Other Items are assigned a risk weight of 100%, unless they relate to cash in hand (0%) or items in the course of collection (20%).

Notes
a The rating agency DBRS is used to calculate risk weight for securitisation exposures only. Please see page 160 for further details.
b The mapping of external ratings to credit quality steps applicable as at year-end 2016 is found in Supervisory Statement SS10/13, published by the Prudential Regulation Authority in December 2013 (see http://www.bankofengland.co.uk/pra/Documents/publications/ss/2013/ss1013.pdf". Implementing technical standards that will update these mappings have been finalised by the Joint Committee of the three European Supervisory Authorities (EBA, ESMA and EIOPA) and are awaiting endorsement by the European Commission (see eba. europa.eu/regulation-and-policy/external-credit-assessment-institutions-ecai).

Analysis of credit risk

Table 36: CR5-A Analysis of exposures by asset classes and risk weight pre-CCF and CRM under the standardised approach

This table shows exposure at default pre-CRM, broken down by Credit Exposure Class and risk weight. This table includes exposures subject to the Standardised approach only.

EAD by asset classes and risk weights pre-CCF and CRM

		0% £m	2% £m	4% £m	10% £m	20% £m	35% £m	50% £m	70% £m	75% £m	100% £m	150% £m	250% £m	370% £m	1250% £m	Others £m	Deduc-ted £m	Total £m	of which: Unrated £m
As at 31 December 2017																			
1	Central governments or central banks	166,417	–	–	–	20	–	175	–	–	289	31	–	–	–	–	–	166,932	5,443
2	Regional governments or local authorities	545	–	–	–	112	–	–	–	–	9	–	–	–	–	–	–	666	123
3	Public sector entities	–	–	–	–	300	–	50	–	–	39	–	–	–	–	–	–	389	284
4	Multilateral development banks	3,863	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,863	–
5	International Organisations	981	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	981	–
6	Institutions	–	–	–	–	3,232	–	1,360	–	–	502	–	–	–	2	–	–	5,096	970
7	Corporates	–	–	–	–	694	–	3,759	–	–	47,454	655	–	–	2	–	–	52,564	43,520
8	Retail	–	–	–	–	–	–	–	–	105,238	2	–	–	–	–	–	–	105,240	105,240
9	Secured by mortgages on immovable property	–	–	–	–	–	7,856	2	–	260	806	–	–	–	–	–	–	8,924	8,924
10	Exposures in default	–	–	–	–	–	–	–	–	–	1,354	1,005	–	–	–	–	–	2,359	2,312
11	Items associated with particularly high risk	–	–	–	–	–	–	–	–	–	–	1,649	113	–	–	–	–	1,762	1,755
12	Covered Bonds	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
13	Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
14	Claims in the form of CIU	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
15	Equity exposures	–	–	–	–	–	–	–	–	–	–	–	38	–	–	–	–	38	38
16	Other items	1,674	–	–	–	2,190	–	–	–	–	418	–	–	–	–	–	–	4,282	4,276
17	Total	173,480	–	–	–	6,548	7,856	5,346	–	105,498	50,873	3,340	151	–	4	–	–	353,096	172,885

Analysis of credit risk

Table 36: CR5-A Analysis of exposures by asset classes and risk weight pre-CCF and CRM under the standardised approach continued

EAD by asset classes and risk weights pre-CCF and CRM

		0% £m	2% £m	4% £m	10% £m	20% £m	35% £m	50% £m	70% £m	75% £m	100% £m	150% £m	250% £m	370% £m	1250% £m	Total £m	of which: Unrated £m
As at 31 December 2016																	
1	Central governments or central banks	96,449	–	–	–	299	–	456	–	–	2,396	1	–	–	–	99,601	4,087
2	Regional governments or local authorities	521	–	–	–	80	–	–	–	–	10	–	–	–	–	611	89
3	Public sector entities	–	–	–	–	448	–	–	–	–	213	–	–	–	–	661	472
4	Multilateral development banks	5,884	–	–	–	–	–	–	–	–	–	–	–	–	–	5,884	–
5	International Organisations	1,884	–	–	–	–	–	–	–	–	–	–	–	–	–	1,884	–
6	Institutions	–	–	–	–	8,697	–	1,292	–	–	519	–	–	–	–	10,508	1,376
7	Corporates	–	–	–	–	2,012	–	3,061	–	–	57,110	536	–	–	–	62,719	52,399
8	Retail	–	–	–	–	–	–	–	–	110,058	32	–	–	–	–	110,090	110,090
9	Secured by mortgages on immovable property	–	–	–	–	–	11,268	21	–	431	708	–	–	–	–	12,428	12,296
10	Exposures in default	–	–	–	–	–	–	–	–	3	1,264	1,517	–	–	–	2,784	2,506
11	Items associated with particularly high risk	–	–	–	–	–	–	–	–	–	–	1,794	133	–	–	1,927	1,917
12	Covered Bonds	–	–	–	–	100	–	–	–	–	–	–	–	–	–	100	–
13	Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
14	Claims in the form of CIU	–	–	–	–	–	–	–	–	–	1	–	–	–	–	1	1
15	Equity exposures	–	–	–	–	–	–	–	–	–	–	99	364	12	–	475	475
16	Other items	1,331	–	–	–	1,893	–	–	–	–	698	–	–	–	–	3,922	3,916
17	**Total**	106,069	–	–	–	13,529	11,268	4,830	–	110,492	62,951	3,947	497	12	–	313,595	189,624

Standardised credit risk exposure pre-CCF and CRM increased by £39.5bn to £353.1bn primarily driven by cash held at central banks as the Group strengthened its liquidity position, partially offset by the proportional consolidation of BAGL.

Analysis of credit risk

Table 37: CR5-B Analysis of exposures by asset classes and risk weight post-CCF and CRM under the standardised approach

The difference between exposure at default pre-CRM set out in Table 36 and exposure at default post-CRM below is the impact of financial collateral and CCF as described in Table 32.

		0% £m	2% £m	4% £m	10% £m	20% £m	35% £m	50% £m	70% £m	75% £m	100% £m	150% £m	250% £m	370% £m	1250% £m	Total £m	of which: £m
As at 31 December 2017																	
1	Central governments or central banks	169,519	–	–	–	20	–	175	–	–	271	31	–	–	–	170,016	4,736
2	Regional governments or local authorities	545	–	–	–	32	–	–	–	–	2	–	–	–	–	579	36
3	Public sector entities	–	–	–	–	288	–	23	–	–	36	–	–	–	–	347	269
4	Multilateral development banks	3,863	–	–	–	–	–	–	–	–	–	–	–	–	–	3,863	–
5	International Organisations	981	–	–	–	–	–	–	–	–	–	–	–	–	–	981	–
6	Institutions	–	–	–	–	2,919	–	1,063	–	–	488	–	–	–	2	4,472	798
7	Corporates	–	–	–	–	350	–	1,762	–	–	21,353	329	–	–	2	23,796	19,408
8	Retail	–	–	–	–	–	–	–	–	28,128	2	–	–	–	–	28,130	28,130
9	Secured by mortgages on immovable property	–	–	–	–	–	7,850	2	–	257	797	–	–	–	–	8,906	8,905
10	Exposures in default	–	–	–	–	–	–	–	–	–	1,341	955	–	–	–	2,296	2,265
11	Items associated with particularly high risk	–	–	–	–	–	–	–	–	–	–	1,516	111	–	–	1,627	1,620
12	Covered Bonds	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
13	Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
14	Claims in the form of CIU	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
15	Equity exposures	–	–	–	–	–	–	–	–	–	–	–	38	–	–	38	38
16	Other items	1,674	–	–	–	2,190	–	–	–	–	418	–	–	–	–	4,282	4,276
17	Total	176,582	–	–	–	5,799	7,850	3,025	–	28,385	24,708	2,831	149	–	4	249,333	70,481

Analysis of credit risk

Table 37: CR5-B Analysis of exposures by asset classes and risk weight post-CCF and CRM under the standardised approach continued

		0% £m	2% £m	4% £m	10% £m	20% £m	35% £m	50% £m	70% £m	75% £m	100% £m	150% £m	250% £m	370% £m	1250% £m	Total £m	of which: Unrated £m
As at 31 December 2016																	
1	Central governments or central banks[1]	97,228	–	–	–	298	–	444	–	–	2,352	1	–	–	–	100,323	3,255
2	Regional governments or local authorities	522	–	–	–	15	–	–	–	–	10	–	–	–	–	547	25
3	Public sector entities	–	–	–	–	359	–	–	–	–	213	–	–	–	–	572	421
4	Multilateral development banks	5,884	–	–	–	–	–	–	–	–	–	–	–	–	–	5,884	–
5	International Organisations	1,884	–	–	–	–	–	–	–	–	–	–	–	–	–	1,884	–
6	Institutions	–	–	–	–	6,888	–	1,039	–	–	498	–	–	–	–	8,425	1,195
7	Corporates	–	–	–	–	1,564	–	1,907	–	–	28,872	412	–	–	–	32,755	26,394
8	Retail	–	–	–	–	–	–	–	–	31,410	3	–	–	–	–	31,413	31,413
9	Secured by mortgages on immovable property	–	–	–	–	–	11,256	21	–	428	702	–	–	–	–	12,407	12,275
10	Exposures in default	–	–	–	–	–	–	–	–	–	1,148	1,439	–	–	–	2,587	2,425
11	Items associated with particularly high risk	–	–	–	–	–	–	–	–	–	–	1,607	130	–	–	1,737	1,678
12	Covered Bonds	–	–	–	–	100	–	–	–	–	–	–	–	–	–	100	–
13	Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
14	Claims in the form of CIU	–	–	–	–	–	–	–	–	–	1	–	–	–	–	1	1
15	Equity exposures	–	–	–	–	–	–	–	–	–	–	99	364	12	–	475	475
16	Other items	1,331	–	–	–	1,893	–	–	–	–	698	–	–	–	–	3,922	3,916
17	**Total**	106,849	–	–	–	11,117	11,256	3,411	–	31,838	34,497	3,558	494	12	–	203,032	83,473

Standardised credit risk exposure post-CRM increased by £46.3bn to £249.3bn primarily driven by cash held at central banks as the Group strengthened its liquidity position, partially offset by the proportional consolidation of BAGL.

Credit quality analysis of IRB exposures

The following section provides breakdowns of inputs into risk weighted asset calculations. Please note that risk weights and risk factors may be volatile in granular breakdowns of wholesale exposures, especially in categories that are more sparsely populated. This is often due to the addition or removal of a relatively large exposure to or from narrow categories when its risk factors are different to the category average. This happens in the normal course of business, for instance, following new lending, repayments or syndications. See page 138 for a discussion of IRB models.

Table 38: Internal default grade probabilities and mapping to external ratings

The table below illustrates the approximate relationship between external rating agency grades and the PD bands for wholesale exposures. The EBA and internal Default Grade (DG) bands are based on TTC PD. Note that this relationship is dynamic and therefore, varies over time, region and industry.

EBA PD Band	Internal DG Band	Default Probability			Financial statements description	Moody's	Standard and Poor's
		>Min	Mid	<=Max			
0.00 to < 0.15	1	0.00%	0.01%	0.02%	Strong	Aaa, Aa1, Aa2	AAA, AA+
	2	0.02%	0.03%	0.03%		Aa3	AA
	3	0.03%	0.04%	0.05%		A1	AA-, A+
	4	0.05%	0.08%	0.10%		A2, A3	A, A-
	5	0.10%	0.13%	0.15%		Baa1	BBB+
0.15 to < 0.25	6	0.15%	0.18%	0.20%	Strong	Baa2	BBB+
	7	0.20%	0.23%	0.25%		Baa2	BBB
0.25 to < 0.50	8	0.25%	0.28%	0.30%	Strong	Baa3	BBB
	9	0.30%	0.35%	0.40%		Baa3	BBB-
	10	0.40%	0.45%	0.50%		Ba1	BBB-
0.50 to < 0.75	11	0.50%	0.55%	0.60%	Strong	Ba1	BB+
	12	0.60%	–	–		Ba2	BB+
0.75 to < 2.50	12	–	0.90%	1.20%	Satisfactory	Ba2	BB
	13	1.20%	1.38%	1.55%		Ba3	BB
	14	1.55%	1.85%	2.15%		Ba3	BB-
	15	2.15%	–	–		B1	BB-
2.50 to < 10.00	15	–	2.60%	3.05%	Satisfactory	B1	BB-
	16	3.05%	3.75%	4.45%		B2	B+
	17	4.45%	5.40%	6.35%		B2	B
	18	6.35%	7.50%	8.65%		B3	B
	19	8.65%	10.00%	–		B3	B-
10.00 to < 100.00	19	–	–	11.35%	Higher risk	B3	B-
	20	11.35%	15.00%	18.65%		Caa1	CCC+
	21	18.65%	30.00%	100.00%		Caa2, Caa3, Ca, C	CCC, CCC-, CC+, CC, C
100.00 (Default)						D	D

A-IRB obligor grade disclosure

The following tables show credit risk exposure at default post-CRM for the advanced IRB approach and foundation IRB approach for portfolios within both the trading and banking books. Separate tables are provided for the following credit exposure classes: central governments and central banks (Table 39), institutions (Table 40), corporates (Table 41), corporates subject to slotting (Table 43), Retail SME (Table 44), secured by mortgages on immovable property (Table 45), revolving retail (Table 46) and other retail (Table 47).

Barclays' Model Risk Management group reviews and approves the application of post model adjustments to models that do not fully reflect the risk of the underlying exposures.

Table 39: CR6 Credit risk exposures by exposure class and PD range for central governments and central banks AIRB

	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	RWA £m	RWA Density %	EL £m	Value Adjust-ment and Provisions £m
As at 31 December 2017												
0.00 to < 0.15	**87,706**	**836**	**87.8%**	**88,372**	**0.0%**	**85**	**45.0%**	**1.5**	**3,250**	**3.7%**	**3**	
0.15 to < 0.25	**2**	**1**	**49.8%**	**2**	**0.2%**	**7**	**45.3%**	**5.4**	**1**	**52.3%**	**–**	
0.25 to < 0.50	**710**	**–**	**–**	**710**	**0.4%**	**7**	**31.8%**	**1.7**	**298**	**42.0%**	**1**	
0.50 to < 0.75	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	
0.75 to < 2.50	**5**	**6**	**50.9%**	**8**	**1.4%**	**4**	**45.0%**	**0.8**	**7**	**91.3%**	**–**	
2.50 to < 10.00	**3**	**5**	**0.0%**	**4**	**5.4%**	**7**	**45.2%**	**9.7**	**7**	**193.3%**	**–**	
10.00 to < 100.00	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	
100.00 (Default)	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	
Total	**88,426**	**848**	**83.2%**	**89,096**	**0.0%**	**110**	**44.9%**	**1.5**	**3,563**	**4.0%**	**4**	**–**
As at 31 December 2016												
0.00 to < 0.15	64,586	846	95.4%	65,579	0.0%	46	44.8%	2.1	5,219	8.0%	7	
0.15 to < 0.25	345	6	53.6%	348	0.2%	20	45.0%	1.7	30	8.5%	–	
0.25 to < 0.50	408	4	60.3%	410	0.4%	27	45.0%	1.6	241	58.8%	1	
0.50 to < 0.75	–	–	–	–	–	–	–	–	–	–	–	
0.75 to < 2.50	152	18	48.5%	161	0.9%	9	45.0%	1.0	124	77.0%	1	
2.50 to < 10.00	21	1	51.5%	22	5.3%	23	45.0%	10.6	32	143.6%	1	
10.00 to < 100.00	–	–	–	–	–	–	–	–	–	–	–	
100.00 (Default)	–	–	–	–	–	–	–	–	–	–	–	
Total	65,512	875	93.9%	66,520	0.0%	125	44.6%	2.1	5,646	8.5%	10	(1)

The exposure weighted average risk weight associated with IRB exposures to central governments and central banks decreased 4.5% to 4.0%. This is primarily due to an increase in cash held at central banks as the Group strengthened its liquidity position.

Analysis of credit risk

Table 40: CR6 Credit risk exposures by exposure class and PD range for institutions

	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[a]	Average LGD %	Average Maturity Years	RWA £m	RWA Density %	EL £m	Value Adjust-ment and Provisions £m
As at 31 December 2017												
0.00 to < 0.15	**18,857**	**6,023**	**57.5%**	**21,475**	**0.0%**	**1,003**	**41.6%**	**19.4**	**4,851**	**22.6%**	**4**	
0.15 to < 0.25	**452**	**87**	**18.3%**	**408**	**0.2%**	**82**	**30.9%**	**3.0**	**141**	**34.5%**	**–**	
0.25 to < 0.50	**399**	**100**	**59.2%**	**449**	**0.4%**	**132**	**51.3%**	**4.3**	**354**	**78.8%**	**1**	
0.50 to < 0.75	**148**	**65**	**46.5%**	**193**	**0.6%**	**76**	**43.5%**	**4.2**	**156**	**80.6%**	**–**	
0.75 to < 2.50	**298**	**36**	**54.4%**	**318**	**1.4%**	**201**	**48.0%**	**2.4**	**388**	**122.1%**	**2**	
2.50 to < 10.00	**366**	**160**	**53.0%**	**442**	**3.9%**	**124**	**40.1%**	**8.3**	**653**	**147.6%**	**7**	
10.00 to < 100.00	**18**	**49**	**39.5%**	**32**	**21.5%**	**33**	**32.0%**	**4.1**	**54**	**168.9%**	**2**	
100.00 (Default)	**198**	**46**	**56.7%**	**218**	**100.0%**	**29**	**18.1%**	**9.2**	**301**	**138.1%**	**15**	
Total	**20,736**	**6,566**	**52.7%**	**23,535**	**1.1%**	**1,680**	**41.5%**	**18.1**	**6,898**	**29.3%**	**31**	**(2)**
As at 31 December 2016												
0.00 to < 0.15	20,966	2,630	56.7%	21,826	0.0%	732	40.5%	19.8	4,667	21.4%	4	
0.15 to < 0.25	513	58	12.6%	226	0.2%	52	47.7%	4.1	133	58.6%	–	
0.25 to < 0.50	265	94	79.6%	333	0.4%	39	42.8%	4.1	272	81.5%	1	
0.50 to < 0.75	48	38	59.6%	71	0.7%	26	48.4%	5.3	107	150.9%	–	
0.75 to < 2.50	581	36	50.9%	554	1.1%	67	42.7%	1.3	539	97.3%	3	
2.50 to < 10.00	419	121	49.8%	480	6.4%	106	28.6%	6.0	528	110.0%	7	
10.00 to < 100.00	19	13	25.8%	24	16.4%	31	23.1%	8.0	30	131.0%	1	
100.00 (Default)	157	31	56.8%	175	100.0%	26	17.4%	12.8	263	150.1%	9	
Total	22,968	3,021	55.4%	23,689	1.0%	1,079	40.2%	18.6	6,539	27.6%	25	(3)

Note
a Includes BAGL's total number of obligors

The exposure weighted average risk weight associated with advanced IRB exposures to financial institutions increased 1.7% to 29.3%. This is driven by immaterial movements across various counterparties within higher quality default bands.

Analysis of credit risk

Table 41: CR6 Credit risk exposures by exposure class and PD range for corporates

	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 [a]	Average LGD %	Average Maturity Years	RWA £m	RWA Density %	EL £m	Value Adjust-ment and Provisions £m
As at 31 December 2017												
0.00 to < 0.15	**23,814**	**66,890**	**49.0%**	**54,960**	**0.1%**	**8,096**	**36.2%**	**7.5**	**12,380**	**22.6%**	**13**	
0.15 to < 0.25	**5,693**	**8,006**	**46.5%**	**9,059**	**0.2%**	**4,066**	**41.2%**	**5.0**	**4,325**	**47.7%**	**7**	
0.25 to < 0.50	**7,061**	**9,488**	**49.3%**	**11,350**	**0.4%**	**11,212**	**42.1%**	**3.5**	**7,143**	**62.9%**	**17**	
0.50 to < 0.75	**3,718**	**4,095**	**51.7%**	**5,451**	**0.6%**	**6,359**	**37.2%**	**5.8**	**3,786**	**69.5%**	**12**	
0.75 to < 2.50	**8,249**	**8,784**	**39.0%**	**11,243**	**1.4%**	**23,408**	**31.9%**	**4.0**	**8,852**	**78.7%**	**49**	
2.50 to < 10.00	**5,535**	**7,963**	**43.0%**	**9,017**	**4.4%**	**62,251**	**32.0%**	**3.9**	**9,437**	**104.7%**	**125**	
10.00 to < 100.00	**1,576**	**2,137**	**44.5%**	**2,379**	**20.4%**	**3,598**	**33.9%**	**3.4**	**3,795**	**159.6%**	**175**	
100.00 (Default)	**1,312**	**330**	**54.2%**	**1,518**	**100.0%**	**1,887**	**35.3%**	**4.5**	**1,686**	**111.0%**	**418**	
Total	**56,958**	**107,693**	**47.0%**	**104,977**	**2.6%**	**120,877**	**36.4%**	**6.0**	**51,404**	**49.0%**	**816**	**(757)**
As at 31 December 2016												
0.00 to < 0.15	34,175	86,801	51.0%	74,763	0.1%	3,124	34.8%	6.3	16,743	22.4%	19	
0.15 to < 0.25	9,704	11,014	54.3%	14,316	0.2%	1,535	39.4%	4.2	6,376	44.5%	11	
0.25 to < 0.50	11,229	12,401	53.8%	16,595	0.4%	6,850	38.0%	3.2	9,432	56.8%	23	
0.50 to < 0.75	5,733	6,586	56.9%	8,541	0.6%	5,196	37.7%	4.0	6,171	72.3%	20	
0.75 to < 2.50	9,836	12,011	47.9%	15,114	1.4%	19,956	33.8%	3.7	12,131	80.3%	72	
2.50 to < 10.00	10,693	8,913	58.4%	15,338	4.4%	28,565	28.8%	3.2	13,878	90.5%	191	
10.00 to < 100.00	1,315	724	47.0%	1,642	19.7%	3,396	33.6%	3.1	2,562	156.0%	109	
100.00 (Default)	1,771	720	45.7%	2,052	100.0%	2,462	31.9%	3.0	2,472	120.5%	492	
Total	84,456	139,170	52.3%	148,361	2.3%	71,084	35.0%	5.0	69,765	47.0%	937	(767)

Note
a Includes BAGL's total number of obligors

The exposure weighted average risk weight associated with IRB exposures to corporates increased 2.0% to 49.0%. This is primarily driven by repayment of corporate loans with lower risk weights compared to the average risk weight of the corporate book, credit protection obtained against corporate/SME loans and the proportional consolidation of BAGL.

Analysis of credit risk

Table 42: CR6 Credit risk exposures by exposure class and PD range for corporate of which: SMEs

	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 [a]	Average LGD %	Average Maturity Years	RWA £m	RWA Density %	EL £m	Value Adjust-ment and Provisions £m
As at 31 December 2017												
0.00 to < 0.15	4,419	1,202	50.0%	4,989	0.1%	4,338	22.9%	14.1	862	17.3%	1	
0.15 to < 0.25	1,368	318	48.2%	1,488	0.2%	2,812	33.0%	15.5	558	37.5%	1	
0.25 to < 0.50	1,900	564	53.0%	2,112	0.4%	8,736	33.8%	5.8	858	40.6%	3	
0.50 to < 0.75	1,280	314	56.0%	1,436	0.6%	5,073	32.1%	5.4	678	47.2%	3	
0.75 to < 2.50	3,437	696	50.5%	3,746	1.4%	17,372	31.7%	5.3	2,265	60.5%	17	
2.50 to < 10.00	2,736	624	36.2%	3,009	4.4%	58,125	34.4%	4.9	2,627	87.3%	45	
10.00 to < 100.00	1,054	136	49.6%	917	24.4%	2,990	35.4%	5.4	1,229	134.1%	85	
100.00 (Default)	549	52	14.0%	556	100.0%	1,594	27.3%	3.6	791	142.3%	111	
Total	16,743	3,906	46.5%	18,253	5.4%	101,040	30.2%	8.5	9,868	54.1%	266	(218)
As at 31 December 2016												
0.00 to < 0.15	4,867	1,106	70.3%	5,618	0.1%	895	20.0%	15.1	1,043	18.6%	1	
0.15 to < 0.25	1,530	276	82.3%	1,748	0.2%	730	28.3%	12.1	600	34.4%	1	
0.25 to < 0.50	2,256	601	76.3%	2,700	0.4%	5,249	31.0%	5.3	1,105	40.9%	3	
0.50 to < 0.75	1,656	500	75.4%	2,028	0.6%	4,236	32.9%	4.4	1,071	52.8%	4	
0.75 to < 2.50	4,077	1,353	69.7%	5,031	1.3%	16,763	33.1%	5.8	3,205	63.7%	23	
2.50 to < 10.00	4,344	1,175	62.7%	5,017	4.2%	25,726	33.6%	4.3	4,264	85.0%	73	
10.00 to < 100.00	682	174	45.1%	760	19.6%	2,807	34.3%	4.6	1,022	134.6%	52	
100.00 (Default)	637	93	36.2%	658	100.0%	2,136	31.7%	3.7	798	121.4%	159	
Total	20,049	5,278	68.8%	23,560	4.7%	58,542	29.5%	7.9	13,108	55.6%	316	(218)

Note
a Includes BAGL's total number of obligors

The exposure weighted average risk weight associated with IRB exposures to corporate SME decreased 1.5% to 54.1%. This is primarily driven by the proportional consolidation of BAGL, partially offset by the implementation of a new grading model.

Analysis of credit risk

Table 43: CR10 Specialised lending subject to the slotting approach

Specialised lending exposures where a PD cannot be estimated are subject to slotting approach. The approach is applied to financing of individual projects where the repayment is highly dependent on the performance of the underlying pool or collateral. It uses a standard set of rules for the calculation of RWAs, based upon an assessment of factors such as the financial strength of the counterparty. The requirements for the application of the Slotting approach are detailed in CRR article 153.

Regulatory categories		Remaining maturity	On-balance sheet amount £m	Off-balance sheet amount £m	Risk weight %	Exposure amount £m	RWA £m	Expected losses £m
As at 31 December 2017								
Category 1	Strong	Less than 2.5 years	**1,312**	**452**	**50%**	**1,538**	**769**	**–**
		Equal to or more than 2.5 years	**2,124**	**369**	**70%**	**2,361**	**1,653**	**9**
Category 2	Good	Less than 2.5 years	**789**	**142**	**70%**	**855**	**598**	**3**
		Equal to or more than 2.5 years	**536**	**249**	**90%**	**698**	**628**	**6**
Category 3	Satisfactory	Less than 2.5 years	**168**	**9**	**115%**	**171**	**196**	**5**
		Equal to or more than 2.5 years	**222**	**2**	**115%**	**222**	**255**	**6**
Category 4	Weak	Less than 2.5 years	**13**	**–**	**250%**	**13**	**32**	**1**
		Equal to or more than 2.5 years	**31**	**–**	**250%**	**31**	**77**	**2**
Category 5	Default	Less than 2.5 years	**205**	**14**	**0%**	**196**	**–**	**98**
		Equal to or more than 2.5 years	**120**	**5**	**0%**	**122**	**–**	**61**
Total		Less than 2.5 years	**2,487**	**617**		**2,773**	**1,595**	**107**
		Equal to or more than 2.5 years	**3,033**	**625**		**3,434**	**2,613**	**84**
As at 31 December 2016								
Category 1	Strong	Less than 2.5 years	1,651	332	50%	1,922	961	–
		Equal to or more than 2.5 years	2,940	645	70%	3,517	2,462	14
Category 2	Good	Less than 2.5 years	1,719	180	70%	1,242	869	5
		Equal to or more than 2.5 years	912	277	90%	1,288	1,159	10
Category 3	Satisfactory	Less than 2.5 years	298	74	115%	328	377	9
		Equal to or more than 2.5 years	397	157	115%	468	538	13
Category 4	Weak	Less than 2.5 years	35	4	250%	37	92	3
		Equal to or more than 2.5 years	53	–	250%	54	133	4
Category 5	Default	Less than 2.5 years	270	27	0%	255	–	128
		Equal to or more than 2.5 years	97	2	0%	98	–	49
Total		Less than 2.5 years	3,973	617		3,784	2,299	145
		Equal to or more than 2.5 years	4,399	1,081		5,425	4,292	90

The decrease in exposures subject to the slotting approach across multiple risk weight buckets is primarily driven by the securitisation of corporate loans previously treated under the slotting approach.

Please refer to page 105 for further details on exposures subject to the securitisation treatment.

Analysis of credit risk

Table 44: CR6 Credit risk exposures by exposure class and PD range for retail SME

	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[a]	Average LGD %	Average Maturity Years	RWA £m	RWA Density %	EL £m	Value Adjust-ment and Provisions £m
As at 31 December 2017												
0.00 to < 0.15	45	37	1302%	738	0.1%	467,205	52.2%	1.5	71	9.6%	–	
0.15 to < 0.25	128	65	363%	369	0.2%	120,361	44.4%	4.5	58	15.7%	–	
0.25 to < 0.50	465	217	172%	863	0.4%	227,859	39.4%	6.3	171	19.8%	1	
0.50 to < 0.75	490	188	126%	734	0.6%	125,325	33.8%	7.7	165	22.5%	2	
0.75 to < 2.50	1,926	631	118%	2,704	1.5%	371,796	35.3%	7.9	920	34.0%	14	
2.50 to < 10.00	1,521	382	124%	2,036	4.8%	285,568	40.2%	7.0	1,016	49.9%	40	
10.00 to < 100.00	918	68	244%	1,095	26.7%	118,064	34.6%	6.3	692	63.2%	121	
100.00 (Default)	654	33	80%	682	100.0%	46,313	23.2%	8.2	788	115.5%	105	
Total	6,147	1,621	174%	9,221	12.2%	1,762,491	37.4%	6.7	3,881	42.1%	283	(98)
As at 31 December 2016												
0.00 to < 0.15	1,284	387	97.1%	1,685	0.1%	121,725	26.5%	8.9	212	12.6%	3	
0.15 to < 0.25	339	152	99.8%	491	0.2%	14,463	36.1%	8.0	103	21.1%	1	
0.25 to < 0.50	596	264	97.9%	868	0.4%	51,985	38.1%	7.4	226	26.0%	3	
0.50 to < 0.75	533	213	98.9%	750	0.6%	27,834	39.5%	7.5	224	29.9%	3	
0.75 to < 2.50	1,557	511	95.3%	2,079	1.4%	111,553	39.0%	6.9	928	44.6%	32	
2.50 to < 10.00	1,774	382	89.7%	2,159	4.1%	111,636	43.7%	5.6	1,346	62.3%	42	
10.00 to < 100.00	516	66	95.0%	585	23.5%	104,722	47.0%	6.4	564	96.6%	73	
100.00 (Default)	489	20	98.1%	508	100.0%	30,652	23.9%	7.9	642	126.4%	73	
Total	7,088	1,995	95.6%	9,125	8.5%	574,570	37.3%	7.1	4,245	46.5%	230	(198)

Note
a Includes BAGL's total number of obligors

The exposure weighted average risk weight associated with advanced IRB exposure to retail SMEs decreased by 4.4% to 42.1%. This is primarily driven by the proportional consolidation of BAGL offset by the implementation of a new grading model.

Movement in average CCF % and the increase in the number of obligors are driven by the implementation of a new grading model which captures EAD for potential future borrowings.

Analysis of credit risk

Table 45: CR6 Credit risk exposures by exposure class and PD range for secured by mortgages on immovable property

	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 [a]	Average LGD %	Average Maturity Years	RWA £m	RWA Density %	EL £m	Value Adjust-ment and Provisions £m
As at 31 December 2017												
0.00 to < 0.15	29,237	2,345	98.8%	31,233	0.1%	184,624	11.7%	20.4	1,431	4.6%	13	
0.15 to < 0.25	18,821	1,772	90.9%	19,948	0.2%	151,452	9.5%	16.6	1,047	5.2%	8	
0.25 to < 0.50	35,280	3,305	90.9%	37,663	0.4%	260,722	10.0%	16.8	2,602	6.9%	16	
0.50 to < 0.75	20,453	986	82.9%	21,147	0.6%	146,938	10.0%	16.8	2,085	9.9%	15	
0.75 to < 2.50	22,892	1,132	74.8%	23,851	1.2%	161,471	12.5%	16.1	4,601	19.3%	42	
2.50 to < 10.00	8,656	211	85.4%	8,900	4.6%	48,759	14.4%	15.7	4,217	47.4%	63	
10.00 to < 100.00	3,912	112	98.4%	4,031	30.4%	29,279	10.1%	11.2	2,431	60.3%	220	
100.00 (Default)	1,992	6	41.3%	1,991	100.0%	17,337	18.9%	7.4	1,619	81.3%	326	
Total	141,243	9,869	88.6%	148,764	2.9%	1,000,582	11.1%	17.1	20,033	13.5%	703	(415)
As at 31 December 2016												
0.00 to < 0.15	7,872	70	99.6%	8,199	0.1%	95,020	20.4%	17.0	1,162	14.2%	13	
0.15 to < 0.25	2,995	951	84.5%	3,702	0.2%	37,553	15.4%	15.5	487	13.2%	6	
0.25 to < 0.50	34,727	3,923	90.2%	37,213	0.4%	239,184	10.0%	15.7	2,264	6.1%	17	
0.50 to < 0.75	38,531	2,899	89.1%	40,053	0.6%	272,760	9.9%	15.9	3,745	9.4%	28	
0.75 to < 2.50	49,771	3,114	82.1%	52,301	1.2%	301,690	13.1%	17.6	8,299	15.9%	90	
2.50 to < 10.00	9,990	642	82.4%	10,650	3.7%	26,767	14.6%	15.3	4,362	41.0%	70	
10.00 to < 100.00	1,597	46	95.8%	1,672	33.7%	8,548	14.2%	13.1	1,468	87.8%	179	
100.00 (Default)	2,502	9	32.7%	2,465	100.0%	13,256	20.4%	9.1	1,890	76.7%	381	
Total	147,985	11,654	87.5%	156,255	2.9%	994,778	12.2%	16.3	23,677	15.2%	784	(533)

Note
a Includes BAGL's total number of obligors

The exposure weighted average risk weight associated with advanced IRB exposure to retail secured by mortgage on immovable property decreased by 1.7% to 13.5% This is primarily driven by the proportional consolidation of BAGL, partly offset by model updates in Barclays UK Mortgages.

Analysis of credit risk

Table 46: CR6 Credit risk exposures by exposure class and PD range for revolving retail

	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 [a]	Average LGD %	Average Maturity Years	RWA £m	RWA Density %	EL £m	Value Adjust-ment and Provisions £m
As at 31 December 2017												
0.00 to < 0.15	1,017	22,675	52.0%	13,949	0.1%	10,873,580	78.5%	13.3	470	3.4%	7	
0.15 to < 0.25	800	6,547	16.9%	3,226	0.2%	1,883,169	77.1%	5.1	284	8.8%	5	
0.25 to < 0.50	1,667	8,284	12.4%	4,563	0.4%	2,264,756	76.8%	5.8	660	14.5%	14	
0.50 to < 0.75	1,497	4,457	8.2%	2,955	0.6%	1,209,685	77.2%	8.4	701	23.7%	17	
0.75 to < 2.50	5,247	7,639	9.4%	8,281	1.4%	2,706,695	77.2%	9.8	3,593	43.4%	106	
2.50 to < 10.00	5,756	2,861	33.0%	7,567	5.0%	1,745,275	75.6%	4.0	7,347	97.1%	301	
10.00 to < 100.00	1,897	216	10.1%	2,195	22.8%	529,816	75.3%	38.7	4,191	190.9%	389	
100.00 (Default)	1,220	218	0.0%	1,220	100.0%	341,885	77.8%	89.9	2,763	226.6%	761	
Total	19,101	52,897	24.0%	43,956	5.2%	21,554,861	77.2%	12.7	20,009	45.5%	1,600	(1,234)
As at 31 December 2016												
0.00 to < 0.15	852	21,785	53.5%	13,397	0.1%	10,530,249	78.1%	11.0	472	3.5%	8	
0.15 to < 0.25	765	6,766	18.0%	3,305	0.2%	1,896,207	76.4%	4.9	286	8.7%	5	
0.25 to < 0.50	1,657	8,631	13.2%	4,729	0.4%	2,285,721	75.5%	4.7	661	14.0%	14	
0.50 to < 0.75	1,459	4,594	8.5%	2,971	0.6%	1,229,233	75.9%	5.7	706	23.8%	17	
0.75 to < 2.50	5,887	8,254	9.7%	9,266	1.4%	2,836,510	75.1%	10.8	3,872	41.8%	114	
2.50 to < 10.00	6,643	3,892	27.8%	8,746	4.9%	1,803,893	71.7%	3.2	7,876	90.1%	317	
10.00 to < 100.00	1,861	268	8.2%	2,167	23.1%	511,265	72.1%	35.1	3,923	181.0%	374	
100.00 (Default)	1,493	309	0.0%	1,493	100.0%	379,026	74.8%	74.0	2,527	169.3%	945	
Total	20,617	54,499	24.4%	46,074	5.7%	21,472,104	75.4%	11.2	20,323	44.1%	1,794	(1,398)

Note
a Includes BAGL's total number of obligors

The exposure weighted average risk weight associated with advanced IRB exposures to qualifying revolving retail, mainly comprising credit cards and overdrafts, increased by 1.4% to 45.5%, mainly driven by higher average loss given default within the lower quality default grades.

The exposure decrease is primarily driven by the proportional consolidation of BAGL.

Analysis of credit risk

Table 47: CR6 Credit risk exposures by exposure class and PD range for other retail exposures

	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 [a]	Average LGD %	Average Maturity Years	RWA £m	RWA Density %	EL £m	Value Adjust-ment and Provisions £m
As at 31 December 2017												
0.00 to < 0.15	3	1	112.9%	5	0.1%	617	61.7%	2.4	1	13.3%	–	
0.15 to < 0.25	29	10	117.5%	54	0.2%	2,904	46.1%	1.5	11	19.7%	–	
0.25 to < 0.50	425	1	93.7%	427	0.4%	53,787	88.1%	3.5	239	56.0%	2	
0.50 to < 0.75	826	–	99.5%	826	0.6%	98,315	88.6%	3.6	618	74.9%	5	
0.75 to < 2.50	3,416	1	95.6%	3,419	1.4%	387,593	87.8%	3.7	3,403	99.6%	44	
2.50 to < 10.00	1,534	6	57.8%	1,542	4.3%	144,344	76.0%	3.6	1,695	109.9%	53	
10.00 to < 100.00	323	–	97.6%	323	37.4%	29,857	73.2%	3.4	485	150.3%	102	
100.00 (Default)	355	–	1.0%	353	100.0%	46,560	74.3%	15.1	187	52.8%	256	
Total	6,911	19	73.4%	6,949	8.6%	763,977	83.6%	4.2	6,639	95.5%	462	(393)
As at 31 December 2016												
0.00 to < 0.15	23	7	101.6%	30	0.1%	649	65.4%	2.6	4	13.3%	–	
0.15 to < 0.25	75	60	143.7%	234	0.2%	2,453	26.5%	0.6	29	12.4%	–	
0.25 to < 0.50	417	7	89.2%	428	0.4%	48,849	83.5%	3.3	244	57.0%	3	
0.50 to < 0.75	841	1	94.6%	843	0.6%	92,816	83.8%	3.6	612	72.6%	6	
0.75 to < 2.50	3,900	8	94.9%	3,912	1.4%	373,837	80.4%	3.7	3,856	98.6%	66	
2.50 to < 10.00	3,692	34	58.9%	3,732	4.6%	155,231	55.3%	3.5	3,244	86.9%	107	
10.00 to < 100.00	1,015	–	98.3%	1,015	24.1%	28,764	56.5%	3.6	1,252	123.3%	156	
100.00 (Default)	654	–	0.0%	634	100.0%	45,435	63.7%	11.5	734	115.8%	328	
Total	10,617	117	73.7%	10,828	10.3%	748,034	67.7%	4.0	9,975	92.1%	666	(489)

Note
a Includes BAGL's total number of obligors

The exposure weighted average risk weight associated with advanced IRB exposures to other retail, primarily comprised of unsecured personal loans, increased by 3.4%. Mainly driven by the proportional consolidation of BAGL.

Analysis of credit risk

Table 48: CR1-A – Credit quality of exposures by exposure class and instrument

This table provides a comprehensive picture of the credit quality of the bank's on balance sheet and off balance sheet exposures

	As at December 2017	Defaulted exposures £m	Non-defaulted exposure £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges of the period £m	Net values £m	Accumulated write-offs £m
1	Central governments or central banks	–	89,273	–	–	–	89,273	–
2	Institutions	244	27,057	2	–	–	27,299	1
3	Corporates	1,987	169,463	773	–	155	170,677	12
4	Of which: Specialised lending	344	6,455	17	–	(29)	6,782	–
5	Of which: SMEs	601	20,047	218	–	104	20,430	8
6	Retail	4,478	233,328	2,140	–	47	235,666	884
7	Secured by real estate property	1,998	149,114	415	–	39	150,697	25
8	SMEs	–	–	–	–	–	–	–
9	Non-SMEs	1,998	149,114	415	–	39	150,697	25
10	Qualifying revolving	1,438	70,560	1,234	–	30	70,764	604
11	Other retail	1,042	13,654	491	–	(22)	14,205	255
12	SMEs	687	7,080	98	–	(89)	7,669	111
13	Non-SMEs	355	6,574	393	–	67	6,536	144
14	Equity	–	–	–	–	–	–	–
15	**Total IRB approach**	6,709	519,121	2,915	–	202	522,915	897
16	Central governments or central banks	–	166,932	–	–	–	166,932	–
17	Regional governments or local authorities	–	666	–	–	–	666	–
18	Public sector entities	12	390	4	–	4	398	2
19	Multilateral development banks	–	3,863	–	–	–	3,863	–
20	International organisations	–	981	–	–	–	981	–
21	Institutions	7	5,099	4	–	3	5,102	–
22	Corporates	733	52,663	255	–	(75)	53,141	43
23	Of which: SMEs	122	5,675	14	–	–	5,783	–
24	Retail	1,651	105,939	1,733	–	(204)	105,856	1,377
25	Of which: SMEs	87	3,437	50	–	(45)	3,474	30
26	Secured by mortgages on immovable property	1,332	8,924	182	–	24	10,074	158
27	Of which: SMEs	–	492	–	–	-	492	–
28	Exposures in default	3,737	–	1,371	–	(139)	2,366	708
29	Items associated with particularly high risk	–	1,814	52	–	–	1,762	6
30	Covered bonds	–	–	–	–	–	–	–
31	Claims on institutions and corporates with a short-term credit assessment	–	–	–	–	–	–	–
32	Collective investments undertakings	–	–	–	–	–	–	–
33	Equity exposures	–	38	–	–	–	38	–
34	Other exposures	3	4,282	1	–	1	4,284	–
35	**Total standardised approach**	3,738	351,590	2,231	–	(247)	353,097	1,586
36	**Total**	10,447	870,712	5,146	–	(45)	876,012	2,483
37	Of which: Loans	9,677	318,537	2,576	–	(65)	325,638	2,459
38	Of which: Debt securities	–	46,064	–	–	–	46,064	18
38a	Of which: Other exposures	21	188,879	124	–	16	188,776	6
39	**Of which: Off-balance-sheet exposures**	749	317,232	2,446	–	4	315,534	–

Analysis of credit risk

Table 48: CR1-A – Credit quality of exposures by exposure class and instrument continued

	As at December 2016	Defaulted exposures £m	Non-defaulted exposure £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges of the period £m	Net values £m	Accumulated write-offs £m
1	Central governments or central banks	–	66,387	1	–	–	66,386	–
2	Institutions	188	25,802	3	–	(1)	25,987	1
3	Corporates	2,885	230,939	816	–	256	233,008	19
4	Of which: Specialised lending	395	9,804	49	–	(22)	10,150	3
5	Of which: SMEs	730	24,599	218	–	28	25,111	37
6	Retail	5,476	249,093	2,618	–	222	251,951	1,074
7	Secured by real estate property	2,510	157,127	533	–	61	159,104	92
8	SMEs	–	–	–	–	–	–	–
9	Non-SMEs	2,510	157,127	533	–	61	159,104	92
10	Qualifying revolving	1,802	73,313	1,398	–	146	73,717	743
11	Other retail	1,164	18,653	687	–	15	19,130	239
12	SMEs	510	8,574	198	–	11	8,885	24
13	Non-SMEs	654	10,079	489	–	4	10,244	215
14	Equity	–	–	–	–	–	–	–
15	**Total AIRB approach**	8,549	572,221	3,438	–	477	577,332	1,094
16	Central governments or central banks	–	99,601	–	–	(10)	99,601	–
17	Regional governments or local authorities	1	611	–	–	–	612	–
18	Public sector entities	–	663	2	–	(29)	661	35
19	Multilateral development banks	9	5,884	–	–	–	5,893	–
20	International organisations	–	1,884	–	–	–	1,884	–
21	Institutions	34	10,509	1	–	(3)	10,542	–
22	Corporates	1,212	63,011	505	–	(250)	63,718	331
23	Of which: SMEs	35	8,169	19	–	10	8,185	1
24	Retail	2,146	110,659	2,062	–	394	110,743	716
25	Of which: SMEs	123	3,372	96	–	(33)	3,399	26
26	Secured by mortgages on immovable property	1,262	12,428	158	–	(15)	13,532	37
27	Of which: SMEs	–	271	–	–	–	271	–
28	Exposures in default	4,664	–	1,883	–	139	2,781	592
29	Items associated with particularly high risk	–	1,979	52	–	(66)	1,927	97
30	Covered bonds	–	100	–	–	–	100	–
31	Claims on institutions and corporates with a short-term credit assessment	–	–	–	–	–	–	–
32	Collective investments undertakings	–	1	–	–	–	1	–
33	Equity exposures	–	437	–	–	–	437	–
34	Other exposures	–	3,922	–	–	–	3,922	–
35	**Total standardised approach**	4,664	311,689	2,780	–	21	313,573	1,216
36	**Total**	13,213	883,910	6,218	–	498	890,902	2,310
37	Of which: Loans	11,759	410,782	3,760	–	347	418,783	2,202
38	Of which: Debt securities	–	24,179	–	–	(6)	24,179	11
38a	Of which: Other Exposures	27	123,562	108	–	(57)	123,481	97
39	Of which: Off-balance-sheet exposures	1,427	325,387	2,350	–	213	324,462	–

Key movements in total credit risk exposures are shown in Table 23 while further details are provided in Tables 52 to 54

The decrease in defaulted exposures and specific credit risk adjustments is primarily driven by the proportional consolidation of BAGL

Analysis of credit risk

Table 49: CR1-B – Credit quality of exposures by industry or counterparty types

This table provides a comprehensive picture of the credit quality of the bank's on balance sheet and off balance sheet exposures by industry types.

	As at 31 December 2017	Defaulted exposures £m	Non-defaulted exposures £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges of the period £m	Net values £m	Accumulated write-offs £m
1	Agriculture, forestry and fishing	421	5,081	20	–	(36)	5,482	3
2	Mining and quarrying	309	12,831	78	–	(48)	13,062	40
3	Manufacturing	217	41,746	75	–	(48)	41,888	12
4	Electricity, gas, steam and air conditioning supply	66	14,412	8	–	(4)	14,470	–
5	Water supply	–	1,935	1	–	1	1,934	–
6	Construction	119	5,978	25	–	(8)	6,072	14
7	Wholesale and retail trade	431	19,212	145	–	46	19,498	5
8	Transport and storage	58	11,310	36	–	9	11,332	1
9	Accommodation and food service activities	205	4,583	27	–	(13)	4,761	47
10	Information and communication	22	6,614	9	–	5	6,627	–
11	Real estate activities	831	30,216	51	–	(101)	30,996	29
12	Professional, scientific and technical activities	369	16,872	85	–	(26)	17,156	64
13	Administrative and support service activities	17	1,099	–	–	–	1,116	–
14	Public administration and defence, compulsory social security	–	262,093	–	–	–	262,093	–
15	Education	23	11,754	45	–	41	11,732	–
16	Human health services and social work activities	427	11,240	24	–	8	11,643	2
17	Arts, entertainment and recreation	51	3,613	7	–	(3)	3,657	–
18	Other services	6,881	410,123	4,512	–	132	412,493	2,266
19	Total	10,447	870,712	5,148	–	(45)	876,012	2,483

	As at 31 December 2016	Defaulted exposures £m	Non-defaulted exposures £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges of the period £m	Net values £m	Accumulated write-offs £m
1	Agriculture, forestry and fishing	493	9,785	90	–	51	10,188	12
2	Mining and quarrying	729	15,791	131	–	42	16,389	102
3	Manufacturing	375	54,969	141	–	(23)	55,203	71
4	Electricity, gas, steam and air conditioning supply	63	18,125	12	–	7	18,176	15
5	Water supply	–	1,852	–	–	(2)	1,852	–
6	Construction	119	7,124	59	–	(41)	7,184	7
7	Wholesale and retail trade	361	22,594	134	–	(15)	22,821	21
8	Transport and storage	117	12,740	30	–	(36)	12,827	46
9	Accommodation and food service activities	249	5,351	240	–	153	5,360	107
10	Information and communication	15	12,063	4	–	(7)	12,074	23
11	Real estate activities	960	38,159	197	–	(71)	38,922	30
12	Professional, scientific and technical activities	339	17,738	112	–	(9)	17,965	83
13	Administrative and support service activities	–	133	–	–	–	133	1
14	Public administration and defence, compulsory social security	–	178,111	–	–	–	178,111	–
15	Education	35	11,707	4	–	–	11,738	2
16	Human health services and social work activities	273	12,221	17	–	–	12,477	2
17	Arts, entertainment and recreation	37	3,472	11	–	2	3,498	1
18	Other services	9,049	461,974	5,036	–	445	465,987	1,786
19	Total	13,214	883,909	6,218	–	496	890,905	2,309

Key movements in total credit risk exposure by industry are shown in Table 28

The decrease in defaulted exposures and specific credit risk adjustments are primarily driven by the proportional consolidation of BAGL

Analysis of credit risk

Table 50: CR1-C – Credit quality of exposures by geography

This table provides a comprehensive picture of the credit quality of the bank's on balance sheet and off balance sheet exposures by geography.

As at 31 December 2017	Defaulted exposures £m	Non-defaulted exposures £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges of the period £m	Net values £m	Accumulated write-offs £m
UK	**6,808**	**445,888**	**2,808**	**–**	**112**	**449,888**	**905**
Europe	**1,619**	**138,163**	**684**	**–**	**(204)**	**139,098**	**182**
France	189	26,543	33	–	(2)	26,699	–
Germany	203	48,042	167	–	9	48,078	101
Italy	825	12,179	358	–	(182)	12,646	8
Luxembourg	53	6,214	19	–	4	6,247	7
Switzerland	102	18,350	4	–	(4)	18,448	–
Asia	**31**	**16,813**	**32**	**–**	**(69)**	**16,812**	**14**
Japan	–	6,413	1	–	–	6,412	–
Americas	**1,442**	**254,455**	**1,377**	**–**	**61**	**254,520**	**1,305**
United States	1,213	243,004	1,310	–	54	242,906	1,298
Africa and Middle East	**547**	**15,393**	**247**	**–**	**55**	**15,694**	**77**
South Africa	367	9,146	138	–	9	9,374	65
Total	10,447	870,712	5,148	–	(45)	876,012	2,483

As at 31 December 2016	Defaulted exposures £m	Non-defaulted exposures £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges of the period £m	Net values £m	Accumulated write-offs £m
UK	**6,141**	**403,755**	**2,695**	**–**	**44**	**407,201**	**986**
Europe	**2,074**	**135,906**	**888**	**–**	**(398)**	**137,093**	**382**
France	168	15,715	35	–	(3)	15,848	1
Germany	194	46,319	158	–	53	46,355	91
Italy	1,072	13,945	539	–	37	14,477	135
Luxembourg	105	9,251	16	–	(9)	9,341	–
Switzerland	90	21,593	8	–	–	21,675	3
Asia	**53**	**24,121**	**100**	**–**	**44**	**24,074**	**–**
Japan	–	12,265	1	–	–	12,264	–
Americas	**2,039**	**245,713**	**1,316**	**–**	**534**	**246,434**	**511**
United States	1,773	232,120	1,256	–	511	232,634	510
Africa and Middle East	**2,907**	**74,414**	**1,218**	**–**	**274**	**76,103**	**430**
South Africa	2,401	57,159	1,006	–	280	58,554	418
Total	13,214	883,909	6,217	–	498	890,905	2,309

Key movement in total credit risk exposure by geography are shown in table 27

The decrease in defaulted exposures and specific credit risk adjustments are primarily driven by the proportional consolidation of BAGL

Analysis of credit risk

Table 51: CR1-D – Ageing of past-due exposures

This table provides the ageing analysis of accounting on-balance sheet past due exposures regardless of their impairment status.

		Gross carrying values					
	31 December 2017	≤30 days	> 30 days ≤60 days £m	> 60 days ≤90 days £m	> 90 days ≤180 days £m	>180 days ≤1 year £m	>1 year £m
1	Loans	11,365	1,171	661	1,114	2,183	1,557
2	Debt Securities	–	–	–	–	–	11
3	Total Exposures	11,365	1,171	661	1,114	2,183	1,568
	31 December 2016						
1	Loans	12,147	1,891	650	1,163	2,026	1,702
2	Debt Securities	95	–	–	–	2	12
3	Total Exposures	12,242	1,891	650	1,163	2,028	1,714

The carrying value of defaulted exposure decreased £1.6bn to £14.1bn, primarily in balances past due less than 60 days.

Balances more than 60 days past due have remained fairly stable, at £5.5bn.

Table 52: CR1-E – Non-performing and forborne exposures

This table provides an overview of non-performing and forborne exposures.

		Gross carrying amount of performing and non-performing exposures							Accumulated impairment and provisions and negative fair value adjustments due to credit risk				Collaterals and financial guarantees received	
			Of which performing but past due > 30 days and <= 90 days	Of which performing forborne	Of which non-performing				On performing exposures		On non-performing exposures			
						Of which defaulted	Of which impaired	Of which forborne		Of which forborne		Of which forborne	On non-performing exposures	Of which forborne exposures
		£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
	As at 31 December 2017													
010	Debt securities	58,313	–	–	17	11	15	–	–	–	11	–	–	–
020	Loans and advances[a]	691,030	1,750	2,357	6,258	5,192	5,946	1,780	1,690	254	3,021	548	2,076	1,952
030	Off-balance-sheet exposures	309,303	–	518	1,531	1,531	–	14	54	–	25	–	8	35
	As at 31 December 2016													
010	Debt securities	63,095	–	–	114	108	112	–	(3)	–	12	–	–	–
020	Loans and advances[a]	624,309	2,443	2,133	6,583	5,046	5,883	1,445	1,837	143	2,880	347	2,182	2,272
030	Off-balance-sheet exposures	320,890	–	88	1,715	1,715	–	1	39	20	28	–	19	2

Note:
a This includes cash at central banks and financial assets designated at fair value.

Analysis of credit risk

Table 53: CR2-B – Changes in the stock of defaulted and impaired loans and debt securities

This table provides an overview of the Bank's stock of defaulted and impaired loans and debt securities

		Gross carrying value defaulted exposures[a] £m
1	**As at 1 January 2017**	**6,697**
2	Loans and debt securities that have defaulted or impaired since the last reporting period	3,190
3	Returned to non-defaulted status	(1,567)
4	Amounts written off	(1,695)
5	Other changes[b]	(350)
6	**As at 31 December 2017**	**6,275**

Notes

a Included above are total movements in impaired assets, including loans and advances past due less than which may not meet the strict definition of loans in default under Article 178 of the CRR.

b Other changes include the net movement on loans and advances transferred to a retail recovery book or not individually impaired where it has not been possible to analyse the movements on such loans.

The Bank's stock of defaulted and impaired loans and debt securities remained broadly stable, with a decrease in loans and advances of £0.3bn and a decrease in debt securities of £0.1bn.

Table 54: CR2-A – Changes in the stock of general and specific credit risk adjustments

This table shows the movement in the impairment allowance between 2016 and 2017 year-end. Please refer to pages 132 to 136 of this document and Note 7 of the 2017 Annual Report for further information on impairment.

		Accumulated specific credit risk adjustment £m	Accumulated general credit risk adjustment £m
1	**As at 1 January 2017**	4,686	–
2	Increases due to amounts set aside for estimated loan losses during the period	3,189	–
3	Decreases due to amounts reversed for estimated loan losses during the period	(534)	–
4	Decreases due to amounts taken against accumulated credit risk adjustments	(2,329)	–
5	Transfers between credit risk adjustments	–	–
6	Impact of exchange rate differences	(123)	–
7	Business combinations, including acquisitions and disposals of subsidiaries	–	–
8	Other adjustments	(164)	–
9	**As at 31 December 2017**	4,725	–
10	Recoveries on credit risk adjustments recorded directly to the statement of profit or loss	334	–
11	Specific credit risk adjustments directly recorded to the statement of profit or loss	–	–

Impairment allowances remained stable during the year at £4,725m (2016: £4,686m).

Regulatory adjustments to statutory Impairment

The IFRS impairment allowance is adjusted to reflect a regulatory view, which is used to calculate the provision misalignment adjustment to regulatory capital. The primary differences are detailed below:

- Scope of consolidation – adjustments driven by differences between the IFRS and regulatory consolidation, as highlighted on page 11. These include, but are not exclusive to associates and impairments relating to securitisation vehicles and impairment relating to the 14.9% proportional consolidation of BAGL
- Securitisation positions – expected loss is not calculated for securitisation positions. As such, impairments associated with these positions are removed from the regulatory view
- Other regulatory adjustments – adjustments driven by differences between the IFRS and regulatory requirements.

