



Contents

Introduction	Summary of risk profile	03
	Notes on basis of preparation	05
	Scope of application of Basel rules	06

Risk and capital position review	Analysis of treasury and capital risk	16
	Analysis of credit risk	48
	Analysis of counterparty credit risk	104
	Analysis of market risk	122
	Analysis of securitisation exposures	129
	Analysis of operational risk	144

Barclays' approach to managing risks		
	Risk management strategy, governance and risk culture	148
	Management of credit risk and the internal ratings-based approach	157
	Management of credit risk mitigation techniques and counterparty credit risk	175
	Management of market risk	178
	Management of securitisation exposures	187
	Management of treasury and capital risk	191
	Management of operational risk	198
	Management of model risk	202
	Management of conduct risk	205
	Management of reputation risk	207
	Management of legal risk	209

Appendices	
Appendix A – PD, LGD, RWA and exposure by country	212
Appendix B – Analysis of impairment	216
Appendix C – Countercyclical buffer	218
Appendix D – Disclosure on asset encumbrance	220
Appendix E – Disclosures on remuneration	223
Appendix F – CRD IV reference	231
Appendix G – EBA and BCBS reference	238
Location of risk disclosures	243
Index of tables	245



See page 243 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.com/annualreport

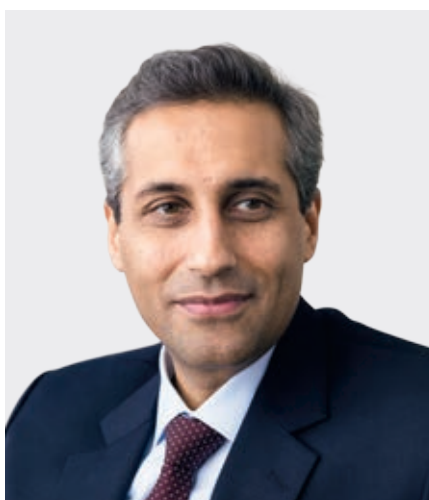
Capital position and risk management in 2019

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.



C.S. Venkatakrisnan
Chief Risk Officer



Tushar Morzaria
Group Finance Director

The CET1 ratio increased to 13.8% (December 2018: 13.2%) as a result of a £16.8bn RWA reduction to £295.1bn partially offset by a £0.3bn CET1 capital reduction to £40.8bn

The average UK leverage ratio remained stable at 4.5% (December 2018: 4.5%) primarily driven by a net increase in AT1 Capital, offset by a modest increase in leverage exposure to £1,143bn (December 2018: £1,110bn)

The UK Leverage also remained stable at 5.1% (December 2018: 5.1%)

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 243 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 2019, the Group's performance was in line with its risk appetite. The following risk metrics reflect the Group's risk profile:

Common Equity Tier 1 ratio

13.8%

2018: 13.2%

[See page 18](#)

Average UK leverage ratio

4.5%

2018: 4.5%

Average Management Value at Risk

£23m

2018: £21m

[See page 124](#)

Common Equity Tier 1 capital

£40.8bn

2018: £41.1bn

[See page 18](#)

UK leverage ratio

5.1%

2018: 5.1%

Liquidity coverage ratio

160%

2018: 169%

[See page 40](#)

Risk weighted assets

£295.1bn

2018: £311.9bn

[See page 26](#)

Loan loss rate

55bps

2018: 44bps

[See page 159](#)

Own funds and eligible liabilities ratio

32.8%

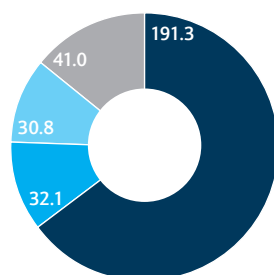
2018: 30.5%

[See page 35](#)

Summary of risk profile

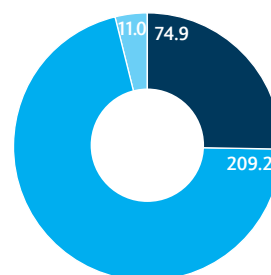
- CET1 capital decreased £0.3bn to £40.8bn as underlying profit generation of £5.0bn, was more than offset by dividends paid and foreseen of £2.4bn, the additional provision for PPI of £1.4bn, pension deficit reduction contribution payments of £0.5bn, a decrease in the currency translation reserve of £0.5bn mainly driven by the depreciation of period end USD against GBP, and a loss on the redemption of Additional Tier 1 (AT1) securities of £0.4bn
- RWAs decreased by £16.8bn to £295.1bn primarily driven by the reduction in the Group's operational risk RWA as well as the depreciation of period end USD against GBP
- The average UK leverage ratio remained stable at 4.5% (December 2018: 4.5%). Tier 1 capital increased £1.4bn to £51.8bn, which included a net increase in AT1 capital, partially offset by a modest increase in exposure of £33bn to £1,143bn primarily driven by SFTs and weighted off-balance sheet commitments. The UK Leverage also remained stable at 5.1% (December 2018: 5.1%)
- Credit Impairment charges increased to £1.9bn (December 2018: £1.5bn). The 2019 charge includes a modest increase from macroeconomic scenario updates and an overall reduction in unsecured gross exposures. Prior year comparatives include the impact of favourable macroeconomic scenario updates in Q3 2018 and a £150m charge regarding the anticipated economic uncertainty in the UK. Credit metrics remained stable across both secured and unsecured lending, reflecting the continued prudent management of credit risk. The Group loan loss rate was 55bps (December 2018: 44bps)
- Average management VaR increased by 10% to £23m in 2019 (December 2018: £21m) and remained relatively stable during the period. The marginal increase in average management VaR in 2019 was due to slightly higher equity and credit risk compared to 2018
- The liquidity coverage ratio (LCR) remained well above the 100% regulatory requirement at 160% (December 2018: 169%), equivalent to a surplus of £78bn (December 2018: £90bn). The liquidity pool, LCR and surplus have been managed down through the course of the year, supporting increased business funding requirements while maintaining a conservative liquidity position

RWAs decreased £16.8bn to £295.1bn (December 2018: £311.9bn):



	2019	2018
■ Credit risk	£191.3bn	£195.6bn
■ Counterparty credit risk	£32.1bn	£28.8bn
■ Market risk	£30.8bn	£30.8bn
■ Operational risk	£41.0bn	£56.7bn

- Credit risk decreased by £4.3bn to £191.3bn primarily driven by depreciation of period end USD against GBP, improvements in risk profile, partially offset by an increase due to recalibration of modelled wholesale RWAs
- Counterparty credit risk increased by £3.3bn to £32.1bn primarily due to increase in trading activity across both derivatives and Securities Financing Transactions (SFT)
- Market risk RWAs remained broadly stable at £30.8bn
- Operational risk decreased by £15.7bn to £41.0bn primarily due to the removal of the Group's operational risk floor



	2019	2018
■ Barclays UK	£74.9bn	£75.2bn
■ Barclays International	£209.2bn	£210.7bn
■ Head Office	£11.0bn	£26.0bn

- Barclays UK decreased by £0.3bn to £74.9bn primarily driven by a reduction in UK cards (reflecting increased debt sales, lower interest earning lending balances and improved risk profile) offset by growth in mortgages
- Barclays International decreased £1.5bn to £209.2bn predominately driven by depreciation of period end USD against GBP
- Barclays Head Office RWAs decreased £15.0bn to £11.0bn mainly driven by the removal of the Group's operational risk RWAs floor

→ We hold RWAs for credit (discussed on page 48), market (page 122), and operational (page 144) risks. See pages 26-29 for the main drivers of movements for each of these risk types.

→ Please see page 149 for a discussion of risk appetite, and page 127 of the annual report for a discussion of material and emerging risks.

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 IV', 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 Pillar 3 disclosures have also been prepared in accordance with the European Banking Authority "Guidelines on materiality, proprietary and confidentiality and on disclosure frequency under Articles 432(1), 432(2) and 433 of CRR" and EBA "Guidelines on disclosure requirements under Part Eight of Regulation (EU) No 575/2013", as amended by Regulation (EU) 2019/876, in effect at the reporting date.



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

Key changes in the 2019 Pillar 3 Report Implementation of Capital Requirements Regulation II (CRR II)

On 27 June 2019, CRR II came into force amending CRR. As an amending regulation, the existing provisions of CRR apply unless they are amended by CRR II. Certain provisions took immediate effect and these primarily relate to MREL. Such amendments include changes to qualifying criteria for CET1, AT1 and Tier 2 instruments, the inclusion of additional holdings eligible for deduction, an amendment to the treatment of deferred tax assets and the introduction of requirements for MREL. Grandfathering and transitional provisions relating to MREL have also been introduced. Other CRR II amendments are expected to take effect from 28 June 2021. Certain aspects of CRR II are dependent on final technical standards to be issued by the European Banking Authority (EBA) and adopted by the European Commission as well as UK implementation of the rules.

Impact of structural reform

From 1 January 2019, as part of structural reform, Barclays Bank UK Group became regulated by the PRA as a ring-fenced bank. The Pillar 3 disclosures for Barclays Bank UK Group are published in a standalone document "Barclays Bank UK PLC Pillar 3" report.

Minimum requirements for own funds and eligible liabilities (MREL)

CRR II requirements relating to own funds and eligible liabilities came into force from 27 June 2019, which amended CRR. As an amending regulation, the existing provisions of CRR apply unless they are amended by

CRR II. Eligible liabilities have been calculated reflecting the Group's interpretation of the current rules and guidance.

Certain aspects of CRR II are dependent on the final technical standards to be issued by the EBA and adopted by the European Commission as well as UK implementation of the rules.

The related disclosures (Tables 19 to 23) have been prepared in accordance with CRR as amended by CRR II, using the uniform format set out in the BCBS Standard on Pillar 3 disclosure requirements, as the EU format for disclosure is yet to be agreed.

Disclosure of Non-performing exposure (NPEs) and forbore exposure

This report includes 4 new tables (Tables 57-60) per the EBA guideline (EBA/GL/2018/10) published in December 2018 which was introduced to improve the uniform disclosure format for the information on NPEs, forbore exposures and foreclosed assets.

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

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

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 on the Group's balance sheet is reported as a drawn balance only. This is one of the reasons why exposure values in the Pillar 3 report differ from asset values as reported in the Annual Report.



Table 4 provides a reconciliation between IFRS and EAD for credit risk. Table 63 provides a reconciliation between the IFRS impairment provision and the regulatory impairment allowance.

Policy, validation and sign-off

Throughout the year ended 31 December 2019, and to date, Barclays has operated a framework of disclosure controls and procedures to ensure the completeness and accuracy of the Group's Pillar 3 disclosure.



See Appendix 231 for a reference to Barclays' compliance with the CRD IV.

Barclays is committed to operating within a strong system of internal controls. A framework of disclosure controls and procedures are in place to support the approval of the Group's external financial disclosures. Specific governance committees are responsible for examining the Group's external 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).

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"

C.S Venkatakrisnan
Chief Risk Officer

Tushar Morzaria
Group Finance Director

Scope of application of Basel rules

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

Tables 1 and 2 show the scope of permission and calculation approaches that summarises the various approaches to calculate RWAs, and Barclays' permission to use them.

Table 3 show the mapping of financial statement categories to regulatory risk types and a reconciliation of financial statement carrying values against regulatory exposures.

Table 5 shows the entities which have a different method of consolidation between accounting and regulatory balance sheets.

Table 8 shows how IFRS balances contribute to the regulatory scope of consolidation on a line-by-line basis.

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 regulatory capital requirements including 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 and the Capital Requirements Regulations (CRR)

Calculation of capital for credit risk

The credit risk RWA 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 166 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, external credit ratings and maturity
- Internal Ratings-Based approach (IRB): 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 48 for more details on capital requirements for credit risk. Also, the Internal Ratings-Based approach to credit risk section on pages 76-85 discusses credit risk modeling in detail.

Calculation of capital for counterparty credit risk

CCR applies to derivative and SFT exposures. It differs from credit risk, above, in how the EAD is calculated. CCR 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 exposures:

- 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 (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, which allows the use of internal models to calculate an effective expected positive exposure (EEPE), multiplied by a factor stipulated by the regulator called alpha. Barclays uses this approach for certain derivative and SFT exposures and its alpha is currently set at 1.4
- 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 104 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: this approach takes into account 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 capital 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 121 for more details on CVA.

Calculation of capital for market risk

RWA calculations for market risk assess the losses from extreme market driven movements in the prices of financial assets and liabilities. Two approaches can be used:

- 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: subject to regulatory permission, the Group 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 122 for more details on capital requirements for market risk.

Application of the Basel framework

Calculation of capital for securitisation exposures

The securitisation framework has been replaced with a new framework (EU) 2017/2401&2 effective from 01/01/2019. This new framework provides a revised hierarchy of methods to calculate risk-weight for securitisation positions. Securitisation exposures initiated from 01/01/2019 are risk weighted according to the new framework, whilst existing exposures effective until 31/12/2019 are subject to grandfathering provisions.



See page 129 for more details on capital requirements for securitisation exposures.

Calculation of capital for operational risk

Capital set aside for operational risk is deemed to cover the losses or costs resulting from human factors, inadequate or failed internal processes and systems or external events.

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

- Standardised approach (TSA): Under the TSA, banks are required to hold regulatory capital for operational risk equal to the annual average, calculated over a rolling three-year period, of the relevant income indicator (across all business lines), multiplied by a percentage factor by business lines as per the regulatory requirement
- Basic Indicator approach (BIA): this approach 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, the capital requirement is calculated based on firms' own models, subject regulatory approval



See page 144 for more details on capital requirements for operational risk.

Calculation of capital for concentration risk

As at 31 December 2019, Barclays has not exceeded the large exposure limit set in CRR, and as such no capital charge applies.

Regulatory minimum capital, leverage and MREL requirements

Capital

As at 31 December 2019, the Group's transitional CET1 ratio was 13.8% which exceeded the Overall Capital Requirement for CET1 of 12.1% comprising a 4.5% Pillar 1 minimum, a 2.5% Capital Conservation Buffer (CCB), a 1.5% Global Systemically Important Institution (G-SII) buffer, a 3.0% Pillar 2A requirement and a 0.6% Countercyclical Capital Buffer (CCyB).

Leverage

As at 31 December 2019, the Group is subject to a UK leverage ratio requirement of 4.0%. This comprises the 3.25% minimum requirement, a G-SII additional leverage ratio buffer (G-SII ALRB) of 0.53% and a countercyclical leverage ratio buffer (CCLB) of 0.2%. Although the leverage ratio is expressed in terms of T1 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. As at 31 December 2019, the CET1 capital held against the 0.53% G-SII ALRB was £6.0bn and against the 0.2%, CCLB was £2.3bn.

The leverage disclosure requirements reflected in the report are based on CRR.

MREL

The Group is required to meet the higher of: (i) the MREL set by the Bank of England; and (ii) the requirements in CRR II, both of which have RWA and leverage based requirements. MREL is subject to phased implementation and will be fully implemented by 1 January 2022, at which time the Group's indicative MREL is expected to be two times the sum of its Pillar 1 and Pillar 2A requirements, as set by the Bank of England. In addition, CET1 capital cannot be counted towards both MREL and the capital buffers, meaning that the buffers will effectively be applied above both the Pillar 1 and Pillar 2A requirements relating to own funds and eligible liabilities. The Bank of England will review the MREL calibration by the end of 2020, including the proposal for Pillar 2A recapitalisation, which may drive a different 1 January 2022 MREL than currently proposed.

Impact of new regulations

Final BCBS standards on counterparty credit risk, leverage, large exposures and a Net Stable Funding Ratio (NSFR) are being implemented under EU law via the Risk Reduction Measures package, which was published in the Official Journal in June 2019 and includes the CRR II regulation, the CRD V directive and the BRRD II directive.

The BCBS's finalisation of 'Basel III – post-crisis regulatory reforms' in December 2017, among other things, eliminated model-based approaches for certain categories of risk-weighted assets (RWAs), 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-SIBs introduced a leverage ratio buffer equal to 50% of the applicable G-SIB buffer used for RWA purposes (meaning, for Barclays Group, a leverage ratio buffer of 0.75%). The majority of the final Basel III changes are due to be implemented commencing 1 January 2022, with a five-year phase-in period for the output floor, although the precise timing as it applies to Barclays Group depends on National and EU legislative processes. The new market risk framework, including rules made as a result of the 'fundamental review of the trading book', is expected to be implemented in the UK first as a reporting requirement, with further legislation needed to replace the existing, binding market risk requirements.



Please see page 204 of the Annual Report for a more complete discussion of prudential developments.

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 2019. The consolidation basis used is the same as that used for reporting regulatory capital adequacy to the Prudential Regulation Authority (PRA). 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 129 for further details).
- 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 Barclays PLC's 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 purposes

Significant subsidiaries

Barclays Group's significant subsidiaries as at 31 December 2019 are Barclays Bank PLC (BB PLC) and Barclays Bank UK Group. BB PLC's significant subsidiary disclosures are included in this document, whilst the Barclays Bank UK PLC's consolidated group Pillar 3 disclosures are published in a standalone document "Barclays Bank UK PLC Pillar 3".

Barclays Bank PLC

Barclays Bank PLC is a wholly-owned subsidiary of Barclays PLC and consists of the Corporate and Investment Bank (CIB), Consumer, Cards and Payments (CCP) and Head Office segments.

Barclays Bank PLC is currently regulated by the PRA on a solo-consolidated basis and comprises Barclays Bank PLC plus certain additional subsidiaries, subject to PRA approval. The disclosures provided in this document for Barclays Bank PLC are based on this regulatory scope of consolidation. This differs from the accounting disclosures, where Barclays Bank PLC Group relates to Barclays Bank PLC and all its subsidiaries.

Barclays Bank UK PLC

Barclays Bank UK PLC is the wholly-owned ring-fenced bank of Barclays PLC. The consolidation of the parent entity, Barclays Bank UK PLC and its subsidiaries, is referred to as Barclays Bank UK Group and consists of Personal Banking, Business Banking and Barclaycard Consumer UK. Refer to the "Barclays Bank UK PLC Pillar 3" report for further information.

SCOPE OF APPLICATION OF BASEL RULES

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 2019.

Table 1: The scope of the Standardised and IRB approaches for credit and counterparty credit risk excluding CVA

Business as at 31 December 2019	Credit risk (see Table 32)	Counterparty credit risk excl. CVA (see Table 66)	Advanced Internal Ratings Based (AIRB) approaches	Standardised approach
	RWA £m	RWA £m		
Barclays UK	62,644	235	UK managed retail and wholesale portfolios UK cards	Minor UK Cards portfolio Further Education and Local Authority portfolios High quality liquidity pool assets Minor unsecured loan portfolios (closed books in run off) UK Wealth Portfolio
Barclays International	117,841	29,331	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 Private Bank) and wholesale portfolios (including legacy) Further Education and Local Authority portfolios 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	10,858	–	Small number of portfolios (including Italy Home Loans)	Small number of portfolios
Group Total	191,343	29,566		

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

SCOPE OF APPLICATION OF BASEL RULES

Scope of permission for calculation approaches

Table 2: Summary of the scope of application of regulatory methodologies for CVA, market and operational risk

As at 31 December 2019	
Risk Type	RWAs £m Scope
Credit value adjustment	2,504 Barclays calculates CVA risk for all contracts in scope as defined by article 382 of the CRR. Barclays has permission to use an internal model for the specific risk of debt instruments and therefore allowed to use the Advanced method for CVA for such instruments where applicable. The Standardised method for CVA is used otherwise.
Market risk	30,761 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 categories and legal entities; see table 10 on page 26 for capital requirements related to each approach and risk category. 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	40,957 The Group applies the Standardised Approach (TSA) for operational risk regulatory capital purposes.

Linkage between financial statements and regulatory risk

Table 3: LI1– Differences between accounting and regulatory scopes of consolidation and the mapping of financial statement categories with regulatory risk categories

This table shows an outline of the differences in the basis of consolidation for accounting and regulatory purposes. It provides an allocation of the balance sheet line items reported under the scope of regulatory consolidation between the different regulatory risk frameworks. 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 178.

As at 31 December 2019	Carrying values as reported in published financial statements £m	Carrying values under scope of regulatory consolidation ^a £m	Subject to the credit risk framework £m	Subject to the CCR framework £m	Subject to the securitisation framework ^b £m	Subject to the market risk framework £m	Not subject to capital requirements or subject to deduction from capital ^c £m
Assets							
Cash and balances at central banks	150,258	150,186	150,186	–	–	–	–
Cash collateral and settlement balances	83,256	83,256	8,025	49,328	–	–	25,903
Loans and advances at amortised cost	339,115	333,410	316,842	–	16,568	–	–
Reverse repurchase agreements and other similar secured lending	3,379	3,379	–	3,379	–	–	–
Trading portfolio assets	114,195	119,240	1,963	–	104	117,173	–
Financial assets at fair value through the income statement	133,086	131,767	13,832	109,457	171	116,465	1,299
Derivative financial instruments	229,236	229,236	–	228,952	284	228,302	–
Financial assets at fair value through other comprehensive income	65,750	65,863	65,559	–	304	–	–
Investments in associates and joint ventures	721	195	195	–	–	–	–
Goodwill and intangible assets	8,119	8,150	–	–	–	–	8,150
Property, plant and equipment	4,215	4,217	4,217	–	–	–	–
Current tax assets	412	412	412	–	–	–	–
Deferred tax assets	3,290	3,290	2,811	–	–	–	479
Retirement benefit assets	2,108	2,108	–	–	–	–	2,108
Other assets	3,089	4,348	4,348	–	–	–	–
Total assets	1,140,229	1,139,057	568,390	391,116	17,431	461,940	37,939
Liabilities							
Deposits at amortised cost	415,787	415,720	–	190	–	–	415,530
Cash collateral and settlement balances	67,341	67,341	–	52,752	–	–	14,589
Repurchase agreements and other similar secured borrowing	14,517	14,517	–	1,908	–	–	12,609
Debt securities in issue	76,369	69,159	–	–	–	–	69,159
Subordinated liabilities	18,156	18,156	–	–	–	–	18,156
Trading portfolio liabilities	36,916	40,018	–	–	–	36,108	3,910
Financial liabilities designated at fair value	204,326	204,612	–	149,105	–	199,635	4,977
Derivative financial instruments	229,204	229,204	–	225,774	997	225,357	2,433
Current tax liabilities	313	307	–	–	–	–	307
Deferred tax liabilities	23	23	–	–	–	–	23
Retirement benefit liabilities	348	348	–	–	–	–	348
Other liabilities	8,505	11,153	–	–	–	–	11,153
Provisions	2,764	2,758	–	–	–	–	2,758
Total liabilities	1,074,569	1,073,316	–	423,729	997	460,980	555,952

Notes:

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

- 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 “Reverse repurchase agreements and other similar secured lending”, “Financial assets at fair value through the income statement”, and “Derivative financial instruments”, can be subject to credit risk, counterparty credit risk and market risk.
- 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.
- For liabilities, balances shown in column “Not subject to capital requirements or subject to deduction from capital” are residual amount so that “Carrying values under scope of regulatory consolidation” at least equal to the sum of those in the columns relating to the regulatory framework.

Linkage between financial statements and regulatory risk

Table 4: LI2 – Main sources of differences between regulatory exposure amounts and carrying values in financial statements

This table provides a reconciliation between assets carrying values under the regulatory scope of consolidation as per Table 3 and the exposures used for regulatory purposes, split as per regulatory risk framework.

Off-balance-sheet amounts: Under the credit risk framework, these balances principally consist of undrawn credit facilities after the application of Credit Conversion Factors (CCF). Under the counterparty credit risk framework, the off-balance-sheet items consist of the exposure due to collateral given in SFTs.

Difference in netting rules: This reflects the effects of master netting agreements in addition to the netting permitted under International Accounting Standards (IAS) framework.

Differences due to consideration of provisions: The assets carrying value of assets is net of impairment. The regulatory exposure calculated under AIRB approach adds back the impairments.

Differences between input balance and modelled regulatory output: The assets carrying values as defined per IFRS differ from the values used for regulatory reporting purposes, which reflect regulatory add on such as those applied for the FCCM calculation.

As at 31 December 2019	Total £m ^a	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 LI1)	976,937	568,390	391,116	17,431
Liabilities carrying value amount under the regulatory scope of consolidation (as per template EU LI1)	(424,726)	–	(423,729)	(997)
Total net amount under the regulatory scope of consolidation	552,211	568,390	(32,613)	16,434
Off-balance-sheet amounts ^b	895,378	130,907	613,860	2,020
Differences in valuations	(118)	(118)	–	–
Differences due to different netting rules	(509,320)	–	(509,320)	–
Differences due to consideration of provisions	3,607	3,607	–	–
Differences due to prudential filters	–	–	–	–
Differences between input balance and modelled regulatory output	54,598	15,015	39,332	251
Regulatory exclusion – CCP trades for a client where Barclays acts as clearing member on behalf of a counterparty	(698)	–	(698)	–
Credit Enhancement Exposure for Sponsor trades	5,934	–	–	5,934
Exposures of Synthetic Securitisation trades	19,608	–	–	19,608
Other	2,712	2,152	560	–
Exposure amounts considered for regulatory purposes	1,023,911	719,953	111,121	44,247

Notes:

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

- The total column cannot be directly reconciled back to the carrying values under scope of consolidation shown in Table 3 – LI1, as it excludes balances “subject to the market risk framework” and items “not subject to capital requirements or subject to deduction from capital”.
- 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.

SCOPE OF APPLICATION OF BASEL RULES

Linkage between financial statements and regulatory risk

Table 5: 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			Deducted	Description of the entity
		Full consolidation	Proportional consolidation	Neither consolidated nor deducted ^a		
Barclays Insurance Services Company Limited	Fully consolidated			Y		Activities auxiliary to financial services and insurance activities
Barclays Insurance Guernsey PCC Limited	Fully consolidated			Y		Insurance, reinsurance and pension funding, except compulsory social security
Care Principles PropCo1 Limited	Fully consolidated			Y		Other services
Care Principles PropCo2 Limited	Fully consolidated			Y		Other services
CP TopCo Limited	Fully consolidated			Y		Other services
Salisbury Receivables Company LLC	Fully consolidated			Y		Financial service activities, except insurance and pension funding
Barclays Insurance U.S Inc	Fully consolidated			Y		Insurance, reinsurance and pension funding, except compulsory social security
CP Flower Guaranteeco (UK) Limited	Fully consolidated			Y		Other services
Sheffield Receivables Company LLC	Fully consolidated			Y		Financial service activities, except insurance and pension funding
Sunderland Receivables Company LLC	Fully consolidated			Y		Financial service activities, except insurance and pension funding
Vaultex UK Limited	Proportionally consolidated			Y		Activities auxiliary to financial services and insurance activities
EnterCard Group AB	Equity		Y			Financial service activities, except insurance and pension funding
BGF Limited	Equity		Y			Financial service activities, except insurance and pension funding
Palomino Limited	Not consolidated	Y				Financial service activities, except insurance and pension funding

Note:

a Column "neither consolidated nor deducted": Exposure to and/or equity investment in these entities are risk weighted or deducted from capital subject to thresholds.

Contents

Analysis of treasury and capital risk	16
Analysis of credit risk	48
Analysis of counterparty credit risk	104
Analysis of market risk	122
Analysis of securitisation exposures	129
Analysis of operational risk	149

Analysis of treasury and capital risk

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

Key Metrics in 2019

Common Equity Tier 1 ratio

13.8%

See page 18

Average UK leverage ratio

4.5%

UK leverage ratio

5.1%

CRR leverage ratio

4.5%

See page 32

Liquidity Coverage ratio

160%

See page 40

Own funds and eligible liabilities ratio

32.8%

See page 35

Analysis of treasury and capital risk

Table 6: KM1 – Key metrics and movements

	As at 31.12.19 £m	As at 30.09.19 £m	As at 30.06.19 £m	As at 31.03.19 £m	As at 31.12.18 £m
Available capital (amounts)					
1 Common Equity Tier 1 (CET1) ^a	40,813	41,875	42,888	41,437	41,100
1a Fully loaded Expected Credit Loss (ECL) accounting model ^b	39,687	40,742	41,704	40,268	39,815
2 Tier 1 ^c	52,241	53,366	55,592	54,724	52,998
2a Fully loaded ECL accounting model Tier 1 ^d	50,428	51,472	53,697	51,257	49,317
3 Total capital ^e	63,641	66,095	68,330	66,549	64,594
3a Fully loaded ECL accounting model total capital ^d	60,294	62,434	64,681	63,485	61,848
Risk-weighted assets (amounts)					
4 Total risk-weighted assets (RWA) ^a	295,131	313,261	319,107	319,671	311,926
4a Fully loaded ECL accounting model total RWA ^b	295,016	313,147	318,993	319,556	311,798
Risk-based capital ratios as a percentage of RWA					
5 Common Equity Tier 1 ratio (%)	13.8%	13.4%	13.4%	13.0%	13.2%
5a Fully loaded ECL accounting model Common Equity Tier 1 (%)	13.5%	13.0%	13.1%	12.6%	12.8%
6 Tier 1 ratio (%)	17.7%	17.0%	17.4%	17.1%	17.0%
6a Fully loaded ECL accounting model Tier 1 ratio (%)	17.1%	16.4%	16.8%	16.0%	15.8%
7 Total capital ratio (%)	21.6%	21.1%	21.4%	20.8%	20.7%
7a Fully loaded ECL accounting model total capital ratio (%)	20.4%	19.9%	20.3%	19.9%	19.8%
Additional CET1 buffer requirements as a percentage of RWA					
8 Capital conservation buffer requirement (%)	2.5%	2.5%	2.5%	2.5%	1.9%
9 Countercyclical buffer requirement (%)	0.6%	0.5%	0.5%	0.5%	0.5%
10 Bank G-SIB and/or D-SIB additional requirements (%)	1.5%	1.5%	1.5%	1.5%	1.1%
11 Total of bank CET1 specific buffer requirements (%) (row 8 + 9 + 10)	4.6%	4.5%	4.5%	4.5%	3.5%
12 CET1 available after meeting the bank's minimum capital requirements (%)	9.3%	8.9%	8.9%	8.5%	8.7%
CRR leverage ratio^{e,f}					
13 Total CRR leverage ratio exposure measure	1,126,259	1,235,079	1,213,800	1,205,303	1,142,520
14 Fully loaded CRR leverage ratio (%)	4.5%	4.2%	4.4%	4.3%	4.3%
Average UK leverage ratio (Transitional)^{g,h,i}					
13a Total average UK leverage ratio exposure measure	1,142,819	1,171,152	1,134,589	1,105,518	1,109,988
14a Transitional average UK leverage ratio (%)	4.5%	4.6%	4.7%	4.6%	4.5%
UK leverage ratio (Transitional)^{f,g,h}					
13b Total UK leverage ratio exposure measure	1,007,721	1,099,815	1,079,416	1,064,959	998,556
14b Transitional UK leverage ratio (%)	5.1%	4.8%	5.1%	4.9%	5.1%
Liquidity Coverage Ratio					
15 Total HQLA	206,448	225,556	232,098	225,850	218,766
16 Total net cash outflows	128,901	148,895	148,669	141,515	129,172
17 LCR ratio (%)	160%	151%	156%	160%	169%

Notes:

- a CET1 capital and RWAs are calculated applying the IFRS 9 transitional arrangements of the CRR as amended by CRR II applicable as at the reporting date.
- b Fully loaded CET1 capital and RWAs are calculated without applying the transitional arrangements of the CRR as amended by CRR II applicable as at the reporting date.
- c Transitional Tier 1 and Total capital include AT1 and T2 capital that is calculated applying the grandfathering of CRR and CRR II non-compliant capital instruments.
- d Fully loaded Tier 1 and Total capital include AT1 and T2 capital that is calculated without applying the grandfathering of CRR and CRR II non-compliant capital instruments.
- e Fully loaded CRR leverage ratio is calculated without applying the transitional arrangements of the CRR as amended by CRR II applicable as at the reporting date.
- f The difference between CRR leverage ratio and UK leverage ratio is primarily driven by the exclusion of qualifying central bank claims from the UK leverage exposure.
- g Transitional UK leverage ratios are calculated applying the IFRS 9 transitional arrangements and in line with the PRA Handbook.
- h Fully loaded average UK leverage ratio was 4.4%, with £1,142bn of leverage exposure. Fully loaded UK leverage ratio was 5.0%, with £1,007bn of leverage exposure. Fully loaded UK leverage ratios are calculated without applying the transitional arrangements of the PRA Handbook.
- i Average UK leverage ratio uses capital based on the last day of each month in the quarter and an exposure measure for each day in the quarter.

The CET1 ratio increased to 13.8% (December 2018: 13.2%):

- CET1 capital decreased by £0.3bn to £40.8bn. This was driven by underlying profit generation of £5.0bn offset by dividends paid and foreseen of £2.4bn, the additional provision for PPI of £1.4bn, pension deficit reduction contribution payments of £0.5bn, a decrease in the currency translation reserve of £0.5bn mainly driven by the depreciation of period end USD against GBP and a loss on the redemption of Additional Tier 1 (AT1) securities of £0.4bn
- RWAs decreased by £16.8bn to £295.1bn primarily driven by the reduction in the Group's operational risk RWAs as well as the depreciation of period end USD against GBP

Analysis of treasury and capital risk

Table 7: CC1 – Composition of regulatory capital

This table shows the components of regulatory capital presented on both a transitional and fully loaded basis as at 31 December 2019.

	Ref [†]	Barclays Group		Ref [†]	Barclays Bank PLC	
		As at 31.12.19 Transitional position £m	As at 31.12.19 Fully loaded position £m		As at 31.12.19 Transitional position £m	As at 31.12.19 Fully loaded position £m
Common Equity Tier 1 capital: instruments and reserves						
1	a	4,594	4,594	a	2,343	2,343
2	b	44,204	44,204	b	31,786	31,786
3	c	4,760	4,760	c	678	678
		(1,096)	(1,096)		(300)	(300)
		(55)	(55)		305	305
6		52,407	52,407		34,812	34,812
Common Equity Tier 1 capital: regulatory adjustments						
7		(1,746)	(1,746)		(1,262)	(1,262)
8	d,e	(3,927)	(3,927)	d,k	(95)	(95)
9	f,g ^a	(4,182)	(4,182)	e,f ^a	(20)	(20)
10	h	(479)	(479)	g	(283)	(283)
11	i	(1,002)	(1,002)	h	(403)	(403)
12		–	–		(93)	(93)
14		260	260	i	205	205
15	k,g ^a	(1,594)	(1,594)	j,f ^a	(1,548)	(1,548)
16		(50)	(50)		–	–
19		–	–	k,l	(8,665)	(8,706)
22		–	–	g,k,l	(976)	(1,174)
23		–	–	k,l	(722)	(838)
25		–	–	g	(254)	(336)
		1,126	–		408	–
28		(11,594)	(12,720)		(12,732)	(13,379)
29		40,813	39,687		22,080	21,433

Notes:

† The references (a) – (p) identify balance sheet components in Table 8 & 8a: CC2 – Reconciliation of regulatory capital to balance sheet on page 21 which are used in the calculation of regulatory capital.

a Deferred tax liabilities on intangible assets and pension fund assets are included as either a negative component of the deferred tax asset or a deferred tax liability on the balance sheet depending on the net deferred tax position of the bank at the time of reporting.

b Barclays Group of which static £1,085m, of which modified £41m; Barclays Bank PLC of which static £408m, of which modified nil.

Analysis of treasury and capital risk

Table 7: CC1 – Composition of Regulatory Capital continued

	Ref ^f	Barclays Group		Ref ^f	Barclays Bank PLC	
		As at 31.12.19 Transitional position £m	As at 31.12.19 Fully loaded position £m		As at 31.12.19 Transitional position £m	As at 31.12.19 Fully loaded position £m
Additional Tier 1 capital: instruments						
30						
Directly issued qualifying additional Tier 1 instruments plus related stock surplus	I	10,871	10,871	m	8,323	8,323
31 <i>Of which: classified as equity under applicable accounting standards</i>	I	10,871	10,871	m	8,323	8,323
33 Directly issued capital instruments subject to phase-out from additional Tier 1		–	–	b,n,o	800	–
34 Additional Tier 1 instruments (and CET1 instruments not included in row 5) issued by subsidiaries and held by third parties (amount allowed in group AT1)	m,n	687	–		–	–
35 <i>Of which: instruments issued by subsidiaries subject to phase out</i>	m,n	800	–		–	–
36 Additional Tier 1 capital before regulatory adjustments		11,558	10,871		9,123	8,323
Additional Tier 1 capital: regulatory adjustments						
37 Investments in own additional Tier 1 instruments		(130)	(130)		(130)	–
40 Significant investments in the capital of banking, financial and insurance entities that are outside the scope of regulatory consolidation		–	–	k	(2,473)	(2,473)
43 Total regulatory adjustments to additional Tier 1 capital		(130)	(130)		(2,603)	(2,473)
44 Additional Tier 1 capital (AT1)		11,428	10,741		6,520	5,850
45 Tier 1 capital (T1 = CET1 + AT1)		52,241	50,428		28,600	27,283
Tier 2 capital: instruments and provisions						
46 Directly issued qualifying Tier 2 instruments plus related stock surplus	m	7,650	7,650	o	8,481	8,699
47 Directly issued capital instruments subject to phase-out from Tier 2		–	–	o	439	–
47a Directly issued capital instruments grandfathered under CRR II		–	–	o	1,799	–
48 Tier 2 instruments (and CET1 and AT1 instruments not included in rows 5 or 34) issued by subsidiaries and held by third parties (amount allowed in group Tier 2)	m	3,984	2,337		–	–
49 <i>Of which: instruments issued by subsidiaries subject to phase out</i>	m	439	–		–	–
49a <i>Of which: instruments issued by subsidiaries grandfathered under CRR II</i>	m	1,799	–		–	–
50 Provisions		16	129		–	–
51 Tier 2 capital before regulatory adjustments		11,650	10,116		10,719	8,699
Tier 2 capital: regulatory adjustments						
52 Investments in own Tier 2 instruments		(250)	(250)		(250)	(250)
55 Significant investments in the capital and other TLAC liabilities of banking, financial and insurance entities that are outside the scope of regulatory consolidation (net of eligible short positions)		–	–	p	(4,114)	(4,114)
57 Total regulatory adjustments to Tier 2 capital		(250)	(250)		(4,364)	(4,364)
58 Tier 2 capital (T2)		11,400	9,866		6,355	4,335
59 Total regulatory capital (TC = T1 + T2)		63,641	60,294		34,955	31,618

Analysis of treasury and capital risk

Table 7: CC1 – Composition of regulatory capital continued

	Barclays Group		Barclays Bank PLC			
	Ref ¹	As at 31.12.19 Transitional position £m	As at 31.12.19 Fully loaded position £m	Ref ¹	As at 31.12.19 Transitional position £m	As at 31.12.19 Fully loaded position £m
60 Total risk weighted assets		295,131	295,016		158,393	157,813
Capital ratios and buffers						
61 Common Equity Tier 1 (as a percentage of risk-weighted assets)		13.8%	13.5%		13.9%	13.6%
62 Tier 1 (as a percentage of risk-weighted assets)		17.7%	17.1%		18.1%	17.3%
63 Total capital (as a percentage of risk-weighted assets)		21.6%	20.4%		22.1%	20.0%
64 Institution-specific buffer requirement (capital conservation buffer plus countercyclical buffer requirements plus higher loss absorbency requirement, expressed as a percentage of risk-weighted assets)		4.6%	4.6%		3.0%	3.0%
65 <i>Of which: capital conservation buffer requirement</i>		2.5%	2.5%		2.5%	2.5%
66 <i>Of which: countercyclical buffer requirement</i>		0.6%	0.6%		0.5%	0.5%
67 <i>Of which: higher loss absorbency requirement</i>		1.5%	1.5%		0.0%	0.0%
68 Common Equity Tier 1 (as a percentage of risk-weighted assets) available after meeting the bank's minimum capital requirements		9.3%	9.0%		9.4%	9.1%
Amounts below the thresholds for deduction (before risk weighting)						
72 Non-significant investments in the capital and other TLAC liabilities of other financial entities		2,789	2,789		2,242	2,242
73 Significant investments in the common stock of financial entities		1,108	1,108		3,172	3,131
75 Deferred tax assets arising from temporary differences (net of related tax liability)		2,988	3,308		1,116	1,258
Applicable caps on the inclusion of provisions in Tier 2						
77 Cap on inclusion of provisions in Tier 2 under standardised approach		945	934		582	573
78 Provisions eligible for inclusion in Tier 2 in respect of exposures subject to internal ratings-based approach (prior to application of cap)		16	129		–	–
79 Cap for inclusion of provisions in Tier 2 under internal ratings-based approach		870	875		426	427
Capital instruments subject to phase-out arrangements (only applicable between 1 Jan 2018 and 1 Jan 2022)						
82 Current cap on AT1 instruments subject to phase-out arrangements		2,777	–		2,777	–
84 Current cap on T2 instruments subject to phase out arrangements		830	–		830	–

Analysis of treasury and capital risk

Table 8: CC2 – Reconciliation of regulatory capital to balance sheet

The following tables show the reconciliation between balance sheet for statutory and regulatory scope of consolidation. 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.

Barclays Group					
	Ref [†]	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
As at 31 December 2019					
Assets					
Cash and balances at central banks		150,258	(72)	–	150,186
Cash collateral and settlement balances		83,256	–	–	83,256
Loans and advances at amortised cost		339,115	(5,869)	164	333,410
Reverse repurchase agreements and other similar secured lending		3,379	–	–	3,379
Trading portfolio assets		114,195	–	5,045	119,240
Financial assets at fair value through the income statement		133,086	(64)	(1,255)	131,767
Derivative financial instruments		229,236	–	–	229,236
Financial assets at fair value through other comprehensive income		65,750	–	113	65,863
Investments in subsidiaries, associates and joint ventures	e	721	162	(688)	195
Goodwill and intangible assets		8,119	–	31	8,150
– Of which: goodwill	d	3,899	–	28	3,927
– Of which: other intangibles (excluding MSRs)	f	4,220	–	3	4,223
Property, plant and equipment		4,215	–	2	4,217
Current tax assets		412	–	–	412
Deferred tax assets	g,h	3,290	–	–	3,290
Retirement benefit assets	k	2,108	–	–	2,108
Other assets		3,089	1,244	15	4,348
Total assets		1,140,229	(4,599)	3,427	1,139,057
Liabilities					
Deposits at amortised cost		415,787	(67)	–	415,720
Cash collateral and settlement balances		67,341	–	–	67,341
Repurchase agreements and other similar secured borrowing		14,517	–	–	14,517
Debt securities in issue		76,369	(7,210)	–	69,159
Subordinated liabilities	m	18,156	–	–	18,156
Trading portfolio liabilities		36,916	–	3,102	40,018
Financial liabilities designated at fair value		204,326	–	286	204,612
Derivative financial instruments		229,204	–	–	229,204
Current tax liabilities		313	(8)	2	307
Deferred tax liabilities	g	23	–	–	23
Retirement benefit liabilities		348	–	–	348
Other liabilities		8,505	2,611	37	11,153
Provisions		2,764	(6)	–	2,758
Total liabilities		1,074,569	(4,680)	3,427	1,073,316
Equity					
Called up share capital and share premium		4,594	–	–	4,594
– Of which: amount eligible for CET1	a	4,594	–	–	4,594
Other equity instruments	l	10,871	–	–	10,871
Other reserves	c,i,j	4,760	6	29	4,795
Retained earnings	b	44,204	75	(29)	44,250
Total equity excluding non-controlling interests		64,429	81	–	64,510
Non-controlling interests	n	1,231	–	–	1,231
Total equity		65,660	81	–	65,741
Total liabilities and equity		1,140,229	(4,599)	3,427	1,139,057

Note:

† The references (a) – (n) identify balance sheet components that are used in the calculation of regulatory capital in Table 7: Composition of regulatory capital on page 18.

Analysis of treasury and capital risk

Table 8a: CC2 – Reconciliation of regulatory capital to balance sheet for significant subsidiary

Barclays Bank PLC				
	Ref [†]	Accounting balance sheet per published financial statements £m	Consolidation of regulatory consolidated entities £m	Balance sheet per regulatory scope of consolidation £m
As at 31 December 2019				
Assets				
Cash and balances at central banks		112,287	–	112,287
Cash collateral and settlement balances		75,822	–	75,822
Loans and advances at amortised cost	p	161,663	3,005	164,668
Reverse repurchase agreements and other similar secured lending		4,939	–	4,939
Trading portfolio assets		79,079	–	79,079
Financial assets at fair value through the income statement		162,500	(473)	162,027
Derivative financial instruments		229,338	–	229,338
Financial assets at fair value through other comprehensive income		43,760	–	43,760
Investments in subsidiaries	k	16,105	(2,998)	13,107
Investments in associates and joint ventures	l	119	–	119
Goodwill and intangible assets		115	–	115
– Of which: goodwill	d	95	–	95
– Of which: other intangibles (excluding MSRs)	e	20	–	20
Property, plant and equipment		426	–	426
Current tax assets		946	–	946
Deferred tax assets	f,g	1,115	–	1,115
Retirement benefit assets	j	2,062	–	2,062
Other assets		845	–	845
Total assets		891,121	(466)	890,655
Liabilities				
Deposits at amortised cost		240,631	(170)	240,461
Cash collateral and settlement balances		59,448	–	59,448
Repurchase agreements and other similar secured borrowing		9,185	–	9,185
Debt securities in issue		19,883	–	19,883
Subordinated liabilities	o	33,205	(137)	33,068
Trading portfolio liabilities		45,130	–	45,130
Financial liabilities designated at fair value		207,765	(473)	207,292
Derivative financial instruments		225,607	–	225,607
Current tax liabilities		221	10	231
Deferred tax liabilities	f	80	–	80
Retirement benefit liabilities		104	–	104
Other liabilities		2,807	–	2,807
Provisions		630	–	630
Total liabilities		844,696	(770)	843,926
Equity				
Called up share capital and share premium		2,348	–	2,348
– Of which: amount eligible for CET1	a	2,343	–	2,343
– Of which: amount eligible for AT1	n	5	–	5
Other equity instruments	m	11,089	–	11,089
Other reserves	c,h,i	678	(8)	670
Retained earnings	b	32,310	312	32,622
Total equity		46,425	304	46,729
Total liabilities and equity		891,121	(466)	890,655

Note:

† The references (a) – (p) identify balance sheet components that are used in the calculation of regulatory capital in Table 7: Composition of regulatory capital on page 18.

Analysis of treasury and capital risk

IFRS 9 - Transitional capital arrangements

On 1 January 2018, IFRS 9 transitional capital arrangements were implemented by Regulation (EU) 2017/2395. Barclays elected to apply the transitional arrangements at both consolidated and individual entity levels and will disclose both transitional and fully loaded CET1 ratios until the end of the transitional period. The transitional benefit is phased out over a 5 year period with 95% applicable for 2018; 85% for 2019; 70% for 2020; 50% for 2021; 25% for 2022 and with no transitional benefit from 2023.

The transitional arrangements, implemented under a modified static approach, allow for transitional relief on the “day 1” impact on adoption of IFRS 9 (static element) and for the increase between “day 1” and the reporting date (modified element), subject to eligibility. For the static element, stage 1, stage 2 and stage 3 provisions are eligible for transition, whereas for the modified element, stage 3 provisions are excluded.

Separate calculations are performed for standardised and advanced IRB portfolios, reflecting the different ways these frameworks take account of provisions. Under the standardised approach, increases in provisions for both the static and modified elements are eligible for transition. Under the advanced approach, for both the static and modified elements, provisions are only eligible for transitional relief to the extent that they exceed regulatory expected loss.

Any increases in impairment allowances as a result of IFRS 9, net of tax, decreases shareholders’ equity through retained earnings. This is somewhat mitigated by the transitional relief applied on eligible impairment.

For regulatory Internal Ratings Based (IRB) exposures, the calculation of capital takes account of the expected loss via a comparison with the impairment allowances. Where regulatory expected losses exceed impairment allowances, the shortfall is deducted from CET1 capital. Where the impairment allowance is higher than expected loss, the excess is added back to tier 2 capital and capped at an amount of 0.6% of IRB RWAs.

The DTAs created from the increase of impairment are also accounted for in the CET1 ratio. When DTAs arising from temporary differences are above the 10% CET1 capital threshold, any excess above the threshold is deducted and those below the threshold are risk weighted at 250% up to the point they reach threshold.

Standardised RWAs decrease due to the increase in impairment being offset against the Standardised Credit Risk exposures.

Analysis of treasury and capital risk

Table 9: IFRS 9-FL – Comparison of institutions' own funds and capital and leverage ratios with and without the application of transitional arrangements for IFRS 9 or analogous ECLs

	Barclays Group				
	As at 31.12.19 £m	As at 30.09.19 £m	As at 30.06.19 £m	As at 31.03.19 £m	As at 31.12.18 £m
Available capital (amounts)					
1 Common Equity Tier 1 (CET1) capital ^a	40,813	41,875	42,888	41,437	41,100
2 Common Equity Tier 1 (CET1) capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	39,687	40,742	41,704	40,268	39,815
3 Tier 1 capital ^b	52,241	53,366	55,592	54,724	52,998
4 Tier 1 capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	51,115	52,233	54,408	53,555	51,713
5 Total capital ^b	63,641	66,095	68,330	66,549	64,594
6 Total capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	62,628	65,084	67,333	65,548	63,468
Risk-weighted assets (amounts)					
7 Total risk-weighted assets ^a	295,131	313,261	319,107	319,671	311,926
8 Total risk-weighted assets as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	295,016	313,147	318,993	319,556	311,798
Capital ratios					
9 Common Equity Tier 1 (as a percentage of risk exposure amount)	13.8%	13.4%	13.4%	13.0%	13.2%
10 Common Equity Tier 1 (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	13.5%	13.0%	13.1%	12.6%	12.8%
11 Tier 1 (as a percentage of risk exposure amount)	17.7%	17.0%	17.4%	17.1%	17.0%
12 Tier 1 (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	17.3%	16.7%	17.1%	16.8%	16.6%
13 Total capital (as a percentage of risk exposure amount)	21.6%	21.1%	21.4%	20.8%	20.7%
14 Total capital (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	21.2%	20.8%	21.1%	20.5%	20.4%
Leverage ratio					
15 Leverage ratio total exposure measure	1,126,259	1,235,079	1,213,800	1,205,303	1,142,520
16 Leverage ratio ^c	4.5%	4.2%	4.4%	4.3%	4.3%
17 Leverage ratio as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	4.5%	4.2%	4.4%	4.3%	4.3%

Notes:

a Transitional CET1 capital and RWAs are calculated applying the IFRS 9 transitional arrangements of the CRR as amended by CRR II applicable as at the reporting date.

b Transitional T1 and Total capital are calculated applying the transitional arrangements of the CRR as amended by CRR II applicable as at the reporting date. This includes the grandfathering of CRR and CRR II non-compliant capital instruments and IFRS 9 transitional arrangements.

c Leverage ratio is calculated applying the fully loaded treatment of the CRR as amended by CRR II applicable as at the reporting date.

Analysis of treasury and capital risk

Table 9a: IFRS 9-FL – Comparison of institutions' own funds and capital and leverage ratios with and without the application of transitional arrangements for IFRS 9 or analogous ECLs significant subsidiary

	Barclays Bank PLC		
	As at 31.12.19 £m	As at 30.06.19 £m	As at 31.12.18 £m
Available capital (amounts)			
1 Common Equity Tier 1 (CET1) capital ^a	22,080	22,403	23,394
2 Common Equity Tier 1 (CET1) capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	21,433	21,757	22,673
3 Tier 1 capital ^b	28,600	30,193	31,902
4 Tier 1 capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	27,953	29,547	31,181
5 Total capital ^b	34,955	36,002	38,439
6 Total capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	34,308	35,356	37,718
Risk-weighted assets (amounts)			
7 Total risk-weighted assets ^a	158,393	166,717	173,200
8 Total risk-weighted assets as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	157,813	166,136	172,559
Capital ratios			
9 Common Equity Tier 1 (as a percentage of risk exposure amount)	13.9%	13.4%	13.5%
10 Common Equity Tier 1 (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	13.6%	13.1%	13.1%
11 Tier 1 (as a percentage of risk exposure amount)	18.1%	18.1%	18.4%
12 Tier 1 (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	17.7%	17.7%	18.1%
13 Total capital (as a percentage of risk exposure amount)	22.1%	21.6%	22.2%
14 Total capital (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	21.7%	21.2%	21.9%
Leverage ratio			
15 Leverage ratio total exposure measure	731,715	800,538	791,406
16 Leverage ratio ^b	3.9%	3.8%	4.0%
17 Leverage ratio as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	3.8%	3.7%	4.0%

Notes:

a Transitional CET1 capital and RWAs are calculated applying the IFRS 9 transitional arrangements of the CRR as amended by CRR II applicable as at the reporting date.

b Transitional T1, total capital and leverage are calculated applying the transitional arrangements of the CRR as amended by CRR II applicable as at the reporting date. This includes the grandfathering of CRR and CRR II non-compliant capital instruments and IFRS 9 transitional arrangements.

Analysis of treasury and capital risk

Table 10: Risk weighted assets by risk type and business

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

Risk weighted assets (RWAs) by risk type and business

	Credit risk		Counterparty credit risk				Market risk		Operational risk £m	Total RWAs £m
	Std £m	A-IRB £m	Std £m	A-IRB £m	Settlement risk £m	CVA £m	Std £m	IMA £m		
As at 31 December 2019										
Barclays UK	5,189	57,455	235	–	–	23	178	–	11,821	74,901
Corporate and Investment Bank	25,749	62,177	12,051	16,875	276	2,470	12,854	17,626	21,475	171,553
Consumer, Cards and Payments	27,209	2,706	92	37	–	11	–	103	7,532	37,690
Barclays International	52,958	64,883	12,143	16,912	276	2,481	12,854	17,729	29,007	209,243
Head Office	5,104	5,754	–	–	–	–	–	–	129	10,987
Barclays Group	63,251	128,092	12,378	16,912	276	2,504	13,032	17,729	40,957	295,131
As at 31 December 2018										
Barclays UK	3,285	59,734	229	–	–	35	63	–	11,835	75,181
Corporate and Investment Bank	26,073	64,704	9,786	14,979	170	3,324	13,913	16,217	21,737	170,903
Consumer, Cards and Payments	29,518	2,251	101	70	–	19	–	628	7,252	39,839
Barclays International	55,591	66,955	9,887	15,049	170	3,343	13,913	16,845	28,989	210,742
Head Office	4,339	5,777	7	13	–	31	–	–	15,836	26,003
Barclays Group	63,215	132,466	10,123	15,062	170	3,409	13,976	16,845	56,660	311,926

Table 10a: Risk weighted assets by risk type and business for significant subsidiary

This table shows risk weighted assets by risk type.

	Credit risk		Counterparty credit risk				Market risk		Operational risk £m	Total RWAs £m
	Std £m	A-IRB £m	Std £m	A-IRB £m	Settlement risk £m	CVA £m	Std £m	IMA £m		
As at 31 December 2019										
Barclays Bank PLC	35,336	56,865	11,199	14,214	259	2,202	6,163	17,275	14,880	158,393
As at 31 December 2018										
Barclays Bank PLC	45,837	63,153	7,927	13,349	314	3,331	6,786	16,684	15,819	173,200

Barclays Bank PLC primarily consists of CIB, CCP and Head Office. These business segments are included within Barclays PLC Group. The difference between Barclays Bank PLC and Barclays International is largely due to subsidiaries of Barclays Bank PLC Group that are not included within the regulatory scope of Barclays Bank PLC.

Analysis of treasury and capital risk

Table 11: OV1 – Overview 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.

	RWA		Minimum Capital Requirements	
	As at 31 December 2019 £m	As at 31 December 2018 £m	As at 31 December 2019 £m	As at 31 December 2018 £m
1 Credit risk (excluding counterparty credit risk) (CCR)	174,321	179,816	13,946	14,307
2 Of which standardised approach	60,482	60,096	4,839	4,808
3 Of which the foundation IRB (FIRB) approach	–	–	–	–
4 Of which the advanced IRB (AIRB) approach	113,839	119,720	9,107	9,499
5 Of which Equity IRB under the Simple risk-weight or the internal models approach	–	–	–	–
6 CCR	31,630	28,472	2,530	2,278
7 Of which mark to market	1,697	2,152	136	172
8 Of which original exposure	–	–	–	–
9 Of which standardised approach	–	–	–	–
9a Of which financial collateral comprehensive method	4,723	3,287	378	263
10 Of which internal model method	21,708	18,669	1,736	1,494
11 Of which risk exposure amount for contributions to the default fund of a CCP	998	955	80	76
12 Of which CVA	2,504	3,409	200	273
13 Settlement risk	276	170	22	14
14 Securitisation exposures in banking book (after cap)	6,899	4,809	552	385
14a Of which capital deduction approach (CAPD)	147	26	12	2
14b Of which look through approach (KIRB)	2,149	346	172	28
15 Of which IRB approach	2,736	3,933	219	315
16 Of which IRB supervisory formula approach (SFA)	–	–	–	–
17 Of which internal assessment approach (IAA)	106	504	8	40
18 Of which standardised approach	1,761	–	141	–
19 Market risk	30,761	30,821	2,461	2,466
20 Of which the standardised approach	13,032	13,976	1,043	1,118
21 Of which IMA	17,729	16,845	1,418	1,348
22 Large exposures	–	–	–	–
23 Operational risk	40,957	56,660	3,277	4,533
24 Of which basic indicator approach	–	–	–	–
25 Of which standardised approach	40,957	56,660	3,277	4,533
26 Of which advanced measurement approach	–	–	–	–
27 Amounts below the thresholds for deduction (subject to 250% risk weight)	10,287	11,178	823	973
28 Floor Adjustments	–	–	–	–
29 Total	295,131	311,926	23,611	24,956

For further detail on movements in RWAs for each risk type please see Analysis of credit risk (page 48), Analysis of counterparty credit risk (page 104), Analysis of market risk (page 122), Analysis of securitisation exposures (page 129) and Analysis of operational risk (page 144).

Analysis of treasury and capital risk

Table 12: Movements in risk weighted assets

The table below shows movements in RWAs, split by risk types and macro drivers

Risk weighted assets	Credit risk £bn	Counterparty credit risk ^a £bn	Market risk £bn	Operational risk £bn	Total £bn
As at 1 January 2019	195.6	28.8	30.8	56.7	311.9
Book size	–	3.9	(1.0)	(1.5)	1.4
Acquisitions and disposals	(0.8)	–	–	–	(0.8)
Book quality	(2.9)	0.3	–	–	(2.6)
Model updates	1.5	0.5	–	–	2.0
Methodology and policy	0.8	(1.4)	0.9	(14.2)	(13.9)
Foreign exchange movement ^b	(2.9)	–	–	–	(2.9)
As at 31 December 2019	191.3	32.1	30.7	41.0	295.1

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 £16.8bn to £295.1bn:

- Book size increased RWAs £1.4bn primarily due to an increase in trading activity, offset by a decrease in operational risk as per the standardised approach
- Book quality decreased RWAs £2.6bn primarily due to changes in risk profile
- Model updates increased RWAs £2.0bn primarily due to the recalibration of modelled wholesale RWAs
- Methodology and Policy decreased RWAs £13.9bn primarily due to the removal of the operational risk floor
- Foreign exchange movements decreased RWAs by £2.9bn primarily due to the depreciation of period end USD against GBP

Tables 13, 14 and 15 below show a subset of the information included in table 12, focused on positions captured under modelled treatment.

Table 13: CR8 – RWA flow statement of credit risk exposures under the AIRB approach

	RWA amount £bn	Capital requirements £bn
1 As at 1 January 2019	132.5	10.6
2 Asset size	2.1	0.2
3 Asset quality	(2.9)	(0.2)
4 Model updates	1.5	0.1
5 Methodology and policy	(2.6)	(0.2)
6 Acquisitions and disposals	(0.8)	(0.1)
7 Foreign exchange movements	(1.7)	(0.1)
8 Other	–	–
9 As at 31 December 2019	128.1	10.2

Advanced credit risk RWAs decreased £4.4bn to £128.1bn driven by:

- Asset size increased RWAs £2.1bn primarily driven by increase in mortgage lending, partially offset by decreased business activities within CIB
- Asset quality decreased RWAs £2.9bn primarily due to changes in risk profile within BUK and BI
- Model updates increased £1.5bn primarily due to the recalibration of modelled wholesale RWAs
- Methodology and Policy decreased £2.6bn primarily due to changes in the regulatory methodology for the ESHLA portfolio
- Foreign exchange movements decreased RWAs £1.7bn primarily due to the depreciation of period end USD against GBP

Analysis of treasury and capital risk

Table 14: CCR7 – RWA flow statement of counterparty credit risk exposures under the IMM

The total in this table shows the contribution of Internal Model Method (IMM) exposures to CCR RWAs (under both standardised and AIRB) and will not directly reconcile to CCR AIRB RWAs in table 10.

	RWA amount £bn	Capital requirements £bn
1 As at 1 January 2019	18.8	1.5
2 Asset size	3.1	0.3
3 Credit quality of counterparties	0.3	–
4 Model updates (IMM only)	0.4	–
5 Methodology and policy (IMM only)	(0.7)	(0.1)
6 Acquisitions and disposals	–	–
7 Foreign exchange movements	–	–
8 Other	–	–
9 As at 31 December 2019	21.9	1.7

Table 15: MR2-B – RWA flow statement of market risk exposures under the IMA

	VaR £bn	SVaR £bn	IRC £bn	CRM £bn	Other £bn	Total RWA £bn	Total Capital requirements £bn
1 As at 1 January 2019	3.2	8.9	1.9	–	2.8	16.8	1.3
2 Movement in risk levels	0.6	(1.3)	1.8	–	(1.1)	–	–
3 Model updates/changes	–	–	–	–	–	–	–
4 Methodology and policy	0.3	0.6	–	–	–	0.9	0.1
5 Acquisitions and disposals	–	–	–	–	–	–	–
6 Other	–	–	–	–	–	–	–
7 As at 31 December 2019	4.1	8.2	3.7	–	1.7	17.7	1.4

Analysis of treasury and capital risk

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.

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 12 do not include the impact of foreign exchange for the counterparty credit risk or 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 2019.

Analysis of treasury and capital risk

Leverage ratio and exposures

The following leverage tables show the components of the leverage ratio using the CRR definition for leverage exposure and Tier 1 capital as at 31 December 2019.^{a, b}

Barclays Group manages the risk associated with leverage exposures through the Barclays Group capital risk management process. Leverage ratio forecasts are regularly monitored against early warning indicators and internal limits which trigger actions to mitigate risk. Barclays Group leverage ratio is also subject to regular external and internal stress testing.

Table 16: Summary reconciliation of accounting assets and leverage ratio exposures

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

	As at 31 December 2019		As at 31 December 2018	
	Barclays Group £m	Barclays Bank PLC £m	Barclays Group £m	Barclays Bank PLC £m
1 Total assets as per published financial statements	1,140,229	891,121	1,133,283	893,396
2 Adjustment for entities which are consolidated for accounting purposes but are outside the scope of regulatory consolidation	(1,170)	(466)	(2,203)	(1,025)
4 Adjustments for derivative financial instruments	(123,318)	(110,955)	(101,125)	(106,917)
5 Adjustments for securities financing transactions (SFTs)	18,339	35,900	16,725	39,329
6 Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	105,289	99,322	108,265	114,536
EU-6a (Adjustment for intragroup exposures excluded from the leverage ratio exposure measure in accordance with Article 429 (7) of Regulation (EU) No 575/2013)	–	(167,667)	–	(136,184)
7 Other adjustments (asset amounts deducted in determining tier 1 capital)	(13,110)	(15,540)	(12,425)	(11,729)
8 Total leverage ratio exposure	1,126,259	731,715	1,142,520	791,406

Notes:

a Capital and leverage measures are calculated applying CRR as amended by CRR II applicable as at the reporting date.

b Leverage ratio is calculated applying the fully loaded treatment of the CRR for Barclays Group and the transitional treatment of the CRR for Barclays Bank PLC.

Analysis of treasury and capital risk

Table 17: Leverage ratio common disclosure

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

Barclays Group		As at 31 December 2019 £m	As at 31 December 2018 £m
On-balance sheet exposures (excluding derivatives and SFTs)^a			
1	On-balance sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral)	798,516	778,651
2	Asset amounts deducted in determining tier 1 capital	(13,110)	(12,425)
3	Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets)	785,406	766,226
Derivative exposures			
4	Replacement cost associated with <i>all</i> derivatives transactions (ie net of eligible cash variation margin)	22,806	22,491
5	Add-on amounts for PFE associated with <i>all</i> derivatives transactions (mark-to-market method)	142,143	142,249
7	Deductions of receivables assets for cash variation margin provided in derivatives transactions	(38,753)	(32,002)
8	Exempted CCP leg of client-cleared trade exposures	(34,061)	(30,661)
9	Adjusted effective notional amount of written credit derivatives	293,935	297,023
10	Adjusted effective notional offsets and add-on deductions for written credit derivatives	(280,152)	(277,991)
11	Total derivative exposures	105,918	121,109
Securities financing transaction exposures^a			
12	Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	387,328	365,967
13	Netted amounts of cash payables and cash receivables of gross SFT assets	(276,021)	(235,772)
14	Counterparty credit risk exposure for SFT assets	18,339	16,725
16	Total securities financing transaction exposures	129,646	146,920
Other off-balance sheet exposures			
17	Off-balance sheet exposures at gross notional amount	331,390	337,576
18	Adjustments for conversion to credit equivalent amounts	(226,101)	(229,311)
19	Other off-balance sheet exposures	105,289	108,265
Capital and total exposures			
20	Tier 1 capital	50,428	49,317
21	Total leverage ratio exposures	1,126,259	1,142,520
Leverage ratio			
22	Leverage ratio	4.5%	4.3%
Choice on transitional arrangements and amount of derecognised fiduciary items			
EU-23	Choice on transitional arrangements for the definition of the capital measure	Fully phased in	

Note:

a Prior period comparatives have been revised to reflect the allocation of margin lending from loans, advances and other assets to SFTs.

The CRR leverage ratio increased to 4.5%. The T1 capital increased £1.1bn to £50.4bn, which included a net increase in AT1 capital. The CRR leverage exposure decreased £16bn to £1,126bn primarily driven by SFTs.

Analysis of treasury and capital risk

Table 17a: Leverage ratio common disclosure for significant subsidiary

Barclays Bank PLC		As at 31 December 2019 £m	As at 31 December 2018 £m
On-balance sheet exposures (excluding derivatives and SFTs)			
1	On-balance sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral) ^a	528,763	518,426
2	Asset amounts deducted in determining tier 1 capital	(15,540)	(11,729)
3	Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets)^a	513,223	506,697
Derivative exposures			
4	Replacement cost associated with all derivatives transactions (ie net of eligible cash variation margin)	25,991	21,097
5	Add-on amounts for PFE associated with all derivatives transactions (mark-to-market method)	128,309	120,775
7	Deductions of receivables assets for cash variation margin provided in derivatives transactions	(34,886)	(30,466)
8	Exempted CCP leg of client-cleared trade exposures	(15,026)	(16,108)
9	Adjusted effective notional amount of written credit derivatives	292,498	297,055
10	Adjusted effective notional offsets and add-on deductions for written credit derivatives	(278,503)	(278,023)
11	Total derivative exposures	118,383	114,330
Securities financing transaction exposures			
12	Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions ^a	418,068	402,146
13	Netted amounts of cash payables and cash receivables of gross SFT assets	(285,514)	(249,448)
14	Counterparty credit risk exposure for SFT assets	35,900	39,329
16	Total securities financing transaction exposures^a	168,454	192,027
Other off-balance sheet exposures			
17	Off-balance sheet exposures at gross notional amount	215,938	253,324
18	Adjustments for conversion to credit equivalent amounts	(116,616)	(138,788)
19	Other off-balance sheet exposures	99,322	114,536
Exempted exposures in accordance with CRR Article 429 (7) and (14) (on and off balance sheet)			
EU-19a	Exemption of intragroup exposures (solo basis) in accordance with Article 429(7) of Regulation (EU) No 575/2013 (on and off balance sheet)	(167,667)	(136,184)
Capital and total exposures			
20	Tier 1 capital	28,600	31,902
21	Total leverage ratio exposures	731,715	791,406
Leverage ratio			
22	Leverage ratio	3.9%	4.0%
Choice on transitional arrangements and amount of derecognised fiduciary items			
EU-23	Choice on transitional arrangements for the definition of the capital measure	Transitional	

Note:

a Prior year comparatives have been revised to reflect the allocation of margin lending from loans, advances and other assets to SFTs.

Analysis of treasury and capital risk

Table 18: 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 regulatory asset class.

Barclays Group		As at 31 December 2019 £m	As at 31 December 2018 £m
EU-1	Total on-balance sheet exposures (excluding derivatives, SFTs, and exempted exposures), of which:	741,929	745,717
EU-2	Trading book exposures	145,185	134,958
EU-3	Banking book exposures, of which:	596,744	610,759
EU-4	Covered bonds	1,766	122
EU-5	Exposures treated as sovereigns	231,664	242,167
EU-6	Exposures to regional governments, MDB, international organisations and PSE NOT treated as sovereigns	8,383	511
EU-7	Institutions	20,091	26,179
EU-8	Secured by mortgages of immovable properties	154,572	148,589
EU-9	Retail exposures	56,031	60,033
EU-10	Corporate	77,503	81,690
EU-11	Exposures in default	5,617	9,773
EU-12	Other exposures (eg equity, securitisations, and other non-credit obligation assets)	41,117	41,695

Analysis of treasury and capital risk

Minimum requirement for own funds and eligible liabilities (MREL)

CRR II requirements relating to own funds and eligible liabilities came into force from 27 June 2019, which amended CRR. As an amending regulation, the existing provisions of CRR apply unless they are amended by CRR II. Eligible liabilities have been calculated reflecting the Group's interpretation of the current rules and guidance. Certain aspects of CRR II are dependent on final technical standards to be issued by the EBA and adopted by the European Commission as well as UK implementation of the rules.

The disclosures in this section (Tables 19 to 23) have been prepared in accordance with CRR as amended by CRR II, using the uniform format set out in the BCBS Standard on Pillar 3 disclosure requirements, as the EU format for disclosure is yet to be agreed.

Table 19: KM2 – Key metrics – TLAC requirements (at resolution group level)

This table shows the key metrics for the Group's own funds and eligible liabilities.

Barclays Group		As at 31 December 2019 £m	As at 30 September 2019 £m	As at 30 June 2019 £m
1	Total loss-absorbing capacity (TLAC) available	96,666	100,615	102,013
2	Total RWA at the level of the resolution group	295,131	313,261	319,107
3	TLAC as a percentage of RWA (row 1 / row 2) (%)	32.8%	32.1%	32.0%
4	Leverage ratio exposure measure at the level of the resolution group ^a	1,126,259	1,235,079	1,213,800
5	TLAC as a percentage of leverage ratio exposure measure (row 1 / row 4) (%)	8.6%	8.1%	8.4%
6a	Does the subordination exemption in the antepenultimate paragraph of Section 11 of the FSB TLAC Term Sheet apply?	No	No	No
6b	Does the subordination exemption in the penultimate paragraph of Section 11 of the FSB TLAC Term Sheet apply?	No	No	No
6c	If the capped subordination exemption applies, the amount of funding issued that ranks pari passu with Excluded Liabilities and that is recognised as external TLAC, divided by funding issued that ranks pari passu with Excluded Liabilities and that would be recognised as external TLAC if no cap was applied (%)	N/A	N/A	N/A

Note:

a CRR leverage exposure as amended by CRR II applicable as at the reporting date.

Analysis of treasury and capital risk

Table 20: TLAC 1 – TLAC composition for G-SIBs (at resolution group level)

This table shows the composition of the Group's own funds and eligible liabilities and ratios.

		Barclays Group As at 31 December 2019 £m
Regulatory capital elements of TLAC and adjustments		
1	Common Equity Tier 1 capital (CET1)	40,813
2	Additional Tier 1 capital (AT1) before TLAC adjustment	11,428
5	AT1 instruments eligible under the TLAC framework	11,428
6	Tier 2 capital (T2) before TLAC adjustments	11,400
7	Amortised portion of T2 instruments where remaining maturity >1 year	60
10	T2 instruments eligible under the TLAC framework	11,460
11	TLAC arising from regulatory capital	63,701
Non-regulatory capital elements of TLAC		
12	External TLAC instruments issued directly by the bank and subordinated to excluded liabilities	32,980
17	TLAC arising from non-regulatory capital instruments before adjustments	32,980
Non-regulatory capital elements of TLAC: adjustments		
18	TLAC before deductions	96,681
20	Deduction of investments in own other TLAC liabilities	(15)
22	TLAC after deductions	96,666
Risk-weighted assets and leverage exposure measure for TLAC purposes		
23	Total risk-weighted assets adjusted as permitted under the TLAC regime	295,131
24	Leverage exposure measure ^a	1,126,259
TLAC ratios and buffers		
25	TLAC (as a percentage of risk-weighted assets adjusted as permitted under the TLAC regime)	32.8%
26	TLAC (as a percentage of leverage exposure) ^a	8.6%
27	CET1 (as a percentage of risk-weighted assets) available after meeting the resolution group's minimum capital and TLAC requirements	9.3%
28	Institution-specific buffer requirement (capital conservation buffer plus countercyclical buffer requirements plus higher loss absorbency requirement, expressed as a percentage of risk-weighted assets)	4.6%
29	Of which: capital conservation buffer requirement	2.5%
30	Of which: bank specific countercyclical buffer requirement	0.6%
31	Of which: higher loss absorbency requirement	1.5%

Note:

a CRR leverage exposure as amended by CRR II applicable as at the reporting date.

Analysis of treasury and capital risk

Table 21: TLAC 3 – Resolution entity – creditor ranking at legal entity level

This table shows the nominal values of Barclays PLC's (the parent company) capital and liabilities and the position in creditor hierarchy.

As at 31 December 2019		Creditor ranking				Total £m
		1 Most junior £m	2 £m	3 £m	4 Most senior £m	
1	Description of creditor ranking	Ordinary Shares	Perpetual Deeply Subordinated Contingent Convertible Debt	Dated Subordinated Debt	Unsecured and Un- subordinated Debt, and other pari passu liabilities	
2	Total capital and liabilities net of credit risk mitigation	4,331	10,919	7,609	34,163	57,022
3	Subset of row 2 that are excluded liabilities	–	–	–	595	595
4	Total capital and liabilities less excluded liabilities	4,331	10,919	7,609	33,568	56,427
5	Subset of row 4 that are potentially eligible as TLAC	4,331	10,919	7,609	32,489	55,348
6	Subset of row 5 with 1 year ≤ residual maturity <2 years	–	–	–	4,432	4,432
7	Subset of row 5 with 2 years ≤ residual maturity <5 years	–	–	948	13,041	13,989
8	Subset of row 5 with 5 years ≤ residual maturity <10 years	–	–	5,411	11,045	16,456
9	Subset of row 5 with residual maturity ≥10 years, but excluding perpetual securities	–	–	1,250	3,971	5,221
10	Subset of row 5 that is perpetual securities	4,331	10,919	–	–	15,250

Analysis of treasury and capital risk

Table 22: TLAC2 – Material subgroup entity – creditor ranking at legal entity level

This table shows the nominal values of Barclays Bank PLC's capital and liabilities and the position in creditor hierarchy.

Barclays Bank PLC		Creditor ranking								Total £m
		1	2	2	3	4	5	5	6	
As at		Most junior							Most senior	
31 December 2019		£m	£m	£m	£m	£m	£m	£m	£m	£m
1	Is the resolution entity the creditor/investor?	Yes	Yes	No	No	No	Yes	No	Yes	
2	Description of creditor ranking	Ordinary Shares	Perpetual Deeply Subordinated Contingent Convertible Debt	Preference Shares/ Perpetual Deeply Subordinated Debt	Perpetual Subordinated Debt	Junior Subordinated Debt	Dated Subordinated Debt	Dated Subordinated Debt/ Dated Subordinated Contingent Capital Debt	Dated secondary non-preferential debt	
3	Total capital and liabilities net of credit risk mitigation	2,343	8,344	727	754	29	6,242	9,203	15,622	43,264
4	Subset of row 3 that are excluded liabilities	–	–	–	–	–	–	–	–	–
5	Total capital and liabilities less excluded liabilities	2,343	8,344	727	754	29	6,242	9,203	15,622	43,264
6	Subset of row 5 that are eligible as TLAC	2,343	8,344	727	754	29	6,242	9,203	14,543	42,185
7	Subset of row 6 with 1 year ≤ residual maturity <2 years	–	–	–	–	–	–	4,676	2,983	7,659
8	Subset of row 6 with 2 years ≤ residual maturity <5 years	–	–	–	–	–	–	3,211	8,005	11,216
9	Subset of row 6 with 5 years ≤ residual maturity <10 years	–	–	–	–	–	3,223	379	2,703	6,305
10	Subset of row 6 with residual maturity ≥10 years, but excluding perpetual securities	–	–	–	–	–	3,019	108	852	3,979
11	Subset of row 6 that is perpetual securities	2,343	8,344	727	754	29	–	–	–	12,197

Analysis of treasury and capital risk

Table 23: TLAC2 – Material subgroup entity – creditor ranking at legal entity level

This table shows the nominal values of Barclays Bank UK PLC Group's capital and liabilities and the position in creditor hierarchy.

Barclays Bank UK PLC Group		Creditor ranking				Total £m
		1	2	3	4	
As at 31 December 2019		Most junior			Most senior	
		£m	£m	£m	£m	
1	Is the resolution entity the creditor/investor?	Yes	Yes	Yes	Yes	
2	Description of creditor ranking	Ordinary Shares	Perpetual Deeply Subordinated Contingent Convertible Debt	Dated Subordinated Debt	Dated secondary non-preferential debt	
3	Total capital and liabilities net of credit risk mitigation	5	2,575	3,288	4,244	10,112
4	Subset of row 3 that are excluded liabilities	–	–	–	–	–
5	Total capital and liabilities less excluded liabilities	5	2,575	3,288	4,244	10,112
6	Subset of row 5 that are eligible as TLAC	5	2,575	3,288	4,244	10,112
7	Subset of row 6 with 1 year ≤ residual maturity <2 years	–	–	–	1,449	1,449
8	Subset of row 6 with 2 years ≤ residual maturity <5 years	–	–	948	1,286	2,234
9	Subset of row 6 with 5 years ≤ residual maturity <10 years	–	–	2,188	1,213	3,401
10	Subset of row 6 with residual maturity ≥10 years, but excluding perpetual securities	–	–	152	296	448
11	Subset of row 6 that is perpetual securities	5	2,575	–	–	2,580

Analysis of treasury and capital risk

Table 24: 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 (period end)	Total period end value				
	31.12.19 £m	31.09.19 £m	30.06.19 £m	31.03.19 £m	31.12.18 £m
Barclays Group					
Liquidity buffer	206,448	225,556	232,098	225,850	218,766
Total net cash outflows	128,901	148,895	148,669	141,515	129,172
Liquidity coverage ratio (%) (period end)	160%	151%	156%	160%	169%

LIQ1 – Liquidity coverage ratio (average)

	Barclays Group									
	Total unweighted value (average)					Total weighted value (average)				
	31.12.19	30.09.19	30.06.19	31.03.19	31.12.18	31.12.19	30.09.19	30.06.19	31.03.19	31.12.18
Number of data points used in calculation of averages ^a	12	12	12	12	12	12	12	12	12	12
High-quality liquid assets	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
1 Total high-quality liquid assets (HQLA)						232,008	233,702	228,910	223,998	220,996
Cash outflows										
2 Retail deposits and deposits from small business customers, of which:						17,961	17,676	17,420	17,178	17,055
3 Stable deposits	111,319	111,028	110,858	110,736	110,505	5,566	5,551	5,543	5,537	5,525
4 Less stable deposits	90,642	88,880	87,275	85,760	84,928	12,387	12,117	11,869	11,633	11,520
5 Unsecured wholesale funding, of which:	170,453	169,354	165,612	161,449	159,087	88,247	89,112	87,232	84,565	83,736
6 Operational deposits (all counterparties) and deposits in networks of cooperative banks	34,908	32,653	31,518	30,675	30,151	8,582	8,030	7,747	7,535	7,401
7 Non-operational deposits (all counterparties)	130,513	131,751	129,483	126,545	124,155	74,633	76,132	74,874	72,801	71,554
8 Unsecured debt	5,032	4,950	4,611	4,229	4,781	5,032	4,950	4,611	4,229	4,781
9 Secured wholesale funding						59,782	58,953	56,419	55,036	54,615
10 Additional requirements, of which:	177,769	178,845	175,345	175,335	173,931	50,402	51,292	50,422	52,089	52,262
11 Outflows related to derivative exposures and other collateral requirements	18,740	19,131	18,917	19,977	20,406	16,734	17,239	17,205	18,503	19,158
12 Outflows related to loss of funding on debt products	8,576	8,421	7,498	7,440	7,244	8,576	8,421	7,498	7,440	7,244
13 Credit and liquidity facilities	150,453	151,293	148,930	147,918	146,281	25,092	25,632	25,719	26,146	25,860
14 Other contractual funding obligations	2,410	5,047	13,666	16,668	18,852	1,654	1,590	1,426	1,241	1,101
15 Other contingent funding obligations	159,506	156,966	152,837	149,866	149,586	5,371	4,486	4,017	3,657	3,677
16 Total cash outflows						223,417	223,109	216,936	213,766	212,446
Cash inflows										
17 Secured lending (e.g. reverse repos)	418,571	406,338	389,512	376,448	370,406	58,649	57,633	56,042	54,564	53,592
18 Inflows from fully performing exposures	12,750	12,714	12,641	12,642	12,488	8,129	8,220	8,305	8,412	8,536
19 Other cash inflows ^a	12,057	12,128	12,042	11,556	10,232	6,926	6,965	6,956	6,763	5,586
EU- (Difference between total weighted inflows and total weighted outflows arising from transactions in third countries where there are transfer restrictions or which are denominated in non-convertible currencies)										
EU- (Excess inflows from a related specialised credit institution)										
20 Total cash inflows	443,378	431,234	414,195	400,646	393,126	73,704	72,818	71,303	69,739	67,714
Fully exempt inflows	–	–	–	–	–	–	–	–	–	–
Inflows subject to 90% cap	–	–	–	–	–	–	–	–	–	–
Inflows subject to 75% cap	359,897	351,480	336,018	318,874	308,378	73,704	72,818	71,303	69,739	67,714
21 Liquidity buffer						232,008	233,702	228,910	223,998	220,996
22 Total net cash outflows						149,713	150,291	145,633	144,027	144,732
23 Liquidity coverage ratio (%) (average)						155%	155%	157%	156%	153%

Notes:

a Trailing average of 12 month-end observations to the reporting date.

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

Analysis of treasury and capital risk

As at 31 December 2019, the Barclays Group LCR was 160% (December 2018: 169%), equivalent to a surplus of £78bn (December 2018: £90bn) to 100% regulatory requirement, as shown on Table 6. The liquidity pool, LCR and surplus were managed down through the course of the year, supporting increased business funding requirements while maintaining a prudent liquidity position.

The average LCR for the 12 months to 30 December 2019 increased to 155% (December 2018: 153%), as growth in the liquidity buffer exceeded growth in stresses. Growth in the average liquidity buffer during the 12 months period was largely driven by net deposit growth across businesses. The Barclays Group also continued to maintain surpluses to its internal liquidity requirements.

The composition of the liquidity pool is subject to limits set by the Barclays PLC 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.

As at 31 December 2019, 67% (December 2018: 70%) of the liquidity pool was located in Barclays Bank PLC, 20% in Barclays Bank UK PLC (December 2018: 20%) and 6% in Barclays Bank Ireland (December 2018: 2%). The residual portion of the liquidity pool is held outside of these entities, predominantly in the US subsidiaries, to meet entity-specific stress outflows and local regulatory requirements. To the extent the use of this residual portion of the liquidity pool is restricted due to local regulatory requirements, it is assumed to be unavailable to the rest of the Group in calculating the LCR.

The strong deposit franchises in Barclays Bank Group and Barclays Bank UK Group are primary funding sources for Barclays Group. Issuances to meet the Minimum Requirement for Own Funds and Eligible Liabilities (MREL) from Barclays PLC also provide a long term stable source of funding for the Barclays Group.

Barclays Bank Group and Barclays Bank UK Group maintain access to a variety of sources of wholesale funding in major currencies, including those available from term investors across a range of distribution channels and geographies, short-term funding markets and repo markets. In addition, Barclays Bank Group has direct access to US, European and Asian capital markets through its global investment banking operations and to long-term investors through its clients worldwide. As a result, wholesale funding is well diversified by product, maturity, geography and currency across the Barclays Group.

Key sources of wholesale funding for Barclays Bank Group include money markets, certificates of deposit, commercial paper, medium-term issuances (including structured notes) and securitisations. Key sources of wholesale funding for Barclays Bank UK Group include money markets, certificates of deposit, commercial paper, covered bonds and other securitisations. Barclays Bank Group and Barclays Bank UK Group also support various central bank monetary initiatives including participation in the Bank of England's Term Funding Scheme.

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.

Table 25: Functional currency of operations

Functional currency of operations						
	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 2019						
USD	25,606	(10,048)	(1,110)	14,448	(5,339)	9,109
EUR	3,068	(3)	–	3,065	(1,122)	1,943
JPY	533	–	–	533	–	533
Other	2,001	–	(34)	1,967	–	1,967
Total	31,208	(10,051)	(1,144)	20,013	(6,461)	13,552
As at 31 December 2018						
USD	28,857	(12,322)	(2,931)	13,604	(4,827)	8,777
EUR	2,672	(3)	–	2,669	(2,146)	523
JPY	489	–	–	489	–	489
Other	2,026	–	(37)	1,989	–	1,989
Total	34,044	(12,325)	(2,968)	18,751	(6,973)	11,778

Economic hedges relate to exposures arising on foreign currency denominated preference share and AT1 instruments. These are accounted for at historical cost under IFRS and do not qualify as hedges for accounting purposes. The gain or loss arising from changes in the GBP value of these instruments is recognised on redemption in retained earnings.

During 2019, total structural currency exposure net of hedging instruments increased by £1.8bn to £13.6bn (December 2018: £11.8bn). Foreign currency net investments decreased by £2.8bn to £31.2bn (December 2018: £34.0bn) driven predominantly by a £3.3bn decrease in USD partially offset by a £0.4bn increase in EUR. The hedges associated with these investments decreased by £4.1bn to £11.2bn (December 2018: £15.3bn).

Analysis of treasury and capital risk

Pension risk review

The UK Retirement Fund (UKRF) represents approximately 97% (2018: 97%) 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.

Refer to page 195 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 two largest market risks within the asset portfolio are interest rates and equities. The split of scheme assets is shown within Note 33 on page 316 of the Barclays PLC Annual Report 2019. The fair value of the UKRF assets was £31.4bn as at 31 December 2019 (2018: £29.0bn).

Liabilities

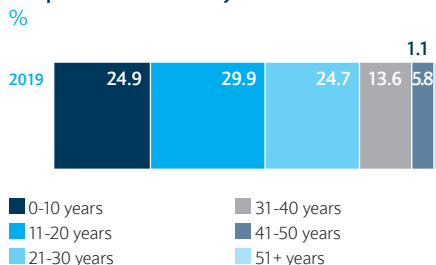
The UKRF retirement benefit obligations are a series of future cash flows with relatively long duration. On an IAS 19 basis these cash flows are sensitive to changes in the expected long-term price inflation rate (RPI) and the discount rate (GBP AA corporate bond yield):

- 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.

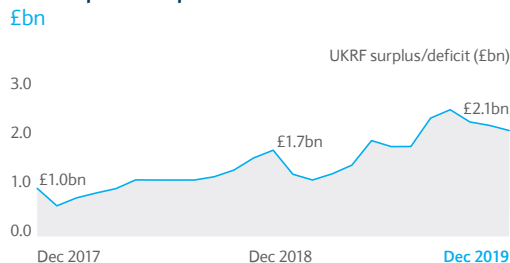
Pension risk is generated through the Group’s defined benefit schemes and this risk is set to reduce over time as the main defined benefit scheme is closed to new entrants. The chart below outlines the shape of the UKRF’s liability cash flow profile as at 31 December 2019 that takes account of the future inflation indexing of payments to beneficiaries. The majority of the cash flows (approximately 93%) 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. Transfers out will bring forward the liability cash flows.

For more detail on the UKRF’s financial and demographic assumptions see Note 33 on page 316 of the Barclays PLC Annual Report 2019.

Proportion of liability cash flows



IAS 19 pension position in 2019



The graph above shows the evolution of the UKRF’s net IAS 19 position over the last two years. During 2019 the net improvement in the IAS 19 position was largely driven by bank contributions. Credit spreads tightening during the year had a negative impact which was broadly offset by changes in other market levels, in particular equity prices and interest rates, and updates to demographic assumptions.

Refer to Note 33 on page 316 of the Barclays PLC Annual Report 2019 to the financial statements for the sensitivity of the UKRF to changes in key assumptions.

Analysis of treasury and capital risk

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 position at 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 on an IAS 19 basis (see Note 33 on page 316 of the Barclays PLC Annual Report 2019). The Trustee receives quarterly VaR measures on a funding basis.

The pension liability is also sensitive to post-retirement mortality assumptions which are regularly reviewed. See Note 33 on page 316 of the Barclays PLC Annual Report 2019 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.

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 remeasurements, 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 Capital Requirement for CET1 capital, Tier 1 capital and total capital. More detail on minimum regulatory requirements can be found on page 8 of this report.

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-traded financial assets and liabilities, including the effect of any hedging. Net Interest Income (NII) sensitivity uses the Annual Earnings at Risk (AEaR) metric as described on page 196. Note that this metric assumes an instantaneous parallel change to forward interest rate curves. The model does not apply floors to shocked market rates, but does recognize contractual product specific interest rate floors where relevant. The main model assumptions are: (i) one-year ahead time horizon; (ii) balance sheet is held constant; (iii) balances are adjusted for assumed behavioural profiles (i.e. considers that customers may prepay the mortgages before the contractual maturity); and (iv) behavioural assumptions are kept unchanged in all rate scenarios.

Table 26: Net interest income sensitivity (AEaR) by business unit

	Barclays UK £m	Barclays International £m	Head Office £m	Total £m
As at 31 December 2019				
+25bps	16	25	4	45
-25bps	(57)	(74)	(4)	(135)
As at 31 December 2018				
+25bps	28	55	5	88
-25bps	(71)	(73)	(5)	(149)

Notes:

a Excludes minor investment banking business.

b Expected fixed rate mortgage pipeline completions in Barclays UK assumed to be consistent with level and timing of pipeline hedging.

c The Group's customer banking book hedging activity is risk reducing from an NII sensitivity perspective. The hedges in place remove interest rate risk and smooth income over the medium term. The NII sensitivity for the Group at 31 December 2019 without hedging in place for +/-25bp rate shocks would be £140m/£(229)m respectively.

d NII sensitivity for December 2018 restated due to increased portfolio coverage, primarily the inclusion of the Treasury portfolio.

NII asymmetry arises due to the current low level of interest rates as some customer products have embedded floors. NII sensitivity to a +25bp shock to rates has decreased year on year resulting from actions taken to reduce the exposure to falling interest rates.

Analysis of treasury and capital risk

Table 27: Net interest income sensitivity (AEaR) by currency

Net interest income sensitivity (AEaR) by currency^{a,b}

	2019		2018	
	+25 basis points £m	-25 basis points £m	+25 basis points £m	-25 basis points £m
As at 31 December				
GBP	38	(93)	56	(112)
USD	29	(32)	36	(37)
EUR	(10)	(20)	(5)	3
Other currencies	(12)	10	1	(3)
Total	45	(135)	88	(149)

Notes:

a Excludes minor investment bank businesses.

b NII sensitivity for December 2018 restated due to increased portfolio coverage, primarily the inclusion of the Treasury portfolio.

Analysis of equity sensitivity

Equity sensitivity measures the overall impact of a +/- 25bps movement in interest rates on retained earnings, fair value through other comprehensive income (FVOCI), cash flow hedge reserves and pensions. For non-NII items a DV01 metric is used, which is an indicator of the yield curve shift in value for a 1 basis point movement.

Table 28: Analysis of equity sensitivity

Analysis of equity sensitivity^a

	2019		2018	
	+25 basis points £m	-25 basis points £m	+25 basis points £m	-25 basis points £m
As at 31 December				
Net interest income	45	(135)	88	(149)
Taxation effects on the above	(11)	34	(22)	37
Effect on profit for the year	34	(101)	66	(112)
As percentage of net profit after tax	1.0%	(3.0%)	2.6%	(4.4%)
Effect on profit for the year (per above)	34	(101)	66	(112)
Fair value through other comprehensive income reserve	(321)	329	(253)	260
Cash flow hedge reserve	(534)	534	(574)	574
Taxation effects on the above	214	(216)	207	(209)
Effect on equity	(607)	546	(554)	513
As percentage of equity	(0.9%)	0.8%	(0.9%)	0.8%

Note:

a December 2018 sensitivities restated due to increased portfolio coverage, primarily the inclusion of the Treasury portfolio.

Movements in the FVOCI reserve impact CET1 capital. However, movements in the cash flow hedge reserve and pensions remeasurement reserve recognised in FVOCI do not affect CET1 capital.

Analysis of treasury and capital risk

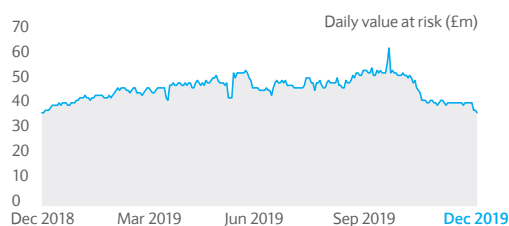
Volatility of the FVOCI portfolio in the liquidity pool

Changes in value of FVOCI exposures flow directly through capital via the FVOCI reserve. The volatility of the value of the FVOCI investments in the liquidity pool is captured and managed through a value measure rather than an earning measure, i.e. 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 FVOCI exposures. These exposures are in the banking book and do not meet the criteria for trading book treatment.

Non-traded value at risk

£m



Analysis of volatility of the FVOCI portfolio in the liquidity pool

	2019			2018		
	Average £m	High £m	Low £m	Average £m	High £m	Low £m
For the year ended 31 December						
Non-traded market value at risk (daily, 95%)	45	53	35	45	61	32

DVaR trended upwards for the first three quarters of 2019 as outright duration and asset swap spread risk increased. The liquidity pool de-risked substantially in early Q4 19, causing an associated reduction in DVaR.

Analysis of treasury and capital risk

Table 29: PV1 – Prudent valuation adjustment

This table below provides a granular breakdown of the Prudent Valuation Adjustment (PVA). 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.

Barclays Group

	Equity £m	Interest rates £m	FX £m	Credit £m	Commodities £m	Total £m	Of which in the trading book ^{ab} £m	Of which in the banking book ^{ab} £m
As at 31 December 2019								
1	575	235	17	260	–	1,087	801	286
2	321	138	10	189	–	658	459	199
3	22	65	1	16	–	104	104	–
4	232	32	6	55	–	325	238	87
5	–	–	–	–	–	–	–	–
6	42	109	–	1	–	152	152	–
7	34	35	1	40	–	110	72	38
8	–	85	–	187	–	272	90	182
9	–	71	–	–	–	71	71	–
10	16	30	1	7	–	54	54	–
11	–	–	–	–	–	–	–	–
12	667	565	19	495	–	1,746	1,240	506
As at 31 December 2018								
1	543	271	22	332	–	1,168	1,142	27
2	342	159	15	198	–	713	687	26
3	15	78	2	21	–	116	115	1
4	187	34	5	113	–	339	339	–
5	–	–	–	–	–	–	–	–
6	31	14	–	8	–	54	54	–
7	36	39	2	41	–	117	97	20
8	–	71	–	194	–	265	86	179
9	–	88	–	–	–	88	88	–
10	8	28	2	16	–	54	54	–
11	–	–	–	–	–	–	–	–
12	618	511	26	591	–	1,746	1,521	225

Notes:

a Barclays' implementation of PVA means that amounts cannot be easily classified as banking book or trading book. In the table we have provided the most material contributors to Banking book PVA, including a portfolio of longer dated non-asset backed loans made to Education, Social Housing and Local Authority counterparties and certain Equity investments.

b Significant contributors to PVA include trading book derivative portfolios, equity investments and non-asset backed loans held at fair value.

c A diversification reduction factor of 50% is applied to uncertainty after all regulatory exclusions and offsets, where permitted by CRR.

The increase in banking book PVA, and decrease in trading book PVA, is primarily driven by a refinement of the methodology used to allocate PVA between regulatory classifications.

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 country and industry concentrations, residual maturities, probabilities of default and actual losses.

Key metrics

Risk weighted assets for credit risk decreased in the year

Total RWA

-£4.3bn

Driven by:

-£2.9bn

Foreign exchange movement due to the depreciation of period end USD against GBP

-£2.9bn

Improvements in the asset quality within both Barclays International and Barclays UK

£1.5bn

Recalibration of modelled wholesale RWAs

Analysis of credit risk

Analysis of capital requirements and exposures for credit risk

Table 30: 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 EAD pre- and post-CRM. In accordance with regulatory requirements, credit mitigation is either reflected in regulatory measures for EAD, or in the risk parameters: 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 on page 52. Pre-CRM exposures are further analysed by geography on page 54, industry on page 60 and residual maturity on page 62. Information on the impact of CRM on EAD is set out on pages 62-69.

Credit exposure class	EAD pre-CRM ^a		EAD post-CRM ^a	
	Year end £m	Average ^b £m	Year end £m	Average ^b £m
Barclays Group				
As at 31 December 2019				
Standardised approach				
Central governments or central banks	166,907	190,544	166,907	190,544
Regional governments or local authorities	8,665	3,040	8,665	2,984
Public sector entities	7,318	6,882	7,318	6,879
Multilateral development banks	7,904	7,636	7,904	7,636
International organisations	750	918	750	918
Institutions	5,328	5,890	5,262	5,841
Corporates	39,018	41,254	25,127	26,630
Retail	29,803	30,464	29,439	29,832
Secured by mortgages	9,091	9,272	9,091	9,272
Exposures in default	1,763	2,027	1,739	2,002
Items associated with high risk	1,521	1,814	1,521	1,814
Covered bonds	1,766	1,312	1,766	1,312
Securitisations positions	8,673	5,446	8,673	5,446
Collective investment undertakings	–	–	–	–
Equity positions	998	1,126	998	1,126
Other items	4,234	5,144	4,234	5,144
Total Standardised Approach Credit Risk Exposure	293,739	312,764	279,394	297,380
Advanced IRB approach				
Central governments or central banks	94,287	85,939	94,163	85,815
Institutions	20,474	27,384	20,058	26,969
Corporates	102,155	109,413	95,847	103,105
Retail	–	–	–	–
– Small and medium-sized enterprises (SMEs)	8,876	8,957	8,876	8,957
– Secured by real estate collateral	154,464	152,156	154,464	152,156
– Qualifying revolving retail	40,199	41,120	40,199	41,120
– Other retail	6,076	6,216	6,076	6,216
Equity	–	–	–	–
Securitisations positions	35,405	33,097	35,405	33,097
Non-credit obligation assets	8,356	8,500	8,356	8,500
Total advanced IRB credit risk exposure	470,292	472,783	463,444	465,935
Total credit exposure	764,031	785,552	742,838	763,315

Notes:

a Collateral and guarantees for advanced IRB are not included within EAD as the impact of these measures is reflected in LGD calculations.

b Averages are calculated based on the last four quarters.

Analysis of credit risk

Table 30: Credit risk exposures – Note on pre- and post-credit risk mitigation (CRM) EAD continued

Barclays Group	EAD pre-CRM		EAD post-CRM	
	Year end £m	Average £m	Year end £m	Average £m
As at 31 December 2018				
Standardised approach				
Central governments or central banks	203,292	197,246	203,292	197,246
Regional governments or local authorities	845	726	606	534
Public sector entities	5,688	2,978	5,686	2,965
Multilateral development banks	4,091	3,861	4,091	3,861
International organisations	920	807	920	807
Institutions	4,162	4,622	4,134	4,590
Corporates	40,369	37,502	26,984	25,020
Retail	30,753	28,162	30,060	27,467
Secured by mortgages	8,875	9,939	8,875	9,939
Exposures in default	2,584	2,422	2,530	2,378
Items associated with high risk	3,160	2,724	3,160	2,642
Covered bonds	122	91	122	91
Securitisation positions	–	–	–	–
Collective investment undertakings	–	–	–	–
Equity positions	–	13	–	13
Other items	2,699	4,019	2,699	4,019
Total Standardised Approach Credit Risk Exposure	307,560	295,112	293,159	281,572
Advanced IRB approach				
Central governments or central banks	74,298	70,873	74,131	70,705
Institutions	26,529	25,029	26,462	24,962
Corporates	112,230	118,577	105,649	111,996
Retail	–	–	–	–
– Small and medium-sized enterprises (SMEs)	8,898	8,952	8,898	8,952
– Secured by real estate collateral	148,396	148,537	148,396	148,537
– Qualifying revolving retail	41,922	42,253	41,922	42,253
– Other retail	6,296	6,531	6,296	6,531
Equity	–	–	–	–
Securitisation positions	34,924	31,023	34,923	31,023
Non-credit obligation assets	8,996	9,181	8,996	9,181
Total advanced IRB credit risk exposure	462,489	460,956	455,673	454,140
Total credit exposure	770,049	756,068	748,832	735,712

Exposure at default pre-CRM decreased £6.0bn to £764.0bn primarily driven by a change in the Group liquidity pool composition.

Analysis of credit risk

Table 31: 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.

Barclays Group		Net value of exposures as at 31 December 2019 £m	Average net exposures as at 31 December 2019 ^a £m	Net value of exposures as at 31 December 2018 £m	Average net exposures as at 31 December 2018 ^a £m
1	Central governments or central banks	94,430	86,037	74,339	71,148
2	Institutions	24,180	31,127	29,970	28,523
3	Corporates	145,313	160,086	164,665	172,527
4	Of Which: Specialised Lending	9,357	8,772	7,684	7,280
5	Of Which: SMEs	17,632	18,120	17,856	18,697
6	Retail	239,611	238,382	236,599	236,834
7	Secured by real estate property	157,248	154,705	150,172	150,656
8	SME	–	–	–	–
9	Non-SMEs	157,248	154,705	150,172	150,656
10	Qualifying Revolving	68,928	70,046	72,741	72,212
11	Other Retail	13,435	13,631	13,686	13,966
12	SME	7,357	7,414	7,388	7,436
13	Non-SMEs	6,078	6,217	6,298	6,530
14	Equity	–	–	–	–
15	Total IRB Approach	503,534	515,632	505,573	509,032
16	Central governments or central banks	157,976	181,272	197,935	192,895
17	Regional governments or local authorities	8,758	3,122	950	837
18	Public sector entities	7,379	7,050	5,897	3,083
19	Multilateral development banks	7,904	7,636	4,091	3,861
20	International organisations	750	918	920	807
21	Institutions	6,140	6,462	5,045	5,307
22	Corporates	58,175	60,189	60,592	56,384
23	Of Which: SMEs	3,461	5,105	5,727	5,577
24	Retail	105,472	108,551	107,025	102,565
25	Of Which: SMEs	3,358	3,748	3,746	3,677
26	Secured by mortgages on immovable property	9,161	9,317	8,892	9,962
27	Of Which: SMEs	175	216	271	110
28	Exposures in default	2,009	2,165	2,779	2,530
29	Items associated with particularly high risk	1,529	1,972	3,173	2,739
30	Covered bonds	1,766	1,312	122	91
31	Claims on institutions and corporates with a short-term credit assessment	–	–	–	–
32	Collective investments undertakings	–	–	–	–
33	Equity exposures	998	1,127	–	13
34	Other exposures	4,234	5,144	2,699	4,019
35	Total standardised approach	372,251	396,237	400,120	385,093
36	Total	875,785	911,869	905,693	894,125

Note:

a Average net exposures values are calculated based on the last four quarters.

For further information on key movements, see table 30.

Analysis of credit risk

Table 32: Detailed view of credit risk RWAs and Capital Requirement

This table shows RWAs for credit risk by credit exposure class.

Barclays Group	As at 31 December 2019			As at 31 December 2018		
	EAD £m	RWA £m	Capital requirements £m	EAD £m	RWA £m	Capital requirements £m
Standardised approach						
Central governments or central banks	166,907	92	7	203,292	179	14
Regional governments or local authorities	8,665	1,481	118	606	15	1
Public sector entities	7,318	234	19	5,686	63	5
Multilateral development banks	7,904	–	–	4,091	–	–
International organisations	750	–	–	920	–	–
Institutions	5,262	1,619	130	4,134	1,357	109
Corporates	25,127	23,679	1,894	26,984	25,699	2,056
Retail	29,439	22,079	1,766	30,060	22,545	1,804
Secured by mortgages	9,091	3,552	284	8,875	3,557	285
Exposures in default	1,739	1,932	155	2,530	3,047	244
Items associated with high risks	1,521	2,282	183	3,160	6,017	481
Covered bonds	1,766	184	15	122	27	2
Securitisation positions	8,673	1,823	146	–	–	–
Collective investment undertakings	–	–	–	–	–	–
Equity positions	998	2,526	202	–	–	–
Other items	4,234	1,768	141	2,699	709	56
Total standardised approach credit risk exposure	279,394	63,251	5,060	293,159	63,215	5,057
Advanced IRB approach						
Central governments or central banks	94,163	4,584	367	74,131	2,682	215
Institutions	20,058	4,630	370	26,462	7,259	581
Corporates	95,847	51,703	4,136	105,649	54,193	4,335
Retail						
– Small and medium-sized enterprises (SMEs)	8,876	3,863	309	8,898	3,931	314
– Secured by real estate collateral	154,464	22,332	1,787	148,396	20,205	1,617
– Qualifying revolving retail	40,199	17,727	1,418	41,922	19,867	1,589
– Other retail	6,076	5,473	438	6,296	6,190	495
Equity	–	–	–	–	–	–
Securitisation positions	35,405	4,913	393	34,923	4,687	375
Non-credit obligation assets	8,356	12,867	1,029	8,996	13,452	1,076
Total advanced IRB credit risk exposure	463,444	128,092	10,247	455,673	132,466	10,597
Total credit risk weighted assets	742,838	191,343	15,307	748,832	195,681	15,654

Risk weighted assets decreased by £4.3bn to £191.3bn:

- Corporates RWAs decreased £4.5bn to £75.4bn primarily driven by a reduction in lending activity and depreciation of period end USD against GBP
- Central governments or central banks RWAs increased by £1.8bn to £4.7bn primarily due to a change in the Group liquidity pool composition
- Retail including secured by mortgages RWAs decreased by £1.3bn to £75.0bn primarily due to reduction in Interest Earning Lending (IEL) balances and debt sales within Barclaycard Consumer UK partially offset by growth in mortgages
- Other items RWAs increased by £1.1bn to £1.8bn primarily due to the implementation of IFRS16

Analysis of credit risk

Table 32a: Detailed view of credit risk RWAs and Capital Requirement for significant subsidiary

This table shows RWAs for credit risk by credit exposure class.

Barclays Bank PLC	As at 31 December 2019		As at 31 December 2018	
	RWA £m	Capital requirements £m	RWA £m	Capital requirements £m
Standardised approach				
Central governments or central banks	69	6	174	14
Regional governments or local authorities	79	6	15	1
Public sector entities	86	7	59	5
Multilateral development banks	–	–	–	–
International organisations	–	–	–	–
Institutions	3,409	273	6,018	481
Corporates	19,661	1,573	24,219	1,938
Retail	620	50	816	65
Secured by mortgages	2,156	172	2,241	179
Exposures in default	1,059	85	2,060	165
Items associated with high risks	287	23	9,593	767
Covered bonds	–	–	7	1
Securitisation positions	1,745	140	–	–
Collective investment undertakings	–	–	–	–
Equity positions	5,893	471	582	47
Other items	272	22	53	4
Total standardised approach credit risk exposure	35,336	2,828	45,837	3,667
Advanced IRB approach				
Central governments or central banks	4,071	326	2,426	194
Institutions	3,976	318	4,286	343
Corporates	40,123	3,210	44,665	3,573
Retail				
– Small and medium-sized enterprises (SMEs)	–	–	–	–
– Secured by real estate collateral	323	26	2,496	200
– Qualifying revolving retail	–	–	–	–
– Other retail	–	–	–	–
Equity	–	–	–	–
Securitisation positions	5,342	427	5,850	468
Non-credit obligation assets	3,030	242	3,430	274
Total advanced IRB credit risk exposure	56,865	4,549	63,153	5,052
Total credit risk weighted assets	92,201	7,377	108,990	8,719

Analysis of credit risk

Table 33: CRB-C Geographic analysis of credit exposure

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

Barclays Group												
As at 31 December 2019	United Kingdom £m	Europe £m	France £m	Germany £m	Italy £m	Switzerland £m	Americas £m	United States £m	Asia £m	Japan £m	Africa and Middle East £m	Total £m
Central governments or central banks	221	36,747	114	9,264	130	25,746	38,936	38,177	18,493	14,119	33	94,430
Institutions	6,429	6,055	2,055	1,043	23	181	9,600	8,142	1,700	1,237	396	24,180
Corporates	65,270	16,478	3,767	2,338	483	1,241	61,484	57,973	1,132	413	949	145,313
Retail	227,322	12,283	1	5,926	6,343	8	4	4	1	–	1	239,611
Equity	–	–	–	–	–	–	–	–	–	–	–	–
Total IRB approach	299,242	71,563	5,937	18,571	6,979	27,176	110,024	104,296	21,326	15,769	1,379	503,534
Central governments or central banks	115,109	27,592	15,877	2,851	3,027	413	9,545	9,466	4,581	4,532	1,149	157,976
Regional governments or local authorities	7,435	855	–	855	–	–	468	62	–	–	–	8,758
Public sector entities	863	6,423	1,421	4,525	8	11	93	3	–	–	–	7,379
Multilateral development banks	336	3,627	228	–	–	–	3,106	3,106	774	–	61	7,904
International organisations	–	750	–	–	–	–	–	–	–	–	–	750
Institutions	323	1,458	443	88	56	111	2,095	1,180	2,103	18	161	6,140
Corporates	17,943	12,201	1,477	842	1,482	968	20,640	15,510	4,474	193	2,917	58,175
Retail	12,430	5,371	156	1,789	1	24	87,580	87,466	10	–	81	105,472
Secured by mortgages on immovable property	6,096	1,817	557	5	14	147	699	52	95	1	454	9,161
Exposures in default	1,022	318	81	32	61	11	588	338	34	–	47	2,009
Items associated with particularly high risk	688	106	10	12	12	–	713	619	21	6	1	1,529
Covered bonds	682	1,084	421	71	–	–	–	–	–	–	–	1,766
Claims on institutions and corporates with a short-term credit assessment	–	–	–	–	–	–	–	–	–	–	–	–
Collective investment undertakings	–	–	–	–	–	–	–	–	–	–	–	–
Equity positions	29	18	–	–	–	–	8	8	–	–	943	998
Other items	3,728	204	9	11	19	93	48	45	121	26	133	4,234
Total Standardised approach	166,684	61,824	20,680	11,081	4,680	1,778	125,583	117,855	12,213	4,776	5,947	372,251
Total	465,926	133,387	26,617	29,652	11,659	28,954	235,607	222,151	33,539	20,545	7,326	875,785

Analysis of credit risk

Table 33: CRB-C Geographic analysis of credit exposure continued

Barclays Group												
As at 31 December 2018	United Kingdom £m	Europe £m	France £m	Germany £m	Italy £m	Switzerland £m	Americas £m	United States £m	Asia £m	Japan £m	Africa and Middle East £m	Total £m
Central governments or central banks	394	21,635	–	5,089	–	16,062	41,132	41,014	11,064	7,834	114	74,339
Institutions	12,304	5,326	1,546	876	13	295	8,912	7,103	2,598	1,703	830	29,970
Corporates	69,655	17,625	3,475	2,563	703	968	75,154	70,191	1,438	602	793	164,665
Retail	222,460	14,132	2	5,821	8,299	7	4	4	1	–	2	236,599
Equity	–	–	–	–	–	–	–	–	–	–	–	–
Total IRB approach	304,813	58,718	5,023	14,349	9,015	17,332	125,202	118,312	15,101	10,139	1,739	505,573
Central governments or central banks	129,100	58,119	32,130	17,002	2,737	489	9,392	9,380	74	28	1,250	197,935
Regional governments or local authorities	410	519	–	519	–	–	21	21	–	–	–	950
Public sector entities	177	5,632	1,456	4,099	5	–	64	47	24	–	–	5,897
Multilateral development banks	144	2,700	112	–	–	12	883	883	325	–	39	4,091
International organisations	–	920	–	–	–	–	–	–	–	–	–	920
Institutions	662	930	422	6	36	94	677	616	2,538	48	238	5,045
Corporates	17,696	13,523	1,974	1,403	1,531	897	–	16,932	4,704	712	2,829	60,592
Retail	14,828	5,178	148	1,635	7	83	21,840	86,202	86	–	379	107,025
Secured by mortgages on immovable property	5,627	2,096	654	30	7	130	86,554	54	104	–	352	8,892
Exposures in default	1,480	531	128	14	70	88	713	488	30	–	33	2,779
Items associated with particularly high risk	1,150	103	6	4	10	–	705	609	21	8	1,115	3,173
Covered bonds	32	90	34	–	–	–	784	–	–	–	–	122
Claims on institutions and corporates with a short-term credit assessment	–	–	–	–	–	–	–	–	–	–	–	–
Collective investment undertakings	–	–	–	–	–	–	–	–	–	–	–	–
Equity positions	–	–	–	–	–	–	–	–	–	–	–	–
Other items	2,461	219	–	–	22	76	–	–	12	–	7	2,699
Total Standardised approach	173,767	90,560	37,064	24,712	4,425	1,869	121,633	115,232	7,918	796	6,242	400,120
Total	478,580	149,278	42,087	39,061	13,440	19,201	246,835	233,544	23,019	10,935	7,981	905,693

Exposures at default pre-CCF and CRM decreased by £29.9bn to £875.8bn. The key movements by geographical area were as follows:

- United Kingdom decreased £12.7bn to £465.9bn due to a change in the Group liquidity pool composition and reduction in lending activity
- Europe decreased £15.9bn to £133.4bn primarily driven by a decrease in cash at central banks in France and Germany, partially offset by an increase in Switzerland due to a change in the Group liquidity pool composition
- Americas decreased £11.2bn to £235.6bn primarily driven by a reduction in lending activity and depreciation of period end USD against GBP
- Asia increased £10.5bn to £33.5bn primarily driven by an increase in cash at central bank balances due to a change in the Group liquidity pool composition

Analysis of credit risk

Table 33a: CRB-C Geographic analysis of credit exposure for significant subsidiary

Barclays Bank PLC												
As at 31 December 2019	UK £m	Europe £m	France £m	Germany £m	Italy £m	Switzerland £m	Americas £m	United States £m	Asia £m	Japan £m	Africa and Middle East £m	Total £m
Central governments or central banks	221	25,746	–	–	–	25,747	38,932	38,177	17,815	13,503	93	82,807
Institutions	6,026	4,769	1,559	1,043	23	181	7,764	6,823	1,070	612	380	20,009
Corporates	46,557	11,232	1,761	1,760	468	1,240	61,264	57,762	1,131	413	943	121,127
Retail	2	638	–	–	638	–	1	1	–	–	–	641
Equity	–	–	–	–	–	–	–	–	–	–	–	–
Total IRB approach	52,806	42,385	3,320	2,803	1,129	27,168	107,961	102,763	20,016	14,528	1,416	224,584
Central governments or central banks	65,599	23,016	15,461	222	3,027	–	–	–	68	26	1,145	89,828
Regional governments or local authorities	425	467	–	466	–	–	62	62	–	–	–	954
Public sector entities	369	4,096	1,021	2,685	–	11	14	3	–	–	–	4,479
Multilateral development banks	271	1,993	167	–	–	–	2,485	2,485	596	–	39	5,384
International organisations	–	400	–	–	–	–	–	–	–	–	–	400
Institutions	27,032	10,870	112	–	251	1,435	8,283	7,832	6,592	3,490	381	53,158
Corporates	45,886	15,751	330	383	74	753	57,148	22,266	4,169	193	2,153	125,108
Retail	3,268	564	127	1	1	18	100	16	8	–	43	3,983
Secured by mortgages on immovable property	3,157	1,527	461	5	7	46	428	46	66	–	312	5,490
Exposures in default	559	124	57	20	–	5	406	176	33	–	43	1,165
Items associated with particularly high risk	1	–	–	–	–	–	187	188	3	3	–	191
Covered bonds	–	–	–	–	–	–	–	–	–	–	–	–
Claims on institutions and corporates with a short-term credit assessment	–	–	–	–	–	–	–	–	–	–	–	–
Collective investment undertakings	–	–	–	–	–	–	–	–	–	–	–	–
Equity positions	2,201	98	–	–	–	–	76	–	–	–	–	2,375
Other items	1,014	3	–	–	–	–	–	–	4	–	133	1,154
Total Standardised approach	149,782	58,909	17,736	3,782	3,360	2,268	69,190	33,074	11,539	3,712	4,249	293,669
Total	202,588	101,294	21,057	6,585	4,489	29,436	177,151	135,837	31,555	18,240	5,665	518,253

Analysis of credit risk

Table 33a: CRB-C Geographic analysis of credit exposure for significant subsidiary continued

Barclays Bank PLC												
As at 31 December 2018	UK £m	Europe £m	France £m	Germany £m	Italy £m	Switzerland £m	Americas £m	United States £m	Asia £m	Japan £m	Africa and Middle East £m	Total £m
Central governments or central banks	269	16,062	–	–	–	16,062	41,123	41,008	10,511	7,344	114	68,079
Institutions	5,841	4,894	1,435	876	13	295	6,937	5,814	1,399	624	830	19,901
Corporates	50,015	15,988	3,475	2,543	703	968	75,270	70,318	1,438	602	793	143,504
Retail	12	8,297	2	2	8,282	7	3	4	1	–	2	8,315
Equity	–	–	–	–	–	–	–	–	–	–	–	–
Total IRB approach	56,137	45,241	4,912	3,421	8,998	17,332	123,333	117,144	13,349	8,570	1,739	239,799
Central governments or central banks	70,231	41,805	32,015	1,461	2,737	–	2,289	2,289	46	–	1,250	115,621
Regional governments or local authorities	410	414	–	414	–	–	21	21	–	–	–	845
Public sector entities	161	4,256	1,425	2,752	5	–	63	47	24	–	–	4,504
Multilateral development banks	144	2,390	112	–	–	–	692	692	325	–	39	3,590
International organisations	–	817	–	–	–	–	–	–	–	–	–	817
Institutions	27,736	8,083	225	–	35	1,769	9,784	9,388	7,199	3,112	230	53,032
Corporates	47,333	18,581	1,968	1,385	1,531	831	66,202	21,298	4,587	707	2,345	139,048
Retail	3,886	447	125	1	6	31	161	46	63	–	88	4,645
Secured by mortgages on immovable property	3,071	1,774	541	29	7	43	431	42	63	–	218	5,557
Exposures in default	907	362	84	1	70	22	519	335	29	–	29	1,846
Items associated with particularly high risk	4,260	269	–	–	–	–	290	215	4	4	–	4,823
Covered bonds	–	34	34	–	–	–	–	–	–	–	–	34
Claims on institutions and corporates with a short-term credit assessment	–	–	–	–	–	–	–	–	–	–	–	–
Collective investment undertakings	–	–	–	–	–	–	–	–	–	–	–	–
Equity positions	580	–	–	–	–	–	–	–	–	–	–	580
Other items	683	23	–	–	22	–	–	–	–	–	–	706
Total Standardised approach	159,402	79,255	36,529	6,043	4,413	2,696	80,452	34,373	12,340	3,823	4,199	335,648
Total	215,539	124,496	41,441	9,464	13,411	20,028	203,785	151,517	25,689	12,393	5,938	575,447

Analysis of credit risk

Table 34: CRB-D – Concentration of exposures by industry

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

Barclays Group																			
	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	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
31 December 2019																			
1 Central Governments or central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	15,200	-	-	-	79,230	94,430
2 Institutions	-	-	45	1,089	624	44	46	887	-	76	811	-	24	3,216	2,870	40	-	14,408	24,180
3 Corporates	3,248	8,677	28,578	10,221	2,234	4,085	9,973	4,969	2,995	9,073	28,754	5,043	5,127	57	1,711	6,112	1,376	13,080	145,313
6 Retail	1,640	35	356	3	17	465	1,078	163	500	140	1,355	367	274	-	126	409	155	232,528	239,611
5 Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Total IRB Approach	4,888	8,712	28,979	11,313	2,875	4,594	11,097	6,019	3,495	9,289	30,920	5,410	5,425	18,473	4,707	6,561	1,531	339,246	503,534
16 Central governments or central banks	-	-	-	-	-	-	-	-	-	-	-	50	-	41,281	-	-	-	116,645	157,976
17 Regional governments or local authorities	-	-	-	-	-	-	-	-	-	-	-	-	-	8,758	-	-	-	-	8,758
18 Public sector entities	-	-	-	22	12	-	-	141	-	-	79	-	-	1,189	704	61	-	5,171	7,379
19 Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,904	7,904
20 International organisations	-	-	-	-	-	-	-	-	-	-	-	-	387	-	-	-	-	363	750
21 Institutions	-	-	-	-	-	-	14	-	-	-	-	-	-	19	1	22	-	6,084	6,140
22 Corporates	34	1,649	7,310	1,365	287	725	4,828	1,930	888	2,335	1,192	906	4,277	15	50	405	106	29,873	58,175
24 Retail	1	-	2	-	-	1	3	1	1	-	31	1	43	-	1	1	5	105,381	105,472
26 Secured by mortgages on immovable property	24	5	8	-	-	-	53	3	137	1	482	2	8	-	5	20	-	8,413	9,161
28 Exposures in default	6	276	32	-	11	-	25	17	1	21	49	1	58	-	16	-	-	1,496	2,009
29 Items associated with particularly high risk	-	419	24	-	-	-	4	49	-	246	28	4	17	-	-	-	-	738	1,529
30 Covered bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,766	1,766
31 Claims on institutions and corporate with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32 Collective investments undertakings (CIU)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33 Equity exposures	-	-	-	-	-	-	8	-	-	1	-	-	-	-	-	-	-	989	998
34 Other exposures	-	-	6	3	1	8	19	12	1	15	1	-	12	7	-	12	-	4,137	4,234
35 Total Standardised approach	65	2,349	7,382	1,390	311	734	4,954	2,153	1,028	2,619	1,862	964	4,802	51,269	777	521	111	288,960	372,251
36 Total	4,953	11,061	36,361	12,703	3,186	5,328	16,051	8,172	4,523	11,908	32,782	6,374	10,227	69,742	5,484	7,082	1,642	628,206	875,785

Analysis of credit risk

Table 34: CRB-D – Concentration of exposures by industry continued^a

Barclays Group																			
	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	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
31 December 2018																			
1 Central Governments or central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	10,526	-	-	-	63,813	84,339
2 Institutions	-	1	44	1,148	730	46	38	817	-	39	817	-	38	9,024	3,571	59	-	13,608	29,970
3 Corporates	3,212	9,643	33,064	12,104	2,544	4,212	12,075	6,227	3,538	11,753	28,449	4,798	6,188	22	1,770	5,573	1,241	18,242	164,665
6 Retail	1,685	23	361	3	18	455	1,122	155	534	129	1,314	355	269	-	106	425	157	229,488	236,599
5 Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Total IRB Approach	4,897	9,667	33,469	13,255	3,292	4,713	13,235	7,199	7,199	11,921	30,580	5,153	6,495	19,572	5,447	6,057	1,398	325,151	505,573
16 Central governments or central banks	-	-	-	-	-	-	-	-	-	-	-	-	760	31,766	-	-	-	165,409	197,935
17 Regional governments or local authorities	-	-	-	-	-	-	-	-	-	-	-	-	-	922	-	-	-	28	950
18 Public sector entities	-	44	-	49	16	-	-	4	4	-	-	-	45	1,005	120	48	-	4,566	5,897
19 Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,091	4,091
20 International organisations	-	-	-	-	-	-	-	-	-	-	-	-	920	-	-	-	-	-	920
21 Institutions	-	-	11	-	-	-	-	-	-	-	-	-	-	19	1	25	-	4,989	5,045
22 Corporates	99	2,525	8,576	1,269	394	966	5,279	2,209	734	1,961	1,896	1,104	5,429	39	43	300	102	27,667	60,592
24 Retail	-	-	4	1	-	-	12	-	3	1	77	2	109	-	3	1	2	106,810	107,025
26 Secured by mortgages on immovable property	13	5	8	-	1	2	68	4	112	-	406	3	46	-	11	43	16	8,154	8,892
28 Exposures in default	4	70	128	-	11	3	47	17	26	29	166	9	204	-	20	82	8	1,955	2,779
29 Items associated with particularly high risk	-	522	16	-	-	-	177	8	-	49	-	5	8	28	-	-	-	2,360	3,173
30 Covered bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	122	122
31 Claims on institutions and corporate with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32 Collective investments undertakings (CIU)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33 Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34 Other exposures	-	1	6	4	1	3	18	17	1	11	-	1	26	7	1	13	-	2,589	2,699
35 Total Standardised approach	116	3,167	8,749	1,323	423	974	5,601	2,259	876	2,051	2,545	1,124	7,547	33,786	199	512	128	328,740	400,120
36 Total	5,013	12,834	42,218	14,578	3,715	5,687	18,836	9,458	4,958	13,972	33,125	6,277	14,042	53,358	5,646	6,569	1,526	653,891	905,693

Note:

a Prior period comparatives have been revised so that they are aligned to industry split as defined by the EBA.