Table 55: Regulatory adjustments to statutory Impairment

As at 31 December 2017	£m
IFRS allowance for impairment	**4,652**
Regulatory adjustments	
Scope of consolidation	231
AFS impairments	38
Other regulatory adjustments	231
Regulatory impairment allowance	**5,152**

Loss analysis – regulatory expected loss (EL) versus actual losses

The following table compares Barclays regulatory expected loss (EL) measure against the view of actual loss for those portfolios where credit risk is calculated using the IRB approach.

As expected loss best estimate (ELBE) represents a charge for assets already in default, it has been separately disclosed from total EL. This facilitates comparison of actual loss during the period to the expectation of future loss or EL, as derived by our IRB models in the prior period.

The following should be considered when comparing EL and actual loss metrics:

- The purpose of EL is not to represent a prediction of future impairment charges
- Whilst the impairment charge and the EL measure respond to similar drivers, they are not directly comparable
- The EL does not reflect growth of portfolios or changes in the mix of exposures. In forecasting and calculating impairment, balances and trends in the cash flow behaviour of customer accounts are considered.

It should be noted that Barclays' EL models and regulatory estimations present a conservative view compared to actual loss.

Regulatory Expected Loss

EL is an input to the capital adequacy calculation which can be seen as an expectation of average future loss based on IRB models over a one year period as follows:

- Non-defaulted assets: EL is calculated using probability of default, downturn loss given default estimates and exposures at default.
- Defaulted assets: EL is based upon an estimate of likely recovery levels for each asset and is generally referred to as ELBE.

Actual Loss

Actual loss where subject to the IRB approach is the amount charged against profit.

Table 56: Analysis of expected loss versus actual losses for IRB exposures

IRB Exposure Class	EL £m	ELBE £m	Total expected loss at 31 December 2016*[a] £m	Total expected loss at 31 December 2017*[a] £m
Central governments or central banks	13	–	13	–
Institutions	19	9	28	1
Corporates	466	547	1,012	167
Retail	–	–	–	–
– SME	129	66	195	22
– Secured by mortgages on immovable property	350	278	628	64
– Qualifying revolving retail	791	781	1,572	634
– Other retail	226	226	452	211
Equity	–	–	–	–
Securitisation positions	–	–	–	–
Non-credit obligation assets	–	–	–	–
Total IRB	1,994	1,907	3,901	1,099

	EL £m	ELBE £m	Total expected loss at 31 December 2015 £m	Total expected loss at 31 December 2016 £m
Central governments or central banks	8	–	8	–
Institutions	25	3	28	–
Corporates	511	540	1,052	275
Retail	–	–	–	–
– SME	101	81	182	35
– Secured by mortgages on immovable property	274	322	596	153
– Qualifying revolving retail	735	1,108	1,844	889
– Other retail	246	379	625	219
Equity	–	–	–	–
Securitisation positions	–	–	–	–
Non-credit obligation assets	–	–	–	–
Total IRB	1,900	2,434	4,335	1,571

The decrease in expected loss and actual loss was primarily driven by proportional consolidation of BAGL.

Note
a Prior year BAGL values have been proportionally consolidated to ensure like for like comparatives between expected versus actual losses

Analysis of credit risk

Non-trading book equity investments

The holding of non-trading book equity positions is primarily related to the holding of investments by the Private Equity business.

Table 57: Fair value of and gains and losses on equity investments

This table shows the fair value of non trading book equity positions subject to credit risk calculations, plus associated gains and losses.

Non trading book equity positions	As at 31 December 2017		As at 31 December 2016	
	Fair Value £m	RWAs £m	Fair Value £m	RWAs £m
Exchange Traded	446	670	252	371
Private Equity	823	1,375	1,486	2,552
Other	–	–	–	–
Total	1,269	2,045	1,738	2,923
Realised gains / (losses) from sale and liquidations of equity investments	(35)	–	622	
Unrealised gains (included in PRA transitional CET1 Capital)	512		299	

Non trading book fair value equity decreased primarily due to proportional consolidation of BAGL.

Analysis of counterparty credit risk

This section details Barclays' counterparty credit risk profile, focusing on regulatory measures such as exposure at default and risk weighted assets. The risk profile is analysed by business segment, financial contract type, approach and notional value.

- Risk weighted assets decreased £4.4bn to £38.0bn, driven by reduction in Credit Valuation Adjustment (CVA).
- Counterparty credit risk (CCR) RWAs are primarily generated by the following IFRS account classifications: financial assets designated at fair value; derivative financial instruments; reverse repurchase agreements and other similar secured lending.
- CVA has been included as part of the CCR RWAs disclosures, in line with guidance received.

Risk weighted assets for counterparty credit risk decreased in the year.

Total RWA **-£4.4bn**

Driven by:

-£3.0bn

CVA reduction driven by improvement in modelling of exposures and increase in hedging activities

-£2.2bn

Driven by a change in calculation basis of modelled derivative exposures

+£1.8bn

Primarily driven by an increase in SFT trading activity

Analysis of counterparty credit risk

Counterparty risk exposures

Counterparty credit risk (CCR) is the risk related to a counterparty defaulting before the final settlement of a transaction's cash flows. Barclays calculates CCR using three methods: Internal Model Method (IMM), Financial Collateral Comprehensive Method (FCCM), and Mark to Market Method (MTM).

The following tables analyse counterparty credit risk exposures and risk weighted assets

Table 58: Exposure at default associated with counterparty credit risk by business

This table summarises EAD post-credit risk mitigation (CRM) by business and exposure class for counterparty credit risk.

The table below excludes CVA which is shown separately in Table 71.

Post-CRM EAD

As at 31 December 2017	Barclays UK £m	Barclays International £m	Head Office £m	Total £m
Counterparty credit risk exposure class				
Standardised approach				
Central governments or central banks	–	4,597	–	4,597
Regional governments or local authorities	–	203	–	203
Public sector entities	–	869	–	869
Multilateral development banks	–	362	–	362
International organisations	–	42	–	42
Institutions	–	108	17	125
Corporates	–	28,338	134	28,472
Retail	–	–	–	–
Secured by mortgages	–	–	–	–
Exposures in default	–	–	–	–
Items associated with high risk	–	1,453	–	1,453
Covered bonds	–	–	–	–
Securitisation positions	–	–	–	–
Collective investment undertakings	–	–	–	–
Equity positions	–	–	–	–
Other items	–	–	–	–
Total Standardised Approach Credit Risk Exposure	–	35,972	151	36,123
Advanced IRB approach				
Central governments or central banks	–	8,397	–	8,397
Institutions	–	19,861	925	20,786
Corporates	–	41,483	536	42,019
Retail	–	–	–	–
– Small and medium enterprises (SME)				
– Secured by mortgages on immovable property	–	–	–	–
– Qualifying revolving retail	–	–	–	–
– Other retail	–	–	–	–
Equity	–	–	–	–
Securitisation positions	–	194	–	194
Non-credit obligation assets	–	–	–	–
Total Advanced IRB Credit Risk Exposure	–	69,935	1,461	71,396
Default fund contributions	–	1,881	79	1,960
Total Counterparty Credit Risk	–	107,788	1,691	109,479

Analysis of counterparty credit risk

Table 58: Exposure at default associated with counterparty credit risk by business continued

Post-CRM EAD

As at 31 December 2016	Barclays UK £m	Barclays International £m	Head Office £m	Total Core £m	Barclays Non-Core £m	Total £m
Counterparty credit risk exposure class						
Standardised approach						
Central governments or central banks	–	4,364	7,515	11,879	3,140	15,019
Regional governments or local authorities	–	54	–	54	115	169
Administrative bodies and non-commercial undertakings	–	40	–	40	868	908
Multilateral development banks	–	255	–	255	218	473
International organisations	–	20	–	20	1	21
Institutions	46	74	24	144	26	170
Corporates	–	24,822	109	24,931	2,057	26,988
Retail	–	–	–	–	–	–
Secured By Mortgages	–	–	–	–	–	–
Past due items	–	–	–	–	–	–
Private equity positions	–	1,333	–	1,333	23	1,356
Covered bonds	–	–	–	–	–	–
Securitisation positions	–	–	–	–	–	–
Collective investment undertakings	–	–	–	–	–	–
Equity positions	–	–	–	–	–	–
Other items	–	–	–	–	–	–
Total Standardised approach credit risk exposure	46	30,962	7,648	38,656	6,448	45,104
Advanced IRB approach						
Central governments or central banks	–	5,589	22	5,611	38	5,649
Institutions	–	14,773	1,088	15,861	3,982	19,843
Corporates	–	36,699	1,433	38,132	10,505	48,637
Retail	–	–	–	–	–	–
– Small and medium enterprises (SME)	–	–	–	–	–	–
– Secured by mortgages on immovable property	–	–	–	–	–	–
– Qualifying revolving retail	–	–	–	–	–	–
– Other retail	–	–	–	–	–	–
Equity	–	–	–	–	–	–
Securitisation positions	–	26	–	26	1,145	1,171
Non-credit obligation assets	–	–	–	–	–	–
Total Advanced IRB Credit Risk Exposure	–	57,087	2,543	59,630	15,670	75,300
Default fund contributions	–	1,131	57	1,188	400	1,588
Total Counterparty Credit Risk	46	89,180	10,248	99,474	22,518	121,992

Counterparty credit risk exposure post-CRM decreased £12.5bn to £109.5bn, primarily due to:

- Barclays International increased by £18.6bn to £107.8bn primarily driven by the reintegration of Non-Core related exposures and increased SFT trading activity
- Head Office decreased by £8.6bn to £1.7bn primarily driven by a change in treatment of pre-positioned securities for central bank discount window facility exposures
- Barclays Non-Core decreased by £22.5bn due to the rundown of Non-Core related exposures and reintegration into Core businesses as at 1 July 2017.

Analysis of counterparty credit risk

Table 59: Risk weighted assets of counterparty credit risk exposures by business units

This table summarises risk weighted assets by business and exposure class for counterparty credit risk.

The disclosure below excludes CVA which is shown separately on table 71.

Risk weighted assets					
As at 31 December 2017	Barclays UK £m	Barclays International £m	Head Office £m	Total £m	Capital reqs £m
Counterparty credit risk exposure class					
Standardised approach					
Central governments or central banks	–	3	–	3	–
Regional governments or local authorities	–	1	–	1	–
Public sector entities	–	99	–	99	8
Multilateral development banks	–	–	–	–	–
International organisations	–	–	–	–	–
Institutions	–	53	4	57	5
Corporates	–	13,620	10	13,630	1,090
Retail	–	–	–	–	–
Secured by mortgages	–	–	–	–	–
Exposures in default	–	1	–	1	–
Items associated with high risk	–	2,114	–	2,114	169
Covered bonds	–	–	–	–	–
Securitisation positions	–	–	–	–	–
Collective investment undertakings	–	–	–	–	–
Equity positions	–	–	–	–	–
Other items	–	–	–	–	–
Total Standardised Approach Credit Risk Exposure	–	15,891	14	15,905	1,272
Advanced IRB approach					
Central governments or central banks	–	1,299	–	1,299	104
Institutions	–	5,548	283	5,831	466
Corporates	–	10,296	350	10,646	852
Retail	–	–	–	–	–
– Small and medium enterprises (SME)	–	–	–	–	–
– Secured by mortgages on immovable property	–	–	–	–	–
– Qualifying revolving retail	–	–	–	–	–
– Other retail	–	–	–	–	–
Equity	–	–	–	–	–
Securitisation positions	–	100	–	100	8
Non-credit obligation assets	–	–	–	–	–
Total Advanced IRB Credit Risk Exposure	–	17,243	633	17,876	1,430
Default fund contributions	–	1,210	51	1,261	101
Total Counterparty Credit Risk	–	34,344	698	35,042	2,803

Analysis of counterparty credit risk

Table 59: Risk weighted assets of counterparty credit risk exposures by business units continued

Risk weighted assets

As at 31 December 2016	Barclays UK £m	Barclays International £m	Head Office £m	Total £m	Barclays Non-Core £m	Total £m	Capital reqs £m
Counterparty credit risk exposure class							
Standardised approach							
Central governments or central banks	–	10	–	10	–	10	1
Regional governments or local authorities	–	3	–	3	1	4	–
Public sector entities	–	10	–	10	190	200	16
Multilateral development banks	–	–	–	–	–	–	–
International organisations	–	–	–	–	–	–	–
Institutions	47	277	23	347	2	349	28
Corporates	–	10,274	7	10,281	525	10,806	864
Retail	–	–	–	–	–	–	–
Secured by mortgages	–	–	–	–	–	–	–
Exposures in default	–	–	–	–	–	–	–
Items associated with high risk	–	2,043	–	2,043	34	2,077	166
Covered bonds	–	–	–	–	–	–	–
Securitisation positions	–	–	–	–	–	–	–
Collective investment undertakings	–	–	–	–	–	–	–
Equity positions	–	–	–	–	–	–	–
Other items	–	–	–	–	–	–	–
Total Standardised Approach Credit Risk Exposure	47	12,617	30	12,694	752	13,446	1,075
Advanced IRB approach							
Central governments or central banks	–	1,145	9	1,154	12	1,166	93
Institutions	–	3,098	363	3,461	1,297	4,758	381
Corporates	–	9,463	785	10,248	4,381	14,629	1,170
Retail	–	–	–	–	–	–	–
– Small and medium enterprises (SME)	–	–	–	–	–	–	–
– Secured by mortgages on immovable property	–	–	–	–	–	–	–
– Qualifying revolving retail	–	–	–	–	–	–	–
– Other retail	–	–	–	–	–	–	–
Equity	–	–	–	–	–	–	–
Securitisation positions	–	–	–	–	391	391	31
Non-credit obligation assets	–	–	–	–	–	–	–
Total Advanced IRB Credit Risk Exposure	–	13,706	1,157	14,863	6,081	20,944	1,675
Default fund contributions	–	928	47	975	328	1,303	104
Total Counterparty Credit Risk	47	27,251	1,234	28,532	7,161	35,693	2,854

Counterparty credit risk weighted assets remained broadly stable at £35.0bn (2016 £35.7bn):

- Barclays International increased by £7.1bn to £34.3bn primarily driven by the reintegration of Non-Core related RWAs and increased SFT trading activity
- Head Office decreased by £0.5bn to £0.7bn primarily driven by the reduction as a result of the proportional consolidation of BAGL
- Barclays Non-Core decreased by £7.2bn due to the rundown of the Non-Core related assets and the reintegration into Core businesses as at 1 July 2017.

Analysis of counterparty credit risk

Table 60: CCR1 – Analysis of CCR exposure by approach

This table provides the comprehensive view of the methods used by Barclays to calculate CCR regulatory requirements and the main parameters used within each method.

As at December 2017		Notional £m	Replacement cost/current market value £m	Potential future credit exposure £m	EEPE £m	Multiplier £m	EAD post-CRM £m	RWAs £m
1	Mark to market		3,328	9,186			6,567	2,613
2	Original exposure	–					–	–
3	Standardised approach		–				–	–
4	IMM (for derivatives and SFTs)				59,853	1.4	83,794	21,400
5	Of which securities financing transactions				22,819	1.4	31,947	5,180
6	Of which derivatives and long settlement transactions				37,034	1.4	51,848	16,220
7	Of which from contractual cross-product netting				–		–	–
8	Financial collateral simple method (for SFTs)						–	–
9	Financial collateral comprehensive method (for SFTs)						17,153	9,768
10	VaR for SFTs						–	–
11	**Total**							33,781

As at December 2016		Notional £m	Replacement cost/current market value £m	Potential future credit exposure £m	EEPE £m	Multiplier £m	EAD post-CRM £m	RWAs £m
1	Mark to market		4,919	10,935			8,051	3,627
2	Original exposure	–					–	–
3	Standardised approach		7,515				8,086	–
4	IMM (for derivatives and SFTs)				65,197	1.4	91,276	22,724
5	Of which securities financing transactions				20,950	1.4	29,330	4,739
6	Of which derivatives and long settlement transactions				44,247	1.4	61,946	17,985
7	Of which from contractual cross-product netting				–		–	–
8	Financial collateral simple method (for SFTs)						–	–
9	Financial collateral comprehensive method (for SFTs)						13,394	7,959
10	VaR for SFTs						–	–
11	**Total**							34,310

Counterparty credit risk weighted assets remained broadly stable at £33.8bn (2016 £34.3bn), this was driven by:

- IMM for derivatives RWAs decreased by £1.8bn to £16.2bn primarily driven by rundown of Non-Core related assets and the depreciation of period
- SFT RWAs increased by £2.3bn to £15.0bn primarily driven by increased trading activity

- Standardised approach EAD decreased £7.5bn due to a change in treatment of pre-positioned securities for central bank disount window facility exposures

Analysis of counterparty credit risk

Table 61: CCR3 Counterparty credit risk exposures by exposure classes and risk weight under standardised approach

This table shows exposure at default, broken down by exposure class and risk weight. This table includes exposures subject to the Standardised approach only.

Exposures by regulatory portfolio and risk

As at 31 December 2017		0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1250%	Others	Deducted	Total	of which: Unrated
1	Central governments or central banks	4,594	–	–	–	–	–	2	–	–	1	–	–	–	–	–	–	4,597	1,392
2	Regional governments or local authorities	198	–	–	–	5	–	–	–	–	–	–	–	–	–	–	–	203	203
3	Public sector entities	362	56	–	–	444	–	–	–	–	7	–	–	–	–	–	–	869	869
4	Multilateral development banks	362	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	362	362
5	International Organisations	42	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	42	42
6	Institutions	–	–	–	–	93	–	1	–	–	31	–	–	–	–	–	–	125	85
7	Corporates	–	15,045	–	–	48	–	12	–	–	13,362	5	–	–	–	–	–	28,472	25,883
8	Retail	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
9	Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10a	Secured by mortgages on immovable property	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10b	Exposures in default	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10c	Items associated with particularly high risk	–	–	–	–	–	–	–	–	–	–	1,453	–	–	–	–	–	1,453	1,453
10d	Covered Bonds	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10e	Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10f	Claims in the form of CIU	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10g	Equity exposures	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10h	Other items	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11	Total	5,558	15,101	–	–	590	–	15	–	–	13,401	1,458	–	–	–	–	–	36,123	30,288

Analysis of counterparty credit risk

Table 61: CCR3 Counterparty credit risk exposures by exposure classes and risk weight under standardised approach continued

Exposures by regulatory portfolio and risk

As at 31 December 2016		0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1250%	Others	Deducted	Total	of which: Unrated
1	Central governments or central banks	14,971	–	–	–	48	–	–	–	–	–	–	–	–	–	–	–	15,019	2,610
2	Regional governments or local authorities	159	–	–	–	8	–	–	–	–	2	–	–	–	–	–	–	169	18
3	Public sector entities	15	42	–	–	844	–	–	–	–	7	–	–	–	–	–	–	908	951
4	Multilateral development banks	473	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	473	514
5	International Organisations	21	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	21	21
6	Institutions	8	–	–	–	129	–	2	–	–	16	–	–	–	–	15	–	170	55
7	Corporates	104	16,442	–	–	31	–	46	–	–	10,330	9	–	–	–	26	–	26,988	26,646
8	Retail	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
9	Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10a	Secured by mortgages on immovable property	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10b	Exposures in default	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10c	Items associated with particularly high risk	–	–	–	–	–	–	–	–	–	–	1,356	–	–	–	–	–	1,356	1,356
10d	Covered Bonds	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10e	Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10f	Claims in the form of CIU	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10g	Equity exposures	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10h	Other items	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11	**Total**	15,751	16,484	–	–	1,060	–	48	–	–	10,355	1,365	–	–	–	41	–	45,104	32,171

Standardised counterparty credit risk exposures decreased by £9.1bn to £36.1bn, primarily driven by:

- 0% risk weighted exposures to central governments or central bank decreased by £10.2bn to £5.5bn primarily driven by a change in treatment of pre-positioned securities for central bank disount window facility exposures
- 100% risk weighted exposures increased by £3bn to £13.3bn primarily driven by increase in SFT trading activity.

Analysis of counterparty credit risk

Advanced IRB obligor grade disclosure

The following tables show counterparty credit risk exposure at default post-CRM for the advanced IRB approach for portfolios within both the trading and banking books. Separate tables are provided for the following exposure classes: central governments and central banks (Table 62), institutions (Table 63), corporates (Table 64) and corporates subject to slotting (Table 65).

Table 62: CCR4 Counterparty credit risk exposures by portfolio and PD range for central governments and central banks

	EAD post-CRM £m	Average PD %	Number of obligors	Average LGD %	Average Maturity	RWA £m	RWA Density %	Expected Loss £m	Value Adjustment and Provisions £m
As at 31 December 2017									
0.00 to < 0.15	**8,201**	**0.1%**	**60**	**62.6%**	**–**	**1,100**	**13.4%**	**3**	**–**
0.15 to < 0.25	**16**	**0.2%**	**3**	**48.0%**	**–**	**3**	**20.7%**	**–**	**–**
0.25 to < 0.50	**128**	**0.3%**	**11**	**52.9%**	**1**	**68**	**52.9%**	**–**	**–**
0.50 to < 0.75	**–**	**0.6%**	**2**	**45.0%**	**1**	**–**	**61.2%**	**–**	**–**
0.75 to < 2.50	**7**	**0.8%**	**3**	**58.1%**	**5**	**11**	**161.8%**	**–**	**–**
2.50 to < 10.00	**45**	**8.8%**	**4**	**63.0%**	**1**	**117**	**257.2%**	**3**	**–**
10.00 to < 100.00	**–**	**0.0%**	**–**	**0.0%**	**–**	**–**	**–**	**–**	**–**
100.00 (Default)	**–**	**0.0%**	**–**	**0.0%**	**–**	**–**	**–**	**–**	**–**
Total	**8,397**	**0.10%**	**83**	**62.4%**	**1**	**1,299**	**15.5%**	**6**	**–**
As at 31 December 2016									
0.00 to < 0.15	5,247	0.1%	61	61.6%	1	750	14.3%	2	–
0.15 to < 0.25	31	0.2%	4	45.9%	2	15	48.7%	–	–
0.25 to < 0.50	238	0.3%	6	52.7%	–	97	40.9%	–	–
0.50 to < 0.75	–	0.0%	–	0.0%	–	–	0.0%	–	–
0.75 to < 2.50	6	1.3%	3	45.3%	1	5	94.7%	–	–
2.50 to < 10.00	127	7.5%	2	60.0%	1	298	235.0%	5	–
10.00 to < 100.00	–	0.0%	–	0.0%	–	–	0.0%	–	–
100.00 (Default)	–	0.0%	–	0.0%	–	–	0.0%	–	–
Total	5,649	0.23%	76	61.1%	1	1,165	20.6%	7	–

The exposure weighted average risk weight associated with advanced IRB exposures to central governments and central banks decreased by 5.1% to 15.5%. This was primarily driven by increased exposure in higher quality default grades.

Analysis of counterparty credit risk

Table 63: CCR4 Counterparty credit risk exposures by portfolio and PD range for institutions

	EAD post-CRM £m	Average PD %	Number of obligors	Average LGD %	Average Maturity	RWA £m	RWA Density %	Expected Loss £m	Value Adjustment and Provisions £m
As at 31 December 2017									
0.00 to < 0.15	**18,497**	**0.1%**	**726**	**46.3%**	**2**	**4,283**	**23.2%**	**5**	**–**
0.15 to < 0.25	**1,076**	**0.2%**	**158**	**45.1%**	**2**	**511**	**47.5%**	**1**	**–**
0.25 to < 0.50	**493**	**0.4%**	**135**	**50.7%**	**1**	**299**	**60.7%**	**1**	**–**
0.50 to < 0.75	**166**	**0.6%**	**42**	**46.0%**	**1**	**100**	**60.9%**	**–**	**–**
0.75 to < 2.50	**419**	**1.6%**	**105**	**48.3%**	**1**	**435**	**103.9%**	**4**	**–**
2.50 to < 10.00	**90**	**3.8%**	**91**	**48.5%**	**1**	**113**	**124.6%**	**1**	**–**
10.00 to < 100.00	**45**	**15.0%**	**17**	**43.3%**	**1**	**90**	**198.3%**	**3**	**–**
100.00 (Default)	**–**	**0.0%**	**–**	**0.0%**	**–**	**–**	**–**	**–**	**–**
Total	**20,786**	**0.2%**	**1,274**	**46.4%**	**2**	**5,831**	**28.1%**	**15**	**–**
As at 31 December 2016									
0.00 to < 0.15	18,883	0.0%	603	42.7%	2	4,082	22%	4	–
0.15 to < 0.25	308	0.2%	93	46.8%	1	132	43%	–	–
0.25 to < 0.50	342	0.4%	129	47.8%	1	236	69%	1	–
0.50 to < 0.75	105	0.6%	23	44.5%	6	103	98%	–	–
0.75 to < 2.50	158	1.1%	69	45.6%	1	139	88%	1	–
2.50 to < 10.00	34	4.5%	54	45.2%	2	46	137%	1	–
10.00 to < 100.00	13	12.6%	8	45.0%	4	20	157%	–	–
100.00 (Default)	–	–	–	–	–	–	–	–	–
Total	**19,843**	**0.1%**	**979**	**42.9%**	**2**	**4,758**	**24.0%**	**7**	**–**

The exposure weighted average risk weight associated with advanced IRB exposures to Institutions increased by 4.1% to 28.1%. This was primarily driven by a reclassification of counterparties from corporates to institutions.

Table 64: CCR4 Counterparty credit risk exposures by portfolio and PD range for corporates

	EAD post-CRM £m	Average PD %	Number of obligors	Average LGD %	Average Maturity	RWA £m	RWA Density %	Expected Loss £m	Value Adjustment and Provisions £m
As at 31 December 2017									
0.00 to < 0.15	**34,917**	**0.1%**	**5,737**	**45.0%**	**1**	**5,832**	**16.7%**	**8**	**–**
0.15 to < 0.25	**3,239**	**0.2%**	**941**	**43.9%**	**2**	**1,324**	**40.9%**	**2**	**–**
0.25 to < 0.50	**1,086**	**0.4%**	**587**	**49.1%**	**3**	**824**	**75.9%**	**2**	**–**
0.50 to < 0.75	**344**	**0.6%**	**167**	**40.1%**	**3**	**231**	**67.2%**	**1**	**–**
0.75 to < 2.50	**940**	**1.6%**	**743**	**41.7%**	**3**	**941**	**100.0%**	**5**	**–**
2.50 to < 10.00	**850**	**4.7%**	**310**	**37.7%**	**3**	**990**	**116.5%**	**13**	**–**
10.00 to < 100.00	**71**	**15.5%**	**70**	**36.1%**	**3**	**95**	**133.8%**	**2**	**–**
100.00 (Default)	**6**	**100.0%**	**35**	**43.4%**	**2**	**13**	**213.3%**	**–**	**–**
Total	**41,453**	**0.2%**	**8,590**	**44.8%**	**2**	**10,250**	**24.7%**	**33**	**–**
As at 31 December 2016									
0.00 to < 0.15	38,765	0.1%	6,090	45.6%	2	8,220	21.2%	9	–
0.15 to < 0.25	4,578	0.2%	841	45.8%	2	2,094	45.7%	4	–
0.25 to < 0.50	1,550	0.4%	697	47.1%	2	1,048	67.6%	3	–
0.50 to < 0.75	690	0.6%	206	41.2%	2	459	66.5%	2	–
0.75 to < 2.50	1,172	1.2%	783	41.7%	2	1,031	88.0%	5	–
2.50 to < 10.00	803	4.8%	426	36.0%	3	879	109.4%	12	–
10.00 to < 100.00	57	19.8%	106	39.8%	2	104	181.5%	4	–
100.00 (Default)	50	100.0%	64	36.6%	2	104	208.0%	–	–
Total	47,665	0.3%	9,213	45.3%	2	13,939	29.2%	39	–

The exposure weighted average risk weight associated with Advanced IRB exposure to corporates decreased by 4.5% to 24.7%. This was primarily driven by a reclassification of counterparties from corporates to institutions.

Analysis of counterparty credit risk

Table 65: Counterparty Credit risk – Corporates specialised lending Advanced IRB

Regulatory categories	Remaining maturity	On-balance sheet amount £m	Off-balance sheet amount £m	Risk weight %	Exposure amount £m	RWA £m	Expected losses £m
As at 31 December 2017							
Category 1	Less than 2.5 years	–	–	**50%**	**34**	**17**	–
	Equal to or more than 2.5 years	–	–	**70%**	**443**	**310**	**2**
Category 2	Less than 2.5 years	–	–	**70%**	**47**	**33**	–
	Equal to or more than 2.5 years	–	–	**90%**	**30**	**27**	–
Category 3	Less than 2.5 years	–	–	**115%**	**4**	**4**	–
	Equal to or more than 2.5 years	–	–	**115%**	**4**	**5**	–
Category 4	Less than 2.5 years	–	–	**250%**	–	–	–
	Equal to or more than 2.5 years	–	–	**250%**	–	–	–
Category 5	Less than 2.5 years	–	–	0%	**4**	–	**2**
	Equal to or more than 2.5 years	–	–	0%	–	–	–
Total	Less than 2.5 years	–	–		**89**	**54**	**2**
	Equal to or more than 2.5 years	–	–		**477**	**342**	**2**
As at 31 December 2016							
Category 1	Less than 2.5 years	–	–	50%	107	54	–
	Equal to or more than 2.5 years	–	–	70%	718	502	1
Category 2	Less than 2.5 years	–	–	70%	36	25	–
	Equal to or more than 2.5 years	–	–	90%	48	43	–
Category 3	Less than 2.5 years	–	–	115%	33	38	–
	Equal to or more than 2.5 years	–	–	115%	22	25	1
Category 4	Less than 2.5 years	–	–	250%	1	3	–
	Equal to or more than 2.5 years	–	–	250%	–	–	–
Category 5	Less than 2.5 years	–	–	0%	7	–	3
	Equal to or more than 2.5 years	–	–	0%	–	–	–
Total	Less than 2.5 years	–	–		184	120	3
	Equal to or more than 2.5 years	–	–		788	570	2

The RWA related to specialised lending remained broadly stable at £0.3bn (2016: £0.6bn).

Analysis of counterparty credit risk

Table 66: CCR5-A – Impact of netting and collateral held on exposure values

This table shows the impact on exposure from netting and collateral held for derivatives and SFTs

		Gross positive fair value or net carrying amount £m	Netting benefits £m	Netted current credit exposure £m	Collateral held £m	Net credit exposure £m
As at 31 December 2017						
1	Derivatives	350,891	294,500	56,391	72,788	23,230
2	SFTs	1,079,108	1,057,971	21,137	1,083	20,876
3	Cross-product netting	–	–	–	–	–
4	**Total**	1,429,999	1,352,471	77,528	73,871	44,106

Table 67: CCR5-B – Composition of collateral for exposures to CCR

This table shows the types of collateral posted or received to support or reduce CCR exposures relating to derivative transactions or SFTs, including transactions cleared through a CCP

		Collateral used in derivative transactions				Collateral used in SFTs	
		Fair value of collateral received		Fair value of posted collateral			
		Segregated £m	Unsegregated £m	Segregated £m	Unsegregated £m	Fair value of collateral received £m	Fair value of posted collateral £m
As at December 2017							
1	Cash	–	56,777	–	53,808	822	1,677
2	Debt	7,022	7,575	3,068	7,470	261	261
3	Equity	420	17	–	–	–	–
4	Others	–	977	–	–	–	–
	Total	7,442	65,346	3,068	61,278	1,083	1,938

CCR5-A and CCR5-B are new tables for 31 December 2017 for which no prior year comparatives are shown.

Analysis of counterparty credit risk

Credit derivative notionals

The following tables show the notional of the credit derivative transactions outstanding as at 31 December 2017.

The first table splits the notional values of credit derivatives, credit default swaps (CDS) and total return swaps (TRS), by two categories: own credit portfolio and intermediation activities.

Own credit portfolio consists of trades used for hedging and credit management. Intermediation activities cover all other credit derivatives.

Credit derivatives booked arising from clearing activities performed on behalf of external counterparties (for example within Barclays subsidiaries) are not reported in this table as the Group does not have any long/short exposures to the underlying reference obligations.

Own credit for the purposes of this note is different from own credit used for accounting disclosures purposes, which represents the change in fair value due to Barclays' own credit standing.

Table 68: Notional exposure associated with credit derivative contracts

Outstanding amount of exposure held:	Own credit portfolio		Intermediation activities	
Credit derivative product type As at 31 December 2017	As protection purchaser £m	As protection seller £m	As protection purchaser £m	As protection seller £m
Credit default swaps	1,455	476	307,716	301,423
Total return swaps	60	65	7,277	–
Total	1,515	541	314,993	301,423
Credit derivative product type As at 31 December 2016				
Credit default swaps	3,097	944	423,899	414,708
Total return swaps	–	–	9,552	–
Total	3,097	944	433,451	414,708

Notional from intermediation activities, which mainly comprises derivatives used to manage the trading book, decreased by £232bn to £616bn primarily driven by reduced trading activity and the maturity of trades.

Table 69: CCR6 – Credit derivatives exposures

This table provides a breakdown of the Bank's exposures to credit derivative products.

	Credit derivative hedges		
	Protection bought £m	Protection sold £m	Other credit derivatives £m
As at 31 December 2017			
Notionals			
Single-name credit default swaps	475	40	359,474
Index credit default swaps	–	–	250,237
Total return swaps	60	65	7,277
Credit options	–	–	42,833
Other credit derivatives	–	–	844
Total notionals	535	105	660,665
Fair values	(13)	–	994
Positive fair value (asset)	–	5	11,853
Negative fair value (liability)	(25)	–	(10,859)
As at 31 December 2016			
Notionals			
Single-name credit default swaps	867	48	517,629
Index credit default swaps	–	–	320,183
Total return swaps	–	–	9,552
Credit options	–	–	40,582
Other credit derivatives	–	–	1,876
Total notionals	867	48	889,822
Fair values	(12)	–	972
Positive fair value (asset)	4	–	15,360
Negative fair value (liability)	(16)	–	(14,388)

Notional value of other credit derivatives decreased £229bn to £661bn primarily driven by reduced trading activity and the maturity of trades.

Analysis of counterparty credit risk

Table 70: CCR8 Exposures to CCPs associated with credit derivative contracts[a]

This table provides a breakdown of the Bank's exposures and RWAs to central counterparties (CCP)

		EAD post-CRM	RWAs
		As at 31 December 2017 £m	As at 31 December 2017 £m
1	**Exposures to QCCPs (total)**		1,563
2	Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which	–	–
3	(i) OTC derivatives	1,691	34
4	(ii) Exchange-traded derivatives	1,656	33
5	(iii) SFTs	1,549	31
6	(iv) Netting sets where cross-product netting has been approved	–	–
7	Segregated initial margin	–	
8	Non-segregated initial margin	10,205	204
9	Prefunded default fund contributions	1,960	1,261
10	Alternative calculation of own funds requirements for exposures		–
11	**Exposures to non-QCCPs (total)**		–
12	Exposures for trades at non-QCCPs (excluding initial margin and default fund contributions); of which	–	–
13	(i) OTC derivatives	–	–
14	(ii) Exchange-traded derivatives	–	–
15	(iii) SFTs	–	–
16	(iv) Netting sets where cross-product netting has been approved	–	–
17	Segregated initial margin	–	
18	Non-segregated initial margin	–	–
19	Prefunded default fund contributions	–	–
20	Unfunded default fund contributions	–	–

Note

a CCR8 disclosure is a new table for 31 December 2017 for which no prior year comparatives are shown.

In line with the EBA 'extension of the transitional period related to exposures to CCPs (No 648/2012)' all exposures to CCPs are currently treated as exposures to qualifying CCPs until 15 June 2018

The information disclosed in this table is consistent with the 2% risk weight column in Table 61, except for prefunded default fund contributions which are shown in Table 58.

Analysis of counterparty credit risk

Credit value adjustments

The Credit value adjustment (CVA) measures the risk from MTM losses due to deterioration in the credit quality of a counterparty to over-the-counter derivative transactions with Barclays. It is a complement to the counterparty credit risk charge, that accounts for the risk of outright default of a counterparty.

Table 71: CCR2 Credit valuation adjustment (CVA) capital charge

Two approaches can be used to calculate the adjustment:

- Standardised approach: this approach takes account of the external credit rating of each counterparty, and incorporates the effective maturity and EAD from the calculation of the CCR
- Advanced approach: this approach requires the calculation of the charge as a) a 10-day 99% Value at Risk (VaR) measure for the current one-year period and b) the same measure for a stressed period. The sum of the two VaR measures is tripled to yield the capital charge.

Credit valuation adjustment (CVA) capital charge			
		Exposure value £m	RWA £m
As at 31 December 2017			
1	Total portfolios subject to the Advanced Method	16,241	2,631
2	(i) VaR component (including the 3x multiplier)	–	471
3	(ii) Stressed VaR component (including 3x multiplier)	–	2,160
4	All portfolios subject to the Standardised Method	674	370
5	**Total subject to the CVA capital charge**	16,915	3,001
As at 31 December 2016			
1	Total portfolios subject to the Advanced Method	22,423	5,613
2	(i) VaR component (including the 3x multiplier)	–	1,258
3	(ii) Stressed VaR component (including 3x multiplier)	–	4,355
4	All portfolios subject to the Standardised Method	2,141	1,130
5	**Total subject to the CVA capital charge**	24,564	6,743

CVA RWAs decreased by £3.7bn to £3.0bn primarily driven by targeted reduction of trades subject to Current Exposure Method (CEM) as well as hedging activity.

Analysis of market risk

This section contains key disclosures describing the Group's market risk profile, highlighting regulatory as well as management measures. This includes risk weighted assets by major business line, as well as Value at Risk measures.

- Risk weighted assets increased £3.3bn to £28.3bn, primarily driven by equity market risk and specific interest rate risk of securitisation positions.
- Management Value at Risk decreased 10% year on year, primarily due to tighter credit spreads
- Market risk RWAs are primarily generated by the following IFRS account classifications: Trading portfolio assets and liabilities; and derivative financial instruments and liabilities

Risk weighted assets for market risk increased in the year

Total RWAs **+3.3bn**

Driven by equity market risk and specific interest rate risk of securitisation positions

-£130m

Reductions in RNIV

-10%

Decrease in Management Value at Risk

Analysis of market risk

Balance sheet view of trading and banking books

As defined by regulatory rules, a trading book consists of positions held for trading intent or to hedge elements of the trading book. Trading intent must be evidenced in the basis of the strategies, policies and procedures set up by the firm to manage the position or portfolio. The table below provides a Group-wide overview of where assets and liabilities on the Group's balance sheet are managed within regulatory traded and non-traded books.

The balance sheet split by trading book and banking book is shown on an IFRS accounting scope of consolidation. The reconciliation between the accounting and regulatory scope of consolidation is shown in table 1 on page 11.

Table 72: Balance sheet split by trading and banking books

As at 31 December 2017	Banking book[a] £m	Trading book £m	Total £m
Cash and balances at central banks	171,082	–	171,082
Items in course of collection from other banks	2,153	–	2,153
Trading portfolio assets	1,555	112,205	113,760
Financial assets designated at fair value	7,874	108,407	116,281
Derivative financial instruments	924	236,745	237,669
Financial investments	58,916	–	58,916
Loans and advances to banks	32,464	3,199	35,663
Loans and advances to customers	343,771	21,781	365,552
Reverse repurchase agreements and other similar secured lending	12,546	–	12,546
Prepayments, accrued income and other assets	2,389	–	2,389
Investments in associates and joint ventures	718	–	718
Property, plant and equipment	2,572	–	2,572
Goodwill and intangible assets	7,849	–	7,849
Current tax assets	482	–	482
Deferred tax assets	3,457	–	3,457
Retirement benefit assets	966	–	966
Assets included in disposal groups classified as held for sale	1,193	–	1,193
Total assets	650,911	482,337	1,133,248
Deposits from banks	35,337	2,386	37,723
Items in course of collection due to other banks	446	–	446
Customer accounts	415,783	13,338	429,121
Repurchase agreements and other similar secured borrowing	40,338	–	40,338
Trading portfolio liabilities	–	37,351	37,351
Financial liabilities designated at fair value	4,368	169,350	173,718
Derivative financial instruments	389	237,956	238,345
Debt securities in issue	73,314		73,314
Subordinated liabilities	23,826	–	23,826
Accruals, deferred income and other liabilities	8,565	–	8,565
Provisions	3,543	–	3,543
Current tax liabilities	586	–	586
Deferred tax liabilities	44	–	44
Retirement benefit liabilities	312	–	312
Liabilities included in disposal groups classified as held for sale	–	–	–
Total liabilities	606,851	460,381	1,067,232

Note

a The primary risk factors for banking book assets and liabilities are interest rates and to a lesser extent, foreign exchange rates. Credit spreads and equity prices will also be factor where the Group holds debt and equity securities respectively, either as financial assets designated at fair value or as available for sale, shown in Note 15 and Note 17 of the Barclays PLC 2017 Annual Report.

Included within the trading book are assets and liabilities which are included in the market risk regulatory measures. For more information on these measures (VaR, SVaR, Incremental risk charge (IRC) and Comprehensive risk measure) see the risk management section on page 154.

Analysis of market risk

Traded market risk review

Review of management measures

The following disclosures provide details on management measures of market risk. See the risk management section on page 152 for more detail on management measures and the differences when compared to regulatory measures.

The table below shows the total Management VaR on a diversified basis by risk factor. Total Management VaR includes all trading positions in CIB and Head Office.

Limits are applied against each risk factor VaR as well as total Management VaR, which are then cascaded further by risk managers to each business.

Table 73: The daily average, maximum and minimum values of management VaR

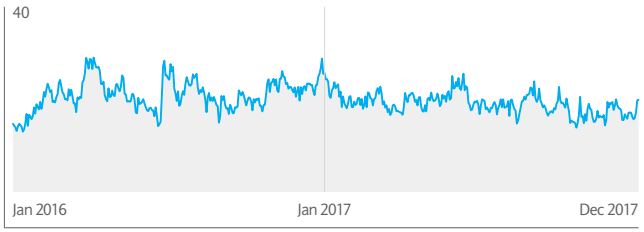
Management VaR (95%, one day) (audited)

	2017			2016		
For the year ended 31 December[a]	Average £m	High[b] £m	Low[b] £m	Average £m	High[b] £m	Low[b] £m
Credit risk	12	18	8	16	24	9
Interest rate risk	8	15	4	7	13	4
Equity risk	8	14	4	7	11	4
Basis risk	5	6	3	5	9	3
Spread risk	5	8	3	3	5	2
Foreign exchange risk	3	7	2	3	5	2
Commodity risk	2	3	1	2	4	1
Inflation risk	2	4	1	2	3	2
Diversification effect[b]	(26)	n/a	n/a	(24)	n/a	n/a
Total management VaR	19	26	14	21	29	13

Notes
a Includes 100% BAGL.
b Diversification effects recognise that forecast losses from different assets or businesses are unlikely to occur concurrently, hence the expected aggregate loss is lower than the sum of the expected losses from each area. Historic correlations between losses are taken into account in making these assessments. The high and low VaR figures reported for each category did not necessarily occur on the same day as the high and low VaR reported as a whole. Consequently a diversification effect balance for the high and low VaR figures would not be meaningful and is therefore omitted from the above table.

Management VaR remained relatively stable year–on–year characterised by a low volatility environment. The year–on–year reduction in credit risk VaR was driven primarily by tighter credit spreads.

Group Management VaR[a] (£m)



Note
a Includes 100% BAGL.

Business Scenario Stresses

As part of the Group's risk management framework, on a regular basis the performance of the trading business in hypothetical scenarios characterised by severe macroeconomic conditions is modelled. Up to seven global scenarios are modelled on a regular basis, for example, a sharp deterioration in liquidity, a slowdown in the global economy, global recession, and a sharp increase in economic growth.

In 2017, the scenario analyses showed that the largest market risk related impacts would be due to a severe deterioration in financial liquidity and global recession.

Analysis of market risk

Review of regulatory measures

The following disclosures provide details on regulatory measures of market risk. See pages 154 to 155 for more detail on regulatory measures and the differences when compared to management measures.

The Group's market risk capital requirement comprises of two elements:

- the market risk of trading book positions booked to legal entities are measured under a PRA approved internal models approach, including Regulatory VaR, Stressed Value at Risk (SVaR), Incremental Risk Charge (IRC) and Comprehensive Risk Measure (CRM) as required
- the trading book positions that do not meet the conditions for inclusion within the approved internal models approach are calculated using standardised rules.

The table below summarises the regulatory market risk measures, under the internal models approach. See Table "Minimum capital requirement for market risk", on page 97 for a breakdown of capital requirements by approach.

Table 74: Analysis of Regulatory VaR, SVaR, IRC and CRM

Analysis of Regulatory VaR, SVaR, IRC and Comprehensive Risk Measure[a]				
As at 31 December 2017	Year-end £m	Avg. £m	Max £m	Min £m
Regulatory VaR (1-day)	**28**	**27**	**39**	**19**
Regulatory VaR (10-day)[b]	**90**	**85**	**123**	**60**
SVaR (1-day)	**59**	**63**	**105**	**41**
SVaR (10-day)[b]	**186**	**200**	**331**	**130**
IRC	**188**	**202**	**326**	**142**
CRM	**–**	**1**	**2**	**–**
As at 31 December 2016				
Regulatory VaR (1-day)	33	26	34	18
Regulatory VaR (10-day)[b]	105	84	108	57
SVaR (1-day)	65	56	75	34
SVaR (10-day)[b]	205	178	236	109
IRC	154	155	238	112
CRM	2	5	12	2

Notes
a Includes 100% BAGL.
b The 10 day VaR is based on scaling of 1 day VaR model output since VaR is currently not modelled for a 10 day holding period. More information about Regulatory and Stressed VaR methodology is available on page 154.

Overall, there was an increase in IRC in 2017, with no significant movements in other internal model components:

- Regulatory VaR/SVaR: Average VaR/SVaR was broadly unchanged compared to the previous year
- IRC: Increase was mainly driven by positional increases
- CRM: Reduced to zero as the final positions matured in a specific legacy portfolio.

Analysis of market risk

Table 75: Breakdown of the major regulatory risk measures by portfolio[a]

Breakdown of the major regulatory risk measures by portfolio

As at 31 December 2017	Macro £m	Equities £m	Credit £m	Barclays International Treasury £m	Banking £m	Group Treasury £m	Barclays Non-Core £m	Financial Resource Management[b] £m
Regulatory VaR (1-day)	13	6	19	–	5	6	–	8
Regulatory VaR (10-day)	42	20	59	–	16	18	–	25
SVaR (1-day)	23	11	41	–	10	11	–	20
SVaR (10-day)	72	35	130	1	30	35	–	64
IRC	203	5	270	–	1	10	–	65
CRM	–	–	–	–	–	–	–	–

Breakdown of the major regulatory risk measures by portfolio

As at 31 December 2016	Macro £m	Equities £m	Credit £m	Barclays International Treasury £m	Banking £m	Group Treasury £m	Barclays Non-Core £m	Financial Resource Management[b] £m
Regulatory VaR (1-day)	14	12	6	14	12	5	6	–
Regulatory VaR (10-day)	44	38	20	45	40	15	21	–
SVaR (1-day)	22	43	7	30	18	9	22	–
SVaR (10-day)	69	137	24	95	58	30	69	–
IRC	220	8	146	196	25	10	18	–
CRM	–	–	–	–	–	–	2	–

Note
a Excludes BAGL.
b The movement from Barclays International Treasury to Financial Resource Management was driven by internal business rellocation.

The table above shows the primary portfolios which are driving the trading businesses' modelled capital requirement as at 2017 year end. The standalone portfolio results diversify at the total level and are not additive. Regulatory VaR, SVaR, IRC and CRM in the prior table show the diversified results at a group level.

Capital requirements for market risk

The table below shows the elements of capital requirements and risk weighted assets under the market risk framework as defined in the CRR. The Group is required to hold capital for the market risk exposures arising from regulatory trading books. Inputs for the modelled components include the measures on table 75 Regulatory_DVaR_SvaR 'Analysis of regulatory VaR, SVaR, IRC and Comprehensive risk measure', using the higher of the end of period value or an average over the past 60 days (times a multiplier in the case of VaR and SVaR).

Table 76: Market risk own funds requirements

		RWA		Capital requirements	
		As at 31 December 2017 £m	As at 31 December 2016 £m	As at 31 December 2017 £m	As at 31 December 2016 £m
1	**Internal models approach**	**14,912**	14,711	**1,193**	1,177
2	VaR	**2,823**	3,519	**226**	282
3	SVaR	**6,827**	6,634	**546**	531
4	Incremental risk charge	**2,962**	2,089	**237**	167
5	Comprehensive risk measure	**–**	39	**–**	3
6	Risks not in VaR	**2,300**	2,430	**184**	194
7	**Standardised approach**	**13,401**	10,302	**1,072**	824
8	Interest rate risk (general and specific)	**5,625**	5,036	**450**	403
9	Equity risk (general and specific)	**5,608**	4,103	**448**	328
10	Foreign exchange risk	**220**	230	**18**	18
11	Commodity risk	**–**	–	**–**	–
12	Specific interest rate risk of securitisation position	**1,948**	933	**156**	75
13	**Total**	**28,313**	25,013	**2,265**	2,001

Overall market risk RWAs increased by £3.3bn to £28.3bn primarily driven by Equity market risk and Securitisation specific market risk. Refer to table 79 for securitisation specific market risk.

Refer to tables 77 and 78 for detailed movement analysis on the Standardised approach and Internal Model Approach

Analysis of market risk

Table 77: MR1– Market risk under standardised approach

This table shows the RWAs and capital requirements for standardised market risk split between outright products, options and securitisation. This table includes exposures subject to the Standardised approach only.

		RWA		Capital requirements	
		As at 31 December 2017 £m	As at 31 December 2016 £m	As at 31 December 2017 £m	As at 31 December 2016 £m
	Outright products				
1	Interest rate risk (general and specific)	**5,625**	5,036	**450**	403
2	Equity risk (general and specific)	**4,681**	3,610	**374**	289
3	Foreign exchange risk	**220**	230	**18**	18
4	Commodity risk	**–**	–	**–**	–
	Options				
5	Simplified approach	**–**	–	**–**	–
6	Delta-plus method	**690**	387	**55**	31
7	Scenario approach	**237**	106	**19**	8
8	**Securitisation (Specific Risk)**	**1,948**	933	**156**	75
9	**Total**	**13,401**	10,302	**1,072**	824

Standardised market risk RWAs increased £3.1bn to £13.4bn, driven by:

- Increase in Equity risk primarily due to an increase in holdings of US equities
- Increase in Securitisation specific market risk primarily due to a growth in trading book positions.

Table 78: MR2–A – Market risk under internal models approach

This table shows RWAs and capital requirements under the internal models approach. The table shows the calculation of capital requirements as a function of latest and average values for each component.

		RWA		Capital requirements	
		As at December 2017 £m	As at December 2016 £m	As at December 2017 £m	As at December 2016 £m
1	**VaR** (higher of values a and b)	**2,823**	3,519	**226**	282
(a)	Previous day's VaR (Article 365(1) (VaRt-1))	**–**		**114**	138
(b)	Average of the daily VaR (Article 365(1)) on each of the preceding sixty business days (VaRavg) x multiplication factor ((mc) in accordance with Article 366)	**–**		**226**	282
2	**SVaR** (higher of values a and b)	**6,827**	6,634	**546**	531
(a)	Latest SVaR (Article 365(2) (sVaRt-1))	**–**		**230**	303
(b)	Average of the SVaR (Article 365(2) during the preceding sixty business days (sVaRavg) x multiplication factor (ms) (Article 366)	**–**		**546**	531
3	Incremental risk charge – **IRC** (higher of values a and b)	**2,962**	2,089	**237**	167
(a)	Most recent IRC value (incremental default and migration risks section 3 calculated in accordance with Section 3 articles 370/371)	**–**		**188**	154
(b)	Average of the IRC number over the preceding 12 weeks	**–**		**237**	167
4	Comprehensive Risk Measure – **CRM** (higher of values a, b and c)	**–**	39	**–**	3
(a)	Most recent risk number for the correlation trading portfolio (article 377)	**–**		**–**	2
(b)	Average of the risk number for the correlation trading portfolio over the preceding 12-weeks	**–**		**–**	3
(c)	8 % of the own funds requirement in SA on most recent risk number for the correlation trading portfolio (Article 338(4))	**–**		**–**	1
5	Other	**2,300**	2,430	**184**	194
6	**Total**	**14,912**	14,711	**1,193**	1,177

Modelled market risk RWAs remained broadly stable at £14.9bn (2016: £14.7bn), driven by:

- IRC increase primarily due to holdings in the emerging markets sovereign issuer positions
- SVaR increase primarily due to trading activity, partially offset by reduction as a result of the proportional consolidation of BAGL
- VaR decrease primarily as a result of the proportional consolidation of BAGL.

Analysis of securitisation exposures

This section shows the credit, counterparty credit and market risk arising from securitisation positions. These are already included in previous related sections.

Securitisation positions are subject to a distinct risk weighted assets calculation framework and are therefore disclosed separately.

- Securitisation exposures have marginally decreased by £0.2bn, primarily driven by client and business activity offset by Barclays obtaining tranched credit protection on £7.1bn of existing Corporate and SME loans and £2.9bn of existing Commercial Mortgages. The transactions involved Barclays transferring a significant portion of the credit risk on the underlying assets to external counterparties.
- An increase of £0.6bn in trading book exposures is driven by trading activity.

Key Metrics

Banking book exposures	-£0.2bn
Trading book exposures	+£0.6bn

Analysis of securitisation exposures

For regulatory disclosure purposes, a securitisation is defined as a transaction or scheme where the payments are dependent upon the performance of a single exposure or pool of exposures and where the subordination of tranches determines the distribution of losses during the on-going life of the transaction or scheme. Such transactions or schemes are undertaken for a variety of reasons including the transfer of risk for Barclays or on behalf of a client.

The tables below detail exposures from securitisation transactions entered into by the Group and cover banking and trading book exposures. Only transactions that achieved significant risk transfer (SRT) are included in these tables. Where securitisations do not achieve SRT (for instance when they are entered into for funding purposes), the associated exposures are presented alongside the rest of the banking book or trading book positions in other sections of the Pillar 3 report. In line with prior year disclosures, CCR securitisation disclosures are part of banking book tables.

Please see page 158 for further details on Barclays' approach to managing risks associated with securitisation activities.

Barclays completes the Pillar 3 disclosures in accordance with the Basel framework and CRDIV, which prescribes minimum disclosure requirements. The following quantitative disclosures are not applicable or result in a nil return for the current and prior reporting period.

- Securitised facilities subject to an early amortisation period – there were no securitisation positions backed by revolving credit exposures, where Barclays acted as the originator and capital relief was sought
- Re-securitisation exposures subject to hedging insurance or involving financial guarantors – there were no such exposures in the current or prior reporting period
- A separate table for capital deduction is no longer applicable, in line with CRD IV.

Barclays Plc Balance sheet – summary versus regulatory view for securitisation exposures

Table 1 shows a reconciliation between Barclays Plc balance sheet for statutory purposes versus a regulatory view. Specifically for securitisation positions, the regulatory balance sheet will differ from the statutory balance sheet due to the following:

- Deconsolidation of certain securitisation entities that are consolidated for accounting purposes, but not for regulatory purposes (refer to page 161 for a summary of accounting policies for securitisation activities)
- Securitised positions are treated in accordance with the Group's accounting policies, as set out in the 2017 Annual Report. Securitisation balances will therefore be disclosed in the relevant asset classification according to their accounting treatment
- Some securitisation positions are considered to be off balance sheet and relate to undrawn liquidity lines to securitisation vehicles, market risk derivative positions and where Barclays is a swap provider to a Special Purpose Vehicle (SPV). These balances are disclosed in table 83.

Location of securitisation risk disclosures

As securitisation exposures are subject to a distinct risk weighted asset framework, additional securitisation disclosures are provided separate to the credit, counterparty and market risk disclosures.

This table shows a reconciliation of securitisation exposures in the following section and where the balance can be found in the relevant credit, counterparty and market risk sections.

Table 79: Reconciliation of exposures and capital requirements relating to securitisations

As at 31 December 2017	Table number in this document	Exposure value £m	RWAs £m	Capital requirement £m
Banking book				
Standardised approach				
Credit risk	Tables 23, 25, 26	–	–	–
Total Standardised approach		–	–	–
Advanced IRB				
Credit risk	Tables 23, 25, 26	29,926	4,068	325
Counterparty credit risk	Tables 58, 59	194	100	8
Total A-IRB		30,120	4,168	333
Total banking book		30,120	4,168	333
Trading book				
Trading book – specific interest rate market risk				
Standardised approach	Table 76	2,089	1,948	156
Total trading book		2,089	1,948	156

Analysis of securitisation exposures

Table 80: Securitisation activity during the year

This table discloses a summary of the securitisation activity during 2017, including the amount of exposures securitised and recognised gain or loss on sale in the banking book and trading book. Barclays is involved in the origination of traditional and synthetic securitisations. A securitisation is considered to be synthetic where the transfer of risk is achieved through the use of credit derivatives or guarantees and the exposure remains on Barclays' balance sheet. A securitisation is considered to be traditional where the transfer of risk is achieved through the actual transfer of exposures to a SPV.

	Banking book				Trading book			
	Traditional £m	Synthetic £m	Total banking book £m	Gain/loss on sale £m	Traditional £m	Synthetic £m	Total trading book £m	Gain/loss on sale £m
As at 31 December 2017								
Originator								
Residential Mortgages	–	–	–	–	–	–	–	–
Commercial Mortgages	3,677	3,143	6,820	73	–	–	–	–
Credit Card Receivables	–	–	–	–	–	–	–	–
Leasing	–	–	–	–	–	–	–	–
Loans to Corporates or SMEs	748	7,743	8,491	29	–	–	–	–
Consumer Loans	–	–	–	–	–	–	–	–
Trade Receivables	–	–	–	–	–	–	–	–
Securitisations/Re-securitisations	–	–	–	–	–	–	–	–
Other Assets	–	–	–	–	–	–	–	–
Total	4,425	10,886	15,311	102	–	–	–	–
As at 31 December 2016								
Originator								
Residential Mortgages	–	–	–	–	–	–	–	–
Commercial Mortgages	4,629	–	4,629	36	–	–	–	–
Credit Card Receivables	–	–	–	–	–	–	–	–
Leasing	–	–	–	–	–	–	–	–
Loans to Corporates or SMEs	245	8,687	8,932	15	–	–	–	–
Consumer Loans	–	–	–	–	–	–	–	–
Trade Receivables	–	–	–	–	–	–	–	–
Securitisations/Re-securitisations	–	–	–	–	–	–	–	–
Other Assets	–	–	–	–	–	–	–	–
Total	4,874	8,687	13,561	51	–	–	–	–

The value of assets securitised in the banking book has increased by £1.8bn to £15.3bn:

Synthetic

- Barclays synthetically securitised £3.1bn Commercial Mortgages and £7.7bn Loans to Corporates or SMEs retaining the senior and mezzanine tranches. Three of these transactions were entered into in December 2017 and are subject to ongoing regulatory discussion.