Exposures at default pre-CCF and CRM decreased by £29.9bn to £875.8bn. The key movements by industry sector were as follows:

- Manufacturing decreased £5.9bn to £36.4bn primarily driven a reduction in lending activity and depreciation of period end USD against GBP
- Public administration and defence, compulsory social security increased £16.4bn to £69.7bn due to a change in the Group liquidity pool composition
- Other Services decreased £25.7bn to £628.2bn primarily due to a change Group liquidity pool composition, as well as depreciation of period end USD against GBP

Analysis of credit risk

Table 34a: CRB-D – Concentration of exposures by industry for significant subsidiary

Barclays Bank PLC																			
	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	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
31 December 2019																			
1 Central Governments or central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	15,131	-	-	-	67,676	82,807
2 Institutions	-	-	44	821	538	45	46	783	-	76	811	-	23	3,217	2,865	18	-	10,722	20,009
3 Corporates	119	8,017	27,057	9,098	2,081	3,838	9,348	4,708	2,642	8,855	15,163	4,752	5,049	58	1,559	5,613	1,228	11,942	121,127
6 Retail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	641	641
5 Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Total IRB Approach	119	8,017	27,101	9,919	2,619	3,883	9,394	5,491	2,642	8,931	15,974	4,752	5,072	18,406	4,424	5,631	1,228	90,981	224,584
16 Central governments or central banks	-	-	-	-	-	-	-	-	-	-	-	50	-	26,559	-	-	-	63,219	89,828
17 Regional governments or local authorities	-	-	-	-	-	-	-	-	-	-	-	-	-	954	-	-	-	-	954
18 Public sector entities	-	-	-	15	12	-	-	17	-	-	-	-	-	847	300	53	-	3,235	4,479
19 Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,384	5,384
20 International organisations	-	-	-	-	-	-	-	-	-	-	-	-	177	-	-	-	-	223	400
21 Institutions	-	-	-	-	-	-	14	-	-	-	-	-	-	-	-	-	-	53,144	53,158
22 Corporates	15	899	5,590	1,041	139	303	4,212	1,708	779	1,839	1,278	594	4,911	-	48	370	99	101,283	125,108
24 Retail	1	-	1	-	-	-	1	-	1	1	24	1	43	-	-	-	1	3,909	3,983
26 Secured by mortgages on immovable property	2	5	6	-	-	-	26	3	135	-	376	2	8	-	-	15	-	4,912	5,490
28 Exposures in default	5	252	29	-	8	-	24	12	-	16	44	-	55	-	-	-	-	720	1,165
29 Items associated with particularly high risk	-	7	3	-	-	-	4	38	-	22	-	-	-	-	-	-	-	117	191
30 Covered bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31 Claims on institutions and corporate with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32 Collective investments undertakings (CIU)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33 Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,375	2,375
34 Other exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,154	1,154
35 Total Standardised approach	23	1,163	5,639	1,056	159	303	4,281	1,778	915	1,878	1,722	647	5,194	28,360	348	438	100	239,675	293,669
36 Total	142	9,180	32,730	10,975	2,778	4,186	13,675	7,269	3,557	10,809	17,696	5,399	10,266	46,766	4,772	6,069	1,328	330,656	518,253

Analysis of credit risk

Table 34a: CRB-D – Concentration of exposures by industry for significant subsidiary continued^a

Barclays Bank PLC																			
	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	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
31 December 2018																			
1 Central Governments or central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	10,356	-	-	-	57,723	68,079
2 Institutions	-	1	45	1,067	641	46	38	816	-	39	817	-	37	2,628	3,508	39	-	10,629	19,901
3 Corporates	120	9,619	32,419	12,024	2,490	3,967	11,252	6,089	3,232	11,700	13,988	4,567	6,046	31	1,637	5,112	1,064	18,147	143,504
6 Retail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8,315	8,315
5 Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Total IRB Approach	120	9,620	32,464	13,091	3,131	4,013	11,290	6,905	3,232	11,739	14,805	4,597	6,083	13,015	4,695	5,151	1,064	94,814	239,799
16 Central governments or central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	26,464	-	-	-	89,157	115,621
17 Regional governments or local authorities	-	-	-	-	-	-	-	-	-	-	-	-	-	817	-	-	-	28	845
18 Public sector entities	-	44	-	49	16	-	-	3	-	-	-	-	45	974	115	37	-	3,221	4,504
19 Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,590	3,590
20 International organisations	-	-	-	-	-	-	-	-	-	-	-	-	817	-	-	-	-	-	817
21 Institutions	-	-	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53,021	53,032
22 Corporates	20	2,517	8,438	1,255	376	867	4,837	2,004	677	1,747	1,823	1,069	6,335	40	44	244	93	106,662	139,048
24 Retail	-	-	3	-	1	-	9	-	1	-	45	-	107	-	-	-	-	4,479	4,645
26 Secured by mortgages on immovable property	1	5	7	-	-	2	50	4	110	-	329	3	44	-	7	41	14	4,940	5,557
28 Exposures in default	-	70	126	-	11	1	45	16	24	25	153	9	181	-	17	78	8	1,082	1,846
29 Items associated with particularly high risk	-	-	5	-	-	-	10	-	-	5	-	-	-	-	-	-	-	4,699	4,823
30 Covered bonds	-	104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34	34
31 Claims on institutions and corporate with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32 Collective investments undertakings (CIU)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33 Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	580	580
34 Other exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	706	706
35 Total Standardised approach	21	2,740	8,590	1,304	404	870	4,951	2,027	812	1,777	2,350	1,081	7,529	28,295	183	400	115	272,199	335,648
36 Total	141	12,360	41,054	14,395	3,535	4,883	16,241	8,932	4,044	13,516	17,155	5,648	13,612	41,310	4,878	5,551	1,179	367,013	575,447

Note:

a Prior period comparatives have been revised so that they are aligned to industry split as defined by the EBA.

Analysis of credit risk

Table 35: CRB-E – Residual maturity analysis credit exposures

This table shows exposure at default pre-CCF and pre-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.

Barclays Group		Net Exposure Value					Total £m
		On Demand £m	<=1 year £m	>1 year <=5 years £m	>5 years £m	No stated maturity £m	
As at 31 December 2019							
1	Central Governments or central banks	79,461	2,765	5,941	6,263	–	94,430
2	Institutions	5,527	4,656	9,460	4,537	–	24,180
3	Corporates	13,119	21,945	90,128	20,121	–	145,313
4	Retail	71,583	1,935	15,853	150,240	–	239,611
5	Equity	–	–	–	–	–	–
6	Total IRB Approach	169,690	31,301	121,382	181,161	–	503,534
7	Central governments or central banks	87,135	30,120	25,542	15,107	72	157,976
8	Regional governments or local authorities	395	157	790	7,416	–	8,758
9	Public sector entities	51	830	3,689	2,809	–	7,380
10	Multilateral development banks	–	1,151	4,381	2,372	–	7,904
11	International organisations	–	65	286	399	–	750
12	Institutions	171	4,146	1,348	475	–	6,140
13	Corporates	7,498	21,061	19,345	10,271	–	58,175
14	Retail	98,384	2,418	3,503	1,167	–	105,472
15	Secured by mortgages on immovable property	–	1,788	2,606	4,767	–	9,162
16	Exposures in default	279	810	351	569	–	2,008
17	Items associated with particularly high risk	–	–	–	–	1,529	1,529
18	Covered bonds	–	146	998	622	–	1,766
19	Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	–
20	Collective investments undertakings	–	–	–	–	–	–
21	Equity exposures	–	–	–	–	998	998
22	Other exposures	–	–	–	–	4,234	4,234
23	Total standardised approach	193,913	62,692	62,839	45,974	6,833	372,251
24	Total	363,603	93,993	184,221	227,135	6,833	875,785

Analysis of credit risk

Table 35: CRB-E – Residual maturity analysis of credit exposures continued

Barclays Group		Net Exposure Value				No stated maturity £m	Total £m
		On Demand £m	<=1 year £m	>1 year <=5 years £m	>5 years £m		
As at 31 December 2018							
1	Central Governments or central banks	62,892	1,809	5,134	4,504	–	74,339
2	Institutions	3,903	6,028	8,033	11,762	244	29,970
3	Corporates	14,649	23,723	105,959	20,287	47	164,665
4	Retail	75,343	2,079	15,570	143,607	–	236,599
5	Equity	–	–	–	–	–	–
6	Total IRB Approach	156,787	33,639	134,696	180,160	291	505,573
7	Central governments or central banks	135,816	17,353	28,145	16,609	12	197,935
8	Regional governments or local authorities	379	126	261	183	1	950
9	Public sector entities	188	1,988	2,966	755	–	5,897
10	Multilateral development banks	–	482	2,529	1,080	–	4,091
11	International organisations	–	–	331	589	–	920
12	Institutions	549	4,210	169	117	–	5,045
13	Corporates ^a	9,613	22,136	19,703	8,958	182	60,592
14	Retail	98,007	2,667	3,536	2,815	–	107,025
15	Secured by mortgages on immovable property ^a	65	1,333	2,406	5,089	–	8,893
16	Exposures in default ^a	299	426	714	1,340	–	2,779
17	Items associated with particularly high risk	–	522	397	1,111	1,143	3,173
18	Covered bonds	–	43	45	34	–	122
19	Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	–
20	Collective investments undertakings	–	–	–	–	–	–
21	Equity exposures	–	–	–	–	–	–
22	Other exposures ^a	–	–	–	–	2,699	2,699
23	Total standardised approach	244,916	51,286	61,201	38,680	4,037	400,120
24	Total	401,703	84,925	195,897	218,840	4,328	905,693

Note:

a Prior year comparatives have been revised to better reflect the underlying maturity profile

Exposures at default pre-CCF and CRM decreased by £29.9bn to £875.8bn. The key movements by residual maturity were as follows:

- On demand exposures decreased £38.1bn to £363.6bn primarily due to a change in the Group liquidity pool composition
- Exposures with residual maturity of less than 1 year increased £9.1bn to £94.0bn primarily driven by an increase in bond positions with Central Governments or Central Banks due to a change in the Group liquidity pool composition
- Exposures with a residual maturity of between 1 and 5 years decreased £11.7bn to £184.2bn primarily driven by a reduction in lending activity and depreciation of period end USD against GBP
- Exposures with residual maturity greater than 5 years increased £8.3bn to £227.1bn primarily driven by growth in mortgages

Analysis of credit risk

Table 35a: CRB-E – Residual maturity analysis of credit exposures for significant subsidiary

Barclays Bank PLC

As at 31 December 2019	Net Exposure Value					Total £m
	On Demand £m	<=1 year £m	>1 year <=5 years £m	>5 years £m	No stated maturity £m	
1 Central Governments or central banks	68,076	2,572	5,896	6,263	–	82,807
2 Institutions	1,847	4,560	9,127	4,475	–	20,009
3 Corporates	12,050	20,215	81,264	7,598	–	121,127
4 Retail	–	98	454	89	–	641
5 Equity	–	–	–	–	–	–
6 Total IRB Approach	81,973	27,445	96,741	18,425	–	224,584
7 Central governments or central banks	60,003	12,520	4,570	12,713	22	89,828
8 Regional governments or local authorities	395	70	325	164	–	954
9 Public sector entities	50	466	2,240	1,723	–	4,479
10 Multilateral development banks	–	478	2,895	2,011	–	5,384
11 International organisations	–	–	177	223	–	400
12 Institutions	24,909	19,501	2,658	6,090	–	53,158
13 Corporates	27,122	73,440	15,848	8,698	–	125,108
14 Retail	2,958	241	272	512	–	3,983
15 Secured by mortgages on immovable property	–	960	2,108	2,422	–	5,490
16 Exposures in default	1	507	282	375	–	1,165
17 Items associated with particularly high risk	–	–	–	–	191	191
18 Covered bonds	–	–	–	–	–	–
19 Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	–
20 Collective investments undertakings	–	–	–	–	–	–
21 Equity exposures	–	–	–	–	2,375	2,375
22 Other exposures	–	–	–	–	1,154	1,154
23 Total standardised approach	115,438	108,183	31,375	34,931	3,742	293,669
24 Total	197,411	135,628	128,116	53,356	3,742	518,253

Analysis of credit risk

Table 35a: CRB-E – Residual maturity analysis of credit exposures for significant subsidiary continued

Barclays Bank PLC		Net Exposure Value				No stated maturity £m	Total £m
		On Demand £m	<=1 year £m	>1 year <=5 years £m	>5 years £m		
As at 31 December 2018							
1	Central Governments or central banks	56,825	1,745	5,130	4,379	–	68,079
2	Institutions	3,536	3,305	7,894	4,922	244	19,901
3	Corporates	13,662	22,447	100,193	7,155	47	143,504
4	Retail	–	305	631	7,379	–	8,315
5	Equity	–	–	–	–	–	–
6	Total IRB Approach	74,023	27,802	113,848	23,835	291	239,799
7	Central governments or central banks	78,951	13,631	8,150	14,887	2	115,621
8	Regional governments or local authorities	379	126	157	183	–	845
9	Public sector entities	31	1,154	2,707	612	–	4,504
10	Multilateral development banks	–	171	2,423	996	–	3,590
11	International organisations	–	–	273	544	–	817
12	Institutions ^a	25,436	15,016	822	11,758	–	53,032
13	Corporates ^a	30,321	79,453	19,036	10,238	–	139,048
14	Retail	2,933	248	457	1,007	–	4,645
15	Secured by mortgages on immovable property	–	760	2,543	2,254	–	5,557
16	Exposures in default ^a	38	393	656	759	–	1,846
17	Items associated with particularly high risk	–	3,633	609	–	581	4,823
18	Covered bonds	–	–	–	34	–	34
19	Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	–
20	Collective investments undertakings	–	–	–	–	–	–
21	Equity exposures	–	580	–	–	–	580
22	Other exposures ^a	–	–	–	–	706	706
23	Total standardised approach	138,089	115,165	37,833	43,272	1,289	335,648
24	Total	212,112	142,967	151,680	67,107	1,580	575,447

Note:

a Prior year comparatives have been revised to better reflect the underlying maturity profile.

Analysis of credit risk

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) with further details on page 175 of this document. In the case of collateral, the recognition of the mitigant is reflected through regulatory calculations in several different ways, depending on the nature of the collateral and the regulatory approach applied to the exposure.

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 page 49, as a component of the difference between EAD pre-CRM and EAD-post CRM.

Table 36: 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. For the STD approach, the table below has been populated post-substitution effect.

Under the Advanced approach, the table is designed to show exposures for which the credit protection impact is not reflected though the loss given default (LGD), for example where it is applied directly to the EAD metric. As Barclays recognises AIRB eligible collateral by reducing the modelled downturn loss given default (LGD) metric, the AIRB values in the table below are “nil”.

Credit exposure class

	Exposures covered by unfunded credit protection		Exposures covered by funded credit protection
	Standardised £m	Advanced IRB £m	Advanced IRB £m
Barclays Group			
As at 31 December 2019			
Central governments or central banks	398	–	–
Institutions	335	–	–
Corporates	416	–	–
Retail	–	–	–
Exposures in default	26	–	–
Items associated with high risk	–	–	–
Equity	–	–	–
Securitisation positions	–	–	–
Non-credit obligation assets	–	–	–
Total	1,175	–	–
As at 31 December 2018			
Central governments or central banks	–	–	–
Institutions	197	–	–
Corporates	283	–	–
Retail	4	–	–
Exposures in default	2	–	–
Items associated with high risk	–	–	–
Equity	–	–	–
Securitisation positions	–	–	–
Non-credit obligation assets	–	–	–
Total	486	–	–

Analysis of credit risk

Table 36a: Exposures covered by guarantees and credit derivatives for significant subsidiary

Credit exposure class	Exposures covered by unfunded credit protection			Exposures covered by funded credit protection
	Standardised £m	Advanced IRB £m		Advanced IRB £m
Barclays Bank PLC				
As at 31 December 2019				
Central governments or central banks	398	–	–	–
Institutions	–	–	–	–
Corporates	231	–	–	–
Retail	–	–	–	–
Exposures in default	26	–	–	–
Items associated with high risk	–	–	–	–
Equity	–	–	–	–
Securitisation positions	–	–	–	–
Non-credit obligation assets	–	–	–	–
Total	655	–	–	–
As at 31 December 2018				
Central governments or central banks	–	–	–	–
Institutions	–	–	–	–
Corporates	121	–	–	–
Retail	–	–	–	–
Exposures in default	2	–	–	–
Items associated with high risk	–	–	–	–
Equity	–	–	–	–
Securitisation positions	–	–	–	–
Non-credit obligation assets	–	–	–	–
Total	123	–	–	–

Table 37: 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.

Barclays Group	Exposures unsecured – Carrying amount	Exposures secured – Carrying amount	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
	£m	£m	£m	£m	£m
As at 31 December 2019					
1 Total loans	290,666	189,352	188,637	664	51
2 Total debt securities	81,539	822	–	822	–
3 Total exposures	372,205	190,174	188,637	1,486	51
4 Of which defaulted	2,797	2,958	2,933	25	–
As at 31 December 2018					
1 Total loans	338,042	184,797	184,153	603	40
2 Total debt securities	49,138	595	–	595	–
3 Total exposures	387,180	185,392	184,153	1,198	40
4 Of which defaulted	3,516	3,295	3,293	2	–

- The total unsecured and secured exposure decreased £10.2bn to £562.4bn due to a change in the Group liquidity pool composition
- Exposures secured by collateral increased £4.5bn to £188.6bn primarily due to a growth in mortgages

Analysis of credit risk

Table 38: CR4 Standardised – Credit Risk exposure and CRM effect

This table shows the impact of CRM and credit conversion factors (CCF) on exposure values, broken down by regulatory 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.

Barclays Group	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 2019						
1 Central governments or central banks	121,352	36,624	121,769	45,138	92	0%
2 Regional governments or local authorities	8,618	140	8,618	47	1,481	17%
3 Public sector entities	7,279	100	7,285	33	234	3%
4 Multilateral development banks	7,904	–	7,904	–	–	0%
5 International Organisations	750	–	750	–	–	0%
6 Institutions	4,647	1,493	4,484	778	1,619	31%
7 Corporates	24,187	33,988	16,355	8,772	23,679	94%
8 Retail	29,701	75,771	29,359	80	22,079	75%
9 Secured by mortgages on immovable property	9,043	118	9,043	48	3,552	39%
10 Exposures in default	1,679	330	1,629	110	1,932	111%
11 Items associated with particularly high risk	1,512	17	1,512	9	2,282	150%
12 Covered Bonds	1,766	–	1,766	–	184	10%
13 Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	0%
14 Claims in the form of CIU	–	–	–	–	–	0%
15 Equity exposures	998	–	998	–	2,526	250%
16 Other items	4,234	–	4,234	–	1,768	42%
17 Total	223,670	148,581	215,706	55,015	61,428	22%
As at 31 December 2018						
1 Central governments or central banks	158,783	39,152	159,029	44,263	179	0%
2 Regional governments or local authorities	845	105	605	1	15	3%
3 Public sector entities	5,609	288	5,621	65	63	1%
4 Multilateral development banks	4,091	–	4,091	–	–	0%
5 International Organisations	920	–	920	–	–	0%
6 Institutions	3,447	1,598	3,396	738	1,357	32%
7 Corporates	24,926	35,666	15,967	11,017	25,699	95%
8 Retail	30,563	76,462	29,914	146	22,545	75%
9 Secured by mortgages on immovable property	8,869	23	8,868	7	3,557	40%
10 Exposures in default	2,394	385	2,338	192	3,047	120%
11 Items associated with particularly high risk	3,148	25	3,147	13	6,017	190%
12 Covered Bonds	122	–	122	–	27	22%
13 Claims on institutions and corporate with a short-term credit assessment	–	–	–	–	–	0%
14 Claims in the form of CIU	–	–	–	–	–	0%
15 Equity exposures	–	–	–	–	–	0%
16 Other items	2,699	–	2,699	–	709	26%
17 Total	246,416	153,704	236,717	56,442	63,215	22%

Further information about the key drivers for RWAs are provided in Table 32.

Analysis of credit risk

Table 39: CR7– Effect on RWA of credit derivatives used as CRM techniques (IRB)

This table shows the effect of credit derivatives on the IRB credit risk approach.

Barclays Group		Pre-credit derivatives RWAs		Actual RWAs	
		As at 31 December 2019 £m	As at 31 December 2018 £m	As at 31 December 2019 £m	As at 31 December 2018 £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	123,240	127,810	123,179	127,774
8	Central governments and central banks	4,584	2,682	4,584	2,682
9	Institutions	4,630	7,259	4,630	7,259
10	Corporates – SME	10,200	9,380	10,200	9,380
11	Corporates – Specialised Lending	6,316	4,721	6,316	4,721
12	Corporates – Other	35,248	40,123	35,187	40,087
13	Retail – Secured by real estate SME	–	–	–	–
14	Retail – Secured by real estate non-SME	22,332	20,205	22,332	20,205
15	Retail – Qualifying revolving	17,727	19,867	17,727	19,867
16	Retail – Other SME	3,863	3,931	3,863	3,931
17	Retail – Other non-SME	5,473	6,190	5,473	6,190
18	Equity IRB	–	–	–	–
19	Other non credit-obligation assets	12,867	13,452	12,867	13,452
20	Total	123,240	127,810	123,179	127,774

Numbers are aligned to the 'Detailed view of credit risk RWAs and Capital Requirement' table except for securitisation balances. Please see Table 32 for further information on key movements.

Analysis of credit risk

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. Ratings from an ECAI may be used where the ECAI is a rating agency that:

- Has been recognised as an ECAI by the European Banking Authority (EBA); and
- Has been nominated for use by Barclays

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, corporate and securitisation 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 being assigned to a specific 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 counterparty is located. The following table is a simplified version of the risk weight allocation process.

Table 40: 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 41: 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)				
	Corporates	Sovereign method	Credit assessment method		Central governments or central banks
		Credit assessment method	Maturity > 3 months	Maturity 3 months or less	
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 0% risk weight.

If considered fully and completely secured by residential property, measured on the basis of the Loan-To-Value ratio, a retail exposure is assigned a risk weight of 35%. 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.

High risk items are assigned a risk weight of 150%.

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

Notes:

a DBRS and Kroll Bond Rating Agency are used to calculate risk weights for securitisation exposures only. Please see page 188 for further details.

b The mapping of external ratings to credit quality steps applicable as at year-end 2019 are found in Commission Implementing Regulation (EU) 2016/1799 as amended and Commission Implementing Regulation (EU) 2016/1801 (with the latter applicable for securitisation exposures).

Analysis of credit risk

Table 42: 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.

Barclays Group	0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1250%	Others	Deducted	Total	of which:	
	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	Unrated
As at 31 December 2019																			
1 Central governments or central banks	157,868	-	-	-	11	-	-	-	-	98	-	-	-	-	-	-	-	157,976	1,942
2 Regional governments or local authorities	1,263	-	-	-	7,495	-	-	-	-	-	-	-	-	-	-	-	-	8,758	7,447
3 Public sector entities	6,241	-	-	-	1,106	-	-	-	-	32	-	-	-	-	-	-	-	7,379	984
4 Multilateral development banks	7,904	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,904	-
5 International Organisations	750	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	750	-
6 Institutions	-	-	-	-	4,832	-	834	-	-	474	-	-	-	-	-	-	-	6,140	1,236
7 Corporates	82	-	-	-	1,461	-	3,129	-	-	52,999	495	-	-	-	8	-	-	58,175	49,172
8 Retail	-	-	-	-	-	-	-	-	-	105,472	-	-	-	-	-	-	-	105,472	105,472
9 Secured by mortgages on immovable property	-	-	-	-	-	8,469	-	-	159	533	-	-	-	-	-	-	-	9,161	9,161
10 Exposures in default	-	-	-	-	-	-	-	-	-	1,360	649	-	-	-	-	-	-	2,009	2,009
11 Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	1,529	-	-	-	-	-	-	1,529	1,529
12 Covered Bonds	-	-	-	1,736	14	-	16	-	-	-	-	-	-	-	-	-	-	1,766	-
13 Claims on institutions and corporate with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14 Claims in the form of CIU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Equity exposures	-	-	-	-	-	-	-	-	-	-	-	998	-	-	-	-	-	998	998
16 Other items	1,624	-	-	-	1,052	-	-	-	-	1,558	-	-	-	-	-	-	-	4,234	4,214
17 Total	175,732	-	-	1,736	15,971	8,469	3,979	-	105,631	57,054	2,673	998	-	8	-	-	-	372,251	173,838

Analysis of credit risk

Table 42: CR5-A Analysis of exposures by asset classes and risk weight pre-CCF and CRM under the standardised approach continued

Barclays Group																
	0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1250%	Total	of which: Unrated
	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
As at 31 December 2018																
1 Central governments or central banks	197,722	-	-	-	12	-	48	-	-	153	-	-	-	-	197,935	1,641
2 Regional governments or local authorities	534	-	-	-	415	-	-	-	-	22	-	-	-	-	950	395
3 Public sector entities	5,605	-	-	-	247	-	24	-	-	-	-	-	-	-	5,897	269
4 Multilateral development banks	4,091	-	-	-	-	-	-	-	-	-	-	-	-	-	4,091	3
5 International Organisations	920	-	-	-	-	-	-	-	-	-	-	-	-	-	920	-
6 Institutions	-	-	-	-	3,725	-	857	-	-	463	-	-	-	-	5,045	791
7 Corporates	-	-	-	-	1,319	-	3,256	-	-	55,059	952	-	-	5	60,592	50,875
8 Retail	-	-	-	-	-	-	-	-	107,025	-	-	-	-	-	107,025	107,025
9 Secured by mortgages on immovable property	-	-	-	-	-	8,192	2	-	183	514	-	-	-	-	8,892	8,892
10 Exposures in default	-	-	-	-	-	-	-	-	-	1,611	1,168	-	-	-	2,779	2,498
11 Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	1,899	1,274	-	-	3,173	3,170
12 Covered Bonds	-	-	-	-	122	-	-	-	-	-	-	-	-	-	122	-
13 Claims on institutions and corporate with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14 Claims in the form of CIU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16 Other items	1,408	-	-	-	725	-	-	-	-	566	-	-	-	-	2,699	2,681
17 Total	210,280	-	-	-	6,565	8,192	4,187	-	107,208	58,388	4,019	1,274	-	5	400,120	178,239

Standardised credit risk exposure pre-CCF and CRM decreased £27.9bn to £372.3bn primarily due to a change in the Group liquidity pool composition, partially offset by a regulatory methodology change for local authorities and further education portfolios.

Analysis of credit risk

Table 43: 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 42 Pre and exposure at default post-CRM below is the impact of financial collateral and CCF as described in Table 38.

Barclays Group																
	0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1250%	Total	of which: Unrated
	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
As at 31 December 2019																
1 Central governments or central banks	166,808	-	-	-	11	-	-	-	-	87	-	-	-	-	166,906	1,705
2 Regional governments or local authorities	1,261	-	-	-	7,404	-	-	-	-	-	-	-	-	-	8,665	7,396
3 Public sector entities	6,247	-	-	-	1,047	-	-	-	-	24	-	-	-	-	7,318	929
4 Multilateral development banks	7,904	-	-	-	-	-	-	-	-	-	-	-	-	-	7,904	-
5 International Organisations	750	-	-	-	-	-	-	-	-	-	-	-	-	-	750	-
6 Institutions	-	-	-	-	4,111	-	733	-	-	418	-	-	-	-	5,262	1,029
7 Corporates	-	-	-	-	1,012	-	1,464	-	-	22,364	279	-	-	8	25,127	20,495
8 Retail	-	-	-	-	-	-	-	-	29,439	-	-	-	-	-	29,439	29,439
9 Secured by mortgages on immovable property	-	-	-	-	-	8,444	-	-	152	495	-	-	-	-	9,091	9,091
10 Exposures in default	-	-	-	-	-	-	-	-	-	1,354	386	-	-	-	1,740	1,737
11 Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	1,521	-	-	-	1,521	1,521
12 Covered Bonds	-	-	-	1,736	14	-	16	-	-	-	-	-	-	-	1,766	-
13 Claims on institutions and corporate with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14 Claims in the form of CIU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Equity exposures	-	-	-	-	-	-	-	-	-	-	-	998	-	-	998	998
16 Other items	1,625	-	-	-	1,052	-	-	-	-	1,558	-	-	-	-	4,235	4,214
17 Total	184,595	-	-	1,736	14,651	8,444	2,212	-	29,591	26,300	2,186	998	-	8	270,721	76,193

Analysis of credit risk

Table 43: CR5-B Analysis of exposures by asset classes and risk weight post-CCF and CRM under the standardised approach continued

Barclays Group																
	0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1250%	Total	of which: Unrated
	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
As at 31 December 2018																
1 Central governments or central banks	203,079	-	-	-	12	-	48	-	-	153	-	-	-	-	203,292	1,414
2 Regional governments or local authorities	530	-	-	-	76	-	-	-	-	-	-	-	-	-	606	79
3 Public sector entities	5,463	-	-	-	190	-	16	-	-	17	-	-	-	-	5,686	207
4 Multilateral development banks	4,091	-	-	-	-	-	-	-	-	-	-	-	-	-	4,091	3
5 International Organisations	920	-	-	-	-	-	-	-	-	-	-	-	-	-	920	-
6 Institutions	-	-	-	-	3,024	-	681	-	-	429	-	-	-	-	4,134	681
7 Corporates	-	-	-	-	795	-	1,554	-	-	24,108	521	-	-	5	26,984	22,103
8 Retail	-	-	-	-	-	-	-	-	30,060	-	-	-	-	-	30,060	30,060
9 Secured by mortgages on immovable property	-	-	-	-	-	8,180	2	-	180	513	-	-	-	-	8,875	8,875
10 Exposures in default	-	-	-	-	-	-	-	-	-	1,497	1,033	-	-	-	2,530	2,375
11 Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	1,888	1,272	-	-	3,160	3,157
12 Covered Bonds	-	-	-	-	122	-	-	-	-	-	-	-	-	-	122	-
13 Claims on institutions and corporate with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14 Claims in the form of CIU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16 Other items	1,408	-	-	-	725	-	-	-	-	566	-	-	-	-	2,699	2,681
17 Total	215,491	-	-	-	4,944	8,180	2,301	-	30,240	27,283	3,442	1,272	-	5	293,159	71,636

Standardised credit risk exposure pre-CCF and CRM decreased £22.4bn to £270.7bn primarily due to a change in the Group liquidity pool composition, partially offset by a regulatory methodology change for Local Authorities and Further Education portfolios.

Analysis of credit risk

Credit quality analysis of IRB exposures

The following section provides breakdowns of inputs into risk weighted asset calculations. 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 166 for a discussion of IRB models.

Table 44: Internal default grade probabilities and mapping to external ratings

The table below illustrates the approximate relationship between external rating agency grades and Barclays' internal 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 Range	Internal	Default Probability			Moody's	Standard and Poor's
		>Min	Mid	<=Max		
0.00 to < 0.15	1	0.00%	0.01%	0.02%	Aaa, Aa1, Aa2	AAA, AA+, AA
	2	0.02%	0.03%	0.03%	Aa3	AA-
	3	0.03%	0.04%	0.05%	A1	AA-
	4	0.05%	0.08%	0.10%	A2, A3	A+, A, A-
	5	0.10%	0.13%	0.15%	Baa1	BBB+
0.15 to < 0.25	6	0.15%	0.18%	0.20%	Baa2	BBB
	7	0.20%	0.23%	0.25%	Baa2	BBB
0.25 to < 0.50	8	0.25%	0.28%	0.30%	Baa3	BBB-
	9	0.30%	0.35%	0.40%	Baa3	BBB-
	10	0.40%	0.45%	0.50%	Ba1	BB+
0.50 to < 0.75	11	0.50%	0.55%	0.60%	Ba1	BB
	12	0.60%	–	–	Ba2	BB
0.75 to < 2.50	12	–	0.90%	1.20%	Ba2	BB-
	13	1.20%	1.38%	1.55%	Ba3	BB-
	14	1.55%	1.85%	2.15%	Ba3	B+
	15	2.15%	–	–	B1	B+
2.50 to < 10.00	15	–	2.60%	3.05%	B1	B+
	16	3.05%	3.75%	4.45%	B2	B
	17	4.45%	5.40%	6.35%	B3, Caa1	B
	18	6.35%	7.50%	8.65%	Caa1	B-
	19	8.65%	10.00%	–	Caa2	CCC+
10.00 to < 100.00	19	–	–	11.35%	Caa2	CCC+
	20	11.35%	15.00%	18.65%	Caa2	CCC
	21	18.65%	30.00%	99.99%	Caa3, Ca, C	CCC-, CC+, CC, C
100.00 (Default)				D	D	

Analysis of credit risk

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 the banking book. Separate tables are provided for the following credit exposure classes: central governments and central banks (Table 45), institutions (Table 46), corporates (Table 47), corporates subject to slotting (Table 49), Retail SME (Table 50), secured retail (Table 51), revolving retail (Table 52) and other retail (Table 53).

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 45: CR6 Credit risk exposures by exposure class and PD range for central governments and central banks IRB

Barclays Group													
	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 Adjustment and Provisions £m	
As at 31 December 2019													
0.00 to < 0.15	93,551	286	36.3%	93,570	0.0%	35	45.1%	1	4,254	4.5%	4		
0.15 to < 0.25	175	–	–	175	0.2%	3	46.3%	2	73	41.5%	1		
0.25 to < 0.50	418	–	–	418	0.3%	3	41.8%	3	257	61.5%	1		
0.50 to < 0.75	–	–	–	–	–	–	–	–	–	–	–		
0.75 to < 2.50	–	–	–	–	–	–	–	–	–	–	–		
2.50 to < 10.00	–	–	–	–	–	–	–	–	–	–	–		
10.00 to < 100.00	–	–	–	–	–	–	–	–	–	–	–		
100.00 (Default)	–	–	–	–	–	–	–	–	–	–	–		
Total	94,144	286	36.3%	94,163	0.0%	41	45.1%	1	4,584	4.9%	6	(0)	
As at 31 December 2018													
0.00 to < 0.15	73,733	101	31.5%	73,627	0.0%	26	45.0%	1.4	2,469	3.4%	3		
0.15 to < 0.25	–	–	–	–	–	–	–	–	–	–	–		
0.25 to < 0.50	504	1	–	504	0.3%	4	36.2%	1.6	213	42.2%	1		
0.50 to < 0.75	–	–	–	–	–	–	–	–	–	–	–		
0.75 to < 2.50	–	–	–	–	–	–	–	–	–	–	–		
2.50 to < 10.00	–	–	–	–	–	–	–	–	–	–	–		
10.00 to < 100.00	–	–	–	–	–	–	–	–	–	–	–		
100.00 (Default)	–	–	–	–	–	–	–	–	–	–	–		
Total	74,237	102	31.6%	74,131	0.0%	30	45.0%	1.4	2,682	3.6%	4	(5)	

The RWA density associated with advanced IRB exposure to central governments and central banks increased by 1.3% to 4.9%. This was primarily driven by a change in the Group liquidity pool composition.

Analysis of credit risk

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

Barclays Group												
	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 Adjustment and Provisions £m
As at 31 December 2019												
0.00 to < 0.15	14,827	8,034	52.4%	19,000	0.0%	797	37.1%	4.5	3,730	19.6%	3	
0.15 to < 0.25	158	189	57.7%	269	0.2%	82	61.8%	1.4	157	58.8%	0	
0.25 to < 0.50	238	136	93.8%	364	0.3%	172	48.1%	1.8	234	64.1%	1	
0.50 to < 0.75	55	23	55.0%	67	0.7%	77	60.6%	1.6	83	122.9%	0	
0.75 to < 2.50	77	82	59.5%	125	1.4%	127	37.9%	2.4	126	100.8%	1	
2.50 to < 10.00	87	214	49.5%	194	4.1%	136	37.5%	4.1	270	139.1%	3	
10.00 to < 100.00	5	45	54.7%	29	14.6%	18	9.8%	2.9	15	52.8%	0	
100.00 (Default)	8	2	92.7%	10	100.0%	19	17.6%	4.0	15	149.7%	1	
Total	15,455	8,725	53.1%	20,058	0.2%	1,428	37.7%	4.4	4,630	23.1%	9	(6)
As at 31 December 2018												
0.00 to < 0.15	21,498	6,383	55.6%	24,580	0.0%	693	41.3%	16.0	5,219	21.3%	4	
0.15 to < 0.25	278	25	79.9%	297	0.2%	73	48.6%	0.8	125	42.1%	–	
0.25 to < 0.50	379	163	71.8%	488	0.4%	155	48.9%	3.5	373	76.4%	1	
0.50 to < 0.75	85	13	79.7%	90	0.6%	52	44.7%	4.4	83	91.6%	–	
0.75 to < 2.50	265	113	81.8%	351	1.8%	131	42.9%	1.2	398	113.2%	3	
2.50 to < 10.00	393	182	63.7%	475	4.4%	114	45.0%	9.7	850	178.9%	9	
10.00 to < 100.00	28	27	134.6%	44	11.9%	20	11.2%	10.1	26	58.7%	1	
100.00 (Default)	26	113	98.4%	137	100.0%	25	14.2%	1.4	186	135.4%	5	
Total	22,951	7,019	60.4%	26,462	0.7%	1,263	41.4%	15.2	7,260	27.5%	23	(39)

The RWA density associated with advanced IRB exposures to financial institutions decreased by 4.4% to 23.1%. This was primarily driven by a regulatory methodology change for ESHLA as the Local Authority and Further Education portfolio migrated to the standardised approach.

Analysis of credit risk

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

Barclays Group												
	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 Adjustment and Provisions £m
As at 31 December 2019												
0.00 to < 0.15	21,106	56,505	48.1%	46,945	0.1%	8,149	33.9%	7.5	12,461	26.5%	10	
0.15 to < 0.25	4,791	5,592	53.8%	6,112	0.2%	4,678	42.6%	3.7	3,103	50.8%	5	
0.25 to < 0.50	5,265	8,024	56.8%	9,406	0.4%	9,463	36.9%	3.6	5,271	56.0%	12	
0.50 to < 0.75	2,535	3,352	53.3%	4,053	0.6%	4,294	34.9%	3.9	2,936	72.4%	8	
0.75 to < 2.50	5,625	5,946	52.3%	8,312	1.4%	10,274	31.1%	3.7	6,576	79.1%	35	
2.50 to < 10.00	4,639	6,403	52.0%	7,602	4.7%	6,392	30.1%	3.7	8,186	107.7%	106	
10.00 to < 100.00	1,858	2,370	50.4%	2,865	20.8%	2,145	30.7%	3.5	4,612	161.0%	189	
100.00 (Default)	1,649	295	44.2%	1,788	100.0%	843	27.5%	3.0	2,242	125.4%	323	
Total	47,468	88,487	50.1%	87,083	3.4%	46,238	34.0%	5.7	45,387	52.1%	688	(778)
As at 31 December 2018												
0.00 to < 0.15	24,892	69,184	51.9%	56,573	0.1%	9,063	37.0%	7.3	15,285	27.1%	14	
0.15 to < 0.25	5,087	5,462	44.8%	6,448	0.2%	4,604	42.2%	4.3	3,349	51.9%	5	
0.25 to < 0.50	6,186	9,370	56.3%	10,767	0.4%	9,664	38.7%	3.8	6,431	59.7%	15	
0.50 to < 0.75	3,148	3,557	53.4%	4,525	0.6%	4,378	37.5%	9.1	3,239	71.6%	10	
0.75 to < 2.50	6,033	6,614	53.2%	8,698	1.4%	10,480	31.5%	4.7	6,716	77.2%	39	
2.50 to < 10.00	4,266	7,447	51.3%	7,322	4.5%	6,243	31.6%	4.6	7,858	107.3%	103	
10.00 to < 100.00	1,467	2,493	54.9%	2,704	19.2%	2,032	31.9%	3.0	4,414	163.2%	173	
100.00 (Default)	1,344	430	63.9%	1,520	100.0%	966	27.4%	3.8	2,180	143.4%	262	
Total	52,423	104,557	52.1%	98,557	2.6%	47,430	36.4%	6.2	49,472	50.2%	621	(634)

The RWA density associated with IRB exposures to corporates increased by 1.9% to 52.1% primarily due to the recalibration of modelled wholesale RWAs.

Analysis of credit risk

Table 48: CR6 Credit risk exposures by exposure class and PD range for corporate of which: SMEs

Barclays Group												
	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 Adjustment and Provisions £m
As at 31 December 2019												
0.00 to < 0.15	3,102	941	62.6%	3,605	0.1%	4,745	23.1%	11.6	719	19.9%	1	
0.15 to < 0.25	884	199	52.5%	976	0.2%	3,390	35.4%	7.8	361	37.0%	1	
0.25 to < 0.50	1,794	558	55.5%	2,069	0.4%	7,233	34.3%	5.9	959	46.4%	3	
0.50 to < 0.75	1,198	290	45.5%	1,271	0.6%	3,160	33.6%	5.3	876	68.9%	3	
0.75 to < 2.50	2,800	754	54.9%	3,177	1.4%	6,950	29.9%	4.8	2,124	66.9%	13	
2.50 to < 10.00	2,423	439	51.9%	2,432	4.7%	4,419	32.3%	4.7	2,332	95.8%	37	
10.00 to < 100.00	1,072	95	55.0%	935	22.4%	1,614	33.9%	5.3	1,328	142.0%	77	
100.00 (Default)	1,010	73	20.1%	1,012	100.0%	598	18.2%	3.7	1,501	148.3%	83	
Total	14,283	3,349	54.6%	15,477	9.0%	32,109	29.4%	6.7	10,200	65.9%	218	(265)
As at 31 December 2018												
0.00 to < 0.15	3,806	1,068	58.6%	4,415	0.1%	5,440	24.5%	11.8	1,300	29.5%	1	
0.15 to < 0.25	1,076	309	40.5%	1,194	0.2%	3,496	34.0%	10.4	457	38.2%	1	
0.25 to < 0.50	1,932	512	54.2%	2,163	0.4%	7,562	32.1%	6.3	915	42.3%	2	
0.50 to < 0.75	1,151	281	47.2%	1,248	0.6%	3,321	32.6%	5.5	627	50.2%	3	
0.75 to < 2.50	2,774	664	47.8%	3,066	1.4%	7,334	30.8%	4.8	1,805	58.9%	13	
2.50 to < 10.00	2,090	469	61.5%	2,328	4.6%	4,488	32.3%	7.9	2,083	89.5%	35	
10.00 to < 100.00	721	82	51.2%	751	24.4%	1,586	33.5%	4.3	993	132.2%	67	
100.00 (Default)	873	48	59.6%	858	100.0%	695	20.8%	4.6	1,200	139.9%	101	
Total	14,423	3,433	53.4%	16,023	7.6%	33,922	29.4%	7.8	9,380	58.5%	223	(257)

The RWA density associated with IRB exposures to corporate SME increased 7.4% to 65.9% primarily due to the recalibration of modelled wholesale RWAs.

Analysis of credit risk

Table 49: CR10 Corporate exposures subject to the slotting approach

Slotting, also known as specialised lending, is an approach that 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.

Barclays Group			On-balance sheet amount £m	Off-balance sheet amount £m	Risk weight %	Exposure amount £m	RWA £m	Expected losses £m
Regulatory categories		Remaining maturity						
As at 31 December 2019								
Category 1	Strong	Less than 2.5 years	1,620	757	50%	2,101	1,031	–
		Equal to or more than 2.5 years	3,097	338	70%	3,280	2,291	13
Category 2	Good	Less than 2.5 years	1,242	186	70%	1,353	934	5
		Equal to or more than 2.5 years	1,036	165	90%	1,150	1,009	9
Category 3	Satisfactory	Less than 2.5 years	65	2	115%	65	75	2
		Equal to or more than 2.5 years	397	36	115%	414	471	12
Category 4	Weak	Less than 2.5 years	3	–	250%	3	5	0
		Equal to or more than 2.5 years	201	–	250%	201	500	16
Category 5	Default	Less than 2.5 years	113	14	–	112	–	56
		Equal to or more than 2.5 years	84	2	–	85	–	42
Total		Less than 2.5 years	3,043	959	–	3,634	2,045	63
		Equal to or more than 2.5 years	4,815	541	–	5,130	4,271	92
As at 31 December 2018								
Category 1	Strong	Less than 2.5 years	1,566	721	50%	2,020	1,010	–
		Equal to or more than 2.5 years	2,050	495	70%	2,373	1,662	9
Category 2	Good	Less than 2.5 years	1,281	208	70%	1,418	992	6
		Equal to or more than 2.5 years	557	91	90%	639	575	9
Category 3	Satisfactory	Less than 2.5 years	53	17	115%	67	77	2
		Equal to or more than 2.5 years	203	2	115%	205	235	6
Category 4	Weak	Less than 2.5 years	40	–	250%	40	99	3
		Equal to or more than 2.5 years	28	–	250%	28	71	2
Category 5	Default	Less than 2.5 years	303	6	–	248	–	124
		Equal to or more than 2.5 years	52	7	–	54	–	28
Total		Less than 2.5 years	3,243	952	–	3,793	2,178	135
		Equal to or more than 2.5 years	2,890	595	–	3,299	2,543	54

RWAs increased £1.6bn to £6.3bn primarily due to an increase in specialised lending activities across risk weight categories.

Analysis of credit risk

Table 49a: CR10 – Corporate exposures subject to specialised lending IRB for significant subsidiary

Barclays Bank PLC

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 2019								
Category 1	Strong	Less than 2.5 years	1,467	737	50%	1,761	865	–
		Equal to or more than 2.5 years	2,681	329	70%	1,984	1,387	8
Category 2	Good	Less than 2.5 years	1,104	164	70%	1,188	829	5
		Equal to or more than 2.5 years	738	165	90%	802	717	6
Category 3	Satisfactory	Less than 2.5 years	55	2	115%	55	63	2
		Equal to or more than 2.5 years	351	36	115%	368	422	10
Category 4	Weak	Less than 2.5 years	–	–	250%	–	–	–
		Equal to or more than 2.5 years	186	–	250%	186	464	15
Category 5	Default	Less than 2.5 years	71	12	–	62	–	30
		Equal to or more than 2.5 years	42	2	–	43	–	21
Total		Less than 2.5 years	2,697	915	–	3,066	1,757	37
		Equal to or more than 2.5 years	3,998	532	–	3,383	2,990	60
As at 31 December 2018								
Category 1	Strong	Less than 2.5 years	1,254	660	50%	1,677	839	–
		Equal to or more than 2.5 years	1,696	450	70%	1,992	1,395	8
Category 2	Good	Less than 2.5 years	1,147	168	70%	1,258	881	5
		Equal to or more than 2.5 years	325	91	90%	405	365	7
Category 3	Satisfactory	Less than 2.5 years	38	17	115%	52	60	1
		Equal to or more than 2.5 years	165	2	115%	167	192	5
Category 4	Weak	Less than 2.5 years	39	–	250%	39	97	3
		Equal to or more than 2.5 years	8	–	250%	8	19	1
Category 5	Default	Less than 2.5 years	251	3	–	195	–	98
		Equal to or more than 2.5 years	26	7	–	28	–	13
Total		Less than 2.5 years	2,729	848	–	3,221	1,877	107
		Equal to or more than 2.5 years	2,220	550	–	2,600	1,971	34

Analysis of credit risk

Table 50: CR6 Credit risk exposures by exposure class and PD range for retail SME

Barclays Group											
	Original on-balance sheet gross exposure £m	Off-balance sheet exposures pre CCF £m	Average CCF ^a %	EAD post CRM and post CCF £m	Average PD %	Number of obligors	Average LGD %	RWA £m	RWA Density %	EL £m	Value Adjustment and Provisions £m
As at 31 December 2019											
0.00 to < 0.15	126	14	4870.1%	786	0.1%	361,269	49.7%	75	9.5%	0	
0.15 to < 0.25	121	36	698.4%	372	0.2%	123,914	49.8%	67	18.0%	0	
0.25 to < 0.50	421	152	266.8%	825	0.4%	208,141	46.6%	202	24.5%	1	
0.50 to < 0.75	440	168	146.4%	685	0.6%	117,387	40.2%	186	27.2%	2	
0.75 to < 2.50	1,827	641	116.6%	2,574	1.5%	305,081	36.8%	923	35.9%	14	
2.50 to < 10.00	1,631	412	131.1%	2,170	4.8%	243,883	38.9%	1,038	47.8%	42	
10.00 to < 100.00	552	61	277.4%	723	23.0%	106,612	42.5%	534	73.9%	69	
100.00 (Default)	719	39	54.8%	740	100.0%	29,154	21.2%	837	113.0%	90	
Total	5,837	1,523	199.8%	8,875	11.9%	1,495,441	39.3%	3,862	43.5%	218	(93)
As at 31 December 2018											
0.00 to < 0.15	85	21	3263.8%	764	0.1%	367,276	51.2%	75	9.8%	0	
0.15 to < 0.25	135	51	482.1%	379	0.2%	120,768	47.3%	65	17.1%	0	
0.25 to < 0.50	456	183	219.3%	858	0.4%	203,216	43.2%	194	22.7%	1	
0.50 to < 0.75	452	170	144.9%	697	0.6%	120,392	37.5%	177	25.4%	2	
0.75 to < 2.50	1,759	588	123.2%	2,482	1.5%	307,428	36.4%	881	35.5%	13	
2.50 to < 10.00	1,353	377	137.4%	1,872	4.8%	241,945	41.3%	952	50.9%	38	
10.00 to < 100.00	844	71	231.4%	1,009	27.2%	107,118	34.3%	620	61.5%	87	
100.00 (Default)	805	40	80.8%	838	100.0%	33,654	19.4%	967	115.4%	85	
Total	5,889	1,501	200.7%	8,899	14.0%	1,501,797	38.1%	3,931	44.2%	226	(75)

Note:

a Average CCF % reflects where the modelled EAD is higher than the original on and off balance sheet exposures pre CCF.

The RWA density associated with IRB exposures to retail SMEs remained broadly stable at 43.5% (December 2018: 44.2%).

Analysis of credit risk

Table 51: CR6 Credit risk exposures by exposure class and PD range for secured retail

Barclays Group											
	Original on-balance sheet gross exposure £m	Off-balance sheet exposures pre CCF £m	Average CCF ^a %	EAD post CRM and post CCF £m	Average PD %	Number of obligors	Average LGD %	RWA £m	RWA Density %	EL £m	Value Adjustment and Provisions £m
As at 31 December 2019											
0.00 to < 0.15	25,248	1,950	98.6%	26,827	0.1%	131,954	11.7%	1,348	5.0%	9	
0.15 to < 0.25	12,136	1,499	95.7%	13,047	0.2%	105,088	11.9%	974	7.5%	7	
0.25 to < 0.50	35,639	2,559	97.7%	37,311	0.4%	240,795	10.0%	2,776	7.4%	17	
0.50 to < 0.75	29,995	2,191	98.2%	31,593	0.6%	206,728	10.7%	3,352	10.6%	23	
0.75 to < 2.50	28,585	1,330	99.3%	29,692	1.2%	197,510	12.9%	6,218	20.9%	57	
2.50 to < 10.00	9,394	213	100.2%	9,627	4.7%	53,914	15.9%	3,817	39.6%	54	
10.00 to < 100.00	4,601	261	44.1%	4,719	28.6%	30,600	10.7%	2,723	57.7%	149	
100.00 (Default)	1,642	4	100.1%	1,648	100.0%	15,286	18.6%	1,124	68.2%	309	
Total	147,240	10,007	96.9%	154,464	2.7%	981,875	11.6%	22,332	14.5%	625	(371)
As at 31 December 2018											
0.00 to < 0.15	26,419	1,574	99.2%	27,782	0.1%	146,091	12.1%	1,269	4.6%	12	
0.15 to < 0.25	10,998	1,062	97.0%	11,695	0.2%	99,057	12.6%	834	7.1%	7	
0.25 to < 0.50	28,952	1,906	97.8%	30,165	0.4%	204,514	8.7%	1,805	6.0%	11	
0.50 to < 0.75	28,415	1,163	98.8%	29,216	0.6%	201,827	9.1%	2,619	9.0%	18	
0.75 to < 2.50	35,112	1,522	99.6%	36,473	1.3%	237,345	12.5%	7,257	19.9%	64	
2.50 to < 10.00	6,886	153	100.2%	7,050	4.8%	45,113	11.1%	2,665	37.8%	43	
10.00 to < 100.00	4,043	92	100.3%	4,148	27.9%	28,939	9.8%	2,381	57.4%	138	
100.00 (Default)	1,861	14	99.6%	1,867	100.0%	16,736	18.1%	1,374	73.6%	303	
Total	142,686	7,486	98.8%	148,396	2.8%	979,622	10.9%	20,204	13.6%	596	(390)

Note:

a Average CCF % reflects where the modelled EAD is higher than the original on and off balance sheet exposures pre CCF.

The RWA density associated with IRB exposures to secured retail remained broadly stable at 14.5% (December 2018: 13.6%).

Analysis of credit risk

Table 52: CR6 Credit risk exposures by exposure class and PD range for revolving retail

Barclays Group											
	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 %	RWA £m	RWA Density %	EL £m	Value Adjustment and Provisions £m
As at 31 December 2019											
0.00 to < 0.15	925	19,043	47.2%	10,483	0.1%	10,056,210	73.9%	385	3.7%	6	
0.15 to < 0.25	757	7,135	15.8%	3,487	0.2%	2,531,885	76.0%	307	8.8%	6	
0.25 to < 0.50	1,927	9,357	12.1%	5,535	0.4%	3,505,590	76.4%	826	14.9%	18	
0.50 to < 0.75	1,355	4,439	8.0%	2,861	0.6%	1,259,990	76.6%	807	28.2%	24	
0.75 to < 2.50	5,224	8,192	4.9%	8,282	1.4%	2,614,218	76.5%	3,395	41.0%	97	
2.50 to < 10.00	5,077	2,557	3.4%	6,726	5.0%	1,817,752	74.6%	6,376	94.8%	259	
10.00 to < 100.00	1,566	179	14.0%	1,827	22.0%	492,133	73.8%	3,416	187.0%	311	
100.00 (Default)	998	195	2.6%	998	100.0%	388,122	77.2%	2,215	221.8%	600	
Total	17,829	51,097	22.1%	40,199	4.7%	22,665,900	75.4%	17,727	44.1%	1,321	(1,988)
As at 31 December 2018											
0.00 to < 0.15	992	21,896	43.8%	11,338	0.1%	10,081,695	74.8%	418	3.7%	7	
0.15 to < 0.25	814	7,212	13.8%	3,548	0.2%	2,569,062	76.4%	310	8.7%	6	
0.25 to < 0.50	1,784	9,102	13.6%	5,261	0.4%	3,430,949	76.8%	805	15.3%	18	
0.50 to < 0.75	1,426	4,628	9.4%	3,021	0.6%	1,376,738	77.3%	792	26.2%	22	
0.75 to < 2.50	5,163	7,903	6.4%	8,126	1.4%	2,545,788	77.7%	3,519	43.3%	104	
2.50 to < 10.00	5,518	2,839	4.0%	7,305	5.0%	1,916,649	76.3%	7,152	97.9%	292	
10.00 to < 100.00	1,827	229	12.0%	2,122	22.2%	550,443	75.5%	4,054	191.0%	367	
100.00 (Default)	1,199	209	5.3%	1,199	100.0%	481,347	78.7%	2,817	234.8%	728	
Total	18,723	54,018	21.1%	41,920	5.3%	22,952,671	76.3%	19,867	47.4%	1,544	(2,274)

The RWA density associated with IRB exposures to revolving retail decreased 3.3% to 44.1% primarily due to lower IEL balances as well as debt sales within Barclaycard Consumer UK.

Analysis of credit risk

Table 53: CR6 Credit risk exposures by exposure class and PD range for other retail exposures

Barclays Group											
	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 %	RWA £m	RWA Density %	EL £m	Value Adjustment and Provisions £m
As at 31 December 2019											
0.00 to < 0.15	252	2	99.4%	252	0.1%	58,296	72.8%	48	19.1%	–	
0.15 to < 0.25	381	–	100.0%	381	0.2%	56,815	74.5%	122	32.1%	1	
0.25 to < 0.50	776	–	100.0%	776	0.4%	100,161	75.5%	372	47.9%	2	
0.50 to < 0.75	610	–	100.0%	610	0.6%	72,884	76.1%	397	65.0%	3	
0.75 to < 2.50	1,866	–	100.0%	1,866	1.4%	214,014	76.7%	1,711	91.8%	20	
2.50 to < 10.00	1,345	–	0.0%	1,345	4.7%	157,253	77.2%	1,610	119.6%	49	
10.00 to < 100.00	550	–	0.0%	550	25.4%	69,154	77.3%	894	162.5%	108	
100.00 (Default)	296	–	0.0%	296	100.0%	44,854	79.9%	319	107.9%	217	
Total	6,076	2	100.0%	6,076	8.8%	773,431	76.5%	5,473	90.1%	400	(351)
As at 31 December 2018											
0.00 to < 0.15	26	3	82.2%	26	0.0%	126	4.0%	19	72.8%	–	
0.15 to < 0.25	24	–	99.7%	24	0.2%	2,879	89.8%	9	38.8%	–	
0.25 to < 0.50	456	–	76.6%	456	0.4%	56,177	89.9%	261	57.2%	2	
0.50 to < 0.75	846	–	100.0%	846	0.6%	101,615	90.3%	646	76.4%	5	
0.75 to < 2.50	3,312	–	72.3%	3,313	1.4%	398,085	90.6%	3,401	102.7%	45	
2.50 to < 10.00	1,069	–	100.0%	1,069	4.1%	138,390	89.5%	1,367	127.9%	43	
10.00 to < 100.00	200	–	100.0%	200	45.5%	28,282	87.7%	357	178.8%	89	
100.00 (Default)	363	–	100.0%	363	100.0%	55,902	79.6%	130	35.8%	330	
Total	6,296	3	86.7%	6,297	8.7%	781,456	89.2%	6,190	98.3%	514	(478)

The RWA density associated with IRB exposures to other retail exposures decreased 8.2% to 90.1% primarily due to risk profile improvements.

Analysis of credit risk

Table 54: CR1-A – Credit quality of exposures by exposure class and instrument

This table provides a comprehensive picture of the credit quality of on-balance sheet and off-balance sheet exposures.

Barclays Group

	Defaulted exposures £m	Non-defaulted exposure £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges in the period £m	Net values £m	Accumulated write-offs £m
As at 31 December 2019							
1 Central governments or central banks	–	94,430	–	–	(5)	94,430	–
2 Institutions	10	24,170	6	–	(32)	24,183	–
3 Corporates	2,156	143,158	798	–	135	144,516	60
4 Of which Specialised lending	212	9,146	20	–	(9)	9,338	–
5 Of which SMEs	1,082	16,550	265	–	8	17,367	–
6 Retail	3,897	235,713	2,802	–	(415)	236,807	605
7 Secured by real estate property	1,647	155,600	371	–	(19)	156,876	38
8 SMEs	–	–	–	–	–	–	–
9 Non-SMEs	1,647	155,601	371	–	(19)	156,877	38
10 Qualifying revolving	1,196	67,731	1,988	–	(286)	66,939	365
11 Other retail	1,054	12,381	444	–	(110)	12,992	202
12 SMEs	758	6,600	93	–	18	7,264	28
13 Non-SMEs	296	5,782	351	–	(127)	5,727	174
14 Equity	–	–	–	–	–	–	–
15 Total IRB approach	6,062	497,471	3,607	–	(317)	499,936	665
16 Central governments or central banks	–	157,977	–	–	–	157,976	–
17 Regional governments or local authorities	–	8,758	–	–	–	8,758	–
18 Public sector entities	16	7,391	10	–	7	7,397	2
19 Multilateral development banks	–	7,904	–	–	–	7,904	–
20 International organisations	–	750	–	–	–	750	–
21 Institutions	5	6,148	9	–	7	6,144	–
22 Corporates	1,291	58,387	371	–	(14)	59,307	98
23 Of which: SMEs	–	3,490	29	–	(1)	3,461	–
24 Retail	1,903	106,658	2,729	–	(309)	105,831	1,105
25 Of which: SMEs	–	3,394	36	–	(1)	3,358	–
26 Secured by mortgages on immovable property	495	9,165	3	–	–	9,657	13
27 Of which: SMEs	–	175	–	–	–	175	–
28 Exposures in default	3,710	–	1,704	–	(143)	2,007	29
29 Items associated with particularly high risk	–	1,529	–	–	–	1,529	–
30 Covered bonds	–	1,766	–	–	–	1,766	–
31 Claims on institutions and corporates with a short-term credit assessment	–	–	–	–	–	–	–
32 Collective investments undertakings	–	–	–	–	–	–	–
33 Equity exposures	–	998	–	–	–	998	–
34 Other exposures	–	4,234	–	–	–	4,234	–
35 Total standardised approach	3,710	371,665	3,124	–	(308)	372,251	1,218
36 Total	9,773	869,145	6,731	–	(625)	872,187	1,883
37 Of which: Loans	8,888	477,422	6,292	–	(288)	480,018	1,883
38 Of which: Debt securities	1	82,363	4	–	–	82,361	–
39 Of which: Off-balance-sheet exposures	884	309,360	435	–	(337)	309,808	–

Analysis of credit risk

Table 54: CR1-A – Credit quality of exposures by exposure class and instrument continued

Barclays Group		Defaulted exposures £m	Non-defaulted exposure £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges in the period £m	Net values £m	Accumulated write-offs £m
As at 31 December 2018								
1	Central governments or central banks	–	74,339	5	–	5	74,335	–
2	Institutions	139	29,831	39	–	37	29,932	–
3	Corporates	2,143	162,522	663	–	(80)	164,001	34
4	Of which Specialised lending	368	7,316	29	–	13	7,655	–
5	Of which SMEs	922	16,934	257	–	56	17,599	–
6	Retail	4,490	232,109	3,217	–	1,174	233,382	884
7	Secured by real estate property	1,873	148,299	390	–	4	149,782	8
8	SMEs	–	–	–	–	–	–	–
9	Non-SMEs	1,873	148,299	390	–	4	149,782	8
10	Qualifying revolving	1,409	71,332	2,274	–	1,074	70,467	748
11	Other retail	1,209	12,478	554	–	96	13,133	128
12	SMEs	846	6,543	75	–	(20)	7,313	–
13	Non-SMEs	363	5,935	478	–	116	5,820	128
14	Equity	–	–	–	–	–	–	–
15	Total IRB approach	6,772	498,801	3,924	–	1,135	501,649	918
16	Central governments or central banks	–	197,935	–	–	–	197,935	–
17	Regional governments or local authorities	–	950	–	–	–	950	–
18	Public sector entities	13	5,900	3	–	3	5,910	–
19	Multilateral development banks	–	4,091	–	–	–	4,091	–
20	International organisations	–	920	–	–	–	920	–
21	Institutions	6	5,047	2	–	(2)	5,051	–
22	Corporates	1,666	60,792	385	–	128	62,072	36
23	Of which: SMEs	–	5,757	30	–	22	5,727	–
24	Retail	2,174	108,402	3,038	–	1,283	107,538	937
25	Of which: SMEs	–	3,784	38	–	(9)	3,746	–
26	Secured by mortgages on immovable property	767	8,895	4	–	(132)	9,658	–
27	Of which: SMEs	–	271	4	–	4	268	–
28	Exposures in default	4,625	–	1,846	–	481	2,779	32
29	Items associated with particularly high risk	–	3,173	–	–	(52)	3,173	–
30	Covered bonds	–	122	–	–	–	122	–
31	Claims on institutions and corporates with a short-term credit assessment	–	–	–	–	–	–	–
32	Collective investments undertakings	–	–	–	–	–	–	–
33	Equity exposures	–	–	–	–	–	–	–
34	Other exposures	–	2,699	–	–	–	2,699	–
35	Total standardised approach	4,625	398,928	3,432	–	1,227	400,120	973
36	Total	11,396	897,729	7,356	–	2,363	901,769	1,891
37	Of which: Loans	10,170	319,295	6,571	–	2,533	322,894	1,883
38	Of which: Debt securities	–	49,733	–	–	–	49,733	8
38a	Of which: Other exposures	20	199,937	12	–	(111)	199,945	–
39	Of which: Off-balance-sheet exposures	1,206	328,764	772	–	(59)	329,198	–

Non-defaulted exposures decreased £28.6bn to £869.1bn primarily due a change in the Group liquidity pool composition as well as depreciation of period end USD against GBP.

Specific credit risk adjustments decreased £0.6bn to £6.7bn primarily due to improvement in risk profile as well as depreciation of period end USD against GBP.

Analysis of credit risk

Table 54a: CR1-A – Credit quality of exposures by exposure class and instrument for significant subsidiary

Barclays Bank PLC

As at 31 December 2019		Defaulted exposures £m	Non-defaulted exposure £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges in the period £m	Net values £m	Accumulated write-offs £m
1	Central governments or central banks	–	82,807	–	–	–	82,807	–
2	Institutions	7	20,002	6	–	(1)	20,003	–
3	Corporates	1,393	119,734	639	–	129	120,488	41
4	Of which Specialised lending	127	8,015	17	–	(9)	8,125	–
5	Of which SMEs	481	8,813	128	–	(12)	9,167	–
6	Retail	500	142	245	–	(77)	397	13
7	Secured by real estate property	500	142	245	–	(77)	397	13
8	SMEs	–	–	–	–	–	–	–
9	Non-SMEs	500	142	245	–	(77)	397	13
10	Qualifying revolving	–	–	–	–	–	–	–
11	Other retail	–	–	–	–	–	–	–
12	SMEs	–	–	–	–	–	–	–
13	Non-SMEs	–	–	–	–	–	–	–
14	Equity	–	–	–	–	–	–	–
15	Total IRB approach	1,900	222,685	890	–	51	223,695	54
16	Central governments or central banks	–	89,828	–	–	–	89,828	–
17	Regional governments or local authorities	–	954	–	–	–	954	–
18	Public sector entities	–	4,482	1	–	(1)	4,481	2
19	Multilateral development banks	–	5,384	–	–	–	5,384	–
20	International organisations	–	400	–	–	–	400	–
21	Institutions	4	53,162	5	–	3	53,162	–
22	Corporates	929	125,292	320	–	(15)	125,900	89
23	Of which: SMEs	–	3,015	26	–	–	2,989	–
24	Retail	71	4,034	126	–	(78)	3,980	–
25	Of which: SMEs	–	3,342	36	–	(1)	3,306	–
26	Secured by mortgages on immovable property	368	5,493	3	–	(1)	5,858	9
27	Of which: SMEs	–	75	–	–	(1)	75	–
28	Exposures in default	1,372	–	210	–	(121)	1,163	–
29	Items associated with particularly high risk	–	191	–	–	–	191	–
30	Covered bonds	–	–	–	–	–	–	–
31	Claims on institutions and corporates with a short-term credit assessment	–	–	–	–	–	–	–
32	Collective investments undertakings	–	–	–	–	–	–	–
33	Equity exposures	–	2,375	–	–	–	2,375	–
34	Other exposures	–	1,154	–	–	–	1,154	–
35	Total standardised approach	1,372	292,749	455	–	(91)	293,666	100
36	Total	3,272	515,434	1,345	–	(40)	517,361	154
37	Of which: Loans	2,707	283,154	1,149	–	(17)	284,712	154
38	Of which: Debt securities	1	58,246	4	–	–	58,243	–
39	Of which: Off-balance-sheet exposures	564	174,034	192	–	(23)	174,409	–

Analysis of credit risk

Table 54a: CR1-A – Credit quality of exposures by exposure class and instrument for significant subsidiary continued

Barclays Bank PLC

	Defaulted exposures £m	Non-defaulted exposure £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges in the period £m	Net values £m	Accumulated write-offs £m
As at 31 December 2018							
1 Central governments or central banks	–	68,079	–	–	–	68,079	–
2 Institutions	136	19,765	8	–	6	19,893	–
3 Corporates	1,414	142,091	509	–	(233)	142,996	130
4 Of which Specialised lending	287	6,061	26	–	11	6,322	24
5 Of which SMEs	313	8,331	140	–	(60)	8,504	7
6 Retail	636	7,679	322	–	(1,722)	7,993	229
7 Secured by real estate property	636	7,679	322	–	(64)	7,993	4
8 SMEs	–	–	–	–	–	–	–
9 Non-SMEs	636	7,679	322	–	(64)	7,993	4
10 Qualifying revolving	–	–	–	–	(1,200)	–	225
11 Other retail	–	–	–	–	(458)	–	–
12 SMEs	–	–	–	–	(95)	–	–
13 Non-SMEs	–	–	–	–	(363)	–	–
14 Equity	–	–	–	–	–	–	–
15 Total IRB approach	2,186	237,614	839	–	(1,949)	238,961	359
16 Central governments or central banks	–	115,621	–	–	–	115,621	–
17 Regional governments or local authorities	–	845	–	–	–	845	–
18 Public sector entities	13	4,507	3	–	2	4,517	–
19 Multilateral development banks	–	3,590	–	–	–	3,590	–
20 International organisations	–	817	–	–	–	817	–
21 Institutions	5	53,034	2	–	(1)	53,037	1
22 Corporates	1,308	139,201	333	–	82	140,176	174
23 Of which: SMEs	–	4,470	26	–	–	4,444	–
24 Retail	340	4,699	204	–	(195)	4,835	31
25 Of which: SMEs	–	3,418	38	–	–	3,380	–
26 Secured by mortgages on immovable property	510	5,651	4	–	4	6,067	–
27 Of which: SMEs	–	191	4	–	–	187	–
28 Exposures in default	2,176	–	381	–	(149)	1,846	15
29 Items associated with particularly high risk	–	4,823	–	–	(52)	4,823	–
30 Covered bonds	–	34	–	–	–	34	–
31 Claims on institutions and corporates with a short-term credit assessment	–	–	–	–	–	–	–
32 Collective investments undertakings	–	–	–	–	–	–	–
33 Equity exposures	–	580	–	–	–	580	–
34 Other exposures	–	706	–	–	–	706	–
35 Total standardised approach	2,176	334,018	546	–	(160)	335,648	206
36 Total	4,362	571,632	1,385	–	(2,109)	574,609	565
37 Of which: Loans	3,439	316,134	1,169	–	(1,625)	318,424	565
38 Of which: Debt securities	–	42,058	–	–	–	42,058	–
39 Of which: Off-balance-sheet exposures	903	213,440	216	–	(484)	214,127	–

Analysis of credit risk

Table 55: CR1-B – Credit quality of exposures by industry or counterparty types

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

Barclays Group

	Defaulted exposures £m	Non-defaulted exposure £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges in the period £m	Net values £m	Accumulated write-offs £m
As at 31 December 2019							
1 Agriculture, forestry and fishing	554	4,402	98	–	11	4,858	–
2 Mining and quarrying	487	10,664	103	–	54	11,048	7
3 Manufacturing	135	36,265	92	–	12	36,308	16
4 Electricity, gas, steam and air conditioning supply	112	12,569	34	–	8	812,647	1
5 Water supply	39	3,148	7	–	5	3,181	2
6 Construction	101	5,229	41	–	7	5,289	–
7 Wholesale and retail trade	364	15,729	160	–	(2)	15,933	19
8 Transport and storage	103	8,118	68	–	–	8,153	1
9 Accommodation and food service activities	187	4,341	26	–	2	4,502	–
10 Information and communication	53	11,868	57	–	45	11,864	5
11 Real estate activities	508	32,292	123	–	6	32,678	1
12 Professional, scientific and technical activities	109	6,280	56	–	(65)	6,333	2
13 Administrative and support service activities	378	9,875	208	–	208	10,045	12
14 Public administration and defence, compulsory social security	–	69,842	1	–	(76)	69,840	–
15 Education	58	5,446	19	–	(5)	5,485	2
16 Human health services and social work activities	253	6,830	30	–	(18)	7,053	–
17 Arts, entertainment and recreation	42	1,601	15	–	1	1,628	–
18 Other services	6,290	624,646	5,595	–	(818)	625,341	1,815
19 Total	9,773	869,145	6,731	–	(625)	872,187	1,883

Table 55: CR1-B – Credit quality of exposures by industry or counterparty types continued

Barclays Group

	Defaulted exposures £m	Non-defaulted exposure £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges in the period £m	Net values £m	Accumulated write-offs £m
As at 31 December 2018							
1 Agriculture, forestry and fishing	567	4,446	87	–	75	4,926	–
2 Mining and quarrying	224	12,628	49	–	(27)	12,802	16
3 Manufacturing	345	41,913	82	–	11	42,176	10
4 Electricity, gas, steam and air conditioning supply	18	14,567	28	–	21	14,557	–
5 Water supply	27	3,689	4	–	2	3,713	–
6 Construction	142	5,549	33	–	12	5,658	2
7 Wholesale and retail trade	367	18,539	160	–	21	18,745	20
8 Transport and storage	82	9,431	66	–	31	9,447	–
9 Accommodation and food service activities	182	4,769	24	–	–	4,927	1
10 Information and communication	74	13,904	36	–	27	13,943	11
11 Real estate activities	767	32,382	117	–	69	33,032	25
12 Professional, scientific and technical activities	89	6,205	51	–	(23)	6,244	20
13 Administrative and support service activities	478	13,591	105	–	105	13,965	–
14 Public administration and defence, compulsory social security	–	53,358	22	–	22	53,336	20
15 Education	63	5,589	27	–	(18)	5,624	–
16 Human health services and social work activities	216	6,355	25	–	1	6,546	25
17 Arts, entertainment and recreation	44	1,483	12	–	5	1,515	1
18 Other services	7,715	649,330	6,428	–	2,028	650,613	1,745
19 Total	11,396	897,729	7,356	–	2,363	901,769	1,891

Note:

a Prior year comparatives have been revised so that they are aligned to industry split as defined by the EBA.

Non-defaulted exposures decreased £28.6bn to £869.1bn primarily within “Other services” due to a change in the Group liquidity pool composition, as well as depreciation of period end USD against GBP.

Specific credit risk adjustments decreased £0.6bn to £6.7bn primarily due to improvement in risk profile as well as depreciation of period end USD against GBP.

Analysis of credit risk

Table 55a: CR1-B – Credit quality of exposures by industry or counterparty types for significant subsidiaries

Barclays Bank PLC							
	Defaulted exposures £m	Non-defaulted exposure £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges in the period £m	Net values £m	Accumulated write-offs £m
As at 31 December 2019							
1 Agriculture, forestry and fishing	10	135	3	–	2	142	–
2 Mining and quarrying	422	8,838	93	–	44	9,167	7
3 Manufacturing	94	32,668	77	–	7	32,685	16
4 Electricity, gas, steam and air conditioning supply	109	10,842	32	–	9	10,919	–
5 Water supply	30	2,749	6	–	5	2,773	–
6 Construction	30	4,156	26	–	5	4,160	–
7 Wholesale and retail trade	233	13,484	135	–	(4)	13,582	19
8 Transport and storage	76	7,241	62	–	(1)	7,254	1
9 Accommodation and food service activities	78	3,483	17	–	1	3,545	–
10 Information and communication	37	10,783	51	–	40	10,769	5
11 Real estate activities	195	17,515	63	–	12	17,647	1
12 Professional, scientific and technical activities	70	5,343	44	–	(55)	5,369	2
13 Administrative and support service activities	350	9,938	195	–	195	10,093	12
14 Public administration and defence, compulsory social security	–	46,766	1	–	(63)	46,765	–
15 Education	13	4,760	7	–	5	4,766	2
16 Human health services and social work activities	171	5,901	23	–	(4)	6,048	–
17 Arts, entertainment and recreation	10	1,319	10	–	–	1,320	–
18 Other services	1,343	329,512	500	–	(238)	330,356	89
19 Total	3,272	515,434	1,345	–	(40)	517,361	154

Table 55a: CR1-B – Credit quality of exposures by industry or counterparty types for significant subsidiary continued^a

Barclays Bank PLC							
	Defaulted exposures £m	Non-defaulted exposure £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges in the period £m	Net values £m	Accumulated write-offs £m
As at 31 December 2018							
1 Agriculture, forestry and fishing	1	140	1	–	(66)	141	–
2 Mining and quarrying	203	12,175	49	–	(27)	12,329	7
3 Manufacturing	306	40,785	73	–	5	41,018	3
4 Electricity, gas, steam and air conditioning supply	15	14,387	24	–	16	14,378	–
5 Water supply	23	3,512	3	–	–	3,533	–
6 Construction	102	4,783	21	–	14	4,864	2
7 Wholesale and retail trade	208	16,100	138	–	28	16,170	1
8 Transport and storage	62	8,923	61	–	32	8,923	–
9 Accommodation and food service activities	58	3,990	15	–	5	4,032	1
10 Information and communication	57	13,465	32	–	3	13,490	11
11 Real estate activities	437	16,736	51	–	31	17,121	25
12 Professional, scientific and technical activities	47	5,617	43	–	41	5,622	20
13 Administrative and support service activities	426	13,199	86	–	–	13,540	–
14 Public administration and defence, compulsory social security	–	41,309	–	–	67	41,309	20
15 Education	37	4,846	12	–	2	4,871	–
16 Human health services and social work activities	110	5,444	19	–	11	5,535	12
17 Arts, entertainment and recreation	13	1,168	8	–	7	1,173	1
18 Other services	2,256	365,053	749	–	(2,278)	366,560	463
19 Total	4,362	571,632	1,385	–	(2,109)	574,609	565

Note:

a Prior year comparatives have been revised so that they are aligned to industry split as defined by the EBA.

Analysis of credit risk

Table 56: CR1-C – Credit quality of exposures by geography

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

Barclays Group							
	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
As at 31 December 2019							
UK	6,212	460,292	3,471	–	(451)	463,033	770
Europe	1,398	132,294	857	–	(50)	132,835	97
France	109	26,543	37	–	(5)	26,615	4
Germany	203	29,512	250	–	(18)	29,465	64
Italy	710	11,002	353	–	(27)	11,359	13
Switzerland	21	28,944	12	–	(4)	28,954	–
Asia	55	33,530	49	–	14	33,536	6
Japan	–	20,545	–	–	–	20,544	–
Americas	2,016	235,746	2,302	–	(117)	235,460	1,001
United States	1,713	222,564	2,240	–	(136)	222,037	1,001
Africa and Middle East	92	7,283	52	–	(21)	7,323	9
Total	9,773	869,145	6,731	–	(625)	872,187	1,883
As at 31 December 2018							
UK	7,427	471,819	3,920	–	1,112	475,326	916
Europe	1,802	147,801	908	–	235	148,695	98
France	167	41,954	42	–	9	42,079	–
Germany	239	38,890	269	–	102	38,860	98
Italy	782	12,713	379	–	32	13,116	–
Switzerland	103	19,114	16	–	11	19,201	–
Asia	55	22,998	35	–	3	23,018	–
Japan	–	10,936	–	–	–	10,935	–
Americas	2,020	247,151	2,419	–	1,044	246,752	877
United States	1,765	234,092	2,376	–	1,065	233,481	877
Africa and Middle East	92	7,960	74	–	(31)	7,978	–
Total	11,396	897,729	7,356	–	2,363	901,769	1,891

The decrease in Non-defaulted exposures across UK, Europe and Americas is primarily driven by a change in the Group liquidity pool composition. Specific credit risk adjustments decreased £0.6bn to £6.7bn primarily due to improvement in risk profile as well as depreciation of period end USD against GBP.

Analysis of credit risk

Table 56a: CR1-C – Credit quality of exposures by geography for significant subsidiary

Barclays Bank PLC

	Defaulted exposures £m	Non-defaulted exposures £m	Specific credit risk adjustment £m	General credit risk adjustment £m	Credit risk adjustment charges in the period £m	Net values £m	Accumulated write-offs £m
As at 31 December 2019							
UK	1,686	201,111	638	–	40	202,159	89
Europe	787	100,596	399	–	(150)	100,984	35
France	78	21,004	26	–	(11)	21,056	4
Germany	20	6,569	6	–	2	6,583	–
Ireland	501	3,988	246	–	(133)	4,243	13
Switzerland	12	29,433	9	–	(2)	29,436	–
Asia	54	31,547	48	–	14	31,553	6
Japan	–	18,240	–	–	–	18,239	–
Americas	655	176,559	209	–	78	177,005	15
United States	372	135,502	149	–	60	135,724	15
Africa and Middle East	88	5,623	51	–	(22)	5,660	9
Total	3,272	515,434	1,345	–	(40)	517,361	154
As at 31 December 2018							
UK	2,202	213,564	598	–	(2,073)	215,167	452
Europe	1,376	123,287	549	–	(53)	124,115	91
France	118	41,353	37	–	7	41,434	–
Germany	39	9,428	5	–	(162)	9,462	91
Ireland	764	12,703	379	–	32	13,087	–
Switzerland	32	20,006	11	–	11	20,027	–
Asia	54	25,670	35	–	3	25,689	–
Japan	–	12,393	–	–	–	12,393	–
Americas	643	203,191	131	–	40	203,703	22
United States	422	151,121	89	–	62	151,454	22
Africa and Middle East	87	5,920	73	–	(26)	5,935	–
Total	4,362	571,632	1,385	–	(2,109)	574,609	565

Analysis of credit risk

Table 57: Credit Quality of Forborne Exposures

	Gross carrying amount/nominal amount of exposures with forbearance measures				Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions		Collateral received and financial guarantees received on forborne exposures	
	Performing forborne		Non-performing forborne		On performing forborne exposures	On non-performing forborne exposures		Of which collateral and financial guarantees received on non-performing exposures with forbearance measures
			Of which defaulted	Of which impaired				
As at 31 December 2019	£m	£m	£m	£m	£m	£m	£m	£m
Loans and Advances	1,114	2,118	897	2,118	(77)	(515)	1,443	873
Central banks	–	–	–	–	–	–	–	–
General governments	–	–	–	–	–	–	–	–
Credit institutions	–	–	–	–	–	–	–	–
Other financial corporations	–	–	–	–	–	–	–	–
Non-financial corporations	965	1,465	493	1,465	(41)	(257)	745	301
Households	149	653	404	653	(36)	(258)	698	572
Debt securities	–	–	–	–	–	–	–	–
Loan commitments given	275	150	56	4	–	–	16	–
Total	1,389	2,268	953	2,122	(77)	(515)	1,459	873

Table 57a: Credit Quality of Forborne Exposures for significant subsidiary

	Gross carrying amount/nominal amount of exposures with forbearance measures				Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions		Collateral received and financial guarantees received on forborne exposures	
	Performing forborne		Non-performing forborne		On performing forborne exposures	On non-performing forborne exposures		Of which collateral and financial guarantees received on non-performing exposures with forbearance measures
			Of which defaulted	Of which impaired				
As at 31 December 2019	£m	£m	£m	£m	£m	£m	£m	£m
1 Loans and Advances	788	835	229	470	(20)	(152)	843	392
2 Central banks	–	–	–	–	–	–	–	–
3 General governments	–	–	–	–	–	–	–	–
4 Credit institutions	–	–	–	–	–	–	–	–
5 Other financial corporations	–	–	–	–	–	–	–	–
6 Non-financial corporations	761	528	205	419	(20)	(135)	529	105
7 Households	27	307	24	51	–	(17)	314	287
8 Debt securities	–	–	–	–	–	–	–	–
9 Loan commitments given	200	148	56	1	–	–	16	–
10 Total	988	983	285	471	(20)	(152)	859	392

Analysis of credit risk

Table 58: Credit quality of performing and non-performing exposures by past due days

The table below follows regulatory defined measures rather than the IFRS definition and they cannot be reconciled to the tables disclosed in the Annual Report. For example, loans and advances in the tables below include cash balances at central banks, cash collateral and settlement balances and reverse repos that are not part of the “loans and advances at amortised cost” disclosed in the Annual Report.

Barclays Group		Gross carrying amount/nominal amount										
		Performing exposures			Non-performing exposures							
As at 31 December 2019	£m	Not past due or past due ≤ 30 days £m	Past due > 30 days ≤ 90 days £m	Unlikely to pay that are not past due or are past due ≤ 90 days £m			Past due > 90 days ≤ 180 days £m		Past due > 180 days ≤ 1 year £m		Past due > 5 years £m	Of which defaulted £m
				£m	£m	£m	£m	£m	£m	£m		
1	Loans and advances	669,345	667,549	1,796	8,227	2,613	1,261	2,574	1,558	221	8,181	
2	Central banks	159,850	159,850	–	–	–	–	–	–	–	–	
3	General governments	11,053	11,053	–	–	–	–	–	–	–	–	
4	Credit institutions	37,414	37,414	–	–	–	–	–	–	–	–	
5	Other financial corporations	164,554	164,217	337	106	14	69	8	14	1	106	
6	Non-financial corporations	85,577	85,232	345	2,346	989	343	355	605	54	2,326	
7	Of which SMEs	11,945	11,920	25	1,213	274	179	258	463	39	1,213	
8	Households	210,897	209,783	1,114	5,775	1,610	849	2,211	939	166	5,749	
9	Debt securities	87,372	87,372	–	–	–	–	–	–	–	–	
10	Central banks	1,078	1,078	–	–	–	–	–	–	–	–	
11	General governments	57,010	57,010	–	–	–	–	–	–	–	–	
12	Credit institutions	18,622	18,622	–	–	–	–	–	–	–	–	
13	Other financial corporations	6,864	6,864	–	–	–	–	–	–	–	–	
14	Non-financial corporations	3,798	3,798	–	–	–	–	–	–	–	–	
15	Off-balance-sheet exposures	363,948			937						937	
16	Central banks	768			–						–	
17	General governments	2,916			–						–	
18	Credit institutions	3,176			–						–	
19	Other financial corporations	60,364			54						54	
20	Non-financial corporations	160,224			649						649	
21	Households	136,500			234						234	
22	Total	1,120,665	754,921	1,796	9,164	2,613	1,261	2,574	1,558	221	9,118	

Analysis of credit risk

Table 58a: Credit quality of performing and non-performing exposures by past due days for significant subsidiary

The table below follows regulatory defined measures rather than the IFRS definition and they cannot be reconciled to the tables disclosed in the Annual Report. For example, loans and advances in the tables below include cash balances at central banks, cash collateral and settlement balances and reverse repos that are not part of the “loans and advances at amortised cost” disclosed in the Annual Report.

As at 31 December 2019		Gross carrying amount/nominal amount									
		Performing exposures			Non-performing exposures						
		£m	Not past due or past due ≤ 30 days £m	Past due > 30 days ≤ 90 days £m	£m	Unlikely to pay that are not past due or are past due ≤ 90 days £m	Past due > 90 days ≤ 180 days £m	Past due > 180 days ≤ 1 year £m	Past due > 1 year ≤ 5 years £m	Past due > 5 years £m	Of which defaulted £m
1	Loans and advances	501,822	501,071	751	2,307	831	407	394	658	17	2,307
2	Central banks	117,983	117,983	–	–	–	–	–	–	–	–
3	General governments	3,383	3,383	–	–	–	–	–	–	–	–
4	Credit institutions	47,049	47,049	–	–	–	–	–	–	–	–
5	Other financial corporations	266,786	266,455	331	79	9	67	2	–	1	79
6	Non-financial corporations	58,213	57,887	326	1,067	659	168	93	134	13	1,067
7	Of which SMEs	653	637	16	7	1	5	–	–	1	7
8	Households	8,408	8,314	94	1,161	163	172	299	524	3	1,161
9	Debt securities	59,721	59,721	–	–	–	–	–	–	–	–
10	Central banks	1,021	1,021	–	–	–	–	–	–	–	–
11	General governments	38,761	38,761	–	–	–	–	–	–	–	–
12	Credit institutions	13,359	13,359	–	–	–	–	–	–	–	–
13	Other financial corporations	5,611	5,611	–	–	–	–	–	–	–	–
14	Non-financial corporations	969	969	–	–	–	–	–	–	–	–
15	Off-balance-sheet exposures	217,551			641						641
16	Central banks	18			–						–
17	General governments	2,903			–						–
18	Credit institutions	3,603			–						–
19	Other financial corporations	64,462			54						54
20	Non-financial corporations	145,113			582						582
21	Households	1,452			5						5
22	Total	779,094	560,792	751	2,948	831	407	394	658	17	2,948

Analysis of credit risk

Table 59: Performing and non-performing exposures and related provisions

The table below follows regulatory defined measures rather than the IFRS definition and they cannot be reconciled to the tables disclosed in the Annual Report. For example, loans and advances in the tables below include cash balances at central banks, cash collateral and settlement balances and reverse repos that are not part of the “loans and advances at amortised cost” disclosed in the Annual Report.

Barclays Group

	Gross carrying amount/nominal						Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions						Collateral and financial guarantees received			
	Performing exposures			Non-performing exposures			Performing exposures – accumulated impairment and provisions			Non-performing exposures – accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions			Accumulated partial write-off £m	On performing exposures £m	On non-performing exposures £m	
	£m	Of which stage 1 £m	Of which stage 2 £m	£m	Of which stage 2 £m	Of which stage 3 £m	£m	Of which stage 1 £m	Of which stage 2 £m	£m	Of which stage 2 £m	Of which stage 3 £m				
As at 31 December 2019																
1 Loans and advances	669,345	631,384	37,961	8,227	177	8,021	(3,106)	(722)	(2,384)	(3,277)	(6)	(3,271)	(146)	195,849	3,200	
2 Central banks	159,850	159,850	–	–	–	–	–	–	–	–	–	–	–	–	–	
3 General governments	11,053	11,053	–	–	–	–	–	–	–	–	–	–	–	64	–	
4 Credit institutions	37,414	37,328	86	–	–	–	(3)	(1)	(2)	–	–	–	–	1,182	–	
5 Other financial corporations	164,554	163,389	1,165	106	–	106	(83)	(24)	(59)	(18)	–	(18)	(116)	4,897	21	
6 Non-financial corporations	85,577	76,565	9,012	2,346	20	2,326	(400)	(128)	(272)	(557)	(1)	(556)	(28)	31,088	950	
7 Of which SMEs	11,945	9,477	2,468	1,213	–	1,213	(117)	(38)	(79)	(178)	–	(178)	–	–	705	
8 Households	210,897	183,199	27,698	5,775	157	5,589	(2,620)	(569)	(2,051)	(2,702)	(5)	(2,697)	(2)	158,618	2,229	
9 Debt securities	87,372	86,398	974	–	–	–	(16)	(9)	(7)	–	–	–	–	110,630	–	
10 Central banks	1,078	1,078	–	–	–	–	–	–	–	–	–	–	–	–	–	
11 General governments	57,010	57,010	–	–	–	–	(6)	(6)	–	–	–	–	–	490	–	
12 Credit institutions	18,622	17,895	727	–	–	–	(2)	(1)	(1)	–	–	–	–	10,454	–	
13 Other financial corporations	6,864	6,727	137	–	–	–	(5)	(1)	(4)	–	–	–	–	93,426	–	
14 Non-financial corporations	3,798	3,688	110	–	–	–	(3)	(1)	(2)	–	–	–	–	6,260	–	
15 Off-balance-sheet exposures	363,948	345,055	18,893	937	2	935	(266)	(95)	(171)	(56)	–	(56)		–	27	
16 Central banks	768	768	–	–	–	–	–	–	–	–	–	–		–	–	
17 General governments	2,916	2,764	152	–	–	–	(1)	–	(1)	–	–	–		–	–	
18 Credit institutions	3,176	3,022	154	–	–	–	(3)	(1)	(2)	–	–	–		–	–	
19 Other financial corporations	60,364	57,594	2,770	54	–	54	(11)	(7)	(4)	–	–	–		–	–	
20 Non-financial corporations	160,224	150,479	9,745	649	1	648	(152)	(58)	(94)	(56)	–	(56)		–	23	
21 Households	136,500	130,428	6,072	234	1	233	(99)	(29)	(70)	–	–	–		–	4	
22 Total	1,120,665	1,062,837	57,828	9,164	179	8,956	(3,388)	(826)	(2,562)	(3,333)	(6)	(3,327)	(146)	306,479	3,227	

Analysis of credit risk

Table 59a: Performing and non-performing exposures and related provisions for significant subsidiary

The table below follows regulatory defined measures rather than the IFRS definition and they cannot be reconciled to the tables disclosed in the Annual Report. For example, loans and advances in the tables below include cash balances at central banks, cash collateral and settlement balances and reverse repos that are not part of the “loans and advances at amortised cost” disclosed in the Annual Report.

Barclays Bank PLC

	Gross carrying amount/nominal						Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions						Collateral and financial guarantees received			
	Performing exposures			Non-performing exposures			Performing exposures – accumulated impairment and provisions			Non-performing exposures – accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions			Accumulated partial write-off £m	On performing exposures £m	On non-performing exposures £m	
	£m	Of which stage 1 £m	Of which stage 2 £m	£m	Of which stage 2 £m	Of which stage 3 £m	£m	Of which stage 1 £m	Of which stage 2 £m	£m	Of which stage 2 £m	Of which stage 3 £m				
As at 31 December 2019																
1 Loans and advances	501,822	494,243	7,579	2,307	8	2,299	(404)	(144)	(260)	(710)	–	(710)	(146)	47,407	1,029	
2 Central banks	117,983	117,983	–	–	–	–	–	–	–	–	–	–	–	–	–	
3 General governments	3,383	3,383	–	–	–	–	–	–	–	–	–	–	–	54	–	
4 Credit institutions	47,049	46,963	86	–	–	–	(4)	(2)	(2)	–	–	–	–	4,398	–	
5 Other financial corporations	266,786	265,683	1,103	79	–	79	(84)	(26)	(58)	(7)	–	(7)	(116)	19,552	3	
6 Non-financial corporations	58,213	52,396	5,817	1,067	–	1,067	(279)	(91)	(188)	(368)	–	(368)	(28)	16,506	207	
7 Of which SMEs	653	532	121	7	–	7	(37)	(12)	(25)	(7)	–	(7)	–	–	–	
8 Households	8,408	7,835	573	1,161	8	1,153	(37)	(25)	(12)	(335)	–	(335)	(2)	6,897	819	
9 Debt securities	59,721	58,847	874	–	–	–	(14)	(7)	(7)	–	–	–	–	–	–	
10 Central banks	1,021	1,021	–	–	–	–	–	–	–	–	–	–	–	–	–	
11 General governments	38,761	38,761	–	–	–	–	(5)	(5)	–	–	–	–	–	–	–	
12 Credit institutions	13,359	12,632	727	–	–	–	(2)	(1)	(1)	–	–	–	–	–	–	
13 Other financial corporations	5,611	5,474	137	–	–	–	(5)	(1)	(4)	–	–	–	–	–	–	
14 Non-financial corporations	969	959	10	–	–	–	(2)	–	(2)	–	–	–	–	–	–	
15 Off-balance-sheet exposures	217,551	205,847	11,704	641	–	641	(158)	(61)	(97)	(56)	–	(56)		–	8	
16 Central banks	18	18	–	–	–	–	–	–	–	–	–	–		–	–	
17 General governments	2,903	2,751	152	–	–	–	(1)	–	(1)	–	–	–		–	–	
18 Credit institutions	3,603	3,468	135	–	–	–	(3)	(1)	(2)	(0)	–	(0)		–	–	
19 Other financial corporations	64,462	61,696	2,766	54	–	54	(11)	(6)	(5)	(0)	–	(0)		–	–	
20 Non-financial corporations	145,113	136,518	8,595	582	–	582	(143)	(54)	(89)	(56)	–	(56)		–	8	
21 Households	1,452	1,396	56	5	–	5	–	–	(0)	–	–	–		–	–	
22 Total	779,094	758,937	20,157	2,948	8	2,940	(576)	(212)	(364)	(766)	(0)	(766)	(146)	47,407	1,037	

Analysis of credit risk

Table 60: Collateral obtained by taking possession and execution processes

The table below reflects the position for these assets as at 31 December 2019

Barclays Group		Collateral obtained by taking possession	
		Value at initial recognition	Accumulated negative changes
		£m	£m
As at 31 December 2019			
1	Property, plant and equipment (PP&E)	–	–
2	Other than PP&E	–	–
3	Residential immovable property	15	9
4	Commercial Immovable property	–	–
5	Movable property (auto, shipping, etc.)	–	–
6	Equity and debt instruments	–	–
7	Other	–	–
8	Total	15	9

Table 60a: Collateral obtained by taking possession and execution processes for significant subsidiary

Barclays Bank PLC		Collateral obtained by taking possession	
		Value at initial recognition	Accumulated negative changes
		£m	£m
As at 31 December 2019			
1	Property, plant and equipment (PP&E)	–	–
2	Other than PP&E	–	–
3	Residential immovable property	15	9
4	Commercial Immovable property	–	–
5	Movable property (auto, shipping, etc.)	–	–
6	Equity and debt instruments	–	–
7	Other	–	–
8	Total	15	9

Analysis of credit risk

Table 61: 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.

Barclays Group		Gross carrying value defaulted exposures ^a £m
1	As at 1 January 2019	8,775
2	Loans and debt securities that have defaulted or impaired since the last reporting period	4,104
3	Returned to non-defaulted status	(1,187)
4	Amounts written off	(1,903)
5	Other changes ^b	(1,608)
10	As at December 2019	8,181

Notes:

a Defaulted exposures are defined as all stage 3 impaired gross loans and debt securities under IFRS 9 and any stage 1 and stage 2 gross loans and debt securities under IFRS 9 that are more than 90 days past due.

b Other changes include repayments and disposals net drawdowns.

Table 62: CR2-A – Changes in the stock of general and specific credit risk adjustments

This table shows the movement in the 2019 impairment allowance. Please refer to pages 160 to 162 of this document and Note 7 of the 2019 Annual Report for further information on impairment.

Barclays Group		Accumulated specific credit risk adjustment ^a £m	Accumulated general credit risk adjustment £m
1	As at 1 January 2019	7,127	–
2	Increases due to amounts set aside for estimated loan losses during the period ^b	1,614	–
3	Decreases due to amounts reversed for estimated loan losses during the period ^c	(1,903)	–
4	Decreases due to amounts taken against accumulated credit risk adjustments	–	–
5	Transfers between credit risk adjustments	–	–
6	Impact of exchange rate differences	(117)	–
7	Business combinations, including acquisitions and disposals of subsidiaries	–	–
9	Other adjustments	–	–
10	As at 31 December 2019	6,721	–
11	Recoveries on credit risk adjustments recorded directly to the statement of profit or loss	(124)	–
12	Specific credit risk adjustments directly recorded to the statement of profit or loss	–	–

Notes:

a Excludes other assets impairment.

b Increases due to amounts set aside for estimated loan losses during the period includes the net impact of changes made to parameters (such as probability of default, exposure at default and loss given default), changes in macro-economic variables, new assets originated, repayments and drawdowns.

c Represents amounts written off.

Analysis of credit risk

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 14. These include, but are not exclusive to associates and impairments relating to securitisation vehicles.

Table 63: Regulatory adjustments to statutory Impairment

As at 31 December 2019	£m
IFRS allowance for impairment	6,630
Scope of consolidation	101
Regulatory impairment allowance	6,731

Analysis of credit risk

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

The following table compares Barclays regulatory expected loss (EL) measure against the 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 per 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

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 PD, downturn LGD estimates and EAD
- Defaulted assets: EL is based upon an estimate of likely recovery levels for each asset and is generally referred to as ELBE

Table 64: Analysis of expected loss versus actual losses for IRB exposures

IRB Exposure Class	EL £m	ELBE £m	Total expected loss as at 31 December 2018 £m	Total actual loss as at 31 December 2019 £m
Barclays Group				
Central governments or central banks	6	–	6	–
Institutions	29	5	33	1
Corporates	425	415	840	180
Retail	–	–	–	–
– SME	142	85	227	21
– Secured by real estate collateral	294	303	596	26
– Qualifying revolving retail	816	728	1,544	554
– Other retail	183	329	512	126
Equity	–	–	–	–
Securitisation positions	–	–	–	(18)
Non-credit obligation assets	–	–	–	–
Total IRB	1,895	1,865	3,758	890

IRB Exposure Class	EL £m	ELBE £m	Total expected loss as at 31 December 2017 £m	Total actual loss as at 31 December 2018 £m
Barclays Group				
Central governments or central banks	10	–	10	1
Institutions	32	15	48	7
Corporates	470	580	1,049	(122)
Retail	–	–	–	–
– SME	178	105	283	18
– Secured by real estate collateral	377	326	703	15
– Qualifying revolving retail	840	758	1,600	910
– Other retail	205	257	462	113
Equity	–	–	–	–
Securitisation positions	–	–	–	4
Non-credit obligation assets	–	–	–	–
Total IRB	2,112	2,041	4,155	946

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 65: 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.

	As at 31 December 2019		As at 31 December 2018	
	Fair Value £m	RWAs £m	Fair Value £m	RWAs £m
Barclays Group				
Exchange Traded	1,115	2,606	1,590	3,510
Private Equity	1,396	2,148	1,138	1,774
Other	–	–	–	–
Total	2,511	4,754	2,728	5,284
Realised gains/(losses) from sale and liquidations of equity investments	11	–	114	–
Unrealised gains	925	–	501	–
Unrealised gains included in PRA transitional CET1 Capital	925	–	501	–

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 financial contract type, approach and notional value.

- 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 within this section

Key metrics

Risk weighted assets for counterparty credit risk increased in the year

Total RWA

£3.3bn

Driven by:

£4.0bn

Increase in derivatives and SFTs 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 transaction settlement. Barclays calculates the exposures subject to 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 split by regulatory exposure classes.

Table 66: Detailed view of counterparty credit risk RWAs and Capital Requirement

Barclays Group

As at 31 December 2019	EAD £m	RWA £m	Capital requirements £m
Standardised approach			
Central governments or central banks	2,951	2	–
Regional governments or local authorities	1,291	1	–
Public sector entities	912	119	10
Multilateral development banks	328	1	–
International organisations	48	–	–
Institutions	19,819	563	45
Corporates	10,939	10,969	878
Retail	–	–	–
Secured by mortgages	–	–	–
Exposures in default	–	–	–
Items associated with high risks	–	–	–
Covered bonds	–	–	–
Securitisation positions	7	1	–
Collective investment undertakings	–	–	–
Equity positions	–	–	–
Other items	–	–	–
Total standardised approach credit risk exposure	36,295	11,656	933
Advanced IRB approach			
Central governments or central banks	5,889	576	46
Institutions	21,173	5,083	407
Corporates	45,687	11,091	887
Retail	–	–	–
– Small and medium-sized enterprises (SMEs)	–	–	–
– Secured by real estate collateral	–	–	–
– Qualifying revolving retail	–	–	–
– Other retail	–	–	–
Equity	–	–	–
Securitisation positions	162	162	13
Non-credit obligation assets	–	–	–
Total advanced IRB credit risk exposure	72,911	16,912	1,353
Default fund contributions	2,084	998	80
Total Counterparty credit risk weighted assets	111,290	29,566	2,366

Analysis of counterparty credit risk

Table 66: Detailed view of counterparty credit risk RWAs and Capital Requirement continued

Barclays Group	EAD £m	RWA £m	Capital requirements £m
As at 31 December 2018			
Standardised approach			
Central governments or central banks	2,857	13	1
Regional governments or local authorities	318	2	–
Public sector entities	1,337	106	8
Multilateral development banks	601	–	–
International organisations	98	–	–
Institutions	309	160	13
Corporates	23,748	9,057	725
Retail	–	–	–
Secured by mortgages	–	–	–
Exposures in default	–	–	–
Items associated with high risks	–	–	–
Covered bonds	–	–	–
Securitisation positions	–	–	–
Collective investment undertakings	–	–	–
Equity positions	–	–	–
Other items	–	–	–
Total standardised approach credit risk exposure	29,268	9,338	747
Advanced IRB approach			
Central governments or central banks	6,488	716	57
Institutions	21,616	5,318	425
Corporates	37,294	8,905	712
Retail	–	–	–
– Small and medium-sized enterprises (SMEs)	–	–	–
– Secured by real estate collateral	–	–	–
– Qualifying revolving retail	–	–	–
– Other retail	–	–	–
Equity	–	–	–
Securitisation positions	179	123	10
Non-credit obligation assets	–	–	–
Total advanced IRB credit risk exposure	65,577	15,062	1,205
Default fund contributions	1,486	955	76
Total Counterparty credit risk weighted assets	96,331	25,355	2,028

Counterparty credit risk exposures post-CRM and RWAs increased £15.0bn to £111.3bn and £4.2bn to £29.6bn respectively, primarily due to increased derivatives and SFT trading activity.

Analysis of counterparty credit risk

Table 66a: Detailed view of counterparty credit risk RWAs and Capital Requirement for significant subsidiary

Barclays Bank PLC

As at 31 December 2019	RWA £m	Capital requirements £m
Standardised approach		
Central governments or central banks	2	–
Regional governments or local authorities	1	–
Public sector entities	117	9
Multilateral development banks	1	–
International organisations	–	–
Institutions	2,718	217
Corporates	8,276	662
Retail	–	–
Secured by mortgages	–	–
Exposures in default	–	–
Items associated with high risks	–	–
Covered bonds	–	–
Securitisation positions	1	–
Collective investment undertakings	–	–
Equity positions	–	–
Other items	–	–
Total standardised approach credit risk exposure	11,116	888
Advanced IRB approach		
Central governments or central banks	450	36
Institutions	4,329	346
Corporates	9,273	742
Retail	–	–
– Small and medium-sized enterprises (SMEs)	–	–
– Secured by real estate collateral	–	–
– Qualifying revolving retail	–	–
– Other retail	–	–
Equity	–	–
Securitisation positions	163	13
Non-credit obligation assets	–	–
Total advanced IRB credit risk exposure	14,215	1,137
Default fund contributions	342	27
Total Counterparty credit risk weighted assets	25,673	2,052

Analysis of counterparty credit risk

Table 66a: Detailed view of counterparty credit risk RWAs and Capital Requirement for significant subsidiary continued

Barclays Bank PLC		
	RWA £m	Capital requirements £m
As at 31 December 2018		
Standardised approach		
Central governments or central banks	11	1
Regional governments or local authorities	2	–
Public sector entities	105	8
Multilateral development banks	–	–
International organisations	–	–
Institutions	1,125	90
Corporates	6,452	516
Retail	–	–
Secured by mortgages	–	–
Exposures in default	–	–
Items associated with high risks	–	–
Covered bonds	–	–
Securitisation positions	–	–
Collective investment undertakings	–	–
Equity positions	–	–
Other items	–	–
Total standardised approach credit risk exposure	7,695	615
Advanced IRB approach		
Central governments or central banks	654	52
Institutions	4,591	367
Corporates	7,981	639
Retail	–	–
– Small and medium-sized enterprises (SMEs)	–	–
– Secured by real estate collateral	–	–
– Qualifying revolving retail	–	–
– Other retail	–	–
Equity	–	–
Securitisation positions	123	10
Non-credit obligation assets	–	–
Total advanced IRB credit risk exposure	13,349	1,068
Default fund contributions	546	44
Total Counterparty credit risk weighted assets	21,590	1,727

Analysis of counterparty credit risk

Table 67: CCR1 – Analysis of CCR exposure by approach

This table provides the CCR regulatory requirements split between the method and main parameters used. This table excludes default fund contribution and as such cannot be directly reconciled to Table 66.

Barclays Group		Notional £m	Replacement cost/current market value	Potential future credit exposure £m	EEPE £m	Multiplier	EAD post CRM £m	RWAs £m
As at 31 December 2019								
1	Mark to market		2,004	7,996			5,723	1,974
2	Original exposure	–					–	–
3	Standardised approach		–				–	–
4	IMM (for derivatives and SFTs)				64,055	1.4	89,677	21,871
5	Of which securities financing transactions				21,083	1.4	29,517	4,297
6	Of which derivatives and long settlement transactions				42,972	1.4	60,160	17,575
7	Of which from contractual cross-product netting				–		–	–
8	Financial collateral simple method (for SFTs)						–	–
9	Financial collateral comprehensive method (for SFTs)						13,806	4,723
10	VaR for SFTs						–	–
11	Total							28,568
As at 31 December 2018								
1	Mark to market		3,127	9,405			6,125	2,321
2	Original exposure	–					–	–
3	Standardised approach		–				–	–
4	IMM (for derivatives and SFTs)				54,622	1.4	76,471	18,792
5	Of which securities financing transactions				18,152	1.4	25,413	4,376
6	Of which derivatives and long settlement transactions				36,470	1.4	51,058	14,416
7	Of which from contractual cross-product netting				–		–	–
8	Financial collateral simple method (for SFTs)						–	–
9	Financial collateral comprehensive method (for SFTs)						12,252	3,287
10	VaR for SFTs						–	–
11	Total							24,400

Counterparty Credit Risk RWAs increased £4.2bn to £28.6bn, driven by:

- IMM – Derivative RWAs increased £3.2bn to £17.6bn due to an increase in trading activity
- FCCM – SFT RWAs increased £1.4bn to £4.7bn due to an increase in trading activity

Analysis of counterparty credit risk

Table 68: 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															of which:		
Barclays Group		0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1250%	Total	Unrated
As at 31 December 2019																	
1	Central governments or central banks	2,947	-	-	-	-	-	4	-	-	-	-	-	-	-	2,951	219
2	Regional governments or local authorities	1,288	-	-	-	3	-	-	-	-	-	-	-	-	-	1,291	21
3	Public sector entities	327	-	-	-	582	-	1	-	-	2	-	-	-	-	912	591
4	Multilateral development banks	323	-	-	-	5	-	-	-	-	-	-	-	-	-	328	4
5	International Organisations	48	-	-	-	-	-	-	-	-	-	-	-	-	-	48	48
6	Institutions	-	19,191	-	-	550	-	29	-	7	-	-	-	-	-	19,777	10,210
7	Corporates	-	-	-	-	81	-	55	-	10,647	34	-	-	-	-	10,817	10,664
8	Retail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9a	Secured by mortgages on immovable property	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9b	Exposures in default	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9c	Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10f	Other items	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	4,933	19,191	-	-	1,221	-	89	-	-10,656	34	-	-	-	-	36,125	21,757

Analysis of counterparty credit risk

Table 68: CCR3 Counterparty credit risk exposures by exposure classes and risk weight under standardised approach continued

Exposures by regulatory portfolio and risk																
Barclays Group	0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1250%	Total	of which: Unrated
As at 31 December 2018																
1 Central governments or central banks	2,843	–	–	–	–	–	2	–	–	12	–	–	–	–	2,857	245
2 Regional governments or local authorities	314	–	–	–	3	–	–	–	–	2	–	–	–	–	319	27
3 Public sector entities	350	526	–	–	458	–	–	–	–	3	–	–	–	–	1,337	990
4 Multilateral development banks	601	–	–	–	–	–	–	–	–	–	–	–	–	–	601	–
5 International Organisations	98	–	–	–	–	–	–	–	–	–	–	–	–	–	98	39
6 Institutions ^a	–	–	–	–	230	–	34	–	–	42	2	–	–	–	308	226
7 Corporates ^a	–	14,675	–	–	46	–	54	–	–	8,751	14	–	–	–	23,540	20,578
8 Retail	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
9a Secured by mortgages on immovable property	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
9b Exposures in default	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
9c Items associated with particularly high risk	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
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	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10f Other items	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total	4,206	15,201	–	–	737	–	90	–	–	8,810	16	–	–	–	29,060	22,105

Note:

a CCP exposures have been reclassified from corporates to institutions.

Standardised counterparty credit risk exposures increased £7.1bn to £36.1bn, primarily driven by:

- 0% risk weighted exposures to regional governments or local authorities increased £1.0bn due to a reduction in collateral following the revision of a CSA agreement
- 2% risk weighted exposures to institutions increased £4.5bn to £19.2bn due to derivatives and SFTs trading activity
- 100% risk weighted exposures to corporates increased £1.9bn to £10.7bn due to derivatives and SFTs trading activity

Analysis of counterparty credit risk

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 69), institutions (Table 70), corporates (Table 71) and corporates subject to slotting (Table 72).

Table 69: CCR4 Counterparty credit risk exposures by portfolio and PD range for central governments and central banks

Barclays Group

	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 2019									
0.00 to < 0.15	5,734	0%	60	58.45%	–	491	8.6%	1	
0.15 to < 0.25	84	0.2%	9	51.66%	1	29	34.5%	–	
0.25 to < 0.50	4	0.4%	5	50.92%	2	3	72.1%	–	
0.50 to < 0.75	–	0.6%	1	45.00%	1	–	67.1%	–	
0.75 to < 2.50	63	1.1%	2	45.00%	–	46	72.3%	–	
2.50 to < 10.00	4	5.4%	3	59.13%	1	7	202.2%	–	
10.00 to < 100.00	–	0.0%	–	0.00%	–	–	0.0%	–	
100.00 (Default)	–	0.0%	–	0.00%	–	–	0.0%	–	
Total	5,889	0.1%	80	58.20%	–	576	9.8%	1	
As at 31 December 2018									
0.00 to < 0.15	6,320	0.0%	54	63.6%	–	601	9.5%	2	
0.15 to < 0.25	53	0.2%	8	49.5%	1	22	41.1%	–	
0.25 to < 0.50	29	0.3%	5	57.6%	–	11	39.7%	–	
0.50 to < 0.75	4	0.7%	3	55.5%	4	5	143.6%	–	
0.75 to < 2.50	76	1.6%	1	45.0%	–	64	84.6%	1	
2.50 to < 10.00	6	6.3%	4	62.8%	1	13	226.1%	–	
10.00 to < 100.00	–	0.0%	–	0.0%	–	–	–	–	
100.00 (Default)	–	0.0%	–	0.0%	–	–	–	–	
Total	6,488	0.1%	75	63.3%	–	716	11.0%	3	

The RWA density associated with central governments and central banks remained broadly stable at 9.8% (December 2018: 11.0%).