Traditional

- Barclays decreased its Commercial Mortgages traditional securitisation activity by £1.0bn. Barclays' role in these transactions is to contribute the underlying mortgage loans to the securitisation and to act as lead manager, book runner or underwriter to distribute the issued securities. The amount shown in the above table represents Barclays' share of assets contributed to the securitisation
- Barclays contributed £0.7bn Loans to Corporates or SMEs in addition to providing tranched limited recourse financing to European and US CLO transactions.
- Barclays may participate in market making of these originated positions in its trading book. As at 31 December 2017, the total exposure value of positions held was £0.1bn. These are not reflected in the above table as for trading book purposes, Barclays is considered to be an investor.

The Bank did not issue any trading book traditional securitisation/Re-securitisation in 2017.

Analysis of securitisation exposures

Table 81: Assets awaiting securitisation

This table discloses the value of assets held on the balance sheet at year end and awaiting securitisation.

Exposure Type	Banking Book £m	Trading Book £m
As at 31 December 2017		
Originator		
Residential Mortgages	–	–
Commercial Mortgages	203	–
Credit Card Receivables	–	–
Leasing	–	–
Loans to Corporates or SMEs	–	–
Consumer Loans	–	–
Trade Receivables	–	–
Securitisations/Re-securitisations	–	–
Other Assets	–	–
Total	203	–
As at 31 December 2016		
Originator		
Residential Mortgages	–	–
Commercial Mortgages	240	–
Credit Card Receivables	–	–
Leasing	–	–
Loans to Corporates or SMEs	–	–
Consumer Loans	–	–
Trade Receivables	–	–
Securitisations/Re-securitisations	–	–
Other Assets	–	–
Total	240	–

Banking book assets awaiting securitisation have remained materially consistent year on year.

Analysis of securitisation exposures

Table 82: Outstanding amount of exposures securitised – Asset value and impairment charges

This table presents the asset values and impairment charges relating to securitisation programmes where Barclays is the originator or sponsor. For programmes where Barclays contributed assets to a securitisation alongside third parties, the amount represents the entire asset pool. Barclays is considered a sponsor of two multi-seller asset-backed commercial paper (ABCP) conduits, Sheffield Receivables Corporation and Salisbury Receivables Corporation. Please note that table 82 will not reconcile to table 80, as table 82 shows outstanding amount of exposure for the positions held/retained by Barclays. Table 80 shows the total position originated by Barclays in 2017.

	Banking book					Trading Book
As at 31 December 2017	Traditional £m	Synthetic £m	Total banking book £m	Of which past due £m	Recognised losses £m	Traditional £m
Originator						
Residential Mortgages	1,173	–	1,173	160	–	–
Commercial Mortgages	560	3,143	3,703	16	–	–
Credit Card Receivables	–	–	–	–	–	–
Leasing	–	–	–	–	–	–
Loans to Corporates or SMEs	380	16,013	16,393	41	–	–
Consumer Loans	–	–	–	–	–	–
Trade Receivables	–	–	–	–	–	–
Securitisations/Re-securitisations	44	–	44	–	–	–
Other Assets	–	–	–	–	–	–
Total (Originator)	2,157	19,156	21,313	217	–	–
Sponsor						
Residential Mortgages	730	–	730	–	–	–
Commercial Mortgages	–	–	–	–	–	–
Credit Card Receivables	–	–	–	–	–	–
Leasing	1,576	–	1,576	7	–	–
Loans to Corporates or SMEs	111	–	111	–	–	–
Consumer Loans	4,073	–	4,073	53	–	–
Trade Receivables	308	–	308	2	–	–
Securitisations/ Re-securitisations	–	–	–	–	–	–
Other Assets	256	–	256	–	–	–
Total (Sponsor)	7,054	–	7,054	62	–	–
Total	9,211	19,156	28,367	279	–	–

Analysis of securitisation exposures

Table 82: Outstanding amount of exposures securitised – Asset value and impairment charges continued

	Banking book					Trading Book
As at 31 December 2016	Traditional £m	Synthetic £m	Total banking book £m	Of Which Past Due £m	Recognised losses £m	Traditional £m
Originator						
Residential Mortgages	3,218	–	3,218	659	–	–
Commercial Mortgages	7,070	–	7,070	18	–	–
Credit Card Receivables	–	–	–	–	–	–
Leasing	–	–	–	–	–	–
Loans to Corporates or SMEs	433	9,507	9,940	45	–	–
Consumer Loans	–	–	–	–	–	–
Trade Receivables	–	–	–	–	–	–
Securitisations/ Re-securitisations	955	–	955	–	–	–
Other Assets	1,640	–	1,640	–	–	–
Total (Originator)	13,316	9,507	22,823	722	–	–
Sponsor						
Residential Mortgages	871	–	871	–	–	–
Commercial Mortgages	–	–	–	–	–	–
Credit Card Receivables	–	–	–	–	–	–
Leasing	1,020	–	1,020	8	–	–
Loans to Corporates or SMEs	182	–	182	–	–	–
Consumer Loans	4,999	–	4,999	61	–	–
Trade Receivables	473	–	473	1	–	–
Securitisations/ Re-securitisations	–	–	–	–	–	–
Other Assets	96	–	96	–	–	–
Total (Sponsor)	7,641	–	7,641	70	–	–
Total	20,957	9,507	30,464	792	–	–

Banking book securitised assets where Barclays is considered to be the originator or sponsor has decreased by £2.1bn to £28.4bn, primarily driven by:

Originator

- Traditional securitisations decreased £11.2bn to £2.2bn driven by £8.8bn reduction in outstanding Legacy exposures where Barclays does not have retained risk, of which; £4.3bn in Commercial Mortgages, £2bn in Residential Mortgages £1.6bn in Other Assets and £0.9bn in Securitisations/ Re-securitisations. There was a further £2.2bn reduction in Commercial Mortgages as a result of Barclays no longer taking RWA relief on a Commercial Mortgages securitisation.
- Synthetic securitisations increased £9.6bn to £19.2bn driven by the Bank synthetically securitising £10.8bn exposures and retaining the senior and mezzanine tranches, of which; £3.1bn in Commercial Mortgages and £7.7bn in Loans to Corporates or SMEs. This was partially offset by the de-recognition of £0.8bn in a synthetic securitisation structure during the year.

Sponsor

- Barclays continues to sponsor and provide liquidity and program-wide credit enhancement to its conduits – Sheffield Receivables Corporation and Salisbury Receivables Corporation
- There has been an overall decrease of £0.6bn for sponsored facilities during the year.

Analysis of securitisation exposures

Table 83: Securitisation exposures – by exposure class

The table below discloses the aggregate amount of securitisation exposures held, which is consistent with table 84, 86 and 87.

For originated positions, the table below reflects Barclays retained exposure in the securitisation programmes also disclosed in table 82. For clarity, table 82 discloses the underlying asset value of these programmes.

For invested and sponsored positions, the table below presents the aggregate amount of positions purchased.

	Banking book *[a,b]				Trading Book*[a,b]		
As at 31 December 2017	Originator £m	Sponsor £m	Investor £m	Total banking book £m	Originator £m	Investor £m	Total trading book £m
On-balance sheet							
Residential Mortgages	22	–	2,208	2,230	–	775	775
Commercial Mortgages	2,891	–	2	2,893	–	152	152
Credit Card Receivables	–	–	–	–	–	57	57
Leasing	–	–	1	1	–	–	–
Loans to Corporates or SMEs	14,599	–	588	15,187	–	751	751
Consumer Loans	–	–	1,189	1,189	–	256	256
Trade Receivables	–	–	119	119	–	–	–
Securitisations/ Re-securitisations	–	–	–	–	–	89	89
Other Assets	–	–	149	149	–	9	9
Total On-balance sheet	17,512	–	4,256	21,768	–	2,089	2,089
Off-balance sheet							
Residential Mortgages	136	502	416	1,054	–	–	–
Commercial Mortgages	–	–	–	–	–	–	–
Credit Card Receivables	–	418	–	418	–	–	–
Leasing	–	396	56	452	–	–	–
Loans to Corporates or SMEs	4	–	601	605	–	–	–
Consumer Loans	–	4,634	868	5,502	–	–	–
Trade Receivables	–	72	22	94	–	–	–
Securitisations/ Re-securitisations	–	–	–	–	–	–	–
Other Assets	–	148	79	227	–	–	–
Total Off-balance sheet	140	6,170	2,042	8,352	–	–	–
Total	17,652	6,170	6,298	30,120	–	2,089	2,089

Analysis of securitisation exposures

Table 83: Securitisation exposures – by exposure class continued

As at 31 December 2016	Banking book[a,b] Originator £m	Sponsor £m	Investor £m	Total banking book £m	Trading Book[a,b] Originator £m	Investor £m	Total trading book £m
On-balance sheet							
Residential Mortgages	21	–	795	816	–	602	602
Commercial Mortgages	2,171	–	2	2,173	–	20	20
Credit Card Receivables	–	–	367	367	–	103	103
Leasing	–	–	2	2	–	–	–
Loans to Corporates or SMEs	8,636	–	103	8,739	–	408	408
Consumer Loans	–	–	3,984	3,984	–	132	132
Trade Receivables	–	–	113	113	–	–	–
Securitisations/ Re-securitisations	–	–	–	–	–	88	88
Other Assets	–	–	668	668	–	127	127
Total On-balance sheet	10,828	–	6,034	16,862	–	1,480	1,480
Off-balance sheet							
Residential Mortgages	494	634	2,222	3,350	–	5	5
Commercial Mortgages	147	–	262	409	–	–	–
Credit Card Receivables	–	–	387	387	–	–	–
Leasing	–	–	92	92	–	–	–
Loans to Corporates or SMEs	17	–	619	636	–	–	–
Consumer Loans	–	5,706	2,112	7,818	–	–	–
Trade Receivables	–	20	25	45	–	–	–
Securitisations/ Re-securitisations	–	–	8	8	–	–	–
Other Assets	–	122	573	695	–	–	–
Total Off-balance sheet	658	6,482	6,300	13,440	–	5	5
Total	11,486	6,482	12,334	30,302	–	1,485	1,485

Notes
a The exposure type is based on the asset class of underlying positions.
b Off balance sheet relates to liquidity lines to securitisation vehicles, market risk derivative positions and where the Group is a swap provider to a SPV.

The total amount of securitisation positions in the banking book has marginally decreased by £0.2bn to £30.1bn, primarily driven by:

On-balance sheet

- Increase in Residential Mortgages by £1.4bn to £2.2bn driven by execution of commitment to acquire investor bond positions
- Increase in Commercial Mortgages by £0.7bn to £2.9bn driven by Barclays synthetically originating £2.9bn portfolio partially offset by a decrease of £2.2bn where Barclays stopped taking RWA relief on a traditional securitisation structure. The bank retained senior and mezzanine tranches in both cases
- Increase in Loans to Corporates or SMEs by £6.4bn to £15.2bn due to Barclays synthetically securitising £7.7bn and retaining £7.1bn notes in the senior and mezzanine tranches partially offset by a decrease of £0.8bn where Barclays stopped taking RWA relief on a synthetic securitisation structure
- Decrease in Consumer Loans by £2.8bn to £1.2bn driven by £1.2bn decease in investor client activity, the termination of £1.0bn of facilities and £0.6bn transfer to off balance sheet conduit structures

Off-balance sheet

- Decrease in Residential Mortgages of £2.3bn to £1.1bn driven by a reduction in new securitisation commitments
- Decrease in Consumer Loans of £2.3bn in sponsor and investor positions to £5.5bn primarily driven by movement to conduit and reduction in client activity.

The total amount of securitisation positions in the trading book has increased by £0.6bn to £2.1bn driven by an increase in trading activity in Residential Mortgages, Commercial Mortgages, Loans to Corporates or SMEs and Consumer Loans.

Analysis of securitisation exposures

Table 84: Securitisation exposures – by capital approach

This table discloses the total exposure value and associated capital requirement of securitisation positions held by the approach adopted in accordance with the Basel framework. Barclays has approval to use, and therefore applies the Advanced IRB approach for the calculation of its RWAs. The total population is as per tables 83, 86 and 87.

	Exposure values				Capital requirements			
	Originator £m	Sponsor £m	Investor £m	Total £m	Originator £m	Sponsor £m	Investor £m	Total £m
As at 31 December 2017								
Banking book								
A-IRB approach								
Ratings Based Approach								
<= 10%	16,014	1,880	3,097	20,991	96	11	19	126
> 10% <= 20%	752	443	2,310	3,505	10	4	24	38
> 20% <= 50%	282	56	372	710	7	1	6	14
> 50% <= 100%	336	–	158	494	16	–	8	24
>100% <= 650%	245	–	85	330	35	–	8	43
> 650% < 1250%	–	–	–	–	–	–	–	–
= 1250% / Look through	23	–	276	299	1	–	55	56
Internal Assessment Approach	–	3,791	–	3,791	–	32	–	32
Supervisory Formula Method	–	–	–	–	–	–	–	–
Total IRB	17,652	6,170	6,298	30,120	165	48	120	333
Standardised approach	–	–	–	–	–	–	–	–
Total banking book	17,652	6,170	6,298	30,120	165	48	120	333
Trading book								
A-IRB approach								
Ratings Based Approach								
<= 10%	–	–	1,272	1,272	–	–	8	8
> 10% <= 20%	–	–	207	207	–	–	2	2
> 20% <= 50%	–	–	266	266	–	–	6	6
> 50% <= 100%	–	–	110	110	–	–	5	5
>100% <= 650%	–	–	93	93	–	–	23	23
> 650% < 1250%	–	–	–	–	–	–	–	–
= 1250% / Look through	–	–	141	141	–	–	112	112
Total trading book	–	–	2,089	2,089	–	–	156	156
As at 31 December 2016								
Banking book								
A-IRB approach								
Ratings Based Approach								
<= 10%	9,544	1,602	5,493	16,639	57	10	34	101
> 10% <= 20%	928	223	3,805	4,956	12	2	39	53
> 20% <= 50%	682	54	1,006	1,742	19	1	19	39
> 50% <= 100%	144	–	241	385	7	–	14	21
>100% <= 650%	181	–	107	288	17	–	10	27
> 650% < 1250%	–	–	–	–	–	–	–	–
= 1250% / Look through	7	–	1,682	1,689	7	–	31	38
Internal Assessment Approach	–	4,603	–	4,603	–	36	–	36
Supervisory Formula Method	–	–	–	–	–	–	–	–
Total IRB	11,486	6,482	12,334	30,302	119	49	147	315
Standardised approach	–	–	–	–	–	–	–	–
Total banking book	11,486	6,482	12,334	30,302	119	49	147	315
Trading book								
A-IRB approach								
Ratings Based Approach								
<= 10%	–	–	780	780	–	–	5	5
> 10% <= 20%	–	–	161	161	–	–	2	2
> 20% <= 50%	–	–	278	278	–	–	6	6
> 50% <= 100%	–	–	120	120	–	–	6	6
>100% <= 650%	–	–	43	43	–	–	8	8
> 650% < 1250%	–	–	12	12	–	–	7	7
= 1250% / Look through	–	–	91	91	–	–	41	41
Total trading book	–	–	1,485	1,485	–	–	75	75

Analysis of securitisation exposures

Risk Weighted Band	IRB S&P Equivalent Rating	STD S&P Equivalent Rating
<= 10%	AAA to A+ (Senior Position Only)	N/A
> 10% <= 20%	A to A- (Senior Position Only) / AAA to A+ (Base Case)	N/A
> 20% <= 50%	A to A- (Base Case)	AAA to AA-
> 50% <= 100%	BBB+ to BBB (Base Case)	A+ to A-
> 100% <= 650%	BBB- (Base Case) to BB (Base Case)	BBB+ to BBB-
> 650% < 1250%	BB- (Base Case)	BB to BB-
= 1250% / deduction	Below BB-	Below BB-

The securitisation positions in the banking book have marginally decreased by £0.2bn to £30.1bn, primarily driven by:

Increase in the <=10% band:
- £6.5bn increase in Originator positions due to synthetically securitised Loans to Corporates or SMEs with the Bank retaining the senior tranche
- £0.3bn increase in Sponsor positions primarily due to £2.5bn increase in synthetically securitised Commercial Mortgages offset by a decrease of £2.1bn due to Barclays no longer taking RWA relief on a traditional securitisation structure, with the Bank retaining the senior tranche in both structures
- £2.4bn decrease in investor positions driven by client activity.

Decrease in the > 10% <= 20% band:
- £1.5bn decrease in investor positions primarily driven by £1.3bn transfer of positions to off balance sheet conduits.

Decrease in the > 1250% / Look through band:
- £1.4bn decrease in investor positions driven by client activity.

Decrease in the Internal Assessment Approach band:
- £0.8bn decrease in sponsor positions driven by termination of trades.

The securitisation positions in the trading book have increased by £0.6bn to £2.1bn primarily driven by:

Increase in the <=10% band:
- £0.5bn increase in individually immaterial rated investor positions across Residential Mortgages, Commercial Mortgages, Loans to Corporates or SMEs and Consumer Loans.

Table 85: Re-securitisation exposures – by risk weight band

This table is a subset of table 84 and discloses Barclays exposures to re-securitisations by capital approach. For the purposes of the table below, a re-securitisation is defined as a securitisation where at least one of the underlying exposures is a securitisation position. This is in line with CRD IV.

For securitisations with mixed asset pools (e.g. certain collateralised loan obligations), the exposure class disclosed in tables 83, 86 and 87 represents the exposure class of the predominant underlying asset class.

	Exposure values				Capital requirements			
As at 31 December 2017	Originator £m	Sponsor £m	Investor £m	Total £m	Originator £m	Sponsor £m	Investor £m	Total £m
Banking book								
AIRB approach								
Ratings Based Approach								
<= 10%	–	–	–	–	–	–	–	–
> 10% <= 20%	–	–	–	–	–	–	–	–
> 20% <= 50%	4	–	–	4	–	–	–	–
> 50% <= 100%	–	–	6	6	–	–	–	–
>100% <= 650%	–	–	–	–	–	–	–	–
> 650% < 1250%	–	–	–	–	–	–	–	–
= 1250% / Look through	–	–	–	–	–	–	–	–
Internal Assessment Approach	–	–	–	–	–	–	–	–
Supervisory Formula Method	–	–	–	–	–	–	–	–
Total A-IRB	4	–	6	10	–	–	–	–
Standardised approach	–	–	–	–	–	–	–	–
Total banking book	4	–	6	10	–	–	–	–
Trading book								
AIRB approach								
Ratings Based Approach								
<= 10%	–	–	–	–	–	–	–	–
> 10% <= 20%	–	–	–	–	–	–	–	–
> 20% <= 50%	–	–	49	49	–	–	1	1
> 50% <= 100%	–	–	44	44	–	–	2	2
>100% <= 650%	–	–	–	–	–	–	–	–
> 650% < 1250%	–	–	–	–	–	–	–	–
= 1250% / Look through	–	–	5	5	–	–	5	5
Total trading book	–	–	98	98	–	–	8	8

Analysis of securitisation exposures

Table 85: Re-securitisation exposures – by risk weight band continued

	Exposure values				Capital requirements			
As at 31 December 2016	Originator £m	Sponsor £m	Investor £m	Total £m	Originator £m	Sponsor £m	Investor £m	Total £m
Banking book								
AIRB approach								
Ratings Based Approach								
<= 10%	–	–	–	–	–	–	–	–
> 10% <= 20%	–	–	–	–	–	–	–	–
> 20% <= 50%	84	–	1	85	2	–	–	2
> 50% <= 100%	–	–	7	7	–	–	1	1
>100% <= 650%	–	–	–	–	–	–	–	–
> 650% < 1250%	–	–	–	–	–	–	–	–
= 1250% / Look through	–	–	–	–	–	–	–	–
Internal Assessment Approach	–	–	–	–	–	–	–	–
Supervisory Formula Method	–	–	–	–	–	–	–	–
Total A-IRB	84	–	8	92	2	–	1	3
Standardised approach	–	–	–	–	–	–	–	–
Total banking book	84	–	8	92	2	–	1	3
Trading book								
AIRB approach								
Ratings Based Approach								
<= 10%	–	–	–	–	–	–	–	–
> 10% <= 20%	–	–	–	–	–	–	–	–
> 20% <= 50%	–	–	59	59	–	–	2	2
> 50% <= 100%	–	–	45	45	–	–	2	2
>100% <= 650%	–	–	–	–	–	–	–	–
> 650% < 1250%	–	–	–	–	–	–	–	–
= 1250% / Look through	–	–	–	–	–	–	–	–
Total trading book	–	–	104	104	–	–	4	4

Decrease in the banking book in the > 20% <= 50% band was primarily driven by £0.1bn disposal of Non-Core exposures.

Analysis of securitisation exposures

Table 86: Aggregate amount of securitised positions retained or purchased by geography – banking book

This table presents total banking book securitised exposure type by geography, based on location of the counterparty.

Exposure Type	United Kingdom £m	Europe £m	Americas £m	Africa and Middle East £m	Asia £m	Total £m
As at 31 December 2017						
Residential Mortgages	3,133	51	13	23	64	3,284
Commercial Mortgages	1,782	1,098	13	–	–	2,893
Credit Card Receivables	–	–	418	–	–	418
Leasing	1	–	452	–	–	453
Loans to Corporates or SMEs	7,654	3,711	4,283	–	144	15,792
Consumer Loans	437	809	5,410	–	35	6,691
Trade Receivables	141	–	72	–	–	213
Securitisations/ Re-securitisations	–	–	–	–	–	–
Other Assets	1	2	368	–	5	376
Total	13,149	5,671	11,029	23	248	30,120
As at 31 December 2016						
Residential Mortgages	3,660	122	15	199	170	4,166
Commercial Mortgages	2,582	–	–	–	–	2,582
Credit Card Receivables	–	–	754	–	–	754
Leasing	2	–	92	–	–	94
Loans to Corporates or SMEs	3,857	2,050	3,468	–	–	9,375
Consumer Loans	879	792	10,066	–	65	11,802
Trade Receivables	138	–	20	–	–	158
Securitisations/ Re-securitisations	–	–	8	–	–	8
Other Assets	–	1	1,359	–	3	1,363
Total	11,118	2,965	15,782	199	238	30,302

The securitisation positions in the banking book have marginally decreased by £0.2bn to £30.1bn driven by:

United Kingdom increased by £2.0bn to £13.1bn, primarily driven by:

- Decrease in Residential Mortgages of £0.5bn to £3.1bn owing to lower purchased amount than commitment as a result of higher placement of bonds to external investors
- Decrease in Commercial Mortgages of £0.8bn to £1.8bn driven by Barclays no longer taking RWA relief on a traditional securitisation structure partially offset by a new synthetic securitisation where Barclays retained the senior and mezzanine tranches
- Increase in Loans to Corporates or SMEs of £3.8bn to £7.7bn driven by synthetic securitisation where Barclays retained the senior and mezzanine tranches.

Europe increased by £2.7bn, primarily driven by:

- Increase in Commercial Mortgages driven by synthetic securitisation of £1.1bn where Barclays retained the senior and mezzanine tranches
- Increase in Loans to Corporates or SMEs driven by synthetic securitisation of £1.6bn where Barclays retained the senior and mezzanine tranches.

Americas decreased by £4.8bn primarily driven by:

- Increase in Loans to Corporates or SMEs of £0.8bn driven by synthetic securitisation where Barclays retained £1.6bn of senior and mezzanine tranches, partially offset by Barclays no longer taking RWA relief of £0.7bn on a synthetic securitisation structure
- Decrease in investor and sponsor positions in Consumer Loans and Other Assets of £5.7bn due to client activity.

Analysis of securitisation exposures

Table 87: Aggregate amount of securitised positions retained or purchased by geography – trading book

This table presents total trading book securitised exposure type by geography. The country is based on the country of operation of the issuer.

Exposure Type	United Kingdom £m	Europe £m	Americas £m	Africa and Middle East £m	Asia £m	Total £m
As at 31 December 2017						
Residential Mortgages	696	13	63	–	3	775
Commercial Mortgages	2	–	150	–	–	152
Credit Card Receivables	–	–	57	–	–	57
Leasing	–	–	–	–	–	–
Loans to Corporates or SMEs	3	401	347	–	–	751
Consumer Loans	–	8	248	–	–	256
Trade Receivables	–	–	–	–	–	–
Securitisations/ Re-securitisations	–	89	–	–	–	89
Other Assets	–	–	9	–	–	9
Total	701	511	874	–	3	2,089
As at 31 December 2016						
Residential Mortgages	591	1	15	–	–	607
Commercial Mortgages	–	–	20	–	–	20
Credit Card Receivables	–	–	103	–	–	103
Leasing	–	–	–	–	–	–
Loans to Corporates or SMEs	16	157	235	–	–	408
Consumer Loans	–	–	132	–	–	132
Trade Receivables	–	–	–	–	–	–
Securitisations/ Re-securitisations	88	–	–	–	–	88
Other Assets	52	–	75	–	–	127
Total	747	158	580	–	–	1,485

The total amount of securitisation positions in the trading book increased by £0.6bn to £2.1bn driven by:

- £0.3bn increase in Loans to Corporates or SMEs driven by increase in trading activity in Europe and Americas

Analysis of treasury and capital risk

This section contains key disclosures describing the Group's treasury and capital risk profile, highlighting regulatory as well as management measures. This includes foreign exchange, pension risk and non Traded VaR measures.

- Annual Earnings at Risk (AEaR) is a key measure of interest rate risk in the banking book (IRRBB). The additional sensitivity measure of a positive 100bps shock was added for 2017, driven by the rise in GBP base rate in November 2017.

Key Metrics

AEaR **+£76m**

across the Group from a positive 100bps shock in interest rates

Analysis of treasury and capital risk

Foreign exchange risk

The Group is exposed to two sources of foreign exchange risk.

a) Transactional foreign currency exposure

Transactional foreign currency exposures represent exposure on banking assets and liabilities, denominated in currencies other than the functional currency of the transacting entity.

The Group's risk management policies prevent the holding of significant open positions in foreign currencies outside the trading portfolio managed by Barclays International which is monitored through VaR.

Banking book transactional foreign exchange risk outside of Barclays International is monitored on a daily basis by the market risk function and minimised by the businesses.

b) Translational foreign exchange exposure

The Group's investments in overseas subsidiaries and branches create capital resources denominated in foreign currencies, principally USD and EUR. Changes in the GBP value of the net investments due to foreign currency movements are captured in the currency translation reserve, resulting in a movement in CET1 capital.

The Group's strategy is to minimise the volatility of the capital ratios caused by foreign exchange movements, by matching the CET1 capital movements to the revaluation of the Group's foreign currency RWA exposures.

Functional currency of operations (audited)

	Foreign currency net investments £m	Borrowings which hedge the net investments £m	Derivatives which hedge the net investments £m	Structural currency exposures pre-economic hedges £m	Economic hedges £m	Remaining structural currency exposures £m
As at 31 December 2017						
USD	**27,848**	**(12,404)**	**(540)**	**14,904**	**(6,153)**	**8,751**
EUR	**2,489**	**(3)**	**–**	**2,486**	**(2,127)**	**359**
ZAR	**8**	**–**	**–**	**8**	**–**	**8**
JPY	**467**	**(152)**	**(301)**	**14**	**–**	**14**
Other	**2,475**	**–**	**(1,299)**	**1,176**	**–**	**1,176**
Total	**33,287**	**(12,559)**	**(2,140)**	**18,588**	**(8,280)**	**10,308**
As at 31 December 2016						
USD	29,460	(12,769)	–	16,691	(7,898)	8,793
EUR	2,121	(363)	–	1,758	(2,053)	(295)
ZAR	3,679	–	(2,571)	1,108	–	1,108
JPY	438	(209)	(224)	5	–	5
Other	2,793	–	(1,318)	1,475	–	1,475
Total	38,491	(13,341)	(4,113)	21,037	(9,951)	11,086

The economic hedges primarily represent the USD and EUR preference shares and Additional Tier 1 (AT1) instruments that are held as equity. These are accounted for at historic cost under IFRS and do not qualify as hedges for accounting purposes.

During 2017, total structural currency exposure net of hedging instruments decreased by £0.8bn to £10.3bn (2016: £11.1bn). Foreign currency net investments decreased by £5.2bn to £33.3bn (2016: £38.5bn) driven predominantly by the decrease in ZAR investments following the partial disposal of the Group's investment in BAGL and accounting deconsolidation of the remaining holding. The hedges associated with these investments decreased by £2.8bn to £14.7bn (2016: £17.5bn).

Analysis of treasury and capital risk

Pension risk review

The UK Retirement Fund (UKRF) represents approximately 96% (2016: 96%) of the Group's total retirement benefit obligations globally. As such this risk review section focuses exclusively on the UKRF. The UKRF is closed to new entrants and there is no new final salary benefit being accrued. Existing active members accrue a combination of a cash balance benefit and a defined contribution element. Pension risk arises as the market value of the pension fund assets may decline, investment returns may reduce or the estimated value of the pension liabilities may increase.

See page 167 of this report for more information on how pension risk is managed.

Assets

The Trustee Board of the UKRF defines its overall long-term investment strategy with investments across a broad range of asset classes. This results in an appropriate mix of return seeking assets as well as liability matching assets to better match future pension obligations. The main market risks within the asset portfolio are against interest rates and equities. The split of scheme assets is shown within Note 35 on page 301 of the Barclays PLC Annual Report 2017. The fair value of the UKRF assets was £30.1bn as at 31 December 2017 (2016: £31.8bn).

Liabilities

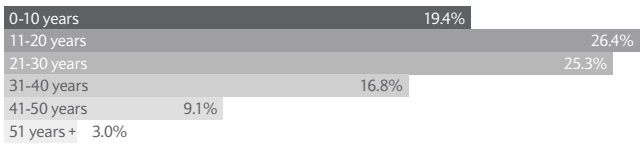
The UKRF retirement benefit obligations are a series of future cash flows with relatively long duration. On an IAS 19 basis these cash flows are sensitive to changes in the expected long-term price inflation rate (RPI) and the discount rate (AA corporate bond yield curve):

- An increase in long-term expected inflation corresponds to an increase in liabilities
- A decrease in the discount rate corresponds to an increase in liabilities.

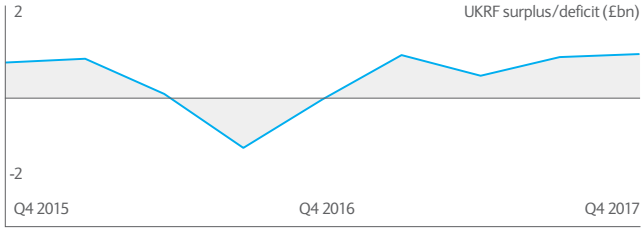
Pension risk is generated through the Group's defined benefit schemes and this risk is set to reduce over time as the main defined benefit scheme is closed to new entrants. The chart below outlines the shape of the UKRF's liability cash flow profile as at 31 December 2017 that takes account of the future inflation indexing of payments to beneficiaries. The majority of the cash flows (approximately 88%) fall between 0 and 40 years, peaking between 11 and 20 years and reducing thereafter. The shape may vary depending on changes to inflation and longevity expectations and any members who elect to transfer out.

For more detail on the UKRF's financial and demographic assumptions see Note 35 to the financial statements of the Barclays PLC Annual Report 2017.

Proportion of liability cash flows



IAS19 Pension Position in 2017



The graph above shows the UKRF's net IAS 19 pension position for each quarter-end for the past two years. The volatility shown by the fluctuation in the net IAS 19 pension position is reflective of the movements observed in the market.

In Q2 2016 the UKRF IAS 19 position deteriorated as the AA discount rate moved lower, driven by both a decrease in long-dated government bond yields as well as a tightening in credit spreads.

During H2 2016 this trend continued driven by the outcome of the EU Referendum in June as well as the Bank of England's announcement on quantitative easing in August. These events drove significant market moves adversely affecting the UKRF AA discount rate. For example the market index IBOXX £-Corp AA yield was 53bps lower between June and September.

Gilt yields reverted higher in the months following September which was also reflected in a higher AA discount rate. As a result the net IAS 19 position ended 2016 close to zero.

During 2017 the net improvement in the IAS 19 position was largely driven by bank contributions. Changes to market levels, in particular equity prices and interest rates, largely offset each other over the year.

Please see Note 35 on page 301 of the Barclays PLC Annual Report 2017 for the sensitivity of the UKRF to changes in key assumptions.

Risk measurement

In line with Barclays' risk management framework the assets and liabilities of the UKRF are modelled within a VaR framework to show the volatility of the pension positions on a total portfolio level. This enables the risks, diversification and liability matching characteristics of the UKRF obligations and investments to be adequately captured. VaR is measured and monitored on a monthly basis. Risks are reviewed and reported regularly at forums including the Board Risk Committee, the Group Risk Committee, the Pensions Management Group and the Pension Executive Board. The VaR model takes into account the valuation of the liabilities based on an IAS 19 basis (see Note 35 on page 301 of the Barclays PLC Annual Report 2017). The Trustee receives quarterly VaR measures on a funding basis.

The pension liability is also sensitive to post-retirement mortality assumptions which are reviewed regularly. See Note 35 on page 301 of the Barclays PLC Annual Report 2017 for more details.

In addition the impact of pension risk to the Group is taken into account as part of the stress testing process. Stress testing is performed internally on at least an annual basis. The UKRF exposure is also included as part of regulatory stress tests.

Analysis of treasury and capital risk

Barclays defined benefit pension schemes affects capital in two ways:

- An IAS 19 deficit is treated as a liability on the Group's balance sheet. Movement in a deficit due to re-measurements, including actuarial losses, are recognised immediately through Other Comprehensive Income and as such reduces shareholders' equity and CET1 capital. An IAS 19 surplus is treated as an asset on the balance sheet and increases shareholders' equity; however it is deducted for the purposes of determining CET1 capital.
- In the Group's statutory balance sheet an IAS 19 surplus or deficit is partially offset by a deferred tax liability or asset respectively. These may or may not be recognised for calculating CET1 capital depending on the overall deferred tax position of the Group at the particular time.

Pension risk is taken into account in the Pillar 2A capital assessment undertaken by the PRA at least annually. The Pillar 2A requirement forms part of the Group's overall regulatory minimum requirement for CET1 capital, Tier 1 capital and total capital. More detail on minimum regulatory requirements can be found in the Capital risk management section on pages 166 to167.

Interest rate risk in the banking book

Net interest income sensitivity

The table below shows a sensitivity analysis on pre-tax net interest income for non-trading financial assets and financial liabilities, including the effect of any hedging. The sensitivity has been measured using the Annual Earnings at Risk (AEaR) methodology as described on page 168. Note that this metric assumes an instantaneous parallel change to interest rate forward curves. The model floors shocked market rates at zero; changes in Net Interest Income (NII) sensitivity are only observed where forward rates are greater than zero. The main model assumptions are: (i) one year time horizon; (ii) balance sheet is held constant; (iii) balances are adjusted for assumed behavioural profiles (i.e. considers that customers may remortgage before the contractual maturity); and (iv) behavioural assumptions are kept unchanged in all rate scenarios.

Table 88: Net interest income sensitivity (AEaR) by business unit[a,b,c]

As at 31 December 2017	Barclays UK £m	Barclays International £m	Barclays Non-Core £m	Total £m
+100bps	45	31	–	76
+25bps	11	9	–	20
-25bps	(61)	(22)	–	(83)
As at 31 December 2016				
+100bps	19	46	6	71
+25bps	5	16	1	22
-25bps	(130)	(90)	–	(220)

Notes
a Excludes investment banking business and excludes 100% BAGL
b Excludes Treasury operations, which are driven by the firm's investments in the liquidity pool, which are risk managed using value-based risk measures described on pages 163 to 165. Treasury's NII (AEaR) sensitivity to a +25/-25bps move is £13m / £(2)m respectively.
c Expected fixed rate mortgage pipeline completions in Barclays UK assumed to be consistent with level and timing of pipeline hedging.

NII asymmetry arises due to the current low level of interest rates. Modelled NII sensitivity to a -25bp shock to rates has however reduced year on year as a result of the change in UK base rate increasing from 0.25% to 0.5% in November 2017.

Both Barclays UK and Barclays International exposures to falling rates have reduced as a result of the higher base rate environment and the movement of customer savings rates away from the implicit customer savings market 0% floor.

Table 89: Net interest income sensitivity (AEaR) by currency[a]

	2017		2016	
As at 31 December 2017	+25 basis points £m	-25 basis points £m	+25 basis points £m	-25 basis points £m
GBP	12	(76)	9	(215)
USD	1	(1)	3	(5)
EUR	4	(1)	7	1
Other currencies	3	(5)	3	(1)
Total	20	(83)	22	(220)
As percentage of net interest income	0.20%	(0.84%)	0.21%	(2.09%)

Note
a Barclays UK and Barclays International sensitivity (excluding Investment Banking business and Treasury) and excludes 100% BAGL.

Economic Capital by business unit

Barclays measures some non-traded market risks using an economic capital (EC) methodology. EC is predominantly calculated using a VaR model using a 99% confidence interval aligning to other regulatory submissions. For more information on definitions of prepayment, recruitment and residual risk, and on how EC is used to manage non-traded market risk, see the treasury and capital risk management section on pages 168 to 169.

Analysis of treasury and capital risk

Table 90: Economic Capital for non-traded risk by business unit

Economic Capital by business unit

As at 31 December 2017	Barclays UK £m	Barclays International[a] £m	Total £m
Prepayment risk	20	13	33
Recruitment risk	64	1	65
Residual risk	3	3	6
Total	87	17	104
As at 31 December 2016			
Prepayment risk	27	8	35
Recruitment risk	18	2	20
Residual risk	1	35	36
Total	46	45	91

Note
a Only retail exposures within Barclays International are captured in the measure.

Recruitment Risk in UK Retail Banking has increased by £46m due to higher volumes of pipeline hedging, as a result of increased customer appetite for fixed rate mortgages.

Analysis of equity sensitivity
Equity sensitivity table measures the overall impact of a +/- 25bps movement in interest rates on retained earnings, available for sale and cash flow hedge reserves. This data is captured using DV01 metric which is an indicator of the shift in value for a 1 basis point in the yield curve.

Table 91: Analysis of equity sensitivity

Analysis of equity sensitivity

	2017		2016	
As at 31 December	+25 basis points £m	-25 basis points £m	+25 basis points £m	-25 basis points £m
Net interest income	20	(83)	22	(220)
Taxation effects on the above	(6)	25	(7)	66
Effect on profit for the year	14	(58)	15	(154)
As percentage of net profit after tax	(1.57%)	6.52%	0.54%	(5.45%)
Effect on profit for the year (per above)	14	(58)	15	(154)
Available for sale reserve	(164)	219	(154)	114
Cash flow hedge reserve	(616)	598	(732)	692
Taxation effects on the above	195	(204)	222	(202)
Effect on equity	(571)	555	(649)	450
As percentage of equity	(0.87%)	0.84%	(0.91%)	0.63%

As indicated in relation to the net interest income sensitivity table on page 115, the impact of a 25bps movement in rates is largely driven by Barclays UK.

The year on year movement in cash flow hedge reserve sensitivities was driven by structural changes in business activities and related hedging. Movements in the available for sale reserve would impact CRD IV fully loaded CET1 capital, however the movement in the cash flow hedge reserve would not impact CET1 capital.

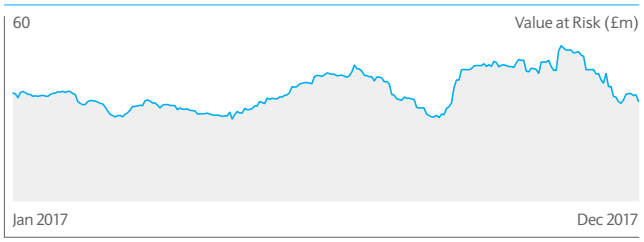
Analysis of treasury and capital risk

Volatility of the Available for Sale portfolio in the liquidity pool

Changes in value of Available for Sale exposures flow directly through capital via the Available for Sale reserve. The volatility of the value of the Available for Sale investments in the Liquidity pool is captured and managed through a value measure rather than an earning measure, i.e. the non-traded market risk VaR.

Although the underlying methodology to calculate the non traded VaR is identical to the one used in Traded Management VaR, the two measures are not directly comparable. The Non-Traded VaR represents the volatility to capital driven by the Available for Sale exposures. These exposures are in the banking book and do not meet the criteria for trading book treatment.

Volatility of AFS portfolio in Liquidity Pool[a]



Note

a Excludes 100% BAGL.

Analysis of volatility of the available for sale portfolio in the liquidity pool

	2017			2016		
For the year ended 31 December	Average £m	High £m	Low £m	Average £m	High £m	Low £m
Non-Traded Market Value at Risk (daily, 95%)	36	50	27	40	46	32

Non-traded VaR was mainly driven by volatility of interest rates in developed markets. The increases in late Spring and early Autumn were driven primarily by additional outright interest rate risk exposure taken in the liquidity pool at those times.

Analysis of operational risk

This section contains details of capital requirements for operational risk, expressed as RWAs, and an analysis of the Group's operational risk profile, including events which have had a significant impact in 2017.

Operational risk RWAs remained unchanged during the year

Operational Risk RWAs **£56.7bn**

87%

of the Group's net reportable operational risk events had a loss value of £50k or less

75%

of events by number are due to external fraud

- Barclays' operational risk RWA requirement has remained unchanged at £56.7bn.
- The closure of Barclays Non-Core resulted in the reallocation of operational risk RWAs from Non-Core to Head Office.

For the purpose of risk weighted assets, conduct risk remediation provisions have been included within this operational risk section

Conduct risk is a separate Principal Risk and is covered more fully on page 176 and page 177

Analysis of operational risk

Operational risk – risk weighted assets

The following table details the Group's operational risk RWAs. Barclays has approval from the PRA to calculate its operational risk capital requirement using an Advanced Measurement Approach (AMA), although more recently acquired businesses are excluded from this approval. Barclays uses the Basic Indicator Approach (BIA) to calculate capital for these businesses.

See pages 170 to 173 for information on operational risk management.

Table 92: Risk weighted assets for operational risk

As at 31 December 2017	Barclays UK £m	Barclays International £m	Head Office[a] £m	Barclays Non-Core £m	Total £m
Operational Risk					
Basic Indicator Approach	790	1,527	935	–	3,252
Standardised Approach	–	–	–	–	–
Advanced Measurement Approach	11,377	26,181	15,850		53,408
Total operational risk RWAs	12,167	27,708	16,785	–	56,660
As at 31 December 2016					
Operational Risk					
Basic Indicator Approach	790	1,527	639	296	3,252
Standardised Approach	–	–	–	–	–
Advanced Measurement Approach	11,503	26,011	11,517	4,377	53,408
Total operational risk RWAs	12,293	27,538	12,156	4,673	56,660

Note
a Includes BAGL.

Barclays' operational risk RWA requirement has remained static at £56.7bn. Barclays currently holds sufficient operational risk capital to cover the range of potential extreme operational risks the Group faces.

The closure of Barclays Non-Core has resulted in the reallocation of operational risk AMA RWAs from Barclays Non-Core to Head Office.

Analysis of operational risk

Operational risk profile

Within operational risk, a high proportion of risk events have a low financial cost whilst a very small proportion of operational risk events will have a material impact on the financial results of the Group. In 2017, 87% of the Group's net reportable operational risk events by volume had a value of less than £50,000 (2016: 86%), although this type of event accounted for only 16% (2016: 22%) of the Group's total net operational risk losses.

The analysis below presents the Group's operational risk events by Basel event category:

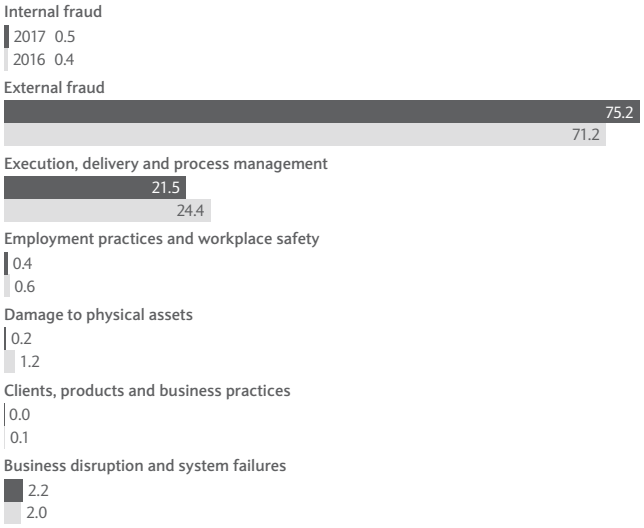
- Execution, Delivery and Process Management impacts increased to £222m (2016: £165m) and accounted for 72% (2016: 69%) of overall operational risk losses. The events in this category are typical of the banking industry as a whole where high volumes of transactions are processed on a daily basis. The increase in impact was largely driven by a limited number of events with higher loss values.
- External Fraud is the category with the highest frequency of events (75% of total events in 2017, up from 71% in prior year) where high volume, low value events are driven by debit and credit card fraud. These accounted for 20% of overall operational risk losses in 2017, slightly down compared to 25% for prior year.
- Business Disruption impacts increased to £24m, accounting for 8% of total operational risk losses in 2017, mainly driven by a few events with significant impacts. Overall the volume of events in this category remained low and decreased from 2016.

The Group's operational risk profile is informed by bottom-up risk assessments undertaken by each business unit and top-down qualitative review from the Operational Risk Management for each risk type. External Fraud and Technology are highlighted as key operational risk exposures. The operational risk profile is also informed by a number of risk themes: execution, resilience, cyber and data. These represent threats to the bank but have scope which extends across multiple risk types, and therefore require a risk management approach which is integrated within relevant risk and control frameworks.

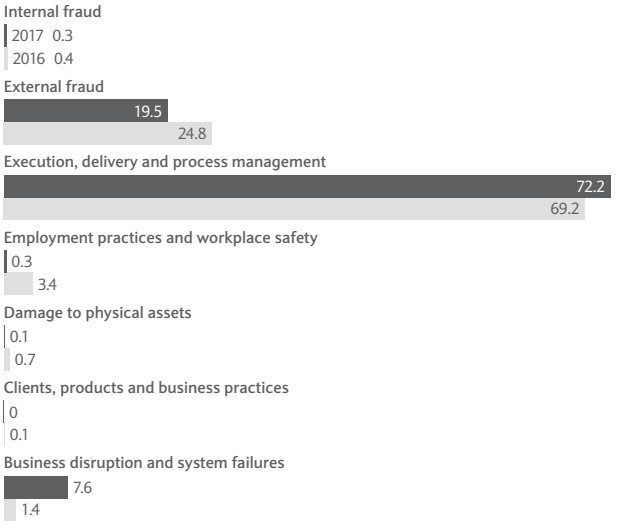
Investment continues to be made in new and enhanced fraud prevention systems and tools to combat the increasing level of fraud attempts being made and to minimise any disruption to genuine transactions. Fraud remains an industry wide threat and the Bank continues to work closely with external partners on various prevention initiatives. Technology, resilience and cyber security risks evolve rapidly so the Bank maintains continued focus and investment in our control environment to manage these risks, and actively partners with peers and relevant organisations to understand and disrupt threats originating outside the Bank.

For further information, see operational risk management section (pages 170-173).

Operational risk events by risk category
% of total risk events by count



Operational risk events by risk category
% of total risk events by value



Note

a The data disclosed includes operational risk losses for reportable events (excluding BAGL) having an impact of ≥ £10,000 and excludes events that are conduct or legal risk, aggregate and boundary events. A boundary event is an operational risk event that results in a credit risk impact. Due to the nature of risk events that continue to evolve, prior year losses are updated.

Risk management strategy, governance and risk culture

In this section we describe the approaches and strategies for managing risks at Barclays. It contains information on how risk management functions are organised, how they maintain their independence and foster a sound risk culture throughout the organisation.

- The Enterprise Risk Management Framework (ERMF) sets out the tools, techniques and organisational arrangements to enable all material risks to be identified and understood (see page 122).
- A governance structure, encompassing the organisation of the function as well as executive and Board committees, supports the continued application of the ERMF. This is discussed in pages 122 to 124.
- A discussion of how our risk management strategy is designed to foster a strong risk culture is contained on page 125.
- Pages 126 to 128 describe group-wide risk management tools that support risk management, Executive Committee and the Board in discharging their responsibilities, and how they are applied in the strategic planning cycle.

Risk management strategy, governance and risk culture

Introduction

Barclays engages in activities which entail risk taking, every day, throughout its business. This section introduces these risks, and outlines key governance arrangements for managing them. These include roles and responsibilities, frameworks, policies and standards, assurance and lessons learned processes. The Group's approach to fostering a strong Risk Culture is also described.

Enterprise Risk Management Framework (ERMF)

The ERMF sets the strategic direction for risk management by defining standards, objectives and responsibilities for all areas of Barclays. It supports the Chief Executive Officer (CEO) and Group Chief Risk Officer (CRO) in embedding effective risk management and a strong Risk Culture.

The ERMF sets out:

- Principal Risks faced by the Group
- Risk Appetite requirements
- Roles and responsibilities for risk management
- Risk Committee structure.

Principal Risks

The ERMF identifies eight Principal Risks (see table below) and sets out associated responsibilities and risk management standards.

Risk Appetite for the Principal Risks

Risk Appetite is defined as the level of risk which the Group is prepared to accept in the conduct of its activities (see Risk Appetite on page 126 for further discussion). Risk Appetite is approved and disseminated across legal entities and businesses, including by use of Mandate and Scale limits to enable and control specific activities that have material concentration risk implications for the Group.

Roles and responsibilities in the management of risk

The Three Lines of Defence

All colleagues are responsible for understanding and managing risks within the context of their individual roles and responsibilities, as set out in the "Three Lines of Defence".

First Line of Defence

The First Line comprises all employees engaged in the revenue generating and client facing areas of the Group and all associated support functions, including Finance, Treasury, Human Resources and the Chief Operating Officer (COO) function. Employees in the First Line are responsible for:

- identifying all the risks and developing appropriate policies, standards and controls to govern their activities
- operating within any and all limits which the Risk and Compliance functions establish in connection with the Risk Appetite of the Group
- escalating risk events to senior managers in Risk and Compliance.

Second Line of Defence

Employees of Risk and Compliance comprise the Second Line of Defence. The role of the Second Line is to establish the limits, rules and constraints under which First Line activities shall be performed, consistent with the Risk Appetite of the Group, and to monitor the performance of the First Line against these limits and constraints.

Third Line of Defence

Employees of Internal Audit comprise the Third Line of Defence. They provide independent assurance to the Board and Executive Management over the effectiveness of governance, risk management and control over current, systemic and evolving risks.

The Legal function does not sit in any of the three lines, but supports them all. The Legal function is, however, subject to oversight from Risk and Compliance, with respect to operational and conduct risks.

Financial Principal Risks	Non-Financial Principal Risks
Credit risk: The risk of loss to the firm from the failure of clients, customers or counterparties, including sovereigns, to fully honour their obligations to the firm, including the whole and timely payment of principal, interest, collateral and other receivables. **Market risk:** The risk of loss arising from potential adverse changes in the value of the firm's assets and liabilities from fluctuation in market variables including, but not limited to, interest rates, foreign exchange, equity prices, commodity prices, credit spreads, implied volatilities and asset correlations. **Treasury and capital risk:** ■ **Liquidity risk:** The risk that the firm is unable to meet its contractual or contingent obligations or that it does not have the appropriate amount, tenor and composition of funding and liquidity to support its assets. ■ **Capital risk:** The risk that the firm has an insufficient level or composition of capital to support its normal business activities and to meet its regulatory capital requirements under normal operating environments or stressed conditions (both actual and as defined for internal planning or regulatory testing purposes). This includes the risk from the firm's pension plans. ■ **Interest rate risk in the banking book:** The risk that the firm is exposed to capital or income volatility because of a mismatch between the interest rate exposures of its (non-traded) assets and liabilities.	**Operational risk:** The risk of loss to the firm from inadequate or failed processes or systems, human factors or due to external events (for example fraud) where the root cause is not due to credit or market risks. **Model risk:** The risk of the potential adverse consequences from financial assessments or decisions based on incorrect or misused model outputs and reports. **Conduct risk:** The risk of detriment to customers, clients, market integrity, competition or Barclays from the inappropriate supply of financial services, including instances of wilful or negligent misconduct. **Reputation risk:** The risk that an action, transaction, investment or event will reduce trust in the firm's integrity and competence by clients, counterparties, investors, regulators, employees or the public. **Legal risk:** The risk of loss or imposition of penalties, damages or fines from the failure of the firm to meet its legal obligations including regulatory or contractual requirements.

Risk management strategy, governance and risk culture

Risk Committees

Business Risk Committees consider Risk matters relevant to their business, and escalate as required to the Group Risk Committee (GRC), whose Chairman in turn escalates to Board Committees and the Board.

There are three Board-level forums which oversee the application of the ERMF and review and monitor risk across the Group. These are: the Board Risk Committee, the Board Audit Committee, and the Board Reputation Committee. Additionally, the Board Remuneration Committee oversees pay practices focusing on aligning pay to sustainable performance. Finally, the main Board of Barclays receives regular information on the risk profile of the Group, and has ultimate responsibility for risk appetite and capital plans.

The Chairman of each Committee prepares a statement each year on the committee's activities, which is included on pages 64 to 68 of the Barclays PLC Annual Report 2017.

The Board

One of the Board's (Board of Directors of Barclays Bank PLC) responsibilities is the approval of Risk Appetite (see page 126). The Group CRO regularly presents a report to the Board summarising developments in the risk environment and performance trends in the key portfolios. The Board is also responsible for the ERMF and it oversees the management of the most significant risks through regular review of risk exposures. Responsibilities of management with respect to the Board forums, including reporting of risk information, are set out in the ERMF.

The Board Risk Committee (BRC)

The BRC monitors the Group's risk profile against the agreed financial appetite. Where actual performance differs from expectations, the actions taken by management are reviewed to verify that the BRC is comfortable with them. After each meeting, the Chairman of the BRC prepares a report for the next meeting of the Board. All members are independent non-executive directors. The Group Finance Director (GFD) and the Group CRO attend each meeting as a matter of course.

The BRC also considers the Group's Risk Appetite statement for operational risk and evaluates the Group's operational risk profile and operational risk monitoring.

The BRC receives regular and comprehensive reports on risk methodologies, the effectiveness of the risk management framework, and the Group's risk profile, including the key issues affecting each business portfolio and forward risk trends. The Committee also commissions in-depth analyses of significant risk topics, which are presented by the Group CRO or senior risk managers in the businesses.

The Board Audit Committee (BAC)

The BAC receives regular reports on the effectiveness of internal control systems, quarterly reports on material control issues of significance, and quarterly papers on accounting judgements (including impairment). It also receives a half-yearly review of the adequacy of impairment allowances, which it reviews relative to the risk inherent in the portfolios, the business environment, the Group's policies and methodologies. The Chairman of the BAC also sits on the BRC.

The Board Reputation Committee (RepCo)

The RepCo reviews management's recommendations on conduct and reputation risk and the effectiveness of the processes by which the Group identifies and manages these risks. It also reviews and monitors the effectiveness of Barclays' Citizenship strategy, including the management of Barclays' economic, social and environmental contribution.

The Board Remuneration Committee (RemCo)

The RemCo receives a detailed report on risk management performance and risk profile, and proposals on ex-ante and ex-post risk adjustments to variable remuneration. These inputs are considered in the setting of performance incentives.

Summaries of the relevant skills, experience and background of the Directors of the Board are presented in the Board of Directors section on pages 47 to 48 of the Barclays PLC Annual Report 2017. The terms of reference and additional details on membership and activities for each of the principal Board Committees are available from the Corporate Governance section of Barclays' website at: **home.barclays/about-barclays/barclays-corporate-governance.html**

Coverage of risk reports to executive and Board risk committees

Chairs of Risk Committees at executive and Board levels specify the information they require to discharge their duties. Advance committee calendars are agreed with the committee chairman. Topics that are regularly covered include:

- Financial and Operational risk profile
- Risk perspective on medium-term plans and strategy
- Risk Appetite
- Results of stress tests, including Comprehensive Capital Analysis and Review (CCAR)
- Risk inputs into remuneration decisions
- Other technical topics, e.g. Model risk.

In addition to regular topics, committees consider ad hoc papers on current risk topics, such as:

- Political events and their potential impacts on Barclays and its customers
- Economic developments in major economies or sectors
- Impacts of key market developments on the risk management of the Group.

Reports are generally presented by CROs or other accountable executives. Occasionally subject matter experts are delegated to present specific topics of interest. Report presenters are responsible for following processes for creating reports that include appropriate controls and that these controls are operated effectively.

Roles and responsibilities in the management of risk – senior management

Certain roles within Barclays carry specific responsibilities and accountabilities with respect to risk management and the ERMF.

Group Chief Executive Officer (CEO)

The CEO is accountable for leading the development of Barclays' strategy and business plans that align to the Goal, Purpose and Values within the approved Risk Appetite, and for managing and organising executive management to drive their execution. Managing Barclays' financial and operational performance within the approved Risk Appetite is ultimately the CEO's responsibility.

Specifically, a crucial role of the CEO is to appoint the most senior Risk owners at the executive level including the Chief Risk Officer and the Group General Counsel. The CEO must work with them to embed a strong Risk Culture within the Group, with particular regard to the identification, escalation and management of risk matters.