Analysis of counterparty credit risk

Table 70: CCR4 Counterparty credit risk exposures by portfolio and PD range for institutions

Barclays Group									
	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 2019									
0.00 to < 0.15	18,894	0.05%	634	46.44%	1	3,720	19.70%	4	
0.15 to < 0.25	1,672	0.18%	151	45.58%	2	887	53.10%	1	
0.25 to < 0.50	294	0.34%	90	46.57%	1	160	54.30%	–	
0.50 to < 0.75	45	0.61%	38	43.98%	1	28	62.00%	–	
0.75 to < 2.50	108	1.71%	76	44.69%	1	109	100.50%	1	
2.50 to < 10.00	152	4.44%	82	46.21%	1	175	115.20%	2	
10.00 to < 100.00	8	10.71%	11	7.09%	1	4	56.00%	–	
100.00 (Default)	–	0.00%	–	0.00%	–	–	0.00%	–	
Total	21,173	0.11%	1,082	46.35%	–	5,083	24.00%	8	
As at 31 December 2018									
0.00 to < 0.15	19,850	0.1%	671	46.0%	2	4,342	21.9%	6	
0.15 to < 0.25	1,034	0.2%	119	48.4%	1	408	39.4%	2	
0.25 to < 0.50	449	0.4%	104	48.7%	1	295	65.6%	1	
0.50 to < 0.75	59	0.6%	27	45.1%	1	38	64.8%	–	
0.75 to < 2.50	155	1.7%	83	47.3%	1	167	107.9%	1	
2.50 to < 10.00	49	4.1%	81	46.6%	1	62	125.2%	1	
10.00 to < 100.00	20	13.8%	8	5.9%	1	6	30.4%	–	
100.00 (Default)	–	0.00%	–	0.00%	–	–	–	–	
Total	21,616	0.1%	1,093	46.2%	2	5,318	24.6%	11	

The RWA density associated with institutions remained broadly stable at 24.0% (December 2018: 24.6%).

Analysis of counterparty credit risk

Table 71: CCR4 Counterparty credit risk exposures by portfolio and PD range for corporates

Barclays Group

	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 2019									
0.00 to < 0.15	38,463	0.0%	6,132	45.5%	1	6,098	15.9%	8	
0.15 to < 0.25	2,415	0.2%	615	46.9%	2	1,126	46.6%	2	
0.25 to < 0.50	1,474	0.3%	382	36.2%	3	725	49.2%	2	
0.50 to < 0.75	717	0.5%	314	43.6%	2	563	78.6%	2	
0.75 to < 2.50	1,074	1.4%	256	30.4%	3	773	72.0%	4	
2.50 to < 10.00	1,087	5.0%	190	39.4%	2	1,327	122.1%	17	
10.00 to < 100.00	218	22.1%	40	32.9%	2	306	140.3%	11	
100.00 (Default)	6	100.0%	19	39.1%	2	7	118.4%	–	
Total	45,454	0.3%	7,948	44.7%	2	10,925	24.0%	46	
As at 31 December 2018									
0.00 to < 0.15	32,359	0.0%	5,798	44.8%	2	5,414	16.7%	7	
0.15 to < 0.25	1,995	0.2%	632	44.0%	2	856	42.9%	2	
0.25 to < 0.50	917	0.4%	423	45.9%	3	678	73.9%	1	
0.50 to < 0.75	292	0.6%	92	42.9%	2	203	69.3%	1	
0.75 to < 2.50	605	1.5%	233	37.4%	3	579	95.7%	3	
2.50 to < 10.00	708	4.5%	177	35.0%	3	829	117.0%	11	
10.00 to < 100.00	52	12.7%	30	40.7%	2	84	162.2%	2	
100.00 (Default)	8	100.0%	39	41.4%	2	10	127.2%	–	
Total	36,936	0.2%	7,424	44.5%	2	8,653	23.4%	27	

The RWA density associated with corporates remained broadly stable at 24.0% (December: 23.4%).

Analysis of counterparty credit risk

Table 72: CR10 – Corporate exposures subject to specialised lending IRB

Barclays Group			On-balance sheet amount £m	Off-balance sheet amount £m	Risk weight £m	Exposure amount £m	RWA £m	Expected losses £m
Regulatory categories		Remaining maturity						
As at 31 December 2019								
Category 1	Strong	Less than 2.5 years			50%	42	21	–
		Equal to or more than 2.5 years			70%	24	17	–
Category 2	Good	Less than 2.5 years			70%	136	96	1
		Equal to or more than 2.5 years			90%	17	15	–
Category 3	Satisfactory	Less than 2.5 years			115%	11	13	–
		Equal to or more than 2.5 years			115%	3	4	–
Category 4	Weak	Less than 2.5 years			250%	–	–	–
		Equal to or more than 2.5 years			250%	–	–	–
Category 5	Default	Less than 2.5 years			0%	–	–	–
		Equal to or more than 2.5 years			0%	–	–	–
Total		Less than 2.5 years			–	189	130	1
		Equal to or more than 2.5 years			–	44	36	–
As at 31 December 2018								
Category 1	Strong	Less than 2.5 years			50%	15	7	–
		Equal to or more than 2.5 years			70%	40	28	–
Category 2	Good	Less than 2.5 years			70%	280	196	1
		Equal to or more than 2.5 years			90%	15	13	–
Category 3	Satisfactory	Less than 2.5 years			115%	3	3	–
		Equal to or more than 2.5 years			115%	3	3	–
Category 4	Weak	Less than 2.5 years			250%	–	–	–
		Equal to or more than 2.5 years			250%	–	–	–
Category 5	Default	Less than 2.5 years			0%	2	–	1
		Equal to or more than 2.5 years			0%	–	–	–
Total		Less than 2.5 years			–	300	206	2
		Equal to or more than 2.5 years			–	58	44	–

Analysis of counterparty credit risk

Table 72a: CR10 – Corporate exposures subject to specialised lending IRB for significant subsidiary

Barclays Bank PLC

Regulatory categories		Remaining maturity	On-balance sheet amount £m	Off-balance sheet amount £m	Risk weight £m	Exposure amount £m	RWA £m	Expected losses £m
As at 31 December 2019								
Category 1	Strong	Less than 2.5 years			50%	42	21	–
		Equal to or more than 2.5 years			70%	24	17	–
Category 2	Good	Less than 2.5 years			70%	134	94	1
		Equal to or more than 2.5 years			90%	17	15	–
Category 3	Satisfactory	Less than 2.5 years			115%	3	4	–
		Equal to or more than 2.5 years			115%	3	4	–
Category 4	Weak	Less than 2.5 years			250%	–	–	–
		Equal to or more than 2.5 years			250%	–	–	–
Category 5	Default	Less than 2.5 years			0%	–	–	–
		Equal to or more than 2.5 years			0%	–	–	–
Total		Less than 2.5 years			–	179	119	1
		Equal to or more than 2.5 years			–	44	36	–
As at 31 December 2018								
Category 1	Strong	Less than 2.5 years			50%	15	7	–
		Equal to or more than 2.5 years			70%	40	28	–
Category 2	Good	Less than 2.5 years			70%	280	196	1
		Equal to or more than 2.5 years			90%	15	13	–
Category 3	Satisfactory	Less than 2.5 years			115%	3	3	–
		Equal to or more than 2.5 years			115%	3	3	–
Category 4	Weak	Less than 2.5 years			250%	–	–	–
		Equal to or more than 2.5 years			250%	–	–	–
Category 5	Default	Less than 2.5 years			0%	2	–	1
		Equal to or more than 2.5 years			0%	–	–	–
Total		Less than 2.5 years			–	300	206	2
		Equal to or more than 2.5 years			–	58	44	–

Analysis of counterparty credit risk

Table 73: 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.

Barclays Group

	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 2019					
1 Derivatives	457,727	395,378	62,349	86,485	21,932
2 SFTs	1,014,883	995,137	19,745	378	19,745
3 Cross-product netting	–	–	–	–	–
4 Total	1,472,610	1,390,515	82,094	86,863	41,677

As at 31 December 2018

1 Derivatives	352,870	293,115	59,755	79,846	23,851
2 SFTs	911,515	892,833	18,682	388	18,682
3 Cross-product netting	–	–	–	–	–
4 Total	1,264,385	1,185,948	78,437	80,234	42,533

Net carrying amount increased £208.2bn to £1,472.6bn primarily due to increase in trading activity, which was more than offset by netting and collateral benefits resulting in a net credit exposure decrease of £0.9bn to £41.7bn.

Table 74: 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.

Barclays Group

	Collateral used in derivative transactions				Collateral used in SFTs	
	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received £m	Fair value of posted collateral £m
	Segregated £m	Un-segregated £m	Segregated £m	Un-segregated £m		
As at 31 December 2019						
1 Cash	–	65,487	–	57,877	259	762
2 Debt	7,180	12,060	5,892	4,771	–	–
3 Equity	13	637	–	–	–	–
4 Others	–	1,108	–	–	119	–
Total	7,193	79,292	5,892	62,648	378	762

As at 31 December 2018

1 Cash	–	61,236	–	46,865	388	2,118
2 Debt	6,703	9,979	3,760	5,359	–	–
3 Equity	292	675	–	–	–	–
4 Others	–	961	–	–	–	37
Total	6,995	72,851	3,760	52,224	388	2,155

Derivatives collateral received increased £6.6bn to £86.5bn and posted collateral increased £12.6bn to £68.5bn driven by trading activity.

Analysis of counterparty credit risk

Credit derivative notionals

The following tables show the notional of the credit derivative transactions outstanding as at 31 December 2019.

Table 75 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 75: Notional exposure associated with credit derivative contracts

Outstanding amount of exposure held:

Barclays Group Credit derivative product type	Own credit portfolio		Intermediation activities	
	As protection purchaser £m	As protection seller £m	As protection purchaser £m	As protection seller £m
As at 31 December 2019				
Credit default swaps	1,017	133	345,152	334,321
Total return swaps	171	171	9,689	1,570
Total	1,188	304	354,841	335,891
As at 31 December 2018				
Credit default swaps	1,134	716	326,029	323,973
Total return swaps	–	–	7,208	–
Total	1,134	716	333,237	323,973

Notional exposures from intermediation activities, which mainly comprises derivatives used to manage the trading book, increased £33.5bn to £690.7bn primarily driven by trading activity.

Analysis of counterparty credit risk

Table 76: CCR6 – Credit derivatives exposures

This table provides a breakdown of the Barclays' exposures to credit derivatives products.

Barclays Group		Credit derivative hedges		
		Protection bought £m	Protection sold £m	Other credit derivatives £m
As at 31 December 2019				
Notionals				
	Single-name credit default swaps	347	–	315,330
	Index credit default swaps	–	–	364,946
	Total return swaps	–	–	11,601
	Credit options	–	–	50,512
	Other credit derivatives	–	–	–
	Total notionals	347	–	742,389
Fair values				
	Positive fair value (asset)	4	–	12,646
	Negative fair value (liability)	(18)	–	(12,482)
As at 31 December 2018				
Notionals				
	Single-name credit default swaps	249	11	340,309
	Index credit default swaps	–	–	311,189
	Total return swaps	–	–	7,208
	Credit options	–	–	46,213
	Other credit derivatives	–	–	94
	Total notionals	249	11	705,013
Fair values				
	Positive fair value (asset)	2	–	9,921
	Negative fair value (liability)	(7)	–	(8,899)

Credit derivatives notionals increased by £37.4bn to £742.4bn driven by trading activity.

Analysis of counterparty credit risk

Table 77: CCR8 Exposures to CCPs

This table provides a breakdown of Barclays' exposures and RWAs to qualifying central counterparties (CCP).

Barclays Group		As at 31 December 2019		As at 31 December 2018	
		EAD post CRM £m	RWAs £m	EAD post CRM £m	RWAs £m
1	Exposures to QCCPs (total)		1,382		1,259
2	Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which				
3	(i) OTC derivatives	9,346	187	7,629	153
4	(ii) Exchange-traded derivatives	3,639	73	3,228	65
5	(iii) SFTs	2,684	54	3,049	61
6	(iv) Netting sets where cross-product netting has been approved	3,023	60	1,352	27
7	Segregated initial margin	–	–	–	–
8	Non-segregated initial margin	–	–	–	–
9	Prefunded default fund contributions	9,845	197	7,571	151
10	Alternative calculation of own funds requirements for exposures	2,084	998	1,489	955
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	–	–	–	–

Non-segregated initial margin increased by £2.3bn to £9.8bn driven by trading activity.

Analysis of counterparty credit risk

Credit valuation adjustments

The Credit Valuation 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 78: 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 used for the CRR calculation
- 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
Barclays Group		
As at 31 December 2019		
1 Total portfolios subject to the Advanced Method	15,966	2,295
2 (i) VaR component (including the 3x multiplier)		595
3 (ii) Stressed VaR component (including 3x multiplier)		1,698
4 All portfolios subject to the Standardised Method	306	210
EU4 Based on original exposure method	–	–
5 Total subject to the CVA capital charge	16,272	2,504
As at 31 December 2018		
1 Total portfolios subject to the Advanced Method	17,011	3,270
2 (i) VaR component (including the 3x multiplier)		497
3 (ii) Stressed VaR component (including 3x multiplier)		2,773
4 All portfolios subject to the Standardised Method	195	139
EU4 Based on original exposure method	–	–
5 Total subject to the CVA capital charge	17,206	3,409

CVA RWAs decreased £0.9bn to £2.5bn primarily due to additional products included within the IMM component of the Advanced approach.

Analysis of market risk

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

- Management Value at Risk increased 10% year on year, driven by slightly higher equity and credit risks compared to 2018
- Market risk RWAs are primarily generated by the following IFRS account classifications: Trading portfolio assets and liabilities; and derivative financial instruments

Key metric

Risk weighted assets for market risk remained stable at £30.8bn (December 2018: £30.8bn)

Increase in management Value at Risk

10%

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 8 on page 21.

Table 79: Balance sheet split by trading and banking books

	Banking book ^a £m	Trading book £m	Total £m
As at 31 December 2019			
Cash and balances at central banks	150,258	–	150,258
Cash collateral and settlement balances	68,425	14,831	83,256
Loans and advances at amortised cost	339,115	–	339,115
Reverse repurchase agreements and other similar secured lending	3,379	–	3,379
Trading portfolio assets	2,067	112,128	114,195
Financial assets designated at fair value	12,574	120,512	133,086
Derivative financial instruments	934	228,302	229,236
Financial assets at fair value through other comprehensive income	65,750	–	65,750
Investments in associates and joint ventures	721	–	721
Goodwill and intangible assets	8,119	–	8,119
Property, plant and equipment	4,215	–	4,215
Current tax assets	412	–	412
Deferred tax assets	3,290	–	3,290
Retirement benefit assets	2,108	–	2,108
Other assets	3,089	–	3,089
Total assets	664,455	475,337	1,140,229
Deposits at amortised cost	415,787	–	415,787
Cash collateral and settlement balances	53,075	14,266	67,341
Repurchase agreements and other similar secured borrowing	14,517	–	14,517
Debt securities in issue	76,369	–	76,369
Subordinated liabilities	18,156	–	18,156
Trading portfolio liabilities	808	36,108	36,916
Financial liabilities designated at fair value	4,691	199,635	204,326
Derivative financial instruments	1,534	227,670	229,204
Current tax liabilities	313	–	313
Deferred tax liabilities	23	–	23
Retirement benefit liabilities	348	–	348
Other liabilities	8,505	–	8,505
Provisions	2,764	–	2,764
Total liabilities	596,890	477,679	1,074,569

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 financial assets at fair value through other comprehensive income.

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 182 and 183.

Analysis of market risk

Traded market risk review

Review of management measures

The following disclosures provide details on market risk management measures. See the risk management section on page 180 for more detail on management measures and the differences with 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 Treasury and is calculated with a one-day holding period.

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

	2019			2018 ^a		
	Average £m	High ^b £m	Low ^b £m	Average £m	High ^b £m	Low ^b £m
For the year ended 31 December 2019						
Credit risk	12	17	8	11	16	8
Interest rate risk	6	11	3	8	19	3
Equity risk	10	22	5	7	14	4
Basis risk	8	11	6	6	8	4
Spread risk	4	5	3	6	9	3
Foreign exchange risk	3	5	2	3	7	2
Commodity risk	1	2	–	1	2	–
Inflation risk	2	3	1	3	4	2
Diversification effect ^b	(23)	n/a	n/a	(24)	n/a	n/a
Total management VaR	23	29	17	21	27	15

Notes:

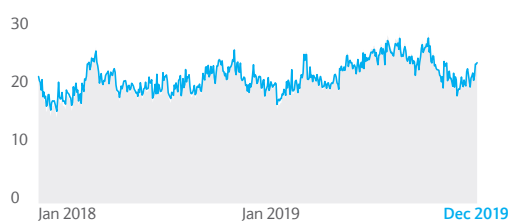
a Excludes BAGL from 23 July 2018.

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. Historical 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.

Average management VaR increased by 10% to £23m in 2019 (December 2018: £21m) driven by a small increase in equity risk and credit risk, partially offset by a slight decrease in interest rate risk compared to 2018.

Group Management VaR^a

£m



Note:

a Excludes BAGL from 23 July 2018.

Analysis of market risk

Business scenario stresses

As part of the Group's risk management framework, 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 2019, the scenario analyses showed that the largest market risk related impacts would be due to a severe deterioration in financial liquidity and a global recession.

Review of regulatory measures

The following disclosures provide details on regulatory measures of market risk. Refer to pages 181 to 183 of this report for more detail on regulatory measures and the differences when compared to management measures.

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

- the market risk of trading book positions booked to legal entities 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 that are calculated using standardised rules.

The table below summarises the regulatory market risk measures, under the internal models approach. Refer to Table 83 "Market risk own funds requirements", on page 127 for a breakdown of capital requirements by approach.

Table 81: Analysis of Regulatory VaR, SVaR, IRC and CRM

Analysis of Regulatory VaR, SVaR, IRC and Comprehensive Risk Measure^a

	Year-end £m	Avg. £m	Max £m	Min £m
As at 31 December 2019				
Regulatory VaR (1-day)	36	27	38	16
Regulatory VaR (10-day) ^b	115	84	119	52
SVaR (1-day)	112	57	112	35
SVaR (10-day) ^b	355	180	355	111
IRC	264	139	283	74
CRM	–	–	–	–
As at 31 December 2018				
Regulatory VaR (1-day)	24	27	41	19
Regulatory VaR (10-day) ^b	76	87	129	61
SVaR (1-day)	83	67	112	41
SVaR (10-day) ^b	262	211	355	130
IRC	146	126	219	52
CRM	–	–	–	–

Notes:

a Includes BBI from 15 March 2019. Excludes BAGL from 23 July 2018. Excludes IHC.

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. For more information about regulatory and stressed VaR methodology, refer to page 182.

Overall, on an average basis there was reduction in SVaR and a marginal increase in IRC in 2019, with no significant movements in other internal model components:

- SVaR: Average SVaR decreased due to a more conservative risk profile
- IRC: Increase mainly driven by Fixed Income Credit

Analysis of market risk

Table 82: Breakdown of the major regulatory risk measures by portfolio

The table below shows the primary portfolios which are driving the trading businesses' modelled capital requirement as at 2019 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.

Breakdown of the major regulatory risk measures by portfolio^a

	Macro £m	Equities £m	Credit £m	Barclays International Treasury £m	Banking ^b £m	Barclays Group Treasury £m	Financial Resource Manage- ment ^b £m	Investing and Lending ^b £m
As at 31 December 2019								
Regulatory VaR (1-day)	13	10	23	–	1	4	16	–
Regulatory VaR (10-day)	42	31	73	1	2	12	49	–
SVaR (1-day)	61	11	41	1	2	13	33	–
SVaR (10-day)	194	33	129	2	5	41	103	–
IRC	174	6	427	–	3	–	59	–
CRM	–	–	–	–	–	–	–	–
As at 31 December 2018								
Regulatory VaR (1-day)	10	19	14	–	10	5	10	1
Regulatory VaR (10-day)	31	60	45	1	30	17	31	2
SVaR (1-day)	64	59	30	1	20	13	20	4
SVaR (10-day)	203	187	95	2	63	40	64	11
IRC	154	7	209	–	14	9	84	5
CRM	–	–	–	–	–	–	–	–

Notes:

a Excludes BAGL and IHC.

b A hierarchy change affecting the Investing and Lending portfolio resulted in assets being moved to Financial Resource Management and Banking during 2019.

Analysis of market risk

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 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 81, 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 83: Market risk own funds requirements

Barclays Group		RWA		Capital requirements	
		As at 31 December 2019 £m	As at 31 December 2018 £m	As at 31 December 2019 £m	As at 31 December 2018 £m
1	Internal models approach	17,729	16,845	1,418	1,348
2	VaR	4,121	3,255	330	260
3	SVaR	8,236	8,872	659	710
4	Incremental risk charge	3,705	1,878	296	151
5	Comprehensive risk measure	–	–	–	–
6	Risks not in VaR	1,667	2,840	133	227
7	Standardised approach	13,032	13,976	1,043	1,118
8	Interest rate risk (general and specific)	5,770	5,568	462	445
9	Equity risk (general and specific)	4,951	5,162	396	413
10	Foreign exchange risk	457	585	37	47
11	Commodity risk	–	–	–	–
12	Specific interest rate risk of securitisation position	1,854	2,661	148	213
13	Total	30,761	30,821	2,461	2,466

Overall market risk RWAs remained stable at £30.8bn.

Refer to tables 84 and 85 for detailed movement analysis on the standardised approach and Internal model approach.

Table 83a: Market risk own funds requirements for significant subsidiary

Barclays Bank PLC		RWA		Capital requirements	
		As at 31 December 2019 £m	As at 31 December 2018 £m	As at 31 December 2019 £m	As at 31 December 2018 £m
1	Internal models approach	17,275	16,684	1,382	1,335
2	VaR	4,288	3,233	343	259
3	SVaR	7,986	9,362	639	749
4	Incremental risk charge	3,394	1,877	271	150
5	Comprehensive risk measure	–	–	–	–
6	Risks not in VaR	1,607	2,212	129	177
7	Standardised approach	6,163	6,786	493	543
8	Interest rate risk (general and specific)	3,607	3,068	289	245
9	Equity risk (general and specific)	1,828	2,113	146	169
10	Foreign exchange risk	36	34	3	3
11	Commodity risk	–	–	–	–
12	Specific interest rate risk of securitisation position	692	1,571	55	126
13	Total	23,438	23,470	1,875	1,878

Analysis of market risk

Table 84: 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.

Barclays Group		RWA		Capital requirements	
		As at 31 December 2019 £m	As at 31 December 2018 £m	As at 31 December 2019 £m	As at 31 December 2018 £m
Outright products					
1	Interest rate risk (general and specific)	5,770	5,568	462	445
2	Equity risk (general and specific)	4,057	4,010	325	321
3	Foreign exchange risk	457	585	37	47
4	Commodity risk	–	–	–	–
Options					
5	Simplified approach	–	–	–	–
6	Delta-plus method	789	982	63	78
7	Scenario approach	105	170	8	14
8	Securitisation (Specific Risk)	1,854	2,661	148	213
9	Total	13,032	13,976	1,043	1,118

Standardised market risk RWAs decreased £0.9bn to £13.0bn driven by securitisations specific market risk primarily due to a reduction in trading book positions.

Table 85: 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.

Barclays Group		RWA		Capital requirements	
		As at 31 December 2019 £m	As at 31 December 2018 £m	As at 31 December 2019 £m	As at 31 December 2018 £m
1	VaR (higher of values a and b)	4,121	3,255	330	260
(a)	Previous day's VaR (Article 365(1) (VaR _{t-1}))	–	–	171	124
(b)	Average of the daily VaR (Article 365(1)) on each of the preceding sixty business days (VaR _{avg}) x multiplication factor ((mc) in accordance with Article 366)	–	–	330	260
2	SVaR (higher of values a and b)	8,236	8,872	659	710
(a)	Latest SVaR (Article 365(2) (sVaR _{t-1}))	–	–	521	341
(b)	Average of the SVaR (Article 365(2) during the preceding sixty business days (sVaR _{avg}) x multiplication factor (ms) (Article 366)	–	–	659	710
3	Incremental risk charge –IRC (higher of values a and b)	3,705	1,878	296	151
(a)	Most recent IRC value (incremental default and migration risks section 3 calculated in accordance with articles 370/374)	–	–	296	151
(b)	Average of the IRC number over the preceding 12 weeks	–	–	185	130
4	Comprehensive Risk Measure – CRM (higher of values a, b and c)	–	–	–	–
(a)	Most recent risk number for the correlation trading portfolio (article 377)	–	–	–	–
(b)	Average of the risk number for the correlation trading portfolio over the preceding 12-weeks	–	–	–	–
(c)	8 % of the own funds requirement in SA on most recent risk number for the correlation trading portfolio (Article 338(4))	–	–	–	–
5	Other	1,667	2,840	133	227
6	Total	17,729	16,845	1,418	1,348

Modelled market risk RWAs increased £0.9bn to £17.7bn, driven by:

- IRC increased by £1.8bn to £3.7bn primarily driven by trading activity
- Other decreased by £1.2bn to £1.7bn primarily due to underlying market movements

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 regulatory framework and are therefore disclosed separately.

- Securitisation exposures have increased by £9.4bn, primarily driven by Barclays obtaining tranching credit protection on £11.6bn of existing Corporate and SME loans. The transactions involved Barclays transferring a significant portion of the credit risk on the underlying assets to external counterparties

Banking book exposures

+£9.1bn

Trading book exposures

+£0.3bn

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 following tables 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.

Please see page 188 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.

The new securitisation Regulation (EU) 2017/2402 (the Securitisation Regulation) and Regulation (EU) 2017/2401 (amendments to Capital Requirements Regulation or CRR) have taken effect on 1 January 2019 for new transactions issued since that date. In accordance, securitised exposures risk weights have been calculated per the following approaches:

- Internal ratings based approach (Sec IRBA)
- Standardised approach (Sec SA)
- External ratings based approach / internal assessment approach (Sec ERBA / Sec IAA).

From 1 January 2020 all transactions are risk weighted per the revised framework.

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

Table 8 shows a reconciliation between Barclays Plc balance sheet for statutory purposes versus a regulatory view. Specifically, for securitisation positions, the regulatory balance sheet differs 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 190 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 2019 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 90.

Analysis of securitisation exposures

Location of securitisation risk disclosures

As securitisation exposures are subject to a distinct regulatory 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 balances can be found in the relevant credit, counterparty and market risk sections.

Table 86: Reconciliation of exposures and capital requirements relating to securitisations

As at 31 December 2019	Table number in this document	Exposure value £m	RWAs £m	Capital requirement £m
Banking Book				
Standardised approach				
Credit risk	Table 32	8,673	1,823	146
Counterparty credit risk		7	1	–
Of which subject to New Securitisation framework ^a		8,680	1,824	146
Total Standardised approach		8,680	1,824	146
Advanced IRB				
Credit risk	Table 32	35,405	4,913	393
Counterparty credit risk		162	162	13
Of which subject to New Securitisation framework ^a		11,713	2,072	166
Total IRB approach		35,567	5,075	406
Total banking book		44,247	6,899	552
Trading book				
Trading book – specific interest rate market risk				
Standardised approach	Table 83	2,319	1,854	148
Of which subject to New Securitisation framework ^a		413	495	40
Total trading book		2,319	1,854	148

Note:

a Transactions risk weighted per the new securitisation framework (EU) 2017/2401 & 2017/2402 effective from 01/01/2019. Existing positions are subject to grandfathering provisions effective till 31/12/2019. From 01/01/2020 all exposures are risk weighted per the new framework.

Sec SA, Sec ERBA, Sec IAA and 1250% positions risk weighted per new rules are considered under Standardised approach.

Analysis of securitisation exposures

Table 87: Securitisation activity during the year

This table discloses a summary of the securitisation activity during 2019, 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 2019								
Originator								
Residential Mortgages	–	–	–	–	–	–	–	–
Commercial Mortgages	3,732	–	3,732	40	–	–	–	–
Credit Card Receivables	–	–	–	–	–	–	–	–
Leasing	–	–	–	–	–	–	–	–
Loans to Corporates or SMEs	–	11,563	11,563	–	–	–	–	–
Consumer Loans	–	–	–	–	–	–	–	–
Trade Receivables	–	–	–	–	–	–	–	–
Securitisations/ Re-securitisations	–	–	–	–	–	–	–	–
Other Assets	–	–	–	–	–	–	–	–
Total	3,732	11,563	15,295	40	–	–	–	–
As at 31 December 2018								
Originator								
Residential Mortgages	8,929	–	8,929	34	–	–	–	–
Commercial Mortgages	3,065	–	3,065	31	–	–	–	–
Credit Card Receivables	–	–	–	–	–	–	–	–
Leasing	–	–	–	–	–	–	–	–
Loans to Corporates or SMEs	–	6,062	6,062	–	–	–	–	–
Consumer Loans	–	–	–	–	–	–	–	–
Trade Receivables	–	–	–	–	–	–	–	–
Securitisations/ Re-securitisations	–	–	–	–	–	–	–	–
Other Assets	–	–	–	–	–	–	–	–
Total	11,994	6,062	18,056	65	–	–	–	–

The value of assets securitised in the Banking book decreased £2.8bn to £15.3bn:

Traditional

- Barclays did not originate Residential Mortgages securitisations in 2019

Synthetic

- Barclays originated new securitisations of £8.6bn and upsized existing structures by £3.0bn where Barclays Group retains the senior tranches

Analysis of securitisation exposures

Table 88: Assets awaiting securitisation

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

Exposure Type	As at 31 December 2019	
	Banking Book £m	Trading Book £m
As at 31 December 2019		
Originator		
Residential Mortgages	–	–
Commercial Mortgages	863	–
Credit Card Receivables	–	–
Leasing	–	–
Loans to Corporates or SMEs	–	–
Consumer Loans	–	–
Trade Receivables	–	–
Securitisations/ Re-securitisations	–	–
Other Assets	–	–
Total	863	–

Exposure Type	As at 31 December 2018	
	Banking Book £m	Trading Book £m
As at 31 December 2018		
Originator		
Residential Mortgages	–	–
Commercial Mortgages	938	–
Credit Card Receivables	–	–
Leasing	–	–
Loans to Corporates or SMEs	–	–
Consumer Loans	–	–
Trade Receivables	–	–
Securitisations/ Re-securitisations	–	–
Other Assets	–	–
Total	938	–

Analysis of securitisation exposures

Table 89: 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 three multi-seller asset-backed commercial paper (ABCP) conduits Sheffield Receivables Corporation, Salisbury Receivables Corporation and Sunderland Receivables Corporation. Please note that table 89 will not reconcile to table 87, as table 89 shows outstanding amount of exposure for the positions held/retained by Barclays. Table 87 shows the total position originated by Barclays in 2019.

	Banking book			Trading Book		
	Traditional £m	Synthetic £m	Total banking book £m	Of which past due £m	Recognised losses £m	Traditional £m
As at 31 December 2019						
Originator						
Residential Mortgages	4,395	–	4,395	43	–	–
Commercial Mortgages	111	1,423	1,534	–	–	–
Credit Card Receivables	–	–	–	–	–	–
Leasing	–	–	–	–	–	–
Loans to Corporates or SMEs	–	31,957	31,957	–	–	–
Consumer Loans	–	–	–	–	–	–
Trade Receivables	–	–	–	–	–	–
Securitisations/ Re-securitisations	–	–	–	–	–	–
Other Assets	–	–	–	–	–	–
Total (Originator)	4,506	33,380	37,886	43	–	–
Sponsor						
Residential Mortgages	850	–	850	1	–	–
Commercial Mortgages	25	–	25	–	–	–
Credit Card Receivables	377	–	377	56	–	–
Leasing	1,352	–	1,352	2	–	–
Loans to Corporates or SMEs	583	–	583	–	–	–
Consumer Loans	3,429	–	3,429	41	–	–
Trade Receivables	880	–	880	7	–	–
Securitisations/ Re-securitisations	–	–	–	–	–	–
Other Assets	138	–	138	1	–	–
Total (Sponsor)	7,634	–	7,634	108	–	–
Total	12,140	33,380	45,520	151	–	–

Analysis of securitisation exposures

Table 89: Outstanding amount of exposures securitised – Asset value and impairment charges continued

	Banking book			Trading Book		
	Traditional £m	Synthetic £m	Total banking book £m	Of Which Past Due £m	Recognised losses £m	Traditional £m
As at 31 December 2018						
Originator						
Residential Mortgages	9,824	–	9,824	192	–	–
Commercial Mortgages	876	2,587	3,463	41	–	–
Credit Card Receivables	–	–	–	–	–	–
Leasing	–	–	–	–	–	–
Loans to Corporates or SMEs	–	22,507	22,507	–	–	–
Consumer Loans	–	–	–	–	–	–
Trade Receivables	–	–	–	–	–	–
Securitisations/ Re-securitisations	45	–	45	–	–	–
Other Assets	–	–	–	–	–	–
Total (Originator)	10,745	25,094	35,839	233	–	–
Sponsor						
Residential Mortgages	1,849	–	1,849	3	–	–
Commercial Mortgages	–	–	–	–	–	–
Credit Card Receivables	189	–	189	20	–	–
Leasing	2,349	–	2,349	6	–	–
Loans to Corporates or SMEs	324	–	324	–	–	–
Consumer Loans	2,579	–	2,579	18	–	–
Trade Receivables	683	–	683	2	–	–
Securitisations/ Re-securitisations	–	–	–	–	–	–
Other Assets	274	–	274	1	–	–
Total (Sponsor)	8,247	–	8,247	50	–	–
Total	18,992	25,094	44,086	283	–	–

Banking book securitised assets where Barclays is considered to be the Originator or Sponsor increased £1.4bn to £45.5bn, primarily driven by:

Originator

- Traditional Residential Mortgages securitisations decreased by £5.4bn to £4.4bn driven by a program balance of £4.2bn and £1.2bn reduction across various structures
- Synthetic Loans to Corporates or SMEs securitisations increased by £9.5bn to £32.0bn due to further securitisation activities where Barclays Group retains the senior tranches

Sponsor

- The exposure reduction of £0.6bn to £7.6bn is primarily driven by client activity

Analysis of securitisation exposures

Table 90: Securitisation exposures – by exposure class

The table below discloses the aggregate amount of securitisation exposures held, which is consistent with table 91, 92 and 93.

For originated positions, the table below reflects Barclays' retained exposure in the securitisation programmes also disclosed in table 89. For clarity, table 89 discloses the total 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}		
	Originator £m	Sponsor £m	Investor £m	Total banking book £m	Originator £m	Investor £m	Total trading book £m
As at 31 December 2019							
On-balance sheet							
Residential Mortgages	475	–	2,179	2,654	–	882	882
Commercial Mortgages	1,171	–	100	1,271	–	277	277
Credit Card Receivables	–	–	–	–	–	126	126
Leasing	–	–	99	99	–	3	3
Loans to Corporates or SMEs	29,243	–	1,901	31,444	–	647	647
Consumer Loans	–	–	1,045	1,045	–	282	282
Trade Receivables	–	–	–	–	–	–	–
Securitisations/ Re-securitisations	–	–	–	–	–	–	–
Other Assets	–	–	239	239	–	102	102
Total On-balance sheet	30,889	–	5,563	36,452	–	2,319	2,319
Off-balance sheet							
Residential Mortgages	–	646	524	1,170	–	–	–
Commercial Mortgages	–	35	66	101	–	–	–
Credit Card Receivables	–	219	–	219	–	–	–
Leasing	–	1,004	49	1,053	–	–	–
Loans to Corporates or SMEs	–	336	976	1,312	–	–	–
Consumer Loans	–	2,919	178	3,097	–	–	–
Trade Receivables	–	671	21	692	–	–	–
Securitisations/ Re-securitisations	–	–	–	–	–	–	–
Other Assets	–	104	47	151	–	–	–
Total Off-balance sheet	–	5,934	1,861	7,795	–	–	–
Total	30,889	5,934	7,424	44,247	–	2,319	2,319

Analysis of securitisation exposures

Table 90: Securitisation exposures – by exposure class continued

	Banking Book ^{a,b}				Trading Book ^{a,b}		
	Originator £m	Sponsor £m	Investor £m	Total Banking Book £m	Originator £m	Investor £m	Total Banking Book £m
As at 31 December 2018							
On-balance sheet							
Residential Mortgages	35	1	1,971	2,007	–	751	751
Commercial Mortgages	2,343	–	14	2,357	–	181	181
Credit Card Receivables	–	–	–	–	–	42	42
Leasing	–	–	–	–	–	16	16
Loans to Corporates or SMEs	20,584	–	1,234	21,818	–	644	644
Consumer Loans	–	–	1,024	1,024	–	247	247
Trade Receivables	–	–	124	124	–	61	61
Securitisations/ Re-securitisations	–	–	–	–	–	–	–
Other Assets	–	–	1	1	–	93	93
Total On-balance sheet	22,962	1	4,368	27,331	–	2,035	2,035
Off-balance sheet							
Residential Mortgages	75	1,485	360	1,920	–	–	–
Commercial Mortgages	1	–	–	1	–	–	–
Credit Card Receivables	–	316	–	316	–	–	–
Leasing	–	1,740	2	1,742	–	–	–
Loans to Corporates or SMEs	3	228	504	735	–	–	–
Consumer Loans	–	2,199	102	2,301	–	–	–
Trade Receivables	–	531	37	568	–	–	–
Securitisations/ Re-securitisations	–	–	–	–	–	–	–
Other Assets	–	179	9	188	–	–	–
Total Off-balance sheet	79	6,678	1,014	7,771	–	–	–
Total	23,041	6,679	5,382	35,102	–	2,035	2,035

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 increased £9.1bn to £44.2bn, primarily driven by:

On-balance sheet

- Increase in Originator Loans to Corporates or SMEs by £8.6bn to £29.2bn where Barclays Group retains £9.2bn senior synthetic securitisation tranches

Analysis of securitisation exposures

Table 91: 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 IRB approach for the calculation of its RWAs. The RWA calculation approaches per new securitisation Regulation (EU) 2017/2402 (the Securitisation Regulation) and Regulation (EU) 2017/2401 (amendments to Capital Requirements Regulation or CRR) have been added to table 91. The 2019 disclosure incorporates Sec Internal Ratings Based approach (IRBA), Sec Standardised approach (SA), Sec External Ratings Based approach (ERBA) and Sec Internal Assessment approach (IAA). The total population is as per tables 90, 93 and 94.

As at 31 December 2019	Exposure values				Capital requirements			
	Originator £m	Sponsor £m	Investor £m	Total £m	Originator £m	Sponsor £m	Investor £m	Total £m
Banking book								
Existing framework IRB (RBA, IAA) & New securitisation framework approaches (Sec IRBA, Sec SA, Sec ERBA/Sec IAA)								
<= 10%	18,498	223	1,841	20,562	110	1	12	123
> 10% <= 20%	11,490	658	4,873	17,021	138	8	63	209
> 20% <= 50%	292	29	158	479	7	1	4	12
> 50% <= 100%	359	15	273	647	17	1	14	32
> 100% <= 650%	245	–	235	480	41	–	27	68
> 650% < 1250%	–	–	–	–	–	–	–	–
= 1250% / Look through	5	4	43	52	5	4	16	25
Internal Assessment Approach	–	5,006	–	5,006	–	83	–	83
Supervisory Formula Method	–	–	–	–	–	–	–	–
Sub-total IRB	30,884	1,285	3,398	35,567	313	15	78	406
Sub-total Standardised approach	5	4,650	4,025	8,680	5	83	58	146
Total banking book	30,889	5,935	7,423	44,247	318	98	136	552
Trading book								
Existing framework IRB (RBA, IAA) & New securitisation framework approaches (Sec IRBA, Sec SA, Sec ERBA/Sec IAA)								
<= 10%	–	–	937	937	–	–	6	6
> 10% <= 20%	–	–	747	747	–	–	10	10
> 20% <= 50%	–	–	344	344	–	–	6	6
> 50% <= 100%	–	–	18	18	–	–	1	1
> 100% <= 650%	–	–	169	169	–	–	24	24
> 650% < 1250%	–	–	10	10	–	–	7	7
= 1250% / Look through	–	–	94	94	–	–	94	94
Total trading book	–	–	2,319	2,319	–	–	148	148

Analysis of securitisation exposures

Table 91: Securitisation exposures – by capital approach continued

As at 31 December 2018	Exposure values				Capital requirements			
	Originator £m	Sponsor £m	Investor £m	Total £m	Originator £m	Sponsor £m	Investor £m	Total £m
Banking book								
IRB approach								
Ratings Based Approach								
<= 10%	20,804	1,694	2,421	24,919	123	10	15	148
> 10% <= 20%	1,066	154	2,097	3,317	14	1	22	37
> 20% <= 50%	324	1	118	443	8	–	3	11
> 50% <= 100%	495	5	448	948	24	–	23	47
>100% <= 650%	351	–	96	447	55	–	9	64
> 650% < 1250%	–	–	–	–	–	–	–	–
= 1250% / Look through	1	–	202	203	1	–	37	38
Internal Assessment Approach	–	4,825	–	4,825	–	40	–	40
Supervisory Formula Method	–	–	–	–	–	–	–	–
Total IRB	23,041	6,679	5,382	35,102	225	51	109	385
Standardised approach	–	–	–	–	–	–	–	–
Total banking book	23,041	6,679	5,382	35,102	225	51	109	385
Trading book								
IRB approach								
Ratings Based Approach								
<= 10%	–	–	919	919	–	–	6	6
> 10% <= 20%	–	–	319	319	–	–	4	4
> 20% <= 50%	–	–	353	353	–	–	7	7
> 50% <= 100%	–	–	161	161	–	–	8	8
>100% <= 650%	–	–	107	107	–	–	19	19
> 650% < 1250%	–	–	16	16	–	–	9	9
= 1250% / Look through	–	–	160	160	–	–	160	160
Total trading book	–	–	2,035	2,035	–	–	213	213
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-			
Risk Weighted Band	New securitisation Regulation (EU) 2017/2401&2 S&P Equivalent Rating (STS)				New securitisation Regulation (EU) 2017/2401&2 S&P Equivalent Rating (Non STS)			
<= 70%	AAA to BBB- (Senior Position Only) / AAA to A (Base Case)				AAA to A- (Senior Position Only) / AAA to A+ (Base Case)			
> 70% <= 160%	BBB to BB (Senior Position Only) / AA- to BBB+ (Base Case)				BBB+ to BB (Senior Position Only) / AA+ to A- (Base Case)			
> 160% <= 280%	BB- to B (Senior Position Only) / A- to BBB- (Base Case)				BB to B+ (Senior Position Only) / A+ to BBB (Base Case)			
> 280% <= 420%	B to CCC- (Senior Position Only) / BBB- to BB+ (Base Case)				B+ to B- (Senior Position Only) / BBB to BBB- (Base Case)			
> 420% <= 860%	CCC+ to CCC- (Senior Position Only) / BB+ to B+ (Base Case)				B- to CCC- (Senior Position Only) / BBB- to BB- (Base Case)			
> 860% <= 1130%	B to B- (Base Case)				BB- to B- (Base Case)			
= 1250% / deduction	Below CCC-/Below B- (Base Case)				Below CCC-/ Below B- (Base Case)			

The total amount of securitisation positions in the banking book increased £9.1bn to £44.2bn, primarily driven by:

- A net decrease of £4.3bn to £20.6bn in the “<=10%” band primarily driven by migration of exposures to “> 10% <= 20%” band as per the new securitisation rules
- A net increase of £13.7bn to £17.0bn in the “>10%<=20%” band primarily driven by the retention of Originator senior synthetic securitisations tranches

Analysis of securitisation exposures

Table 92: Re-securitisation exposures – by risk weight band

This table is a subset of table 91 and discloses Barclays exposures to re-securitisations by capital approach. 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 Basel capital requirements.

For securitisations with mixed asset pools (e.g. certain collateralised loan obligations), the exposure class disclosed in tables 90, 93 and 94 represents the exposure class of the predominant underlying asset class.

As at 31 December 2019	Exposure values				Capital requirements			
	Originator £m	Sponsor £m	Investor £m	Total £m	Originator £m	Sponsor £m	Investor £m	Total £m
Banking book								
Existing framework IRB (RBA, IAA) & New securitisation framework approaches (Sec IRBA, Sec SA, Sec ERBA/Sec IAA)								
<= 10%	–	–	–	–	–	–	–	–
> 10% <= 20%	–	–	–	–	–	–	–	–
> 20% <= 50%	–	–	–	–	–	–	–	–
> 50% <= 100%	–	–	–	–	–	–	–	–
>100% <= 650%	–	–	–	–	–	–	–	–
> 650% < 1250%	–	–	–	–	–	–	–	–
= 1250% / Look through	–	–	–	–	–	–	–	–
Internal Assessment Approach	–	–	–	–	–	–	–	–
Supervisory Formula Method	–	–	–	–	–	–	–	–
Total IRB	–	–	–	–	–	–	–	–
Standardised approach	–	–	–	–	–	–	–	–
Total banking book	–	–	–	–	–	–	–	–
Trading book								
Existing framework IRB (RBA, IAA) & New securitisation framework approaches (Sec IRBA, Sec SA, Sec ERBA/Sec IAA)								
<= 10%	–	–	–	–	–	–	–	–
> 10% <= 20%	–	–	–	–	–	–	–	–
> 20% <= 50%	–	–	–	–	–	–	–	–
> 50% <= 100%	–	–	–	–	–	–	–	–
>100% <= 650%	–	–	–	–	–	–	–	–
> 650% < 1250%	–	–	–	–	–	–	–	–
= 1250% / Look through	–	–	–	–	–	–	–	–
Total trading book	–	–	–	–	–	–	–	–

Analysis of securitisation exposures

Table 92: Re-securitisation exposures – by risk weight band continued

As at 31 December 2018	Exposure values				Capital requirements			
	Originator £m	Sponsor £m	Investor £m	Total £m	Originator £m	Sponsor £m	Investor £m	Total £m
Banking book								
IRB approach								
Ratings Based Approach								
<= 10%	–	–	–	–	–	–	–	–
> 10% <= 20%	–	–	–	–	–	–	–	–
> 20% <= 50%	2	–	–	2	–	–	–	–
> 50% <= 100%	–	–	5	5	–	–	–	–
>100% <= 650%	–	–	–	–	–	–	–	–
> 650% < 1250%	–	–	–	–	–	–	–	–
= 1250% / Look through	–	–	1	1	–	–	1	1
Internal Assessment Approach	–	–	–	–	–	–	–	–
Supervisory Formula Method	–	–	–	–	–	–	–	–
Total IRB	2	–	6	8	–	–	1	1
Standardised approach								
Total banking book	2	–	6	8	–	–	1	1
Trading book								
IRB approach								
Ratings Based Approach								
<= 10%	–	–	–	–	–	–	–	–
> 10% <= 20%	–	–	–	–	–	–	–	–
> 20% <= 50%	–	–	–	–	–	–	–	–
> 50% <= 100%	–	–	–	–	–	–	–	–
>100% <= 650%	–	–	–	–	–	–	–	–
> 650% < 1250%	–	–	–	–	–	–	–	–
= 1250% / Look through	–	–	5	5	–	–	5	5
Total trading book	–	–	5	5	–	–	5	5

Analysis of securitisation exposures

Table 93: Aggregate amount of securitised positions retained or purchased by geography – banking book

This table presents total banking book securitised exposure type split 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 2019						
Residential Mortgages	2,949	513	319	–	43	3,824
Commercial Mortgages	1,188	149	35	–	–	1,372
Credit Card Receivables	–	–	219	–	–	219
Leasing	–	192	960	–	–	1,152
Loans to Corporates or SMEs	9,911	6,183	15,830	103	429	32,456
Consumer Loans	381	317	3,404	–	40	4,142
Trade Receivables	140	337	215	–	–	692
Securitisations/ Re-securitisations	–	–	–	–	–	–
Other Assets	–	171	218	–	1	390
Total	14,569	7,862	21,200	103	513	44,247
As at 31 December 2018						
Residential Mortgages	2,923	633	326	–	45	3,927
Commercial Mortgages	2,273	72	–	13	–	2,358
Credit Card Receivables	–	–	316	–	–	316
Leasing	–	98	1,644	–	–	1,742
Loans to Corporates or SMEs	7,707	4,680	9,657	38	471	22,553
Consumer Loans	393	389	2,521	–	22	3,325
Trade Receivables	136	353	203	–	–	692
Securitisations/ Re-securitisations	–	–	–	–	–	–
Other Assets	–	–	186	–	3	189
Total	13,432	6,225	14,853	51	541	35,102

The total amount of securitisation positions in the banking book increased £9.1bn to £44.2bn, primarily driven by:

- A net reduction of £1.0bn to £1.4bn in Commercial Mortgages driven by amortisation of exposures in United Kingdom
- An increase of £9.9bn to £32.5bn in Loans to Corporate or SMEs driven by £9.2bn retention of Originator senior synthetic securitisation tranches in Americas (£5.6bn), Europe (£1.9bn) and United Kingdom (£1.7bn)

Analysis of securitisation exposures

Table 94: 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 2019						
Residential Mortgages	750	16	116	–	–	882
Commercial Mortgages	5	1	271	–	–	277
Credit Card Receivables	1	–	125	–	–	126
Leasing	–	–	3	–	–	3
Loans to Corporates or SMEs	67	266	314	–	–	647
Consumer Loans	1	–	281	–	–	282
Trade Receivables	–	–	–	–	–	–
Securitisations/ Re-securitisations	–	–	–	–	–	–
Other Assets	–	85	17	–	–	102
Total	824	368	1,127	–	–	2,319
As at 31 December 2018						
Residential Mortgages	732	10	8	–	–	750
Commercial Mortgages	8	5	167	–	–	180
Credit Card Receivables	4	–	38	–	–	42
Leasing	–	–	16	–	–	16
Loans to Corporates or SMEs	11	417	216	–	–	644
Consumer Loans	13	3	232	–	–	248
Trade Receivables	–	–	61	–	–	61
Securitisations/ Re-securitisations	–	–	–	–	–	–
Other Assets	–	90	4	–	–	94
Total	768	525	742	–	–	2,035

The total amount of securitisation positions in the trading book increased £0.3bn to £2.3bn, primarily driven by trading activity in Americas.

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 2019.

Summary of performance in the period

During 2019, total operational risk losses decreased to £169m (2018: £230m) whilst the number of recorded events for 2019 (2,098) remained stable (2018: 2,068). The total operational risk losses for the year were mainly driven by events falling within the Execution, Delivery and Process Management and External Fraud categories, which tend to be high volume but low impact events.

Operational risk RWAs decreased in the year



Key metrics



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 the Standardised Approach.

See pages 198 to 201 for information on operational risk management.

Table 95: Risk weighted assets for operational risk

	Barclays UK £m	Barclays International £m	Head Office £m	Total £m
As at 31 December 2019				
Operational Risk				
Basic Indicator Approach				
Standardised Approach	11,821	29,007	129	40,957
Advanced Measurement Approach				
Total operational risk RWAs	11,821	29,007	129	40,957
As at 31 December 2018				
Operational Risk				
Basic Indicator Approach	–	–	–	–
Standardised Approach	11,835	28,989	15,836	56,660
Advanced Measurement Approach	–	–	–	–
Total operational risk RWAs	11,835	28,989	15,836	56,660

Operational risk decreased by £15.7bn to £41.0bn primarily due to the removal of the Group's operational risk floor (December 2018: £56.7bn)

Analysis of operational risk

Operational risk profile

Within operational risk, there are a large number of small risk events. In 2019, 84% (2018: 84%) of the Group's reportable operational risk events by volume had a value of less than £50,000 each. Cumulatively, events under this £50,000 threshold accounted for only 19% (2018: 14%) of the Group's total net operational risk losses. A small proportion of operational risk events have a material impact on the financial results of the Group.

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

- Execution, Delivery and Process Management impacts decreased to £101m (2018: £130m) and accounted for 60% (2018: 57%) of total 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, mapping mainly to Barclays Transaction Operations risk type. The overall frequency of events in this category remained stable year-on-year at 28% of total events by volume (2018: 31%).
- External Fraud remains the category with the highest frequency of events at 67% of total events in 2019 (2018: 62%). In this category, high volume, low value events are driven by transactional fraud often related to debit and credit card usage. Ratio of losses in this category increased to 28% of total 2019 losses (2018: 21%), driven mainly by increased fraud attacks on the Group's systems following implementation of Cheque Imaging as part of the clearing process.
- Business Disruption and System Failures accounted for an increased share at 11% of total impacts (2018: 6%), although actual losses remained broadly stable at £18m (2018: £14m) and volume of events fell slightly to 86 (2018: 99).
- Employment Practices and Workplace Safety impacts show a significant decrease to £1m (2018: £35m) accounting for 0.4% of total operational risk losses in 2019 (2018: 15%), while volume of events in this category also decreased to 17 in 2019 (2018: 46). The 2018 loss was mainly incurred from a low number of events with significant impacts (three single legacy events relating to closed businesses accounted for 90% of total impacts).

The Group's operational risk profile is informed by bottom-up risk assessments undertaken by each business unit and top-down qualitative review by the Operational Risk specialists for each risk type. Fraud, Transaction Operations and Technology continue to be highlighted as key operational risk exposures. The operational risk profile is also informed by a number of risk themes: Cyber, Data, Execution and Resilience. These represent threats to the Group that extend across multiple risk types, and therefore require an integrated risk management approach.

Investment continues to be made in improving the control environment across the Group. Particular areas of focus include 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 Group continues to work closely with external partners on various prevention initiatives.

Operational Resilience is a key area of focus for the Group. Disruption to our business activities is a material inherent risk within the Group and across the financial services industry, whether arising through impacts on our technology systems, our real estate services, availability of personnel or services supplied by third parties. Failure to build resilience and recovery capabilities into our business activities may result in significant customer detriment, costs to reimburse losses incurred by the Group's customers, market impact and reputational damage. In common with the rest of the Financial Services industry, the Group expects continued regulatory scrutiny in relation to resilience. Technology, resilience and cyber security risks evolve rapidly so the Group 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 Group.

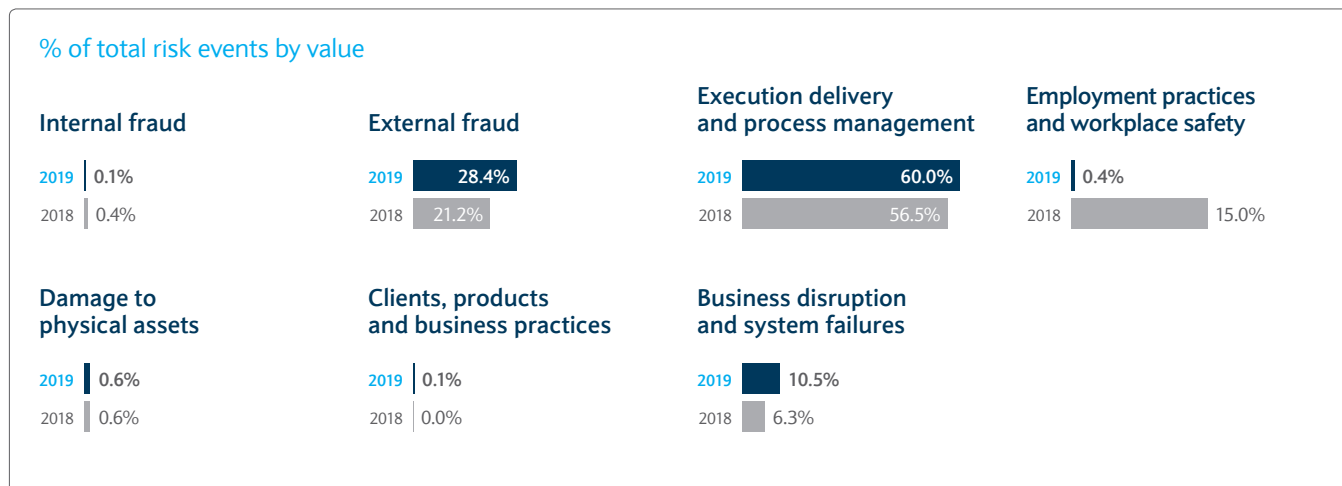
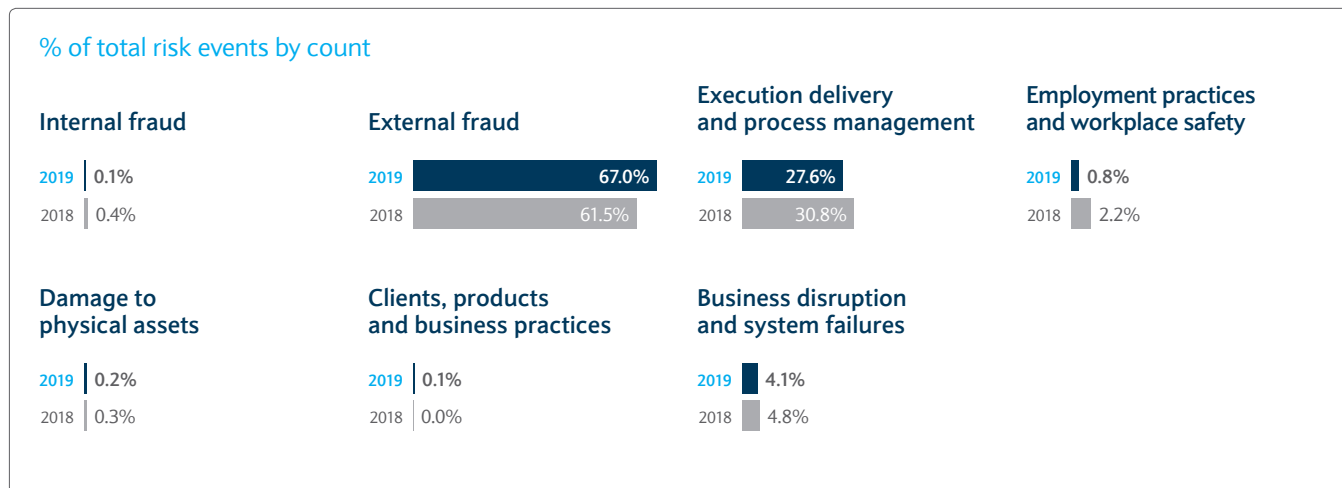
Cyber-attacks are a global threat that are inherent across all industries. The financial sector remains a primary target for cyber criminals, hostile nation states, opportunists and hackers. There are high levels of sophistication in criminal hacking for the purpose of stealing money, stealing, destroying or manipulating data (including customer data) and/or disrupting operations, where multiple threats exist including threats arising from malicious emails, distributed denial of service (DDoS) attacks, payment system compromises, insider attackers, supply chain and vulnerability exploitation. Cyber events can have a compounding impact on services and customers, e.g. data breaches in social networking sites, retail companies and payments networks.

The threat of cyber-attack is recognised by the Group along with the significant potential impact on all areas of its business ranging from operational matters to its scrutiny of its relationships with its suppliers, customers and other external stakeholders. Regulators in the UK, US and Europe continue to focus on cyber-security risk management in the financial sector and have highlighted the need for financial institutions to improve their monitoring and control of, and resilience (particularly of critical services) to cyber-attacks, and to provide timely notification of them, as appropriate. This has resulted in a number of proposed laws, regulations and other requirements that necessitate implementation of a variety of increased controls and enhancement activities for regulated Group entities. These include, among others, the adoption of cyber security policies and procedures meeting specified criteria, minimum required security measures, controls and procedures for enhanced reporting and public disclosures, compliance certification requirements, and other cyber and information risk governance measures. The Group continues to use an intelligence-driven defence approach, analysing external events for current and emerging cyber threats which allows the delivery of proactive counter measures; the Group also completes cyber threat scenarios and incident playbooks to assess our security posture and business impacts and runs an internal adversarial capability which simulates hackers to proactively test controls and responses. The increased control environment will continue to enhance our security posture and our ability to better protect the organisation and our customers. Cyber-attacks however are increasingly sophisticated and there can be no assurance that the measures implemented will be fully effective to prevent or mitigate future attacks, the consequences of which could be significant to the Group. Furthermore, such measures have resulted and will result in increased technology and other costs in connection with cyber security mitigation and compliance for the Group.

For further information, refer to operational risk management section (pages 198 to 201).

Analysis of operational risk

Operational risk events by BASEL event category^a



Note:

^a The data disclosed includes operational risk losses for reportable events having 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 keep evolving, prior year losses have been updated.

Risk management strategy, governance and risk culture

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

- 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 pages 149 to 150)
- 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 150 to 151
- A discussion of how our risk management strategy is designed to foster a strong risk culture is contained on page 152
- Pages 152 to 156 describe group-wide risk management tools that support risk management, the Barclays Group ExCo and the Board in discharging their responsibilities, and how they are applied in the strategic planning cycle.

Risk management strategy, governance and risk culture

Barclays Group's risk management strategy

This section introduces Barclays Group's approach to managing and identifying risks, and for fostering a strong risk culture.

Enterprise Risk Management Framework (ERMF)

The ERMF sets the strategic direction for risk management by defining standards, objectives and responsibilities for all areas of the Group. It is then approved by the Barclays PLC Board on recommendation of the Group Chief Risk Officer. It supports senior management in effective risk management and developing a strong risk culture.

The ERMF sets out:

- Segregation of duties: The ERMF clearly defines a Three Lines of Defence model
- Principal risks faced by the Group. This list guides the organisation of the risk management function, and the identification, management and reporting of risks.
- Risk appetite requirements
- Roles and responsibilities for risk management: The ERMF sets out the accountabilities of the Group CEO and other senior managers, as well as Barclays PLC committees

The ERMF is complemented by frameworks, policies and standards that are mainly aligned to individual principal risks:

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

Segregation of duties – the "Three Lines of Defence" model

The ERMF sets out a clear lines of defence model. All colleagues are responsible for understanding and managing risks within the context of their individual roles and responsibilities, as set out below:

- 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, and Human Resources. First line is responsible for identifying and managing

the risks they generate, establishing a control framework, and escalating risk events to Risk and Compliance.

- Second line is comprised of the Risk and Compliance functions. 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. Note that limits for a number of first line activities, related to operational risk, will be set by the first line and overseen by the Chief Controls Office (described below). These will remain subject to supervision by the second line.
- Third line of defence is Internal Audit, who are responsible for providing independent assurance over the effectiveness of governance, risk management and control over current, systemic and evolving risks.
- The Legal function provides support to all areas of the bank and is not formally part of any of the three lines, however is subject to second line oversight.

Principal risks

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

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.

Non-Financial Principal Risks

- **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, effective 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

Each of the principal risks is overseen by an accountable executive within the Group who is responsible for the framework, policies and standards that detail the related requirements. Risk reports to executive and Board committees are clearly organised by principal risk.

Accountable executives, their delegates and teams frequently collaborate to address issues and drive initiatives that span more than one principal risk.

Risk appetite for the principal risks

Risk appetite is defined as the level of risk which the Group's businesses are prepared to accept in the conduct of their activities. It 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.

Risk appetite is approved by the Barclays PLC Board and disseminated across legal entities. Total Group risk appetite is supported by limits to control exposures and activities that have material concentration risk implications.

Roles and responsibilities in the management of risk

Certain roles within the Group carry specific responsibilities and accountabilities with respect to risk management and the ERMF. These include the following:

- Group Chief Executive Officer (CEO):** The Group CEO is accountable for leading the development and execution of the strategy in line with the Group's purpose and values, and within the risk appetite. Importantly, the Group CEO appoints the most senior risk owners including the Group Chief Risk Officer and the Group General Counsel.

- Group Chief Risk Officer (CRO):** The Group CRO leads the Risk Function across Barclays Group. In addition to developing and maintaining all aspects of the ERMF, the Group CRO:
 - prepares and recommends to the Barclays PLC Board the Group risk appetite and its allocation to the trading entities (Barclays Bank Group and Barclays Bank UK Group);
 - is primarily responsible for assessing and reporting the actual risk profile of the institution against the agreed appetite;
 - has the power to identify and assign actions to the business in order to comply with the ERMF and remain within the risk appetite, suspend or stop decisions that carry unacceptable risks, and escalate unresolved concerns directly to the Group CEO, the Chairman of the Board or any of its committees; and
 - is accountable for the final approval of lending or investing decisions either directly or via delegated authority.
- Group Chief Compliance Officer:** The Group Chief Compliance Officer is accountable to the Group CRO for the strategic and function leadership of the Group Compliance Function. Their main role is:
 - to effectively manage the Group's conduct and reputation risks and escalate to the Barclays PLC Board where appropriate;
 - to set global compliance standards, and to maintain robust breach reporting and whistleblowing processes; and
 - similarly to Group CRO, to utilise their mandate to access any part of the organisation and any information, and to bring to the attention of line and

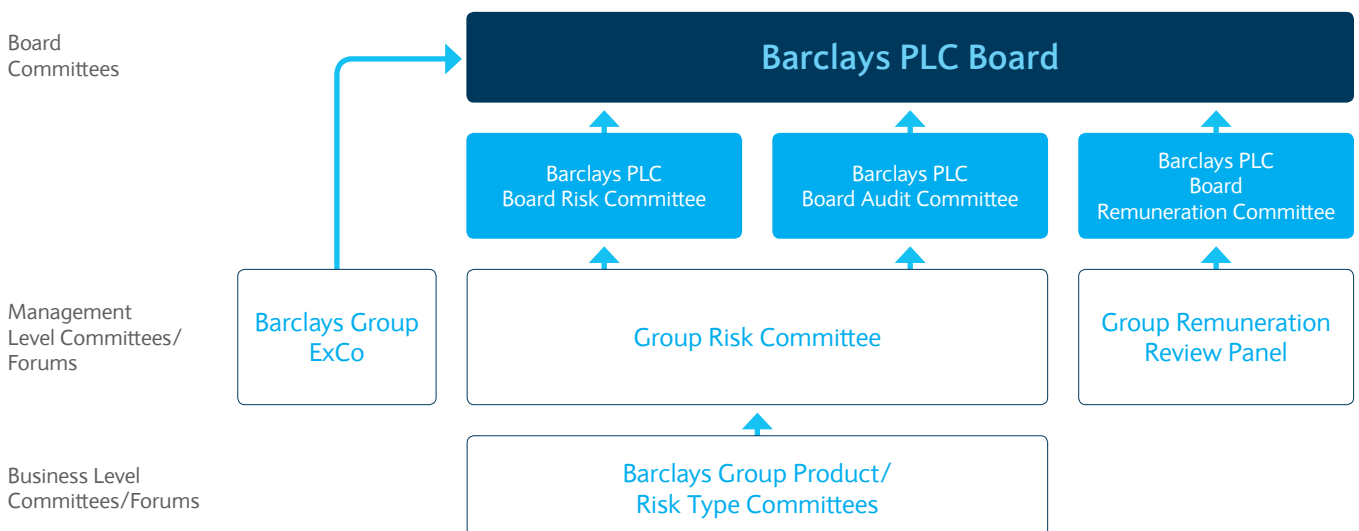
senior management or the Board, as appropriate, any situation that is of concern from a conduct or reputation risk management perspective that could materially violate the approved risk appetite guidelines.

- Group General Counsel:** The Group General Counsel is required to develop and maintain the Legal Risk Management Framework. This includes defining Legal Risk Policies, and defining and overseeing the Group-wide and business risk appetite/tolerances for legal risk.
- Group Chief Controls Officer:** The Chief Controls Officer, led by the Group Chief Controls Officer, sits in the First Line of Defence and is responsible for overseeing the practical implementation of operational, conduct and reputation risk controls and methodologies across the Group. To that end the Chief Controls Officer defines a control framework and oversees its execution. The control framework directs businesses to manage risk exposure within approved operational risk appetites, to record risk events and issues, and to complete risk and control self-assessments.

Senior Managers Regime

A number of members of the Barclays PLC Board, the majority of the Group 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;



Risk management strategy, governance and risk culture

- 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.
- The Barclays PLC Board Remuneration Committee (RemCo): The RemCo receives a 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.

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 the Barclays website at: home.barclays/about-barclays/barclays-corporate-governance.html.

The Group Risk Committee (GRC) is the most senior executive body responsible for reviewing and monitoring the risk profile of the Group. This includes coverage of all principal risks, and any other material risks, to which the Group is exposed. The GRC reviews and recommends the proposed risk appetite and relative limits to the BRC. The committee covers all business units and legal entities with the Group and incorporates specific coverage of Barclays Bank Group.

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:

- Risk profile
- Risk perspective on medium-term plans and strategy
- Risk appetite
- Results of stress tests, including Comprehensive Capital Analysis and Review (CCAR)
- 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.

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 the development and implementation of frameworks, policies and associated standards for each of the financial principal risks, operational risk and model risk. These must be subject to limits, monitored, reported on and escalated as required. The Group 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. The Controls Assurance Standard defines the requirements for controls assurance and controls testing.

In addition, the Risk function carry out conformance reviews to assess the implementation of, and adherence to, principal risk framework and component policies. This activity is undertaken independently of the business

Risk committees

Various committees also fulfil important roles and responsibilities. Barclays business level product/risk type committees consider risk matters relevant to their business, and escalate as required to the Group Risk Committee (GRC), whose Chairman, in turn, escalates to the Barclays PLC Board Committees and the Barclays PLC Board.

In addition to setting the risk appetite of the Group, the Board is responsible for approving the ERMF, and reviewing all reputation risk matters. It receives regular information on the risk profile of the bank, and has ultimate responsibility for risk appetite and capital plans.

Further, there are three Board-level committees which oversee the application of the ERMF and implementation of key aspects. Membership of these committees is comprised solely of non-executive directors providing independent oversight and challenge. These are detailed below:

- The Barclays PLC Board Risk Committee (BRC): The BRC monitors the Group's risk profile against the agreed appetite. Where actual performance differs from expectations, the actions taken by management are reviewed to ascertain that the BRC is comfortable with them. The BRC also reviews certain key risk methodologies, the effectiveness of risk management, and the Group's risk profile, including the material 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.
- The Barclays PLC 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, Barclays policies and methodologies.

Risk management strategy, governance and risk culture

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 BAC 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 the design of the ERMF and its components 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 lessons learned process, setting out requirements for the completion of lessons learned assessments in response to internal and external risk events. The approach is aligned to the Three Lines of Defence model (see page 149), 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 Group;
- Standardised templates to report conclusions consistently to relevant management forums 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 the norms, attitudes and behaviours related to risk awareness, risk taking and risk management. This is reflected in how the Group identifies, escalates and manages risk matters.

Barclays is committed to maintaining a robust risk culture in which:

- management expect, model and reward the right behaviours from a risk and control perspective;
- colleagues identify, manage and escalate risk and control matters, and meet their responsibilities around risk management.

Specifically, all employees regardless of their positions, functions or locations must play their part in the Group's risk management. Employees are required to be familiar with risk management policies which are relevant to their responsibilities, know how to escalate actual or potential risk issues, and have a role-appropriate level of awareness of the risk management process as defined by the ERMF.

Our Code of Conduct – the Barclays Way

Globally, all colleagues must attest to the "Barclays Way", our Code of Conduct, and comply with 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 the aspects of colleagues' working relationships, with other Barclays employees, customers and clients, governments and regulators, business partners, suppliers, competitors and the broader community.

Group-wide risk management tools

To support 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 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 and enables strategic and financial decisions to be made on an informed basis. Thus, the risk appetite setting process aims to consider the material risks Barclays is exposed to under its business plans.

The risk appetite aims to:

- Specify the level of risk we are willing to take to enable specific risk taking activities.
- Consider all principal risks individually and, where appropriate, in aggregate.
- Consistently communicate the acceptable level of risk for different risk types.

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 formally 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 2020 the key financial parameters are listed below.

<i>Measure relevant to strategy and risk</i>	<i>Link between strategy and risk profile</i>
Profit after tax	Fundamental performance of Barclays Group 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.
Liquidity Risk Appetite	Monitors liquidity of the bank and its ability to meet financial obligations in a stress.

Based on the specified risk appetite, the Group develops both stress loss and mandate & scale limits to control specific activities.

Risk management strategy, governance and risk culture

Stress loss

Stress loss limits are derived from the results of the adverse stress test scenario. Limits are a reflection of the losses absorbed by the stressed capital plans within risk appetite and provide a crucial link between the strategic planning process and risk appetite. Stress loss limits are conservatively assumed to be additive but in practice stresses may not happen at the same time. Risk management may over-allocate stress loss limits where they deem it unlikely all businesses will require full limit utilization at the same time. Aggregate utilisation across all risk types is monitored against both the aggregate of stress loss limits and losses absorbed by the stressed capital plan. It is the role of Risk to manage the over-allocation within capital constraints.

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. The use of limits and triggers helps mitigate the risk of concentrations that could be out of line with expectations, and which may lead to unexpected losses of a scale 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 the Group and individual business mandates
- 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 stress loss and mandate and scale limits are designated as A-level (Board level) and B-Level (Group level). All B-level and lower limits are set by the Risk function. Business limits are approved by the relevant business risk teams and are reportable to the relevant risk committee. Unapproved excesses of limits may result in performance management and disciplinary consequences. All limits and are subject to escalation and governance requirements.

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:

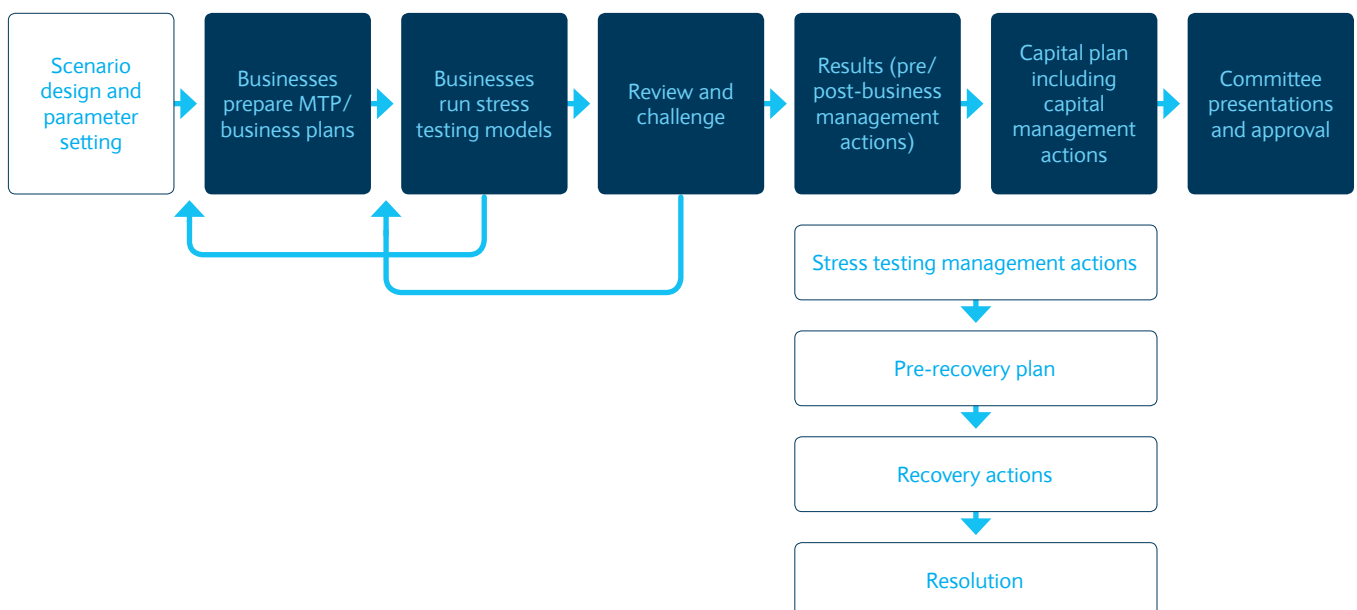
- The Group risk appetite
- current exposure/MTP forecasts
- risk return considerations
- senior risk management judgement.

Internal stress testing

Group-wide stress tests are an 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 the Group to make changes to plans as necessary. 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 the Group's internal capital adequacy assessment process (ICAAP).

The following diagram outlines the key steps in Group-wide stress testing process.

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.



Risk management strategy, governance and risk culture

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, assumptions, judgements, results and management actions within each business (including sign-off by business CROs and CFOs) and by central functions.

The businesses 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 Group-wide stress testing results.

The overall stress testing results are reviewed and signed off by the Board, following review by the Stress Testing Steering Committee, the Group Risk Committee and the Board Risk Committee.

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

Principal Risk	Stress testing approach
Credit risk	<ul style="list-style-type: none"> ■ Credit risk impairment: For retail portfolios businesses use statistical models to establish a relationship between IFRS9 impairment loss levels and key macroeconomic parameters such as GDP, inflation and unemployment, incorporating credit quality migration analysis to estimate stressed levels. In addition, house price reductions (for mortgages), increased customer drawdowns (for revolving facilities) and higher interest rates impacting customer affordability 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: The 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	<ul style="list-style-type: none"> ■ 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	<ul style="list-style-type: none"> ■ The analysis of treasury and capital risk also contributes to the estimate of stressed income and costs: <ul style="list-style-type: none"> – 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 exchange rates with management actions to partly offset profit reductions (due to impairment increases and decreases in income) such as headcount reductions and lower performance costs. <p>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 Group's 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.</p> <p>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.</p>

Risk management strategy, governance and risk culture

Principal Risk	Stress testing approach
Treasury and Capital Risk continued	<p>Liquidity Risk: Liquidity risk is assessed by the internal liquidity risk appetite, LRA, which analyses specific liquidity risk drivers such as wholesale funding and contingent funding needs based on the below scenarios:</p> <ul style="list-style-type: none"> 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 Liquidity Coverage Ratio: Regulatory prescribed 30-day liquidity metric. <p>Interest Rate Risk in the Banking Book (IRRBB): Risk assessment for interest rate risk on the banking books is driven by the economic risk of the underlying positions but also considers the accounting treatment:</p> <ul style="list-style-type: none"> Earnings based measures are used to assess risk to net interest income from positions in customer banking books, hedging portfolios (held to mitigate those risks), and Treasury investment and funding activities Value based measures are used to assess risk to the fair value of assets held as part of investments in the liquid asset portfolio and associated risk management portfolios. <p>Risk under stress is assessed by considering:</p> <ul style="list-style-type: none"> The impact on net interest income resulting from stressed product margins and volumes, which are dependent on the level of interest rates and funding costs under stress conditions. This can be partly mitigated by management actions, which may include repricing of variable rate products taking into account interbank lending rates under stress. <p>Securities in the buffer are subject to several market risk stresses designed to estimate potential losses in various scenarios. This includes, but is not limited to, an annual internal stress test, regulatory stress tests as well as various ad hoc exploratory exercises.</p>
Operational risk	<ul style="list-style-type: none"> Operational risk loss projections include the effect of the stressed macroeconomic scenario as well as the impact of forward-looking idiosyncratic risk events under stress. Operational risk is also part of the reverse stress testing framework through scenario assessments of such idiosyncratic events.
Model risk	<ul style="list-style-type: none"> IVU reviews the models and assumptions used in the MTP and stress test and may request the application of overlays to address model deficiencies.
Conduct risk	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Reputation risk is not quantified or stressed.
Legal risk	<ul style="list-style-type: none"> Legal risk is not quantified or stressed.

Risk management strategy, governance and risk culture

In 2019, 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 risk appetite setting process.

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 United Kingdom 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 Barclays Group-wide stress tests, Barclays Group also runs regulatory stress tests. In 2019, 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 December 2019, and support the BoE's aim for increased transparency as part of its stress testing framework.

Barclays Group is also subject to stress testing by non-UK regulators which includes the European Banking Authority (EBA) and the US Federal Reserve CCAR process (which focuses on the US domicile legal entity). For 2019 the results of the EBA stress test were published in November 2019 with the CCAR stress test results published by the US Federal Reserve in June 2019.

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 Barclays 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 Barclays Group's risk profile and setting of risk appetite.

- The 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 Barclays 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 businesses' results to verify that these are appropriate and realistic in a stressed environment.
- Meetings are held with each business, where they present their business plans to Barclays Group CRO and Finance Director. The findings from the risk reviews are discussed and businesses may be required to change their business plans as a result of these meetings.
- Interim internal capital adequacy assessments inform the capital planning process and are reviewed during the meetings. These assessments are refreshed based on year-end positions and reflected in the ICAAP.

The BRC has overall responsibility for reviewing Barclays Group's risk profile and making appropriate recommendations to the Board. The Board is ultimately responsible for approving the MTP and Barclays 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 maintain Barclays Group stays 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 158 to 166 cover the aspects of the Group's risk management framework specific to credit risk, including committees and Barclays Group's reporting structure
- As [66%] of our regulatory capital is for credit risk, we devote pages 166 to 174 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 from wholesale and retail loans and advances together with the counterparty credit risk arising from derivative contracts with clients; trading activities, including: debt securities, settlement balances with market counterparties, FVOCI assets and reverse repurchase loans.

Credit risk management objectives are to:

- maintain a framework of controls to oversee credit risk;
- 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.

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 greater in number but lesser in value and are, therefore, managed in aggregated segments.

Roles and responsibilities

The first line of defence has primary responsibility for managing credit risk within the risk appetite and limits set by the Risk function, supported by a defined set of policies, standards and controls. In the entities, business risk committees (attended by the first line) monitor and review the credit risk profile of each business unit where the most material issues are escalated to the Retail Credit Risk Management Committee, Wholesale Credit Risk Management Committee and Group Risk Committee.

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 strategies 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 development of credit risk measurement models. The credit risk management teams in each legal entity are accountable to the relevant Legal Entity CRO, who reports to the Group CRO.

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 assigned 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 a legal entity Senior Credit Officer. For exposures in excess of the legal entity Senior Credit Officer's authority, approval by Group Senior Credit Officer/Board Risk Committee is also required. The Group Credit Risk Committee, attended by legal entity Senior Credit Officers, provides a formal mechanism for the Group Senior Credit Officer to exercise the highest level of credit authority over the most material Group single name exposures.

In the wholesale portfolios, credit risk managers are organised in sanctioning teams by geography, industry and/or product.

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

Barclays PLC Board Risk Committee

- Reviews and recommends Barclays Group's risk appetite for wholesale and retail credit risk to the Barclays PLC Board
- Reviews Barclays Group's risk profile for wholesale and retail credit risk on behalf of the Barclays PLC Board
- Commissions, receives and considers reports on wholesale and retail credit risk issues

Barclays Group Risk Committee

- Reviews appetite for wholesale and retail credit risk and makes recommendations on the setting of limits to the Barclays PLC Board
- Monitors the risk profile for wholesale and retail credit risk
- Reviews and monitors the control environment for wholesale and retail credit risk

Business Risk Committees

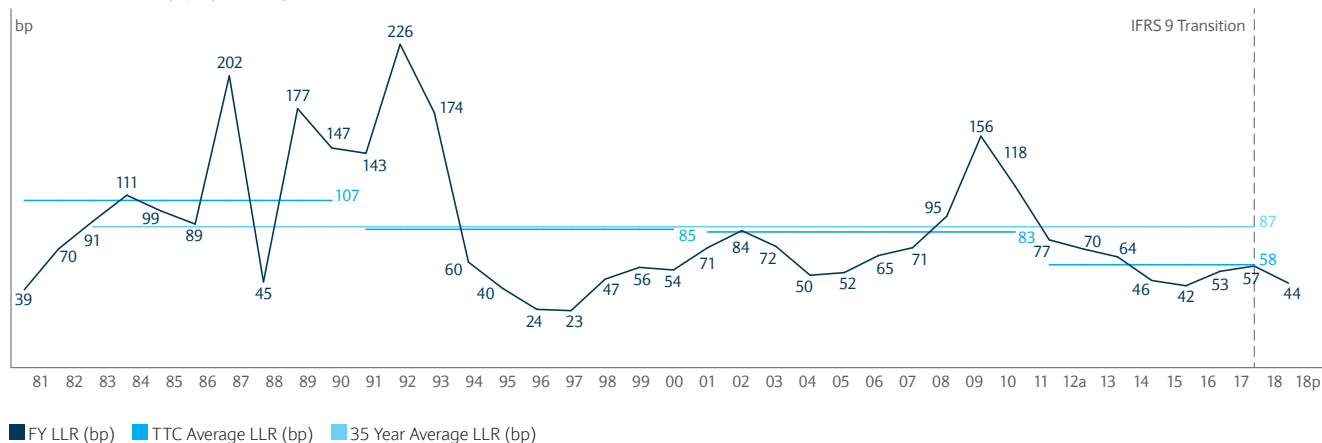
- Oversee activities and manage information relating to business portfolios, and identify actions needed to mitigate current and arising credit risks
- Review and approve business mandate and scale limits and, where relevant, provide recommendations for limits managed by wholesale and retail risk committees
- Review relevant decisions made by, and material issues and topics raised by, other forums and committees

Wholesale and Retail Credit Risk Management Committees

- Monitor the wholesale and retail credit risk profile against plan and agree required actions
- Review and approve Group mandate and scale limits and, where relevant, provide recommendations for limits managed by the Barclays PLC Board Risk Committee
- Review key wholesale and retail credit risk issues
- Review credit risk policies and framework
- Monitor risk appetite consumption – key credit portfolio (mandate and scale) limits

Management of credit risk and the internal ratings-based approach

Loan loss rate (bps) – longer-term trends^{a, b, c}



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 Figures from 2015 onwards exclude BAGL.
- c Impairment calculated under IFRS9 from 2018 onwards.

Reporting

The Group dedicates considerable resources to gaining a clear and accurate understanding of credit risk across the business and maintaining that its balance sheet correctly reflects the value of the assets 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.

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 businesses' 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.

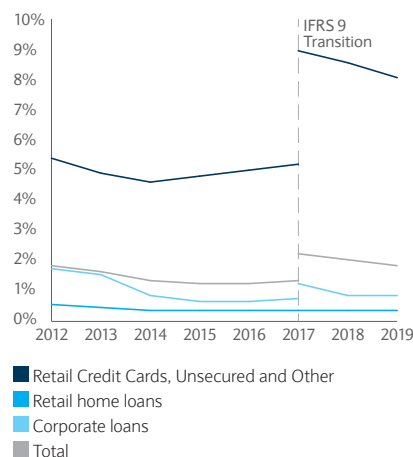
Loan loss rate

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 151 of the Barclays PLC Annual Report 2019.

Coverage ratios

The impairment allowance is the aggregate of the total stock of expected credit loss (ECL).

Loans and advances total impairment coverage



Total coverage ratios will vary according to the type of product. The increase in 2017 reflects the transition to the new accounting standard IFRS 9. Overall, coverage ratios would therefore be expected to remain fairly steady over a defined period of time but in principle, a number of factors may affect Barclays Group's overall coverage ratios, including:

- **The mix of products:** coverage ratios will tend to be lower when there is a high proportion of secured retail and corporate balances. 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;

Management of credit risk and the internal ratings-based approach

Wholesale account status

Performing Watchlist 1-2

- Watchlist Committee flags client on the basis of evidence of financial difficulty.
- Business support assists the client to return to an in order position.

Business Support Watchlist 3

- Customer's financial difficulty requires a decision on the form of future relationship.

Default (Recovery) Watchlist 4

- Asset is considered irrecoverable and is written off.

Retail account status

Performing (Current) Arrears Status 0

- Customer misses contractual payment and moves to collections function.
- Customer pays total overdue payments and returns back to an in order position.

Delinquent (Collections) Arrears Status 1-6

- Customer reaches high arrears status and is moved to the recovery function where legal action is taken.

Charge-off (Recovery) Arrears Status 6+

- Asset is impaired or considered to be irrecoverable and is written off.

Write-off: the point where it is determined that the asset is irrecoverable.

- **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 shown signs of deterioration;
- **Staging:** coverage ratios will tend to be higher when there is a high proportion of balances that have met the criteria for significant increase in credit risk with associated expected credit losses (ECL) moving from a 12-month to a lifetime assessment; and
- **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 more quickly.

Details of the coverage ratios for the current period are shown in the above chart and may be found in the analysis of loans and advances and impairment section at page 153 of the Barclays PLC Annual Report 2019.

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 other wholesale counterparties are subject to a review on, at least, an annual basis, even when they are performing satisfactorily. Retail exposures are monitored to identify customers exhibiting signs of potential financial difficulty. Identified customers are included in the High Risk Account Management (HRAM) population. Businesses have a contact strategy for their HRAM populations and they are excluded from credit expansion activities and, where appropriate, also considered for credit reduction activities or other mitigating actions.

Wholesale portfolios¹

Within the Wholesale portfolios, the Basel definitions of default are used as default indicators. A default is deemed to have occurred with regard to a particular obligor if one or both of the following applies:

- the obligor is considered unlikely to pay its credit obligations to Barclays in full without recourse to actions such as the realisation of collateral,

- the obligor is 90 days or more past due on any material credit obligation to Barclays.

Examples of unlikelihood to pay include:

- The Group puts the credit obligation on a non-accrued status;
- The Group makes a charge-off or account specific identified impairment resulting from a significant perceived decline in credit quality;
- The Group sells the credit obligation at a material credit-related economic loss;
- The Group triggers a petition for obligor's bankruptcy or similar order;
- The Group 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 Group;
- The Group 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;

Note:

¹ Includes certain Business Banking facilities which are recorded as Retail for management purposes.

Management of credit risk and the internal ratings-based approach

Wholesale accounts that are deemed to contain heightened levels of risk are recorded on Watch Lists (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. 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 defaulted counterparties in higher levels of WL. Their priority is working intensively with the counterparty to help them to return to financial health or, in the cases of insolvency, obtain the orderly and timely recovery of impaired debts in order to maximise shareholder value. 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. 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.

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.

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 Barclays International 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:

An up-to-date (i.e. not in arrears in relation to the agreed Forbearance programme) Non-Performing Forbearance (NPF) may be reclassified as Performing Forbearance (PF) upon receipt (on-time) of all due payments (at current agreed repayment amount), over a 12-month period.

An up-to-date (i.e. not in arrears in relation to the agreed Forbearance programme) PF may be reclassified to the 'in order' book when the customer completes a minimum probation period of 24 months from the point of entering PF, even if they are no longer on a Forbearance programme. They must also meet the following criteria:

- 12 consecutive on-time payments have been made during the probation period at the agreed repayment amount (i.e. the forbearance amount while forbearance is continuing or the contractual monthly payment CMP once forbearance has concluded);
- Arrears must not have been >30 days past due during the probation period
- Account is not past due at the point of exit

If a performing forbore contract under probation is granted additional forbearance measures or becomes more than 30 days past-due, it is classified as non-performing.

For non UK 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 169 in the Barclays PLC Annual Report 2019.

Foreclosures in process and properties in possession

Foreclosure is the process where the Group initiates legal action against a customer, with the intention of terminating the loan agreement whereby the Group may repossess the property subject to local law and recover amounts it is owed. This process can be initiated by the Group 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 Group.

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 Group 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.

Management of credit risk and the internal ratings-based approach

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.

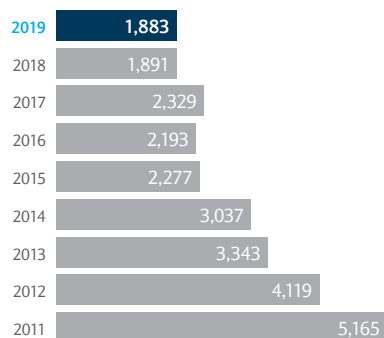
The timing and extent of write-offs may involve some element of subjective judgement. Nevertheless, a write-off will often be prompted by a specific event, such as the inception of insolvency proceedings or other formal recovery action, which makes it possible to establish that some or the entire advance 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 are written off based on contractual payment criteria or accelerated criteria. Assets in the recovery book will be written-off if the required qualifying repayments are not made within a rolling twelve-month period. In certain circumstances accounts will be eligible for accelerated write off (e.g. deceased, insolvency, inappropriate to pursue (medical, vulnerable, small balance) or settlement is accepted in lieu of the full balance). For secured loans, any shortfall after the receipt of the proceeds from the disposal of the collateral is written off within three months of that date if a repayment schedule has not been agreed with the borrower/estate. 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 2019, total write-offs of impaired financial assets remained stable at £1.9bn (2018: £1.9bn).

Total write-offs of financial assets £m



Assessment of Impairment Under IFRS9

Under the IFRS9 accounting standard, businesses are required to assess and recognise Expected Credit Losses (ECL) on financial assets from the point of origination or purchase, and to update said assessment at each reporting date, reflecting changes in the credit risk of the financial asset.

ECL represents a present value measure of the credit losses expected to result from default events that may occur during a specified period of time. ECLs must reflect the present value of cash shortfalls, i.e. the difference between cash flows due under the contract and the cash flows that the business now expects to receive. Given ECLs take into account both the amount and the timing of payments, a credit loss may result if a contractual payment is missed or received late, even if the debt is ultimately paid in full. ECL assessments must reflect an unbiased and probability weighted assessment of a range of possible outcomes, including reasonable and supportable information about future economic conditions.

Exposures must be assessed and assigned to one of the following populations at each reporting point:

- Stage 1: Performing risk assets.**
 In scope items classified as stage 1 exposure for IFRS9 purposes are those assets performing in line with expectations in place at the point of origination/acquisition. This includes new originations or purchased assets (from the point of initial origination), but excludes exposures deemed credit impaired at point of origination.
 Businesses must recognise an impairment allowance equal to 12 months expected credit losses. This allowance must be raised at point of initial reporting of an asset and the assessment updated at each subsequent reporting point.

- Stage 2: Significantly Increase in Credit Risk (SICR) assets.**

Assets classified as stage 2 exposures for IFRS9 purposes are those where credit risk has significantly increased compared with expectations at point of origination/acquisition, but which are not yet considered 'Credit Impaired'.

In order to maintain that individual exposures or groups of assets are correctly classified as stage 2 assets, businesses must undertake regular assessments to identify whether a significant increase in credit risk has occurred since initial recognition. This must take the form of the following:

- Quantitative Test**
 Where the residual annualised weighted average lifetime PD for an individual exposure at the latest reporting date shows a material deterioration compared with that at the origination/acquisition point, then the assets must be classified under stage 2 as having significantly increased credit risk.
 The assessment of materiality, i.e. at what point the PD increase is deemed 'significant', is based upon analysis of the portfolios risk profile against a common set of defined principles and key performance metrics.
- Qualitative Test**
 For personal banking assets managed under Retail Portfolios, accounts meeting the portfolios 'high risk' criteria (i.e. within the last 12 months reclassified from forbearance, rehabilitated from charge-off or subject to either re-age or collections arrangement; and external behavioural metric indicate an increased probability of financial difficulty, for example excessive or increasing indebtedness and/or missed or late payments recorded at credit bureau), must be classified under stage 2 as having significantly increased credit risk. For Wholesale portfolios and Business Banking assets managed under Retail portfolios where accounts are managed under the Watch List framework, then customers on WL 2/3, not breaching the quantitative test must be classified under stage 2 as having SICR. Obligors on WL1 may be classified as stage 1 for a maximum period of 6 months. In exceptional circumstances for an obligor on WL2 where it can be proven that a specific exposure is not deteriorated e.g. it is newly originated and therefore cannot have deteriorated, stage 1 ECL may be applied.

Management of credit risk and the internal ratings-based approach

– **Backstop Criteria**

For Retail portfolios, adverse changes in payment status must be considered within the assessment, and accounts 1 or more contractual payment in arrears at reporting date classified under stage 2, except where:

- a. The missed payment is a result of a bank error or technical issue;
- b. The arrears can be analytically proven not to represent deterioration from risk performance expectations at point of origination/acquisition, e.g. where there is a very small period between cycle point and reporting date. Such exceptions must be approved by the GCRD or nominated delegate. Exposures at 30 days or more past contractual payment due date at the reporting date must be classified as stage 2 assets without exception.

For Wholesale portfolios adverse changes in payment status must be considered within the assessment, and accounts with contractual payment 30 days or more in arrears at reporting date are included within the entry criteria for stage 2, except where the missed payment is a result of a proven bank error or administrative issue. Where 30 days is used it must be proven that this is a backstop, not a lead driver of exposure moving to stage 2.

Where the assessment of SICR is undertaken on a collective basis, assets must be grouped on the basis of similar risk characteristics, taking into account asset type, industry, geographical location, collateral type, past-due status and other relevant factors.

Businesses must raise an impairment allowance equivalent to the latest assessment of lifetime expected credit losses. This increased allowance must be recognised at the first reporting point following entry to stage 2 and the assessment updated at each subsequent reporting date.

The assessment of lifetime ECLs for stage 2 (and stage 3) assets must consider the maximum contractual period over which the business is exposed to credit risk, including the impact of permitted extensions and pre-payments, i.e. those available at the option of the borrower to which the business must agree.

For loan commitments, the lifetime assessment period is normally the maximum contractual life, i.e. the period from the point the loan commitment is established to closure/full repayment of the exposure. However, where customer use of contractually available pre-payments and/or extension has a material impact on the expected life of the asset, then use of behavioural life may be justified.

For revolving credit facilities, the lifetime assessment period may extend beyond the contractual life to include the period over which the business is expected to be exposed to credit risk, based on historical experience i.e. an assessment of the average time to default, closure or withdrawal of the facility.

Assets may be removed from stage 2 and re-assigned to stage 1 once there is objective evidence that the criteria used to indicate a significant increase in credit risk are no longer met.

■ **Stage 3: Credit impaired risk assets.**

Assets classified as stage 3 exposures for IFRS9 purposes are those where credit risk has increased to a point where they are now considered 'Credit Impaired'. For Retail portfolios, this incorporates all defaulted accounts as defined under the Regulatory Definition of Default. For Wholesale portfolios cases of forbearance not captured by stage 3 (i.e. those not meeting the regulatory definition of default – EBA classification of non-performing) must be classified as stage 2 until such time as the relevant forbearance probation period has been completed.

Businesses must raise an impairment allowance equivalent to the latest assessment of lifetime expected credit losses, i.e. on the same basis as for stage 2 assets.

For Single Name Wholesale Assets, a threshold approach is taken with stage 3 impairment calculated individually. A discounted cash flow is completed establishing a base estimated impairment allowance, derived from the difference between asset carrying values and the recoverable amount.

Where the base allowance is greater than GBP 10m, a bespoke assessment is performed reflecting individual work out strategies. The assessment is clearly and specifically articulated including how general economic scenarios and downside analyses have been applied.

Interest and fee income on stage 3 assets is recognised based on the net amortised value, i.e. the gross carrying amount adjusted for the loss allowance in line with IFRS principles.

For exposures that are considered credit-impaired on purchase or origination, lifetime ECLs must be taken into account within the estimated cash flows at point of initial recognition, and the asset classified as stage 3.

In subsequent reporting periods, businesses must recognise cumulative changes in lifetime ECLs since initial recognition as a loss allowance, i.e. the amount of change in lifetime ECLs is treated as an impairment gain or loss. Assets may only exit stage 3 and be reclassified into stage 1 or stage 2 once the original default trigger event no longer applies.

To fully embed this standard into businesses, management requires frequent periodic reviews of ECL performance across the Group both in isolation and, more importantly, in comparison to the underlying performance of portfolios and product types.

Review and challenge is carried out through a hierarchy of committees confirming both the adequacy of provisions under the ECL requirements and that all policies, standards and processes have been adhered to (see below) and that appropriate controls are evidenced.

Governance and oversight of impairment under IFRS 9

Barclays Group's organisational structure and internal governance processes oversee the estimation of ECL across several areas, including: i) setting requirements in policy, including key assumptions and the application of key judgements; ii) the design and execution of models; and iii) review of ECL results.

- i) Impairment policy requirements are set and reviewed regularly, at a minimum annually, to maintain adherence to accounting standards. Key judgements inherent in policy, including the estimated life of revolving credit facilities and the quantitative criteria for assessing the SICR, are separately supported by analytical study. In particular, the quantitative thresholds used for assessing SICR are subject to a number of internal validation criteria, particularly in retail portfolios where thresholds decrease as the origination PD of each facility increases. Key policy requirements are also typically aligned to Barclays Group's credit risk management strategy and practices, for example, wholesale customers that are risk managed on an individual basis are assessed for ECL on an individual basis upon entering Stage 3; furthermore, key internal risk management indicators of high risk are used to set SICR policy, for example, retail customers identified as High Risk Management Accounts are automatically deemed to have met the SICR criteria.

Management of credit risk and the internal ratings-based approach

ii) ECL is estimated in line with internal policy requirements using models which are validated by a qualified independent party to the model development area, the Independent Validation Unit (IVU), before first use and at a minimum annually thereafter. Each model is designated an owner who is responsible for:

- Model maintenance: monitoring of model performance including backtesting by comparing predicted ECL versus flow into stage 3 and coverage ratios; proposing material changes for independent IVU approval; and recalibrating model parameters on more timely data; and
- Proposing post-model adjustments (PMA) to address model weaknesses or to account for situations where known or expected risk factors and information have not been considered in the modelling process. Each PMA above an absolute and relative threshold is approved by the IVU for a set time period (usually a maximum of six months) together with a plan for remediation where related to a model deficiency. The most material PMAs are also approved by the Barclays Group's Chief Risk Officer.

Models must also assess ECL across a range of future economic conditions. These economic scenarios are generated via an independent model and ultimately set by the Senior Scenario Review Committee. Economic scenarios are regenerated at a minimum annually, to align with Barclays Group's medium term planning exercise, but also if the external consensus of the UK or US economy materially worsens. Each model used in the estimation of ECL, including key inputs, are governed by a series of internal controls, which include the validation of completeness and accuracy of data in golden source systems, documented data transformations and documented lineage of data transfers between systems.

iii) The Barclays Group's Impairment Committee, formed of members from both Finance and Risk and attended by both the Barclays Group's Finance Director and the Barclays Group's Chief Risk Officer, is responsible for overseeing impairment policy and practice across Barclays Group and will approve impairment results. Reported results and key messages are communicated to the Barclays Group's Board Audit Committee, which has an oversight role and provides challenge of key assumptions, including the basis of the scenarios adopted. Impairment results are then factored into management decision making. Including but not limited to, business planning, risk appetite setting and portfolio management.

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. Barclays 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, Barclays Group 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.

Where a concession is granted that is not a result of financial difficulty and/or is within Barclays Group's current market terms, the concession would not amount to forbearance. For example, a commercially balanced restructure within the Barclays Group's current terms which involves the granting of concessions and receiving risk mitigation/ structural enhancement of benefit to Barclays 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 Barclays 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.

Forbearance is considered evidence of a Significant Increase in Credit Risk and all forborne debtors are impaired as IFRS9 stage 2 (Lifetime Expected Credit Loss) regardless of Watch List category as a minimum for the lifetime of the forbearance. Those forbearance cases in regulatory default will attract stage 3 impairment treatment.

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 or Non-Performing.

Management of credit risk and the internal ratings-based approach

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 forbore 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 less than 30 days 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 for performing status. Performing debtors remain forbore for a minimum 24 months before forbore 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.

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. 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. 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 until a defined cure period has been successfully completed, incorporating a successful track record of payment in line with the revised terms, upon which it will be

returned to the up-to-date book. When Barclays Group agrees a forbearance programme with a customer, impairment allowances recognise the impact on cash flows of the agreement to receive less than the original contractual payments. The Retail Impairment Policy prescribes the methodology for the impairment of forbearance assets, in line with the new IFRS9 methodology adopted in January 2018. Forborne exposures are classified as stage 3 (credit impaired) assets under IFRS9, resulting in higher impairment than for fully performing assets, reflecting the additional credit risk attached to loans subject to forbearance.

When customers exit forbearance, the accounts are ring-fenced as High Risk within the up-to-date book for a period of at least twelve months.

Barclays has continued to assist customers in financial difficulty through the use of forbearance programmes. However, the extent of forbearance offered by Barclays 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 172 of the Barclays PL Annual Report 2019.

Please see the credit risk performance section on page 173 to 174 of the Barclays PLC Annual Report 2019 for details of principal Wholesale and Retail assets currently in forbearance.

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 that have a minimum payment requirement 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 Barclays 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), 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 cannot exceed cycle 3 arrears at the time of the final qualifying payment no account should be re-aged more than twice within any twelve-month period, or more than four times in a five-year period.

Re-aged assets are included in portfolios High Risk population, and are classified as stage 2 assets (i.e. as having significantly increases credit risk) for IFRS 9 impairment purposes. 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.

Management of credit risk and the internal ratings-based approach

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 Barclays Group has a dedicated Environmental Risk Management team, as part of the Enterprise Risk Management function. Environmental issues are considered in credit risk assessment, and environmental risk standards are included in the Wholesale Credit Risk Control Framework.

Barclays Group's approach to environmental credit risk management addresses risk under two categories, namely Direct risk and Indirect risk, which are covered below.

Direct risk can arise when Barclays Group takes commercial land as collateral. In many jurisdictions, enforcement of a commercial mortgage by Barclays Group, leading to possession, potentially renders Barclays 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, Barclays 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 any potential environmental degradation in the

value ascribed to that security. It also identifies potential liabilities which may be incurred by Barclays 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. Barclays Group 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.

Climate change is an increasing driver of environmental risk. More information on our approach to managing risks associated with climate change can be found on page 138 of the Barclays PLC Annual Report 2019.

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): The Group 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, the Group 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, the Group 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. The Group employs a 21-point scale of default probabilities. In some applications, grades in this scale are divided further to permit more detailed analysis. These are shown in Table 44 on page 75.
- **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 152.
- **impairment calculation:** under IFRS9, ECL outputs are produced based on PD, EAD and CF IRB feeder models, with scenario and weighting. See page 162.
- **collections and recoveries:** model outputs are used to identify segments of the portfolio where collection and recovery efforts should be prioritised

Management of credit risk and the internal ratings-based approach

- **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, corporations, specialised lending, purchased corporate receivables and equity exposures, the Group 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.

Wholesale PD models

The Group 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 so 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 so that 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.

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.

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 product, 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, Barclays 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.

Management of credit risk and the internal ratings-based approach

- 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 Chief Risk Officer (GCRO). The model development teams have separate reporting lines to the Barclays UK and Barclays International Chief Risk Officers, who in turn report to the GCRO.

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 exposures

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.

Measures of grade stability and the degree to which PD tracks default rates over time are also routinely calculated to infer relevant aspects of the model performance (i.g. rating philosophy).

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 the Group's 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 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 test 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.

Management of credit risk and the internal ratings-based approach

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 test 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 96 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. Please note that the RWAs reported in this table are based on the models in production as of Nov'19.

- PD models listed in the table account for £102bn of total AIRB approach RWAs
- LGD models listed in the table account for £97bn of total AIRB approach RWAs

Management of credit risk and the internal ratings-based approach

Table 96: IRB credit risk models' selected features

Component modelled	Portfolio	Size of associated portfolio (RWAs)		Model description and methodology	Number of years loss data	Basel asset classes measured	Applicable industry-wide regulatory thresholds
		BUK (£m)	BI (£m)				
PD	Publicly traded corporate	–	21,235	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	–	29,009	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	SME customers with turnover < £20m	8,592	3,073	Statistical models that uses regression techniques to derive relationship between observed default experience and a set of behavioural variables.	>10 Years	Corporate SME, SME	Regulatory PD floor of 0.03%
PD	Corporate customers with turnover >= £20m	–	5,221	Statistically derived models sourced from an external vendor (Moody's RiskCalc).	>10 Years	Corporate	PD floor of 0.03%
PD	Home Finance	19,536	–	Statistical scorecards estimated using regression techniques, segmented along arrears status and portfolio type.	>10 Years	Secured By Real Estate (residential and buy-to-let mortgages)	Regulatory PD floor of 0.03%
PD	Barclaycard UK	15,463	–	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	–	44,599	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 specialized sectors)	3,587	14,014	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	19,536	–	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	15,463	–	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.

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 ensure 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 203.

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, UK Home Finance, UK Current Account, and SME are the only CRD IV compliant portfolio as of the reference month (Nov'18), 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 Nov'18 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 Nov'14.
- 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 97: 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. Please note these tables exclude exposures calculated under the supervisory slotting approach and the straddling obligors between BUK and BI have been classified under BUK.

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	EBA PD Range (%)	External Ratings Equivalent		Weighted Average PD %	Arithmetic Average PD by obligors %	Number of obligors		Defaulted obligors in the year in the year £m	of which: new defaulted in the year £m	Average historical annual default %
		Moody's	S&P			As at Nov'18	As at Nov'19			
Wholesale 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+	0.01	0.03	43	39	-	-	0.00
	0.15 to <0.25	Baa2	BBB	0.22	0.19	8	7	-	-	0.00
	0.25 to <0.50	Baa3,Ba1	BBB-, BB+	0.00	0.39	4	4	-	-	0.00
	0.50 to <0.75	Ba1,Ba2	BB	0.00	0.61	2	3	-	-	0.00
	0.75 to <2.50	Ba2,Ba3,B1	BB-,B+	2.35	1.55	9	9	-	-	0.00
	2.50 to <10.00	B1,B2,B3,Caa1,Caa2	B+,B,B-,CCC+	3.35	4.22	10	9	-	-	0.00
	10.00 to <100.00	Caa2,Caa3,Ca,C	CCC,CCC+,CCC-, CC+,CC,C	0.00	21.06	5	3	-	-	0.00
	100.00 (default)	D	D	100.00	100.00	-	-	-	-	-
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	8,641	8,573	-	-	0.00
	0.15 to <0.25	Baa2	BBB	0.18	0.18	623	574	-	-	0.00
	0.25 to <0.50	Baa3,Ba1	BBB-, BB+	0.35	0.41	380	398	1	-	0.05
	0.50 to <0.75	Ba1,Ba2	BB	0.58	0.57	86	83	1	-	0.23
	0.75 to <2.50	Ba2,Ba3,B1	BB-,B+	1.37	1.34	199	201	1	-	0.10
	2.50 to <10.00	B1,B2,B3,Caa1,Caa2	B+,B,B-,CCC+	3.88	4.67	152	157	-	-	0.29
	10.00 to <100.00	Caa2,Caa3,Ca,C	CCC,CCC+,CCC-, CC+,CC,C	12.66	23.49	57	56	-	-	0.48
	100.00 (default)	D	D	100.00	100.00	9	4	-	-	-
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	1,578	1,472	3	-	0.12
	0.15 to <0.25	Baa2	BBB	0.19	0.20	472	448	2	-	0.17
	0.25 to <0.50	Baa3,Ba1	BBB-, BB+	0.34	0.35	895	898	4	-	0.28
	0.50 to <0.75	Ba1,Ba2	BB	0.60	0.63	393	386	1	-	0.28
	0.75 to <2.50	Ba2,Ba3,B1	BB-,B+	1.47	1.40	789	802	7	-	0.58
	2.50 to <10.00	B1,B2,B3,Caa1,Caa2	B+,B,B-,CCC+	4.36	4.38	634	715	15	-	1.98
	10.00 to <100.00	Caa2,Caa3,Ca,C	CCC,CCC+,CCC-, CC+,CC,C	17.20	20.15	114	139	13	-	7.80
	100.00 (default)	D	D	100.00	100.00	295	300	-	-	-
SME	0.00 to <0.15	Aaa,Aa1,Aa2,Aa3, A1,A2,A3,Baa1	AAA, AA+,AA,AA-, A+,A,A-,BBB+	0.12	0.06	484,206	298,071	785	772	0.09
	0.15 to <0.25	Baa2	BBB	0.21	0.19	114,285	146,850	322	311	0.21
	0.25 to <0.50	Baa3,Ba1	BBB-, BB+	0.38	0.36	133,546	204,312	623	550	0.39
	0.50 to <0.75	Ba1,Ba2	BB	0.62	0.61	77,342	103,135	563	436	0.66
	0.75 to <2.50	Ba2,Ba3,B1	BB-,B+	1.47	1.39	161,717	222,783	2,444	1,493	1.42
	2.50 to <10.00	B1,B2,B3,Caa1,Caa2	B+,B,B-,CCC+	4.83	4.43	75,564	81,127	3,201	604	5.83
	10.00 to <100.00	Caa2,Caa3,Ca,C	CCC,CCC+,CCC-, CC+,CC,C	25.83	27.01	21,579	19,947	5,522	16	27.94
	100.00 (default)	D	D	100.00	100.00	15,032	12,495	-	-	-
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+	0.07	0.08	744,710	745,609	637	-	0.08
	0.15 to <0.25	Baa2	BBB	0.19	0.19	108,480	97,842	216	-	0.20
	0.25 to <0.50	Baa3,Ba1	BBB-, BB+	0.34	0.33	38,840	43,462	214	-	0.48
	0.50 to <0.75	Ba1,Ba2	BB	0.61	0.61	10,925	10,171	91	-	0.88
	0.75 to <2.50	Ba2,Ba3,B1	BB-,B+	1.48	1.44	21,796	20,548	329	-	1.56
	2.50 to <10.00	B1,B2,B3,Caa1,Caa2	B+,B,B-,CCC+	4.98	4.83	13,888	13,409	694	-	5.69
	10.00 to <100.00	Caa2,Caa3,Ca,C	CCC,CCC+,CCC-, CC+,CC,C	30.82	31.14	8,025	7,208	2,449	-	42.50
	100.00 (default)	D	D	100.00	100.00	15,219	14,107	-	-	-

Management of credit risk and the internal ratings-based approach

Table 97: Analysis of expected performance versus actual results continued

Asset Class	EBA PD Range (%)	External Ratings Equivalent		Weighted Average PD %	Arithmetic Average PD by obligors %	Number of obligors		Defaulted obligors in the year in the year £m	of which: new defaulted in the year £m	Average historical annual default %
		Moody's	S&P			As at Nov'18	As at Nov'19			
Wholesale										
Qualifying Revolving	0.00 to <0.15	Aaa,Aa1,Aa2,Aa3, A1,A2,A3,Baa1	AAA, AA+,AA,AA-, A+,A,A-,BBB+	0.08	0.06	10,103,965	9,877,109	5,381	1,065	0.05
Retail	0.15 to <0.25	Baa2	BBB	0.20	0.20	2,544,014	2,549,690	4,920	885	0.18
	0.25 to <0.50	Baa3,Ba1	BBB-, BB+	0.36	0.36	3,272,114	3,418,248	10,854	1,412	0.32
	0.50 to <0.75	Ba1,Ba2	BB	0.62	0.61	1,242,397	1,267,252	7,751	778	0.58
	0.75 to <2.50	Ba2,Ba3,B1	BB-,B+	1.44	1.38	2,595,230	2,582,363	35,905	1,706	1.35
	2.50 to <10.00	B1,B2,B3,Caa1,Caa2	B+,B,B-,CCC+	5.09	4.98	1,683,828	1,633,429	83,546	1,328	4.82
	10.00 to <100.00	Caa2,Caa3,Ca,C	CCC,CCC+,CCC-, CC+,CC,C	24.07	24.40	508,192	458,817	131,777	97	26.30
	100.00 (default)	D	D	100.00	100.00	476,275	430,732	-	-	-
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	99	95	-	-	1.28
	0.15 to <0.25	Baa2	BBB	0.22	0.22	3,300	3,856	6	-	0.61
	0.25 to <0.50	Baa3,Ba1	BBB-, BB+	0.40	0.40	60,750	65,901	137	-	0.35
	0.50 to <0.75	Ba1,Ba2	BB	0.63	0.63	101,531	107,885	355	-	0.39
	0.75 to <2.50	Ba2,Ba3,B1	BB-,B+	1.36	1.37	353,489	357,008	4,897	-	1.17
	2.50 to <10.00	B1,B2,B3,Caa1,Caa2	B+,B,B-,CCC+	4.23	4.34	102,373	95,213	5,449	-	4.53
	10.00 to <100.00	Caa2,Caa3,Ca,C	CCC,CCC+,CCC-, CC+,CC,C	45.02	40.06	25,361	23,212	10,913	-	40.77
	100.00 (default)	D	D	100.00	100.00	48,818	31,089	-	-	-

Asset Class

Asset Class	Number of resolved cases over last one year (Dec'18 to Nov'19)	Predicted LGD (Simple Average) %	Actual LGD (Simple Average) %
Wholesale			
Investment Bank	18	32%	36%
Corporate Bank	19	50%	44%
SME	5,360	80%	86%
Retail			
Secured by Real Estate	1,859	3%	6%
Qualifying Revolving Retail	320,063	70%	72%
Other Retail	54,628	77%	85%

Management of credit risk and the internal ratings-based approach

2019 AIRB models back testing summary

Section below provides AIRB model performance summary based on the above back testing results, along with the remediation plans.

Wholesale

- For Investment Bank
 - No defaults observed for 'Central Governments or Central Banks'. For 'Institutions' asset class. For 'Institutions' asset class, the estimated PDs are higher (conservative) compared to actual default rates across PD ranges.
 - LGD model's predicted LGDs are in line with actual LGDs.
- For Corporate Bank
 - Corporate Banking asset class continues to maintain low default rates across IRB exposures with estimated PDs being higher (conservative) compared to actual default rates for most of the PD ranges.
 - LGD model's predicted LGDs are in line with actual LGDs.
- New PD and LGD models are being developed to comply with CRD IV requirements for the material wholesale portfolios and planned to be submitted to the PRA in 2020.
- For SME
 - The back testing report is based on the current CRD IV compliant models implemented in 2017 and looks at data from 2014. Oct'18 data has been used as Nov'19 data was not available when the reporting process was initiated. Historical average has been calculated using 5 years of data where Oct'14, Oct'15, Oct'16 and Oct'17 are based on proxy BUK/BI split based on sales turnover and Oct'18 is based on Structural Reform Program (SRP) implemented legal identifier. LGD back testing is reported on the basis of proxy BUK/BI split due to unavailability of SRP implemented identifier prior to Apr'18.
 - The estimated PiT PDs under-predict the default rate (1.21% expected vs. 1.26% actual) for SME. The migration of customers towards higher PD bands in 2019 is largely attributable to non-borrowing customers. The proportion of the portfolio showing improvement in PDs over the 12 month window is higher than the proportion showing deterioration when weighted by exposure for borrowing customers. TTC PD model continues to maintain conservatism.

- LGD model under-estimates (79.85% estimated vs. 86.35% actual) on a PiT basis due to operational issues and changes that affect underlying data. Downturn LGD adds buffer on PiT LGD reducing the non-conservatism observed.
- Capital adjustments are in place to address LGD model under-performance.