Group Chief Risk Officer (CRO)

The Group CRO leads the Risk Function across Barclays. The CRO's responsibilities include developing and maintaining the ERMF and clearly articulating Risk Culture objectives. Specific accountabilities include:

- preparing and recommending the Group's Risk Appetite to the Board Risk Committees
- developing, operating and maintaining a comprehensive risk management framework to monitor and manage the risk profile of the Group
- providing accurate, transparent and timely reporting of the actual Risk Profile of the Group relative to the set Risk Appetite to the Board
- defining the risk taxonomy (Principal Risks) and updating it as needed so that it remains relevant and comprehensive
- bringing a risk perspective to compensation decisions
- reporting to all the relevant stakeholders on Barclays' risk positions, adherence to Risk Appetite and enterprise wide risks and controls.

Chief Compliance Officer

The Chief Compliance Officer is accountable to the Group CRO for the strategic and function leadership of the Compliance Function. The Group Chief Compliance Officer is a member of the Group Executive Committee, enabling the Compliance Function to discharge its responsibilities properly and independently. Specific accountabilities include:

- overseeing the effective management of the Group's conduct and reputation risks and escalation to the Board where appropriate
- setting minimum standards through compliance policies applicable globally and monitoring breaches, especially for conduct and reputation risks and financial crime
- inputting into compensation structures, objectives and performance management of employees who can expose Barclays to significant risk
- maintaining a robust and effectively managed whistleblowing process on an enterprise-wide basis
- using mandate to access any part of the organisation and any information, bringing to the attention of line and senior management or the Board, as appropriate, any situation that is of concern from a conduct or reputation risk management perspective that could materially violate the approved Risk Appetite guidelines.

Group General Counsel

The Group General Counsel is required to:

- develop and maintain the Legal Risk Framework
- define the Legal Risk Policies
- develop the Group-wide and Business Risk Appetite for Legal Risk.

Group Chief Controls Officer

The Chief Controls Office, led by the Group Chief Controls Officer, is responsible for overseeing the practical implementation of operational, conduct and reputation risk controls and control methodologies across the Group. The Chief Controls Office has the following key responsibilities:

- defining a control framework directing businesses to manage risk exposure within approved operational risk appetites, and monitoring its application;
- reviewing tolerances for non-financial operational risk exposures set by the business, and confirming their appropriateness;
- maintaining the standard for the creation and maintenance of all control documentation in the Group; and
- overseeing the execution of control framework requirements consistently across the Group. Execution includes recording risk events, issues, and the completion of risk and control self-assessments.

Senior Managers Regime

A number of Members of the Board, the majority of the Executive Committee and a limited number of specified senior individuals are also subject to additional rules included within the Senior Managers Regime (SMR), which clarifies their accountability and responsibilities. Those designated with a Senior Manager Function under the SMR are held to four specific rules of conduct in which they must:

- take reasonable steps to establish that the business of the Group for which they are responsible is controlled effectively
- take reasonable steps to establish that the business of the Group for which they are responsible complies with relevant regulatory requirements and standards of the regulatory system
- take reasonable steps to make certain that any delegation of their responsibilities is to an appropriate individual and that they oversee the discharge of the delegated responsibilities effectively
- disclose appropriately any information to the FCA or PRA, of which they would reasonably expect notice.

Risk management strategy, governance and risk culture

Frameworks, Policies and Standards

Frameworks, policies and standards set out the governance around Barclays' activities:

- Frameworks cover the management processes for a collection of related activities and define the associated policies used to govern them
- Policies set out control objectives, principles and other core requirements for the activities of the Group. Policies describe "what" must be done
- Standards set out the key controls that must be followed for the objectives set out in the Policy to be met, and who needs to carry them out. Standards describe "how" controls should be undertaken.

Frameworks, Policies and Standards are owned by the area responsible for performing the described activity.

The Group CRO is accountable for overseeing that frameworks, policies and associated standards are developed and implemented for each of the Financial Principal Risks, Operational Risk and Model Risk and that they are subject to limits, monitored, reported on and escalated as required. The Chief Compliance Officer is likewise accountable for Conduct Risk and Reputation Risk, and the Group General Counsel for Legal Risk. The Group CRO and Group Chief Compliance Officer have the right to require amendments to any Frameworks, Policies or Standards in the Group, for any reason, including inconsistencies or contradictions among them.

Frameworks, Policies and Standards are subject to minimum annual review, and challenge by the Risk and/or Compliance functions, unless explicitly waived by the relevant heads of those functions. Principal Risk Frameworks are subject to approval by relevant committees of the Board.

Assurance

Assurance is undertaken to assess the control environment and to independently assess the ERMF, to provide confidence to the Board in the risk and control framework. The Controls Assurance Standard defines the requirements for Controls Assurance and Controls Testing.

Internal Audit is responsible for the independent review of risk management and the control environment. Its objective is to provide reliable, valued and timely assurance to the Board and executive management over the effectiveness of controls, mitigating current and evolving material risks and thus enhancing the control culture within the Group. The Board Audit Committee reviews and approves Internal Audit's plans and resources, and evaluates the effectiveness of Internal Audit. An assessment by independent external advisers is also carried out periodically.

Effectiveness of risk management arrangements

The embedding of the ERMF is monitored by executive and board committees as described above. The ERMF and its component Principal Risks are subject to control testing assurance reviews to confirm its effectiveness or identify issues to be mitigated. Management and the Board are satisfied that these arrangements are appropriate given the risk profile of the Group.

Learning from our mistakes

Learning from mistakes is central to Barclays' culture and values, demonstrating a commitment to excellence, service and stewardship and taking accountability for failure as well as success. The Group seeks to learn lessons on a continuous basis to support achievement of strategic objectives, increase operational excellence and to meet commitments to stakeholders, including colleagues, customers, shareholders and regulators.

Barclays has implemented a Group Lessons Learned process, setting out requirements for the completion of Lessons Learned assessments in response to internal and external risk events. The approach to Lessons Learned will be further enhanced during 2018 which with the aim to fulfil the Group's Salz commitments by putting in place a consistent and effective approach applicable to all Principal Risks. The approach is aligned to the three lines of defence model (see page 122), with businesses and functions accountable for undertaking Lessons Learned Assessments; the Second Line providing oversight and challenge; and independent review by Internal Audit.

Core components of the Lessons Learned approach include:

- Defined triggers for when Lessons Learned Assessments must be completed
- Requirements and guidance for the completion of root cause analysis to identify the causes of risk events impacting the bank
- Standardised Templates to report conclusions consistently to relevant management fora and committees
- Use of a central system to record completed Lessons Learned Assessments and to facilitate sharing across the Group.

Barclays' Risk Culture

Risk Culture can be defined as "norms, attitudes and behaviours related to risk awareness, risk taking and risk management". At Barclays this is reflected in how we identify, escalate and manage risk matters.

Our Code of Conduct – the Barclays Way

Globally, all colleagues must attest to the "Barclays Way", our Code of Conduct, and all frameworks, policies and standards applicable to their roles. The Code of Conduct outlines the Purpose and Values which govern our Barclays Way of working across our business globally. It constitutes a reference point covering all aspects of colleagues' working relationships, specifically (but not exclusively) with other Barclays employees, customers and clients, governments and regulators, business partners, suppliers, competitors and the broader community.

Embedding of a values-based, conduct culture

The Group Executive Committee reconfirmed Conduct, Culture and Values as one of its execution priorities for 2017 with the aim of embedding the cultural measurement tool developed in 2016. The effectiveness of the Risk and Control environment, for which all colleagues are responsible, depends on the continued embedment of strong values. Please see the Board Reputation Committee report on pages 69 to 74 of the Barclays PLC Annual Report 2017 for further details.

Induction programmes support new colleagues in understanding how risk management culture and practices support how the Group does business and the link to Barclays' values. The Leadership Curriculum covers the building, sustaining and supporting of a trustworthy organisation and is offered to colleagues globally.

Other Risk Culture drivers

In addition to values and conduct, we consider the following determinants of Risk Culture:

- **Management and governance**: This means a consistent tone from the top and clear responsibilities to enable identification and challenge.
- **Motivation and incentives**: The right behaviours are rewarded and modelled.
- **Competence and effectiveness**: This means that colleagues are enabled to identify, coordinate, escalate and address risk and control matters.
- **Integrity:** Colleagues are willing to meet their risk management responsibilities; colleagues escalate issues on a timely basis.

Group-wide risk management tools

To support the Group-wide management of risks, the Board uses risk appetite, mandate and scale, and stress testing as key inputs in the annual planning cycle, including setting of the Group's strategy. The following describes in further detail the group-wide risk management tools used as part of this process.

Risk Appetite

Risk Appetite is defined as the level of risk which the Group is prepared to accept in the conduct of its activities.

Risk Appetite sets the 'tone from the top' and provides a basis for ongoing dialogue between management and Board with respect to the Group's current and evolving risk profile, allowing strategic and financial decisions to be made on an informed basis.

The Risk Appetite setting process aims to consider the material risks Barclays is exposed to under its business plans.

Risk Appetite is approved by the Board and must be formally reviewed at least annually in conjunction with the Medium Term Planning (MTP) process.

Risk Appetite is expressed, by the Board, as the acceptable level of deterioration in a set of key financial parameters under a severe but plausible stress scenario defined as the Adverse stress test scenario. For 2018, the key financial parameters are listed above.

Measure relevant to strategy and risk	Link between strategy and risk profile
Profit after tax	Fundamental performance of the Bank and underpins the Group's capacity to make capital distributions.
Common Equity Tier 1 (CET1)	Monitors capital adequacy in relation to capital plan, targets and regulatory hurdle rates.

Based on the specified Risk Appetite, the Group develops mandate and scale limits to control specific activities.

Mandate and scale

Mandate and scale is a risk management approach that seeks to formally review and control business activities to make sure that they are within mandate (i.e. aligned with expectations), and are of an appropriate scale (relative to the risk and reward of the underlying activities) based on an appropriately detailed system of limits. Using limits and triggers helps mitigate the risk of concentrations which would be out of line with expectations, and which may lead to unexpected losses of a scale that would be detrimental to the stability of the relevant business line or the Group.

For example, for leveraged finance and commercial property finance portfolios, there is a series of limits in place to control exposure within each business and geographic sector. To further align limits to the underlying risk characteristics, the mandate and scale limits differentiate between types of exposure. There are, for example, individual limits for property investment and property development.

The mandate and scale framework is used to:

- limit concentration risk
- keep business activities within Group and individual business mandate
- maintain activities at an appropriate scale relative to the underlying risk and reward
- confirm that risk-taking is supported by appropriate expertise and capabilities and take corrective actions otherwise.

The most material mandate and scale limits are designated as A-level (Board level) and B-Level (Group level). Group limits are approved by the appropriate risk committee (e.g. Wholesale Credit Risk Management Committee) and are subject to additional escalation and governance requirements.

Further limits are set by risk managers within each business, covering particular portfolios. Unapproved excesses of limits may result in performance management and disciplinary consequences. Business limits are approved by the relevant business risk team and reportable to the relevant risk committee.

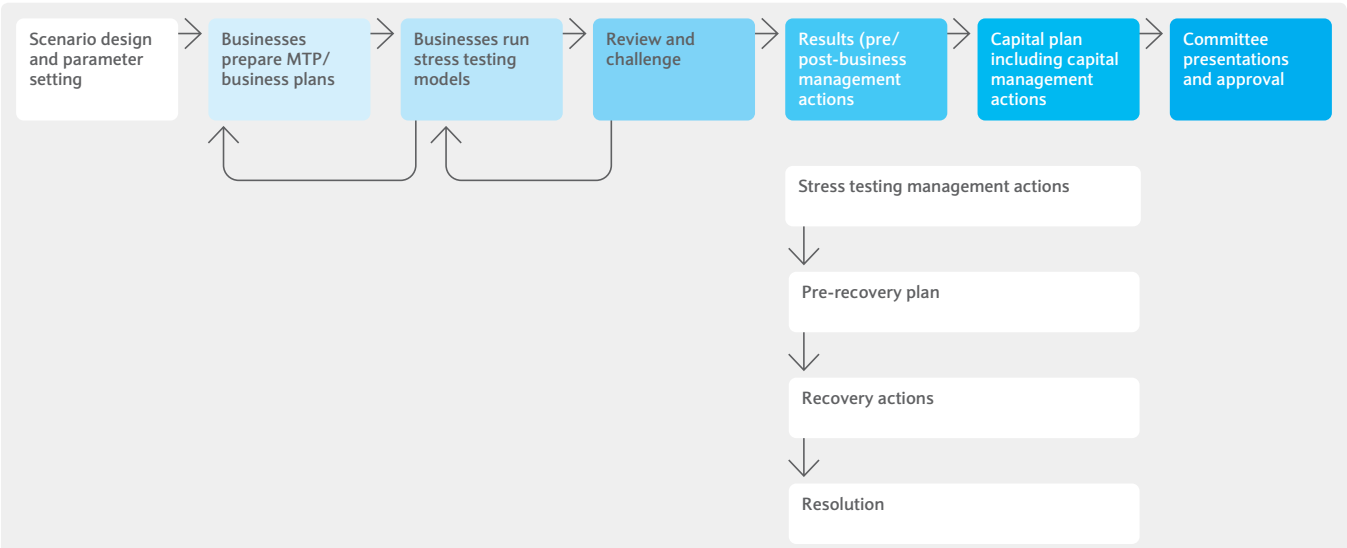
Limits reflect the nature of the risk being managed and controlled and are measured by total financing limits, LGD, stress loss or other metrics as appropriate. There is explicit identification of the exposures that are captured by limits and any material exclusion must be agreed. Limits are reviewed at least annually. The factors taken into consideration when setting the limit include:

- Group Risk Appetite
- current exposure/MTP forecasts
- risk return considerations
- senior risk management judgement.

Stress testing

Group-wide stress tests are integrated within the MTP process and annual review of risk appetite. They aim to check that the Group's financial position and risk profile provide sufficient resilience to withstand the impact of severe economic stress, allowing Barclays to make changes to plans as necessary. The Group-wide stress testing process is supported by a Capital Stress Testing Standard which sets out the minimum control requirements and defines clear roles and responsibilities across businesses and central functions. The results also feed into our internal capital adequacy assessment process (ICAAP) submission to the Prudential Regulation Authority (PRA).

The following diagram outlines the key steps in the Group-wide stress testing process, which are described below.



Risk management strategy, governance and risk culture

The Group-wide stress testing process begins with a detailed scenario setting process, with the GRC and BRC agreeing the range of scenarios to be tested. The scenarios are designed to be severe but plausible, and relevant to the business. A wide range of macroeconomic parameters are defined (such as GDP, unemployment, house prices, FX and interest rates), which allows the impact of the scenarios across the wide range of products and portfolios to be assessed across the Group.

Businesses prepare detailed MTP business plans which form the baseline for the stress test assessment. The stress test process aims to support this level of complexity, using bottom-up analysis across all of our businesses including both on- and off-balance sheet positions, and combines running statistical models with expert judgement. An overview of the stress testing approach by Principal Risk is provided in the table below. As part of their stress test assessments, businesses are also required to identify potential management actions that could be taken to mitigate the impact of stress and document these within their results.

The governance process in place includes a detailed review of stress testing methodology and results both within businesses (including sign-off by business CROs and CFOs) and by central functions.

The business stress test results are consolidated to form a Group view which is used to assess the stress impact on the Group's capital plans. For the latter, capital management actions such as reducing dividends or redeeming certain capital instruments may be considered. The Group also maintains recovery plans which take into consideration actions to facilitate recovery from severe stress or an orderly resolution. These actions are additional to those included in the Group-wide stress testing results.

The overall stress testing results are reviewed and signed off by the Board, following review by the Treasury and Capital Risk Committee, Treasury Committee, BRC and ExCo.

Summary of methodologies for Group-wide stress testing by risk type

Principal Risk	Stress testing approach
Credit risk	▪ **Credit risk impairment:** For retail portfolios businesses use statistical models to establish a relationship between arrears movements and key macroeconomic parameters such as interest rates, inflation and unemployment, incorporating credit quality migration analysis to estimate stressed levels. In addition, house price reductions (for mortgages) and increased customer drawdowns (for revolving facilities) lead to higher losses which also contribute to increased impairment levels. For wholesale portfolios the stress shocks on credit risk drivers (PDs, LGDs and EADs) are primarily calibrated using historical and expected relationships with key macro-economic parameters. ▪ **Counterparty credit risk losses: T**he scenarios include market risk shocks that are applied to determine the market value under stress of contracts that give rise to Counterparty Credit Risk (CCR). Counterparty losses, including from changes to the Credit Valuation Adjustment and from defaults, are modelled based on the impact of these shocks as well as using stressed credit risk drivers (PDs and LGDs). The same approach is used to stress the market value of assets held as available for sale or at fair value in the banking book. ▪ **Credit risk weighted assets:** The impact of the scenarios is calculated via a combination of business volumes and using similar factors to impairment drivers above, as well as the regulatory calculation and the level of pro-cyclicality of underlying regulatory credit risk models.
Market risk	▪ **Trading book losses:** Market risk factors on the balance sheet are stressed using specific market risk shocks (and are used for the CCR analysis, above). The severity of the shocks applied are dependent on the liquidity of the market under stress, e.g. illiquid positions are assumed to have a longer holding period than positions in liquid markets.
Treasury and capital risk	▪ Treasury and capital risk will apply scenario variables to forecast the Group's capital, liquidity and IRRBB requirements under stress and review proposed management actions to mitigate the impact of this stress. ▪ **Interest rate risk in the banking book (IRRBB):** IRRBB is assessed by considering: – Stress impact on non-interest income is primarily driven by lower projected business volumes and hence lower income from fees and commissions – Impact on net interest income is driven by stressed margins, which depend on the level of interest rates under stress as well as funding costs, and on stressed balance sheet volumes. This can be partly mitigated by management actions that may include repricing of variable rate products, taking into account interbank lending rates under stress – The impact on costs is mainly driven by business volumes and management actions to partly offset profit reductions (due to impairment increases and decreases in income) such as headcount reductions and lower performance costs. ▪ **Capital risk:** Capital risk is assessed by taking all modelled risk impacts as part of the stress test (as listed above) into consideration when assessing Barclays' ability to withstand a severe stress. The stressed results are considered against internally agreed risk appetite levels but also regulatory minima and perceived market expectations. The MTP can only be agreed by the Board if this is within the agreed risk appetite levels under stress. ▪ The IAS19 position of pension funds is also stressed as part of the capital risk assessment, taking into account key economic drivers impacting future obligations (e.g. long-term inflation and interest rates) and the impact of the scenarios on the value of fund assets. ▪ **Liquidity risk:** Liquidity risk is assessed by the internal liquidity risk metric (LRA), which analyses specific liquidity risk drivers such as wholesale funding and contingent funding needs based on the below scenarios: – Barclays idiosyncratic liquidity scenario: Barclays faces a loss of market confidence while the market overall is not impacted – Market wide liquidity stress scenario: All financial institutions are impacted by a market wide loss of confidence – Combined liquidity stress scenario: A simultaneous Barclays idiosyncratic and market liquidity stress scenario – Long term liquidity stress scenario: Barclays is unable for a prolonged period of time to access the capital market on a regular basis.

Summary of methodologies for Group-wide stress testing by risk type continued

Principal Risk	Stress testing approach
Operational risk	▪ As part of the reverse stress testing framework, operational risk scenarios are performed to include the assessment of extreme impacts arising from idiosyncratic losses
Model risk	▪ IVU reviews the models and assumptions used in the MTP and may request the application of overlays to address model deficiencies.
Conduct risk	▪ Redress/Remediation: Businesses review existing provisions and include additional provisions in MTP if required. ▪ Litigation: Irrespective of whether a provision had been recognised, stress projections of future losses for conduct risk matters managed by legal are estimated by exercising expert judgment on a case by case basis (material matters) or on a portfolio basis (non-material matters) on accordance with the methodology provided by regulators (EBA, PRA).
Reputation risk	▪ Reputation risk is not quantified or stressed.
Legal risk	▪ Legal risk is not quantified or stressed.

In 2017, the internal Group-wide stress testing exercise was run as part of the MTP process, where the Group assessed the impact of an "Adverse" global recession scenario. This was used for the MTP Risk Review and risk appetite setting process.

The Group-wide stress testing framework also includes reverse stress testing techniques, which aim to identify the circumstances under which the Group's business model would no longer be viable, leading to a significant change in business strategy and to the identification of appropriate mitigating actions. Examples include extreme macroeconomic downturn ('severely adverse') scenarios, or specific idiosyncratic events, covering both operational risk and capital/ liquidity events.

Reverse stress testing is used to help support ongoing risk management and is an input to our Recovery Planning process.

Business and risk type specific stress tests

Stress testing techniques at portfolio and product level are also used to support risk management. For example, portfolio management in the US cards business employs stressed assumptions of loss rates to determine profitability hurdles for new accounts. In the UK mortgage business, affordability thresholds incorporate stressed estimates of interest rates. In the Corporate and Investment Bank, global scenario testing is used to gauge potential losses that could arise in conditions of a severe but plausible market stress. Stress testing is also conducted on positions in particular asset classes, including interest rates, commodities, equities, credit and foreign exchange.

Regulatory stress testing

In addition to running internal Group-wide stress tests, the Group also runs regulatory stress tests.

In 2017, the PRA ran its annual concurrent stress testing of the major UK banks, which was based on the Bank of England (BoE) stress scenario. The results of the stress test were published in November 2017, and support the BoE's aim for increased transparency as part of its stress testing framework.

The Group is also subject to stress testing by non-UK regulators, which are typically focused at the local legal entity level. This includes the Federal Reserve CCAR process, which will be run in 2018.

Risk management in the setting of strategy

The risk appetite and (internal) stress testing processes described above form the basis of the risk review of the Medium Term Plan (MTP), performed annually. The MTP embeds the Group's objectives into detailed business plans taking into account the likely business and macroeconomic environment. The strategy is informed by the risk review process, which includes reviewing the Group's risk profile and setting of risk appetite.

- The MTP risk review process includes a review of the proposed risk appetite by the business, including assessment of business plans under stress which is used to inform the MTP.
- If the business' plans entail too high a level of risk, management can challenge them. This assessment is based on a comparison of the businesses' own risk appetite assessment reflected in their business plans ('bottom-up' risk appetite) with the central risk team's view ('top-down' risk appetite) based on the financial constraints set by the Board for the Group.
- Businesses may be asked to update their business plans until the bottom-up risk appetite is within top-down appetite. There is also a detailed review of the stressed estimates and the methodology used to translate the economic scenario to these stressed estimates, as well as the management actions included in the business' results to verify that these are appropriate and realistic in a stressed environment.
- Risk review meetings are held with the CEO, CFO, CRO and Treasurer of each business, where they present their business plans to the Group CRO and the findings from the risk reviews are discussed, including the risk appetite proposals and stress testing results. Businesses may be required to change their business plans as a result of these meetings.

The BRC has overall responsibility for reviewing the Group's risk profile and making appropriate recommendations to the Board. The Board is ultimately responsible for approving the MTP and the Group's risk appetite. The risk appetite process allows senior management and the Board to understand the MTP's sensitivities by risk type, and includes a set of limits to help the Group to stay within its risk appetite, as described above.

Management of credit risk and the internal ratings-based approach

This section discusses the organisation specific to the management of credit risks, and provides details of the calculation of risk weighted assets under the Internal Ratings Based approach of the Basel framework.

- Pages 130 to 137 cover the aspects of the Group's risk management framework specific to credit risk, including committees and the Group reporting structure.
- As 61% of our regulatory capital is for credit risk, we devote pages 138 to 145 to detailing how we approach the internal ratings models, and how the framework supports risk differentiation and management.

Management of credit risk and the internal ratings-based approach

Credit risk

The risk of loss to the firm from the failure of clients, customers or counterparties, including sovereigns, to fully honour their obligations to the firm, including the whole and timely payment of principal, interest, collateral and other receivables.

Overview

The credit risk that the Group faces arises mainly from wholesale and retail loans and advances together with the counterparty credit risk arising from derivative contracts with clients. Other sources of credit risk arise from trading activities, including: debt securities, settlement balances with market counterparties, available for sale assets and reverse repurchase loans.

Credit risk management objectives are to:

- maintain a framework of controls to enable credit risk taking to be based on sound credit risk management principles;
- identify, assess and measure credit risk clearly and accurately across the Group and within each separate business, from the level of individual facilities up to the total portfolio;
- control and plan credit risk-taking in line with external stakeholder expectations and avoiding undesirable concentrations;
- monitor credit risk and adherence to agreed controls;
- enable risk-reward objectives to be met.

Organisation and structure

Wholesale and retail portfolios are managed separately to reflect the differing nature of the assets; wholesale balances tend to be larger and are managed on an individual basis, while retail balances are larger in number but smaller in value and are, therefore, managed on a homogeneous portfolio basis.

Credit risk management responsibilities have been structured so that decisions are taken as close as possible to the business, while enforcing robust review and challenge of performance, risk infrastructure and strategic plans. The credit risk management teams in each business are accountable to the relevant Business CRO who, in turn, reports to the Group CRO.

Roles and responsibilities

The responsibilities of the credit risk management teams in the businesses, the sanctioning team and other shared services include: sanctioning new credit agreements (principally wholesale); setting policies for approval of transactions (principally retail); setting risk appetite; monitoring risk against limits and other parameters; maintaining robust processes, data gathering, quality, storage and reporting methods for effective credit risk management; performing effective turnaround and workout scenarios for wholesale portfolios via dedicated restructuring and recoveries teams; maintaining robust collections and recovery processes/units for retail portfolios; and review and validation of credit risk measurement models.

For wholesale portfolios, credit risk approval is undertaken by experienced credit risk professionals operating within a clearly defined delegated authority framework, with only the most senior credit officers entrusted with the higher levels of delegated authority.

The largest credit exposures, which are outside the Risk Sanctioning Unit or Risk Distribution Committee authority require the support of the Group Senior Credit Officers (GSCOs), the Group's most senior credit risk sanctioners. For exposures in excess of the GSCOs' authority, approval by Group CRO is required. In the wholesale portfolios, credit risk managers are organised in sanctioning teams by geography, industry and/or product.

The role of the Central Risk function is to provide Group-wide direction, oversight and challenge of credit risk-taking. Central Risk sets the Credit Risk Control Framework, which provides the structure within which credit risk is managed, together with supporting credit risk policies.

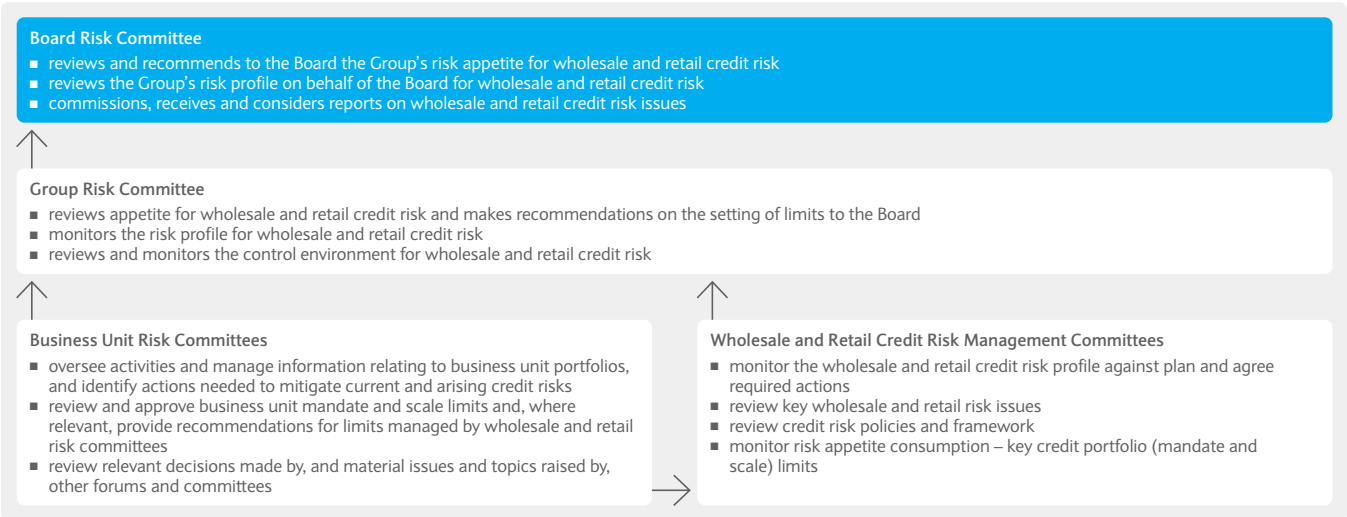
Reporting

The Group dedicates considerable resources to gaining a clear and accurate understanding of credit risk across the business and to correctly reflecting the value of the assets in its balance sheet in accordance with applicable accounting principles. This process can be summarised in five broad stages:

- measuring exposures and concentrations
- monitoring performance and asset quality
- monitoring for weaknesses in portfolios
- raising allowances for impairment and other credit provisions
- returning assets to a performing status or writing off assets when the whole or part of a debt is considered irrecoverable.

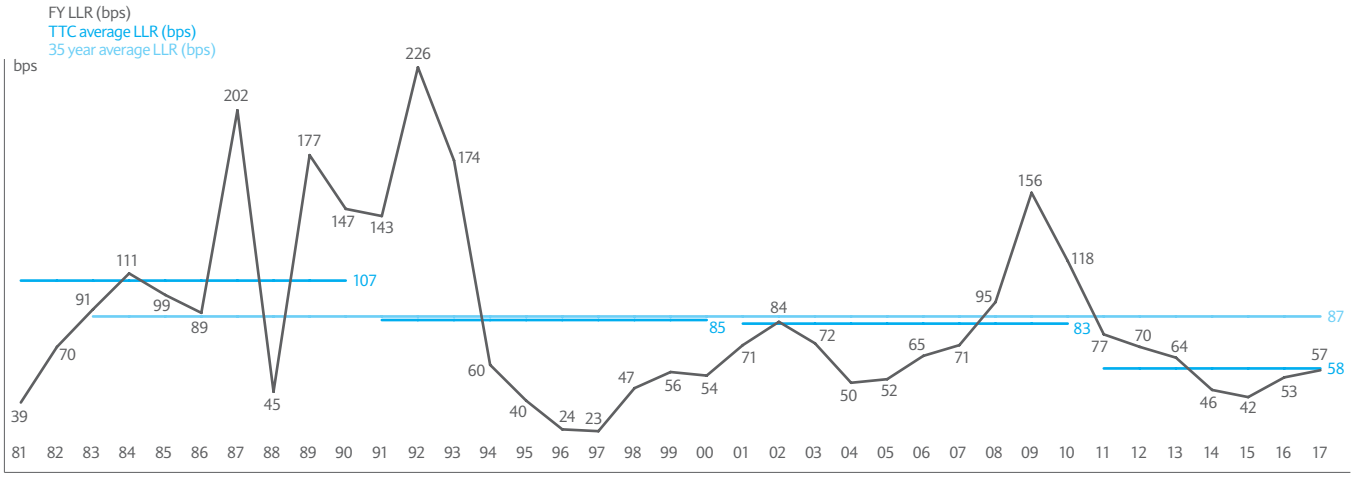
Measuring exposures and concentrations

Loans and advances to customers provide the principal source of credit risk to the Group although it is also exposed to other forms of credit risk through, for example, loans and advances to banks, loan commitments and debt securities. Risk management policies and processes are designed to identify and analyse risk, to set appropriate risk appetite, limits and controls, and to monitor the risks and adherence to limits by means of reliable and timely data.



Management of credit risk and the internal ratings-based approach

Loan loss rate (bps) – longer-term trends



Notes
a Restated to reflect the impact of IFRS10, which results in some former Exit Quadrant exposures being recorded at fair value from 2012 onwards.
b 2015, 2016, 2017 figures exclude Africa.

One area of particular review is concentration risk. A concentration of credit risk exists when a number of counterparties or customers are engaged in similar activities or geographies, and have similar economic characteristics that would cause their ability to meet contractual obligations to be similarly affected by changes in economic and other conditions. As a result, the Group constantly reviews its concentration in a number of areas including, for example, geography, maturity and industry.

Mandate and scale limits are used to maintain concentrations at appropriate levels, which are aligned with the business' stated risk appetite. Limits are typically based on the nature of the lending and the amount of the portfolio meeting certain standards of underwriting criteria. Diversification, to reduce concentration risk, is achieved through setting maximum exposure limits to individual counterparties' exposures. Excesses are reported to the BRC.

Monitoring performance and asset quality

Trends in the quality of the Group's loan portfolio are monitored in a number of ways including tracking loan loss rate and coverage ratios.

Loan loss rate

The loan loss rate (LLR) provides a way of consistently monitoring trends in loan portfolio quality at the Group, business and product levels. The LLR represents the annualised impairment charges on loans and advances to customers and banks and other credit provisions as a percentage of the total period-end loans and advances to customers and banks, gross of impairment allowances. Details of the LLR for the current period may be found in the Credit Risk Performance section on page 138 of the Barclays PLC Annual Report 2017.

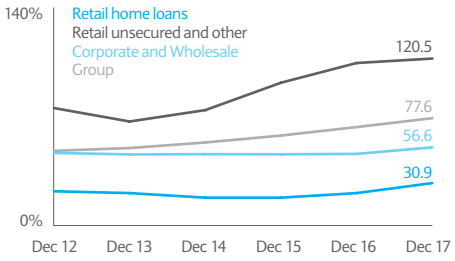
Coverage ratios

The impairment allowance is the aggregate of the identified and unidentified impairment (UI) balances. Impairment allowance coverage, or the coverage ratio, is reported at two levels:

- credit risk loans (CRLs) coverage ratio, calculated as impairment allowances as a percentage of CRL balances
- potential credit risk loans coverage ratio (impairment allowances as a percentage of total CRL and PPL balances).

See identifying potential credit risk loans on page 133 for more information for the criteria for these categories.

CRL coverage ratios



Notes
a Some Non-core related exposures are not reported as CRLs following the introduction of IFRS10, which accounts for these balances at fair value.
b All historical figures exclude BAGL.

Appropriate coverage ratios will vary according to the type of product. In principle, a number of factors may affect the Group's overall coverage ratios, including:

The mix of products within total CRL balances: coverage ratios will tend to be lower when there is a high proportion of secured Retail and corporate balances within total CRLs. This is due to the fact that the recovery outlook on these types of exposures is typically higher than Retail unsecured products, with the result that they will have lower impairment requirements.

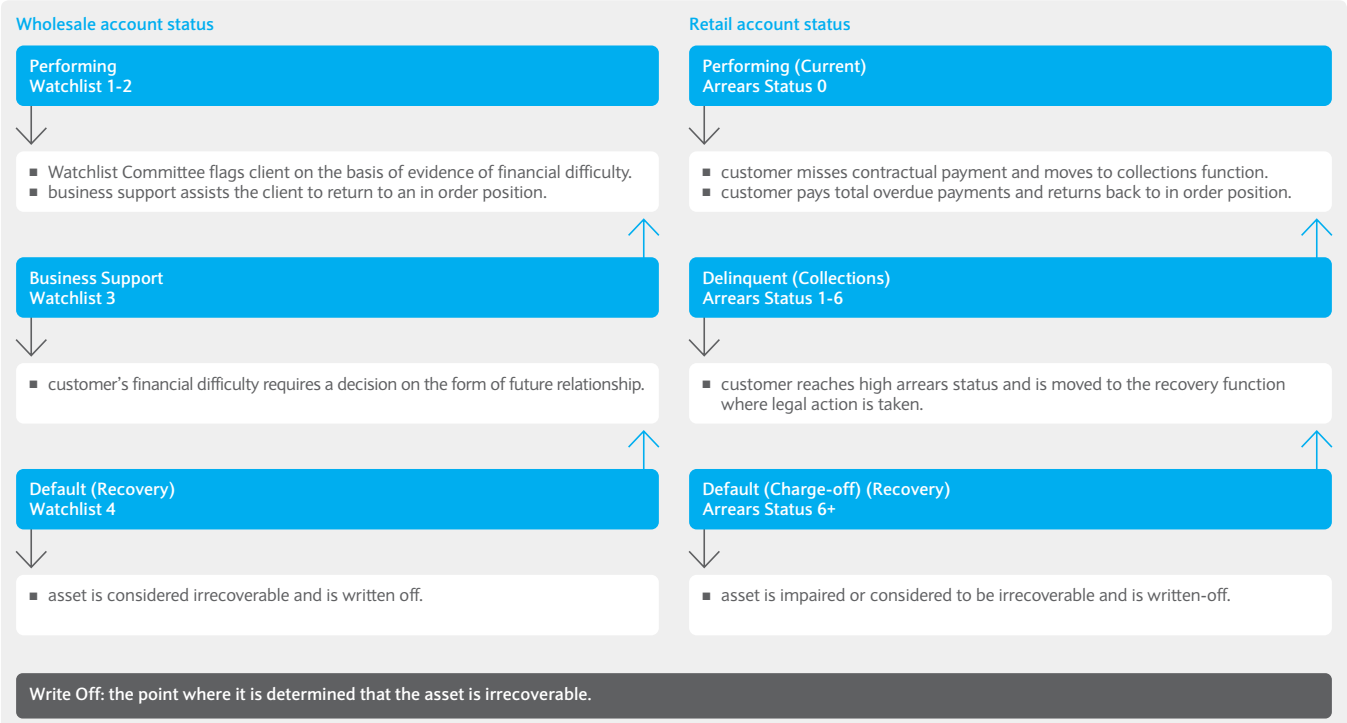
The stage in the economic cycle: coverage ratios will tend to be lower in the earlier stages of deterioration in credit conditions. At this stage, Retail delinquent balances will be predominantly in the early delinquency cycles and corporate names will have only recently moved to CRL categories. As such balances attract a lower impairment requirement, the CRL coverage ratio will be lower.

The balance of PPLs to CRLs: the impairment requirements for PPLs are lower than for CRLs, so the greater the proportion of PPLs, the lower the PCRL coverage ratio.

Write-off policies: the speed with which defaulted assets are written off will affect coverage ratios. The more quickly assets are written off, the lower the ratios will be, since stock with 100% coverage will tend to roll out of PCRL categories more quickly.

Details of the coverage ratios for the current period are shown in the chart on the left and may be found in the analysis of loans and advances and impairment section on page 147 of the Barclays PLC Annual Report 2017.

Management of credit risk and the internal ratings-based approach



Monitoring weaknesses in portfolios

While the basic principles for monitoring weaknesses in Wholesale and Retail exposures are broadly similar, they reflect the differing nature of the assets. As a matter of policy, all facilities granted to corporate or Wholesale counterparties are subject to a review on, at least, an annual basis, even when they are performing satisfactorily.

Wholesale portfolios*

Within the Wholesale portfolios, the Basel definitions of default are used as default indicators which have been aligned to the IAS 39 objective evidence of impairment. A default is triggered if individual identified impairment is recognised. Group definitions of default used are:

- bank puts the credit obligation on a non-accrued status
- bank makes a charge-off or account specific identified impairment resulting from a significant perceived decline in credit quality
- bank sells the credit obligation at a material credit-related economic loss
- bank consents to a distressed restructuring of the credit obligation where this is likely to result in a diminished financial obligation caused by the material forgiveness or postponement of principal, interest or fees
- bank triggers a petition for obligor's bankruptcy or similar order
- bank becomes aware of the obligor having sought or having been placed in bankruptcy or similar protection where this would avoid or delay repayment of the credit obligation to the banking group
- bank becomes aware of an acceleration of an obligation by a firm
- where the obligor is a bank – revocation of authorisation
- where the obligor is a sovereign – trigger of default definition of an approved External Credit Assessment Institution (ECAI) such as a rating agency
- obligor past due more than 90 days on any material credit obligation to the Group.

Wholesale accounts that are deemed to contain heightened levels of risk are recorded on graded watchlists (WL) comprising four categories graded in line with the perceived severity of the risk attached to the lending, and its probability of default. Examples of heightened levels of risk may include, for example:

- a material reduction in profits
- a material reduction in the value of collateral held
- a decline in net tangible assets in circumstances which are not satisfactorily explained
- periodic waiver requests or changes to the terms of the credit agreement over an extended period of time.

These lists are updated monthly and circulated to the relevant risk control points. Once an account has been placed on WL, the exposure is monitored and, where appropriate, exposure reductions are effected. Should an account become impaired, it will normally, but not necessarily, have passed through each of the four categories, which reflects the need for increasing caution and control. While all counterparties, regardless of financial health, are subject to a full review of all facilities on at least an annual basis, more frequent interim reviews may be undertaken should circumstances dictate. Specialist recovery functions deal with counterparties in higher levels of WL, default, collection or insolvency. Their mandate is to maximise shareholder value, ideally via working intensively with the counterparty to help them to either return to financial health or, in the cases of insolvency, obtain the orderly and timely recovery of impaired debts. Where a counterparty's financial health gives grounds for concern, it is immediately placed into the appropriate category.

Retail portfolios

Within the Retail portfolios, which tend to comprise homogeneous assets, statistical techniques more readily allow potential credit weaknesses to be monitored on a portfolio basis. The approach is consistent with the Group's policy of raising a collective impairment allowance as soon as objective evidence of impairment is identified. Retail accounts can be classified according to specified categories of arrears status (or 30 day cycle), which reflects the level of contractual payments which are overdue. An outstanding balance is deemed to be delinquent when it is one day or "one penny" down and goes into default when it moves into recovery, normally 180 days. Impairment is considered at all stages of the customer's outstanding obligations.

The probability of default increases with the number of contractual payments missed, thus raising the associated impairment requirement.

* Includes certain Business Banking facilities which are recorded as Retail for management purposes.

Management of credit risk and the internal ratings-based approach

Once a loan has passed through a prescribed number of cycles, normally six, it will be charged-off and enter recovery status. Charge-off refers to the point in time when collections activity changes from the collection of arrears to the recovery of the full balance. In most cases, charge-off will result in the account moving to a legal recovery function or debt sale. This will typically occur after an account has been treated by a collections function. However, in certain cases, an account may be charged off directly from a performing status, such as in the case of insolvency or death.

The timings of the charge-off points are established based on the type of loan. For the majority of products, the standard period for charging off accounts is six cycles (180 days past due date of contractual obligation). Early charge-off points are prescribed for unsecured assets. For example, in cases of customer bankruptcy or insolvency, associated accounts are charged off within 60 days of notification.

Identifying potential credit risk loans
The Group reports potentially and actually impaired loans as PCRLs under two categories: PPLs and CRLs.

PPLs are loans that currently comply with repayment terms but where serious doubt exists as to the ability of the borrower to continue to comply with such terms in the near future. If the credit quality of a Wholesale loan on a WL deteriorates to the highest category, or a Retail loan deteriorates to delinquency cycle 2, consideration is given to including it within the PPL category.

Should further evidence of deterioration be observed, a loan may move to the CRL category. Events that would trigger the transfer of a loan from the PPL to the CRL category include a missed payment or a breach of covenant. CRLs comprise three classes of loans:

Impaired loans comprise loans where an individually identified impairment allowance has been raised and also include loans which are fully collateralised or where indebtedness has already been written down to the expected realisable value. This category includes all Retail loans that have been charged off to legal recovery. The category may include loans, which, while impaired, are still performing.

Accruing past due 90 days or more: comprises loans that are 90 days or more past due with respect to principal or interest. An impairment allowance will be raised against these loans if the expected cash flows discounted at the effective interest rate are less than the carrying value.

Impaired and restructured loans: comprises loans not included above where, for economic or legal reasons related to the debtor's financial difficulties, a concession has been granted to the debtor that would not otherwise be considered. Where the concession results in the expected cash flows discounted at the effective interest rate being less than the loan's carrying value, an impairment allowance will be raised. See Forbearance and other concession programmes below for more detail.

Allowances for impairment and other credit provisions
The Group establishes, through charges against profit, impairment allowances and other credit provisions for the incurred loss inherent in the lending book. Under IFRS, impairment allowances are recognised where there is objective evidence of impairment as a result of one or more loss events that have occurred after initial recognition, and where these events have had an impact on the estimated future cash flows of the financial asset or portfolio of financial assets. Impairment of loans and receivables is measured as the difference between the carrying amount and the present value of estimated future cash flows discounted at the financial asset's original effective interest rate. If the carrying amount is less than the discounted cash flows, then no further allowance is necessary.

Movements in impairment to individual names with a total impairment allowance of £10m or more are presented to the GSCOs for approval.

Individually assessed impairment
Impairment allowances are measured individually for assets that are individually significant, and collectively where a portfolio comprises homogeneous assets and where appropriate statistical techniques are available. In terms of individual assessment, the principal trigger point for impairment is the missing of a contractual payment which is evidence that an account is exhibiting serious financial problems, and where any further deterioration is likely to lead to failure. Details of other trigger points can be found above. Two key inputs to the cash flow calculation are the valuation of all security and collateral, as well as the timing of all asset realisations, after allowing for all attendant costs. This method applies mainly in the Wholesale portfolios.

Collectively assessed impairment
For collective assessment, the principal trigger point for impairment is the missing of a contractual payment, which is the policy consistently adopted across all credit cards, unsecured loans, mortgages and most other Retail lending. The calculation methodology relies on the historical experience of pools of similar assets; hence the impairment allowance is collective. The impairment calculation is typically based on a roll-rate approach, where the percentage of assets that move from the initial delinquency to default is derived from statistical probabilities based on historical experience. Recovery amounts are calculated using a weighted average for the relevant portfolio. This method applies mainly to the Retail portfolios and is consistent with Group policy of raising an allowance as soon as impairment is identified. Unidentified impairment is also included in collective impairment.

Impairment for losses incurred but not specifically identified
Unidentified impairment allowances are also raised to cover losses which are judged to be incurred but not yet specifically identified in customer exposures at the balance sheet date, and which, therefore, have not been specifically reported. The incurred but not yet reported calculation is based on the asset's probability of moving from the performing portfolio to being specifically identified as impaired within the given emergence period and then on to default within a specified period, termed as the outcome period. This is calculated on the present value of estimated future cash flows discounted at the financial asset's effective interest rate. The emergence and outcome periods vary across products.

Wholesale portfolios
Impairment in the Wholesale portfolios is generally calculated by valuing each impaired asset on a case by case basis, i.e. on an individual assessment basis. A relatively small amount of Wholesale impairment relates to unidentified or collective impairment; in such cases, impairment is calculated using modelled Probability of Default (PD) x Loss Given Default (LGD) x Exposure at Default (EAD) adjusted for an emergence period.

Management of credit risk and the internal ratings-based approach

Retail portfolios

For Retail portfolios, the impairment allowance is mainly assessed on a collective basis and is based on the drawn balances adjusted to take into account the likelihood of the customer defaulting at a particular point in time (PDpit) and the amount estimated as not recoverable (LGD). The basic calculation is:

Impairment allowance =
Total outstandings x PDpit x LGD

The PDpit increases with the number of contractual payments missed thus raising the associated impairment requirement.

In Retail, the current policy also incorporates a high risk segment which is included in the unidentified impairment calculation. High risk segments are those which can be demonstrated to experience higher levels of loss within the performing segment. This segmentation allows for earlier identification of potential loss in a portfolio. Unidentified impairment is also referred to as collective impairment. This is to reflect the impairment that is collectively held against a pool of assets where a loss event has occurred, but has not yet been captured.

Sensitivity of the impairment to key assumptions

Wholesale portfolios

Impairment in the Wholesale portfolios is generally calculated by valuing each impaired asset on a case by case basis, and is not therefore primarily model-driven. As such, the key assumptions that would have the most impact on impairment provisions in the Wholesale portfolios are the valuations placed upon security and collateral held and the timing of asset realisations.

When calculating impairment, estimated future cash flows are discounted at the financial asset's original effective interest rate. At present, in Wholesale portfolios, the impact of discounting is relatively small in itself but would rise with reference rates. In addition, to the extent that a rise in interest rates impacted economic growth and/or serviceability of Wholesale clients and customers, this would be expected to feed through in future impairment numbers.

Retail portfolios

For Retail portfolios, impairment is calculated predominantly using models. The models are developed using historical data and include explicit and implicit assumptions such as debt sale estimates, house price valuations and the distribution of accounts. Model monitoring and validation are undertaken regularly, at least annually, to make sure that models are fit for purpose. Further to this, the Group accounts for the impact of changes in the economic environment and lags resulting from the design of the models to enable overall impairment adequacy. See Management adjustments to Models for Impairment on page 156 of the Barclays PLC Annual Report 2017 for more information on key management judgements in 2017. See stress testing (page 126) for further information.

Emergence and outcome periods

To develop models to calculate the allowance for impairment it is first necessary to estimate the time horizons of these models. These time horizons are called the emergence and outcome periods. Emergence period relates to the time between a loss event occurring and that event becoming apparent via the account becoming delinquent and attracting identified impairment. Outcome is an analytically derived period taken to capture lifetime defaults associated with the observed loss event.

The application of this methodology means that the Group captures the loss incurred at the correct balance sheet date. These impairment allowances are reviewed and adjusted at least quarterly by an appropriate charge or release of the stock of impairment allowances based on statistical analysis and management judgement. Where appropriate, the accuracy of this analysis is periodically assessed against actual losses. For further detail, see modelling of risk on pages 138 to 145.

Wholesale portfolios

For the Corporate Banking and Investment Bank portfolios, the emergence period is portfolio specific and is based on the anticipated length of time from the occurrence of a loss event to identified impairment being incurred. The emergence period in Corporate Banking is derived from actual case file review. This is periodically benchmarked against the time taken to move between risk grades in internal watchlists, from WL1 or 2 into WL3, which is the level of risk that will attract a collective impairment allowance. Both methodologies produce similar results for the emergence period, which is currently six months. Within Corporate Banking, post model adjustments can be made to increase the emergence period for certain industry sectors to reflect, for example, a benign environment. The average life of the Investment Bank portfolio is estimated to be 18 months, during which time Investment Bank is exposed to losses on the portfolio. However, it is expected that incurred losses would become apparent within six months, therefore the Investment Bank also uses a six-month emergence period.

Retail portfolios

During 2017, the Retail Impairment Policy was strengthened and required enhancements to modelling approaches to both emergence and outcome periods across the credit card portfolios, notably UK and US. Emergence periods at a product level, are shown in the table below.

Emergence periods

	Emergence period (months)	
Product Type	2017	2016
Credit cards	3-3.5	3-3.5
Current Accounts	4	4
Unsecured Loans	6	4
Secured Loans	8	6

Businesses undertake regular analysis, at least annually, to validate that the minimum emergence periods above continue to reflect the actual observed time between the occurrence of a loss event and entry to an impaired state, so that they remain appropriate and provide sufficient coverage of future losses.

Where any shortfalls are identified at a business or portfolio level, the prescribed minimum emergence periods are increased to reflect our most up-to-date experience of customer behaviour.

The final approved emergence periods are incorporated within the rates used as part of the overall Unidentified Impairment (UI) assessment, which now encompasses total outstanding balances on all accounts that are in order, and for which no identified impairment allowances are held.

Individual evidence based outcome periods are also derived at a business/portfolio level, businesses are required to capture lifetime defaults allowing consideration to cure rates and future events, subject to a minimum floor of 80%.

Final outcome periods adopted are re-evaluated on an annual basis so that they continue to reflect the actual time elapsing from the initial indication of potential default to the default event.

Returning assets to a performing status

Wholesale portfolios

In Wholesale portfolios, an account may only be returned to a performing status when it ceases to have any actual or perceived financial stress and no longer meets any of the WL criteria, or once facilities have been fully repaid or cancelled. Unless a facility is fully repaid or cancelled, the decision in Corporate Banking to return an account to performing status may only be taken by the credit risk team, while within the Investment Bank, the decision can only be taken by the BI Watch List Committee.

Retail portfolios

A Retail asset, pre-point of charge-off, may only be returned to a performing status in the following circumstances:

- all arrears (both capital and interest) have been cleared and payments have returned to original contractual payments
- for revolving products, a re-age event has occurred, when the customer is returned to an up-to-date status without having cleared the requisite level of arrears

Management of credit risk and the internal ratings-based approach

- for amortising products, which are performing on a programme of forbearance and meet the following criteria may be returned to the performing book classified as High Risk*:
  - no interest rate concessions must have been granted
  - restructure must remain within original product parameters (original term + extension)
  - twelve consecutive payments at the revised contractual payment amount must have been received post the restructure event.

For residential mortgages, accounts may also be considered for rehabilitation post charge-off, where customer circumstances have changed. The customer must clear all unpaid capital and interest, and confirm their ability to meet full payments going forward.

Recovery units

Recovery units are responsible for exposures where deterioration of the counterparty/customer credit profile is severe, to the extent that timely or full recovery of exposure is considered unlikely and default has occurred or is likely in the short term. Recovery teams set and implement strategies to recover the Group's exposure through realisation of assets and collateral, in co-operation with counterparties/customers and where this is not possible through insolvency and legal procedures.

In Wholesale, for a case to be transferred to a recovery unit, it must be in default and have ceased to actively trade or be in insolvency. In Retail, the timings of the charge-off points to recovery units are established based on the type of loan. For the majority of products, the standard period for charging off accounts is six missed contractual payments (180 days past due date of contractual obligation) unless a Forbearance programme is agreed. Early points are prescribed for unsecured assets. For example, in case of customer bankruptcy or insolvency, associated accounts are charged off within 60 days of notification. See recovery information included in Analysis of Specific Portfolio and Asset Types section on page 148 of the Barclays PLC Annual Report 2017.

Foreclosures in process and properties in possession

Foreclosure is the process where the bank initiates legal action against a customer, with the intention of terminating the loan agreement whereby the bank may repossess the property subject to local law and recover amounts it is owned. This process can be initiated by the bank independent of the impairment treatment and it is therefore possible that the foreclosure process may be initiated while the account is still in collections (delinquent) or in recoveries (post charge-off) where the customer has not agreed a satisfactory repayment schedule with the bank.

Properties in possession include properties held as 'loans and advances to customers' and properties held as 'other real estate owned'.

Held as 'loans and advances to customers' (UK and Italy) refers to the properties where the customer continues to retain legal title but where the bank has enforced the possession order as part of the foreclosure process to allow for the disposal of the asset, or the court has ordered the auction of the property.

Writing off assets

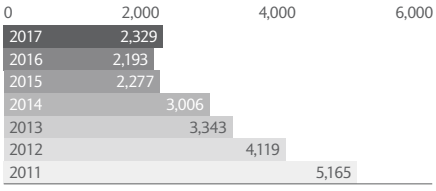
Write-off refers to the point where it is determined that the asset is irrecoverable, it is no longer considered economically viable to try and recover the asset, it is deemed immaterial, or full and final settlement is reached and a shortfall remains. In the event of write-off, the customer balance is removed from the balance sheet and the impairment reserve held against the asset is released.

The timing and extent of write-offs may involve some element of subjective judgement. Nevertheless, a write-off will often be prompted by a specific event, such as the inception of insolvency proceedings or other formal recovery action, which makes it possible to establish that some or the entire advance is beyond realistic prospect of recovery. The position of impaired loans is also reviewed at least quarterly to make sure that irrecoverable advances are being written off in a prompt and orderly manner and in compliance with any local regulations.

For Retail portfolios, the timings of the write-off points are established based on the type of loan. For unsecured, assets in the recoveries book will be written-off if the required qualifying repayments are not made within a rolling twelve-month period. For secured loans, the shortfall after the receipt of the proceeds from the disposal of the collateral is written off within three months of that date if no repayment schedule has been agreed with the borrower. Such assets are only written off once all the necessary procedures have been completed and the amount of the loss has been determined.

Subsequent recoveries of amounts previously written off are written back and hence decrease the amount of the reported loan impairment charge in the income statement. In 2017, total write-offs of impaired financial assets increased 6% to £2.3bn (2016: £2.2bn).

Total write-offs of financial assets (£m)



Forbearance and other concession programmes

Forbearance programmes

Forbearance takes place when a concession is made on the contractual terms of a facility in response to an obligor's financial difficulties. The Group offers forbearance programmes to assist customers and clients in financial difficulty through agreements that may include accepting less than contractual amounts due where financial distress would otherwise prevent satisfactory repayment within the original terms and conditions of the contract. These agreements may be initiated by the customer, the bank or a third party.

Forbearance programmes for Wholesale portfolios

The majority of Wholesale client relationships are individually managed, with lending decisions made with reference to specific circumstances and on bespoke terms.

Forbearance measures consist of concessions made towards a debtor that is experiencing or about to experience difficulties in meeting their financial commitments.

A concession is a sanctioned action, outside of market terms that is beneficial to the debtor. The concession arises solely due to the financial distress of the debtor and the terms are more favourable than those which would be offered to a new or existing obligor with a similar risk profile. Concessions are represented by:

- A change or alteration to the previous terms and conditions of a contract,
- A total or partial refinancing of a troubled debt contract.

The following are some examples of concessions which would be deemed forbearance (where granted to debtors in financial difficulties and outside of market terms):

- A restructuring of the contractual terms of a credit facility (such as a reduction in the interest rate).
- An extension to the maturity date.
- Change to the collateral structure (typically resulting in a net reduction in collateral).
- Favourable adjustment to covenants where repayment profile changes, or non-enforcement of material covenant breach.
- Repayment in some form other than cash (e.g. equity).
- Capitalisation of accrued interest.
- Any other concession made which is designed to alleviate actual or apparent financial stress e.g. a capital repayment holiday.

* The identification and subsequent treatment of up-to-date customers who, either through an event or observed behaviour exhibit potential financial difficulty. High Risk includes customers who have suffered recent financial dislocation, i.e. prior forbearance or re-age.

Management of credit risk and the internal ratings-based approach

Where a concession is granted that is not a result of financial difficulty and/or is within our current market terms, the concession would not amount to forbearance. For example, a commercially balanced restructure within the Group's current terms which involves the granting of concessions and receiving risk mitigation/structural enhancement of benefit to the Group would not be indicative of forbearance.