Secured by Real Estate

- This covers the Mortgage portfolios for UK and Italy. Rank ordering is maintained across PD ranges.
- For UK Mortgages, the PD model is accurate at an overall level (0.42% expected vs. 0.41% actual). The portfolio maintains low LGD and the LGD model underestimates (0.86% estimated vs. 1.42% actual). Increased Forced Sale Discount (FSD) and lower expected Probability of Possession given default (PPD) causes LGD underestimation. FSD and PPD make major components in the expected LGD calculation for the new to default book on which numbers have been reported.
 - 5 year averages of actual defaults are taken from 5 snapshot months of which Nov'14 is based on older generation of models and Nov'15, Nov'16, Nov'17 & Nov'18 are based on CRD IV complaint models (G4).
 - For accounts where actual sale cost was not available, an average sale cost is used while calculating Actual LGD.
 - G4 PPD model was developed on the total default population base whereas this analysis is done at the point of collaterals entering into default. The total default base contains a mixed set of collaterals, ranging from recent defaults to the ones in default for a longer time. We expect the predicted PPD (and hence LGD as well) for collaterals defaulting at any month to be lower compared to the total default base.
- For Italy Mortgages, both the PIT PD and LGD models are underestimated primarily due to a decrease in the House Price Index (HPI). A new set of CRD IV compliant models is due for regulatory submission in Q4'21. 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 (2.30% estimated vs. 2.40% actual) at an overall level. However, an additional layer of conservatism is applied through Regulatory PD buffers in the capital calculation, so overall PD is still conservative. The LGD model is non-conservative with an under-estimation (69.6% estimated vs. 74.7% actual). The primary driver of this is that the volume of accounts debt-sold in 2019 vs 2018 have increased by 40%. Largely driven by the one off vulnerable bulk sale and increased Informal Arrangements (IA) sales. Given current LGD model construct does not account for recoveries from bulk sale income it means actual LGD is higher, as we are selling these accounts sooner than model initially values them. However Downturn LGD used for capital calculation is conservative.
- For Germany Cards, the PD model overestimates (1.13% estimated vs. 0.88% actual) at an overall level. The LGD model overestimates (84.2% estimated vs. 67.1% actual) is primarily driven by 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 Q4 2021. Interim Post Model Adjustments (PMAs) are in place to address existing models' deficiencies.
- For UK Current Account, PD Model is accurate at overall level (0.57% estimated vs. 0.57% actual). The LGD model overestimates (69.54% estimated vs. 62.65% actual). 5 year averages of actual defaults are taken from 5 snapshot months of which Nov'14 is based on the older generation of models and Oct'15, Oct'16, Oct'17 are Oct'18 are based on the new CRD IV complaint models (G2).

Other Retail

- This covers UK Barclayloan portfolio. A new set of CRD IV compliant models were approved by the PRA and implemented in Jul'19. However, the current back testing report is based on the models which were in production as of Nov'18.
- The PD rank ordering does not hold for a few bands and the model underestimates (3.14% estimated vs. 3.36% actual) at an overall level. The LGD model underestimates (77.33% expected vs. 85.34% actual) at an overall level due to bulk write-off in Jul'19 (operational changes) and execution of a Debt sale in Nov'19, worsening off the observed LGD.

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 177 a high level description of the types of counterparty credit exposures incurred in the course of Barclays' activity supplements the analytical tables in pages 104 to 121.
- 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 176.

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.

The Group has detailed policies in place to maintain that credit risk mitigation is appropriately recognised and recorded. 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

Netting and set-off

In most jurisdictions and within legal entities 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, on a legal entity basis, 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 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.

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 the 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 176 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. The 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 the Group 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 179 we provide an overview of the market risks we incur across Barclays Group
- The governance structure specific to market risks is discussed on pages 179 to 180.

The rest of the section consists of traded and other risks:

- Market risk, the risk of Barclays Group being impacted by changes in the level or volatility of positions in the trading book, is covered on pages 180 to 186. 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, volatility or correlations.

Organisation and structure

Market risk in the businesses resides primarily in Barclays International and the Group Treasury. These businesses have the mandate to assume market risk. Market risk oversight and challenge is provided by business committees and Barclays Group committees, including the Market Risk committee. The front office and Treasury trading desks are responsible for managing market risk on a day-to-day basis, where they are required to understand and adhere to all limits applicable to their businesses. The Market Risk team support the trading desks with the day-to-day limit management of market risk exposures through governance processes which are outlined in supporting market risk policies and standards.

Roles and responsibilities

The objectives of market risk management are to:

- identify, 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 governance structure is in place to manage these risks consistent with the ERMF.

The Barclays PLC Board Risk Committee recommends market risk appetite to the Barclays PLC 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 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 market or regulatory issues and limits and utilisation. The committee is chaired by the PR Lead and attendees include the business heads of market risk and business aligned market risk managers.

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 maintain the Group remains 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 pages 156 for more detail on the role of risk 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 the Group-wide risk appetite. See page 152 for more detail on risk culture.

Barclays PLC Board Risk Committee

- Reviews and recommends Barclays Group's risk appetite for market risk to the Barclays PLC Board
- Reviews material events impacting market risk



Barclays 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 Barclays Group
- Considers issues escalated by risk type heads and business risk directors



Barclays Group Market Risk Committee

- Reviews market risk appetite proposals from the business
- Oversees the management of Barclays Group's market risk profile
- 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 maintain all market risks that the Group is exposed to are well managed and understood. Market risk is generated primarily as a result of client facilitation in wholesale markets, involving market making activities, risk management solutions and execution of syndications. 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 Group is exposed to due to unfavourable changes in asset prices. The primary tools to control the Group'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 the potential losses that might arise due to liquid risk factors from extreme market moves or scenarios.
Secondary stress tests	An estimate of the potential losses that might arise due to illiquid risk factors from extreme market moves of scenarios.
Business scenario stresses	Multi-asset scenario analysis of extreme, but plausible events that may simultaneously impact Market Risk exposures across all primary and secondary stresses.

The use of Management VaR for 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 Barclays 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 182) 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
- back testing is performed to evaluate that 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	Risk arises from changes in the level or shape of interest rate curves can impact the price of interest rate sensitive assets, such as bonds and derivatives instruments. For example, the price of an interest rate swap will vary due to changes in the absolute level of interest rates and/or in the shape of the yield curve
Foreign exchange	Risk arises from 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	Risk arises from providing clients and investors with access to a range of commodity products on both a derivative and physical basis.
Traded credit	Risk arises from changes in credit quality impacting the prices of assets, for example positions such as corporate bonds, securitised products and credit based derivative instruments, including credit default swaps. Similar to interest rate risk, the price of these assets will change as the credit quality of the asset (or its pricing index in the case of credit based derivative instruments) changes.

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 an 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 back testing. 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 124 for a review of Management VaR in 2019.

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 Group 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 125 for a review of business scenario stresses in 2019.

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.

Management of market risk

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.

Page 280 of the Barclays PLC Annual Report 2019 sets out the valuation control framework for accounting valuations and the related responsibilities of the Finance-product control valuations function and the Valuation Committee. This function and committee are also responsible for the oversight of the PVA and maintaining compliance with article 105 of the CRR.

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, BBI and BCSL. 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. Barclays 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 Barclays Group to supervise the total market risk across Barclays 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 180), with the key differences listed above. The model is complemented with RNIVs, as described on page 186.

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 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.

Management of market risk

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 tranching 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.

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 125 for a review of regulatory measures in 2019.

Table 98: 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; £4.1bn	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; £8.2bn	Same methodology as used for VaR model, but using a different time series	Regulatory SVaR is computed with one-year holding period and 99% confidence level
IRC	1 model; £3.7bn	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

Management of market risk

Regulatory back testing

Back testing 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 back testing 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. actual or hypothetical 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 will occur in 100 days).

Back testing 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 back testing 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 model that is used in the calculation of regulatory capital.

A back testing exception is generated when a loss is greater than the daily VaR for any given day. Back testing counts the number of days when a loss exceeds the corresponding VaR estimate, measured at the 99% regulatory confidence level.

Back testing is also performed on management VaR to validate it remains reasonable and fit for purpose.

The table below shows the VaR back testing exceptions on legal entities aligned to the Group's business as at 31 December 2019. Model performance at a legal entity level determines regulatory capital within those entities. Legal entity disclosure is also relevant from a management perspective as the Group's VaR and model performance of VaR for a legal entity across asset class are key metrics in addition to asset class metrics across legal entity.

The IHC backtesting process compares IHC 99% Regulatory VAR against Hypothetical P&L. The definition of Hypothetical P&L and the scope of Regulatory VaR for the IHC are consistent with the Federal Reserve's Market Risk Rule.

Legal Entity	Actual P&L Total Exceptions	Hypo P&L Total Exceptions
BBPlc Trading and BCSL	–	5
BBPlc Trading	–	6
BCSL	–	1
BBI ^a	–	5
IHC	N/A	–

Note:

a BBI exception count is maintained in line with the consolidated entity BBPlc Trading + BCSL until sufficient time series is available.

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.

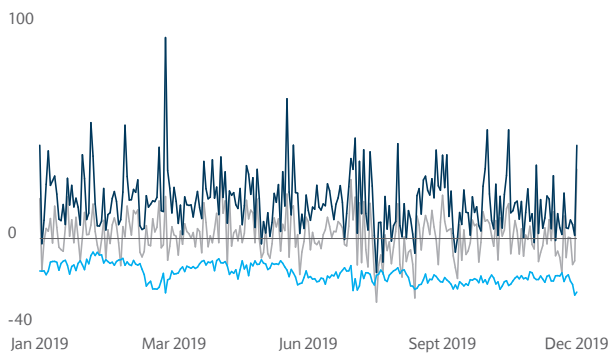
In addition to being driven by market moves in excess of the 99% confidence level, back testing exceptions can be caused by risks that impact P&L not captured directly in the VaR itself but separately captured as non VaR-type, namely Risks Not in VaR (RNIVs).

Exceptions are reported to internal management and regulators on a regular basis and investigated to evaluate the model performs as expected. The number of back testing exceptions is not considered as indicating any concerns with the VaR model.

In 2019, the Group experienced five back testing exceptions against hypothetical P&L: four exceptions were driven by rates volatility and one driven by credit spread moves.

BBPlc Trading and BCSL

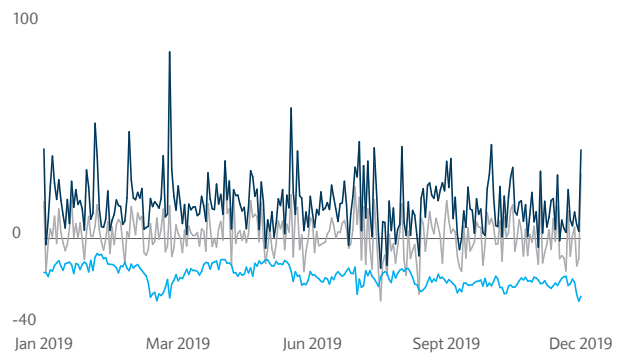
£m



■ Actual P&L ■ Hypo P&L ■ Reg VaR 99%

BBPlc Trading

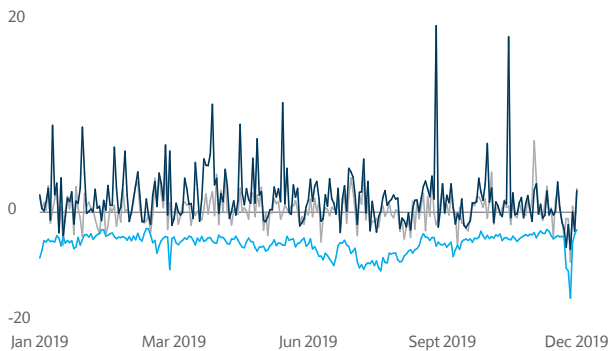
£m



■ Actual P&L ■ Hypo P&L ■ Reg VaR 99%

BCSL

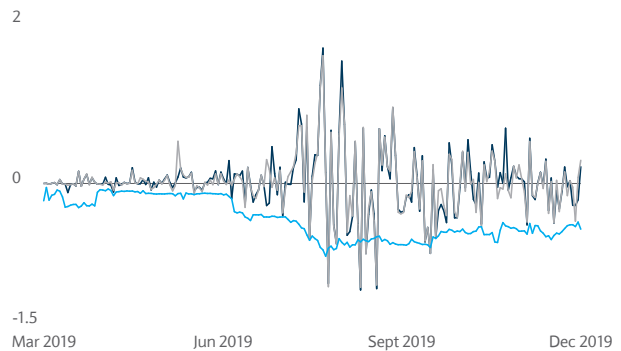
£m



■ Actual P&L ■ Hypo P&L ■ Reg VaR 99%

BBi

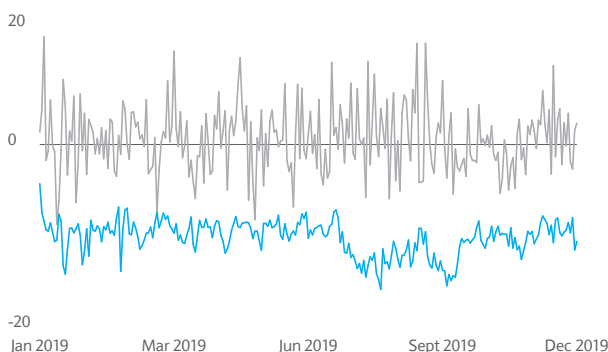
£m



■ Actual P&L ■ Hypo P&L ■ Reg VaR 99%

IHC

£m



■ Hypo P&L ■ Reg VaR 99%

Management of risks not fully captured in models, including Risks not in VaR (RNIVs)

Barclays 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 maintain risk coverage, the range of core risks is identified following either market convention, regulatory guidance, or the specific historical experience of Barclays Group; and for new products or changes to existing products, is considered as part of the New and Amended Product Approval (NAPA) process.

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. Barclays Group has policies to apply add-ons 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 17 in the Barclays PLC Annual Report 2019 '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 Barclays 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.

Barclays Group-wide limits are reported to the BRC and are termed A-level limits for total management VaR, primary stress and secondary stresses and business scenarios. These are then cascaded down by risk managers in order to meet the Barclays Group-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 Barclays Group Market Risk.

Throughout 2019, Barclays 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 Barclays Group-wide basis, these are sent to Barclays Group Market Risk for review and a risk summary is presented at Barclays 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 188.
- A description of the risks incurred in the course of securitisation activities, and how we manage them, is contained on page 189.

Management of securitisation exposures

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 129 to 143, 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 129 to 143) as they do not fall under the regulatory securitisation framework (the new securitisation Regulation (EU) 2017/2402 (the Securitisation Regulation) and Regulation (EU) 2017/2401 (amendments to Capital Requirements Regulation or CRR)). 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 Barclays Group in securitisations in 2019

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 and aggregators, 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. In certain limited instances, the Group may also hold a portion of securitisations, which are required for risk retention purposes.

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).

Sponsoring conduit vehicles

The Group acts as managing agent and administrative agent of three multi-seller asset backed commercial paper (ABCP) conduits, Sheffield Receivables Company, LLC (Sheffield) and Salisbury Receivables Company, LLC (Salisbury), and Sunderland Receivables S.A. (Sunderland) 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, Salisbury and Sunderland. In relation to such conduit activity, the Group provides all or a portion of the backstop liquidity to the commercial paper and, as appropriate, interest rate and foreign currency hedging facilities. The Group receives fees for the provision of these services.

Sheffield, Salisbury and Sunderland have a 'Hold to Collect' business model and their assets are measured at amortised cost. It funds the assets through the issuance of ABCP. Note that Sheffield, Salisbury and Sunderland 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.

Management of securitisation exposures

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 the new securitisation Regulation (EU) 2017/2402 (the Securitisation Regulation) and Regulation (EU) 2017/2401 (amendments to CRR).

Securitisation risks, monitoring and hedging policies

Capital requirements against securitisation exposures are subject to a separate framework under CRR 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).

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 2019 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, Salisbury and Sunderland the Internal Assessment Approach (IAA) framework mirrors the ECAI methodology, which also includes Moody's, Standard & Poor's and Fitch, who rate the Sheffield, Salisbury and Sunderland programmes. Under the IAA framework, the securitisation exposure must be internally rated, and the Group 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.

Where the securitisation entity is consolidated by the Group such that the balance sheet includes the assets held for securitisation prior to and post transfer to the securitisation entity, the assets will typically be part of a 'Hold to Collect' business model, and if the contractual cash flows characteristics are solely payments of principal and interest (SPPI), the assets will be measured at amortised cost. Otherwise assets will be measured at fair value where, for example, assets on initial recognition are expected to be securitised by a transfer to an unconsolidated Group entity where derecognition will be met, or where the contractual cash flows characteristics of the asset are not SPPI. 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 the 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 35 in the Barclays PLC Annual Report 2019). 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 Barclays PLC Annual Report 2019. 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 overview of the management of liquidity risk, capital risk and interest rate risk in the banking book.

- Liquidity risk, with a focus on how it is managed so that highly quality liquid assets are adequate at all times including under stress, is discussed on pages 192 to 194.
- Capital risk, including how the risk of insufficient capital and leverage ratios and pension risk are managed, is discussed on pages 194 to 196.
- The management of Interest rate risk in the banking book is discussed on pages 196 to 197.

Management of Treasury and Capital Risk

Treasury and capital risk management

This comprises:

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 also 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

The Treasury function manages treasury and capital risk exposure on a day-to-day basis with the Group Treasury Committee acting as the principal management body. The Treasury and Capital Risk function is responsible for oversight and provide insight into key capital, liquidity, interest rate risk in the banking book (IRRBB) and pension risk management activities.

Liquidity risk management

Overview

The efficient management of liquidity is essential to Group in order to retain the confidence of the financial markets and maintain the sustainability of the business. The liquidity risk control framework is used to manage all liquidity risk exposures under both BAU and stressed conditions. The framework is designed to maintain liquidity resources that are sufficient in amount, quality and funding tenor profile to support the liquidity risk appetite as expressed by the Barclays PLC Board. The liquidity risk appetite is monitored against both internal and regulatory liquidity metrics.

Organisation, roles and responsibilities

Treasury has the primary responsibility for managing liquidity risk within the set risk appetite. Both Risk and Treasury contribute to the production of the Internal Liquidity Adequacy Assessment Process (ILAAP). The Treasury and Capital Risk function is responsible for the management and governance of the liquidity risk mandate, as defined by the Board.

The liquidity risk control framework is designed to deliver the appropriate term and structure of funding, consistent with the liquidity risk appetite 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, 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 Group's obligations as they fall due.

The Board approves the Group funding plan, internal stress tests, regulatory stress test results, and recovery plan. The Group Treasury Committee is responsible for monitoring and managing liquidity risk in line with the Group's funding management objectives, funding plan and risk framework. The Treasury and Capital Risk Committee monitors and reviews the

Organisation and structure

Barclays PLC Board Risk Committee

- Reviews and recommends Barclays Group's risk appetite for treasury and capital risk to the Barclays PLC Board for approval
- Reviews material issues impacting treasury and capital risk
- Approves the ICAAP and ILAAP, via delegated authority of the Board



Barclays Group Treasury Committee

- Monitors and manages capital and liquidity risk in line with objectives and risk appetite of the Group
- Guides development of the Group recovery and resolution planning for capital, funding and liquidity
- Reviews non-traded market risk positions against risk appetite and limits



Barclays Group Risk Committee

- Reviews and recommends treasury and capital risk appetite to the Barclays PLC Board Risk Committee
- Escalates material issues impacting treasury and capital risk to the Barclays PLC Board Risk Committee
- Reviews and recommends the ICAAP and ILAAP to the Barclays PLC Board Risk Committee for approval



Barclays Bank Group/Barclays Bank UK Group Asset and Liability Committees (ALCOs)

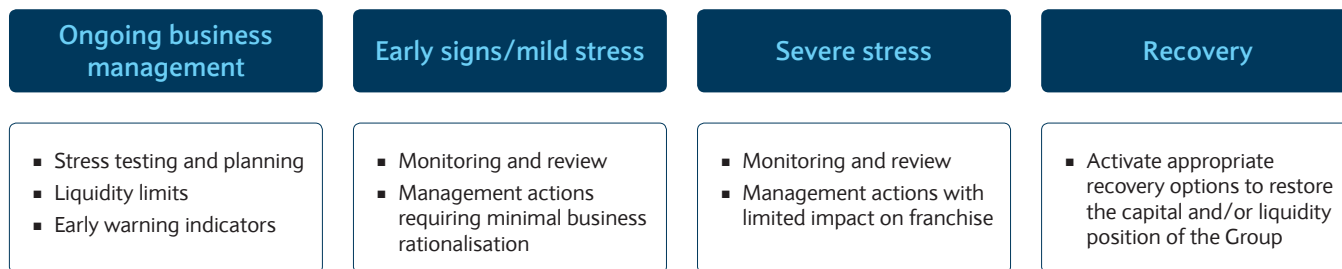
- Manages the balance sheet of the Barclays Bank Group and the Barclays Bank UK Group
- Monitors performance in managing of capital and liquidity risk within agreed first line of defence targets and limits
- Reviews non-traded market risk positions of key legal entities against agreed limits
- Oversees the risks managed by the Treasury function of key legal entities through their funding, investment and hedging activities



Barclays Group 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
- Recommends risk appetite to the Barclays Group Risk Committee and Barclays PLC Board Risk Committee
- Escalates material issues impacting treasury and capital risk to the Barclays Group Risk Committee and Barclays PLC Board Risk Committee

Management of Treasury and Capital Risk



liquidity risk profile and control environment, providing second line oversight of the management of liquidity risk. The BRC reviews the risk profile, and annually reviews risk appetite and the impact of stress scenarios on the Group funding plan/forecast in order to agree the Group's projected funding abilities.

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 Group Recovery Plan also contains more severe recovery options to generate additional liquidity in order to facilitate recovery during a severe stress. Any stress event would be regularly monitored and reviewed using key management information by Treasury, Risk and business representatives.

Risk Appetite and planning

Barclays has established a Group LRA stress test 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 testing metrics.

Statement of Liquidity Risk Appetite: For 2019, 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 100% (Pillar 2 basis)

The Group LRA stress test 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).

The Group LRA stress outflows are used to determine the minimum size of the Group Liquidity Pool. The Liquidity Pool represents those resources immediately available to meet outflows in a liquidity stress. In addition to the liquidity pool, the control framework and policy details available management actions that could be used to raise additional liquidity. Available management actions are assessed to determine their suitability, effectiveness and time to delivery.

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 each risk driver.

Early warning indicators

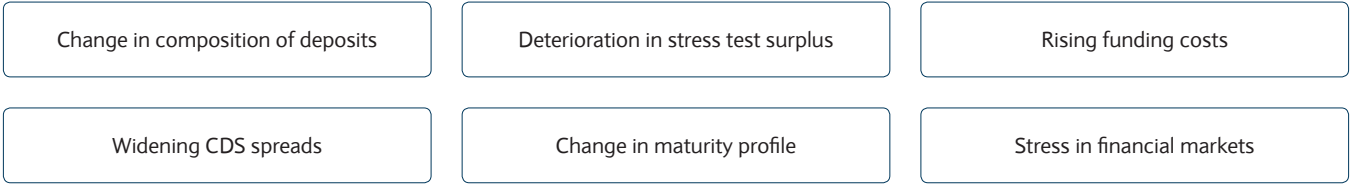
Barclays Treasury FLM monitor a range of market indicators for early signs of liquidity risk. Both market indicators and Barclays specific indicators are tracked, a sample of which is shown in the table below. These are designed to immediately identify the emergence of increased liquidity risk in order to maximise the time available to execute appropriate mitigating management 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 a liquidity stress would be managed.

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

Management of Treasury and Capital Risk

Examples of early warning indicators



Recovery & resolution planning

Barclays maintains a Group Recovery Plan (GRP) 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 ensure 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) the 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 used to respond 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 given 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 exercising the recovery options.

Liquidity risk governance

The Treasury function operates within the bounds of the liquidity risk control framework. The control framework describes liquidity risk management processes, associated policies, controls and how the Group have implemented controls. This framework is used to manage liquidity risk within the Liquidity Risk Appetite. The framework is reviewed annually and supported by the internal architecture used to record and measure group wide liquidity metrics.

The Board sets the Liquidity Risk Appetite based on the internal liquidity risk stress test (LRA) and external regulatory requirements, namely the Liquidity Coverage Ratio (LCR). The Liquidity Risk Appetite 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 Liquidity Risk Appetite is implemented in line with the Enterprise Risk Management Framework.

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. The objectives of the framework are to maintain adequate capital for the Group and legal entities to withstand the impact of the risks that may arise under normal and stressed conditions, and maintain adequate capital to cover current and forecast business needs and associated risks to provide a viable and sustainable business offering.

Organisation, roles and responsibilities

Treasury has the primary responsibility for managing and monitoring capital. The Treasury and Capital Risk function provides oversight of capital risk and is an independent risk function that reports to the Group CRO. Production of the Barclays PLC Internal Capital Adequacy Assessment Process (ICAAP) is the responsibility of Treasury.

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 Group 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 BRC 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 (ALCOs) with oversight by the Group Treasury Committee, as required. In 2019, Barclays complied with all regulatory minimum capital requirements.

Capital risk management strategy

Barclays Group's capital management strategy is driven by the strategic aims of Barclays Group and the risk appetite set by the Board. Barclays Group's objectives are achieved through well embedded capital management practices.

Capital planning and allocation

Barclays Group assesses its capital requirements on multiple bases, with Barclays Group's capital plan set in consideration of Barclays Group's risk profile and appetite, strategic and performance objectives, regulatory requirements, international financial reporting standards (including IFRS 9), 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 Barclays Group maintains an adequate level of capital to support its capital requirements. The planning process captures the impact of IFRS 9 to the capital plan, both including and excluding the impacts of transitional regulatory adjustments.

Management of Treasury and Capital Risk

The PRA determines the regulatory capital requirements for the consolidated Barclays Group. Under these regulatory frameworks, capital requirements are set in consideration of the level of risk that Barclays Group 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 Barclays Group's capital adequacy is undertaken through the Internal Capital Adequacy Assessment Process (ICAAP) and is used to inform the capital requirements of Barclays Group.

Barclays Group expects to meet the minimum requirements for capital and leverage at all times and also holds an internal buffer sized according to Barclays Group's assessment of capital risk.

Through the capital planning process, capital allocations are approved by Barclays Group Executive committee, taking into consideration the risk appetite and strategic aims of Barclays 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 remain appropriate and that risks to the plans are considered. Limits are set by Risk to control the level of capital risk within Barclays Group. Treasury is responsible for complying with these limits as the first line of defence for the management of capital risk. Limits are monitored through appropriately governed forums in the first and second line of defence.

To support compliance with risk limits, Treasury monitor capital risks against firm-specific and macroeconomic early warning indicators and report on these to the Treasury Committee and entity ALCOs. 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.

Barclays 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 Barclays 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, Barclays Group Recovery Plan defines the actions and implementation strategies available to Barclays Group to increase or preserve capital resources in the situation that a stress occurs that is more severe than anticipated.

Capitalisation of legal entities

Barclays as a group comprises legal entities across multiple jurisdictions. Barclays 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 Barclays Group are higher than the consolidated requirement, Barclays Group 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 Barclays 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 the immediate parent 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. Capital is managed for Barclays Group as a whole as well as for its operating subsidiaries to allow fungibility and redeployment of capital while meeting relevant internal and regulatory targets at entity levels.

Foreign exchange risk

Barclays 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, Barclays Group's CET1 ratio is sensitive to foreign currency movements.

Barclays Group seeks to minimise the volatility of the CET1 ratio caused by foreign exchange rate movements by maintain that the CET1 capital movements broadly match the revaluation of Barclays Group's foreign currency RWA exposures. This is achieved by seeking to align the ratio of CET1 sensitive to foreign exchange rate movements to foreign currency RWAs with Barclays Group CET1 ratio.

Pension risk

The Group maintains a number of defined benefit pension schemes for past and current employees. The ability of schemes to meet pension payments is achieved with investments and contributions.

Pension risk arises because the market value of pension fund assets might decline; investment returns might reduce; or the estimated value of 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 Treasury and Capital Risk

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:

- The investment strategy including asset allocation and performance.
- Assessing the level of technical provision required.
- Ensuring any minimum funding objectives are met.
- 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 Group'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 the Group. It is the most senior executive body for pensions in Barclays.

The Pension Management Group (PMG) is accountable for the oversight and management of the Group's responsibilities relating to its pension arrangements. 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 and comment on pension risk in a wider context with other relevant stakeholders from HR, Legal, Treasury and Finance.

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 Group's perspective.
- Coordinating responses to regulatory initiatives, developments and proposals on pensions, which may include inputs from material overseas schemes.

Interest rate risk in the banking book management (IRRBB)

Overview

Interest rate risk in the banking book is driven by customer deposit taking and lending activities, investments in the liquid asset portfolio and funding activities. As per the Group's policy to remain within the defined risk appetite, businesses and Treasury execute hedging strategies to mitigate the risks. However, the Group remains susceptible to interest rate risk and other non-traded market risks from key sources:

- **Interest rate and repricing risk:** the risk that net interest income could be adversely impacted by a change in interest rates, differences in the timing of interest rate changes between assets and liabilities, and other constraints on interest rate changes as per product terms and conditions.
- **Customer behavioural risk:** the risk that net interest income could be adversely impacted by the discretion that customers and counterparties may have in respect of being able to vary their contractual obligations with Barclays. This risk is often referred to by industry regulators as 'embedded option risk'.
- **Investment risks in the liquid asset portfolio:** the risk that the fair value of assets held in the liquid asset portfolio and associated risk management portfolios could be adversely impacted by market volatility, creating volatility in capital directly.

Organisation, roles and responsibilities

The entity ALCOs, together with the Group Treasury Committee, are responsible for monitoring and managing IRRBB risk in line with the Group's management objectives and risk frameworks. The GRC and Treasury and Capital Risk Committee monitors and reviews the IRRBB risk profile and control environment, providing second line oversight of the management of IRRBB. The BRC reviews the interest rate risk profile, including annual review of the risk appetite and the impact of stress scenarios on the interest rate risk of the Group's banking books.

In addition, the Group's IRRBB policy sets out the processes and key controls required to identify all IRRBB risks arising from banking book operations, to monitor the risk exposures via a set of metrics with a frequency in line with the risk management horizon, and to manage these risks within agreed risk appetite and limits.

Management of IRRBB

Barclays executes hedging strategies to minimise IRRBB and maintain it within the agreed risk appetite, whilst actively managing the trade-off between return and associated risks in liquid asset portfolio. Therefore, the primary control for IRRBB is calculating the risk metrics described in the table below and monitoring risk exposure vs. defined limits. Limits are set at an aggregate business level and then cascaded down.

These measures of risk are typically dependent on an assumption of expected customer behaviour, to the extent that actual behaviour may vary from expectation this variation is measured using a supplementary set of behavioural stress measures.

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 the present value of expected future cash flows due to an adverse interest rate movement, based on the existing balance sheet expected run-off profile.
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 Loss	A measure of the potential loss from an adverse shock to market variables

Management of Treasury and Capital Risk

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 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, and run-off balances are reinvested to maintain a constant balance sheet
- Contractual positions are adjusted for an assumed behavioural profile, to align with the expected product life-cycle.

AEaR sensitivity is calculated on a monthly basis for the entire banking book, including the investments in liquid asset portfolio. The metric provides a measure of how interest rate risk may impact the Group's earnings, providing a simple comparison between risk and returns. As AEaR provides a view on the next year's earnings impacts of interest rate risk, Barclays also monitors economic value metrics to complement the view as this captures the IRRBB impact of risk exposures beyond one year.

See pages 44 to 45 for a review of AEaR in 2019.

Economic Value of Equity (EVE)

EVE calculates the change in the present value of the Group's expected future cash-flows from a parallel upward or downward interest rate shock. Note that the EVE calculation measures sensitivity in terms of present value, while AEaR measures income sensitivity, and as such are complimentary.

The EVE measure is calculated on a monthly basis and is applied to the full life of transactions and hedges allowing the risk over the whole life of positions to be considered. It does not capture the impact of business growth or management actions, and is based on the expected balance sheet run-off profile.

Value at Risk (VaR)

VaR is an estimate of the potential loss arising from unfavourable market movements if the current position 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 liquid asset portfolio. The calculation uses a two-year historical period, a 95% confidence level and is scaled from daily to quarterly using a constant factor.

VaR is calculated on a daily basis and exposure is reported versus defined limits.

Stress testing

Securities in the buffer are subject to several market risk stresses designed to estimate potential losses in various scenarios. This includes, but is not limited to, an annual internal stress test, regulatory stress tests as well as various ad hoc exploratory exercises.

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 199 to 200.
- Governance, management and measurement techniques are covered on pages 200 and 201.

Management of operational risk

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.

Overview

The management of operational risk has three key objectives:

- Deliver an operational risk capability owned and used by business leaders
- Provide the frameworks, policies and standards 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 and stakeholder needs.

The Group operates 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.

Operational risk categories

Operational risks are grouped into risk categories to support effective risk management, measurement and reporting. These are defined as follows:

- **Data Management & Information Risk:** The risk that the Group 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 reporting, regulatory reporting or internal financial 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 or without appropriate authentication and authorisation. It includes payments processes from initiation through to external settlement, including any repairs or amendments.

Organisation and structure

Barclays PLC Board Risk Committee

- Approves operational risk framework
- Oversees operational risk capital
- Recommends and monitors operational risk appetite and the residual risk position, supported by feedback from the Barclays PLC Board Audit Committee/Chief Controls Officer

Barclays PLC Board Audit Committee

- Oversees the operating effectiveness of the control environment
- Oversees remediation of control issues
- Gives feedback to the Barclays PLC Board Risk Committee where concerns exist over the impact on residual risk through either the design or operating effectiveness of the control environment

Barclays Group Risk Committee

- Reviews and recommends risk appetite and risk limit across operational risk to the Barclays PLC Board
- Monitors the Barclays Group risk profile and the utilisation of risk appetite
- Reviews appetite, limit usage and risk management within tolerance agreed by Barclays PLC Board
- Reviews deep dives of specific risks as requested
- Reviews the impact of any material acquisitions and disposals on the risk profile
- Reviews remediation plans and actions taken, and agrees any further action required
- Escalates to Barclays PLC Board level

Barclays Group Controls Committee

- Oversees the effectiveness of the control environment
- Reviews and recommends the control framework
- Oversees control remediation activities
- Oversees the execution of the Operational Risk Management Framework consistently across Barclays Group
- Oversees risk and internal control matters including significant issues
- Escalates to Barclays PLC Board level

Business Risk Committees

- Manage and oversee risk at the business/function level
- Escalate to Barclays Group level

Business Control Committees

- Manage and oversee the control environment at the business/function level
- Escalate to Barclays Group level

Management of operational risk

- **People Risk:** The set of risks associated with employing and managing people, including compliance with regulations, appropriate resourcing for requirements, recruitment and development risks (excluding health and safety related risk).
- **Premises Risk:** The risk of business detriment or harm to people due to premises and infrastructure issues.
- **Physical Security Risk:** The risk of business detriment, financial loss or harm to people as a result of any physical security incident impacting the Group or a Group employee – relating to harm to people, unauthorised access, intentional damage to premises or theft or intentional damage to moveable assets.
- **Supplier Risk:** The risk that is introduced to the Group or a Group's entity as a consequence of obtaining services or goods from another legal entity, or entities, whether external or internal as a result of inadequate selection, inadequate management or inadequate exit management.
- **Tax Risk:** The risk of unexpected tax cost in relation to any tax for which the Group 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 of dependency on technological solutions and failure to develop, deploy and maintain technology solutions that are stable, reliable and deliver business need.
- **Transaction Operations Risk:** The risk of customer/client or the Group 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 Group with an underlying financial instrument (e.g. mortgage, derivative product, trade product etc.) in consideration.
- **Execution:** The risk of failing to deliver and implement the agreed initiatives, priorities and business outcomes required to deliver the Group's strategy within agreed timelines.

In addition to the above, operational risk encompasses risks associated with prudential regulation. This includes the risk of failing to: adhere to prudential regulatory requirements; provide regulatory submissions; or monitor and manage adherence to new prudential regulatory requirements.

These risks may result in financial and/or non-financial impacts including legal/regulatory breaches or reputational damage.

Enterprise risk themes

The Group also recognises that there are certain threats/risk drivers that are more thematic and have the potential to impact the Group's strategic objectives. These are enterprise risk themes which require an overarching and integrated risk management approach. Including:

- **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:** Aligned to the data strategy of the Group and encompassing data risks to the Group from multiple risk categories, including data management, data architecture, data security & protection, data resilience, data retention and data privacy.
- **Resilience:** The risk of the 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 legal entities, 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 these items. Legal entities, businesses and functions 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 the Group's operational risk profile. ORM alerts management when risk levels exceed acceptable tolerance in order to drive timely decision making and actions by the first line of defence. 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 operational risk profile Forum, the Barclays PLC Board Risk Committee or the Barclays PLC Board Audit Committee.

Specific reports are prepared by Operational Risk on a regular basis for the Barclays Group Risk Committee, and the Barclays PLC Board Risk Committee.

Operational risk framework

The Operational Risk Framework comprises a number of elements which allow Barclays Group to manage and measure its operational risk profile and to calculate the amount of operational risk capital that Barclays 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 Barclays Group with all legal entities, businesses and functions 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

Risk and control self-assessments (RCSAs) are the way in which Barclays Group identifies and assesses the risks which are inherent in the material processes operated by Barclays Group. Managers in the business use the RCSA approach to evaluate the controls in place to mitigate those risks and assess the residual risk exposure to Barclays Group. The businesses / functions are then able to make decisions on what action, if any, is required to reduce the level of residual risk to Barclays Group. These risk assessments are monitored on a regular basis to maintain that each business understands the risks it faces.

Management of operational risk

Risk events

An operational risk event is any circumstance where, through the lack or failure of a control, Barclays Group has actually, or could have, made a loss. The definition includes situations in which Barclays 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 Barclays 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.

Barclays 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.

Operational Risk Appetite

The Board approves an Operational Risk Appetite Statement on an annual basis, establishing the level of operational risk that is acceptable in pursuit of Barclays Group's strategic objectives.

Operational risks are assessed and monitored against the Board approved Operational Risk Appetite, with Risk Reduction Plans established for any risks that are above the acceptable level.

The Operational Risk Profile is monitored through Risk Committees at legal entity, Barclays Group and Board level in the context of Operational Risk Appetite.

Key indicators

Key indicators (KIs) are metrics which allow the Operational Risk Profile to be measured and monitored against Management's Risk Appetite. KIs include defined thresholds and performance is reported regularly to Management to drive action when risk exceeds acceptable limits.

Risk scenarios

Risk scenarios are a summary of the extreme potential risk exposures for Barclays Group covering the complete range of risks. The scenarios include an assessment of the key drivers for the exposure, occurrence and impact of the scenario and a review of the corresponding control environment. The risk scenario assessments are a key input to the calculation and benchmarking of economic capital requirements (see following section on operational risk measurement). The assessment considers analysis of internal and external loss experience, Key Risk Indicators, Risk and Control Self-Assessments and other relevant information. The businesses and functions analyse potential extreme scenarios, considering the:

- circumstances and contributing factors that could lead to an extreme event;
- potential financial impacts;
- 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 then determine whether the potential risk exposure is acceptable or whether changes in risk management control or business strategy are required.

The risk scenarios are regularly re-assessed, taking into account trends in risk factors.

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 legal entity and business management to understand, monitor, manage and control operational risks and losses.

The operational risk profile is reviewed by senior management at legal entity Risk Committee meetings as well as the Operational Risk Profile Forum and BRC, BAC and the Board.

Operational risk measurement

Barclays Group assesses its Operational Risk Capital requirements using the Standardised Approach (TSA). Barclays Group also maintains a voluntary floor for the Regulatory Capital. The floor is based on the Capital calculated by Barclays Group under the previous AMA regime.

Insurance

As part of its risk management approach, Barclays 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.

- Model risk is the risk of the potential adverse consequences from financial assessments or decisions based on incorrect or misused model outputs and reports.

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

The Group 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

The Group 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. The Group manages model risk as an enterprise level risk similar to other principal risks.

The Group 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.

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.

Barclays PLC Board Risk Committee

- Reviews and recommends Barclays Group's risk appetite for model risk to the Barclays PLC Board
- Reviews the effectiveness of the processes and policies by which Barclays Group identifies and manages model risk
- Assesses performance relative to model risk appetite



Barclays Group Risk Committee

- Reviews risk appetite across model risk
- Monitors the Barclays Group risk profile for model risk, including emerging risks, against expected trends, and the utilisation of risk appetite



Business Risk Committees

- Review critical updates on model risk e.g. updates on Barclays Group-wide remediation plans
- Review targeted updates on progress towards meeting regulatory deliverables
- Review identified policy breaches

Management of model risk

Roles and responsibilities

The key model risk management activities include:

- Correctly identifying models across all relevant areas of the Group, 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, Group Finance Director, Treasurer, 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 and materiality.

Management of conduct risk

This section provides an overview of the management of conduct risk

- Conduct risk is the of detriment to customers, clients, market integrity, effective competition or Barclays from the inappropriate supply of financial services, including instances of wilful or negligent misconduct.

Management of conduct risk

Conduct risk

The risk of detriment to customers, clients, market integrity, effective 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 objective of providing good customer and client outcomes, protecting market integrity and promoting effective competition. This includes taking reasonable steps to assure that (i) the Group's culture and strategy are appropriately aligned to these goals; (ii) its products and services are reasonably designed and delivered to meet the needs of customers and clients; (iii) the fair and orderly operation of the markets in which the Group does business is promoted; and (iv) 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 within the Group definition of conduct risk.

Organisation and structure

The governance of conduct risk within the Group 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 Group Risk Committee is the most senior executive body responsible for reviewing and monitoring the effectiveness of the Group's management of conduct risk.

Roles and responsibilities

The Conduct Risk Management Framework (CRMF) outlines how the Group manages and measures its conduct risk profile.

Senior managers have accountability for managing conduct risk in their areas of responsibility. This is included in their Statements of Responsibilities. The primary responsibility for managing conduct risk 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. This includes defining and owning the relevant conduct risk policies and oversight of the implementation of controls to manage and escalate the risk.

Businesses are required to report their conduct risks on both a quarterly and an event-driven basis to their respective trading entity risk committees. 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 Group Risk Committee and the Barclays Bank UK Group Risk Committee are the primary second line governance forums for oversight of conduct risk profile and implementation of the CRMF. The responsibilities of these 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.

Barclays PLC and Barclays Bank PLC Board Risk Committee

- Reviews the effectiveness of the processes by which Barclays Group and Barclays Bank Group identifies and manages conduct risk including annually reviewing the effectiveness of the Barclays Group Conduct Risk Management Framework;
- Seeks to obtain fair customer outcomes by carrying out periodic reviews of Barclays Group and Barclays Bank Group's implementation of policies on customers, clients and counterparties and by monitoring management reports on issues such as compliant levels, customer satisfaction indicators, net promoter scores and market share measures; and
- Reviews performance against conduct risk metrics for Barclays Group and Barclays Bank Group.

Barclays Bank UK PLC Board Risk Committees

- Reviews the effectiveness of the processes by which Barclays Bank UK Group identifies and manage conduct risk, including annually reviewing the effectiveness of the Barclays Group Conduct Risk Management Framework as it applies to Barclays Bank UK Group;
- Seeks to obtain fair customer outcomes by carrying out periodic reviews of Barclays Bank UK Group's implementation of policies on customers, clients and counterparties and by monitoring management reports on issues such as compliant levels, customer satisfaction indicators, net promoter scores and market share measures; and
- Reviews performance against conduct risk metrics.

Barclays Group Controls Committees

- Provides oversight and challenge of the effectiveness of the Barclays Group control environment in relation to conduct risk and provides governance, oversight and supervision of all elements of the Barclays Group Conduct Risk Framework

Barclays Group Risk Committee

- Reviews and monitors the effectiveness of conduct risk management for Barclays Group and Barclays Bank Group

Barclays UK Risk Committee

- Reviews and monitors all material issues which may have potential to incur conduct risk and reports these issues in accordance with the Group Conduct Risk Management Framework

Management of reputation risk

This section provides an overview of the management of reputation risk

- Reputation risk is 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.

Management of reputation risk

Reputation risk

The risk that an action, transaction, investment, event, decision, or business relationship will reduce trust in the firm's integrity and/or competence.

Overview

A reduction of trust in the Group's integrity and competence may reduce the attractiveness of the Group 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 Barclays Group Risk Committee is the most senior executive body responsible for reviewing and monitoring the effectiveness of the Group's management of reputation risk.

Roles and responsibilities

The Group Chief Compliance Officer is accountable for developing a Reputation Risk Management Framework, and the Head of Corporate Relations is responsible for developing a reputation risk policy and associated standards, including tolerances against which data is 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 across the Group.

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 Bank Group and Barclays Bank UK Group are required to operate within established reputation risk appetite, and their component businesses prepare reports 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 Group Risk Committee and Barclays PLC Board Committee.

Barclays PLC Board

- Reviews the effectiveness of the processes and policies by which Barclays Group identifies and manages reputation risk
- Considers and evaluates regular reports on Barclays Group's reputation risk issues and exposures
- Considers whether significant business decisions will compromise Barclays Group's ethical policies or core business beliefs and values



Barclays Group Risk Committee

- Reviews the monitoring processes utilised by Compliance and Corporate Relations to ensure they are proportionate given the level of risk identified in the businesses
- Reports reputation issues in accordance with Barclays Group's Reputation Risk Management Framework for all material issues which may have the potential to incur reputation risk for Barclays Group



Business Risk Committees/Forums

- Review and escalate reputation risks in accordance with Barclays Group's Reputation Risk Management Framework

Management of legal risk

This section provides an overview 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.

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 Group has no tolerance for wilful breaches of laws, regulations or other legal obligations. However, the multitude of laws and regulations across the globe are highly dynamic and their application to particular circumstances is often unclear; this results in a level of inherent legal risk, for which the Group has limited tolerance.

Organisation, roles and responsibilities

The Group's businesses and functions have primary responsibility for identifying, managing and escalating legal risk in their area as well as responsibility for adherence to minimum control requirements.

The Legal Function organisation and coverage model aligns expertise to businesses, functions, products, activities and geographic locations so that the Group receives legal support from appropriate legal professionals. The senior management of the Legal Function oversees, monitors and challenges legal risk across the Group. The Legal Function does not sit in any of the Three Lines of Defence but supports them all.

The Group General Counsel is responsible for maintaining an appropriate Group-wide legal risk management framework. This includes defining the relevant legal risk policies and oversight of the implementation of controls to manage and escalate legal risk.

The legal risk profile and control environment is reviewed by management through business risk committees and control committees. The Group Risk Committee is the most senior executive body responsible for reviewing and monitoring the effectiveness of risk management across the Group. Escalation paths from this committee exist to the Barclays PLC Board Risk Committee.

Barclays PLC Board Risk Committee

- Approves risk tolerances
- Reviews risk profile and material risk issues
- Commissions, receives and considers reports on key risk issues



Barclays Group Risk and Control Committees

- Monitor risk profile with respect to non-financial risk tolerances
- Debates and agrees actions on the non-financial risk profile and risk strategy across Barclays Group



Legal Executive Committee

- Oversees, monitors and challenges legal risk across the Barclays Group

APPENDICES

Contents

Appendix A – PD, LGD, RWA and Exposures by country	212
Appendix B – Analysis of impairment	216
Appendix C – Countercyclical Capital Buffer	218
Appendix D – Disclosure on asset encumbrance	220
Appendix E – Disclosures on remuneration – Barclays Group	223
Appendix F – CRD IV reference	231
Appendix G – EBA and BCBS reference	238

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 99: PD, LGD, RWA and exposure values by country for IRB – all asset classes

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	3.44%	27.9%	79,721	267,684	Cayman Islands	4.62%	45.5%	607	1,279
United States	0.72%	40.8%	20,990	92,036	Mexico	0.48%	58.5%	596	699
Germany	0.84%	50.2%	3,375	18,593	Australia	0.13%	45.3%	451	1,856
Italy	9.30%	25.9%	2,870	7,197	Spain	2.13%	45.7%	441	1,078
Japan	0.05%	46.0%	2,690	21,065	South Africa	0.34%	44.1%	422	689
France	0.11%	44.4%	2,098	10,357	Finland	0.21%	41.0%	374	975
Ireland	1.93%	46.8%	1,690	5,826	Saudi Arabia	0.06%	89.7%	339	1,672
Canada	0.52%	43.3%	1,503	4,635	Venezuela, Bolivarian Republic Of	0.05%	45.0%	229	475
Netherlands	0.46%	41.7%	1,268	4,258	Singapore	0.03%	45.2%	188	3,853
Switzerland	0.02%	45.1%	1,220	28,184	Turkey	4.00%	52.3%	162	91
Luxembourg	1.34%	45.5%	1,063	4,812	China	0.05%	50.6%	156	1,131
Jersey	3.02%	35.2%	668	1,164					
India	0.60%	51.5%	609	663					

Table 99a: PD, LGD, RWA and exposure values by country for IRB – central governments and central banks

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	0.01%	45.0%	2	58	Cayman Islands	–	–	–	–
United States	0.00%	45.0%	1,195	38,505	Mexico	0.14%	45.0%	7	36
Germany	0.01%	45.0%	282	9,366	Australia	0.01%	45.0%	43	296
Italy	0.18%	45.0%	41	130	Spain	–	–	–	–
Japan	0.04%	45.0%	1,585	14,913	South Africa	0.32%	4.7%	2	33
France	0.01%	45.0%	8	147	Finland	–	–	–	–
Ireland	0.02%	50.0%	112	1,448	Saudi Arabia	0.06%	92.8%	309	1,548
Canada	0.02%	45.0%	163	757	Venezuela, Bolivarian Republic Of	–	–	–	–
Netherlands	0.01%	45.0%	–	5	Singapore	0.01%	45.0%	97	3,086
Switzerland	0.01%	45.0%	748	25,764	Turkey	–	–	–	–
Luxembourg	0.01%	45.0%	9	60	China	0.04%	53.0%	97	803
Jersey	–	–	–	–					
India	0.29%	45.0%	257	387					

APPENDICES

Appendix A – PD, LGD, RWA and Exposures by country

Table 99b: PD, LGD, RWA and exposure values by country for IRB – institutions

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	0.23%	38.8%	2,687	9,378	Cayman Islands	–	–	–	–
United States	0.15%	41.9%	1,955	7,875	Mexico	0.46%	53.5%	112	161
Germany	0.04%	34.9%	518	2,773	Australia	0.05%	45.4%	150	694
Italy	0.22%	45.8%	234	338	Spain	0.05%	45.7%	167	645
Japan	0.08%	49.9%	666	3,596	South Africa	0.31%	47.3%	202	323
France	0.05%	41.4%	976	5,866	Finland	0.03%	45.1%	29	195
Ireland	0.16%	51.3%	93	341	Saudi Arabia	0.07%	52.6%	22	93
Canada	0.22%	45.6%	461	1,996	Venezuela, Bolivarian Republic Of	0.05%	45.0%	226	465
Netherlands	0.03%	38.7%	111	1,019	Singapore	0.08%	48.0%	31	168
Switzerland	0.03%	46.8%	131	1,291	Turkey	4.02%	52.5%	162	90
Luxembourg	0.04%	50.4%	81	854	China	0.06%	44.5%	59	325
Jersey	0.34%	54.1%	38	63					
India	1.07%	50.1%	78	97					

Table 99c: PD, LGD, RWA and exposure values by country for IRB – corporates

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	3.92%	32.5%	31,511	58,967	Cayman Islands	4.62%	45.5%	607	1,279
United States	1.42%	37.0%	17,840	45,652	Mexico	0.51%	61.1%	477	502
Germany	0.66%	44.3%	1,164	2,549	Australia	0.24%	45.4%	258	866
Italy	1.79%	41.9%	137	322	Spain	5.23%	45.8%	274	433
Japan	0.07%	46.2%	439	2,556	South Africa	0.38%	45.0%	219	333
France	0.19%	48.4%	1,113	4,342	Finland	0.25%	40.0%	345	780
Ireland	2.75%	45.2%	1,485	4,037	Saudi Arabia	0.09%	45.0%	8	32
Canada	1.04%	40.2%	879	1,882	Venezuela, Bolivarian Republic Of	0.05%	45.0%	3	10
Netherlands	0.60%	42.7%	1,156	3,232	Singapore	0.13%	45.1%	60	600
Switzerland	0.40%	45.8%	338	1,120	Turkey	–	–	–	–
Luxembourg	1.64%	44.5%	973	3,898	China	0.04%	53.4%	1	3
Jersey	3.18%	34.2%	631	1,101					
India	1.01%	66.1%	274	179					

APPENDICES

Appendix A – PD, LGD, RWA and Exposures by country

Table 99d: PD, LGD, RWA and exposure values by country for IRB – SME retail

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	11.92%	39.3%	3,863	8,873	Cayman Islands	–	–	–	–
United States	–	–	–	–	Mexico	–	–	–	–
Germany	–	–	–	–	Australia	–	–	–	–
Italy	–	–	–	–	Spain	–	–	–	–
Japan	–	–	–	–	South Africa	–	–	–	–
France	–	–	–	–	Finland	–	–	–	–
Ireland	–	–	–	–	Saudi Arabia	–	–	–	–
Canada	–	–	–	–	Venezuela, Bolivarian	–	–	–	–
Netherlands	–	–	–	–	Republic Of	–	–	–	–
Switzerland	–	–	–	–	Singapore	–	–	–	–
Luxembourg	–	–	–	–	Turkey	–	–	–	–
Jersey	–	–	–	–	China	–	–	–	–
India	–	–	–	–					

Table 99e: PD, LGD, RWA and exposure values by country for IRB – secured retail

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	2.38%	11.1%	19,869	148,035	Cayman Islands	–	–	–	–
United States	27.92%	29.5%	1	4	Mexico	–	–	–	–
Germany	0.82%	25.5%	–	2	Australia	–	–	–	–
Italy	10.34%	23.6%	2,459	6,407	Spain	4.23%	20.9%	–	1
Japan	–	–	–	–	South Africa	–	–	–	–
France	0.62%	19.3%	–	1	Finland	–	–	–	–
Ireland	–	–	–	–	Saudi Arabia	–	–	–	–
Canada	–	–	–	–	Venezuela, Bolivarian	–	–	–	–
Netherlands	10.19%	24.7%	–	1	Republic Of	–	–	–	–
Switzerland	5.20%	22.4%	2	8	Singapore	–	–	–	–
Luxembourg	–	–	–	–	Turkey	–	–	–	–
Jersey	–	–	–	–	China	–	–	–	–
India	–	–	–	–					

APPENDICES

Appendix A – PD, LGD, RWA and Exposures by country

Table 99f: PD, LGD, RWA and Exposure values by country for IRB – revolving retail

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	4.86%	75.2%	16,315	36,297	Cayman Islands	–	–	–	–
United States	–	–	–	–	Mexico	–	–	–	–
Germany	3.51%	77.3%	1,411	3,902	Australia	–	–	–	–
Italy	–	–	–	–	Spain	–	–	–	–
Japan	–	–	–	–	South Africa	–	–	–	–
France	–	–	–	–	Finland	–	–	–	–
Ireland	–	–	–	–	Saudi Arabia	–	–	–	–
Canada	–	–	–	–	Venezuela, Bolivarian	–	–	–	–
Netherlands	–	–	–	–	Republic Of	–	–	–	–
Switzerland	–	–	–	–	Singapore	–	–	–	–
Luxembourg	–	–	–	–	Turkey	–	–	–	–
Jersey	–	–	–	–	China	–	–	–	–
India	–	–	–	–					

Table 99g: PD, LGD, RWA and exposure values by country for IRB – other retail exposures

Country	PD %	LGD %	RWA £m	Exposure £m	Country	PD %	LGD %	RWA £m	Exposure £m
United Kingdom	8.77%	76.5%	5,473	6,076	Cayman Islands	–	–	–	–
United States	–	–	–	–	Mexico	–	–	–	–
Germany	–	–	–	–	Australia	–	–	–	–
Italy	–	–	–	–	Spain	–	–	–	–
Japan	–	–	–	–	South Africa	–	–	–	–
France	–	–	–	–	Finland	–	–	–	–
Ireland	–	–	–	–	Saudi Arabia	–	–	–	–
Canada	–	–	–	–	Venezuela, Bolivarian	–	–	–	–
Netherlands	–	–	–	–	Republic Of	–	–	–	–
Switzerland	–	–	–	–	Singapore	–	–	–	–
Luxembourg	–	–	–	–	Turkey	–	–	–	–
Jersey	–	–	–	–	China	–	–	–	–
India	–	–	–	–					

Appendix B – Analysis of impairment

IFRS Impairment

The following tables are presented using the IFRS consolidation rather than the regulatory consolidation basis. See pages 161-163 for background on impairment, and page 14 explaining the scope of regulatory consolidation.

Table 100: Analysis of impaired and past due exposures and allowance for impairment by exposure type

This table shows total gross loans and advances analysed by balances past due and not past due. It also shows gross exposure assessed for impairment in accordance with IFRS9 and the resulting allowance for impairment.

	Not past due £m	Past due £m	Total £m	Gross exposure assessed for impairment £m	Allowance for Impairment £m
As at 31 December 2019					
Traded loans	5,238	140	5,378	–	–
Financial assets designated at fair value through the income statement	22,629	63	22,692	–	–
Financial assets designated at fair value through other comprehensive income	624	–	624	624	–
Cash collateral and settlement balances	82,316	944	83,260	83,260	4
Gross loans and advances at amortised cost:			–		
Home Loans	150,254	4,657	154,911	154,911	432
Credit cards, unsecured and other retail lending	55,995	4,185	60,180	60,180	4,884
Corporate loans	123,774	6,558	130,332	130,332	992
Total Gross loans and advances at amortised cost	330,023	15,400	345,423	345,423	6,308
Total^a	440,830	16,547	457,377	429,307	6,312

Note:

a Other financial assets subject to impairment not included in the Loans and Advances table above include financial assets at fair value through other comprehensive income and other assets. These have a total gross exposure of £65.5bn and impairment allowance of £20m.

Appendix B – Analysis of impairment

Table 101: Geographic analysis of impaired and past due exposures and allowance for impairment

This table shows total gross loans and advances analysed by balances past due and not past due, and gross exposures assessed for impairment in accordance with IFRS9 and the resulting impairment allowance, split by geographic location of the counterparty.

	Not past due £m	Past due £m	Total £m	Gross exposure assessed for impairment £m	Allowance for Impairment £m
As at 31 December 2019					
UK	289,037	9,968	299,005	288,235	3,246
Europe	53,007	1,589	54,596	52,286	787
Americas	82,313	4,592	86,905	72,828	2,182
Africa and Middle East	4,057	204	4,261	4,192	60
Asia	12,416	194	12,610	11,766	37
Total	440,830	16,547	457,377	429,306	6,312

Appendix C – Countercyclical Capital Buffer

Table 102: 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.