Forbearance is not deemed to have occurred in the following situations:

- There is a pending maturity event anticipated at the onset of lending i.e. the loan was never structured to amortise to zero.
- A maturity extension or a temporary covenant waiver (e.g. short term standstill) is granted to support a period of negotiation, subject to the Group being satisfied that:
  - the debtor is actively pursuing refinancing or the sale of an asset enabling full repayment at expiry of the extended term
  - no loss is anticipated
  - payments of interest and capital continues as originally scheduled,
  - there is a high probability of a successful outcome within a "reasonable" time scale (6 months for bilateral facilities, 9 months for multi-lender).
- Immaterial amendments to lending terms are agreed, including changes to non-financial internal risk triggers that are only used for internal monitoring purposes.

Impairment is assessed on an individual basis and recognised where relevant impairment triggers have been reached including where counterparties are in arrears and require renegotiation of terms. Forbearance is considered to be an indicator that impairment may be present and an impairment test is performed for all cases placed in forbearance.

A control framework exists along with regular sampling so that policies for watch list and impairment are enforced as defined and all assets have suitable levels of impairment applied. Portfolios are subject to independent assessment.

Aggregate data for Wholesale forbearance cases is reviewed by the Wholesale Credit Risk Management Committee.

Forbearance programmes for retail portfolios

Retail forbearance is available to customers experiencing financial difficulties. Forbearance solutions take a number of forms depending on individual customer circumstances. Short-term solutions focus on temporary reductions to contractual payments and may change from capital and interest payments to interest only. For loan customers with longer-term financial difficulties, term extensions may be offered, which may include interest rate concessions. For credit card customers with longer-term financial difficulties, a switch to a fully amortising plan may be offered, which may include an interest rate concession.

When an account is placed into a programme of forbearance, the asset will be classified as such for the remainder of its term, unless after 12 months it qualifies for reclassification, upon which it will be returned to the up-to-date book and classified as high risk for a further 12 month period. When the Group agrees to a forbearance programme with a customer, the impairment allowance recognises the impact on cash flows of the agreement to receive less than the original contractual payments. The Retail Impairment Policy prescribes the methodology for impairment of forbearance assets, which is measured by comparing the debt outstanding to the revised expected repayment. This results in higher impairment, in general, than for fully performing assets, reflecting the additional credit risk attached to loans subject to forbearance.

Barclays has continued to assist customers in financial difficulty through the use of forbearance programmes. However, the extent of forbearance offered by the Group to customers and clients remains small in comparison to the overall size of the loan book.

The level of forbearance extended to customers in other Retail portfolios is not material and, typically, does not currently play a significant part in the way customer relationships are managed. However, additional portfolios will be added to this disclosure should the forbearance in respect of such portfolios become material.

A Retail loan is not considered to be renegotiated where the amendment is at the request of the customer, there is no evidence of actual or imminent financial difficulty and the amendment meets with all underwriting criteria. In this case it would be treated as a new loan. In the normal course of business, customers who are not in financial difficulties frequently apply for new loan terms, for example to take advantage of a lower interest rate or to secure a further advance on a mortgage product. Where these applications meet our underwriting criteria and the loan is made at market interest rates, the loan is not classified as being in forbearance. Only in circumstances where a customer has requested a term extension, interest rate reduction or further advance and there is evidence of financial difficulty is the loan classified as forbearance and included in our disclosures on forbearance on page 153 of the Barclays PLC Annual Report 2017.

Please see the credit risk performance section on page 138 of the 2017 Annual Report for details of principal Wholesale and Retail assets currently in forbearance.

Impairment of loans under forbearance

Loans under forbearance programmes are subject to Group policy. In both Retail and Wholesale portfolios, identified impairment is raised for such accounts, recognising the agreement between the Group and customer to pay less than the original contractual payment and is measured using a future discounted cash flow approach comparing the debt outstanding to the expected repayment on the debt. This results in higher impairment, in general, being held for loans under forbearance than for fully performing assets, reflecting the additional credit risk attached to loans subject to forbearance.

Sustainability of loans under forbearance

The Group monitors the sustainability of loans for which forbearance has been granted.

Wholesale portfolios

Debtors granted forbearance are classified on watch list (WL) for the duration of the forbearance. Counterparties placed on WL status are subject to increased levels of credit risk oversight.

Forborne debtors are classified for reporting as either Performing (WL 1-3) or Non-Performing (WL4).

Non-Performing debtors are defined as:

- More than 90 days past due.
- Assessed as unlikely to pay credit obligations in full without realisation of collateral, regardless of the existence of any past due amount or of the number of days past due.
- Credit impaired.
- Performing forborne debtors granted additional forbearance measures or becoming more than 30 days past-due on a facility obligation.

Performing debtors are classified as debtors that are not past due and are without risk of non-payment.

Non-performing status remains in force for a minimum 12 months from the date of classification before the debtor can be considered as performing. Performing debtors remain forborne for a minimum 24 months before forborne status may be reviewed. The minimum time spent in forbearance for a case that is Non-Performing at the point forbearance is granted is therefore 36 months.

Management of credit risk and the internal ratings-based approach

Retail portfolios
In Retail portfolios, the type of forbearance programme offered should be appropriate to the nature and the expected duration of the customer's financial distress. It is imperative that the solution agreed is both appropriate to that customer and sustainable, with a clear demonstration from the customer of both willingness and ability to repay. Before any permanent programme of forbearance is granted, an affordability assessment is undertaken to confirm suitability of the offer. When customers exit forbearance, the accounts are ring-fenced as a High Risk segment within the up-to-date book for a period of at least twelve months.

For disclosure on the Group's accounting policy with respect to impairment, see pages 133 to 135, and Note 7 of the Barclays PLC Annual Report 2017.

Other programmes

Retail re-aging activity
Re-aging refers to the placing of an account into an up-to-date position without the requisite repayment of arrears. The re-age policy applies to revolving products only. No reduction is made to the minimum due payment amounts which are calculated, as a percentage of balance, with any unpaid principal included in the calculation of the following month's minimum due payment.

The changes in timing of cash flows following re-aging do not result in any additional cost to the Group. The following are the conditions required to be met before a re-age may occur:

- the account must not have been previously charged off or written off
- the borrower cannot be bankrupt, subject to an Individual Voluntary Arrangement (a UK contractual arrangement with creditors for individuals wishing to avoid bankruptcy), convicted of fraud or deceased
- the borrower must show a renewed willingness and ability to repay the debt. This will be achieved by the borrower making at least three consecutive contractual monthly payments or the equivalent cumulative amount. Contractual monthly payment is defined as the contractual minimum due. Funds may not be advanced for any part of this
- the account must have been on book at least nine months (i.e. nine months prior to the three-month qualification period)
- no account should be re-aged more than once within any twelve-month period, or more than twice in a five year period.

Assets are considered to belong to a separate High Risk pool. Under High Risk, the performance of the assets is a risk characteristic and results in a higher probability of default being assigned to them in impairment models which meet the requirement of IAS 39, AG87-88. This results in an appropriately higher impairment allowance being recognised on the assets.

Retail small arrears capitalisation
All small arrears capitalisations are now considered a form of Forbearance, based on the European Banking Authority's requirements for Supervisory Reporting on Forbearance and Non-Performing exposures.

Refinancing risk

This is the risk that the borrower or group of correlated borrowers may be unable to repay bullet-repayment loans at expiry, and will therefore need refinancing.

From a large corporates perspective, refinancing risk will typically be associated with loans that have an element of bullet repayment incorporated into the repayment profile. Refinancing risk is taken into account on a case by case basis as part of the credit review and approval process for each individual loan. The review will consider factors such as the strength of the business model and sustainability of the cash flows; and for bridge loans, the certainty of the sources of repayment and any associated market risk.

Commercial real estate loans will frequently incorporate a bullet repayment element at maturity. Where this is the case, deals are sized and structured to enable the Group to term out the loan if the client were unable to refinance the loan at expiry. Credit review will incorporate an examination of various factors that are central to this consideration, such as tenant quality, tenancy agreement (including break clauses), property quality and interest rate sensitivity. Loans to small and medium enterprises (SMEs) will typically be either revolving credit lines to cover working capital needs or amortising exposures, with periodic refinancing to give the opportunity to review structure, pricing, etc.

Environmental risk

Environmental risk is recognised as a mainstream credit risk issue and the Group has a dedicated Environmental Risk Management team, as part of the central Credit Risk Management function. Environmental issues are considered in credit risk assessment, and environmental risk standards are included in the Wholesale Credit Risk Control Framework.

The Group's approach to environmental credit risk management addresses risk under three categories, namely Direct risk and Indirect risk, which are covered below, and Reputation risk, on which more detail may be found on page 178.

Direct risk can arise when the Group takes commercial land as collateral. In many jurisdictions, enforcement of a commercial mortgage by the bank, leading to possession, potentially renders the Group liable for the costs of remediating a site if deemed by the regulator to be contaminated, including for pre-existing conditions. In the UK, the Group's approach requires commercial land, if being pledged as collateral, to be subject to a screening mechanism. Where required, a further assessment of the commercial history of a piece of land and its potential for environmental contamination helps reflect in the value ascribed to that security any potential environmental degradation. It also identifies potential liabilities which may be incurred by the Group, if realisation of the security were to become likely.

Indirect risk can arise when environmental issues may impact the creditworthiness of the borrower. For instance, incremental costs may be incurred in upgrading a business' operations to meet emerging environmental regulations or tightening standards. In other circumstances, failure to meet those standards may lead to fines. Environmental impacts on businesses may also include shifts in the market demand for goods or services generated by our customers, or changing supply chain pressures. Environmental considerations affecting our clients can be varied. The bank has developed a series of environmental risk briefing notes, covering ten broad industry headings ranging from Agriculture and Fisheries to Oil and Gas, from Mining and Metals to Utilities and Waste Management. These briefing notes are available to colleagues in business development and credit risk functions across the organisation, outlining the nature of environmental and social risks of which to be aware, as well as the factors which mitigate those risks.

The growing importance of climate change as a source of indirect risk is increasingly being recognised in credit policy discussions. Climate risk can arise as physical risk, where changing weather patterns may adversely impact a client's operations, their access to critical resources, their supply chains or their distribution networks, or it can be a transition risk if movement to a lower carbon economy increases the costs or reduces the demand for their products or services. Currently, climate risks are assessed at a relationship level or on a transactional level, such as assessing a client's perspective on the potential impacts of the climate change agenda on their operations, and the extent to which such impacts are reflected in their business planning assumptions.

For more information see Managing Climate Change on page 14 of the Barclays PLC Annual Report 2017.

Management of credit risk and the internal ratings-based approach

Internal ratings based (IRB) approach

The IRB approach largely relies on internal models to derive the risk parameters/components used in determining the capital requirement for a given exposure. The main risk components include measures of the probability of default (PD), loss given default (LGD) and the exposure at default (EAD). The IRB approach is divided into three alternative applications: Own-Estimates, Supervisory Estimates and Specialised Lending:

Own-Estimates IRB (OEIRB): Barclays uses its own models to estimate PD, LGD and EAD to calculate given risk exposures for various asset classes and the associated Risk Weighted Assets (RWAs).

Supervisory IRB (SIRB): Barclays uses its own PD estimates, but relies on supervisory estimates for other risk components. The SIRB approach is particularly used to floor risk parameters for wholesale credit exposures where default data scarcity may impact the robustness of the model build process.

Specialised Lending IRB: For specialised lending exposures for which PD cannot be modelled reliably, Barclays uses a set of risk weights defined in the relevant regulation, and takes into account a range of prescribed risk factors.

While in the past the industry has used the terms 'Advanced', 'Foundation' and 'Slotting' IRB, the current enforcing regulation (the Capital Requirements Regulation) does not use these terms.

The IRB calculation for credit risk

For both OEIRB and SIRB approaches, Barclays uses the regulatory prescribed risk-weight functions for the purposes of deriving capital requirements.

In line with regulatory requirements, Long Run Average PD and downturn LGD and CF (Conversion Factor) estimates are used for each customer/facility to determine regulatory capital for all exposures in scope.

For the purpose of pricing and existing customer management, point in time (PIT) PD, LGD and EAD are generally used as these represent the best estimates of risk given the current position in the credit cycle. Whilst Long Run Average PDs are always tested at grade/pool level, PIT PDs are also used for the calculation of capital on certain retail unsecured products, in line with regulation.

Applications of internal ratings

The three components – PD, LGD and CF – are the building blocks used in a variety of applications that measure credit risk across the entire portfolio:

- **credit approval:** PD models are used in the approval process in both retail and wholesale portfolios. In high-volume retail portfolios, application and behaviour scorecards are frequently used as decision-making tools. In wholesale and some retail mortgage portfolios, PD models are used to direct applications to an appropriate credit-sanctioning level
- **credit grading:** this was originally introduced in the early 1990s to provide a common measure of risk across the Group. Barclays now employs a 21-point scale of default probabilities. These are shown in Table 38 on page 59.
- **risk-reward and pricing:** PD, LGD and CF estimates are used to assess the profitability of deals and portfolios and to facilitate risk-adjusted pricing and strategy decisions
- **risk appetite:** estimates are used to calculate the expected loss and the potential volatility of loss in the Group's risk appetite framework. See page 126
- **impairment calculation:** under IAS 39, many collective impairment estimates incorporate the use of PD and LGD models. See page 133
- **collections and recoveries:** model outputs are used to identify segments of the portfolio where collection and recovery efforts should be prioritised
- **economic capital (EC) calculation:** most EC calculations use similar inputs as the regulatory capital (RC) process
- **risk management information:** Risk generate reports to inform senior management on issues such as business performance, risk appetite and EC consumption. Model outputs are used as key indicators in those reports. Risk also generates regular reports on model risk, which covers model accuracy, model use, input data integrity and regulatory compliance among other issues.

Ratings processes and models for credit exposures

Wholesale credit

To construct ratings for wholesale customers, including financial institutions, corporates, specialised lending, purchased corporate receivables and equity exposures, Barclays complements its internal models suite with external models and rating agencies' information. A model hierarchy is in place requiring users/credit officers to adopt a consistent approach/model to rate each counterparty based on the asset class type and the nature of the transaction. The bank employs 41 internal Wholesale models that are available for regulatory capital calculation under AIRB.

Wholesale PD models

Barclays employs a range of methods in the construction of these models:

- statistical models are used for our high volume portfolios such as small or medium enterprises (SME). The models are typically built using large amounts of internal data, combined with supplemental data from external data suppliers where available. Wherever external data is sourced to validate or enhance internally held data, similar data quality standards to those applicable to the internal data management are enforced.
- structural models incorporate, in their specification, the elements of the industry-accepted Merton framework to identify the distance to default for a counterparty. This relies upon the modeller having access to specific time series data or data proxies for the portfolio. Data samples used to build and validate these models are typically constructed by appropriately combining data sets from internal default observations with comparable externally obtained data sets from commercial providers such as rating agencies and industry data gathering consortia.
- expert lender models are used for those parts of the portfolio where there is insufficient internal or external data to support the construction of a statistically robust model. These models utilise the knowledge and in-depth expertise of the senior credit officers dealing with the specific customer type being modelled. For all portfolios with a low number of default observations, the Group adopts specific regulatory rules, methodologies and floors in its estimates to enforce that the calibration of the model meets the current regulatory criteria for conservatism.

Wholesale LGD models

The LGD models typically rely on statistical analysis to derive the model drivers (including seniority of claim, collateral coverage, recovery periods, industry and costs) that best explain the Group's historical loss experience, often supplemented with other relevant and representative external information where available. The models are calibrated to downturn conditions for regulatory capital purposes and, where internal and external data is scarce, they are subject to SIRB floors to enforce the calibration of the model meets the current regulatory criteria for conservatism.

Wholesale CF models

The wholesale CF models estimate the potential utilisation of the currently available headroom based on statistical analysis of the available internal and external data and past client behaviour. As is the case with the LGD models, the CF models are subject to downturn calibration for regulatory capital purposes and to floors where data is scarce. The CF models add a term for accrued interest to facility EAD. Thus, projected EAD can exceed current drawn balance even for

facilities with no headroom.

Retail credit

Retail banking and cards operations have long and extensive experience of using credit models in assessing and managing risks. As a result, models play an integral role in customer approval and management decisions. Most retail portfolios are data rich; consequently, most models are built in-house using statistical techniques and internal data. Exceptions are some expert lender models (similar to those described in the wholesale context) where data scarcity precludes the statistically robust derivation of model parameters. In these cases, appropriately conservative assumptions are typically used, and wherever possible these models are validated/benchmarked against external data. The bank employs 42 internal retail models to calculate regulatory capital for credit exposures.

Retail PD models

Application and behavioural scorecards are most commonly used for retail PD modelling:

- application scorecards are derived from historically observed performance of new clients. They are built using customer demographic and financial information, supplemented by credit bureau information where available. Through statistical techniques, the relationship between these candidate variables and the default marker is quantified to produce output scores reflecting a PD. These scores are used primarily for new customer decisioning but are, in some cases, also used to allocate a PD to new customers for the purpose of capital calculation.
- behavioural scorecards differ from application scorecards in that they rely on the historically observed performance of existing clients. The statistically derived output scores are used for existing customer management activities as well as for the purpose of capital calculation.

Retail LGD models

Retail LGD models are built using bespoke methods chosen to best model the operational recovery process and practices. In a number of secured portfolios, LGD drivers are parameterised with market factors (e.g. house price indices, haircut of the property value) to capture market trends. For most unsecured portfolios, where recoveries are not based on collateral, statistical models of cash flows are used to estimate ultimate recoveries and LGDs. In all instances, cash flows are discounted to the point of default by using bespoke country and product level factors. For capital calculations, customised economic downturn adjustments, taking into account loss and default dependency, are made to adjust losses to stressed conditions.

Retail CF models

CF models within retail portfolios are split into two main methodological categories. The general methodology is to derive product level credit conversion factors (CCFs) from historical balance migrations, typically for amortising products, such as mortgages, consumer loans. These are frequently further segmented at a bucket level (e.g. by delinquency). The most sophisticated CF models are based on behavioural factors, determining customer level CCFs from characteristics of the individual facility, typically for overdrafts and credit cards. For capital calculations, customised downturn adjustments, taking into account loss and default dependency, are made to adjust for stressed conditions.

The control mechanisms for the rating system

Model risk is a risk managed under the ERMF. Consequently, the Group Model Risk Policy (GMRP) and its supporting standards covering the end-to-end model life cycle are in place to support the management of risk models.

Key controls captured by the GMRP cover:

- model governance is anchored in assigning accountabilities and responsibilities to each of the main stakeholders:
  - model owner – each model must have an owner who has overall accountability for the model
  - model developers – support the model owner and drive development according to the model owner's defined scope/ purpose
  - Independent Validation Unit (IVU) – responsible for independent review, challenge and approval of all models.
- externally developed models are subject to the same governance standards as internal models
- models are classified by materiality (high/ low) and complexity (complex/non-complex)
- all models must be validated and approved by IVU before initial implementation/use
- models are subject to annual review by the model owner and periodic validation and approval by IVU
- all models must be recorded in the Group Models Database (GMD), which records model owners and developers
- model owners must evidence that model implementation is accurate and tested.

If a model is found to perform sub-optimally, it may be rejected and/or subjected to a Post Model Adjustment (PMA) before approval for continued use is granted.

The IVU reporting line is separate from that of the model developers. IVU is part of Model Risk Management (MRM), and the head of MRM reports to the Group CRO. The model development teams have separate reporting lines to the Barclays UK and Barclays International Chief Risk Officers, who in turn report to the Group CRO.

Under the Three Lines of Defence approach stated in the ERMF, the actions of all parties with responsibilities under the GMRP are subject to independent review by Barclays Internal Audit.

Validation processes for credit models

Validation of credit models covers observed model performance but also the scope of model use, interactions between models, data use and quality, the model's theoretical basis, regulatory compliance and any remediation to model risk that are proposed or in place. The following sections provide more detail on processes for validating the performance of each model type.

Wholesale PD models

To assess model calibration, the IVU compares the model prediction of default frequency to the realised internal default rate both over the latest year and over all observable model history. Due to the relative infrequency of default of large wholesale obligors, a long-run perspective on default risk is vital. Default rates are also compared to external benchmarks where these are relevant and available, such as default rates in rating-agency data. In practice, since financial crises have been infrequent, IVU would expect the model PD used in calculating regulatory capital to exceed the long run observed default rate.

For portfolios where few internal defaults have been observed, portfolio PD is compared to the 'most prudent PD' generated by the industry-standard Pluto-Tasche method, using conservative parameter assumptions.

To assess model discrimination performance, the IVU compares the rank-ordering of internal ratings with the pattern of defaults, if any, to construct the industry-standard Gini statistic or similar. The ordering of internal ratings is also compared to the ordering of internal and external comparator ratings where these are available.

Mobility metric and population stability index is also routinely calculated to infer relevant aspects of the model performance (e.g. rating philosophy).

Management of credit risk and the internal ratings-based approach

Wholesale LGD models
To assess model calibration, model outputs are compared to the LGD observed on facilities that entered default in 'downturn' periods, as requested by the regulator. Both internal and external data on observed LGD are examined, but preference is given to internal data, since these reflect Barclays' recovery policies. Comparisons are performed by product seniority and security status and for other breakdowns of the portfolio. Model outputs are also compared to the long-run average of observed LGD. The time-lapse between facility default and the closure of recovery is varied and may be long. In the construction of observed LGD, recoveries are discounted back to the date of default at a conservative interest rate, following regulatory guidance of at least 9%. As noted above, regulatory floors are in place for the LGD used in calculating regulatory capital for exposure types where few default observations are available.

To assess model discrimination, the IVU compares the rank-ordering of model predictions to that of observed LGD and calculates the Spearman's Rank correlation coefficient and other measures of discrimination.

Wholesale CF models
To assess model calibration, the conversion factors observed in internal data are compared to model predictions, both in downturn periods as defined by the regulator, and on a long-run average basis. Comparisons are performed separately for different product types. Validation focuses on internal data, with external data used as a benchmark, because conversion factors are related to banks' facility management practices. Particular care is used in separating cases where facility limits changed between the date of observation and default, as these can lead to measurements of conversion factors that take extreme values. As a benchmark only, total predicted exposure at default for all defaulted facilities is compared to realised exposure at default. This comparison is done because it is relatively insensitive to extreme values for observed CF on some facilities. The primary validation tests are performed on a facility-weighted rather than exposure-weighted basis, however, in line with the relevant regulations.

Retail PD models
To assess rating philosophy, i.e. whether it is a Point-in-Time system or Through-the-Cycle system, the IVU produces migration indices to investigate relevant grade migration.

To assess model calibration, the IVU compares the model prediction of default frequency to the realised internal default rate by grade/pool as required by CRR. As a minimum, IVU expects the expected default rate is at least equal or above the level of observed default rate.

To assess model discrimination performance, the IVU compares the rank-ordering of internal ratings with the pattern of defaults, if any, to construct the industry-standard Gini statistic or similar.

To assess model stability, the population distribution, the character distribution and parameter estimates are assessed individually.

A 0.03% regulatory floor is in place for the facility level PD used in calculating regulatory capital.

Retail LGD models
LGD model components are compared to observed value respectively, this may include but not limited to probability of possession/ charge off, forced sale discount, time from default to crystallisation and discount rate. Where components are similar to PD in nature, the approach stated in the PD section applies to assess the calibration, discrimination and stability of the component.

The calibration of the overall LGD is assessed through the expected against actual comparison by default flow and stock population respectively. The downturn LGD appropriateness is further assessed to implement that the downturn LGD is equal to or above the long-run average of observed LGD. This exercise is performed at grade/pool level according to CRR. In the construction of observed LGD, recoveries are discounted back to the date of default at a conservative interest rate, following regulatory guidance. As noted above, regulatory floors are in place for the LGD used in calculating regulatory capital where appropriate (this includes but not limited to the non-zero LGD floor at account level, the collateral uncertainty consideration, the portfolio level LGD floor and UK property haircut floor).

The primary validation tests are performed on facility-weighted rather than exposure-weighted basis, however, in line with the relevant regulations.

Retail CF models
The calibration of the overall CF is assessed through the expected against actual comparison by default flow and stock population respectively. The downturn CF appropriateness is further assessed to implement that the downturn CF is equal to or above the long-run average of observed CF. This exercise is performed at grade/pool level according to CRR. Particular care is used in separating cases where facility limits changed between the date of observation and default, as these can lead to measurements of conversion factors that take extreme values.

Depending on the modelling approach, the relevant measure used for PD/LGD may be used accordingly to assess calibration, discrimination and stability.

CF is floored so that the exposure at the point of default cannot be less than exposure observed at point of regulatory reporting.

The primary validation tests are performed on facility-weighted rather than exposure-weighted basis, however, in line with the relevant regulations.

Table 93 for credit risk model characteristics shows modelled variables to calculate RWAs (PD, LGD, and EAD) at portfolio level, with number of models and their significance in terms of RWAs, model method or approach, numbers of years of data used, Basel asset class of the customer or client, and regulatory thresholds applied.

Selected features of material models
The table below contains selected features of the Group's AIRB credit risk models which are used to calculate RWAs. The RWAs reported in this table are based on the models in production as of November 17.

- PD models listed in the table account for £108bn of total AIRB approach RWAs as of November 17
- LGD models listed in the table account for £115bn of total AIRB approach RWAs as of November 17

Management of credit risk and the internal ratings-based approach

Table 93 AIRB_Credit

Component modelled	Portfolio	Size of associated portfolio (RWAs) BUK (£m)	BI (£m)	Model description and methodology	Number of years loss data	Basel asset classes measured	Applicable industry-wide regulatory thresholds
PD	Publicly traded corporate	10	24,707	Statistical model using a Merton-based methodology. It takes quantitative factors as inputs.	> 10 Years	Corporate	PD floor of 0.03%
PD	Customers rated by Moody's and S&P	483	28,662	Rating Agency Equivalent model converts agency ratings into estimated equivalent PIT default rates using credit cycles based on Moody's data.	> 10 Years	Corporate, Financial Institutions and Sovereigns	PD floor of 0.03% for corporate and institutions
PD	Corporate and SME customers with turnover < £20m	6,285	5,879	Statistical models that use regression techniques to derive relationships between observed default experience and a set of behavioural variables.	< 5 Years	Corporate, Corporate SME	PD floor of 0.03%
PD	Corporate customers with turnover >= £20m	35	8,513	Statistically derived models sourced from an external vendor (Moody's RiskCalc)	6 – 10 Years	Corporate	PD floor of 0.03%
PD	Home Finance	16,319	–	Statistical scorecards estimated using regression techniques, segmented along arrears status and portfolio type.	6 – 10 Years	Secured By Real Estate (residential and buy-to-let mortgages)	PD floor of 0.03%
PD	Barclaycard UK	17,058	–	Statistical scorecards estimated using regression techniques, segmented along arrears status and portfolio type.	6 – 10 Years	Qualifying Revolving Retail (QRRE)	PD floor of 0.03%
LGD	Corporate and Financial Institutions	–	54,351	Model based on a statistical regression that outputs a long run average LGD by estimating the expected value of recovery. Inputs include industry, seniority, instrument, collateral and country.	> 10 Years	Corporate, Financial Institutions	LGD floor of 45% based on low default portfolio criteria
LGD	All business customers (excluding certain specialised sectors)	–	27,543	Model is based on a function estimated using actual recoveries experience. It takes account of collateral value and an allowance for non-collateral recovery.	> 10 Years	Corporate	LGD floor of 5%
LGD	UK Home Finance	16,319	–	Data driven estimates of loss and probability of possession	6 – 10 Years	Secured By Real Estate (residential and buy-to-let mortgages)	The portfolio average downturn LGD is floored at 10%
LGD	Barclaycard UK	17,058	–	Statistical models combining segmented regression and other forecasting techniques	6 – 10 Years	Qualifying Revolving Retail (QRRE)	–

Management of credit risk and the internal ratings-based approach

Credit Risk IRB models performance back testing – estimated versus actual

The following tables compare the PDs and LGDs estimated by the Group's IRB models with the actual default and loss rates. Comparisons are based on the assets in IRB approach portfolios and are used to assess performance of the models. The estimates and actual figures represent direct outputs from the models rather than outputs used in regulatory capital calculations that may be adjusted to apply more conservative assumptions.

Back testing results are reported within each IRB exposure class at overall Bank level both for Retail and Wholesale excluding Africa, as the historical BUK and BI split is not available for the Wholesale obligors. We intend to report back testing results at BUK and BI level in future once adequate data history is available.

Risk models are subject to the Group Model Risk Policy which contains detailed guidance on the minimum standards for model risk management. For example, PDs must be estimated over a sufficient period, show sufficient differentiation in predictions for different customers, show conservatism where data limitations exist, and follow prescriptive techniques. These standards are achieved via an independent validation process through appropriately independent experts. Once validated and correctly implemented, models are subject to regular monitoring to assess they can still be used. Comparing model estimates with actual default rates for PD and loss rates for LGD form part of this monitoring. Such analysis is used to assess and enhance the performance of the models.

Further detail is provided in the management of model risk on page 174.

PD measures

- The model estimated PIT PDs are compared with the actual default rates by PD ranges within each IRB exposure class. PD ranges, estimated PDs and actual default rates are based on the existing models default definitions. UK Cards is the only CRD IV compliant portfolio as of the reference month (November 16), for the remaining portfolios CRD IV compliant models are either implemented post the reference month or under implementation or currently under development/approval as per the CRD IV roll out plan agreed with the PRA.
- The estimated PDs are forward-looking average PD by the model at the beginning of the twelve-month period, i.e. average PD of the November 16 non-defaulted obligors including inactive and non-borrowers. Both EAD weighted and simple average PDs have been reported.
- The estimated PDs are compared with the simple average of historical annual default rates over the past 5 years, starting November 12.
- The PIT PD is used as a predicted measure in internal monitoring and annual validation of the models. In contrast, the capital calculation uses TTC or Regulatory PDs (not shown below), calibrated to long-run default averages with additional adjustments where modelled outputs display evidence of risk understatement (including credit expert overrides, regulatory adjustments etc.). The PIT measure is subject to under or over prediction depending on the relative position of the portfolio to the credit cycle.
- A mapping has been provided between external ratings and internal PD ranges based on the published reports from the two rating agencies – Moody's and S&P.
- For the wholesale models, the average default probabilities in the tables have been determined from the full scope of clients graded by the IRB model suite, which may include some clients that have either zero exposure or zero limits marked at the time of calculation.

LGD measures

- The model estimated LGDs, unadjusted for regulatory floors and for downturn adjustments, are compared with the actual LGDs within each IRB exposure class.
- The estimated LGDs are derived from a simple average of LGDs at the time of default for the set of cases closed over the previous twelve months.
- The actual LGD rate is the simple average observed loss rate for the set of cases closed over the previous twelve months, regardless of the time of default.
- The LGD measures are used as a predicted measure in internal monitoring and annual validation of the models. The capital calculation uses Downturn LGDs with additional adjustments and regulatory floors where modelled outputs display evidence of risk understatement.

Management of credit risk and the internal ratings-based approach

Table 94: Analysis of expected performance versus actual results

This table provides an overview of credit risk model performance, assessed by the analysis of average PDs and average LGDs.

The table compares the raw model output to the actual experience in our portfolios. Such analysis is used to assess and enhance the adequacy and accuracy of models. The raw outputs are subject to a number of adjustments before they are used in the calculation of capital, for example to allow for the position in the credit cycle and the impact of stress on recovery rates.

Asset Class

Wholesale	PD Range	External Ratings Equivalent		Weighted Average PD %	Arithmetic Average PD by obligors %	Number of obligors		Defaulted obligors in the year £m	of which: new defaulted in the year £m	Average historical annual default %
		Moody's	S&P			As at Nov '16	As at Nov '17			
Central governments or central banks	0.00 to <0.15	Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1	AAA, AA+, AA, AA-, A+, A, A-, BBB+	0.02%	0.03%	97	57	–	–	0.00%
	0.15 to <0.25	Baa2	BBB+, BBB	0.20%	0.20%	7	4	–	–	0.00%
	0.25 to <0.50	Baa3, Ba1	BBB, BBB-	0.30%	0.36%	8	7	–	–	0.00%
	0.50 to <0.75	Ba1, Ba2	BB+	0.00%	0.73%	1	4	–	–	0.00%
	0.75 to <2.50	Ba2, Ba3, B1	BB, BB-	0.00%	1.12%	10	7	–	–	0.00%
	2.50 to <10.00	B1, B2, B3	BB-, B+, B, B-	3.65%	4.74%	7	9	–	–	0.00%
	10.00 to <100.00	B3, Caa1, Caa2, Caa3, Ca, C	B-, CCC+, CCC, CCC-, CC+, CC, C	30.00%	22.67%	5	4	–	–	0.00%
	100.00 (default)	D	D	100.00%	100.00%	–	–	–	–	0.00%
Institutions	0.00 to <0.15	Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1	AAA, AA+, AA, AA-, A+, A, A-, BBB+	0.03%	0.03%	8,657	9,156	–	–	0.00%
	0.15 to <0.25	Baa2	BBB+, BBB	0.18%	0.18%	877	909	–	–	0.00%
	0.25 to <0.50	Baa3, Ba1	BBB, BBB-	0.40%	0.40%	379	417	–	–	0.00%
	0.50 to <0.75	Ba1, Ba2	BB+	0.57%	0.57%	106	53	–	–	0.00%
	0.75 to <2.50	Ba2, Ba3, B1	BB, BB-	1.84%	1.23%	221	223	–	–	0.00%
	2.50 to <10.00	B1, B2, B3	BB-, B+, B, B-	3.55%	5.18%	137	141	1	–	0.33%
	10.00 to <100.00	B3, Caa1, Caa2, Caa3, Ca, C	B-, CCC+, CCC, CCC-, CC+, CC, C	11.60%	21.39%	72	46	–	–	0.48%
	100.00 (default)	D	D	100.00%	100.00%	15	15	–	–	0.00%
Corporate	0.00 to <0.15	Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1	AAA, AA+, AA, AA-, A+, A, A-, BBB+	0.03%	0.05%	1450	1430	1	–	0.01%
	0.15 to <0.25	Baa2	BBB+, BBB	0.20%	0.20%	368	375	1	–	0.05%
	0.25 to <0.50	Baa3, Ba1	BBB, BBB-	0.35%	0.36%	639	622	–	–	0.26%
	0.50 to <0.75	Ba1, Ba2	BB+	0.62%	0.62%	297	375	–	–	0.26%
	0.75 to <2.50	Ba2, Ba3, B1	BB, BB-	1.36%	1.37%	844	763	4	–	0.48%
	2.50 to <10.00	B1, B2, B3	BB-, B+, B, B-	4.33%	5.00%	1,271	1,061	15	–	1.95%
	10.00 to <100.00	B3, Caa1, Caa2, Caa3, Ca, C	B-, CCC+, CCC, CCC-, CC+, CC, C	23.15%	20.27%	247	311	15	–	5.10%
	100.00 (default)	D	D	100.00%	100.00%	183	165	–	–	0.00%
Corporate SME	0.00 to <0.15	Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1	AAA, AA+, AA, AA-, A+, A, A-, BBB+	0.07%	0.09%	751	705	–	–	0.03%
	0.15 to <0.25	Baa2	BBB+, BBB	0.19%	0.19%	1,508	1,483	1	–	0.17%
	0.25 to <0.50	Baa3, Ba1	BBB, BBB-	0.37%	0.37%	2,912	2,764	5	–	0.14%
	0.50 to <0.75	Ba1, Ba2	BB+	0.65%	0.65%	2,196	2,090	5	–	0.21%
	0.75 to <2.50	Ba2, Ba3, B1	BB, BB-	1.29%	1.35%	4,412	3,723	14	2	0.50%
	2.50 to <10.00	B1, B2, B3	BB-, B+, B, B-	5.24%	4.82%	4,724	3,769	69	4	2.93%
	10.00 to <100.00	B3, Caa1, Caa2, Caa3, Ca, C	B-, CCC+, CCC, CCC-, CC+, CC, C	27.27%	23.90%	528	510	42	–	9.86%
	100.00 (default)	D	D	100.00%	100.00%	182	178	–	–	0.00%
Specialist Lending	0.00 to <0.15	Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1	AAA, AA+, AA, AA-, A+, A, A-, BBB+	0.07%	0.07%	29	28	–	–	0.00%
	0.15 to <0.25	Baa2	BBB+, BBB	0.19%	0.19%	38	31	–	–	0.00%
	0.25 to <0.50	Baa3, Ba1	BBB, BBB-	0.37%	0.39%	145	153	–	–	0.00%
	0.50 to <0.75	Ba1, Ba2	BB+	0.65%	0.64%	171	140	–	–	0.57%
	0.75 to <2.50	Ba2, Ba3, B1	BB, BB-	1.23%	1.33%	222	211	1	–	0.11%
	2.50 to <10.00	B1, B2, B3	BB-, B+, B, B-	3.82%	3.92%	135	117	2	–	2.19%
	10.00 to <100.00	B3, Caa1, Caa2, Caa3, Ca, C	B-, CCC+, CCC, CCC-, CC+, CC, C	29.13%	28.75%	12	6	2	–	14.63%
	100.00 (default)	D	D	100.00%	100.00%	60	45	–	–	0.00%

Management of credit risk and the internal ratings-based approach

Table 94: Analysis of expected performance versus actual results continued

Asset Class

Retail	PD Range	External Ratings Equivalent Moody's	External Ratings Equivalent S&P	Weighted Average PD %	Arithmetic Average PD by obligors %	Number of obligors As at Nov '16	Number of obligors As at Nov '17	Defaulted obligors in the year £m	of which: new defaulted in the year £m	Average historical annual default %
SME[a]	0.00 to <0.15	Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1	AAA, AA+, AA, AA-, A+, A, A-, BBB+	0.04%	0.06%	33,916	35,506	13	1	0.04%
	0.15 to <0.25	Baa2	BBB+, BBB	0.20%	0.20%	24,262	26,041	16	1	0.06%
	0.25 to <0.50	Baa3, Ba1	BBB, BBB-	0.36%	0.38%	55,626	60,087	41	7	0.06%
	0.50 to <0.75	Ba1, Ba2	BB+	0.63%	0.64%	45,006	63,355	41	8	0.08%
	0.75 to <2.50	Ba2, Ba3, B1	BB, BB-	1.50%	1.54%	215,431	178,463	340	94	0.15%
	2.50 to <10.00	B1, B2, B3	BB-, B+, B, B-	4.88%	5.54%	305,617	321,961	1,134	475	0.32%
	10.00 to <100.00	B3, Caa1, Caa2, Caa3, Ca, C	B-, CCC+, CCC, CCC-, CC+, CC, C	24.03%	23.53%	296,712	339,890	13,446	3,402	2.80%
	100.00 (default)	D	D	100.00%	100.00%	5,097	9,672	–	–	–
Secured by Real Estate	0.00 to <0.15	Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1	AAA, AA+, AA, AA-, A+, A, A-, BBB+	0.08%	0.08%	745,590	728,709	528	–	0.07%
	0.15 to <0.25	Baa2	BBB+, BBB	0.19%	0.19%	137,113	131,176	248	–	0.16%
	0.25 to <0.50	Baa3, Ba1	BBB, BBB-	0.34%	0.33%	60,859	58,609	289	–	0.34%
	0.50 to <0.75	Ba1, Ba2	BB+	0.58%	0.60%	12,575	9,743	124	–	0.77%
	0.75 to <2.50	Ba2, Ba3, B1	BB, BB-	1.22%	1.28%	18,452	16,262	348	–	1.94%
	2.50 to <10.00	B1, B2, B3	BB-, B+, B, B-	5.30%	5.28%	5,467	4,736	371	–	6.75%
	10.00 to <100.00	B3, Caa1, Caa2, Caa3, Ca, C	B-, CCC+, CCC, CCC-, CC+, CC, C	37.51%	37.38%	5,270	4,786	1,625	–	48.93%
	100.00 (default)	D	D	100.00%	100.00%	11,694	10,858	–	–	–
Qualifying Revolving Retail	0.00 to <0.15	Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1	AAA, AA+, AA, AA-, A+, A, A-, BBB+	0.07%	0.05%	10,551,296	10,874,869	3,407	953	0.04%
	0.15 to <0.25	Baa2	BBB+, BBB	0.20%	0.20%	1,814,852	1,814,017	2,861	675	0.17%
	0.25 to <0.50	Baa3, Ba1	BBB, BBB-	0.36%	0.36%	2,166,187	2,143,391	6,130	1,008	0.31%
	0.50 to <0.75	Ba1, Ba2	BB+	0.61%	0.61%	1,140,627	1,113,122	5,677	566	0.55%
	0.75 to <2.50	Ba2, Ba3, B1	BB, BB-	1.46%	1.39%	2,703,357	2,633,448	29,311	1,358	1.22%
	2.50 to <10.00	B1, B2, B3	BB-, B+, B, B-	4.98%	4.87%	1,591,182	1,555,953	72,298	1,326	4.61%
	10.00 to <100.00	B3, Caa1, Caa2, Caa3, Ca, C	B-, CCC+, CCC, CCC-, CC+, CC, C	24.97%	27.67%	494,297	507,976	136,958	114	28.64%
	100.00 (default)	D	D	100.00%	100.00%	459,598	412,355	–	–	–
Other Retail	0.00 to <0.15	Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1	AAA, AA+, AA, AA-, A+, A, A-, BBB+	0.13%	0.13%	60	65	–	–	0.56%
	0.15 to <0.25	Baa2	BBB+, BBB	0.22%	0.22%	1,961	2,417	4	–	0.56%
	0.25 to <0.50	Baa3, Ba1	BBB, BBB-	0.41%	0.41%	46,159	51,568	125	–	0.56%
	0.50 to <0.75	Ba1, Ba2	BB+	0.63%	0.63%	87,454	92,677	237	–	0.58%
	0.75 to <2.50	Ba2, Ba3, B1	BB, BB-	1.40%	1.40%	336,579	347,138	3,805	–	1.24%
	2.50 to <10.00	B1, B2, B3	BB-, B+, B, B-	4.28%	4.38%	125,042	118,003	6,199	–	4.50%
	10.00 to <100.00	B3, Caa1, Caa2, Caa3, Ca, C	B-, CCC+, CCC, CCC-, CC+, CC, C	43.63%	38.05%	26,019	26,353	10,869	–	37.38%
	100.00 (default)	D	D	100.00%	100.00%	43,731	41,964	–	–	–

Asset Class

	Number of resolved cases over last one year (Dec'16 to Nov'17)	Predicted LGD (Simple Average) %	Actual LGD (Simple Average) %
Wholesale			
Investment Bank	29	31	11
Corporate Bank	65	47	42
Retail			
SME	2,399	82	72
Secured by Real Estate	3,812	4	5
Qualifying Revolving Retail	291,488	75	74
Other retail	23,413	77	80

Note
a Refer to the notes on page 145 for an explanation of data limitations relating to the Retail SME figures presented in this table.

Management of credit risk and the internal ratings-based approach

2017 AIRB models back testing summary

The section below provides AIRB model performance summary based on the above back testing results, along with the remediation plans.

Wholesale

- The Wholesale book continues to maintain low default rates across IRB exposure classes, with no defaults observed for 'Central Governments or Central Banks'. The estimated PDs are higher (conservative) compared to actual default rates for most PD ranges within each exposure class. Four wholesale models were decommissioned in August 2017 post implementation of the new SME capital suite; actual default rates based on 8 months performance window (December 2016 to July 2017) has been used for these four models.
- There are two key LGD models used for the Wholesale IRB exposures. Both the LGD models overestimate (conservative) on a PIT basis.
- Replacement models are being developed to comply with CRD IV requirements with the material portfolios submitted to the PRA over 2017 and 2018. Interim Post Model Adjustments (PMAs) are in place to address existing models' deficiencies.

Retail SME

- A new set of CRD IV compliant models has been approved by the PRA and implemented in September 2017. However, the current backtesting report is based on the models which were in production as of November 2016.
- The estimated PDs rank order the historical default experience for the UK SME book, i.e. higher PDs implying higher actual default rates.
- The estimated PDs and LGD are much higher (conservative) compared to the actual default rates and LGD. The actual PD is low due to the inclusion of immaterial and dormant customers in the denominator. In addition, there was a temporary default identification issue during the reporting period, which has now been partially rectified. The LGD model is benchmarked to the Corporate LGD model.

Secured by Real Estate

- This covers mortgage portfolios for UK and Italy. Rank ordering is maintained across PD ranges.
- For UK Mortgages, a new set of CRD IV compliant models has been approved by the PRA and implemented in June 2017. However, the current backtesting report is based on the models which were in production as of November 2016. The PD model is accurate, slightly conservative at an overall level (0.30% expected vs. 0.27% actual). The portfolio maintains low LGD and the model overestimates (1.94% estimated vs. 0.92% actual).
- For Italy Mortgages, both the PIT PD and LGD models underestimate (non-conservative) primarily due to a decrease in the House Price Index (HPI). The portfolio has observed significant decrease in recovery as a result of general collateral evaluation driven by a depressed housing market. Additionally the market at origination, when appraisals of the collateral values were carried out, was significantly optimistic. A new set of CRD IV compliant models is due for PRA submission by December 2018. Interim Post Model Adjustments (PMAs) are in place to address existing models' deficiencies.

Qualifying Revolving Retail

- This constitutes UK Cards, Germany Cards and UK Current Account portfolios. The estimated PDs rank order well across all 3 portfolios and at an overall level.
- For UK Cards, a slight underestimation is observed in the PD model driven by the high risk bands; 2.25% estimated vs. 2.32% actual at an overall level. The LGD model is slightly non-conservative (71.2% estimated vs.73.4% actual). The existing CRD IV model suite has been re-calibrated to further improve its accuracy and submitted for PRA approval in May 2017.
- For Germany Cards, the PD estimates are accurate; 1.35% estimated vs. 1.37% actual at an overall level. The overestimation in the LGD model (84% estimated vs. 74% actual) is primarily driven by a debt sale at a better price. A new set of CRD IV compliant models is currently under development and is due for regulatory submission by March 2019. Interim Post Model Adjustments (PMAs) are in place to address existing models' deficiencies.
- For UK Current Accounts, PD model overestimates primarily due to a decrease in actual default rates over the last year (0.70% estimated vs. 0.49% actual). The LGD model is accurate (81.68% estimated vs. 79.23% actual). A new CRD IV compliant model suite has been approved by the PRA in December 2017 and is currently under implementation.

Other Retail

- This covers the Barclays UK loan portfolio. The PD rank ordering holds for all the PD ranges.
- The PD model is marginally non-conservative at an overall level (3.34% estimated vs. 3.41% actual) due to quarterly calibration. The LGD (76.87% expected vs. 80.12% actual) model is also marginally under-predicting at an overall level based on a comparison over the past one year.
- A new CRD IV compliant capital suite was submitted for PRA approval in December 2016.

Management of credit risk mitigation techniques and counterparty credit risk

Counterparty credit risk arises from derivatives and similar contracts. This section details the specific aspects of the risk framework related to this type of credit risk. As credit risk mitigation is one of the principal uses of derivative contracts by banks, this is also discussed in this section.

- On page 139 a high level description of the types of exposures incurred in the course of Barclays' activity supplements the analytical tables in pages 78 to 92.
- Mitigation techniques specific to counterparty credit risk are also discussed.
- A more general discussion of credit risk mitigation (covering traditional credit risks) is also included from page 147.

Management of credit risk mitigation techniques and counterparty credit risk

Credit risk mitigation

The Group employs a range of techniques and strategies to actively mitigate credit risks. These can broadly be divided into three types:

- netting and set-off
- collateral
- risk transfer

Detailed policies are in place to appropriately recognise and record credit risk mitigation. The recognition of credit risk mitigation is subject to a number of considerations, including legal certainty of enforceability and effectiveness, that the valuation and liquidity of the collateral is adequately monitored, and that the value of the collateral is not materially correlated with the credit quality of the counterparty.

All three types of credit risk mitigation may be used by different areas of the Group for exposures with a full range of counterparties. For instance, businesses may take property, cash or other physical assets as collateral for exposures to retailers, property companies or other client types.

Netting and set-off

In most jurisdictions in which the Group operates, credit risk exposures can be reduced by applying netting and set-off. In exposure terms, this credit risk mitigation technique has the largest overall impact on net exposure to derivative transactions, compared with other risk mitigation techniques.

For derivative transactions, the Group's normal practice is to enter into standard master agreements with counterparties (e.g. ISDAs). These master agreements typically allow for netting of credit risk exposure to a counterparty resulting from derivative transactions against the obligations to the counterparty in the event of default, and so produce a lower net credit exposure. These agreements may also reduce settlement exposure (e.g. for foreign exchange transactions) by allowing payments on the same day in the same currency to be set-off against one another.

Under IFRS, netting is permitted only if both of the following criteria are satisfied:

- the entity currently has a legally enforceable right to set off the recognised amounts
- the entity intends either to settle on a net basis, or to realise the asset and settle the liability simultaneously.

Under US GAAP, netting is also permitted, regardless of a currently legally enforceable right of set-off and/or the intention to settle on a net basis, where there is a counterparty master agreement that would be enforceable in the event of bankruptcy.

Collateral

The Group has the ability to call on collateral in the event of default of the counterparty, comprising:

- **home loans:** a fixed charge over residential property in the form of houses, flats and other dwellings. The value of collateral is impacted by property market conditions which drive demand and therefore value of the property. Other regulatory interventions on ability to repossess, longer period to repossession and granting of forbearance may also affect the collateral value.
- **wholesale lending:** a fixed charge over commercial property and other physical assets, in various forms.
- **other retail lending:** includes charges over motor vehicle and other physical assets; second lien charges over residential property, which are subordinate to first charges held either by the Group or by another party; and finance lease receivables, for which typically the Group retains legal title to the leased asset and has the right to repossess the asset on the default of the borrower.
- **derivatives:** the Group also often seeks to enter into a margin agreement (e.g. Credit Support Annex) with counterparties with which the Group has master netting agreements in place. These annexes to master agreements provide a mechanism for further reducing credit risk, whereby collateral (margin) is posted on a regular basis (typically daily) to collateralise the mark to market exposure of a derivative portfolio measured on a net basis. The Group may additionally negotiate the receipt of an independent amount further mitigating risk by collateralising potential mark to market exposure moves.
- **reverse repurchase agreements:** collateral typically comprises highly liquid securities which have been legally transferred to the Group subject to an agreement to return them for a fixed price.
- **financial guarantees and similar off-balance sheet commitments:** cash collateral may be held against these arrangements.

For details of the fair value of collateral held, please refer to maximum exposure table in the credit risk performance section of the 2017 Annual Report. For detail of collateral in credit portfolios see pages 50 and 51.

In exposure terms, the main portfolios that the Group takes collateral for are home loans and reverse repurchase agreements with financial institutions.

Floating charges over receivables

The Group may also obtain collateral in the form of floating charges over receivables and inventory of corporate and other business customers. The value of this collateral varies from period to period depending on the level of receivables and inventory. It is impracticable to provide an estimate of the amount (fair value or nominal value) of this collateral. The Group may in some cases obtain collateral and other enhancements at a counterparty level, which are not specific to a particular class of financial instrument. The fair value of the credit enhancement gained has been apportioned across the relevant asset classes.

Collateral for derivative contracts

The collateral obtained for derivatives is predominantly cash or government bonds (G7 and other highly rated governments). Appropriate haircuts may be applied to non-cash collateral, which are agreed when the margin agreement (e.g. CSA) is negotiated.

Valuation of collateral and impact of market moves

Typically, assets other than cash are subject to regular revaluation (for example via physical review, linking to an external index or depreciation of the asset), to continue to achieve appropriate mitigation of risk. Customer agreements often include requirements for provision of additional collateral, should valuations decline or credit exposure increase, for example due to market moves impacting a derivative exposure.

The carrying value of non-cash collateral reflects the fair value of the physical assets, limited to the carrying value of the asset where the exposure is over-collateralised. In certain cases, where active markets or recent valuations of the assets are not available, estimates are used. For assets collateralised by residential or commercial property (and certain other physical assets), where it is not practicable to assess current market valuations of each underlying property, values reflect historical fair values updated for movements in appropriate external indices. For further information on LTV ratios in principal home loans portfolios, see the Credit Risk review section on page 148 of the Barclays PLC Annual Report 2017.

Liens over fluctuating assets such as inventory and trade receivables, known as floating charges, over the assets of a borrower are monitored annually. The valuation of this type of collateral takes into account the ability to establish objectively a price or market value, the frequency with which the value can be obtained (including a professional appraisal or valuation), and the volatility or a proxy for the volatility of the value of the collateral.

Management of credit risk mitigation techniques and counterparty credit risk

For assets collateralised by traded financial instruments, values reflect MTM or mark to model values of those assets, applying a haircut where appropriate. A haircut is the valuation percentage applicable to each type of collateral and will be largely based on liquidity and price volatility of the underlying security.

Valuation of collateral – property
When property is taken as collateral, it is monitored to establish whether the current value is less than its value at origination. Monitoring is undertaken annually for commercial property or via linking to an external index for residential property. More frequent monitoring may be carried out where the property sector is subject to significant deterioration.

Deterioration is monitored principally by geography. Specific exercises to monitor property values may be undertaken where the property sector in a given geography has been subject to significant deterioration and where the Group has a material concentration of property collateral.

Monitoring may be undertaken either at a portfolio level (typically retail) or at an individual level (typically wholesale).

In retail businesses, monitoring on a portfolio level refers to a more frequent process of indexing collateral values on each individual loan, using a regional or national index, and updating LGD values. This monitoring may be a desk top assessment and need not necessarily include physical assessment of properties. In the event of charge-off, an individual valuation of the property is undertaken within three months of the charge-off event and subsequently undertaken at least every six months whilst in charge-off.

In wholesale, monitoring is undertaken by individuals who are not part of the sales/relationship part of the business. Where an appropriate local index is not available, property values are monitored on an individual basis as part of the annual review process for the loan. For larger loans, in addition to the regular annual review, the property value is reviewed by an independent valuer at least once every three years. This review is a more detailed assessment than the standard property monitoring review, and may include a fresh professional valuation. In addition, an independent valuer reviews the property valuation where information indicates that the value of the property may have declined materially relative to general market prices. In addition, trigger points are defined under which property values must be reviewed.

Valuation of collateral – distressed assets
The net realisable value from a distressed sale of collateral obtained by the Group upon default or insolvency of counterparty will in some cases be lower than the carrying value recognised. Assets obtained are normally sold, generally at auction, or realised in an orderly manner for the maximum benefit of the Group, the borrower's other creditors and the borrower, in accordance with the relevant insolvency regulations. For business customers, in some circumstances, where excess funds are available after repayment in full of the outstanding loan, they are offered to any other, lower ranked, secured lenders. Any additional funds are returned to the borrower. The Group does not occupy repossessed properties for its business use or use assets obtained in its operations.

Additional revaluations are usually performed when a loan is moved to WL. Exceptions to this may be considered where it is clear a revaluation is not necessary, for instance where there is a very high margin of security or a recent valuation has been undertaken. Conversely, a material reduction in the value of collateral held represents an increase in credit risk and will often cause a loan to be placed on the WL.

Any one of the above events may also trigger a test for impairment, depending on individual circumstances of the loan. When calculating impairment, the difference between an asset's carrying amount and the present value of all estimated cash flows discounted at the original effective interest rate will be recognised as impairment. Such cash flows include the estimated fair value of the collateral, which reflects the results of the monitoring and review of collateral values as detailed above and valuations undertaken as part of the Group's impairment process.

Whether property values are updated as part of the annual review process, or by indexation of collateral values, the updated collateral values feed into the calculation of risk parameters which, in turn, feed into identified and unidentified impairment calculations at each balance sheet date.

Trends in LLRs incorporate the impact of any decrease in the fair value of collateral held.

Risk transfer

A range of instruments including guarantees, credit insurance, credit derivatives and securitisation can be used to transfer credit risk from one counterparty to another. These mitigate credit risk in two main ways:

- if the risk is transferred to a counterparty which is more creditworthy than the original counterparty, then overall credit risk is reduced
- where recourse to the first counterparty remains, both counterparties must default before a loss materialises. This is less likely than the default of either counterparty individually so credit risk is reduced.

Risk transfer can also be used to reduce risk concentrations within portfolios lowering the impact of stress events.

Risk transfer transactions are undertaken with consideration to whether the collateral provider is correlated with the exposure, the credit worthiness of the collateral provider and legal certainty of enforceability and effectiveness. Where credit risk mitigation is deemed to transfer credit risk, this exposure is appropriately recorded against the credit risk mitigation provider.

In exposure terms, risk transfer is used most extensively as a credit risk mitigation technique for wholesale loans and derivative financial instruments.

Off-balance sheet risk mitigation
The Group applies fundamentally the same risk management policies for off-balance sheet risks as it does for its on-balance sheet risks. In the case of commitments to lend, counterparties/customers will be subject to the same credit management policies as for loans and advances. Collateral may be sought depending on the strength of the counterparty and the nature of the transaction.

Recognition of credit risk mitigation in capital calculations
Credit risk mitigation is used to reduce credit risk associated with an exposure, which may reduce potential losses in the event of obligor default or other specified credit events.

Credit risk mitigation that meets certain regulatory criteria may be used to improve risk parameters and reduce RWA consumption against a given obligor. Collateral that meets these regulatory conditions is referred to as eligible collateral. Eligibility criteria are specified in articles 195 to 204 of the Capital Regulations Requirement (CRR).

The Group's policies and standards set out criteria for the recognition of collateral as eligible credit risk mitigation and are designed to be fully consistent with all applicable local regulations and regulatory permissions.

Where regulatory capital is calculated under AIRB regulations, the benefit of collateral is generally taken by adjusting LGDs. For standardised portfolios, the benefit of collateral is taken using the financial collateral comprehensive method: supervisory volatility adjustments approach.

For instruments that are deemed to transfer credit risk, in AIRB portfolios the protection is generally recognised by using the PD and LGD of the protection provider.

For exposures treated under the standardised approach, the impact of eligible credit risk mitigation is primarily recognised by reducing the EAD associated with the exposure that benefits from the mitigation.

Management of credit risk mitigation techniques and counterparty credit risk

Managing concentrations within credit risk mitigation

Credit risk mitigation taken by the Group to reduce credit risk may result in credit or market risk concentrations.

Guarantees that are treated as eligible credit risk mitigation are marked as an exposure against the guarantor and aggregated with other credit exposure to the guarantor. Limit monitoring at the counterparty level is then used for monitoring of concentrations in line with Group policy.

Commercial real estate lending is another potential source of concentration risk arising from the use of credit risk mitigation. The portfolio is regularly reviewed to assess whether a concentration in a particular region, industry or property type exists, and portfolio limits are in place to control the level of exposure to commercial, residential, investment and development activity. See pages 131 and 149 for more information on collateral, valuation and monitoring of concentrations.

Counterparty credit risk

Derivative counterparty credit exposures

The Group enters into financial instruments that are traded or cleared on an exchange, including interest rate swaps, futures and options on futures. Holders of exchange traded instruments provide daily margins with cash or other securities at the exchange, to which the holders look for ultimate settlement.

The Group also enters into financial instruments that are traded over the counter, rather than on a recognised exchange. These instruments range from standardised transactions in derivative markets, to trades where the specific terms are tailored to the requirements of the Group's counterparties. In most cases, industry standard documentation is used, most commonly in the form of a master agreement, with individual transaction confirmations. The existence of a signed master agreement is intended to give the Group protection in situations where the Group's counterparty is in default.

Counterparty credit exposure arises from the risk that parties are unable to meet their payment obligations under certain financial contracts such as derivatives, securities financing transactions (e.g. repurchase agreements), or long settlement transactions.

A Monte Carlo simulation engine is used to estimate the Potential Future Exposure (PFE) to derivative and securities financing counterparties. The exposure simulation model simulates future market states and the MTM of the derivative transactions under those states. Simulated exposures including the effect of credit mitigants such as netting, collateral and mandatory break clauses can then be generated.

Credit limits for CCR are assessed and allocated using the PFE measure. A number of factors are taken into account when setting credit limits for individual counterparties, including but not limited to the credit quality and nature of the counterparty, the rationale for the trading activity entered into and any wrong-way risk considerations.

The expected exposures generated by this engine are also used as an input into both internal and regulatory capital calculations covering CCR.

'Wrong-way risk' in a trading exposure arises when there is significant correlation between the underlying asset and the counterparty, which in the event of default would lead to a significant MTM loss to the counterparty. Specific wrong-way risk trades, which are self-referencing or reference to other entities within the same counterparty group, require approval by a senior credit officer. The exposure to the counterparty will reflect the additional risk generated by these transactions.

Derivative CCR (credit value adjustments)

As the Group participates in derivative transactions it is exposed to CCR, which is the risk that a counterparty will fail to make the future payments agreed in the derivative contract. This is considered as a separate risk to the volatility of the MTM payment flows. Modelling this counterparty risk is an important part of managing credit risk on derivative transactions.

The counterparty risk arising under derivative transactions is taken into account when reporting the fair value of derivative positions. The adjustment to the value is known as credit value adjustment (CVA). It is the difference between the value of a derivative contract with a risk-free counterparty and that of a contract with the actual counterparty. This is equivalent to the cost of hedging the counterparty risk in the Credit Default Swap (CDS) market.

CVAs for derivative positions are calculated as a function of the expected exposure, which is the average of future hypothetical exposure values for a single transaction or group of transactions with the same counterparty, the credit spread for a given horizon and the LGD.

The expected exposure is calculated using Monte Carlo simulations of risk factors that may affect the valuation of the derivative transactions in order to simulate the exposure to the counterparty through time. These simulated exposures include the effect of credit mitigants such as netting, collateral and mandatory break clauses. Counterparties with appropriate credit mitigants will generate a lower expected exposure profile compared to counterparties without credit mitigants in place for the same derivative transactions.

Derivative netting and collateral arrangements

Credit risk from derivatives is mitigated where possible through netting agreements whereby derivative assets and liabilities with the same counterparty can be offset. Group policy requires all netting arrangements to be legally documented. The ISDA Master Agreement is the Group's preferred agreement for documenting OTC derivatives. It provides the contractual framework within which dealing activities across a full range of OTC products are conducted, and contractually binds both parties to apply close-out netting across all outstanding transactions covered by an agreement if either party defaults or other predetermined events occur. The majority of the Group's OTC derivative exposures are covered by ISDA master netting and ISDA CSA collateral agreements.

Collateral is obtained against derivative assets, depending on the creditworthiness of the counterparty and/or nature of the transaction. Any collateral taken in respect of OTC trading exposures will be subject to a 'haircut', which is negotiated at the time of signing the collateral agreement. A haircut is the valuation percentage applicable to each type of collateral and will be largely based on liquidity and price volatility of the underlying security. The collateral obtained for derivatives is predominantly either cash, direct debt obligation government (G14+) bonds denominated in the domestic currency of the issuing country, debt issued by supranationals or letters of credit issued by an institution with a long-term unsecured debt rating of A+/A3 or better. Where the Group has ISDA master agreements, the collateral document will be the ISDA CSA. The collateral document must give Barclays the power to realise any collateral placed with it in the event of the failure of the counterparty.

Management of market risk

This section describes the governance structure specific to the management of market risks, as well as a discussion of measurement techniques.

- Market risks are varied, and a range of techniques must be used to manage them. From page 151 we provide an overview of the market risks we incur across the Group
- The governance structure specific to market risks is discussed on pages 151 to 152.

The rest of the section consists of traded and other risks:

- Market risk, the risk of the Group being impacted by changes in the level or volatility of positions in the trading book, is covered on pages 151 to 157. Measurement techniques such as VaR, are discussed, as well as techniques applied when statistical techniques are not appropriate.

Management of market risk

Market risk

The risk of loss arising from potential adverse changes in the value of the firm's assets and liabilities from fluctuation in market variables including, but not limited to, interest rates, foreign exchange, equity prices, commodity prices, credit spreads, implied volatilities and asset correlations.

Overview

Market risk arises primarily as a result of client facilitation in wholesale markets, involving market making activities, risk management solutions and execution of syndications. Upon execution of a trade with a client, the Group will look to hedge against the risk of the trade moving in an adverse direction. Mismatches between client transactions and hedges result in market risk due to changes in asset prices.

Organisation and structure

Market risk in the businesses resides primarily in Barclays International and Group Treasury. These businesses have the mandate to incur market risk. Market risk oversight and challenge is provided by business Committees and Group Committees, including the Market Risk Committee.

Roles and responsibilities

The objectives of market risk management are to:

- understand and control market risk by robust measurement, limit setting, reporting and oversight
- facilitate business growth within a controlled and transparent risk management framework
- control market risk in the businesses according to the allocated appetite

To meet the above objectives, a well established governance structure is in place to manage these risks consistent with the ERMF. See pages 122 to 128 on risk management strategy, governance and risk culture.

The BRC recommends market risk appetite to the Board for their approval. The Market Risk Principal Risk Lead (PR Lead) is responsible for the Market Risk Control Framework and, under delegated authority from the Group CRO, agrees with the Business CROs a limit framework within the context of the approved market risk appetite.

The Market Risk Committee approves and makes recommendations concerning the Group-wide market risk profile. This includes overseeing the operation of the Market Risk Framework and associated standards and policies; reviewing arising market or regulatory issues, limits and utilisation; and risk appetite levels to the Board. The Committee is chaired by the PR Lead and attendees include the business heads of market risk, business aligned market risk managers and Internal Audit.

The head of each business is accountable for all market risks associated with its activities, while the head of the market risk team covering each business is responsible for implementing the risk control framework for market risk.

Risk management in the setting of strategy

Appetite for market risk is recommended by the risk function to BRC for agreement by the Board. Mandate and scales are set to control levels of market risk and assist the Group remain within the BRC approved risk appetite. The Group runs an annual Group-wide stress testing exercise which aims to simulate the dynamics of exposures across the Group and cover all risk factors. The exercise is also designed to measure the impact to the Group's fundamental business plan, and is used to manage the wider Group's strategy.

See page 128 for more detail on the role of risk management in the setting of strategy.

Market risk culture

Market risk managers are independent from the businesses they cover, and their line management reports into the CRO. This embeds a risk culture with strong adherence to limits that support Group-wide risk appetite.

See page 125 for more detail on risk culture.

Board Risk Committee
- reviews and recommends to the Board the Group's risk appetite for market risk
- reviews material events impacting market risk

Group Risk Committee
- monitors risk profile with respect to financial risk appetite
- debates and agrees actions on the financial risk profile and risk strategy across the Group
- considers issues escalated by Risk Type Heads and Business Risk Directors

Market Risk Committee
- oversees the management of the Group's market risk profile
- reviews market risk appetite proposals from the business
- reviews arising market or regulatory issues
- reviews state of the implementation of the risk frameworks in the businesses

Management of market risk

Management of market risk, mitigation and hedging policies

The governance structure helps manage and understand all market risks that the Group is exposed to.

Traded market risk is generated primarily as a result of market making activities, syndications and providing risk management solutions to clients. Group Treasury supports the businesses in managing their interest rate risk. Positions will contribute both to market risk limits and regulatory capital if relevant.

As part of the continuous monitoring of the risk profile, Market Risk meets with the businesses to discuss the risk profile on a regular basis. The outcome of these reviews includes further detailed assessments of event risk via stress testing, risk mitigation and risk reduction.

Market risk measurement – management view

Market risk management measures

A range of complementary approaches to measure market risk are used which aim to capture the level of losses that the bank is exposed to due to unfavourable changes in asset prices. The primary tools to control the firm's exposures are:

Measure	Description
Management Value at Risk (VaR)	An estimate of the potential loss arising from unfavourable market movements, if the current positions were to be held unchanged for one business day.
Primary stress tests	An estimate of potential losses that might arise from severe market moves or scenarios impacting key liquid market risk exposures.
Secondary stress tests	Modelled losses from unfavourable market movements to illiquid market risk exposures.
Business scenario stresses	Multi asset scenario analysis of severe, but plausible events that may impact the market risk exposures of the investment bank.

The use of Management VaR for traded market risk is broader than the application for use of VaR for regulatory capital, and captures standardised, advanced and certain banking books where market risks are deemed to exist. The wider scope of Management VaR is what the Group deems as material market risk exposures which may have a detrimental impact on the performance of the trading business. The scope used in Regulatory VaR (see page 154) is narrower as it applies only to trading book positions as approved by the PRA.

Stress testing and scenario analysis are also an important part of the risk management framework, to capture potential risk that may arise in severe but plausible events.

Management VaR

- estimates the potential loss arising from unfavourable market movements, over one day for a given confidence level
- differs from the Regulatory VaR used for capital purposes in scope, confidence level and horizon
- backtesting is performed to test the model is fit for purpose.

VaR is an estimate of the potential loss arising from unfavourable market movements if the current positions were to be held unchanged for one business day. For internal market risk management purposes, a historical simulation methodology with a two-year equally weighted historical period, at the 95% confidence level is used for all trading books and some banking books. Risk factors driving VaR are grouped into key risk types as summarised below:

Risk factor	Description
Interest rate	Changes in the level or shape of interest rate expectations that can impact prices of interest rate sensitive assets, such as bonds and derivatives instruments, such as interest rate swaps.
Spread	Difference between bond yields and swaps rates that arises when a business has positions in both bonds and interest rate/ inflation derivatives instruments. Both assets may trade at different levels but are fundamentally exposed to similar risk.
Foreign exchange	The impact of changes in foreign exchange rates and volatilities.
Equity	Risk due to changes in equity prices, volatilities and dividend yields, for example as part of market making activities, syndication or underwriting of initial public offerings.
Commodity	Arises primarily from providing hedging solutions to clients and access to financial investors via financially-settled energy derivatives exposed to changes in the level of energy spot or forward prices and their volatilities.
Inflation	Arises from the impact of changes in inflation rates and volatilities on cash instruments and derivatives. This arises as part of market marking activities, whereby the Group may be exposed to changes in inflation rates, for example, market making syndications for inflation linked securities.
Traded credit	Arises from the uncertainty of credit quality impacting prices of assets, for example positions such as corporate bonds, securitised products and credit based derivative instruments, including credit default swaps.
Basis	The impact of changes in interest rate tenor basis (e.g. the basis between swaps vs 3M LIBOR and swaps vs 6M LIBOR) and cross-currency basis and is primarily generated as a result of market making activities.

In some instances, historical data is not available for particular market risk factors for the entire look-back period, for example, complete historical data would not be available for our equity security following an initial public offering. In these cases, market risk managers will proxy the unavailable market risk factor data with available data for a related market risk factor.

The output of the Management VaR model can be readily tested through backtesting. This checks instances where actual losses exceed the predicted potential loss estimated by the VaR model. If the number of instances is higher than expected, where actual losses exceed the predicted potential loss estimated by the VaR model, this may indicate limitations with the VaR calculation, for example, a risk factor that would not be adequately captured by the model.

The Management VaR model in some instances may not appropriately measure some market risk exposures, especially for market moves that are not directly observable via prices. Market risk managers are required to identify risks which are not adequately captured in VaR ('risks not in VaR' or 'RNIVs', discussed below).

When reviewing VaR estimates, the following considerations are taken into account:

- the historical simulation uses the most recent two years of past data to generate possible future market moves, but the past may not be a good indicator of the future
- the one-day time horizon may not fully capture the market risk of positions that cannot be closed out or hedged within one day
- VaR is based on positions as at close of business and consequently, it is not an appropriate measure for intra-day risk arising from a position bought and sold on the same day
- VaR does not indicate the potential loss beyond the VaR confidence level.

Limits are applied at the total level as well as by risk factor type, which are then cascaded down to particular trading desks and businesses by the market risk management function.

See page 95 for a review of Management VaR in 2017

Management of market risk

Primary stress tests

Primary stress tests are key tools used by management to measure liquid market risks from extreme market movements or scenarios in each major trading asset class. Stress testing provides an estimate of potential significant future losses that might arise from extreme market moves or scenarios. Primary stress tests apply stress moves to key liquid risk factors for each of the major trading asset classes, namely:

- **interest rates:** shock to the level and structure of interest rates and inflation across currencies
- **credit:** impact on traded corporate credit exposures and securities structures, including across rating grades, geography, sectors and products
- **foreign exchange:** impact of unfavourable moves in currency prices and volatility
- **equity:** shocks to share prices including exposures to specific markets and sectors
- **commodities:** adverse commodity price changes across both physical and derivative markets.

Primary stresses apply moves to liquid assets incorporating up to 10 days holding period. Shock scenarios are determined by a combination of observed extreme historical moves and forward looking elements as appropriate.

Primary stresses are calculated for each asset class on a standalone basis. Risk managers calculate several stress scenarios and communicate the results to senior managers to highlight concentrations and the level of exposures. Primary stress loss limits are applied across the trading businesses and is a key market risk control.

Secondary stress tests

Secondary stress tests are key tools used by management to measure illiquid market risks from extreme market movements or scenarios in each major trading asset class.

Secondary stress tests are used in measuring potential losses arising from market risks that are not captured in the primary stress tests. These may relate to financial instruments or risk exposures which are not readily or easily tradable or markets that are naturally sensitive to a rapid deterioration in market conditions.

For each asset class, secondary stresses are aggregated to a single stress loss which allows the business to manage its liquid and illiquid risk factors. Limits against secondary stress losses are also applied, which allows the firm to manage and control the level of illiquid risk factors.

Stresses are specific to the exposure held and are calibrated on both observed extreme moves and some forward-looking elements as appropriate.

Business scenario stresses

Business scenario stresses are key tools used by management to measure aggregated losses across the entire trading book as a result of extreme forward-looking scenarios encompassing simultaneous shocks to multiple asset classes.

Business scenario stresses apply simultaneous shocks to all risk factors assessed by applying changes to foreign exchange rates, interest rates, credit spreads, commodities and equities to the entire portfolio, for example, the impact of a rapid and extreme slowdown in the global economy. The measure shows results on a multi-asset basis across all trading exposures. Business scenarios are used for risk appetite monitoring purposes and are useful in identifying concentrations of exposures and highlighting areas that may provide some diversification.

The estimated impacts on market risk exposures are calculated and reported by the market risk management function on a frequent and regular basis. The stress scenario and the calibration on the shocks are also reviewed by market risk managers periodically for its relevance considering any market environment.

Scenarios focusing on adverse global recession, deterioration in the availability of liquidity, contagion effects of a slowdown in one of the major economies, easing of global growth concerns, and a historical event scenario are examples of business scenarios. If necessary, market event-specific scenarios are also calculated, such as:

- a unilateral decision to exit the Eurozone by a member country
- the impact of a large financial institution collapse, or
- a disorderly exit of quantitative easing programmes, including unexpected rapid and continuous interest rate rises as a result.

See page 95 for a review of business scenario stresses in 2017.

Market risk measurement – regulatory view

Regulatory view of traded positions

For regulatory purposes, the trading book is defined as one that consists of all positions in CRD financial instruments and commodities held either with trading intent, or in order to hedge other elements of trading, and which are either free of any restrictive covenants on their tradability, or able to be hedged. A CRD financial instrument is defined as a contract that gives rise to both a financial asset of one party and a financial liability or equity instrument of another party.

All of the below regulatory measures, including the standardised approach, generate market risk capital requirements, in line with the regulatory requirements set out in the Capital Requirements Directive ('CRD IV') and Regulation. Positions which cannot be included in the trading book are included within the banking book and generate risk capital requirements in line with this treatment.

Inclusion of exposures in the regulatory trading book

The Group maintains a Trading Book Policy, which defines the minimum requirements a business must meet to run trading positions and the process by which positions are allocated to trading or banking books. Trading intent is a key element in deciding whether a position should be treated as a trading or banking book exposure.

Positions in the trading book are subject to market risk capital, computed using models where regulatory approval has been granted, otherwise the market risk capital requirement is calculated using standard rules as defined in the Capital Requirement Regulation (CRR), part of the CRD IV package. If any of the criteria specified in the policy are not met for a position, then that position must be allocated to the banking book.

Most of the Group's market risk regulatory models are assigned the highest model materiality rating. Consequently, the Regulatory VaR model is subject to annual re-approval by the Independent Validation Unit. The Independent Validation Unit makes an assessment of model assumptions and considers evidence of model suitability provided by the model owner. The following table summarises the models used for market risk regulatory purposes and the applicable regulatory thresholds.

Valuation standards

CRR article 105 defines regulatory principles which need to be applied to fair value assets and liabilities, in order to determine a prudent valuation.

The Prudent Valuation Adjustment (PVA) is applied to accounting fair values where there are a range of plausible alternative valuations. It is calculated in accordance with Article 105 of the CRR, and includes (where relevant) adjustments for the following factors: unearned credit spreads, close-out costs, operational risk, market price uncertainty, early termination, investing and funding costs, future administrative costs and model risk. The PVA includes adjustment for all fair valued financial instruments and commodities, irrespective of whether they are in the trading or banking book.

The Finance-product control valuations function and the Valuation Committee are responsible for the oversight of the PVA and meeting compliance with article 105 of the CRR.

Management of market risk

Regulatory measures for Market risk

There are a number of regulatory measures which the Group has permission to use in calculating regulatory capital (internal models approval):

Measure	Definition
Regulatory Value at Risk (VaR)	An estimate of the potential loss arising from unfavourable market movements calibrated to 99% confidence interval 10-day holding period.
Stressed Value at Risk (SVaR)	An estimate of the potential loss arising from a twelve-month period of significant financial stress calibrated to 99% confidence interval 10-day holding period.
Incremental Risk Charge (IRC)	An estimate of the incremental risk arising from rating migrations and defaults, beyond what is already captured in specific market risk VaR for the non-correlation trading portfolio. Uses a 99.9% confidence level and a one-year horizon.
Comprehensive Risk Measure (CRM)	An estimate of all the material market risk, including rating migration and default for the correlation trading portfolio.

The legal entities for which the PRA has given permission to use internal models for market risk regulatory capital are: BBPlc Trading and BCSL (consolidated), BBPlc Trading, BCSL and BBSA. The legal entity for which the FRBNY has given permission to use internal models is IHC.

Regulatory VaR

- Estimates the potential loss arising from unfavourable market movements.
- Regulatory VaR differs from the management approach in the following respects.

VaR Variable	Regulatory	Management
Confidence interval	99%	95%
Scope	As approved by the regulator (PRA or FRBNY)	Management view of market risk exposures. Includes trading books and banking books exposed to price risk
Look-back period	2 years	2 years
Liquidity Horizon (holding period)	10 days	1 day

Regulatory VaR allows oversight of the total potential losses, at a given confidence level, of those trading books which received approval from the regulator to be covered via an internal model. The Group uses a Regulatory VaR model that diversifies general and specific market risk for regulatory capital. Market risks are captured in the Regulatory VaR model using either full revaluation or an approximate revaluation approach depending on the type of product. When simulating potential movements in risk factors, returns are modelled using a combination of absolute changes, proportional changes or a blended mix of these two approaches.

Management VaR allows the bank to supervise the total market risk across the Group, including all trading books and some banking books.

Management VaR is also utilised for the internal capital model (economic capital).

Regulatory VaR is fundamentally the same as the Management VaR (see page 152), with the key differences listed above.

The model is complemented with RNIVs, as described on page 157.

Stressed Value at Risk (SVaR)

- Estimates the potential loss arising from unfavourable market movements in a stressed environment.
- Identical to Regulatory VaR, but calibrated over a one-year stressed period.
- Regulatory capital is allocated to individual businesses. For regulatory capital calculation purposes the Group computes a market risk capital requirement based on a one-day scaled to ten-day, 99% VaR metric calibrated to a period of significant financial stress. This SVaR capital requirement is added to the market risk capital requirement arising from regulatory VaR, the Incremental Risk Charge and the All Price Risk on an undiversified basis.

The SVaR model must be identical to the VaR model used by the Group, with the exception that the SVaR model must be calibrated to a one-year period of significant financial stress ('the SVaR period'). The Group selects the SVaR period to be a one-year period that maximises the sum of general market risk Regulatory VaR and specific market risk Regulatory VaR for positions in scope of regulatory approval. The SVaR period is reviewed on a monthly basis or when required by material changes in market conditions or the trading portfolio.

SVaR cannot be meaningfully backtested as it is not sensitive to current market conditions. Many market risk factors with complete historical data over a two-year period may not have complete data covering the SVaR period and consequently, more proxies may be required for SVaR than for VaR. The SVaR metric itself has the same strengths and weaknesses as the Group's VaR model.

Incremental Risk Charge (IRC)

- Captures risk arising from rating migrations and defaults for traded debt instruments incremental to that already captured by Regulatory VaR and SVaR.

IRC captures the risk arising from ratings migrations or defaults in the traded credit portfolio. IRC measures this risk at a 99.9% confidence level with a one-year holding period and applies to all positions in scope for specific risk including sovereign exposure.

The Group's IRC model simulates default and ratings transition events for individual names. The behaviour of names is correlated with one another to simulate a systemic factor to model the possibility of multiple downgrades or defaults. The correlations between non-sovereign names are based on the Basel-defined correlations stipulated in the IRB approach to measuring credit risk capital, with a fixed correlation between sovereign names.

The Group's IRC model simulates the impact of a ratings transition by estimating the improvement or deterioration in credit spreads resulting from the transition and assumes that the historically observed average change in credit spreads (measured in relative terms) resulting from ratings transitions provides an accurate estimate of likely widening or tightening of credit spreads in future transitions. For each position, the model computes the impact of spread moves up or down at pre-specified relative movements, and the actual impact is obtained by interpolating or extrapolating the actual spread move from these pre-computed values.

The Group's IRC model assumes that ratings transitions, defaults and any spread increases occur on an instantaneous basis.

Comprehensive Risk Measure (CRM)

- Captures all market risks affecting the correlation trading portfolio.

CRM covers the correlation trading portfolio and is intended to adequately capture all risk factors relevant to corporate Nth-to-default (on a basket of referenced names) and tranched credit derivatives. The capital requirement is based on a 99.9% confidence interval over a one-year holding period. The model generates a scenario based on a Monte Carlo simulation and revalues the portfolio under the simulated market scenario.

Table 95: Market risk models selected features

Component modelled	Number of significant models and size of associated portfolio (RWAs)	Model description and methodology	Applicable regulatory thresholds
Regulatory VaR	1 model; £2.8bn	Equally-weighted historical simulation of potential daily P&L arising from market moves	Regulatory VaR is computed with ten-day holding period and 99% confidence level
SVaR	1 model; £6.8bn	Same methodology as used for VaR model, but using a different time series	Regulatory SVaR is computed with ten-day holding period and 99% confidence level
IRC	1 model; £3.0bn	Monte Carlo simulation of P&L arising from ratings migrations and defaults	IRC is computed with one-year holding period and 99.9% confidence level
CRM	1 model; £0.0bn	Same approach as IRC, but it incorporates market-driven movements in spreads and correlations for application to correlation trading portfolios.	CRM is computed with one-year holding period and 99.9% confidence level. As required in CRD IV, the CRM charge is subject to a floor set with reference to standard rules charge

The model captures the following risk factors in the correlation trading portfolio:

- default and ratings migration over a one-year time horizon
- credit spread volatility
- recovery risk: uncertainty of the recoverable value under default
- correlation risk
- basis risk: basis between credit indices and its underlying constituents
- hedge slippage: portfolio rebalancing assumption.

The Group's CRM model is based on the IRC model but also captures market risks not related to transition or default events, such as movements in credit spreads or correlations. These risk factors are included as part of the Monte Carlo simulation using distributions calibrated to historically observed moves. The Group's CRM model assumes that ratings transitions, defaults and any spread increases occur on an instantaneous basis. The Group applies stress tests to the modelling parameters based on combinations of changes in credit spreads, correlations and default events.

See pages 96 and 97 for a review of regulatory measures in 2017.

Regulatory backtesting

Backtesting is the method by which the Group checks and affirms that its procedures for estimating VaR are reasonable and serve its purpose of estimating the potential loss arising from unfavourable market movements. The backtesting process is a regulatory requirement and seeks to estimate the performance of the regulatory VaR model. Performance is measured by the number of exceptions to the model i.e. net trading P&L loss in one trading day is greater than the estimated VaR for the same trading day. The Group's procedures could be underestimating VaR if exceptions occur more frequently than expected (a 99% confidence interval indicates that one exception is expected to occur in 100 days).

Backtesting is performed at a legal entity level, sub-portfolio levels and business-aligned portfolios (shown in the table below and in the charts on the next page) on the Group's regulatory VaR model. Regulatory backtesting compares Regulatory VaR at 99% confidence level (one-day holding period equivalent) to actual and hypothetical changes in portfolio value as defined in CRR Article 366. The consolidated Barclays Bank PLC and Barclays Capital Securities Ltd is the highest level of consolidation for the VaR models that are used in the calculation of regulatory capital.

A backtesting exception is generated when a loss is greater than the daily VaR for any given day.

As defined by the PRA, a green status is consistent with a good working VaR model and is achieved for models that have four or fewer backtesting exceptions in a 12-month period. Backtesting counts the number of days when a loss exceeds the corresponding VaR estimate, measured at the 99% regulatory confidence level. For the Investment Bank's regulatory DVaR model at the consolidated legal entity level, green model status was maintained for 2017.

Backtesting is also performed on management VaR to assess it remains reasonable and fit for purpose.

The table below shows the VaR backtesting exceptions on legal entities aligned to the Group's business as at 31 December 2017. Model performance at a legal entity level determines regulatory capital within those entities. Legal entity disclosure also reflects the management perspective as Barclays moves forward with structural change, where VaR and model performance of VaR for a legal entity across asset class becomes more relevant than asset class metrics across legal entity.

	Actual P&L		Hypo P&L	
Legal entity	Total Exceptions	Status[b]	Total Exceptions	Status[b]
BBPlc Trading and BCSL	–	G	3	G
BBPlc Trading	–	G	3	G
BCSL	5	A	3	G
BBSA[a]	–	G	–	G
IHC	–	G	2	G

Notes

a BCI backtesting has been replaced by IHC backtesting from 1 July 2016 (both are included below for their respective periods). Please note that IHC backtesting is performed for hypo P&L only as per US regulatory requirements.

b RAG status is accurate as of year-end.

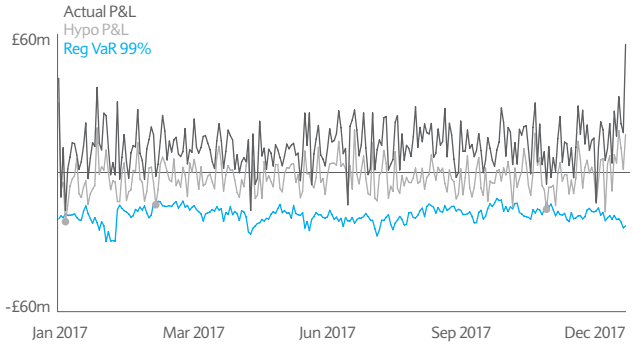
Management of market risk

The charts below show VaR for the Group's regulatory portfolios aligned by legal entity. The dark blue and grey points on the charts indicate losses on the small number of days on which actual and hypo P&L respectively exceeded the VaR amount.

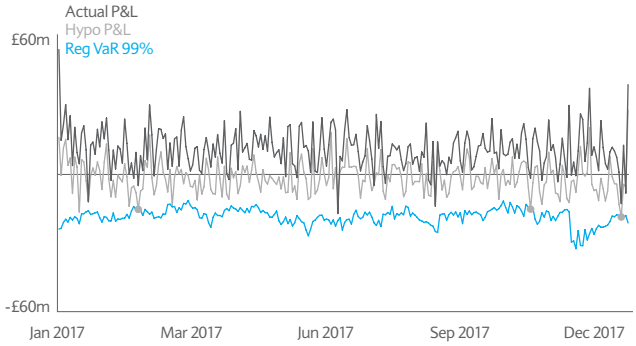
In addition to being driven by market moves in excess of the 99% confidence level, back testing exceptions can be caused by risks that impact P&L not captured directly in the VaR itself but separately captured as non VaR-type, namely Risks Not in VaR (RNIVs).

Exceptions are reported to internal management and regulators on a regular basis and investigated to check the model performs as expected. Overall back testing for the consolidated legal entity remains in the green zone, suggesting that the VaR remains fit for purpose.

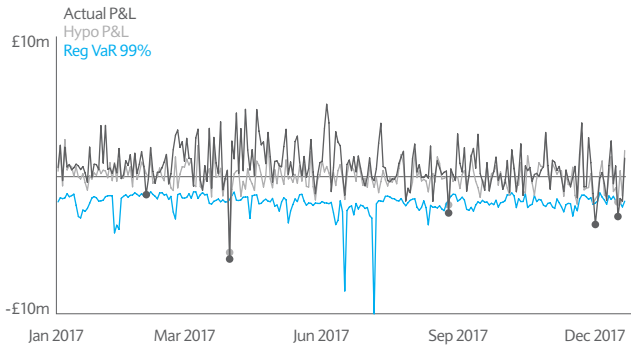
BBPlc trading and BCSL



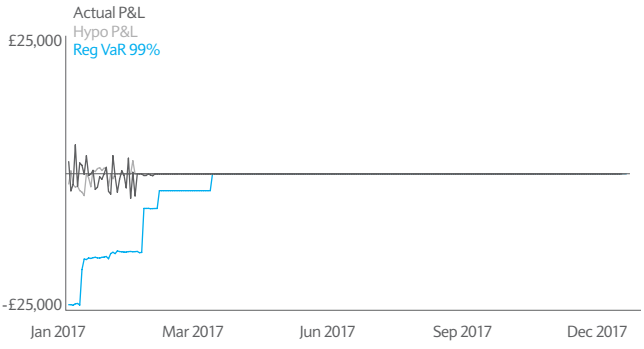
BBPlc trading



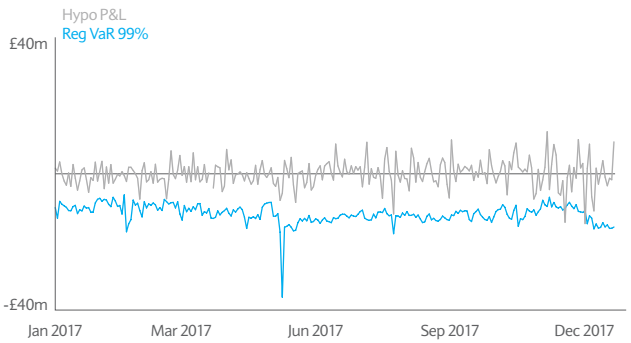
BCSL



BBSA



IHC



Management of market risk

Management of risks not fully captured in models, including Risks not in VaR (RNIVs)
The Group's risk identification process captures risks that either have been observed to, or have the capacity to, produce material losses in normal and stressed market conditions. To enforce risk coverage, the range of core risks is identified following either market convention, regulatory guidance, or the specific historical experience of the Group and is considered as part of the new product processes.

In some instances, the Management and Regulatory VaR model may not appropriately measure some market risks, especially where market moves are not directly observable via prices, the Group has policies to enforce add-ons are applied where risks are not captured by the model. RNIVs refer to those core risks that are not captured, or not adequately captured, in VaR and SVaR. RNIVs can include:

- risks not fully captured elsewhere and/or illiquid risk factors such as cross-risks;
- basis risks;
- higher-order risks;
- calibration parameters, for instance to model parameter uncertainty; and
- potential losses in excess of fair valuation adjustments taken in line with the Valuation Control Framework. Please see Note 18 of the Barclays PLC Annual Report 2017 'Fair value of financial instruments' for more details on fair value adjustments.

The treatment of RNIVs follows whether the risks are considered VaR type or non-VaR type, which depends on, and can change with, the evolving state of financial markets:

- **VaR-type RNIVs:** : Typically represent risks that are not well captured in VaR, mainly because of infrastructure limitations or methodology limitations. In this instance two metrics are calculated, a VaR RNIV and a SVaR RNIV, using the same confidence level, capital horizon and observation period as VaR and SVaR respectively and are capitalised using the same multipliers as VaR and SVaR
- **Non VaR-type RNIVs:** Typically represent risks which would not be well captured by any VaR model either because it represents an event not historically observed in the VaR time series (e.g., currency peg break) or a market risk factor which is not seen to move frequently (e.g. correlation). These are typically estimated using stress scenarios. The stress methodology is calibrated equivalently to at least 99% confidence level and a capital horizon of at least 10 days over an appropriate observation period, depending on the liquidity of the risk. For the purpose of regulatory capital, the capital charge is equal to the loss arising from the stress test except when these risks are already adequately captured elsewhere e.g. via the IRC or CRM models, which are intended to capture certain risks not adequately covered by VaR

For regulatory capital these RNIVs are aggregated without any offsetting or diversification benefit.

Market risk control

The metrics that are used to measure market risk are controlled through the implementation of appropriate limit frameworks. Limits are set at the total Group level, asset class level, for example, interest rate risk, and at business level, for example, rates trading. Stress limits and many book limits, such as foreign exchange and interest rate sensitivity limits, are also used to control risk appetite.

Firm-wide limits are reported to the BRC and are termed A-level limits for total management VaR, asset class VaR, primary stress and secondary stresses and business scenarios. These are then cascaded down by risk managers in order to meet the firm-wide risk appetite.

Each A-level limit is set after consideration is given to revenue generation opportunities and overall risk appetite approved by the Board. Compliance with limits is monitored by the independent risk functions in the trading businesses with oversight provided by Group Market Risk.

Throughout 2017, Group Market Risk continued its ongoing programme of control testing and conformance testing on the trading businesses' market risk management practices. These reviews are intended to verify the business's conformance with the Market Risk Control Framework and best practices.

Market risk reporting

Trading businesses market risk managers produce a number of detailed and summary market risk reports daily, weekly, fortnightly and monthly for business and risk managers. Where relevant on a Group-wide basis, these are sent to Group Market Risk for review and a risk summary is presented at the Group Market Risk Committee and the trading businesses' various market risk committees. The overall market risk profile is also presented to BRC on a regular basis.

Management of securitisation exposures

Securitisations give rise to credit, market and other risks. This section discusses the types of business activities and exposures that we incur in the course of activities related to securitisations.

- The objectives pursued in securitisation activities and the types of activities undertaken are discussed on page 159.
- A description of the risks incurred in the course of securitisation activities, and how we manage them, is contained on pages 160 and 161.

Management of securitisation exposures

This section discloses information about the Group's securitisation activities distinguishing between the various functions performed in supporting its customers and managing its risks. It includes traditional securitisations as well as synthetic transactions effected through the use of derivatives or guarantees.

For the purposes of Pillar 3 disclosures on pages 99 to 111, a securitisation is defined as a transaction or scheme where the payments are dependent upon the performance of a single exposure or pool of exposures and where the subordination of tranches determines the distribution of losses during the ongoing life of the transaction or scheme. Such transactions are ordinarily undertaken to transfer risk for the Group or on behalf of a client.

Certain transactions undertaken by the Group are not disclosed in the quantitative section (pages 99 to 111) as they do not fall under the regulatory securitisation framework (defined under Part Three, Title II, Chapter 5 of the CRR, part of the CRD IV package). These include funding transactions for the purposes of generating term liquidity, and certain government guaranteed transactions.

Objectives of securitisation activities

In the course of its business, the Group has undertaken securitisations of its own originated assets as well as the securitisation of third party assets via special purpose vehicles, sponsored conduit vehicles and shelf programmes.

The Group has securitised its own originated assets in order to manage the Group's credit risk position and to generate term funding for the Group balance sheet. The Group also participates in primary securitisations and distributes bonds to the market to facilitate term liquidity for its clients.

The Group also purchases asset backed loans and securities for the purpose of supporting client franchise, and purchases asset backed securities (ABS) for the purpose of investing its liquidity pool.

Further, the Group makes a secondary market for a range of securitised products globally, including residential mortgage backed securities (RMBS), commercial mortgage backed securities (CMBS) and ABS.

The role and involvement of the Group in securitisations in 2017

The Group adopts the following roles in the securitisation processes in which it is involved:

Originator of assets prior to securitisation

The Group originates or purchases commercial mortgage loans for the purpose of securitisation. The securities are then sold to investors through a broker-dealer subsidiary.

The Group securitises assets otherwise originated in the ordinary course of business including corporate loans, consumer loans and commercial mortgage loans. The Group also provides derivative transactions to securitisations sponsored by itself and third parties. These transactions carry counterparty credit risk and are included in the Group trading book.

Providing warehousing facilities collateralised by third party assets prior to securitisation or exit via whole-loan sale

The Group provides warehouse financing to third party loan originators, including for agency eligible loans that can be securitised by the Federal National Mortgage Association ('Fannie Mae'), the Federal Home Loan Mortgage Corporation ('Freddie Mac'), or the Government National Mortgage Association ('Ginnie Mae') and for corporate loans that can be securitised via collateralised loan obligations (CLO).

Executor of securitisation trades including bond marketing and syndication

The Group transacts primarily as a principal in RMBS, ABS, CLO and CMBS with institutional investors and other broker-dealers. Agency backed residential and commercial mortgage securitisations include Credit Risk Transfer securities (Fannie Mae-sponsored CAS and Freddie Mac-sponsored STACR bonds). ABS securitisations include consumer ABS (e.g. credit card, student loan and auto) and non-traditional ABS (e.g. timeshares, wireless towers and whole business securitisations). Non-agency commercial mortgage securitisations include CMBS and commercial real estate collateralised loan obligations (CRE CLO). The Group makes secondary market in CLOs and acts as arranger on behalf of clients to structure and place arbitrage CLOs.

Purchaser of third party securitisations to support client franchise

The Group may purchase third party securitisations. The Group also funds on its own balance sheet securitisations similar to the ones funded via its sponsored conduits (see below). In such transactions the Group would not be defined as an originator or sponsor for regulatory purposes.

Sponsoring conduit vehicles

The Group acts as managing agent and administrative agent of two multi-seller asset backed commercial paper (ABCP) conduits, Sheffield Receivables Company, LLC (Sheffield) and Salisbury Receivables Company, LLC (Salisbury), through which interests in securitisations of third party originated assets are funded via a variety of funding mechanics including the issuance of ABCP.

From a regulatory perspective, Barclays acts as a sponsor of Sheffield and Salisbury. In relation to such conduit activity, the Group provides all or a portion of the backstop liquidity to the commercial paper, programme-wide credit enhancement and, as appropriate, interest rate and foreign currency hedging facilities. The Group receives fees for the provision of these services.

Sheffield and Salisbury hold securities classified as available for sale, measured at fair value with changes in fair value recognised through other comprehensive income (OCI) and non-securities classified as loans and receivables, measured at amortised cost on its standalone financial statements. It funds the assets through the issuance of ABCP. Note that Sheffield and Salisbury are consolidated for accounting but not regulatory purposes.

Funding transactions to generate term liquidity

Secured funding forms one of the key components of the Group's diversified funding sources providing access to the secured wholesale market and complementing the diversification of funding by maturity, currency and geography. The Group issues ABS and covered bonds secured primarily by customer loans and advances.

The Group currently manages four key, on-balance sheet asset backed funding programmes to obtain term financing for mortgage loans and credit card receivables. These programmes also support retained issuances for the Group to access central bank liquidity and funding. The UK regulated covered bond and the residential mortgage master trust securitisation programmes both utilise assets originated by the Group's UK residential mortgage business. The third programme is a credit card master trust securitisation and uses receivables from the Group's UK credit card business. The fourth programme is a SEC registered securitisation programme backed by US domiciled credit card receivables.

Risk transfer transactions

The Group has entered into synthetic and cash securitisations of corporate and commercial loans (originated in the ordinary course of business) for the purposes of the transfer of credit risk to third party investors. The regulatory capital requirements of these transactions fall under CRD IV.

Management of securitisation exposures

Securitisation risks, monitoring and hedging policies

Capital requirements against securitisation exposures are subject to a separate framework under CRD IV (see CRR article 449) to account for the particular characteristics of this asset class. For risk management purposes, however, a securitisation is aligned to the risk type to which it gives rise.

Credit risks

In a securitisation structure, the payments are dependent upon the performance of a single exposure or pool of exposures. As these underlying exposures are usually credit instruments, the performance of the securitisation is exposed to credit risk.

Securitisation exposures are subject to the Group Credit Risk policies and standards and business level procedures. This includes the requirement to review in detail each transaction at a minimum on an annual basis. As collateral risk is the primary driver the analysis places a particular focus on the underlying collateral performance, key risk drivers, servicer due diligence and cash flows, and the impact of these risks on the securitisation notes. The risk is addressed through the transaction structure and by setting an appropriate modelled tolerance level. Structural features incorporate wind-down triggers set against factors including, but not limited to, defaults/ charge-offs, delinquencies, excess spread, dilution, payment rates and yield, all of which help to mitigate potential credit deterioration. Qualitative aspects such as counterparty risk and ancillary issues (operational and legal risk) are also considered. Changes to the credit risk profile of securitisation exposures will also be identified through ongoing transaction performance monitoring. In addition, periodic stress tests of the portfolio as part of ongoing risk management are conducted as well as in response to Group-wide or regulatory requests.

The principal committee responsible for the monitoring of the credit risk arising from securitisations is Wholesale Credit Risk Management Committee (WCRMC). Executive responsibility rests with the Regional Heads of Financial Institutions Credit Risk.

Market and liquidity risks

Market risk for securitised products is measured, controlled and limited through a suite of VaR, non-VAR and stress metrics in accordance with the Group's Market Risk Policies and Procedures. The key risks of securitisation structures are interest rate, credit, spread, prepayment and liquidity risk. Interest rate and spread risk are hedged with standard liquid interest rate instruments (including interest rate swaps, US Treasuries and US Treasury futures). The universe of hedging instruments for credit and prepayment risk is limited and relatively illiquid, resulting in basis risks. In providing warehouse financing, the Group is exposed to mark to market (if counterparty defaults on related margin call).

Hedging

Securitisation and re-securitisation exposures benefit from the relative seniority of the exposure in the capital structure. Due to lack of availability in the credit default swap market for individual asset backed securities, there are no material CDS hedge counterparties relating to the securitisation and re-securitisation population.

Operational risks

Operational risks are incurred in all of the Group's operations. In particular, all securitised (and re-securitised) assets are subject to a degree of risk associated with documentation and the collection of cash flows.

In providing warehouse financing, the Group incurs potential contingent operational risks related to representations and warranties should there be a need to foreclose on the line and it later be discovered that the underlying loans were not underwritten to agency agreed criteria. Such risks are mitigated by daily collateral margining and ready agency bids. Market risk is also mitigated by employing forward trades.

The Operational Risk Review Forum oversees the management of operational risks for the entire range of the Group's activities.

Rating methodologies, ECAIs and RWA calculations

RWAs reported for securitised and re-securitised banking book and trading book assets at 31 December 2017 are calculated in line with CRR and UK PRA rules and guidance. The Group has approval to use, and therefore applies, the internal ratings based approach for the calculation of RWAs where appropriate, and the Standardised Approach elsewhere.

The Group employs eligible ratings issued by nominated External Credit Assessment Institutions (ECAIs) to risk weight its securitisation and re- securitisation exposure where their use is permitted. Ratings are considered eligible for use based on their conformance with the internal rating standard which is compliant with both CRR and European Credit Rating Agency regulation. The ECAIs nominated by the Group for this purpose are Standard & Poor's, Moody's, Fitch, DBRS and Kroll.

As required by CRR, the Group uses credit ratings issued by these ECAIs consistently for all exposures within the securitisation exposure class. For that reason, there is no systematic assignment of particular agencies to types of transactions within the securitisation exposure class.

For Sheffield and Salisbury, the Internal Assessment Approach (IAA) framework mirrors the ECAI methodology, which also includes Moody's and Fitch, who rate the Sheffield and Salisbury programmes. Under the IAA framework, the securitisation exposure must be internally rated, and the bank's internal assessment process must meet certain requirements in order to map its own internal rating to an ECAI. Cash flow stress analysis on a securitisation structure is performed as prescribed by an ECAI methodology for the relevant ratings level, and is at least as conservative as the published methodology. Stress factors may include, among other factors, asset yields, principal payment rates, losses, delinquency rates and interest rates.

In determining an internal rating, collateral risks are the primary driver and are addressed through the transaction structure and modelled statistical confidence. The analysis reflects the Group's view on the transaction, including dilution risk, concentration and tenor limits, as well as qualitative aspects such as counterparty risk and important ancillary issues (operational and legal risks). The adequacy and integrity of the servicer's systems and processes for underwriting, collections policies and procedures are also reviewed. The Group conducts a full due diligence review of the servicer for each transaction. Each transaction is reviewed on, at least, an annual basis with a focus on the performance of underlying assets. The results of any due diligence review and the financial strength of the seller/servicer, are also factored into the analysis. Ratings of the transaction are reaffirmed with the most up to date ECAI methodologies. Any transaction which deviates from the current methodology is amended accordingly.

Management of securitisation exposures

Summary of the accounting policies for securitisation activities

Certain Group-sponsored entities have issued debt securities or have entered into funding arrangements with lenders in order to finance specific assets. An entity is consolidated by the Group when the Group has control over the entity. The Group controls an entity if it has all of the three elements of control which are i) power over the entity; and ii) exposure, or rights, to variable returns from its involvement with the entity; iii) the ability to use its power over the entity to affect the amount of the Group returns.

The consolidation treatment must be initially assessed at inception and is reassessed if facts and circumstances indicate that there are changes to one or more of the three elements of control.

Typically, assets that are awaiting securitisation on the Group balance sheet are measured at fair value through P&L, using the appropriate method for the asset class as they are classified as held for trading or are designed at fair value through profit and loss, under the IAS 39 fair value option. However some non-derivative assets held prior to securitisation may qualify as loans and receivables and are measured at amortised cost. When securitised assets have been included on the Group balance sheet it is necessary to consider whether those assets may be removed from the Group balance sheet. Assets which have been transferred to third parties (i.e. an unconsolidated Group entity), will remain on the Group balance sheet, and treated as financings, unless the following criteria apply:

- substantially all the risks and rewards associated with the assets have been transferred, in which case, they are derecognised in full
- if a significant portion, but not all, of the risks and rewards have been transferred, the asset is derecognised entirely if the transferee has the ability to sell the financial asset, otherwise the asset continues to be recognised only to the extent of the Group's continuing involvement.

Any financial support or contractual arrangements provided to unconsolidated entities, over securitised assets, would be recognised as a liability on balance sheet if it met the relevant IFRS criteria, or gave rise to a provision under IAS 37, and have to be disclosed (see Note 39 of the Barclays PLC Annual Report 2017). Note, however, that the Group has a Significant Risk Transfer policy that does not allow for any support to be provided to any transactions that fall under the securitisation framework.

Assets may be transferred to a third party through a legal sale or an arrangement that meets the 'pass through' criteria where the substance of the arrangement is principally that the Group is acting solely as a cash collection agent on behalf of the eventual recipients.

Where the transfer applies to a fully proportionate share of all or specifically identified cash flows, the relevant accounting treatment is applied to that proportion of the asset.

When the above criteria support the case that the securitisation should not be accounted for as financing, the transaction will result in sale treatment or partial continued recognition of the assets to the extent of the Group's continuing involvement in those assets. Gains are recognised to the extent that proceeds that can be measured using observable market data exceed the assets derecognised.

Any retained interests, which will consist of loans and/or securities depending on the nature of the transaction, are valued in accordance with the Group's Accounting Policies, as set out in the 2017 Annual Report. To the extent that these interests are measured at fair value, they will be included within the fair value disclosures in the financial statements in the Annual Report. As outlined in these disclosures, key valuation assumptions for retained interests of this nature will include spreads to discount rates, default and recovery rates and prepayment rates that may be observable or unobservable.

In a synthetic securitisation transaction, the underlying assets are not sold into the relevant special purpose entity (SPE). Instead, their performance is transferred into the vehicle through a synthetic instrument such as a CDS, a credit linked note or a financial guarantee. The accounting policies outlined above will apply to synthetic securitisations.

Management of treasury and capital risk

This section provides an analysis of the management of liquidity, capital and interest rate risk in the banking book risk.

- Liquidity risk, with a focus on how it is managed to maintain adequate resources at all times including under stress, is discussed on pages 163 to 165.
- Capital risk, including how the risk of insufficient capital and leverage ratios and pension risk are managed, is discussed on pages 166 to 167.
- The management of Interest rate risk in the banking book is discussed on pages 168 to 169.

Management of treasury and capital risk

Treasury and capital risk

- **Liquidity risk:** The risk that the firm is unable to meet its contractual or contingent obligations or that it does not have the appropriate amount, tenor and composition of funding and liquidity to support its assets
- **Capital risk:** The risk that the firm has an insufficient level or composition of capital to support its normal business activities and to meet its regulatory capital requirements under normal operating environments or stressed conditions (both actual and as defined for internal planning or regulatory testing purposes). This includes the risk from the firm's pension plans
- **Interest rate risk in the banking book:** The risk that the firm is exposed to capital or income volatility because of a mismatch between the interest rate exposures of its (non-traded) assets and liabilities.

Overview

Barclays Treasury manages treasury and capital risk on a day-to-day basis with the Treasury Committee acting as the principal management body. To enforce effective oversight and segregation of duties and in line with the ERMF, the Treasury and Capital Risk function is responsible for oversight of key capital, liquidity, interest rate risk in the banking book (IRRBB) and pension risk management activities. The following describes the structure and governance associated with the risk types within the Treasury and Capital Risk function.

Organisation and structure

Board Risk Committee
- reviews and recommends to the Board the Group's risk appetite for treasury and capital risk
- reviews material issues impacting treasury and capital risk
- approves the ICAAP and ILAAP

↑

Group Risk Committee
- reviews and recommends risk appetite to the BRC
- escalates material issues impacting treasury and capital risk to the BRC
- reviews and recommends the ICAAP and ILAAP to the BRC for approval

↑

Treasury and Capital Risk Committee
- manages treasury and capital risk appetite
- monitors the treasury and capital risk profile
- monitors the treasury and capital risk control environment
- reviews and recommends risk appetite to the GRC and BRC
- escalates material issues impacting treasury and capital risk to the GRC and BRC

Liquidity risk management

Overview

The efficient management of liquidity is essential to the Group in retaining the confidence of the financial markets and maintaining that the business is sustainable. There is a control framework in place for managing liquidity risk and this is designed to meet the following objectives:

- To maintain liquidity resources that are sufficient in amount and quality and a funding profile that is appropriate to meet the liquidity risk appetite as expressed by the Board
- To maintain market confidence in the Group's name.

This is achieved via a combination of policy formation, review and governance, analysis, stress testing, limit setting and monitoring. Together, these meet internal and regulatory requirements.

Roles and responsibilities

The Treasury and Capital Risk function is responsible for the management and governance of the liquidity risk mandate defined by the Board and the production of ILAAPs. Treasury has the primary responsibility for managing liquidity risk within the set risk appetite. The CRO for treasury and capital risk reports to the Group CRO.

Liquidity risk management

A control framework is in place for Liquidity Risk under which the Treasury function operates. The control framework describes liquidity risk management processes, associated policies and controls that the Group has implemented to manage liquidity risk within the Liquidity Risk Appetite (LRA) and is subject to annual review. Internal architecture is in place to record and measure our group wide liquidity metrics reporting

The Board sets the LRA based on the internal liquidity risk model and external regulatory requirements namely the Liquidity Coverage Ratio (LCR). The LRA is represented as the level of risk the Group chooses to take in pursuit of its business objectives and in meeting its regulatory obligations. The approved LRA is implemented in line with the control framework and policy for liquidity risk.

Control framework

Barclays comprehensive control framework for managing the Group's liquidity risk is designed to deliver the appropriate term and structure of funding consistent with the LRA set by the Board.

The control framework incorporates a range of ongoing business management tools to monitor, limit and stress test the Group's balance sheet and contingent liabilities and the Recovery Plan. Limit setting and transfer pricing are tools that are designed to control the level of liquidity risk taken and drive the appropriate mix of funds. Together, these tools reduce the likelihood that a liquidity stress event could lead to an inability to meet the Group's obligations as they fall due. The control framework is subject to internal conformance testing and internal audit review

The liquidity stress tests assess the potential contractual and contingent stress outflows under a range of scenarios, which are then used to determine the size of the liquidity pool that is immediately available to meet anticipated outflows if a stress occurs.

Management of treasury and capital risk

Ongoing business management	Early signs/mild stress	Severe stress	Recovery
■ stress testing and planning ■ liquidity limits ■ early warning indicators	■ monitoring and review ■ management actions requiring minimal business rationalisation	■ monitoring and review ■ management actions with limited impact on franchise	■ activate appropriate recovery options to restore the capital and/or liquidity position of the Group

The Group maintains a range of management actions for use in a liquidity stress, these are documented in the Group Recovery Plan. Since the precise nature of any stress event cannot be known in advance, the actions are designed to be flexible to the nature and severity of the stress event and provide a menu of options that can be drawn upon as required. The Barclays Group Recovery Plan also contains more severe recovery options to generate additional liquidity in order to facilitate recovery in a severe stress. Any stress event would be regularly monitored and reviewed using key management information by key Treasury, Risk and business representatives.

Risk Appetite and planning

Barclays has established an LRA over Group stress tests to represent the level of liquidity risk the Group chooses to take in pursuit of its business objectives and in meeting its regulatory obligations.

The key expression of the liquidity risk is through stress tests. It is measured with reference to the liquidity pool compared to anticipated net stressed outflows for each of five stress scenarios. Barclays has defined both internal short term and long term LRA stress test metrics.

The LRA for internal stress tests is approved by the Board. The LRA is reviewed on a continuous basis and is subject to formal review at least annually as part of the Individual Liquidity Adequacy Assessment Process (ILAAP).

Statement of Liquidity Risk Appetite: For 2017, the Board has approved that the Group will maintain an amount of available liquidity resources to meet modelled and prescribed regulatory liquidity stress outflows over a period of time (minimum buffer duration):

- 30 days in a Barclays specific stress
- 90 days in a market wide stress
- 30 days in a combined stress
- Long term LRA 80% LCR (Pillar 2)
- LCR 30 days minimum ratio 100% (Pillar 1 basis) and 90% (Pillar 2 basis)

The stress outflows are used to determine the size of the Group Liquidity Pool, which represents those resources immediately available to meet outflows in a stress. In addition to the liquidity pool, the control framework and policy provides for other management actions, including generating liquidity from other liquid assets on the Group's balance sheet in order to meet additional stress outflows, or to preserve or restore the Liquidity Pool in the event of a liquidity stress.

Management of treasury and capital risk

Liquidity limits

Barclays manages limits on a variety of on and off-balance sheet exposures, a sample of which is shown in the table below. These limits serve to control the overall extent and composition of liquidity risk taken by managing exposure to the cash outflows.

Examples of liquidity limits			
Gross Repo limits	FX Cashflow limits	Concentration limits	Minimum Cash Requirement
Secured Mismatch limits	Debt Buyback limits	Off-Balance Sheet commitment limits	Ratings Downgrade limits

Early warning indicators

Barclays monitors a range of market indicators for early signs of liquidity risk either in the market or specific to Barclays, a sample of which are shown in the table below. These are designed to immediately identify the emergence of increased liquidity risk to maximise the time available to execute appropriate mitigating actions. Early warning indicators are used as part of the assessment of whether to invoke the Group Recovery Plan, which provides a framework for how the liquidity stress would be managed.

Examples of early warning Indicators		
Change in composition of deposits	Deterioration in stress test surplus	Rising funding costs
Widening CDS spreads	Change in maturity profile	Stress in financial markets

Recovery & resolution planning

Barclays maintains a Group Recovery Plan (GRP) which is designed to provide a framework to effectively manage a severe financial stress. The GRP is proportionate to the nature, scale and complexity of the business and is tested to assess that it is operationally robust. The GRP details the escalation and invocation process for the plan, including integration with i) BAU monitoring of capital and liquidity Early Warning Indicators (EWI) to detect signs of approaching financial stress, ii) existing processes within Barclays Treasury and Risk to respond to mild/moderate stress and iii) a governance process for formally invoking the GRP. The Plan would be formally invoked by the Group Board and would be overseen and executed by the Barclays Crisis Leadership Team (BCLT), a flexible committee of senior management for responding to all types of stress events. In invoking and executing the plan, the BCLT (in consultation with the Group Board) would assess the likely impact of the stress event on the Group and its subsidiaries and determine the appropriate response for the nature and severity of the stress. The GRP includes a range of recovery options to respond to financial stresses of varying severity and includes detailed information on financial and non-financial impacts of options and a communications plan.

Management of treasury and capital risk

Capital risk management primary objectives	Capital risk management core practices
■ maintain adequate capital to withstand the impact of the risks that may arise under the normal and stressed conditions analysed by the Group.	■ meet minimum regulatory requirements in all jurisdictions ■ maintain capital buffers over regulatory minimums ■ perform Group-wide internal and regulatory stress tests ■ develop contingency plans for severe and extreme stresses, which include stress management actions and recovery actions.
■ maintain adequate capital to cover the Group's current and forecast business needs and associated risks in order to provide a viable and sustainable business offering.	■ maintain capital ratios aligned with rating agency expectations.
	■ maintain a capital plan on a short-term and medium-term basis aligned with the Group's strategic objectives, balancing capital generation of the business with business growth and shareholder distributions.

Capital risk management

Overview

Capital risk is managed through ongoing monitoring and management of the capital position, regular stress testing and a robust capital governance framework.

Roles and responsibilities

The management of capital risk is integral to the Group's approach to financial stability and sustainability management, and is embedded in the way businesses and legal entities operate.

Capital risk management is underpinned by a control framework and policy. The capital management strategy, outlined in the Group and legal entity capital plans, is developed in alignment with the control framework and policy for capital risk, and is implemented consistently in order to deliver on the Group's objectives.

The Board approves the Group capital plan, internal stress tests and results of regulatory stress tests, and the Group recovery plan. The Treasury Committee is responsible for monitoring and managing capital risk in line with the Group's capital management objectives, capital plan and risk frameworks. The Treasury and Capital Risk Committee monitors and reviews the capital risk profile and control environment, providing Second Line oversight of the management of capital risk. The Board Risk Committee reviews the risk profile, and annually reviews risk appetite and the impact of stress scenarios on the Group capital plan/forecast in order to agree the Group's projected capital adequacy.

Local management assures compliance with an entity's minimum regulatory capital requirements by reporting to local Asset and Liability Committees with oversight by the Group's Treasury Committee, as required.

Treasury has the primary responsibility for managing and monitoring capital and reports to the Group Finance Director. The Treasury and Capital Risk function contains a Capital Risk Oversight team, and is an independent risk function that reports to the Group CRO and is responsible for oversight of capital risk and production of ICAAPs.

Capital risk management

The Group's capital management strategy is driven by the strategic aims of the Group and the risk appetite set by the Board. The Group's objectives are achieved through well embedded capital management practices.

Capital planning and allocation

The Group assesses its capital requirements on multiple bases, with the Group's capital plan set in consideration of the Group's risk profile and appetite, strategic and performance objectives, regulatory requirements, and market and internal factors, including the results of stress testing. The capital plan is managed on a top-down and bottom-up basis through both short-term and medium-term financial planning cycles, and is developed with the objective that the Group maintains an adequate level of capital to support its capital requirements.

The PRA determines the regulatory capital requirements for the consolidated Group. Under these regulatory frameworks, capital requirements are set in consideration of the level of risk that the firm is exposed to and the factors above, and are measured through both risk-based Risk Weighted Assets (RWAs) and leverage-based metrics. An internal assessment of the Bank's capital adequacy is undertaken through the Internal Capital Adequacy Assessment Process (ICAAP) and is used to inform the capital requirements of the firm.

The Group expects to meet the minimum requirements for capital and leverage at all times and also holds an internal buffer sized according to the firm's assessment of capital risk.

Through the capital planning process, capital allocations are approved by the Group Executive committee, taking into consideration the risk appetite and strategic aims of the Group. Regulated legal entities are, at a minimum, capitalised to meet their current and forecast regulatory and business requirements.

Monitoring and reporting

Capital is managed and monitored to maintain that Barclays' capital plans are appropriate and that risks to the plans are considered.

Limits are in place to support alignment with the capital plan and adherence to regulatory requirements, and are monitored through appropriately governed forums. Capital risks against firm-specific and macroeconomic early warning indicators are monitored and reported to the Treasury Committee, with clear escalation channels to senior management. This enables a consistent and objective approach to monitoring the capital outlook against the capital plan, and supports the early identification when outlooks deteriorate.

Capital management information is readily available to support Senior Management's strategic and day-to-day business decision making.

Stress testing and risk mitigation

Internal group-wide stress testing is undertaken to quantify and understand the impact of sensitivities on the capital plan and capital ratios arising from stressed macroeconomic conditions. Recent economic, market and peer institution stresses are used to inform the assumptions developed for internal stress tests and to assess the effectiveness of mitigation strategies.

The Group also undertakes stress tests prescribed by the BoE and EBA, and legal entities undertake stress tests prescribed by their local regulators. These stress tests inform decisions on the size and quality of the internal capital buffer required and the results are incorporated into the Group capital plan to maintain adequacy of capital under normal and severe, but plausible stressed conditions.

Actions are identified as part of the stress tests that can be taken to mitigate the risks that may arise in the event of material adverse changes in the current economic and business outlook. As an additional layer of protection, the Group Recovery Plan defines the actions and implementation strategies available to the Group to increase or preserve capital resources in the situation that a stress occurs that is more severe than anticipated.

Management of treasury and capital risk

Capitalisation of legal entities

Barclays as a group comprises legal entities across multiple jurisdictions. The Group and regulated legal entities are subject to prudential requirements from the PRA and/or local regulators. Sufficient capital needs to be available to meet these requirements both at a consolidated Group and individual legal entity level.

Where aggregate requirements for individual entities in the Group are higher than the consolidated requirement, the firm may use debt or capital other than CET1 to meet these incremental requirements (so called 'double leverage'). There are regulatory and rating agency expectations that constrain the amount of double leverage that can be used. This might increase the overall level of capital the Group is required to hold.

The capitalisation of legal entities is reviewed annually as part of the capital planning process and monitored on an ongoing basis.

Transferability of capital

Surplus capital held in Group entities is required to be repatriated to Barclays Bank PLC in the form of dividends and/or capital repatriation, subject to local regulatory requirements, exchange controls and tax implications. This approach provides optimal flexibility on the re-deployment of capital across legal entities. Pre and post the implementation of ring-fencing, capital is managed for the Group as a whole as well as its operating subsidiaries to enable fungibility and redeployment of capital while meeting relevant internal and regulatory targets at entity levels.

Foreign exchange risk

The Group has capital resources and risk weighted assets denominated in foreign currencies. Changes in foreign exchange rates result in changes in the Sterling equivalent value of foreign currency denominated capital resources and RWAs. As a result, the Group's regulatory capital ratios are sensitive to foreign currency movements.

The Group's capital ratio management strategy is to minimise the volatility of the capital ratios caused by foreign exchange rate movements. To achieve this, the Group aims to maintain the ratios of foreign currency CET1, Tier 1 and Total capital resources to foreign currency RWAs at the same level as the Group's consolidated capital ratios.

The Group's investments in foreign currency subsidiaries and branches, to the extent that they are not hedged for foreign exchange movements, translate into GBP upon consolidation creating CET1 capital resources sensitive to foreign currency movements. Changes in the GBP value of the investments due to foreign currency movements are captured in the currency translation reserve, resulting in a movement in CET1 capital.

To create foreign currency Tier 1 and Total Capital resources additional to the CET1 capital resources, the Group issues debt capital in non-Sterling currencies, where possible. This is primarily achieved through the issuance of debt capital from Barclays PLC or Barclays Bank PLC in US Dollar and Euro, but can also be achieved by subsidiaries issuing capital in local currencies.

Pension risk

The Group maintains a number of defined benefit pension schemes for past and current employees. The ability of the pension fund to meet the projected pension payments is maintained principally through investments.

Pension risk arises because the estimated market value of the pension fund assets might decline; investment returns might reduce; or the estimated value of the pension liabilities might increase. The Group monitors the pension risks arising from its defined benefit pension schemes and works with Trustees to address shortfalls. In these circumstances the Group could be required or might choose to make extra contributions to the pension fund. The Group's main defined benefit scheme was closed to new entrants in 2012.

Management of pension risk

Many of the Group's defined benefit (DB) pension funds are established as trusts in order to keep the fund's assets separate from the sponsor (Barclays). As such the Trustees are responsible for:

- Investment strategy including asset allocation and performance of assets.
- Assessing the level of technical provision required.
- meeting any minimum funding objectives.
- Complying with local legislation.

The legal structure of Barclays' DB pension funds and the role of the Trustees mean that Pension Risk is not part of the Bank's risk appetite assessment used to manage other key risks.

Pension Forums

The Pension Executive Board (PEB) has accountability for the effective operation of pensions across Barclays Group. It is the most senior executive body for pensions in Barclays.

The Pension Management Group (PMG) is accountable for the oversight and workflow management of the group's responsibilities of the pension arrangements operated by Barclays PLC and its subsidiaries globally. The PMG is accountable to the PEB.

The PEB and PMG are not created or mandated under the ERMF. However these forums provide Risk the opportunity to discuss pension risk in a wider context as other relevant stakeholders from HR, Legal, Treasury and Finance are also represented at these meetings.

Key Pension Risk controls and governance include:

- Annual review, challenge and proposal of the IAS19 market driven assumptions used for the calculation of the pension scheme liabilities used in Barclays disclosures.
- Representation and input at key pension forums.
- Input into the Group's ICAAP for pension risk.
- Input into the Group's strategic planning and stress test exercises.
- Provide independent oversight of the Pension risk profiles from the Bank's perspective.
- Coordinates response to regulatory initiatives, developments and proposals on pensions, which may include inputs from material overseas schemes.

Interest Rate Risk in the Banking Book

Overview

Banking book operations generate non-traded market risk, primarily through the mismatch between the duration of assets and liabilities and where interest rates on products reset at different dates. As per the Group's policy to remain within the defined risk appetite, interest rate and FX risks residing in the banking books of the businesses are transferred to Treasury where they are centrally managed. Currently, these risks are transferred to Treasury via funding arrangements, interest rate or FX swaps. However, the businesses remain susceptible to market risk from seven key sources:

- **Repricing/Residual risk:** the impact from the mismatch between the run-off of product balances and the associated interest rate hedges or from unhedged liquidity buffer investments;
- **Structural risk:** the change to the net interest income on hedge replenishment due to adverse movements in interest rates, assuming that the balance sheet is held static;
- **Prepayment risk:** the potential loss in value if actual prepayment or early withdrawal behaviour from customers deviates from the expected or contractually agreed behaviour, which may result in a hedge or funding adjustment at a cost to the bank. Exposures are typically considered (where appropriate) net of any applicable offsetting early repayment charges. This risk principally relates to early repayment of fixed rate loans or withdrawal from fixed rate savings products;
- **Recruitment risk:** the potential loss in value if the actual completion or drawdown behaviour from customers deviates from the expected behaviour, which may result in a hedge or funding adjustment at a cost to the bank. This risk principally relates to the completion timing around the Bank's fixed rate mortgage pipeline process;
- **Margin compression risk:** the effect of internal or market forces on a bank's net margin where, for example, in a low rate environment any fall in rates will further decrease interest income earned on the assets whereas funding cost cannot be reduced as it is already at the minimum level.
- **Lag risk:** arises from the delay in re-pricing customer rates for certain variable/ managed rate products, following an underlying change to market interest rates. This is typically driven by either regulatory constraint around customer notification on pricing changes, processing time for the Group's notification systems or contractual agreements within a product's terms and conditions.
- **Asset swap spread risk:** the spread between Libor and sovereign bond yields that arises from the management of the liquidity buffer investments and its associated hedges.

Furthermore, liquidity buffer investments are generally subject to Available for Sale (AFS) accounting rules, whereby changes in the value of these assets impact capital via Other Comprehensive Income, creating volatility in capital directly

Roles and responsibilities

The Non-traded Market Risk team provides risk management oversight and monitoring of all traded and non-traded market risk in Treasury and customer banking books, which specifically includes:

- interest rate risk assessment in the customer banking books,
- review and challenge the behavioural assumptions used in hedging and transfer pricing,
- risk management of the liquidity buffer investments and funding activities,
- oversight of balance sheet hedging,
- review of residual risk in the hedge accounting solution and hedging of net investments,
- proposes and monitors risk limits to manage traded and non-traded market risk within the agreed risk appetite.

Management of IRRBB

Barclays seeks to minimise interest rate risk and maintain it is within the agreed risk appetite, whilst actively managing the associated risk which could reduce the value of liquidity buffer investments. Therefore, the primary control for IRRBB is calculating risk measures described below and monitoring risk exposure vs. defined limits. Limits are set at an aggregate business level and then cascaded down.

Barclays uses a range of complementary technical approaches to measure IRRBB as described below. The risk is measured and controlled using both an income based metric (EaR) and value based metrics (EVE, EC and VaR).

Summary of measures for non-traded market risk

Measure	Definition
Earnings at risk (EaR)	A measure of the potential change in Net Interest Income (NII) due to an adverse interest rate movement over a predefined time horizon.
Economic value of equity (EVE)	A measure of the potential change in value of expected future cash flows due to adverse interest rate movement, based on the existing balance sheet run-off profile.
Economic capital (EC)	A measure of the potential loss from a severe stress scenario over a predefined time horizon at a particular confidence level.
Value at risk (VaR)	A measure of the potential loss of value arising from unfavourable market movements at a specific confidence level, if current positions were to be held unchanged for the predefined holding period.
Stress testing	A measure to assess risk exposures under severely adverse market scenarios.

Annual Earnings at Risk (AEaR)

AEaR measures the sensitivity of net interest income over a one-year period. It is calculated as the difference between the estimated income using the expected base rate forecast and the lowest estimated income following a parallel increase or decrease in interest rates.

The main model assumptions are:

The balance sheet is kept at the current level, i.e. no growth is assumed

Contractual positions are adjusted for an assumed behavioural profile, more closely matching the actual product life-cycle.

AEaR is applied to the entire banking book, including the liquidity buffer investments. The metric provides a measure of how interest rate risk may impact the Group's earnings, providing a simple comparison between risk and returns. The main disadvantage of the metric is its short-term focus, as it only measures the impact on a position in the first 12 months. In order to counter this, the Group has implemented additional economic value risk metrics.

See page 115 for a review of AEaR in 2017.

Management of treasury and capital risk

Economic Value of Equity (EVE)

EVE calculates the change in the present value of exposure to a parallel upward and downward interest rate shock. Note that the EVE calculation measures sensitivity in terms of present value, while AEaR measures income sensitivity, hence complements each other.

The EVE measure is applied to the entire banking book, that is, the same coverage as AEaR, and covers the full life of transactions and hedges enforcing the risk over the whole life of positions is considered. It does not capture the impact of business growth or management actions, and is based on the balance sheet run-off profile.

Economic Capital (EC, for recruitment, prepayment and residual risk)

EC consistent models, based on VaR methodologies, are used to measure unexpected losses to a 99.98% confidence interval over a one-year period. Within non-traded market risk, this measure aims to capture recruitment, prepayment and residual risks for banking book products (see definitions on page 168). EC metrics typically measure variations in economic value from specific sources of risk, for example, prepayment risk EC for fixed rate mortgages predicts the cost of hedging in order to reduce any mismatch exposure resulting from the impact of unexpected customer prepayment levels.

Limits are set against EC metrics and breaches trigger mitigating actions to reduce exposure to appropriate levels. EC modelling is typically applied only to fixed rate products, with the majority of variable and administered rate portfolios not subject to an EC measure.

Advantages of EC are that it can calculate unexpected losses to an appropriate degree of confidence given the nature of the risks, and that it covers sources of loss beyond the scope of other models (one-year period for AEaR, only existing business being considered for EVE, etc). However, as with any statistical model, the choice of the distribution may drive under-prediction of very extreme events, i.e. the real distribution may be fat-tailed. To mitigate this, the Group continues to improve its models using long time series of historical data to capture extreme moves.

See page 116 for a review of EC in 2017.

Value at Risk (VaR)

VaR is an estimate of the potential loss arising from unfavourable market movements, if the current positions were to be held unchanged for a set period. For internal market risk management purposes, a historical simulation methodology is used with a two-year equally weighted historical period, at a 95% confidence level.

Daily VaR is used to measure residual interest and foreign exchange risks within certain banking book portfolios.

Quarterly scaled VaR is used to measure risk in the liquidity buffer investments. The calculation uses a two-year historical period, a 95% confidence level and is scaled from daily to quarterly by an approved constant factor.

Stress testing

All non-traded market risk positions are subject to the Group's annual stress testing exercise, where scenarios based on adverse economic parameters are used to determine the potential on the balance sheet.

Management of operational risk

The sources of operational risks, and how those risks are managed, are detailed in this section.

- The types of risks that are classified as operational risks are described on pages 171 and 172.
- Governance, management and measurement techniques are covered on pages 172 and 173.

Management of operational risk

Operational risk

The risk of loss to the firm from inadequate or failed processes, systems, human factors or due to external events (for example, fraud) where the root cause is not due to credit or market risks.

Overview

The management of operational risk has three key objectives:

- Deliver an operational risk capability owned and used by business leaders which is pragmatic, relevant, and enables business leaders to make sound risk decisions over the long term.
- Provide the frameworks, policies and tools to enable management to meet their risk management responsibilities while the Second line of defence provides robust, independent, and effective oversight and challenge.
- Deliver a consistent and aggregated measurement of operational risk that will provide clear and relevant insights, so that the right management actions can be taken to keep the operational risk profile consistent with the Group's strategy, the stated risk appetite, the client franchise, and other stakeholder needs.

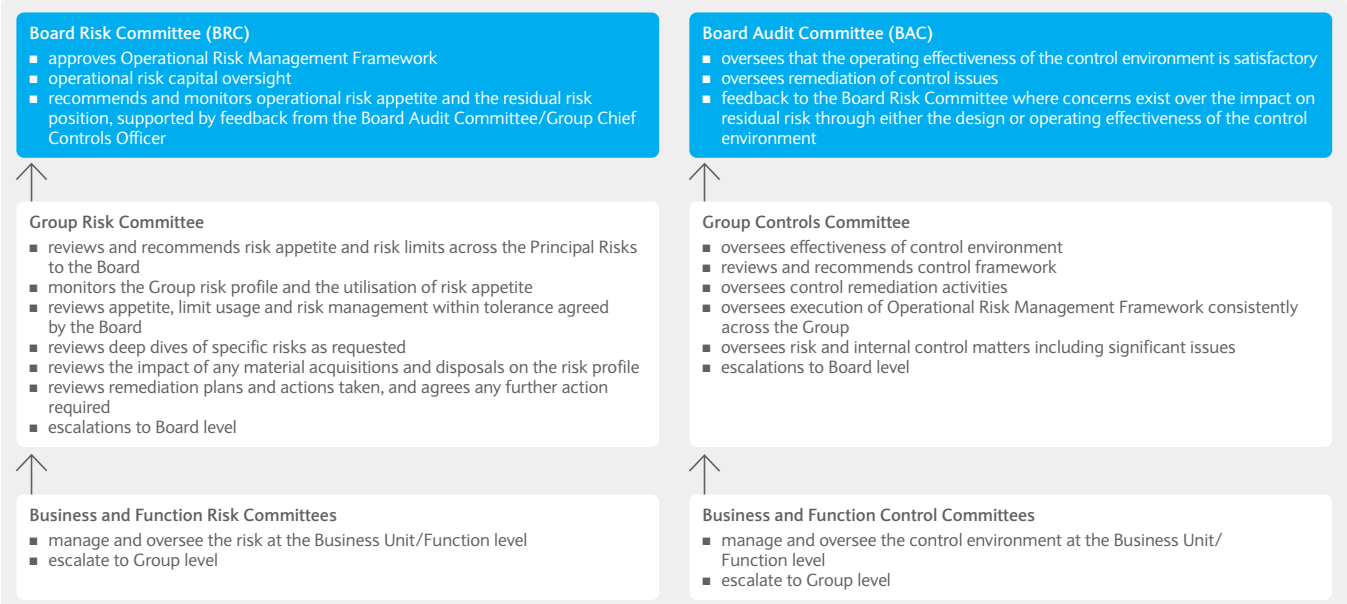
The Group is committed to the management and measurement of operational risk and was granted a waiver by the FSA (now the PRA) to operate an Advanced Measurement Approach (AMA) for operational risk, which commenced in January 2008. The majority of the Group calculates regulatory capital requirements using AMA (94% of capital requirements), except for small parts of the organisation acquired since the original permission (6% of capital requirements) using the Basic Indicator Approach (BIA). The Group works to benchmark its internal operational risk management and measurement practices with peer banks.

The Group is committed to operating within a strong system of internal controls that enables business to be transacted and risk taken without exposing the Group to unacceptable potential losses or reputational damages. The Group has an overarching ERMF that sets out the approach to internal governance. The ERMF establishes the mechanisms and processes by which the Board directs the organisation, through setting the tone and expectations from the top, delegating authority and monitoring compliance.

Organisation and structure

Operational risk comprises a number of specific risks defined as follow:

- **Data Management and Information Risk:** The risk that Barclays information is not captured, retained, used or protected in accordance with its value and legal and regulatory requirements.
- **Financial Reporting Risk:** The risk of a material misstatement or omission within the Group's external financial, regulatory reporting or internal management reporting.
- **Fraud Risk:** The risk of financial loss when an internal or external party acts dishonestly with the intent to obtain an undue benefit, cause a loss to, or to expose either the Group or its customers and clients to a risk of loss.
- **Payments Process Risk:** The risk of payments being processed inaccurately, with delays, without appropriate authentication and authorisation.
- **People Risk:** The risk that Barclays is exposed to by virtue of being an employer (excluding Health and Safety related risk).
- **Premises and Security Risk:** The risk of interruption to Barclays' business due to the unavailability of premises and infrastructure as a result of intentional or accidental damage to premises and moveable assets, physical security breaches and safety and security incidents.
- **Supplier Risk:** The risk that is introduced to the firm or entity as a consequence of obtaining services or goods from another legal entity as a result of inadequate selection, inadequate exit and supplier management, resulting in operational, financial, or reputational risk to the bank, failure of services and / or negative customer impact.



Management of operational risk

- **Tax Risk:** The risk of unexpected tax cost in relation to any tax for which Barclays is liable, or of reputational damage on tax matters with key stakeholders such as tax authorities, regulators, shareholders or the public. Tax cost includes tax, interest or penalties levied by a taxing authority.
- **Technology Risk:** The risk that comes about due to dependency on technological solutions and is defined as failure to develop, deploy and maintain technology solutions that are stable, reliable and deliver on the business need.
- **Transaction Operations Risk:** The risk of Customer/Client or Bank detriment due to unintentional error and/or failure in the end-to-end process of initiation, processing and fulfilment of an interaction between a Customer/Client and the Bank with an underlying financial instrument (e.g. mortgage, derivative product, trade product etc.) in consideration.

These risks may result in financial and/or non-financial impacts including legal/ regulatory breaches or reputational damages.

The Group also recognises that there are certain threats/risk drivers that are more thematic and have the potential to impact the bank's strategic objectives. These are Enterprise Risk Themes which require an overarching and integrated management approach. These include:

- **Cyber:** The potential loss or detriment to Barclays caused by individuals or groups (threat actors) with the capabilities and intention to cause harm or to profit from attacks committed via network information systems against us, our suppliers, or customers/clients.
- **Data:** The Data Risk theme is aligned to the Data Strategy of the firm and encompasses the Data risks to the firm from multiple Risk Categories including Data Management, Data Architecture, Data Security & Protection, Data Resilience, Data Retention and Data Privacy
- **Execution:** The risk of failing to deliver and implement the agreed initiatives, priorities and business outcomes required to deliver the Group Strategy within agreed timelines.
- **Resilience:** Lack of resilience may threaten an organisation's ability to survive and prosper in its commercial endeavours in the presence of adverse events, shocks and chronic or incremental changes.

Roles and responsibilities

The prime responsibility for the management of operational risk and the compliance with control requirements rests with the business and functional units where the risk arises. The operational risk profile and control environment is reviewed by business management through specific meetings which cover governance, risk and control. Businesses are required to report their operational risks on both a regular and an event-driven basis. The reports include a profile of the material risks that may threaten the achievement of their objectives and the effectiveness of key controls, operational risk events and a review of scenarios.

The Group Head of Operational Risk is responsible for establishing, owning and maintaining an appropriate Group-wide Operational Risk Management Framework and for overseeing the portfolio of operational risk across the Group.

Operational Risk Management (ORM) acts in a second line of defence capacity, and is responsible for defining and overseeing the implementation of the framework and monitoring Barclays operational risk profile. ORM alerts management when risk levels exceed acceptable ranges or risk appetite in order to drive timely decision making and actions by the first line of defence. Through attendance at Business Risk Committee meetings, ORM provide specific risk input into the issues highlighted and the overall risk profile of the business. Operational risk issues escalated from these meetings are considered through the second line of defence review meetings. Depending on their nature, the outputs of these meetings are presented to the BRC or the BAC.

Operational risk framework

The Operational Risk Framework comprises a number of elements which allow the Group to manage and measure its operational risk profile and to calculate the amount of operational risk capital that the Group needs to hold to absorb potential losses. The minimum, mandatory requirements for each of these elements are set out in the Operational Risk Framework and supporting policies. This framework is implemented across the Group with all businesses required to implement and operate an Operational Risk Framework that meets, as a minimum, the requirements detailed in the operational risk policies.

The Operational Risk Framework is a key component of the ERMF and has been designed to improve risk management and meet a number of external governance requirements including the Basel Capital Accord, the Capital Requirements Directive and Turnbull guidance as an evaluation framework for the purposes of Section 404(a) of the Sarbanes-Oxley Act. It also supports the Sarbanes-Oxley requirements.

The Operational Risk Framework includes the following elements:

Risk and control self-assessments

The Group identifies and assesses all material risks within each business and evaluates the key controls in place to mitigate those risks. Managers in the businesses use self-assessment techniques to identify risks, evaluate the effectiveness of key controls in place and assess whether the risks are being effectively managed. The businesses are then able to make decisions on what action, if any, is required to reduce the level of risk to the Group. These risk assessments are monitored on a regular basis to determine that each business continually understands the risks it faces.

Risk events

An operational risk event is any circumstance where, through the lack or failure of a control, the Group has actually, or could have, made a loss. The definition includes situations in which the Group could have made a loss, but in fact made a gain, as well as incidents resulting in reputational damage or regulatory impact only.

A standard threshold is used across the Group for reporting risk events and part of the analysis includes the identification of improvements to processes or controls, to reduce the recurrence and/or magnitude of risk events. For significant events, both financial and non-financial, this analysis includes the completion of a formal lessons learnt report.

The Group also maintains a record of external risk events which are publicly available and is a member of the Operational Riskdata eXchange (ORX), a not-for-profit association of international banks formed to share anonymous loss data information. This external loss information is used to support and inform risk identification, assessment and measurement.

Management of operational risk

Operational risk appetite and tolerance

The Group's approach to determining its operational risk appetite combines both quantitative measures and qualitative judgement, in order to best reflect the nature of non-financial risks.

The monitoring and tracking of operational risk measures is supplemented with qualitative review and discussion at senior management executive committees on the actions being taken to improve controls and reduce risk to an acceptable residual level.

Operational risk appetite is aligned to the Group's Risk Appetite Framework. The BRC considers, and recommends to the Board for approval, the Group's risk appetite statement for operational risk based on performance in the current year and the projections for financial volatility the following year.

Key indicators

Key indicators (KIs) are metrics which allow the Group to monitor its operational risk profile. KIs include measurable thresholds that reflect the risk appetite of the business and are monitored to alert management when risk levels exceed acceptable ranges or risk appetite levels and drive timely decision making and actions.

Risk scenarios

Risk scenarios represent an assessment of extreme risk impacts arising from potential exposures and idiosyncratic losses. Risk scenarios are a key benchmark to the evaluation of economic capital for operational risk taking into account:

- circumstances and contributing factors that could lead to an extreme event
- potential financial and non-financial impacts (for example reputational damage)
- controls that seek to limit the likelihood of such an event occurring, and the mitigating actions that would be taken if the event were to occur (for example crisis management procedures, business continuity or disaster recovery plans).

Management may then conclude, in response to the risk scenario extreme loss assessment, changes in risk management control or business strategy are required.

The risk scenarios are regularly re-assessed, taking into account trends in risk factors such as mis-selling, conduct and financial crime risks.

Reporting

The ongoing monitoring and reporting of operational risk is a key component of the Operational Risk Framework. Reports and management information are used by the Operational Risk function and by business management to understand, monitor, manage and control operational risks and losses.

The operational risk profile is reviewed by senior management at the Businesses Risk Committee meetings as well as the second line of defence Operational Risk Review Forum and BRC, BAC and the Board.

Operational risk measurement

The Group assesses its Operational Risk Capital requirements using the Advanced Measurement Approach (AMA). The majority of the Group calculates regulatory capital requirements using AMA (94% of capital requirements), except for small parts of the organisation acquired since the original permission (6% of capital requirements) using the Basic Indicator Approach (BIA). The Group works to benchmark its internal operational risk management and measurement practices with peer banks and to drive the further development of advanced techniques.

Insurance

As part of its risk management approach, the Group also uses insurance to mitigate the impact of some operational risks.

Management of model risk

The types of model risk, and how they are managed, are detailed in this section

- The types of risks that are classified as model risk are described on page 175.
- Governance, management and measurement techniques are covered on page 175.

Management of model risk

Model risk

The risk of the potential adverse consequences from financial assessments or decisions based on incorrect or misused model outputs and reports.

Overview

Barclays uses models to support a broad range of activities, including informing business decisions and strategies, measuring and limiting risk, valuing exposures, conducting stress testing, assessing capital adequacy, managing client assets, and meeting reporting requirements.

Since models are imperfect and incomplete representations of reality, they may be subject to errors affecting the accuracy of their output. Model errors can result in inappropriate business decisions being made, financial loss, regulatory risk, reputational risk and/or inadequate capital reporting. Models may also be misused, for instance applied to products that they were not intended for, or not adjusted, where fundamental changes to their environment would justify re-evaluating their core assumptions. Errors and misuse are the primary sources of model risk.

Robust model risk management is crucial to assessing and managing model risk within a defined risk appetite. Strong model risk culture, appropriate technology environment, and adequate focus on understanding and resolving model limitations are crucial components.

Organisation and structure

Barclays allocates substantial resources to identify and record models and their usage, document and monitor the performance of models, validate models and adequately address model limitations. Barclays manages model risk as an enterprise level risk similar to other Principal Risks.

Barclays has a dedicated Model Risk Management (MRM) function that consists of two main units: the Independent Validation Unit (IVU), responsible for model validation and approval, and Model Governance and Controls (MGC), covering model risk governance, controls and reporting, including ownership of model risk policy and the model inventory.

The model risk management framework consists of the model risk policy and standards. The policy prescribes group-wide, end-to-end requirements for the identification, measurement and management of model risk, covering model documentation, development, implementation, monitoring, annual review, independent validation and approval, change and reporting processes. The policy is supported by global standards covering model inventory, documentation, validation, complexity and materiality, testing and monitoring, overlays, risk appetite, as well as vendor models and stress testing challenger models.

Barclays is continuously enhancing model risk management. The function reports to the Group CRO and operates a global framework. Implementation of best practice standards is a central objective of the Group. Model risk reporting flows to senior management as depicted below:

Roles and responsibilities

The key model risk management activities include:

- Correctly identifying models across all relevant areas of the firm, and recording models in the Group Models Database (GMD), the Group-wide model inventory. The heads of the relevant model ownership areas (typically, the Business Chief Risk Officers, Business Chief Executive Officers, the Treasurer, the Chief Financial Officer, etc.) annually attest to the completeness and accuracy of the model inventory. MGC undertakes regular conformance reviews on the model inventory.
- Enforcing that every model has a model owner who is accountable for the model. The model owner must sign off models prior to submission to IVU for validation. The model owner works with the relevant technical teams (model developers, implementation, monitoring, data services, regulatory) to maintain that the model presented to IVU is and remains fit for purpose.
- Overseeing that every model is subject to validation and approval by IVU, prior to being implemented and on a continual basis. While all models are reviewed and re-approved for continued use each year, the validation frequency and the level of review and challenge applied by IVU is tailored to the materiality and complexity of each model. Validation includes a review of the model assumptions, conceptual soundness, data, design, performance testing, compliance with external requirements if applicable, as well as any limitations, proposed remediation and overlays with supporting rationale. Material model changes are subject to prioritised validation and approval.
- Defining model risk appetite in terms of risk tolerance, and qualitative metrics which are used to track and report model risk.
- Maintaining specific standards that cover model risk management activities relating to stress testing challenger models, model overlays, vendor models, and model complexity

Board Risk Committee
- reviews and recommends to the Board the Group's risk appetite for model risk
- reviews the effectiveness of the processes and policies by which Barclays identifies and manages model risk
- assesses performance relative to model risk appetite

↑

Group Risk Committee
- reviews risk appetite across model risk
- monitors the group risk profile for model risk, including emerging risks, against expected trends, and the utilisation of risk appetite

↑

Business Unit Risk Committees
- review critical updates on model risk e.g. updates on group-wide remediation plans
- review targeted updates on progress toward meeting regulatory deliverables
- review identified policy breaches

Management of conduct risk

This section provides an analysis of the management of conduct risk.

- Conduct risk is the risk that detriment is caused to our customers, clients, counterparties or the Group and its employees because of inappropriate judgement in the execution of our business activities (see page 177).

Management of conduct risk

Conduct risk

The risk of detriment to customers, clients, market integrity, competition or Barclays from the inappropriate supply of financial services, including instances of wilful or negligent misconduct.

Overview

The Group defines, manages and mitigates conduct risk with the goal of providing positive customer and client outcomes, protecting market integrity and promoting effective competition. This includes taking reasonable steps to assure the Group's culture and strategy are appropriately aligned to these goals, products and services are reasonably designed and delivered to meet the needs of customers and clients, as well as promoting the fair and orderly operation of the markets in which the Group does business and that the Group does not commit or facilitate money laundering, terrorist financing, bribery and corruption or breaches of economic sanctions.

Product Lifecycle, Culture and Strategy and Financial Crime are the risk categories under conduct risk.

Organisation and structure

The governance of conduct risk within Barclays is fulfilled through management Committees and forums operated by the First and Second Lines of Defence with clear escalation and reporting lines to the Board.

The GRC is the most senior executive body responsible for reviewing and monitoring the effectiveness of Barclays' management of conduct risk.

Roles and responsibilities

The Conduct Risk Management Framework (CRMF) comprises a number of elements that allow the Group to manage and measure its conduct risk profile.

Senior Managers have ownership within their areas for managing conduct risk. These individuals have a Statement of Responsibilities identifying the activities and areas for which they are accountable. The primary responsibility for managing conduct risk and compliance with control requirements sits with the business where the risk arises. The First Line Business Control Committees provide oversight of controls relating to conduct risk.

The Group Chief Compliance Officer is responsible for owning and maintaining an appropriate Group-wide CRMF for overseeing Group-wide conduct risk management. This includes defining and owning the relevant conduct risk policies and oversight of the implementation of controls to manage the risk.

Businesses are required to report their conduct risks on both a quarterly and an event-driven basis. The quarterly reports detail conduct risks inherent within the business strategy and include forward looking horizon scanning analysis as well as backward looking evidence-based indicators from both internal and external sources.

The Business Unit Risk Committees and the Financial Crime Business Oversight Committees are the primary Second Line governance forums for oversight of conduct risk profile and implementation of the CRMF. The responsibilities of the Business Unit Risk Committees include approval of the conduct risk tolerance and the business defined key indicators. Additional responsibilities include the identification and discussion of any emerging conduct risks exposures which have been identified.

Board Reputation Committee
- reviews and recommends to the Board the Group's risk appetite for conduct risk
- reviews the effectiveness of the processes and policies by which Barclays identifies and manages conduct risk
- monitors the conduct risk profile of the Group
- monitors culture and cultural transformation

Group Risk Committee
- reviews and monitors the effectiveness of conduct risk management

Business Unit Risk Committees and Financial Crime Business Oversight Committees
- oversee the management of the Group's conduct risk profile as the primary Second Line governance forum
- oversee the implementation of the Conduct Risk Management Framework (CRMF)
- oversee existing and emerging conduct risk exposures

Management of reputation risk

This section provides an analysis of the management of reputation risk.

- Reputation risk is the risk of damage to the Barclays brand arising from association, action or inaction which is perceived by stakeholders to be inappropriate or unethical (see page 179).

Management of reputation risk

Reputation risk

The risk that an action, transaction, investment or event will reduce trust in the firm's integrity and competence by clients, counterparties, investors, regulators, employees or the public.

Board Reputation Committee
- reviews the effectiveness of the processes and policies by which Barclays identifies and manages reputation risk
- considers and evaluates regular reports on Barclays' reputation risk issues and exposures
- considers whether significant business decisions will compromise Barclays' ethical policies or core business beliefs and values

Group Risk Committee
- reviews the monitoring processes utilised by Compliance and Citizenship & Reputation for appropriateness given the level of risk identified in the businesses
- reports reputation issues in accordance with Barclays' Reputation Risk Framework for all material issues which may have the potential to incur reputation risk for Barclays

Business Unit Risk Committees
- review and escalate reputation risks in accordance with the Reputation Risk Framework

Overview

A reduction of trust in Barclays' integrity and competence may reduce the attractiveness of Barclays to stakeholders and could lead to negative publicity, loss of revenue, regulatory or legislative action, loss of existing and potential client business, reduced workforce morale and difficulties in recruiting talent. Ultimately it may destroy shareholder value.

Organisation and structure

The GRC is the most senior executive body responsible for reviewing and monitoring the effectiveness of Barclays' management of reputation risk.

Roles and responsibilities

The Chief Compliance Officer is accountable for developing a reputation risk framework and policies and overseeing that they are subject to limits, monitored, reported on and escalated, as required.

Reputation risk is by nature pervasive and can be difficult to quantify, requiring more subjective judgement than many other risks. The Reputation Risk Framework sets out what is required to manage reputation risk effectively and consistently across the bank.

The primary responsibility for identifying and managing reputation risk and adherence to the control requirements sits with the business and support functions where the risk arises.

Barclays International and Barclays UK are required to operate within established reputation risk appetite and their component businesses submit quarterly reports to the Group Reputation Management team, highlighting their most significant current and potential reputation risks and issues and how they are being managed. These reports are a key internal source of information for the quarterly reputation risk reports which are prepared for the GRC and RepCo.

Management of legal risk

This section provides an analysis of the management of legal risk

- Legal risk is the risk of loss or imposition of penalties, damages or fines from the failure of the firm to meet its legal obligations including regulatory or contractual requirements (see page 181).

Management of legal risk

Legal risk

The risk of loss or imposition of penalties, damages or fines from the failure of the firm to meet its legal obligations including regulatory or contractual requirements.

Overview

The Legal Risk Management Framework (LRMF) prescribes Group-wide requirements for the identification, escalation, measurement and management of legal risk, covering assessment, risk tolerance, key indicators and governance. The LRMF is supported by Group-wide legal risk policies and associated standards aligned to the following legal risks:

- **Contractual Arrangements** – the Group's rights and remedies in its relationships with other parties not being enforceable as intended due to the absence of appropriate contractual documentation or defects therein.
- **Litigation Management** – failure to adequately manage litigation involving the Group.
- **Intellectual Property (IP)** – failure to protect the Group's IP assets or the Group infringing valid IP rights of third parties.
- **Competition/Anti-trust** – failure to adequately manage competition/anti-trust issues or failure to manage relationships with competition/anti-trust authorities.
- **Use of Law Firms** – failure to control instruction of external law firms.
- **Contact with Regulators** – failure to manage interactions with regulators or failure to manage the receipt and handling of regulatory information from a regulatory or government agency appropriately.

The LRMF requires businesses and functions to integrate the management of legal risk within their strategic planning and business decision making, including adopting processes to identify legal risk exposures and managing adherence to the minimum control requirements.

In addition to legal risk detailed above, legal outcomes, including losses or the imposition of penalties, damages, fines and sanctions, may arise because of past and future actions, behaviours and business decisions aligned to the Principal Risk which gave rise to the outcome, including but not limited to conduct and operational risk. Details of current contentious legal matters in relation to the Group are set out in Note 29 Legal, competition and regulatory matters of the Barclays PLC Annual Report 2017.

Organisation and structure

Business/function risk forums have oversight of their legal risk profile and implementation of the LRMF. The Legal Executive Committee oversees, challenges and monitors legal risk across the Group. The Group Risk Committee is the most senior executive body responsible for reviewing and monitoring the effectiveness of Barclays' management of risk. Escalation paths from this forum exist to the Board Risk Committee.

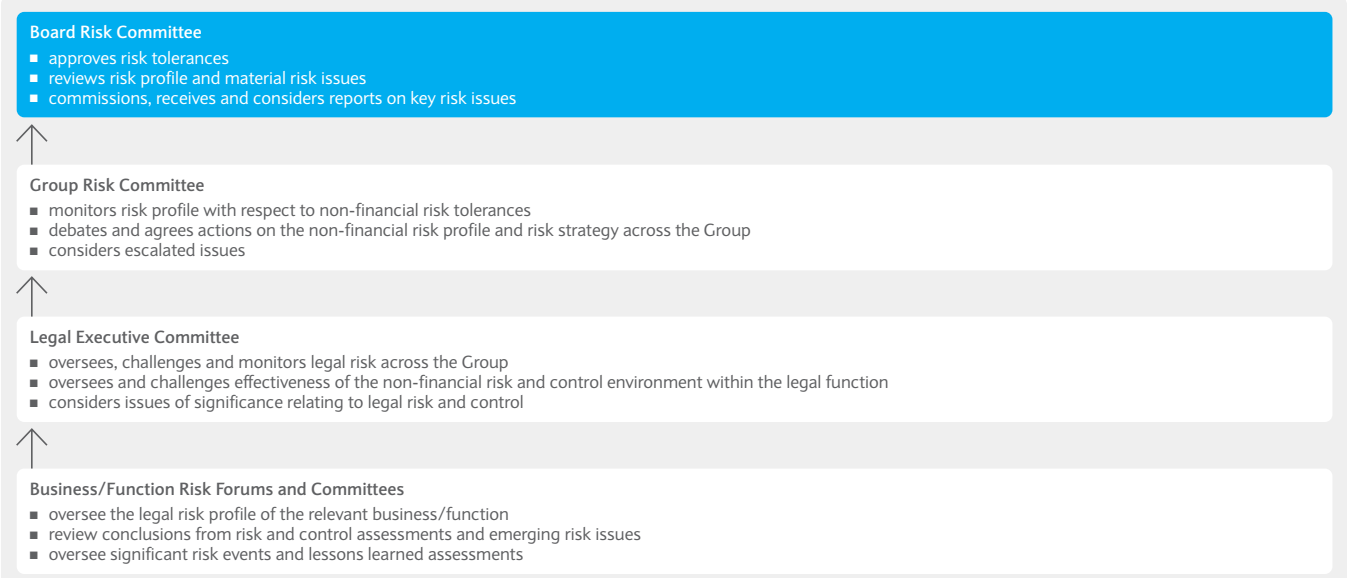
Roles and responsibilities

The primary responsibility for identifying and managing legal risk and adherence to the minimum control requirements sits with the businesses/functions where the risk resides.

On behalf of the businesses/functions, the aligned General Counsel or members of Legal senior management provide oversight and challenge of the legal risk profile, for example by undertaking legal risk tolerance assessments, and providing advice on legal risk management. Legal risk tolerance assessments include both quantitative and qualitative criteria such as:

- Risk and control self-assessment, lessons learned, testing and monitoring processes.
- Analysis of legal risk material control issues or weaknesses.
- Potential legal risks resulting from upcoming changes in the control environment, systems, or internal organisational structures.
- Potential implications on the Group of forthcoming changes in the external legal and regulatory environment and/or prevailing decisions from courts and enforcing authorities as they relate to defined legal risks.

The Group General Counsel supported by the Global Head of Legal Risk, Governance and Control is responsible for maintaining an appropriate LRMF and for overseeing Group-wide legal risk management.



Appendices

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Appendix A – PD, LGD, RWA and Exposures by country

The following tables show IRB data for countries in which Barclays is active where the IRB RWA amount is more than 1% of the Group total for any asset class. The countries are shown in descending order of aggregated total RWAs for all asset classes.

Table 96: PD, LGD, RWA and Exposure values by country for A-IRB – all asset classes

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	3.37%	30.7%	84,329	275,883	Spain	0.51%	45.1%	547	1,050
United States	0.36%	42.1%	19,893	120,784	Cayman Islands	1.32%	44.9%	546	1,081
Italy	7.43%	24.9%	3,789	10,269	Australia	0.14%	45.5%	385	1,849
Germany	2.02%	57.8%	3,542	9,746	Mexico	0.18%	50.3%	375	806
South Africa	6.53%	30.6%	3,497	8,012	Singapore	0.10%	45.3%	239	2,544
Japan	0.09%	47.2%	2,385	11,570	Norway	0.20%	44.9%	235	2,394
Ireland	1.18%	45.3%	2,175	5,426	Taiwan	0.67%	45.1%	214	430
France	0.85%	39.1%	1,606	7,394	Hong Kong	0.10%	49.9%	174	795
Netherlands	0.57%	44.7%	1,494	3,796	China	0.08%	47.7%	166	751
Canada	0.93%	42.4%	1,324	4,435	Korea	0.10%	45.6%	157	942
Switzerland	0.09%	45.0%	1,129	18,082	Brazil	0.91%	46.7%	148	147
Luxembourg	0.59%	45.2%	1,041	3,880	Turkey	0.59%	47.2%	133	182
India	0.40%	51.7%	703	901	Egypt	6.56%	58.1%	131	62
Jersey	3.25%	39.9%	659	1,100					

Table 96a: PD, LGD, RWA and Exposure values by country for A-IRB – central governments and central banks

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	0.04%	46.0%	84	803	Spain	–	–	–	–
United States	0.00%	45.0%	1,771	65,364	Cayman Islands	–	–	–	–
Italy	–	–	–	–	Australia	0.01%	45.0%	2	61
Germany	–	–	–	–	Mexico	0.13%	45.0%	27	125
South Africa	0.15%	32.9%	68	775	Singapore	0.01%	45.0%	110	2,274
Japan	0.07%	45.0%	634	4,865	Norway	0.01%	45.0%	71	1,971
Ireland	0.04%	50.0%	57	473	Taiwan	0.05%	45.0%	–	1
France	–	–	–	–	Hong Kong	0.03%	45.0%	20	243
Netherlands	0.01%	45.0%	2	22	China	0.06%	53.0%	55	291
Canada	0.01%	45.0%	6	31	Korea	0.03%	45.0%	28	281
Switzerland	0.01%	45.0%	628	15,677	Brazil	–	–	–	–
Luxembourg	–	–	–	–	Turkey	–	–	–	–
India	0.35%	45.0%	288	479	Egypt	8.36%	61.9%	117	47
Jersey	–	–	–	–					

Table 96b: PD, LGD, RWA and Exposure values by country for A-IRB – institutions

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	1.50%	41.6%	5,407	16,560	Spain	0.14%	45.9%	185	419
United States	0.22%	43.5%	1,765	6,055	Cayman Islands	4.43%	45.1%	5	4
Italy	0.28%	45.2%	128	208	Australia	0.05%	45.3%	184	980
Germany	0.05%	45.2%	387	1,574	Mexico	0.19%	48.4%	107	256
South Africa	0.37%	39.1%	82	181	Singapore	0.12%	47.8%	33	111
Japan	0.10%	50.6%	1,193	4,287	Norway	0.03%	45.3%	16	63
Ireland	0.17%	53.1%	175	371	Taiwan	0.90%	45.0%	200	308
France	0.05%	39.2%	782	4,479	Hong Kong	0.13%	46.1%	76	387
Netherlands	0.03%	44.5%	109	534	China	0.09%	44.4%	111	459
Canada	0.06%	45.2%	295	1,563	Korea	0.14%	45.0%	112	554
Switzerland	0.05%	44.8%	172	1,467	Brazil	0.97%	45.0%	141	136
Luxembourg	0.04%	49.3%	78	544	Turkey	0.59%	47.3%	133	181
India	0.62%	52.0%	140	195	Egypt	0.79%	46.1%	14	15
Jersey	0.14%	46.7%	1	3					

Appendix A – PD, LGD, RWA and Exposures by country

Table 96c: PD, LGD, RWA and Exposure values by country for A-IRB – corporates

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	3.24%	35.9%	34,445	66,581	Spain	0.74%	44.6%	362	631
United States	0.83%	38.0%	16,356	49,362	Cayman Islands	1.30%	44.9%	542	1,077
Italy	3.30%	44.5%	571	787	Australia	0.28%	45.8%	200	808
Germany	0.69%	42.5%	1,623	4,314	Mexico	0.19%	53.0%	242	425
South Africa	3.10%	34.1%	1,808	3,258	Singapore	1.30%	47.7%	97	159
Japan	0.12%	45.6%	558	2,418	Norway	1.23%	44.5%	149	360
Ireland	1.38%	44.1%	1,942	4,582	Taiwan	0.05%	45.3%	14	121
France	2.09%	38.9%	824	2,913	Hong Kong	0.09%	65.8%	78	165
Netherlands	0.64%	44.7%	1,383	3,239	China	0.08%	53.0%	–	1
Canada	1.43%	40.9%	1,023	2,840	Korea	0.05%	50.5%	16	107
Switzerland	1.40%	45.3%	328	933	Brazil	0.17%	70.0%	7	10
Luxembourg	0.68%	44.6%	964	3,336	Turkey	–	–	–	–
India	0.30%	65.4%	274	226	Egypt	–	–	–	–
Jersey	3.27%	39.9%	657	1,096					

Table 96d: PD, LGD, RWA and Exposure values by country for A-IRB – SME retail

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	12.27%	37.0%	3,756	9,002	Spain	–	–	–	–
United States	–	–	–	–	Cayman Islands	–	–	–	–
Italy	–	–	–	–	Australia	–	–	–	–
Germany	–	–	–	–	Mexico	–	–	–	–
South Africa	7.30%	53.6%	123	215	Singapore	–	–	–	–
Japan	–	–	–	–	Norway	–	–	–	–
Ireland	–	–	–	–	Taiwan	–	–	–	–
France	–	–	–	–	Hong Kong	–	–	–	–
Netherlands	–	–	–	–	China	–	–	–	–
Canada	–	–	–	–	Korea	–	–	–	–
Switzerland	–	–	–	–	Brazil	–	–	–	–
Luxembourg	–	–	–	–	Turkey	–	–	–	–
India	–	–	–	–	Egypt	–	–	–	–
Jersey	2.06%	35.7%	–	1					

Table 96e: PD, LGD, RWA and Exposure values by country for A-IRB – secured by mortgages on immovable property

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	2.38%	10.3%	16,332	137,198	Spain	–	–	–	–
United States	21.66%	30.5%	2	3	Cayman Islands	–	–	–	–
Italy	7.94%	22.8%	3,089	9,274	Australia	–	–	–	–
Germany	1.97%	23.0%	–	1	Mexico	–	–	–	–
South Africa	10.24%	12.5%	607	2,274	Singapore	–	–	–	–
Japan	–	–	–	–	Norway	–	–	–	–
Ireland	–	–	–	–	Taiwan	–	–	–	–
France	0.61%	22.1%	–	1	Hong Kong	–	–	–	–
Netherlands	20.15%	27.0%	1	1	China	–	–	–	–
Canada	–	–	–	–	Korea	–	–	–	–
Switzerland	8.48%	23.4%	2	5	Brazil	–	–	–	–
Luxembourg	–	–	–	–	Turkey	–	–	–	–
India	–	–	–	–	Egypt	–	–	–	–
Jersey	–	–	–	–					

Appendix A – PD, LGD, RWA and Exposures by country

Table 96f: PD, LGD, RWA and Exposure values by country for A-IRB – revolving retail

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	5.14%	77.2%	18,185	39,572	Spain	–	–	–	–
United States	–	–	–	–	Cayman Islands	–	–	–	–
Italy	–	–	–	–	Australia	–	–	–	–
Germany	4.33%	80.1%	1,532	3,857	Mexico	–	–	–	–
South Africa	12.75%	58.0%	291	527	Singapore	–	–	–	–
Japan	–	–	–	–	Norway	–	–	–	–
Ireland	–	–	–	–	Taiwan	–	–	–	–
France	–	–	–	–	Hong Kong	–	–	–	–
Netherlands	–	–	–	–	China	–	–	–	–
Canada	–	–	–	–	Korea	–	–	–	–
Switzerland	–	–	–	–	Brazil	–	–	–	–
Luxembourg	–	–	–	–	Turkey	–	–	–	–
India	–	–	–	–	Egypt	–	–	–	–
Jersey	–	–	–	–					

Table 96g: PD, LGD, RWA and Exposure values by country for A-IRB – other retail exposures

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	7.96%	89.2%	6,120	6,167	Spain	–	–	–	–
United States	–	–	–	–	Cayman Islands	–	–	–	–
Italy	–	–	–	–	Australia	–	–	–	–
Germany	–	–	–	–	Mexico	–	–	–	–
South Africa	13.41%	39.4%	518	781	Singapore	–	–	–	–
Japan	–	–	–	–	Norway	–	–	–	–
Ireland	–	–	–	–	Taiwan	–	–	–	–
France	–	–	–	–	Hong Kong	–	–	–	–
Netherlands	–	–	–	–	China	–	–	–	–
Canada	–	–	–	–	Korea	–	–	–	–
Switzerland	–	–	–	–	Brazil	–	–	–	–
Luxembourg	–	–	–	–	Turkey	–	–	–	–
India	–	–	–	–	Egypt	–	–	–	–
Jersey	–	–	–	–					

Appendix B – Analysis of impairment

IFRS Impairment

The following tables are presented using the IFRS consolidation rather than the regulatory consolidation basis. See pages 133 and 134 for background on impairment, and page 10 explaining the scope of regulatory consolidation.

Table 97: Analysis of impaired and past due exposures and allowance for impairment by exposure type
This table shows total loans and advances to customers and banks, past due balances and impaired loan balances, split by exposure type.

	Neither past due nor impaired £m	Past due but not impaired £m	Impaired loans: Individually £m	Impaired loans: Collectively £m	Total £m	Allowance for impairment £m
As at 31 December 2017						
Traded loans	3,140	–	–	–	3,140	–
Financial assets designated at fair value	10,354	683	–	–	11,037	–
Loans and advances to banks	35,546	117	–	–	35,663	–
Home Loans	142,444	26	922	4,068	147,460	458
Credit cards, unsecured and other retail lending	54,514	109	302	3,897	58,822	3,055
Corporate loans	155,081	6,744	1,384	713	163,922	1,139
Total[a]	401,079	7,679	2,608	8,678	420,044	4,652
As at 31 December 2016						
Traded loans	2,975	–	–	–	2,975	–
Financial assets designated at fair value	10,448	71	–	–	10,519	–
Loans and advances to banks	43,093	158	–	–	43,251	–
Home Loans	139,735	65	820	4,612	145,232	467
Credit cards, unsecured and other retail lending	56,327	92	492	3,957	60,868	3,060
Corporate loans	180,425	8,720	1,580	579	191,304	1,093
Total	433,003	9,106	2,892	9,148	454,149	4,620

Impairments on loans and advances calculated on IFRS consolidated basis.

Table 98: Geographic analysis of impaired and past due exposures and allowance for impairment
This table shows past due and impaired loans and advances to customers and banks, split by geographic location of the counterparty.

	Past due but not impaired £m	Impaired loans: Individually £m	Impaired loans: Collectively £m	Allowance for impairment £m
As at 31 December 2017				
UK	3,976	1,304	6,652	2,757
Europe	267	1,034	553	548
Americas	3,375	123	1,444	1,241
Africa and Middle East	34	105	25	83
Asia	27	42	4	23
Total[a]	7,679	2,608	8,678	4,652
As at 31 December 2016				
UK	3,657	1,502	6,943	2,545
Europe	457	922	781	697
Americas	4,819	211	1,424	1,247
Africa and Middle East	59	172	–	88
Asia	114	85	–	43
Total	9,106	2,892	9,148	4,620

Impairments on loans and advances calculated on IFRS consolidated basis.

Loans and advances past due but not impaired in the Americas decreased by £1.4bn, mainly in past due less than 30 days partly due to foreign exchange movements in USD against GBP, but also due to a reduction in volume.

Further analysis of impairment allowance is presented in Table 54.

Appendix C – Countercyclical Capital Buffer

Table 99: Countercyclical capital buffer

The below table shows the geographical distribution of credit exposures relevant to the calculation of the countercyclical buffer in line with CRR Article 440.

Note that exposures in the below table are prepared in accordance with CRD, Article 140. Hence exclude exposures to central governments/banks, regional governments, local authorities, public sector entities, multilateral development banks, international organisations and institutions and as such the exposure values differ to those found in the Analysis of credit risk section.

	General credit exposures		Trading book exposures		Securitisation exposures		Own funds requirements					
Breakdown by country	Exposure Value for SA £m	Exposure Value for IRB £m	Sum of long and short positions for trading book exposures for SA £m	Value of trading book exposures for internal models £m	Exposure Value for SA £m	Exposure Value for IRB £m	Of which: General credit exposures £m	Of which: Trading book exposures £m	Of which: Securitisation exposures £m	Total £m	Own Funds requirements weights %	Counter-cyclical capital buffer rate %
Czech Republic (CZ)	10	76	3	–	–	–	2	–	–	2	0.01%	0.50%
Slovakia (SK)	–	–	–	–	–	–	–	–	–	–		0.50%
Hong Kong (HK)	364	189	11	9	–	–	28	4	–	31	0.19%	1.25%
Iceland (IC)	–	–	–	3	–	–	–	–	–	–		1.25%
Norway (NO)	476	427	26	20	–	–	44	3	–	47	0.29%	2.00%
Sweden (SE)	751	337	57	133	–	428	53	7	3	63	0.39%	2.00%
Total (countries with existing CCCB rate)	1,601	1,029	97	165	–	428	127	14	3	143	0.88%	7.50%
United Kingdom (GB)	31,050	258,979	1,900	919	–	15,840	7,950	52	154	8,156	50.30%	n/a
United States (US)	42,171	51,882	10,411	3,636	–	12,660	4,018	503	130	4,650	28.68%	n/a
Germany (DE)	4,175	8,268	241	329	–	6	389	21	–	409	2.53%	n/a
Italy (IT)	793	10,067	27	99	–	4	355	9	–	365	2.25%	n/a
South Africa (ZA)	168	7,270	189	100	–	23	294	8	–	302	1.86%	n/a
France (FR)	3,563	3,083	403	835	–	405	227	32	3	262	1.61%	n/a
Ireland (IE)	1,843	3,437	94	28	–	–	225	6	–	231	1.42%	n/a
Netherlands (NI)	801	2,945	195	33	–	–	149	18	–	167	1.03%	n/a
Total (countries with own funds requirements weights 1% or above)	84,564	345,931	13,460	5,979	–	28,938	13,607	649	287	14,542	89.68%	–
Total (rest of the world less than 1% requirement)	12,759	15,132	1,495	1,306	–	754	1,291	193	44	1,528	9.44%	n/a
Total	98,924	362,092	15,052	7,450	–	30,120	15,025	856	334	16,213	100.00%	

Amount of institution-specific countercyclical capital buffer	
Total risk exposure amount	£313,033m
Institution specific countercyclical buffer rate	0.02%
Institution specific countercyclical buffer requirement	£50m

Appendix D – Disclosure on asset encumbrance

Asset encumbrance arises from collateral pledged against secured funding and other collateralised obligations. Barclays funds a portion of trading portfolio assets and other securities via repurchase agreements and other similar borrowing and pledges a portion of customer loans and advances as collateral in securitisation, covered bond and other similar structures. Barclays monitors the mix of secured and unsecured funding sources within the Group's funding plan and seeks to efficiently utilise available collateral to raise secured funding and meet other collateral requirements. The encumbered assets below will not agree to those disclosed in the Annual Report (page 172). The reported values represent the median of the values reported to the regulator via supervisory returns over the period 31 December 2016 to 31 Decemeber 2017. These values include BAGL up to the point of deconsolidation. The Annual Report disclosure is reported as at year end and excludes BAGL. There will also be a difference due to the differences in consolidation between the Annual Report (IFRS consolidation) and the Pillar 3 (regulatory consolidation).

Template A – Assets

		Carrying amount of encumbered assets 010 £bn	Fair value of encumbered assets 040 £bn	Carrying amount of non-encumbered assets 060 £bn	Fair value of non-encumbered assets 090 £bn
010	**Assets of the institution**	**181.9**		**964.0**	
030	Equity instruments	**28.2**	**28.2**	**26.0**	**26.0**
040	Debt securities	**43.9**	**43.9**	**62.3**	**62.3**
120	Other assets	**–**		**280.9**	

Template B – Collateral received

		Fair value of encumbered collateral received or own debt securities issued 010 £bn	Fair value of collateral received or own debt securities issued available for encumbrance 040 £bn
130	**Collateral received by the institution**	**518.5**	**59.9**
150	Equity instruments	**78.8**	**20.2**
160	Debt securities	**412.8**	**39.7**
240	**Own debt securities issued other than own covered bonds or ABSs**	**–**	**0.2**

Template C – Encumbered assets/collateral received and associated liabilities

		Matching liabilities, contingent liabilities or securities lent 010 £bn	Assets, collateral received and own debt securities issued other than covered bonds and ABSs encumbered 030 £bn
010	**Carrying amount of selected financial liabilities**	**212.3**	**430.2**

The Group's median asset encumbrance for 2017 was £181.9bn, which primarily related to firm financing of trading portfolio assets and other securities, cash collateral and secured funding against loans and advances to customers. Encumbered assets have been identified in a manner consistent with the Group's reporting requirements under CRR. Securities and commodity assets are considered encumbered when they have been pledged or used to secure, collateralise or credit enhance a transaction which impacts their transferability and free use.

Appendix E – Disclosures on remuneration

Remuneration

The following tables show the remuneration awards made in respect of the 2017 performance year. The disclosures are made in accordance with Article 450 of the Capital Requirements Regulation, the Basel Committee on Banking Supervision (BCBS) Pillar 3 disclosure requirements standard (March 2017) and the EBA Guidelines on sound remuneration policies to the extent applicable to the 2017 performance year. Given the disclosures have been updated in line with the new requirements prior year information has not been included (except for the 'Number of MRTs by band' table).

Information on decision-making policies for remuneration and the links between pay and performance and Barclays' remuneration policy and process (including information on remuneration design, performance measurement, risk adjustment, deferral and vesting, fixed to variable remuneration ratio and variable remuneration and benefits policies) is contained in the Remuneration report, which can be found on pages 93 to 116 of the 2017 Annual Report.

Total Remuneration

	All employees	Executive Directors	Chairman and Non-executive Directors
Number of individuals	86,401	2	13
Fixed remuneration (£m)	4,853	5	3
Variable remuneration (£m)	1,506	7	0
Total remuneration (£m)	6,359	12	3

Barclays' Material Risk Takers (MRTs)

MRTs are the members of the Barclays PLC Board and Barclays' employees whose professional activities could have a material impact on the Group's risk profile. A total of 1,641 individuals were MRTs in 2017 (2016: 1,561). 'Senior management' means members of the Barclays PLC Board (executive Directors and non-executive Directors) and members of the Barclays Group Executive Committee in accordance with Article 3(9) of CRDIV.

Senior management have a minimum shareholding requirement which for the executive Directors is Barclays' shares worth two times' Total Fixed Pay (Fixed Pay plus Pension) within 5 years of date of appointment, for non-executive Directors is to retain all Barclays' shares bought with £30,000 of their basic fees each year until they retire from the Board and for the Group Executive Committee is Barclays' shares worth two times' salary within 5 years of date of appointment. Other MRTs do not have a minimum shareholding requirement.

Barclays' major business areas are Barclays UK (which encompasses retail and business banking operations in the UK) and Barclays International (which encompasses corporate and investment banking, and cards business in the US). 'Barclays Other' includes all other business areas, internal control functions and corporate functions.

Remuneration for the financial year

		Other MRTs		
	Senior management[a]	Barclays International	Barclays UK	Barclays Other
Fixed remuneration[b]				
Number of individuals	23	982	51	585
Total fixed remuneration (£m)	26.5	486.9	13.8	193.7
Fixed cash remuneration (£m)[c]	18.1	482.8	13.8	193.1
Fixed remuneration in shares (£m)	8.4	4.1	–	0.6
of which subject to holding period (£m)	8.4	4.1	–	0.6
Variable remuneration[b]				
Number of individuals	10	845	46	520
Total variable remuneration (£m)	25.5	473.9	10.9	131.5
Total cash bonus (£m)	9.5	238.9	5.6	70.9
of which deferred (£m)	7.7	139.5	2.5	31.9
Total share bonus (£m)	10.5	235.0	5.3	60.6
of which deferred or subject to holding period (£m)	10.5	235.0	5.3	60.6
Long-term incentive award (£m)[d]	5.5	–	–	–
Total remuneration (£m)	**52.0**	**960.8**	**24.7**	**325.2**

Notes:
a As senior management are comprised of members of the Barclays PLC Board and members of the Barclays Group Executive Committee, it is not appropriate to separate by business area.
b Fixed and variable remuneration take the form of cash and/or shares and pensions and benefits in line with policy. There are no other forms of variable remuneration.
c Fixed cash remuneration includes an estimate for pensions and benefits during the year. Fixed cash remuneration is not subject to holding periods.
d Face value at grant. Outcome contingent on future performance.

Appendix E – Disclosures on remuneration

Deferred remuneration – Senior management

All figures in £m	Senior management		
	Total	Cash	Shares
Balance as at 1 January 2017	**42.2**	**4.8**	**37.4**
Awarded in year	52.2	10.3	41.9
Adjusted through			
ex post explicit adjustments[a]	(2.2)	–	(2.2)
ex post implicit adjustments[b]	(5.4)	–	(5.4)
Forfeited	(0.1)	(0.1)	–
Paid in year	(20.7)	(2.4)	(18.3)
Balance as at 31 December 2017[c]	**66.0**	**12.6**	**53.4**
of which vested	8.6	–	8.6
of which unvested	57.4	12.6	44.8

Deferred Remuneration – Other MRTs (Barclays International)

All figures in £m	Barclays International		
	Total	Cash	Shares
Balance as at 1 January 2017	**1,088.1**	**568.4**	**519.7**
Awarded in year	477.8	177.5	300.3
Adjusted through			
ex post explicit adjustments[a]	–	–	–
ex post implicit adjustments[b]	(66.5)	–	(66.5)
Forfeited	(48.1)	(27.3)	(20.8)
Paid in year	(619.1)	(282.8)	(336.3)
Balance as at 31 December 2017[c]	**832.2**	**435.8**	**396.4**
of which vested	4.5	–	4.5
of which unvested	827.7	435.8	391.9

Deferred Remuneration – Other MRTs (Barclays UK)

All figures in £m	Barclays UK		
	Total	Cash	Shares
Balance as at 1 January 2017	**11.1**	**4.9**	**6.2**
Awarded in year	7.8	2.9	4.9
Adjusted through			
ex post explicit adjustments[a]	–	–	–
ex post implicit adjustments[b]	(0.9)	–	(0.9)
Forfeited	(0.3)	(0.2)	(0.1)
Paid in year	(7.3)	(2.1)	(5.2)
Balance as at 31 December 2017[c]	**10.4**	**5.5**	**4.9**
of which vested	–	–	–
of which unvested	10.4	5.5	4.9

Deferred Remuneration – Other MRTs (Barclays Other)

All figures in £m	Barclays Other		
	Total	Cash	Shares
Balance as at 1 January 2017	**166.4**	**70.7**	**95.7**
Awarded in year	136.0	34.8	101.2
Adjusted through			
ex post explicit adjustments[a]	–	–	–
ex post implicit adjustments[b]	(0.6)	–	(0.6)
Forfeited	(4.0)	(2.3)	(1.7)
Paid in year	(101.2)	(33.6)	(67.6)
Balance as at 31 December 2017[c]	**196.6**	**69.6**	**127.0**
of which vested	1.1	–	1.1
of which unvested	195.5	69.6	125.9

Notes:
a Total reduction due to direct adjustments such as malus and clawback or non-achievement of LTIP performance conditions.
b Total change in remuneration due to movements in share price or exchange rate during the year.
c All outstanding awards are exposed to ex post explicit and/or implicit adjustment.

Appendix E – Disclosures on remuneration

Joining and Severance Payments

		Other MRTs		
	Senior management	Barclays International	Barclays UK	Barclays Other
Sign-on awards				
Number of beneficiaries	–	–	–	–
Made during the year (£m)	–	–	–	–
Buy-out awards				
Number of beneficiaries	1	29	–	15
Made during the year (£m)	23.3	31.5	–	8.2
Severance awards[a]				
Number of beneficiaries	1	24	–	26
Made during the year (£m)	0.4	5.7	–	5.2
of which paid during the year (£m)	0.4	5.1	–	5.0
of which deferred (£m)	-	0.6	–	0.2
Highest individual award (£m)	0.4	1.6	–	1.3

Note:
a Any severance awards that fall outside of paragraph 154 (a) – (c) of the EBA Guidelines are counted for the purposes of the 2:1 pay ratio for the year in which they are paid.

Number of MRTs by band[a]

	2017	2016
Remuneration band	Number of MRTs	Number of MRTs
€1,000,001 to €1,500,000	230	262
€1,500,001 to €2,000,000	112	118
€2,000,001 to €2,500,000	49	55
€2,500,001 to €3,000,000	32	45
€3,000,001 to €3,500,000	18	10
€3,500,001 to €4,000,000	9	13
€4,000,001 to €4,500,000	6	8
€4,500,001 to €5,000,000	4	13
€5,000,001 to €6,000,000	6	4
€6,000,001 to €7,000,000	5	7
€7,000,001 to €8,000,000	1	3
€8,000,001 to €9,000,000	2	2
€9,000,001 to €10,000,000	–	1
€10,000,001 to €11,000,000	–	–
€11,000,001 to €12,000,000	1	–

Note:
a The table is prepared in Euros in accordance with Article 450 of the Capital Requirements Regulation. Data has been converted into Euros using the rates published by the European Commission for financial programming and budget for December of the reported year.

Appendix F – Scope of consolidation (Entity by entity)

Table 100: LI3 Outline of the differences in the scopes of consolidation (entity by entity)

Name of the entity	Method of accounting consolidation	Method of regulatory consolidation: Full consolidation	Proportional consolidation	Neither consolidated nor deducted[1]	Deducted	Description of the entity
Barclays Insurance Services Company Limited	Fully consolidated			●		Activities auxiliary to financial services and insurance activities
Barclays Insurance Guernsey PCC Limited	Fully consolidated			●		Insurance, reinsurance and pension funding, except compulsory social security
Care Principles PropCo1	Fully consolidated			●		Other services activities
CP Topco Limited	Fully consolidated			●		Other services activities
Salisbury Receivables Company LLC	Fully consolidated			●		Financial service activities, except insurance and pension funding
Barclays Insurance U.S. Inc.	Fully consolidated			●		Insurance, reinsurance and pension funding, except compulsory social security
CP Flower Guaranteeco (UK) Limited	Fully consolidated			●		Other services activities
Sheffield Receivables Company LLC	Fully consolidated			●		Financial service activities, except insurance and pension funding
Vaultex UK Ltd	Proportionally consolidated			●		Activities auxiliary to financial services and insurance activities
Crescent Legacy LLC	Equity			●		Real estate activities
Intelligent Processing Solutions Limited	Equity			●		Activities auxiliary to financial services and insurance activities
Sabine Oil & Gas Holdings, Inc	Equity			●		Extraction of crude petroleum and natural gas
EnterCard Holding AB	Equity		●			Financial service activities, except insurance and pension funding
Barclays Funds Investments Limited	Equity		●			Financial service activities, except insurance and pension funding
RS2 Software PLC	Equity		●			Financial service activities, except insurance and pension funding
Barclays Africa Group Holdings Limited	Not consolidated		●			Financial service activities, except insurance and pension funding
Palomino Ltd	Not consolidated	●				Financial service activities, except insurance and pension funding

Note

1 The column "neither consolidated nor deducted" is subject to capital requirements.

Appendix G – CRD IV reference

Table 101: CRD IV reference

CRR ref.	High-level summary	Compliance reference
Scope of disclosure requirements		
431 (1)	Requirement to publish Pillar 3 disclosures	Barclays publishes Pillar 3 disclosures
431 (2)	Firms with permission to use specific operational risk methodologies must disclose operational risk information.	The Operational Risk section on page 170 contains a description of the operational risk framework, and required Pillar 3 disclosures.
431 (3)	Institution must have a policy covering frequency of disclosures. Their verification, comprehensiveness and overall appropriateness.	Barclays has a dedicated Pillar 3 policy.
431 (4)	Explanation of ratings decision upon request	Barclays provides explanations of rating decisions to SMEs whose loan applications were declined in writing, and suggests alternative sources of finance. Barclays participates in a formal appeals process, one of the successful initiatives implemented as part of Business Finance Taskforce, with a government-appointed overseer. In the case of larger corporates, written explanations are not usually requested as direct discussions with relationship managers take place.
Non-material, proprietary or confidential information		
432 (1)	Institutions may omit information that is not material if certain conditions are respected.	Compliance with this provision is covered by Barclays' policy.
432 (2)	Institutions may omit information that is proprietary or confidential if certain conditions are respected.	Compliance with this provision is covered by Barclays' policy.
432 (3)	Where 432 (1) and (2) apply this must be stated in the disclosures, and more general information must be disclosed.	This table specifies where disclosures are omitted.
432 (4)	Use of 432 (1) or (2) is without prejudice to scope of liability for failure to disclose material information	
Frequency of disclosure		
433	Disclosures must be published once a year at a minimum, and more frequently if necessary.	Compliance with this provision is covered by Barclays' policy. See under “Basis of preparation” (page 5).
Means of disclosures		
434 (1)	To include disclosures in one appropriate medium, or provide clear cross-references.	Most disclosures are contained within this document. Signposting directs the reader to other publications where appropriate. Note that remuneration disclosures are contained in a dedicated publication.
434 (2)	Disclosures made under other requirements (e.g. accounting) can be used to satisfy Pillar 3 if appropriate.	Any cross-references to accounting or other disclosures are clearly signposted in this document. In particular, see page 202 for "Location of Risk Disclosures".
Risk management objectives and policies		
435 (1) (a)	Disclose information on strategies and processes; organisational structure, reporting systems and risk mitigation/hedging.	Risk management strategy: pp 121-128
		Credit Risk: pp 129-145
		Counterparty Credit Risk: pp 146-149
		Market Risk: pp 150-157
		Securitisation Exposures: pp 158-161
		Treasury and Capital Risk: pp 162-169
		Operational Risk: pp 170-173
435 (1) (b)		Model Risk: pp 174-175
435 (1) (c)		Conduct Risk: pp 176-177
435 (1) (d)		Reputation Risk: pp 178-179
		Legal Risk: pp 180-181
435 (1) (e)	Inclusion of a declaration approved by the Board on adequacy of risk management arrangements.	See page 125 of the Barclays PLC Pillar 3 Report 2017. This statement covers all Principal Risks.
435 (1) (f)	Inclusion of a concise risk statement approved by the Board.	Please see Page 126 of the Barclays PLC Pillar 3 Report 2017. This statement covers all Principal Risks.
435 (2)	Information on governance arrangements, including information on Board composition and recruitment, and risk committees.	See page 123 for a description of the risk committees. Pages 47-48 of the Barclays PLC Annual Report 2017 contains information on Board composition, experience and recruitment.
435 (2) (a)	Number of directorships held by directors.	Please see pages 47-48 of the Barclays PLC Annual Report 2017.
435 (2) (b)	Recruitment policy of Board members, their experience and expertise.	Please see pages 45-48 of the Barclays PLC Annual Report 2017.
435 (2) (c)	Policy on diversity of Board membership and results against targets.	Please see pages 45-46 of the Barclays PLC Annual Report 2017.
435 (2) (d)	Disclosure of whether a dedicated risk committee is in place, and number of meetings in the year.	Please see pages 64-68 of the Barclays PLC Annual Report 2017.

Appendix G – CRD IV reference

Table 101: CRD IV reference continued

CRR ref.	High-level summary	Compliance reference
435 (2) (e)	Description of information flow on risk to Board.	Figure on page 130 in the risk management strategy section illustrates the reporting structure to Board committees.
Scope of application		
436 (a)	Name of institution	See under "Scope of consolidation" (page 10).
436 (b)	Difference in basis of consolidation for accounting and prudential purposes, naming entities that are:	Figure 1: Summary of regulatory scope of consolidation as at 31 December 2017
436 (b) (i)	Fully consolidated;	Page 192/ Table 100: LI3 Outline of the differences in the scopes of consolidation (entity by entity)
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	See page 167.
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	Barclays makes use of these provisions according to its waiver from the PRA
Own funds		
437 (1)	Requirements regarding capital resources table	Page 19/ Table 7: Capital resources Page 20/ Table 8: Summary of movements in capital resources Pages 23-25/ Table 10: Summary of terms and conditions of capital resources
437 (1) (a)		
437 (1) (b)		
437 (1) (c)		
437 (1) (d) (i)		
437 (1) (d) (ii)		
437 (1) (d) (iii)		
437 (1) (e)		
437 (1) (f)		
437 (2)	EBA to publish implementation standards for points above.	Barclays follows the implementation standards.
Capital requirements		
438 (a)	Summary of institution's approach to assessing adequacy of capital levels.	Discussions of capital calculations are contained in each risk type management section (credit, market and operational). General discussion on capital planning is on pages 130-131 of the 2017 Annual Report.
438 (b)	Result of ICAAP on demand from authorities.	Barclays has not received this request from its regulator.
438 (c)	Capital requirement amounts for credit risk for each Standardised Approach exposure class.	Pages 37-38 and 81-82/ Table 23,59: Minimum capital requirements and exposure for credit risk. Various other tables contain capital requirements throughout the report.
438 (d)	Capital requirements amounts for credit risk for each Internal Ratings Based Approach exposure class .	Pages 37-38 and 81-82 / Table 23,59: Minimum capital requirements and exposure for credit risk Various other tables Page 37: Barclays shows a nil return for equity investments in 2017. Comparative 2016 figures will be shown in a footnote.
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 .	Capital requirements for market risk are disclosed in Page 92/ Table 76: Minimum capital requirement for market risk.
438 (f)	Capital requirement amounts for operational risk, separately for the basic indicator approach, the standardised approach, and the advanced measurement approaches as applicable.	Page 119/ Table 92: Risk weighted assets for operational risk
438 (endnote)	Requirement to disclose specialised lending exposures and equity exposures in the banking book falling under the simple risk weight approach.	Specialised lending exposures: Page 64/ Table 43: Corporate exposures subject to the slotting approach
Exposure to counterparty credit risk (CCR)		
439 (a)	Description of process to assign internal capital and credit limits to CCR exposures.	Pages 146-149; must link to general credit risk section as we do not address assigning limits
439 (b)	Discussion of process to secure collateral and establishing reserves.	Pages 146-149
439 (c)	Discussion of management of wrong-way exposures.	Pages 149
439 (d)	Disclosure of collateral to be provided (outflows) in the event of a ratings downgrade.	See the liquidity risk management section, Appendix pages 163-164
439 (e)	Derivation of net derivative credit exposure.	Page 89/ Table 66: Counterparty credit exposure by approach
439 (f)	Exposure values for mark-to-market, original exposure, standardised and internal model methods.	Page 83/ Table 60: Counterparty credit exposures analysed by financial contract type
439 (g)	Notional value of credit derivative hedges and current credit exposure by type of exposure.	Page 90/ Table 69: Notional value of credit derivative contracts held for hedging purposes
439 (h)	Notional amounts of credit derivative transactions for own credit, intermediation, bought and sold, by product type.	Page 90/ Table 68: Notional exposure associated with credit derivative contracts
439 (i)	Estimate of alpha, if applicable.	The alpha used by Barclays is 1.4. See page 7.

Appendix G – CRD IV reference

Table 101: CRD IV reference continued

CRR ref.	High-level summary	Compliance reference
Capital buffers		
440 (1) (a)	Geographical distribution of relevant credit exposures.	Barclays' countercyclical capital buffer is currently set at 0% for UK exposures. In other jurisdictions where CCyB is being applied, Barclays does not have material relevant exposures. See table 99 for geographic distribution of relevant exposures.
440 (1) (b)	Amount of the institution specific countercyclical capital buffer.	Page 187/Table 99
440 (2)	EBA will issue technical implementation standards related to 440 (1)	Barclays will comply with the standards once applicable.
Indicators of global systemic importance		
441 (1)	Disclosure of the indicators of global systemic importance	Discussed on page 8-9.
441 (2)	EBA will issue technical implementation standards related to 441 (1)	Barclays will comply with the standards once applicable.
Credit risk adjustments		
442 (a)	Disclosure of bank's definitions of past due and impaired.	Impairment on AR page 250; online glossary for "Past Due". Pages 130-137 provide a complete description of credit quality measures.
442 (b)	Approaches for calculating credit risk adjustments.	Pages 133-137
442 (c)	Disclosure of pre-CRM EAD by exposure class.	See points 442 (d), (e), (f) below which break down this total.
442 (d)	Disclosures of pre-CRM EAD by geography and exposure class.	Pages 44-45/ Table 27: Geographic analysis of credit exposure
442 (e)	Disclosures of pre-CRM EAD by industry and exposure class.	Pages 46-47/ Table 28: Industry analysis of credit exposure
442 (f)	Disclosures of pre-CRM EAD by residual maturity and exposure class.	Pages 48-49/ Table 29: Residual maturity analysis credit exposures
442 (g)	Breakdown of impaired, past due, specific and general credit adjustments, and impairment charges for the period, by exposure class or counterparty type.	Page 186/ Table 97: Analysis of impaired and past due exposures and allowance for impairment by exposure type
442 (g) (i)		
442 (g) (ii)		
442 (g) (iii)		
442 (h)	Impaired, past due exposures, by geographical area, and amounts of specific and general impairment for each geography.	Page 186/ Table 98: Geographic analysis of impaired and past due exposures and allowance for impairment
442 (i)	Reconciliation of changes in specific and general credit risk adjustments.	Page 74/ Table 54: Analysis of movement on impairment and amounts taken directly to profit and loss Page 75/ Table 45: Regulatory adjustments to statutory impairment
442 (i) (i)		
442 (i) (ii)		
442 (i) (iii)		
442 (i) (iv)		
442 (i) (v)		
442 endnote	Specific credit risk adjustments recorded to income statement are disclosed separately.	Page 74/ Table 54: Analysis of movement on impairment and amounts taken directly to profit and loss
Unencumbered assets		
443	Disclosures on unencumbered assets	Barclays will implement the technical guidelines/templates issued by the EBA. Barclays may disclose as a separate investor relations communication Page 188.
Use of ECAIs		
444 (a)	Names of the ECAIs used in the calculation of Standardised Approach RWAs, and reasons for any changes	Page 54
444 (b)	Exposure classes associated with each ECAI	Page 54
444 (c)	Explanation of the process for translating external ratings into credit quality steps	Page 54
444 (d)	Mapping of external rating to credit quality steps	Page 54/ Table 34: Relationship of long-term external credit ratings to credit quality steps under the standardised approach Page 54/ Table 35: Credit quality steps and risk weights under the standardised approach
444 (e)	Exposure value pre- and post-credit risk mitigation, by credit quality step.	Pages 55-56/ Table 36: Credit quality step analysis of pre-CRM exposure and capital deductions under the standardised approach Pages 57-58/ Table 37: Credit quality step analysis of post-CRM exposure and capital deductions under the standardised approach
Exposure to market risk		
445	Disclosure of position risk, large exposures exceeding limits, FX, settlement and commodities risk.	Page 97/ Table 76: Minimum capital requirement for market risk
Operational risk		

Appendix G – CRD IV reference

Table 101: CRD IV reference continued

CRR ref.	High-level summary	Compliance reference
446	Disclosure of the scope of approaches used to calculate operational risk, discussion of advanced methodology and external factors considered.	Table 3 page 13, page 119 and 171-173
Exposure in equities not included in the trading book		
447 (a)	Differentiation of exposures based on objectives	Page 77/ Table 57: Fair value of, and gains and losses on equity investments
447 (b)	Recorded and fair value, and actual prices of exchange traded equity where it differs from fair value.	
447 (c)	Types, nature and amounts of the relevant classes of equity exposures.	
447 (d)	Realised cumulative gains and losses on sales over the period.	
447 (e)	Total unrealised gains/losses, latent revaluation gains/ losses, and amounts included within Tier 1 capital.	
Exposure to interest rate risk on positions not included in the trading book		
448 (a)	Nature of risk and key assumptions in measurement models.	Model assumptions on pp 115-117
448 (b)	Variation in earnings or economic value, or other measures used by the bank from upward and downward shocks to interest rates, by currency.	Page 115/ Table 88: Net interest income sensitivity (AEaR) by business unit Page 115/ Table 89: Net interest income sensitivity (AEaR) by currency
Exposure to securitisation positions		
449	Exposure to securitisations positions.	
449 (a)	Objectives in relation to securitisation activity.	Page 159
449 (b)	Nature of other risks in securitised assets, including liquidity.	Pages 159-161
449 (c)	Risks in re-securitisation activity stemming from seniority of underlying securitisations and ultimate underlying assets.	Page 160
449 (d)	The roles played by institutions in the securitisation process.	Pages 159
449 (e)	Indication of the extent of involvement in these roles.	Pages 159
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 159-160
449 (g)	Description of the institution's policies with respect to hedging and unfunded protection, and identification of material hedge counterparties.	Page 159
449 (h)	Approaches to calculation of RWA for securitisations mapped to types of exposures.	Pages 160 "Rating methodologies, ECAIs and RWA calculations"
449 (i)	Types of SSPEs used to securitise third-party exposures, and list of SSPEs.	Page 155 "Sponsoring conduit vehicles"
449 (j)	Summary of accounting policies for securitisations:	Page 159 "Summary of the accounting policies for securitisation activities"
449 (j) (i)	Treatment of sales or financings;	
449 (j) (ii)	Recognition of gains on sales;	
449 (j) (iii)	Approach to valuing securitisation positions;	
449 (j) (iv)	Treatment of synthetic securitisations;	
449 (j) (v)	Valuation of assets awaiting securitisations;	
449 (j) (vi)	Recognition of arrangements that could require the bank to provide support to securitised assets.	
449 (k)	Names of ECAIs used for securitisations.	Page 160
449 (l)	Full description of Internal Assessment Approach.	Page 54/Table 34 "Relationship of long-term external credit ratings to credit quality steps under the standardised approach"
449 (m)	Explanation of changes in quantitative disclosures.	Satisfied throughout; we comment on every quantitative table in the securitisation section.
449 (n)	Banking and trading book securitisation exposures:	
449 (n) (i)	Amount of outstanding exposures securitised;	Pages 103-104/ Table 82: Outstanding amount of exposures securitised – Asset value and impairment charges
449 (n) (ii)	On balance sheet securitisation retained or purchased, and off-balance sheet exposures;	Pages 105-106/ Table 83: Securitisation exposures – by exposure class
449 (n) (iii)	Amount of assets awaiting securitisation;	Page 102/ Table 81: Assets awaiting securitisation
449 (n) (iv)	Early amortisation treatment; aggregate drawn exposures, capital requirements;	There is no applicable data to be published in respect of this table. See page 100
449 (n) (v)	Deducted or 1250%-weighted securitisation positions;	See page 100
449 (n) (vi)	Amount of exposures securitised and recognised gains or losses on sales.	Page 181/ Table 80: Securitisation activity during the year
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;	Pages 107/ Table 84: Securitisation exposures – by capital approach Pages 108/ Table 85: Re-securitisation exposures – by risk weight band

Appendix G – CRD IV reference

Table 101: CRD IV reference continued

CRR ref.	High-level summary	Compliance reference
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.	There is no applicable data to be published in respect of this table. See page 100
449 (p)	Impaired assets and recognised losses related to banking book securitisations, by exposure type	Pages 103-104/ Table 82: Outstanding amount of exposures securitised – Asset value and impairment charges
449 (q)	Exposure and capital requirements for trading book securitisations, separately into traditional	
449 (r)	Whether the institution has provided financial support to securitisation vehicles	There is no applicable data to publish in respect of this table – no support was provided in 2017.
Remuneration disclosures		
450	Remuneration	Appendix E contains the remuneration awards made to Barclays' Material Risk Takers. See the Directors' remuneration report (DRR) of the 2017 Annual Report for other remuneration disclosures.
Leverage		
451 (1) (a)	Leverage ratio, and breakdown of total exposure measure, including reconciliation to financial statements, and derecognised fiduciary items	Page 31/ Table 17: Leverage ratio
451 (1) (b)		Page 31/ Table 17: Leverage ratio
451 (1) (c)		Page 31/ Table 17: Leverage ratio
451 (1) (d)	Description of the risk management approach to mitigate excessive leverage, and factors that impacted the leverage ratio during the year.	See page 166, management of capital risk.
451 (1) (e)		
451 (2)	EBA to publish implementation standards for points above.	Barclays follows the implementation standards.
Use of the IRB approach to credit risk		
452 (a)	Permission for use of the IRB approach from authority	Tables 2 and 3, pages 12-13
452 (b)	Explanation of:	
452 (b) (i)	Internal rating scales, mapped to external ratings;	Page 59/ Table 38: Internal default grade probabilities and mapping to external ratings
452 (b) (ii)	Use of internal ratings for purposes other than capital requirement calculations;	Page 138 "Applications of internal ratings"
452 (b) (iii)	Management and recognition of credit risk mitigation;	Pages 147-149
452 (b) (iv)	Controls around ratings systems.	Pages 139-140. "Management of model risk within Barclays – the control mechanisms for the rating system"
452 (c)	Description of ratings processes for each IRB asset class, provided separately	Page 139. Separate descriptions apply to retail and wholesale classes collectively; hence this is not repeated for each separate class. Pages 140-141/ Table 93: IRB credit risk models selected features.
452 (c) (i)		
452 (c) (ii)		
452 (c) (iii)		
452 (c) (iv)		
452 (c) (v)		
452 (d)	Exposure values by IRB exposure class, separately for Advanced and Foundation IRB.	This is shown throughout the report.
452 (e)	For wholesale exposure classes, disclosed separately by obligor grade:	
452 (e) (i)	Total exposure, separating loans and undrawn exposures where applicable;	Page 60/ Table 39: IRB wholesale obligor grade disclosure for central governments & central banks
452 (e) (ii)	Exposure-weighted average risk weight;	Page 61 / Table 40: IRB wholesale obligor grade disclosure for institutions
452 (e) (iii)	Undrawn commitments and average exposure values by asset class.	Page 62/ Table 41: IRB wholesale obligor grade disclosure for corporates
452 (f)	For retail exposure classes, same disclosures as under 452 (e), by risk grade or EL grade.	Page 65/ Table 44: IRB retail obligor grade disclosure for SME Page 66/ Table 44: IRB retail obligor grade disclosure for secured by mortgages on immovable property Pages 67/ Table 46: IRB retail obligor grade disclosure for revolving retail Pages 68/ Table 47: IRB retail obligor grade disclosure for other retail exposures
452 (g)	Actual specific risk adjustments for the period and explanation of changes.	Page 76/ Table 56: Impairment charges, other value adjustments and individual impairment charges for IRB exposures
452 (h)	Commentary on drivers of losses in preceding period.	
452 (i)	Disclosure of predicted against actual losses for sufficient period, and historical analysis to help assess the performance of the rating system over a sufficient period.	Pages 76/ Table 56: Analysis of expected loss versus actual losses for IRB exposures
		Pages 143-144/ Table 94: Analysis of expected performance versus actual results
452 (j)	For all IRB exposure classes:	
452 (j) (i)	Where applicable, PD and LGD by each country where the bank operates	Appendix A, Page 183-185/ Table 96: PD, LGD, RWA and Exposure by country.
452 (j) (ii)		
Use of credit risk mitigation techniques		
453 (a)	Use of on- and off-balance sheet netting	Pages 147-149

Appendix G – CRD IV reference

Table 101: CRD IV reference continued

CRR ref.	High-level summary	Compliance reference
453 (b)	How collateral valuation is managed	Pages 147-149
453 (c)	Description of types of collateral used by Barclays	Pages 147-149
453 (d)	Types of guarantor and credit derivative counterparty, and their creditworthiness	Pages 147-149
453 (e)	Disclosure of market or credit risk concentrations within risk mitigation exposures	Page 147-149
453 (f)	For exposures under either the Standardised or Foundation IRB approach, disclose the exposure value covered by eligible collateral	Page 50/ Table 30: Collateral and guarantees for IRB approach
453 (g)	Exposures covered by guarantees or credit derivatives	Page 50/ Table 30
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	Pages 172-173
Use of internal market risk models		
455 (a) (i)	Disclosure of the characteristics of the market risk models.	Page 155/ Table 95: Market risk models selected features
455 (a) (ii)	Disclosure of the methodology and description of all-price risk measure and incremental risk charge.	Pages 154-155
455 (a) (iii)	Descriptions of stress tests applied to the portfolios.	Page 153
455 (a) (iv)	Methodology for backtesting and validating the models.	Pages 155-156
455 (b)	Scope of permission for use of the models.	Page 13/ Table 3: The scope of the standardised and IRB approaches
455 (c)	Policies and processes to determine which exposures are to be included in the trading book, and to comply with prudential valuation requirements.	Pages 153-154
455 (d)	High/Low/Mean values over the year of VaR, SVaR, all-price risk measure and incremental risk charge.	Page 96/ Table 74: Analysis of regulatory VaR, SVaR, IRC and All Price Risk Measure
455 (d) (i)		
455 (d) (ii)		Page 95/ Table 73: The daily average, maximum and minimum values of management VaR
455 (d) (iii)		
455 (e)	The elements of the own fund calculation.	Page 97/ Table 76: Minimum capital requirement for market risk
455 (f)	Weighted average liquidity horizons of portfolios covered by models.	Disclosed in model discussions on page 154.
455 (g)	Comparison of end-of-day VaR measures compared with one-day changes in portfolio's value.	Pages 155-156

Appendix H – EBA and BCBS reference

EBA Pillar 3 compliance reference

Table no	High-level summary	Compliance reference	Page
Table 4	Present an outline of the differences in the basis of consolidation for accounting and prudential purposes	Template LI1: Differences between accounting and regulatory scopes of consolidation and the mapping of financial statement categories with regulatory risk categories in accordance with Article 436(b) in the CRR	14
Table 5	Main sources of differences between regulatory exposure amounts and carrying values in financial statements	Template EU LI2 Present the main sources of differences between the financial statements' carrying value amounts and the exposure amounts used for regulatory purposes in accordance with Article 436(c) in the CRR	15
Table 6	Provide an overview of a bank's prudential regulatory metrics	Template KM1: Key metrics Present an overview of prudential regulatory metrics as per the BCBS Pillar 3 disclosure requirements –consolidated and enhanced framework	18
Table 12	Overview of risk weighted assets by risk type and capital requirements	Template EU OV1 RWAs and minimum capital requirements under Part Three, Title I, Chapter 1 of the CRR. in accordance with Article 438(c) to (f) in the CRR	27
Table 14	Flow statement explaining variations in the credit risk-weighted assets (RWA) under an IRB approach and the corresponding capital requirements	Template EU CR8 Present a flow statement explaining variations in the credit RWAs of exposures for which the risk-weighted amount is determined in accordance with Part Three, Title II, Chapter 3 of the CRR and the corresponding capital requirement as specified in Article 92(3)(a).	28
Table 15	Flow statement explaining variations in the counterparty credit risk-weighted assets (RWA) under the IMM approach and the corresponding capital requirements	Template EU CCR7 Present a flow statement explaining changes in the CCR RWAs determined under the IMM for CCR (derivatives and SFTs) in accordance with Part Three, Title II, Chapter 6 of the CRR.	29
Table 16	Flow statement explaining variations in the market risk-weighted assets (RWA) under the IMA approach and the corresponding capital requirements	Template EU MR2-B Present a flow statement explaining variations in the market risk RWAs (as specified in Article 92(4)(b)) determined under an Part Three, Title IV, Chapter 5 of the CRR (IMA).	29
Table 18	Summary reconciliation of accounting assets and leverage ratio exposures	Template LRSum Reconciliation of the total leverage exposure and comprises of total IFRS assets used for statutory purposes, regulatory consolidation and other leverage adjustments (as per Commission implementing regulation-EU 2016/200)	33
Table 19	Leverage ratio common disclosure	Template LRCom Leverage ratio calculation and includes additional breakdowns for the leverage exposure measure (as per Commission implementing regulation-EU 2016/200).	33
Table 20	Split-up of on balance sheet exposures (excluding derivatives, SFTs and exempted exposures)	Template LRSpl Breakdown of the on-balance sheet exposures excluding derivatives, SFTs and exempted exposures, by asset class as per row 1 on LRCom (as per Commission implementing regulation-EU 2016/200)	34
Table 21	Present the breakdown of a bank's cash outflows and cash inflows, as well as its available high-quality liquid assets (HQLA)	Template LIQ1 Liquidity Coverage Ratio Present the breakdown of a bank's cash outflows and cash inflows, as well as its available high-quality liquid assets (HQLA), as measured and defined according to the LCR standard (BCBS Pillar 3 disclosure requirements – consolidated and enhanced framework)	34
Table 22	Present the breakdown of PVA for all assets measured at fair value (marked to market or marked to model) and for which PVA are required	PV1 Prudent valuation adjustments (PVA) Present a breakdown of the constituent elements of the bank's PVA according to the requirements of BCBS Pillar 3 disclosure requirements –consolidated and enhanced framework	35
Table 24	Total and average net amount of exposures	Template EU CRB-B Provide the total and the average amount of net exposures over the period by exposure class in accordance with Article 442(c)	39
Table 27	Geographical breakdown of exposures	Template EU CRB-C Provide a breakdown of exposures by geographical areas and exposure classes in accordance with Article 442(d)	44
Table 28	Concentration of exposures by industry and exposure classes	Template EU CRB-D Provide a breakdown of exposures by industry or counterparty types and exposure classes in accordance with Article 442(e)	46
Table 29	Residual maturity analysis of credit exposure	Template EU CRB-E Provide a breakdown of net exposures by residual maturity and exposure classes in accordance with Article 442(f)	48

Appendix H – EBA and BCBS reference

Table no	High-level summary	Compliance reference	Page
Table 31	Disclose the extent of the use of CRM techniques	Template EU CR3 Present information on exposure value covered by financial collateral, other collateral, guarantees and credit derivatives and the outstanding secured exposures and the secured amount within those exposures in accordance with Article 453(f) and (g),	51
Table 32	CR4 Standardised approach - CCF and CRM effects	Template EU CR4 Paragraph 99 of the guidelines requires institutions to show the effect of all CRM techniques applied in accordance with Part Three, Title II, Chapter 4 of the CRR, including the financial collateral simple method and the financial collateral comprehensive method in the application of Article 221 and Article 22 of the same regulation on standardised approach capital requirements' calculations.	52
Table 33	This table provides the effect on the RWAs of credit derivatives used as CRM techniques	Template EU CR7 The template applies to all institutions using one of the approaches included in the template in accordance with Article 153(5) or Article 155(2)	53
Table 36	Analysis of credit risk exposures by asset classes and risk weight before the application of CCF and CRM under the standardised approach	Template EU CR5-A Regulatory exposure values broken down by risk weights. Institutions should disclose exposures pre conversion factor and pre risk mitigation techniques. The risk weight used for the breakdown corresponds to the different credit quality steps applicable in accordance with Article 113 to Article 134 in Part Three, Title II, Chapter 2 of the CRR	55
Table 37	Analysis of credit risk exposures by asset classes and risk weight after the application of CCF and CRM under the standardised approach	Template EU CR5-B Regulatory exposure values broken down by risk weights. Institutions should disclose exposures post conversion factor and post risk mitigation techniques. The risk weight used for the breakdown corresponds to the different credit quality steps applicable in accordance with Article 113 to Article 134 in Part Three, Title II, Chapter 2 of the CRR	57
Tables 39-47	Analysis of credit risk exposures by exposure classes and PD grades	Template EU CR6 In the application of Article 452(e) and (g), this template applies to institutions included in paragraph 7 of these guidelines using either the FIRB approach or the AIRB approach for some or all of their exposures in accordance with Part Three, Title II, Chapter 3 of the CRR	60-68
Table 48	This table provides Credit quality of exposures by exposure class and instrument	Template EU CR1-A The effect of credit derivatives on the IRB approach capital requirements' calculations. The pre-credit derivative RWAs before taking account of the credit derivatives mitigation effect has been selected to assess the impact of credit derivatives on RWAs in accordance Article 453(g)	69
Table 49	This table present credit quality of exposures by industry or counterparty types	Template EU CR1-B Provide a comprehensive picture of the credit quality of an institution's on-balance-sheet and off-balance0sheet exposures by industry in accordance with Article 442(g)	71
Table 50	Credit quality of exposures by geography	Template EU CR1-C Provide a comprehensive picture of the credit quality of an institution's on-balance-sheet and off-balance sheet exposures by geography in accordance with Article 442(h)	72
Table 51	Table present the ageing of past-due exposures	Template EU CR1-D Provide an ageing analysis of accounting on-balance-sheet past-due exposures regardless of their impairment status	73
Table 52	Table present the analysis of non-performing and forborne exposures	Template EU CR1-E Provide an overview of non-performing and forborne exposures as per the Commission Implementing Regulation (EU) No 680/2014	73
Table 53	Table present changes in the stock of defaulted and impaired loans and debt securities	Template EU CR2-B This table present the changes in an institution's stock of defaulted loans and debt securities in accordance to Article 442(i) of the CRR	74
Table 54	Table present changes in the stock of general and specific credit risk adjustments	Template EU CR2-A This table present the changes in an institution's stock of defaulted loans and debt securities in accordance to Article 442(i) of the CRR	74
Table 60	Analysis of counterparty credit risk exposures by approach	Template EU CCR1 Template present a comprehensive view of the methods used to calculate CCR regulatory requirements and the main parameters used within each method in accordance with Article 439(e), (f) and (i) of the CRR	83

Appendix H – EBA and BCBS reference

Table no	High-level summary	Compliance reference	Page
Table 61	Analysis of counterparty credit risk exposures by regulatory portfolio and risk weight under standardised approach	Template EU CCR3 This applies to institution using the credit risk standardised approach to compute RWAs for CCR exposures in accordance with Article 107 in the CRR, irrespective of the approach used to determine EAD in accordance with Part Three, Title II, Chapter 6 of the same regulation.	84
Table 62-64	Analysis of counterparty credit risk exposures by exposure classes and PD grades	Template EU CCR4 RWAs and parameters used in RWA calculations for exposures subject to the CCR framework (excluding CVA charges or exposures cleared through a CCP) and where the credit risk approach used (in accordance with Article 107 in the CRR) to compute RWAs is an IRB approach	86-87
Table 65	This table provides a quantitative disclosure of counterparty credit risk specialised lending and equity exposures using the simple risk weight approach.	Template EU CR10 (CCR) The template applies to all institutions using one of the approaches included in the template in accordance with Article 153(5) or Article 155(2)	88
Table 66	This table shows the impact of netting and collateral held on exposure values	Template EU CCR5-A Provide an overview of the impact of netting and collateral held on exposures for which the exposure value is measured in accordance with in accordance with Article 439 (e)	89
Table 67	This table shows the composition of collateral for exposures to CCR	Template EU CCR5-B Provide a breakdown of all types of collateral (cash, sovereign debt, corporate bonds, etc.) posted or received by banks to support or reduce CCR exposures related to derivative transactions or to SFTs, including transactions cleared through a CCP.	89
Table 69	This table shows credit derivatives exposures	Template EU CCR6 Provide a breakdown extent of an institution's exposures to credit derivative transactions broken down between derivatives bought or sold in accordance with Article 439(g) and (h)	90
Table 70	This table shows the EAD and RWAs corresponding to exposures to central counterparties	Template EU CCR8 Provide a comprehensive picture of the institution's exposures to CCPs in the scope of Part Three, Title II, Chapter 6, Section 9 of the CRR	91
Table 71	This table provide CVA regulatory calculations (with a breakdown by standardised and advanced approaches).	Template EU CCR2 The template applies to all institutions with exposures subject to CVA capital charges in accordance with Part Three, Title VI, Article 382 in the CRR.	92
Table NA	Present a comparison of the results of estimates from the regulatory VaR model	Template EU MR4 Present a comparison of the results of estimates from the regulatory VaR model approved in application of Part Three, Title IV, Chapter 5 of Regulation (EU) 575/2013 with both hypothetical and actual trading outcomes, to highlight the frequency and the extent of the backtesting exceptions, and to give an analysis of the main outliers in backtested results	156
Table 74	This template display the values (maximum, minimum, average and the ending for the reporting period) resulting from the different types of models approved to be used for computing the market risk regulatory capital charge at the group level before any additional capital charge is applied	Template EU MR3 Outputs of internal models approved for use in accordance with Part Three, Title IV, Chapter 5 of the CRR for regulatory capital purposes at the group level (according to the scope of regulatory consolidation as per Part One, Title II of the same regulation).	96
Table 77	Market risk under Standardised approach	Template MR1 Capital requirements and RWAs (as specified in Article 92(4) (b) in the CRR).	98
Table 78	Market risk under Internal models approach	Template MR2-A Capital requirements and RWAs (as specified in Article 92(4) (b) of the CRR).	98
Table 94	This table provides backtesting data to validate the reliability of PD calculations	Template EU CR9 The template applies to all institutions included in paragraph 7 of these guidelines using the AIRB approach and/or the FIRB approach. Where an institution makes use of an FIRB approach for certain exposures and an AIRB approach for others, it must disclose two separate sets of portfolio breakdowns in separate templates.	143
Table 99	This table provide a geographical distribution of credit exposures by country	CCyB Template requires institutions to disclose the geographical distribution by country of credit exposures of an institution that are relevant for the calculation of its CCyB in accordance with Article 140(4) of the CRD and Article 440 of CRR	187
Table 100	Outline of the differences in the scopes of consolidation (entity by entity)	Template EU LI3 Provide information on the consolidation method applied for each entity within the accounting and the regulatory scopes of consolidation in accordance to Article 436 (b)	192

Location of risk disclosures

Barclays' Risk disclosures are located across the Annual Report and Pillar 3 Report

Risk management

Overview of Barclays' approach to risk management. A detailed overview together with more specific information on policies that the Group determines to be of particular significance in the current operating environment can be found in Barclays PLC Pillar 3 Report 2017 or at Barclays.com.

	Annual Report	Pillar 3 Report
▪ Enterprise Risk Management Framework (ERMF)	119	122
▪ Principal Risks	119	122
▪ Risk Appetite for the Principal Risks	119	122
▪ Roles and responsibilities in the management of risk	119	122
▪ Frameworks, Policies and Standards	n/a	125
▪ Assurance	n/a	125
▪ Effectiveness of risk management arrangements	n/a	125
▪ Learning from our mistakes	n/a	125
▪ Barclays' Risk Culture	120	125
▪ Group-wide risk management tools	n/a	126
▪ Risk management in the setting of strategy	n/a	128

Material existing and emerging risks

Insight into the level of risk across our business and portfolios, the material existing and emerging risks and uncertainties we face and the key areas of management focus.

▪ Material existing and emerging risks potentially impacting more than one Principal Risk	121	n/a
▪ Credit risk	123	n/a
▪ Market risk	123	n/a
▪ Treasury and capital risk	124	n/a
▪ Operational risk	124	n/a
▪ Model risk	125	n/a
▪ Conduct risk	125	n/a
▪ Reputation risk	126	n/a
▪ Legal risk and legal, competition and regulatory matters	126	n/a

Principal Risk management

Barclays' approach to risk management for each Principal Risk with focus on organisation and structure and roles and responsibilities.

▪ Credit risk management	127	129
▪ Management of credit risk mitigation techniques and counterparty credit risk	n/a	146
▪ Market risk management	129	150
▪ Management of securitisation exposures	n/a	158
▪ Treasury and capital risk management	130	162
▪ Operational risk management	132	170
▪ Model risk management	134	174
▪ Conduct risk management	135	176
▪ Reputation risk management	136	178
▪ Legal risk management	137	180

Risk performance

Credit risk: The risk of loss to the firm from the failure of clients, customers or counterparties, including sovereigns, to fully honour their obligations to the firm, including the whole and timely payment of principal, interest, collateral and other receivables.

▪ Credit risk overview and summary of performance	139	n/a
▪ Analysis of the balance sheet	139	n/a
▪ The Group's maximum exposure and collateral and other credit enhancements held	139	n/a
▪ The Group's approach to management and representation of credit quality	142	n/a
▪ Analysis of the concentration of credit risk	144	n/a
▪ Loans and advances to customers and banks	147	n/a
▪ Analysis of specific portfolios and asset types	148	n/a
▪ Analysis of problem loans	151	n/a
▪ Impairment	156	n/a
▪ Analysis of debt securities	157	n/a
▪ Analysis of derivatives	157	n/a

Market risk: The risk of a loss arising from potential adverse changes in the value of the firm's assets and liabilities from fluctuation in market variables including, but not limited to, interest rates, foreign exchange, equity prices, commodity prices, credit spreads, implied volatilities and asset correlations.

▪ Market risk overview and summary of performance	160	93
▪ Balance sheet view of trading and banking books	161	94
▪ Traded Market risk	162	95
▪ Review of regulatory measures	163	96

Location of risk disclosures

Risk performance continued

		Annual Report	Pillar 3 Report
Treasury and capital risk – Liquidity: The risk that the firm is unable to meet its contractual or contingent obligations or that it does not have the appropriate amount, tenor and composition of funding and liquidity to support its assets.	▪ Liquidity risk overview and summary of performance	166	n/a
	▪ Liquidity risk stress testing	166	n/a
	▪ Liquidity pool	168	n/a
	▪ Funding structure and funding relationships	169	n/a
	▪ Encumbrance	171	188
	▪ Credit ratings	174	n/a
	▪ Contractual maturity of financial assets and liabilities	175	n/a
Treasury and capital risk – Capital: The risk that the firm has an insufficient level or composition of capital to support its normal business activities and to meet its regulatory capital requirements under normal operating environments or stressed conditions (both actual and as defined for internal planning or regulatory testing purposes). This includes the risk from the firm's pension plans.	▪ Capital risk overview and summary of performance	179	n/a
	▪ Regulatory minimum capital and leverage requirements	180	8
	▪ Capital resources	181	19
	▪ Risk weighted assets	183	26
	▪ Leverage ratios and exposures	184	31
	▪ Foreign exchange risk	185	113
	▪ Pension risk review	186	114
	▪ Minimum requirement for own funds and eligible liabilities	187	34
Treasury and capital risk – Interest rate risk in the banking book The risk that the firm is exposed to capital or income volatility because of a mismatch between the interest rate exposures of its (non-traded) assets and liabilities.	▪ Interest rate risk in the banking book overview and summary of performance	188	112
	▪ Net interest income sensitivity	189	115
	▪ Economic capital by business unit	189	116
	▪ Analysis of equity sensitivity	190	116
	▪ Volatility of the available for sale portfolio in the liquidity pool	190	117
Operational risk: The risk of loss to the firm from inadequate or failed processes or systems, human factors or due to external events (for example fraud) where the root cause is not due to credit or market risks.	▪ Operational risk overview and summary of performance	191	118
	▪ Operational risk profile	192	120
Model risk: The risk of the potential adverse consequences from financial assessments or decisions based on incorrect or misused model outputs and reports.	▪ Model risk overview and summary of performance	193	n/a
Conduct risk: The risk of detriment to customers, clients, market integrity, competition or Barclays from the inappropriate supply of financial services, including instances of wilful or negligent misconduct.	▪ Conduct risk overview and summary of performance	194	n/a
Reputation risk: The risk that an action, transaction, investment or event will reduce trust in the firm's integrity and competence by clients, counterparties, investors, regulators, employees or the public.	▪ Reputation risk overview and summary of performance	195	n/a
Legal risk: The risk of loss or imposition of penalties, damages or fines from the failure of the firm to meet its legal obligations including regulatory or contractual requirements.	▪ Legal risk overview and summary of performance	196	n/a

Appendices

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Note

1 Pages 93 to 116 of the Barclays PLC Annual Report 2017 (which is available at www.barclays.com/annualreport) include information required to be disclosed on remuneration in accordance with CRR article 450.

BARCLAYS

Positioned for growth, sharing and success

Barclays PLC
Pillar 3 Report 2017

Front cover image

Combining strengths, making space to innovate
Combining the talents and strengths of 14,000 colleagues across four sites in India, Barclays' new Global Service Centre is creating space for true innovation. It's through this centre that colleagues like Sainath Patil in the Automation team proactively find opportunities to provide innovative, technology-driven solutions and services.

Forward-looking statement
This document contains certain forward-looking statements within the meaning of Section 21E of the US Securities Exchange Act of 1934, as amended, and Section 27A of the US Securities Act of 1933, as amended, with respect to the Group. Barclays cautions readers that no forward-looking statement is a guarantee of future performance and that actual results or other financial condition or performance measures could differ materially from those contained in the forward-looking statements. These forward-looking statements can be identified by the fact that they do not relate only to historical or current facts. Forward-looking statements sometimes use words such as 'may', 'will', 'seek', 'continue', 'aim', 'anticipate', 'target', 'projected', 'expect', 'estimate', 'intend', 'plan', 'goal', 'believe', 'achieve' or other words of similar meaning. Examples of forward-looking statements include, among others, statements or guidance regarding the Group's future financial position, income growth, assets, impairment charges, provisions, notable items, business strategy, structural reform, capital, leverage and other regulatory ratios, payment of dividends (including dividend pay-out ratios and expected payment strategies), projected levels of growth in the banking and financial markets, projected costs or savings, original and revised commitments and targets in connection with the strategic cost programme and the Group Strategy Update, rundown of assets and businesses within Barclays Non-Core, sell down of the Group's interest in Barclays Africa Group Limited, estimates of capital expenditures and plans and objectives for future operations, projected employee numbers and other statements that are not historical fact. By their nature, forward-looking statements involve risk and uncertainty because they relate to future events and circumstances. These may be affected by changes in legislation, the development of standards and interpretations under International Financial Reporting Standards, evolving practices with regard to the interpretation and application of accounting and regulatory standards, the outcome of current and future legal proceedings and regulatory investigations, future levels of conduct provisions, future levels of notable items, the policies and actions of governmental and regulatory authorities, geopolitical risks and the impact of competition. In addition, factors including (but not limited to) the following may have an effect: capital, leverage and other regulatory rules (including with regard to the future structure of the Group) applicable to past, current and future periods; UK, US, Africa, Eurozone and global macroeconomic and business conditions; the effects of continued volatility in credit markets; market related risks such as changes in interest rates and foreign exchange rates; effects of changes in valuation of credit market exposures; changes in valuation of issued securities; volatility in capital markets; changes in credit ratings of any entities within the Group or any securities issued by such entities; the potential for one or more countries exiting the Eurozone; the implications of the results of the 23 June 2016 referendum in the United Kingdom and the disruption that may result in the UK and globally from the withdrawal of the United Kingdom from the European Union; the implementation of the strategic cost programme; and the success of future acquisitions, disposals and other strategic transactions. A number of these influences and factors are beyond the Group's control. As a result, the Group's actual future results, dividend payments, and capital and leverage ratios may differ materially from the plans, goals, expectations and guidance set forth in the Group's forward-looking statements. Additional risks and factors which may impact the Group's future financial condition and performance are identified in our filings with the SEC (including, without limitation, our annual report on form 20-F for the fiscal year ended 31 December 2016), which are available on the SEC's website at www.sec.gov.
Subject to our obligations under the applicable laws and regulations of the United Kingdom and the United States in relation to disclosure and ongoing information, we undertake no obligation to update publicly or revise any forward looking statements, whether as a result of new information, future events or otherwise.

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