Barclays Group	General Credit Exposures		Trading book exposures		Securitisation exposures		Own Funds requirements			Counter-cyclical capital buffer rate %		
	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 %
Breakdown by Country												
France (FR)	2,361	4,420	346	512	–	337	191	25	2	218	1.41%	0.25%
Bulgaria (BG)	–	2	–	–	–	–	–	–	–	–	–	0.50%
Denmark (DK)	235	162	21	52	–	–	18	2	–	20	0.13%	1.00%
Ireland (IE)	631	2,747	57	14	–	131	141	7	7	155	1.00%	1.00%
Lithuania (LT)	2	–	–	–	–	–	–	–	–	–	–	1.00%
United Kingdom (GB)	28,125	259,814	1,146	161	–	13,056	7,812	58	123	7,994	51.59%	1.00%
Czech Republic (CZ)	8	41	5	9	–	–	2	–	–	2	0.01%	1.50%
Slovakia (SK)	–	–	–	–	–	–	–	–	–	–	–	1.50%
Iceland (IC)	–	–	1	–	–	–	–	–	–	–	–	1.75%
Hong Kong (HK)	452	34	58	43	–	–	37	7	–	44	0.29%	2.00%
Norway (NO)	757	489	14	34	–	–	56	2	–	58	0.37%	2.50%
Sweden (SE)	1,030	467	19	74	–	308	64	3	2	69	0.45%	2.50%
Total (countries with existing CCyB rate)	33,601	268,176	1,667	899	–	13,832	8,322	105	134	8,561	55.25%	
United States (US)	33,356	48,387	7,485	1,196	–	9,907	3,755	443	103	4,300	27.75%	n/a
Germany (DE)	2,479	6,641	174	199	–	–	369	24	–	393	2.54%	n/a
Italy (IT)	752	6,870	92	56	–	2	268	11	–	279	1.80%	n/a
South Africa (ZA)	951	335	25	9	–	–	206	4	–	210	1.35%	n/a
India (IN)	2,185	182	51	119	–	–	194	9	–	203	1.31%	n/a
Netherlands (NL)	1,072	3,054	186	74	–	–	155	24	–	179	1.15%	n/a
Luxembourg (LU)	1,458	1,866	122	65	–	–	156	12	–	168	1.09%	n/a
Total (countries with own funds requirements weights 1% or above)	42,253	67,336	8,135	1,719	–	9,908	5,103	526	103	5,732	36.99%	
Total (rest of the world less than 1% requirement)	8,879	15,636	1,169	1,691	–	113	1,046	155	2	1,203	7.71%	n/a
Total	84,733	351,148	10,972	4,308	–	23,853	14,470	785	240	15,495	100%	

Amount of institution-specific countercyclical capital buffer

Total risk weighted assets	£295,131m
Institution specific countercyclical buffer rate	0.56%
Institution specific countercyclical buffer requirement	£1,653m

APPENDICES

Appendix C – Countercyclical Capital Buffer

Table 102a: Countercyclical capital buffer for significant subsidiary

Barclays Bank PLC	General Credit Exposures		Trading book exposures		Securitisation exposures		Own Funds requirements			Counter-cyclical capital buffer rate %		
	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 %
Breakdown by Country												
France (FR)	1,141	3,006	260	511	–	337	97	19	2	118	1.52%	0.25%
Bulgaria (BG)	–	2	–	–	–	–	–	–	–	–	–	0.50%
Denmark (DK)	55	108	2	52	–	–	8	–	–	9	0.11%	1.00%
Ireland (IE)	512	1,260	17	14	–	131	72	4	7	83	1.06%	1.00%
Lithuania (LT)	–	–	–	–	–	–	–	–	–	–	–	1.00%
United Kingdom (GB)	60,521	40,706	971	159	–	11,704	3,138	42	114	3,294	0.00%	0.00%
Czech Republic (CZ)	8	41	5	9	–	–	2	–	–	2	0.00%	0.00%
Slovakia (SK)	–	–	–	–	–	–	–	–	–	–	0.00%	0.00%
Iceland (IC)	–	–	1	–	–	–	–	–	–	–	0.00%	0.00%
Hong Kong (HK)	418	34	50	43	–	–	34	6	–	40	0.51%	2.00%
Norway (NO)	1	293	6	34	–	–	10	1	–	11	0.14%	2.50%
Sweden (SE)	36	318	7	75	–	308	13	2	2	17	0.22%	2.50%
Total (countries with existing CCyB rate)	62,693	45,767	1,317	896	–	12,480	3,374	75	125	3,574	45.90%	
United States (US)	10,087	44,835	3,311	1,197	–	10,589	2,236	225	147	2,608	33.50%	n/a
India (IN)	1,791	182	5	119	–	–	162	5	–	167	2.14%	n/a
Luxembourg (LU)	1,374	1,272	104	64	–	–	152	10	–	162	2.08%	n/a
Netherlands (NL)	722	2,382	124	75	–	–	122	19	–	141	1.81%	n/a
Germany (DE)	431	1,561	83	189	–	–	95	17	–	112	1.44%	n/a
Canada (CA)	99	1,727	96	42	–	11	84	12	–	96	1.23%	n/a
Jersey (JE)	1,041	553	2	30	–	–	84	4	–	88	1.13%	n/a
Total (countries with own funds requirements weights 1% or above)	15,545	52,512	3,725	1,716	–	10,600	2,935	293	147	3,375	43.33%	
Total (rest of the world less than 1% requirement)	6,220	10,491	638	1,684	–	105	723	112	3	838	10.79%	n/a
Total	84,458	108,770	5,681	4,296	–	23,185	7,032	480	275	7,786	100%	

Amount of institution-specific countercyclical capital buffer

Total risk weighted assets	£158,393m
Institution specific countercyclical buffer rate	0.46%
Institution specific countercyclical buffer requirement	680

Appendix D – Disclosure on asset encumbrance

Asset encumbrance arises from collateral pledged against secured funding and other collateralised obligations. Barclays Group funds a portion of trading portfolio assets and other securities via repurchase agreements and other similar borrowing, and pledges a portion of loans and advances as collateral in securitisation, covered bond and other similar secured structures. Barclays Group monitors the mix of secured and unsecured funding sources and seeks to efficiently utilise available collateral to raise secured funding and meet other collateral requirements.

Encumbered assets have been defined consistently with the Barclays Group's reporting requirements under Article 100 of the CRR. Securities and commodities 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. This includes external repurchase or other similar agreements with market counterparties.

Excluding assets positioned at central banks, as at 31 December 2019, £175.7bn (December 2018: £165.9bn) of the Barclays Group's assets were encumbered, primarily due to firm financing of trading portfolio assets, posting of cash collateral, funding secured against loans and advances and other assets at fair value.

Assets may also be encumbered under secured funding arrangements with central banks. In advance of such encumbrance, assets are often positioned with central banks to facilitate efficient future draw down. £66.6bn (December 2018: £78.6bn) of on-balance sheet assets were positioned at the central banks, consisting of encumbered assets and collateral available for use in secured financing transactions.

£382.0bn (December 2018: £350.6bn) of on and off balance sheet assets not positioned at the central bank were identified as readily available for use in secured financing transactions. Additionally, they include cash and securities held in the Barclays Group liquidity pool as well as unencumbered assets which provide a source of contingent liquidity. While these additional assets are not relied upon in the Barclays Group's liquidity pool, a portion of these assets may be monetised to generate liquidity through use as collateral for secured funding or through outright sale. Loans and advances to customers are only classified as readily available if they are already in a form, such that, they can be used to raise funding without further management actions. This includes excess collateral already in secured funding vehicles.

£215.4bn (December 2018: £216.3bn) of assets not positioned at the central bank were identified as available as collateral. These assets are not subject to any restrictions on their ability to secure funding, to be offered as collateral, or to be sold to reduce potential future funding requirements, but are not immediately available in the normal course of business in their current form. They primarily consist of loans and advances which would be suitable for use in secured funding structures but are conservatively classified as not readily available because they are not in a transferable form.

Not available as collateral consists of assets that cannot be pledged or used as security for funding due to restrictions that prevent their pledge or use as security for funding in the normal course of business.

Derivatives and reverse repos are shown separately as these on-balance sheet assets cannot be pledged. However, these assets can give rise to the receipt of non-cash assets which are held off-balance sheet, and can be used to raise secured funding or meet additional funding requirements.

In addition, £558.7bn (December 2018: £529.0bn) of the total £656.6bn (December 2018: £598.3bn) securities accepted as collateral, and held off-balance sheet, were on-pledged, the significant majority of which related to matched-book activity where reverse repurchase agreements are matched by repurchase agreements entered into to facilitate client activity. The remainder relates primarily to reverse repurchase agreements used to settle trading portfolio liabilities as well as collateral posted against derivatives margin requirements.

APPENDICES

Appendix D – Disclosure on asset encumbrance

Asset encumbrance	Assets encumbered as a result of transactions with counterparties other than central banks					Other assets (comprising assets encumbered at central banks and unencumbered assets)					
	Assets £bn	As a result of covered bonds £bn	As a result of securitis- ations £bn	Other £bn	Total £bn	Assets positioned at the central banks ^a £bn	Assets not positioned at central banks				Total £bn
							Readily available assets £bn	Available as collateral £bn	Not available as collateral £bn	Derivatives and Reverse repos £bn	
On-balance sheet											
As at 31 December 2019											
Cash and balances at central banks	150.2	-	-	-	-	-	150.2	-	-	-	150.2
Cash collateral	67.2	-	-	64.5	64.5	-	2.7	-	-	-	2.7
Settlement balances	16.1	-	-	-	-	-	-	-	16.1	-	16.1
Loans and advances at amortised cost	333.4	9.5	7.0	5.7	22.2	66.6	34.7	208.3	1.6	-	311.2
Reverse repurchase agreements and other similar secured lending	3.4	-	-	-	-	-	-	-	-	3.4	3.4
Trading portfolio assets	119.2	-	-	69.6	69.6	-	49.6	-	-	-	49.6
Financial assets at fair value through the income statement	131.8	-	-	10.1	10.1	-	3.4	6.5	-	111.8	121.7
Derivative financial instruments	229.2	-	-	-	-	-	-	-	-	229.2	229.2
Financial assets at fair value through other comprehensive income	65.9	-	-	9.3	9.3	-	56.0	0.6	-	-	56.6
Other assets	22.7	-	-	-	-	-	-	-	22.7	-	22.7
Total on-balance sheet	1,139.1	9.5	7.0	159.2	175.7	66.6	296.6	215.4	40.4	344.4	963.4
Off-balance sheet											
Fair value of securities accepted as collateral						Collateral received £bn	Collateral received of which on-pledged £bn	Readily available assets £bn	Available as collateral £bn	Not available as collateral £bn	
						656.6	558.7	85.4	-	12.5	
Total unencumbered collateral						-	-	382.0	215.4	52.9	

Note:

a Includes both encumbered and unencumbered assets. Assets within this category that have been encumbered are disclosed as assets pledged in Note 38 to the financial statements of the Barclays Group Annual Report 2019.

The reported values represent the median of the values reported to the regulator via supervisory returns over the period 31 December 2018 to 31 December 2019. The Annual Report disclosure is reported as at year end. There is a difference due to the differences in consolidation between the Annual Report (IFRS consolidation) and the Pillar 3 (regulatory consolidation).

APPENDICES

Appendix D – Disclosure on asset encumbrance

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	193.5	–	997.8	–
030	Equity instruments	30.8	30.8	29.6	29.6
040	Debt securities	64.3	64.3	88.1	88.1
120	Other assets	–	–	250.9	–

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	544.6	85.1
150	Equity instruments	87.4	18.2
160	Debt securities	455.8	61.6
230	Other collateral received	–	–
240	Own debt securities issued other than own covered bonds or ABSs	–	1.5

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	245.8	514.1

The Barclays Group's median asset encumbrance for 2019 was £193.5bn (2018: £193.0bn), 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 Barclays 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 – Barclays Group

Barclays PLC remuneration

The following 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 (December 2018) and the EBA Guidelines on sound remuneration policies.

The Remuneration Report in the Barclays PLC 2019 Annual Report provides an overview of the Executive Directors' 2019 performance and pay outcomes, as well as all employees (including material risk takers ('MRTs')), Executive Directors and Non-Executive Directors remuneration policies.

Remuneration Governance

The Barclays PLC Board Remuneration Committee (the 'Committee') sets the over-arching principles and parameters of the remuneration policy across the Barclays Group and exercises oversight over remuneration issues. The composition of the Committee, details of the number of meetings held during the year, and the role of relevant stakeholders and external consultants in relation to the remuneration policy are all included in the Remuneration Report.

Performance and remuneration

Barclays' remuneration philosophy (set out in the Remuneration Report) links remuneration to achieving sustained high performance and creating long-term value. Our remuneration philosophy applies to all employees (including those individuals identified as MRTs) of Barclays PLC globally and aims to reinforce our belief that effective performance management is critical to enabling the delivery of our business strategy in line with our Values. Employees who adhere to Barclays' Values and contribute to Barclays' success are rewarded accordingly.

This is achieved by basing performance assessment on clear standards of delivery and behaviour, which starts with employees aligning their objectives ('what' they will deliver) to business and team goals in order to support the delivery of the business strategy and good client/customer outcomes. Behavioural expectations ('how' people will achieve their objectives) are set in the context of our Values.

Performance is assessed against both financial and non-financial criteria. Other factors are also taken into consideration within the overall performance assessment, including core job responsibilities, behaviours towards risk and control, colleague and stakeholder feedback as well as input from the Risk and Compliance functions, where appropriate.

Through our approach to performance, the equal importance of both 'what' an individual has delivered as well as 'how' the individual has achieved this is emphasised, encouraging balanced consideration of each dimension. Both of these elements are assessed and rated independently of each other. There is no requirement to have an overall rating. This allows for more robust and reflective conversations between managers and team members on the individual components of performance.

Risk adjustment

Another key feature of our remuneration philosophy is the alignment of remuneration with our risk appetite and with the conduct expectations of Barclays, our regulators and other stakeholders. The Committee takes risk and conduct events very seriously and ensures that there are appropriate adjustments to individual remuneration and, where necessary, the incentive pool.

The Remuneration Review Panel (the 'Panel'), which reports to the Committee, supports the Committee in this process. The Panel is chaired by the Group HR Director and includes the Group Heads of Risk, Compliance, Legal and Internal Audit as well as the CEO of Barclays Bank UK PLC and the President of Barclays Bank PLC. It applies our policies and processes for assessing compensation adjustments for risk and conduct events.

We have robust processes for considering risk and conduct as part of individual performance management processes with outcomes reflected in individual remuneration decisions. Line managers have primary accountability for ensuring that risk and conduct issues are considered when assessing performance and making remuneration decisions. In addition, there is a secondary review by the control functions for individuals involved in significant failures of risk management, conduct issues, regulatory actions or other major incidents which impact either the Group or business to ensure these issues are also considered. When considering individual responsibility, a variety of factors are taken into account such as whether an individual was directly responsible or whether the individual, by virtue of seniority, could be deemed indirectly responsible, including staff who drive the Group's culture and set its strategy.

Actions which may be taken where risk management and conduct falls below required standards include:

Adjustment	Current year annual bonuses may be adjusted downwards where individuals are found to be involved (either directly or indirectly) in a risk or misconduct event.
Malus	Deferred unvested bonuses from prior years are subject to malus provisions which enable the Committee to reduce the vesting level of deferred bonuses (including to nil) at its discretion. Events which may lead the Committee to do this include, but are not limited to, employee misconduct or a material failure of risk management.
Clawback	Clawback applies to any variable remuneration awarded to a MRT on or after 1 January 2015 in respect of years for which they are a MRT. Barclays may apply clawback if, at any time during the seven-year period from the date on which variable remuneration is awarded to a MRT: <ul style="list-style-type: none"> (i) there is reasonable evidence of employee misbehaviour or material error, and/or (ii) the firm or the business unit suffers a material failure of risk management, in each case taking account of the individual's proximity to and responsibility for that incident. Clawback may be extended to 10 years for PRA Senior Managers where there are outstanding internal or regulatory investigations at the end of the seven-year clawback period.

Appendix E – Disclosures on remuneration – Barclays Group

In addition to reductions to individuals' bonuses, the Committee considers and makes collective adjustments to the incentive pool for specific risk and conduct events. The Committee also adjusts the incentive pool to take account of an assessment of a wide range of future risks including conduct, non-financial factors that can support the delivery of a strong risk management, control and conduct culture, and other factors including reputation, impact on customers, markets and other stakeholders. The Committee is supported in its consideration of this adjustment by the Barclays PLC Board Risk Committee.

Remuneration structure

Employees receive salary, pension and other benefits and are eligible to be considered for an annual bonus. Some MRTs also receive Role Based Pay ('RBP'). Remuneration of all MRTs is subject to the 2:1 maximum ratio of variable to fixed remuneration. Executive Directors participate in the Barclays' LTIP and receive part of their Fixed Pay in Barclays PLC shares (they do not receive RBP).

The remuneration of employees engaged in control functions is determined independently from the business they support and within the parameters of the incentive pool allocated to them by the Committee. Remuneration for control function employees is less weighted towards variable remuneration compared to front-office employees, with the value of variable remuneration typically limited to one times fixed remuneration.

Fixed remuneration

Salary	Salaries reflect individuals' skills and experience and are reviewed annually. They are increased where justified by role change, increased responsibility or a change in the appropriate market rate. Salaries may also be increased in line with local statutory requirements and in line with union and works council commitments.
Role Based Pay	Some MRTs receive a class of fixed pay called RBP to recognise the seniority, scale and complexity of their role. They are adjusted where justified by a role or responsibility change or a change in the appropriate market rate.
Pension and benefits	The provision of a competitive package of benefits is important to attracting and retaining the talented staff needed to deliver Barclays' strategy. Employees have access to a range of country-specific company-funded benefits, including pension schemes, healthcare, life assurance and Barclays' share plans, as well as other voluntary employee-funded benefits. The cost of providing these benefits is defined and controlled.

Variable remuneration

Annual bonus	<p>Annual bonuses incentivise and reward the achievement of Group, business and individual objectives, and reward employees for demonstrating individual behaviours in line with Barclays' Values.</p> <p>The ability to recognise performance through variable remuneration enables the Group to control its cost base flexibly and to react to events and market circumstances. Bonuses remain a key feature of remuneration practice in the highly competitive and mobile market for talent in the financial services sector. The Committee is careful to control the proportion of variable to fixed remuneration paid to individuals and also to ensure an appropriate amount is deferred to future years.</p> <p>The typical deferral structures are:</p> <table border="1"> <thead> <tr> <th colspan="2">For MRTs:</th> <th colspan="2">For de minimis MRTs/non-MRTs</th> </tr> <tr> <th>Incentive award</th> <th>Amount deferred</th> <th>Incentive award</th> <th>Amount deferred</th> </tr> </thead> <tbody> <tr> <td>< £500,000</td> <td>40% of total award</td> <td>Up to £65,000</td> <td>0%</td> </tr> <tr> <td>£500,000 to £1,000,000</td> <td>60% of total award</td> <td>> £65,000</td> <td>Graduated level of deferral</td> </tr> <tr> <td>≥ £1,000,000</td> <td>60% up to £1,000,000 100% above £1,000,000</td> <td></td> <td></td> </tr> </tbody> </table>	For MRTs:		For de minimis MRTs/non-MRTs		Incentive award	Amount deferred	Incentive award	Amount deferred	< £500,000	40% of total award	Up to £65,000	0%	£500,000 to £1,000,000	60% of total award	> £65,000	Graduated level of deferral	≥ £1,000,000	60% up to £1,000,000 100% above £1,000,000		
For MRTs:		For de minimis MRTs/non-MRTs																			
Incentive award	Amount deferred	Incentive award	Amount deferred																		
< £500,000	40% of total award	Up to £65,000	0%																		
£500,000 to £1,000,000	60% of total award	> £65,000	Graduated level of deferral																		
≥ £1,000,000	60% up to £1,000,000 100% above £1,000,000																				
	<p>Deferred bonuses are generally delivered in equal portions as deferred cash and deferred shares (save for Executive Directors for whom they are delivered 100% as deferred shares) subject to the rules of the deferred cash and share plans (as amended from time to time) and continued service. Deferred bonuses are subject to either a 3, 5 or 7-year deferral period in line with regulatory requirements.</p> <p>Where dividend equivalents cannot be delivered on deferred bonus shares, the number of deferred bonus shares awarded will be calculated using a share price discounted to reflect the absence of dividend equivalents during the vesting period.</p>																				
Share plans	Alignment of MRTs with shareholders is achieved through deferral of incentive pay. The Committee also encourages additional shareholding through the all-employee share plans.																				

APPENDICES

Appendix E – Disclosures on remuneration – Barclays Group

Total Remuneration

Total Remuneration for the financial year

	All Employees
Number of individuals	86,931
Fixed remuneration (£m)	5,313
Variable remuneration (£m)	1,490
Total remuneration (£m)	6,803

MRTs

MRTs are members of the Barclays PLC Board, the Barclays Bank UK PLC Board, the Barclays Bank PLC Board, the Barclays Bank Ireland PLC Board and Barclays' Group employees whose professional activities could have a material impact on the Group's risk profile. A total of 1,704 individuals were MRTs in 2019 (2018: 1,590). 'Senior management', as referred to in the tables below, 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.

The Executive Directors are required to hold Barclays shares worth, as a minimum, two times Total fixed pay (Fixed Pay plus pension) and to maintain a holding of shares equal to 100% Total fixed pay for two years post-termination. The shareholding requirement for other Group Executive Committee members is 200% of salary. Executive Directors and Group Executive Committee members are given five years from the date of their appointment to meet the shareholding requirement. Shares that count towards the requirement are beneficially owned shares including any vested share awards subject to holding periods (including vested LTIPs). Shares from unvested deferred share bonuses and unvested LTIPs do not count towards the requirement. The Chairman and Non-Executive Directors have a requirement to use a portion of their annual fees (£100,000 for the Chairman, £30,000 for Non-Executive Directors) to purchase shares.

Barclays' major business areas are Barclays UK (which encompasses Personal Banking, Barclaycard Consumer UK and Business Banking in the UK) and Barclays International (which encompasses Corporate and Investment Banking and Consumer, Cards and Payments). 'Barclays Other' includes internal control functions and corporate functions.

The following tables set out remuneration disclosures for individuals identified as MRTs for Barclays PLC. Remuneration information for individuals who are identified as MRTs at Barclays Bank PLC, Barclays Bank UK PLC and Barclays Bank Ireland PLC are included, where relevant, in those entities' disclosures.

Remuneration for the financial year

	Senior management ^a	Other MRTs		
		Barclays International	Barclays UK	Barclays Other
Fixed remuneration^b				
Number of individuals	29	1,038	55	582
Total fixed remuneration (£m)	39	536	17	183
Fixed cash remuneration (£m) ^c	27	531	17	183
Fixed remuneration in shares (£m)	12	5	–	–
of which subject to holding period (£m)	12	5	–	–
Variable remuneration^b				
Number of individuals	13	865	43	503
Total variable remuneration (£m)	30	482	11	107
Total cash bonus (£m)	11	243	6	60
of which deferred (£m)	9	140	3	24
Total share bonus (£m)	13	239	5	47
of which deferred or subject to holding period (£m)	13	239	5	47
Long-term incentive award (£m) ^d	6	–	–	–
Total remuneration (£m)	69	1,018	28	290

Notes

- a As senior management is 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 remuneration takes the form of cash and/or shares and pensions and benefits in line with policy. Variable remuneration takes the form of cash and/or shares and 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.

APPENDICES

Appendix E – Disclosures on remuneration – Barclays Group

Deferred remuneration – Senior management

All figures in £m	Total	Cash	Shares
Balance as at 1 January 2019	68	22	46
Awarded in year	52	14	38
Adjusted through	–	–	–
ex post explicit adjustments ^a	(1)	–	(1)
ex post implicit adjustments ^b	17	–	17
Forfeited	–	–	–
Paid in year	(26)	(4)	(22)
Balance as at 31 December 2019^c	110	32	78
of which vested	16	–	16
of which unvested	94	32	62

Deferred Remuneration – Other MRTs

All figures in £m	Barclays International		
	Total	Cash	Shares
Balance as at 1 January 2019	588	312	276
Awarded in year	500	183	317
Adjusted through	–	–	–
ex post explicit adjustments ^a	–	–	–
ex post implicit adjustments ^b	86	–	86
Forfeited	(31)	(17)	(14)
Paid in year	(347)	(152)	(195)
Balance as at 31 December 2019^c	796	326	470
of which vested	92	–	92
of which unvested	704	326	378

Deferred Remuneration – Other MRTs

All figures in £m	Barclays UK		
	Total	Cash	Shares
Balance as at 1 January 2019	8	4	4
Awarded in year	8	3	5
Adjusted through	–	–	–
ex post explicit adjustments ^a	–	–	–
ex post implicit adjustments ^b	1	–	1
Forfeited	–	–	–
Paid in year	(5)	(2)	(3)
Balance as at 31 December 2019^c	12	5	7
of which vested	1	–	1
of which unvested	11	5	6

Deferred Remuneration – Other MRTs

All figures in £m	Barclays Other		
	Total	Cash	Shares
Balance as at 1 January 2019	83	41	42
Awarded in year	82	27	55
Adjusted through	–	–	–
ex post explicit adjustments ^a	–	–	–
ex post implicit adjustments ^b	14	–	14
Forfeited	(2)	(1)	(1)
Paid in year	(53)	(18)	(35)
Balance as at 31 December 2019^c	124	49	75
of which vested	17	–	17
of which unvested	107	49	58

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.

APPENDICES

Appendix E – Disclosures on remuneration – Barclays Group

Joining and Severance Payments

	Senior management	Other MRTs		
		Barclays International	Barclays UK	Barclays Other
Sign-on awards				
Number of beneficiaries	–	–	–	1
Made during the year (£m)	–	–	–	0.3
Buy-out awards				
Number of beneficiaries	–	24	2	9
Made during the year (£m)	–	26	3	3
Severance awards^a				
Number of beneficiaries	–	21	1	19
Made during the year (£m)	–	3.2	0.2	2.4
of which paid during the year (£m)	–	3.2	0.2	2.4
of which deferred (£m)	–	–	–	–
Highest individual award (£m)	–	0.3	0.2	0.3

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

Remuneration band	2019 Number of MRTs
€1,000,001 to €1,500,000	262
€1,500,001 to €2,000,000	119
€2,000,001 to €2,500,000	58
€2,500,001 to €3,000,000	42
€3,000,001 to €3,500,000	15
€3,500,001 to €4,000,000	12
€4,000,001 to €4,500,000	6
€4,500,001 to €5,000,000	4
€5,000,001 to €6,000,000	7
€6,000,001 to €7,000,000	9
€7,000,001 to €8,000,000	1
€8,000,001 to €9,000,000	1
€9,000,001 to €10,000,000	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.

APPENDICES

Appendix E – Disclosures on remuneration – Barclays Group

Barclays Bank PLC remuneration

The following 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 (December 2018) and the EBA Guidelines on sound remuneration policies.

Remuneration Governance

The composition and mandate of the Barclays Bank PLC ('BBPLC') Board Remuneration Committee and details of the number of meetings held during the year are all included in the 2019 BBPLC Annual Report. No external consultants provide services to the BBPLC Remuneration Committee.

The BBPLC Remuneration Committee has adopted the over-arching principles and parameters of the remuneration policy set by the Barclays PLC Remuneration Committee, as disclosed in the Barclays PLC Pillar 3 disclosure.

Save as set out below, information relating to qualitative disclosures is contained in the Barclays PLC Pillar 3 disclosure set out earlier in this report.

Total Remuneration

Total Remuneration for the financial year

	All Employees
Number of individuals	21,375
Fixed remuneration (£m)	2,794
Variable remuneration (£m)	1,107
Total remuneration (£m)	3,901

MRTs

On 14 December 2017, the Board of Barclays PLC as shareholder of Barclays Bank PLC approved the resolution that Barclays Bank PLC and any of its current and future subsidiaries be authorised to apply a ratio of fixed to variable components of total remuneration of their MRTs that exceeds 1:1, provided the ratio does not exceed 1:2.

MRTs are the members of the Barclays Bank PLC Board and Barclays Bank PLC employees whose professional activities could have a material impact on Barclays Bank PLC's risk profile. A total of 1,270 individuals were MRTs in 2019 (2018: 1,208). 'Senior management', referred to in the tables below, means members of the Barclays Bank PLC Board (Executive Directors and Non-Executive Directors) and members of the Barclays Bank PLC Executive Committee in accordance with Article 3(9) of CRDIV.

Barclays Bank PLC's major business areas are Corporate and Investment Banking ('CIB') and Consumer, Cards and Payments ('CCP'). 'BBPLC Other' includes internal control functions and corporate functions.

The following set of tables set out the remuneration disclosures for individuals identified as MRTs for Barclays Bank PLC.

Remuneration for the financial year

	Senior management ^a	Other MRTs		
		CIB	CCP	BBPLC Other
Fixed remuneration^b				
Number of individuals	34	926	37	273
Total fixed remuneration (£m)	38	492	14	89
Fixed cash remuneration (£m) ^c	30	487	14	89
Fixed remuneration in shares (£m)	8	5	–	–
of which subject to holding period (£m)	8	5	–	–
Variable remuneration^b				
Number of individuals	17	770	33	236
Total variable remuneration (£m)	31	445	13	53
Total cash bonus (£m)	11	224	7	29
of which deferred (£m)	9	130	3	12
Total share bonus (£m)	14	221	6	24
of which deferred or subject to holding period (£m)	14	221	6	24
Long-term incentive award (£m) ^d	6	–	–	–
Total remuneration (£m)	69	937	27	142

Notes

- a As senior management is comprised of members of the Barclays Bank PLC Board and members of the Barclays Bank PLC Executive Committee, it is not appropriate to separate by business area.
- b Fixed remuneration takes the form of cash and/or shares and pensions and benefits in line with policy. Variable remuneration takes the form of cash and/or shares and 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.

APPENDICES

Appendix E – Disclosures on remuneration – Barclays Group

Deferred remuneration – Senior management

All figures in £m	Total	Cash	Shares
Balance as at 1 January 2019	70	25	45
Awarded in year	49	14	35
Adjusted through	–	–	–
ex post explicit adjustments ^a	(1)	–	(1)
ex post implicit adjustments ^b	16	–	16
Forfeited	–	–	–
Paid in year	(26)	(6)	(20)
Balance as at 31 December 2019^c	108	33	75
of which vested	12	–	12
of which unvested	96	33	63

Deferred Remuneration – Other MRTs

All figures in £m	CIB		
	Total	Cash	Shares
Balance as at 1 January 2019	562	299	263
Awarded in year	481	176	305
Adjusted through	–	–	–
ex post explicit adjustments ^a	–	–	–
ex post implicit adjustments ^b	82	–	82
Forfeited	(29)	(16)	(13)
Paid in year	(334)	(147)	(187)
Balance as at 31 December 2019^c	762	312	450
of which vested	89	–	89
of which unvested	673	312	361

Deferred Remuneration – Other MRTs

All figures in £m	CCP		
	Total	Cash	Shares
Balance as at 1 January 2019	13	6	7
Awarded in year	12	4	8
Adjusted through	–	–	–
ex post explicit adjustments ^a	–	–	–
ex post implicit adjustments ^b	2	–	2
Forfeited	(2)	(1)	(1)
Paid in year	(8)	(3)	(5)
Balance as at 31 December 2019^c	17	6	11
of which vested	3	–	3
of which unvested	14	6	8

Deferred Remuneration – Other MRTs

All figures in £m	BBPLC Other		
	Total	Cash	Shares
Balance as at 1 January 2019	45	23	22
Awarded in year	42	14	28
Adjusted through	–	–	–
ex post explicit adjustments ^a	–	–	–
ex post implicit adjustments ^b	7	–	7
Forfeited	–	–	–
Paid in year	(29)	(11)	(18)
Balance as at 31 December 2019^c	65	26	39
of which vested	10	–	10
of which unvested	55	26	29

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.

APPENDICES

Appendix E – Disclosures on remuneration – Barclays Group

Joining and Severance Payments

	Senior management	Other MRTs		
		CIB	CCP	BBPLC Other
Sign-on awards				
Number of beneficiaries	–	–	–	–
Made during the year (£m)	–	–	–	–
Buy-out awards				
Number of beneficiaries	–	22	1	2
Made during the year (£m)	–	25.1	0.4	0.9
Severance awards^a				
Number of beneficiaries	–	20	1	11
Made during the year (£m)	–	3.0	0.3	1.3
of which paid during the year (£m)	–	3.0	0.3	1.3
of which deferred (£m)	–	–	–	–
Highest individual award (£m)	–	0.3	0.3	0.3

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

	2019 Number of MRTs
Remuneration band	
€1,000,001 to €1,500,000	220
€1,500,001 to €2,000,000	107
€2,000,001 to €2,500,000	52
€2,500,001 to €3,000,000	39
€3,000,001 to €3,500,000	15
€3,500,001 to €4,000,000	12
€4,000,001 to €4,500,000	5
€4,500,001 to €5,000,000	3
€5,000,001 to €6,000,000	5
€6,000,001 to €7,000,000	9
€7,000,001 to €8,000,000	1
€8,000,001 to €9,000,000	1
€9,000,001 to €10,000,000	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 – CRD IV reference

CRR ref.	High-level summary	Compliance reference
<i>Scope of disclosure requirements</i>		
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 pages 198 to 201 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.
<i>Non-material, proprietary or confidential information</i>		
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	
<i>Frequency of disclosure</i>		
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)
<i>Means of disclosures</i>		
434 (1)	To include of 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 243 for "Location of Risk Disclosures".
<i>Risk management objectives and policies</i>		
435 (1) (a)	Disclose information on strategies and processes; organisational structure, reporting systems and risk mitigation/hedging.	Risk management strategy: page 148 Credit Risk: page 157 Market Risk: page 178 Operational Risk: page 198 Counterparty Credit Risk: page 175 Other Principal Risks: Treasury and Capital Risk – Capital: page 194 Treasury and Capital Risk – Liquidity: page 192
435 (1) (b)		Conduct Risk: page 205
435 (1) (c)		Reputation Risk: page 207
435 (1) (d)		
435 (1) (e)	Inclusion of a declaration approved by the Board on adequacy of risk management arrangements.	See page 151 of the 2019 Pillar 3 Report. This statement covers all Principal Risks.
435 (1) (f)	Inclusion of a concise risk statement approved by the Board.	See page 153 of the 2019 Pillar 3 Report. This statement covers all Principal Risks.
435 (2)	Information on governance arrangements, including information on Board composition and recruitment, and risk committees.	See page 151 for a description of the risk committees. Pages 47-53 of the Annual Report contains information on Board composition, experience and recruitment.
435 (2) (a)	Number of directorships held by directors.	Please see pages 47-53 of the 2019 Annual Report.
435 (2) (b)	Recruitment policy of Board members, their experience and expertise.	Please see pages 47-53 of the 2019 Annual Report.
435 (2) (c)	Policy on diversity of Board membership and results against targets.	Please see pages 47-53 of the 2019 Annual Report.
435 (2) (d)	Disclosure of whether a dedicated risk committee is in place, and number of meetings in the year.	Please see pages 68-73 of the 2019 Annual Report.
435 (2) (e)	Description of information flow on risk to Board.	Figure on page 150 in the risk management strategy section illustrates the reporting structure to Board committees.

APPENDICES

Appendix F – CRD IV reference

CRR ref.	High-level summary	Compliance reference
<i>Scope of application</i>		
436 (a)	Name of institution	See under “Scope of consolidation” (page 9).
436 (b)	Difference in basis of consolidation for accounting and prudential purposes, naming entities that are:	Page 14/Table 5 Outline of the differences in the scopes of consolidation.
436 (b) (i)	Fully consolidated;	
436 (b) (ii)	Proportionally consolidated;	
436 (b) (iii)	Deducted from own funds;	
436 (b) (iv)	Neither consolidated nor deducted.	
436 (c)	Impediments to transfer of funds between parent and subsidiaries	See page 192.
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 PRA
<i>Own funds</i>		
437 (1)	Requirements regarding capital resources table	Page 18/Table 7: Composition of regulatory capital Standalone document: Summary of terms and conditions of own funds and eligible liabilities
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.
<i>Capital requirements</i>		
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 180-183 of the 2019 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.	Page 52/Table 32: Detailed view of RWAs and Capital requirements 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.	Page 52/Table 32: Detailed view of RWAs and Capital requirements for credit risk.
438 (d) (i)		
438 (d) (ii)		
438 (d) (iii)		
438 (d) (iv)		Barclays shows a nil return for equity investments in 2019
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 127/Table 83: Market risk own funds requirements
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 145/Table 95: 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 80/ Table 49: Corporate exposures subject to the slotting approach
<i>Exposure to counterparty credit risk (CCR)</i>		
439 (a)	Description of process to assign internal capital and credit limits to CCR exposures.	Pages 176-177; 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 176-177
439 (c)	Discussion of management of wrong-way exposures.	Pages 177
439 (d)	Disclosure of collateral to be provided (outflows) in the event of a ratings downgrade.	Appendix pages 190-197
439 (e)	Derivation of net derivative credit exposure.	Page 117/Table 73: Counterparty credit exposure by approach
439 (f)	Exposure values for mark-to-market, original exposure, standardised and internal model methods.	Page 109/Table 67: Impact of netting and collateral held on exposure value
439 (g)	Notional value of credit derivative hedges and current credit exposure by type of exposure.	Page 119/Table 76: Notional value of credit derivative contracts held for hedging purposes.

APPENDICES

Appendix F – CRD IV reference

CRR ref.	High-level summary	Compliance reference
439 (h)	Notional amounts of credit derivative transactions for own credit, intermediation, bought and sold, by product type.	Page 118/Table 75: Notional exposure associated with credit derivative contracts.
439 (i)	Estimate of alpha, if applicable.	The alpha used by Barclays is 1.4.
<i>Capital buffers</i>		
440 (1) (a)	Geographical distribution of relevant credit exposures.	Barclays' countercyclical buffer is currently set at 1.0% for UK exposures. In other jurisdictions where CCyB is being applied, Barclays does not have material relevant exposures. See page 218/Table 102 for geographic distribution of relevant exposures.
440 (1) (b)	Amount of the institution specific countercyclical capital buffer.	
440 (2)	EBA will issue technical implementation standards related to 440 (1)	Barclays will comply with the standards once applicable.
<i>Indicators of global systemic importance</i>		
441 (1)	Disclosure of the indicators of global systemic importance	Discussed on pages 7-9
441 (2)	EBA will issue technical implementation standards related to 441 (1)	Barclays will comply with the standards once applicable.
<i>Credit risk adjustments</i>		
442 (a)	Disclosure of bank's definitions of past due and impaired.	Pages 158-164 provide a complete description of credit quality measures.
442 (b)	Approaches for calculating credit risk adjustments.	Pages 157-174
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 54/Table 33: Geographic analysis of credit exposure class.
442 (e)	Disclosures of pre-CRM EAD by industry and exposure class.	Pages 58/Table 34: Industry analysis of credit exposure
442 (f)	Disclosures of pre-CRM EAD by residual maturity and exposure class.	Pages 62/Table 35: 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 216/Table 100: 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 217/Table 101: 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 100/Table 62: Analysis of movement on impairment and amounts taken directly to profit and loss Page 101/Table 63: 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 100/ Table 62: Analysis of movement on impairment and amounts taken directly to profit and loss
<i>Unencumbered assets</i>		
443	Disclosures on unencumbered assets	See pages 220-222: Disclosures on asset encumbrance
<i>Use of ECAIs</i>		
444 (a)	Names of the ECAIs used in the calculation of Standardised Approach RWAs, and reasons for any changes	Page 70
444 (b)	Exposure classes associated with each ECAI	Page 70
444 (c)	Explanation of the process for translating external ratings into credit quality steps	Page 70
444 (d)	Mapping of external rating to credit quality steps	Page 70/Table 40: Relationship of long-term external credit ratings to credit quality steps under the standardised approach
		Page 70/Table 41: Credit quality steps and risk weights under the standardised approach

Appendix F – CRD IV reference

CRR ref.	High-level summary	Compliance reference
444 (e)	Exposure value pre- and post-credit risk mitigation, by credit quality step.	Pages 71/Table 42: Credit quality step analysis of pre-CRM exposure and capital deductions under the standardised approach Page 73/Table 43: Credit quality step analysis of post-CRM exposure and capital deductions under the standardised approach
<i>Exposure to market risk</i>		
445	Disclosure of position risk, large exposures exceeding limits, FX, settlement and commodities risk.	Page 127/Table 83: Market risk own funds requirements
<i>Operational risk</i>		
446	Disclosure of the scope of approaches used to calculate operational risk, discussion of advanced methodology and external factors considered.	Table 95/page 145
<i>Exposure in equities not included in the trading book</i>		
447 (a)	Differentiation of exposures based on objectives	
447 (b)	Recorded and fair value, and actual prices of exchange traded equity where it differs from fair value.	Page 103/Table 65: Fair value of, and gains and losses on equity investments
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.	
<i>Exposure to interest rate risk on positions not included in the trading book</i>		
448 (a)	Nature of risk and key assumptions in measurement models.	Model assumptions on page 197
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 44/ Table 26: Net interest income sensitivity (AEaR) by business unit Page 45/Table 27: Net interest income sensitivity (AEaR) by currency
<i>Exposure to securitisation positions</i>		
449	Exposure to securitisations positions.	
449 (a)	Objectives in relation to securitisation activity.	Page 188
449 (b)	Nature of other risks in securitised assets, including liquidity.	Page 189
449 (c)	Risks in re-securitisation activity stemming from seniority of underlying securitisations and ultimate underlying assets.	Page 189
449 (d)	The roles played by institutions in the securitisation process.	Page 188
449 (e)	Indication of the extent of involvement in these roles.	Page 188
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.	Page 188 to 189
449 (g)	Description of the institution's policies with respect to hedging and unfunded protection, and identification of material hedge counterparties.	Page 189
449 (h)	Approaches to calculation of RWA for securitisations mapped to types of exposures.	Page 189 "Rating methodologies, ECAIs and RWA calculations"
449 (i)	Types of SSPEs used to securitise third-party exposures, and list of SSPEs.	Page 188 "Sponsoring conduit vehicles"
449 (j)	Summary of accounting policies for securitisations:	Page 190 "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 189
449 (l)	Full description of Internal Assessment Approach.	Page 189
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 134/Table 89: Outstanding amount of exposures securitised – Asset value and impairment charges

Appendix F – CRD IV reference

CRR ref.	High-level summary	Compliance reference
449 (n) (ii)	On balance sheet securitisation retained or purchased, and off-balance sheet exposures;	Page 136/Table 90: Securitisation exposures – by exposure class
449 (n) (iii)	Amount of assets awaiting securitisation;	Page 133/Table 88: 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 130
449 (n) (v)	Deducted or 1250%-weighted securitisation positions;	Page 138
449 (n) (vi)	Amount of exposures securitised and recognised gains or losses on sales.	Page 132/Table 87: 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;	Page 138/Table 91: Securitisation exposures – by capital approach Page 140/Table 92: Re-securitisation exposures – by risk weight band
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 130
449 (p)	Impaired assets and recognised losses related to banking book securitisations, by exposure type	Page 134/Table 89: 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 2019
<i>Remuneration disclosures</i>		
450	Remuneration	Appendix E contains the remuneration awards made to Barclays' Material Risk Takers. See the Directors' remuneration report (DRR) of the 2019 Annual Report for other remuneration disclosures.
<i>Leverage</i>		
451 (1) (a)	Leverage ratio, and breakdown of total exposure measure, including reconciliation to financial statements, and derecognised fiduciary items	Page 32/Table 17: Leverage ratio common disclosure
451 (1) (b)		Page 32/Table 17: Leverage ratio common disclosure
451 (1) (c)		Page 32/Table 17: Leverage ratio common disclosure
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 194, management of capital risk.
451 (1) (e)		
451 (2)	EBA to publish implementation standards for points above.	Barclays follows the implementation standards.
<i>Use of the IRB approach to credit risk</i>		
452 (a)	Permission for use of the IRB approach from authority	Pages 10-11/Tables 1-2
452 (b)	Explanation of:	
452 (b) (i)	Internal rating scales, mapped to external ratings;	Page 75/Table 44: Internal default grade probabilities and mapping to external ratings
452 (b) (ii)	Use of internal ratings for purposes other than capital requirement calculations;	Page 166 “Applications of internal ratings”
452 (b) (iii)	Management and recognition of credit risk mitigation;	Pages 176 to 177
452 (b) (iv)	Controls around ratings systems.	Pages 202 to 204 . “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	Pages 167 to 169. Separate descriptions apply to retail and wholesale classes collectively; hence this is not repeated for each separate class. Pages 170/Table 96: 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 76/Table 45: IRB wholesale obligor grade disclosure for central governments & central banks
452 (e) (ii)	Exposure-weighted average risk weight;	Page 77/Table 46: IRB wholesale obligor grade disclosure for institutions
452 (e) (iii)	Undrawn commitments and average exposure values by asset class.	Page 78/Table 47: IRB wholesale obligor grade disclosure for corporates

Appendix F – CRD IV reference

CRR ref.	High-level summary	Compliance reference
452 (f)	For retail exposure classes, same disclosures as under 452 (e), by risk grade or EL grade.	Page 82/Table 50: IRB retail obligor grade disclosure for SME Page 83/Table 51: IRB retail obligor grade disclosure for secured retail Page 84/Table 52: IRB retail obligor grade disclosure for revolving retail Page 85/Table 53: IRB retail obligor grade disclosure for other retail exposures
452 (g)	Actual specific risk adjustments for the period and explanation of changes.	Page 102/Table 64: 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.	Page 102/Table 64: Analysis of expected loss versus actual losses for IRB exposures Page 172/Table 97: 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 212/Table 99: PD, LGD, RWA and Exposure by country.
452 (j) (ii)		
<i>Use of credit risk mitigation techniques</i>		
453 (a)	Use of on- and off-balance sheet netting	Page 176
453 (b)	How collateral valuation is managed	Pages 176 to 177
453 (c)	Description of types of collateral used by Barclays	Page 176
453 (d)	Types of guarantor and credit derivative counterparty, and their creditworthiness	Page 177
453 (e)	Disclosure of market or credit risk concentrations within risk mitigation exposures	Page 176-177
453 (f)	For exposures under either the Standardised or Foundation IRB approach, disclose the exposure value covered by eligible collateral	Page 66/Table 36: Exposure covered by guarantees and credit derivatives
453 (g)	Exposures covered by guarantees or credit derivatives	Page 66/Table 36: Exposure covered by guarantees and credit derivatives
<i>Use of the Advanced Measurement Approaches to operational risk</i>		
454	Description of the use of insurance or other risk transfer mechanisms to mitigate operational risk	Pages 176 to 177
<i>Use of internal market risk models</i>		
455 (a) (i)	Disclosure of the characteristics of the market risk models.	Page 183/Table 98: Market risk models selected features
455 (a) (ii)	Disclosure of the methodology and description of all-price risk measure and incremental risk charge.	Pages 182 to 183
455 (a) (iii)	Descriptions of stress tests applied to the portfolios.	Page 181
455 (a) (iv)	Methodology for back-testing and validating the models.	Page 184
455 (b)	Scope of permission for use of the models.	Page 11/Table 2: Summary of the scope of application of regulatory methodologies for CVA, market and operational risk
455 (c)	Policies and processes to determine which exposures are to be included in the trading book, and to comply with prudential valuation requirements.	Page 181 to 182
455 (d)	High/Low/Mean values over the year of VaR, sVaR, all-price risk measure and incremental risk charge.	Page 125/Table 81: Analysis of regulatory VaR, sVaR, IRC and All Price Risk Measure Page 124/Table 80: The daily average, maximum and minimum values of management VaR
455 (d) (i)		
455 (d) (ii)		
455 (d) (iii)		
455 (e)	The elements of the own fund calculation.	Page 127/Table 83: market risk own funds requirements
455 (f)	Weighted average liquidity horizons of portfolios covered by models.	Disclosed in model discussions on page 183.
455 (g)	Comparison of end-of-day VaR measures compared with one-day changes in portfolio's value.	Page 185
<i>Reference to CRR amended by CRR II applicable as at the reporting date</i>		
<i>Disclosure of own funds and eligible liabilities</i>		
437a		

Appendix F – CRD IV reference

CRR ref.	High-level summary	Compliance reference
437a (a)	Composition of own funds and eligible liabilities ranking in the creditor hierarchy main features	Page 36/Table 20: TLAC composition for G-SIBs Standalone document: Summary of terms and conditions of own funds and eligible liabilities Pages 37-39/Table 21-23: Creditor ranking at legal entity level
437a (b)		
437a (c)		
437a (d)		
<i>Disclosure of key metrics</i>		
447 (h)	Disclosure of key metrics for own funds and eligible liabilities	Page 35/Table 19: Key metrics – TLAC requirements

Appendix G – EBA and BCBS reference

This table shows new tables included in the 2016 Pillar 3 report, adopted under guidance received from the EBA.

EBA Pillar 3 compliance reference

Table no	Page	High-level summary	Compliance reference
Table 3	12	Present an outline of the difference in the basis of consolidation for accounting and prudential purposes	Template EU 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
Table 4	13	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
Table 5	14	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)
Table 6	17	Provide an overview of 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
Table 7	18	Shows the components of regulatory capital	Template CC1 Provides details of the composition of regulatory capital and includes information on the linkages with the reconciliation disclosures in Template CC2 and additional rows for the Committee's TLAC holdings standard
Table 8	21	reconciliation between the scope of a bank's accounting consolidation and the scope of its regulatory consolidation	Template CC2 Provides a reconciliation between the scope of a bank's accounting consolidation and the scope of its regulatory consolidation and includes the linkage with composition of regulatory capital in Template CC1
Table 9	25	key ratios with and without transitional arrangements for IFRS9	Template EU IFRS 9-FL: Comparison of institutions' own funds and capital and leverage ratios with and without the application of transitional arrangements for IFRS 9 or analogous ECLs
Table 11	27	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
Table 13	28	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).
Table 14	29	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.
Table 15	29	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 RWAs (as specified in Article 92(4)(b)) determined under an Part Three, Title IV, Chapter 5 of the CRR (IMA).
Table 16	31	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)
Table 17	32	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).

Appendix G – EBA and BCBS reference

EBA Pillar 3 compliance reference continued

Table no	Page	High-level summary	Compliance reference
Table 18	34	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)
Table 19	38	Provide an overview of key metrics for own funds and eligible liabilities	Template KM2: Key metrics Present an overview of key metrics for own funds and eligible liabilities as per the BCBS Pillar 3 disclosure requirements – consolidated and enhanced framework
Table 20	36	Provides details of the TLAC positions of G-SIB resolution groups	Template TLAC 1 Provides the composition of G-SIB's own funds and eligible liabilities and ratios as per the BCBS Pillar 3 disclosure requirements – consolidated and enhanced framework
Table 21	37	Provides details of nominal values of capital and liabilities and the position in the creditor hierarchy for the resolution entity	Template TLAC 3 Provide creditors with information regarding their ranking in the liabilities structure of each G-SIB resolution entity as per the BCBS Pillar 3 disclosure requirements – consolidated and enhanced framework
Table 22-23	38-39	Provides details of nominal values of capital and liabilities and the position in the creditor hierarchy for the material subgroup entities	Template TLAC 2 Provide creditors with information regarding their ranking in the liabilities structure of a material subgroup entity (ie an entity that is part of a material subgroup) which has issued internal TLAC to a G-SIB resolution entity, as per the BCBS Pillar 3 disclosure requirements – consolidated and enhanced framework
Table 24	40	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)
Table 29	47	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
Table 31	51	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)
Table 33	54	Geographical breakdown of exposures	Template EU CRB-C Purpose: Provide a breakdown of exposures by geographical areas and Provide a breakdown of exposures by geographical areas and exposure classes in accordance with Article 442(d)
Table 34	58	Concentration of exposures by industry or counterparty types	Template EU CRB-D Provide a breakdown of exposures by industry or counterparty types and exposure classes in accordance with Article 442(e)
Table 35	62	Maturity of exposures	Template EU CRB-E Provide a breakdown of net exposures by residual maturity and exposure classes in accordance with Article 442(f)
Table 37	67	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),

Appendix G – EBA and BCBS reference

EBA Pillar 3 compliance reference continued

Table no	Page	High-level summary	Compliance reference
Table 38	68	Credit risk exposure 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.
Table 39	69	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)
Table 42	71	Analysis of credit risk exposures by asset classes and risk weight before the application of CCF and CRM under the standardised approach	Template EU CR5A 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
Table 43	73	Analysis of credit risk exposures by asset classes and risk weight after the application of CCF and CRM under the standardised approach	Template EU CR5B 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
Table 45-53	76-81	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
Table 54	86	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)
Table 55	90	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-balance sheet exposures by industry in accordance with Article 442(g)
Table 56	92	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)
Table 57	94	Analysis of credit quality of forborne exposures	Provide an overview of the quality of forborne exposures as per Commission Implementing Regulation (EU) No 680/2014
Table 58	95	Analysis of credit quality of performing and non-performing exposures by past due days	Provide an overview of credit quality of non-performing exposures, as per Commission Implementing Regulation (EU) No 680/2014
Table 59	97	Analysis of Performing and non-performing exposures and related provisions	Provide an overview of the credit quality of non-performing exposures and related impairments, provisions and valuation adjustments by portfolio and exposure class per EBA guideline EBA/GL/2018/10
Table 60	99	Analysis of Collateral obtained by taking possession and execution processes	Provide an overview of foreclosed assets obtained from non-performing exposures per EBA guideline EBA/GL/2018/10
Table 61	100	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

Appendix G – EBA and BCBS reference

EBA Pillar 3 compliance reference continued

Table no	Page	High-level summary	Compliance reference
Table 62	100	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
Table 67	109	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
Table 68	110	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.
Table 69-71	112-114	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
Table 72	115	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)
Table 73	117	This table shows the impact of netting and collateral held on exposure values	Template EU CCR5A 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)
Table 74	117	This table shows the composition of collateral for exposures to CCR	Template EU CCR5B 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.
Table 76	119	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)
Table 77	120	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
Table 78	121	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.
NA	184	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
Table 81	125	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).
Table 83	127	Market risk Own funds requirements	Template MR1-A Capital requirements and RWAs (as specified in Article 92(4) (b) in the CRR)

APPENDICES

Appendix G – EBA and BCBS reference

EBA Pillar 3 compliance reference continued

Table no	Page	High-level summary	Compliance reference
Table 84	128	Market risk under standardised approach	Template MR1-B Capital requirements and RWAs (as specified in Article 92(4) (b) in the CRR).
Table 85	128	Market risk under internal models approach	Template MR2-A Capital requirements and RWAs (as specified in Article 92(4) (b) of the CRR).
Table 97	172	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.
Table 102	218	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

Location of risk disclosures

Barclays' Risk disclosures are provided in the Annual Report and in the Barclays PLC Pillar 3 Report.

		Annual Report	Pillar 3 Report
Risk management strategy			
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 the Barclays PLC Pillar 3 Report 2019 or at barclays.com	<ul style="list-style-type: none"> ■ Enterprise Risk Management Framework (ERMF) 127 ■ Segregation of duties – the “Three Lines of Defence” model 127 ■ Principal risks 127 ■ Risk appetite for the principal risks 127 ■ Risk committees 128 <ul style="list-style-type: none"> – Frameworks, policies and standards n/a – Assurance n/a – Effectiveness of risk management arrangements n/a – Learning from our mistakes n/a ■ Barclays' risk culture 128 <ul style="list-style-type: none"> – Group-wide risk management tools n/a – Risk management in the setting of strategy n/a 	149	149
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.	<ul style="list-style-type: none"> ■ Material existing and emerging risks potentially impacting more than one principal risk 129 ■ Credit risk 133 ■ Market risk 133 ■ Treasury and capital risk 134 ■ Operational risk 134 ■ Model risk 136 ■ Conduct risk 136 ■ Reputation risk 137 ■ Legal risk and legal, competition and regulatory matters 137 	n/a	n/a
Climate change risk management			
Overview of Barclays' approach to managing climate change risk.	<ul style="list-style-type: none"> ■ Overview, organisation and structure 138 ■ Risk management policy 138 	n/a	n/a
Principal risk management			
Barclays' approach to risk management for each principal risk with focus on organisation and structure and roles and responsibilities.	<ul style="list-style-type: none"> ■ Credit risk management 139 <ul style="list-style-type: none"> – Management of credit risk mitigation techniques and counterparty credit risk n/a ■ Market risk management 141 <ul style="list-style-type: none"> – Management of securitisation exposures n/a ■ Treasury and capital risk management 142 ■ Operational risk management 143 ■ Model risk management 144 ■ Conduct risk management 145 ■ Reputation risk management 145 ■ Legal risk management 146 	157	175
Risk performance			
Credit risk: The risk of loss to the Group from the failure of clients, customers or counterparties, including sovereigns, to fully honour their obligations to the Group, including the whole and timely payment of principal, interest, collateral and other receivables.	<ul style="list-style-type: none"> ■ Credit risk overview and summary of performance 148 ■ Maximum exposure and effects of netting, collateral and risk transfer 148 ■ Expected Credit Losses 151 ■ Movements in gross exposure and impairment allowance including provisions for loan commitments and financial guarantees 154 ■ Management adjustments to models for impairment 157 ■ Measurement uncertainty and sensitivity analysis 158 ■ Analysis of the concentration of credit risk 163 ■ The Group's approach to management and representation of credit quality 165 ■ Analysis of specific portfolios and asset types 169 ■ Forbearance 172 ■ Analysis of debt securities 174 ■ Analysis of derivatives 175 	n/a	n/a

Location of risk disclosures

		Annual Report	Pillar 3 Report
Risk performance continued			
Market risk: The risk of a loss arising from potential adverse changes in the value of the Group'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.	<ul style="list-style-type: none"> ■ Market risk overview and summary of performance <ul style="list-style-type: none"> – Balance sheet view of trading and banking books ■ Review of management measures <ul style="list-style-type: none"> – Review of regulatory measures 	176 n/a 176 n/a	122 123 124 125
Treasury and capital risk – Liquidity: The risk that the Group 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.	<ul style="list-style-type: none"> ■ Liquidity risk overview and summary of performance ■ Liquidity risk stress testing ■ Liquidity pool ■ Funding structure and funding relationships ■ Credit ratings ■ Contractual maturity of financial assets and liabilities <ul style="list-style-type: none"> – Asset encumbrance 	180 180 182 183 185 186 n/a	n/a n/a n/a n/a n/a n/a 220
Treasury and capital risk – Capital: The risk that the Group 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 also includes the risk from the Group's pension plans.	<ul style="list-style-type: none"> ■ Capital risk overview and summary of performance ■ Regulatory minimum capital and leverage requirements ■ Analysis of capital resources ■ Analysis of risk weighted assets ■ Analysis of leverage ratio and exposures ■ Minimum requirement for own funds and eligible liabilities ■ Foreign exchange risk ■ Pension risk review 	190 190 191 193 194 195 196 196	n/a 8 18 26 31 n/a 42 43
Treasury and capital risk – Interest rate risk in the banking book: The risk that the Group is exposed to capital or income volatility because of a mismatch between the interest rate exposures of its (non-traded) assets and liabilities.	<ul style="list-style-type: none"> ■ Interest rate risk in the banking book overview and summary of performance ■ Net interest income sensitivity ■ Analysis of equity sensitivity ■ Volatility of the fair value through other comprehensive income (FVOCI) portfolio in the liquidity pool 	198 198 199 199	44 44 45 46
Operational risk: The risk of loss to the Group 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.	<ul style="list-style-type: none"> ■ Operational risk overview and summary of performance ■ Operational risk profile 	200 200	144 146
Model risk: The risk of the potential adverse consequences from financial assessments or decisions based on incorrect or misused model outputs and reports.	<ul style="list-style-type: none"> ■ Model risk overview and summary of performance 	203	n/a
Conduct risk: The risk of detriment to customers, clients, market integrity, effective competition or Barclays from the inappropriate supply of financial services, including instances of wilful or negligent misconduct.	<ul style="list-style-type: none"> ■ Conduct risk overview and summary of performance 	203	n/a
Reputation risk: The risk that an action, transaction, investment, event, decision, or business relationship will reduce trust in the Group's integrity and/or competence.	<ul style="list-style-type: none"> ■ Reputation risk overview and summary of performance 	203	n/a
Legal risk: The risk of loss or imposition of penalties, damages or fines from the failure of the Group to meet its legal obligations including regulatory or contractual requirements.	<ul style="list-style-type: none"> ■ Legal risk overview and summary of performance 	203	n/a
Supervision and regulation			
The Group's operations, including its overseas offices, subsidiaries and associates, are subject to a significant body of rules and regulations.	<ul style="list-style-type: none"> ■ Supervision of the Group ■ Global regulatory developments ■ Financial regulatory framework 	204 204 205	n/a n/a n/a
Pillar 3 Report			
Contains extensive information on risk as well as capital management.	<ul style="list-style-type: none"> – Summary of risk and capital profile – Notes on basis of preparation – Scope of application of Basel rules 	n/a n/a n/a	3 5 6
Risk and capital position review: Provides a detailed breakdown of Barclays' regulatory capital adequacy and how this relates to Barclays' risk management.	<ul style="list-style-type: none"> – Group capital resources, requirements, leverage and liquidity – Analysis of credit risk – Analysis of counterparty credit risk – Analysis of market risk – Analysis of securitisation exposures – Analysis of operational risk 	n/a n/a n/a n/a n/a n/a	16 48 104 122 129 144

Index of tables

Table		Page
Table 3	LI1– Differences between accounting and regulatory scopes of consolidation and the mapping of financial statement categories with regulatory risk categories	12
Table 4	LI2 – Main sources of differences between regulatory exposure amounts and carrying values in financial statements	13
Table 5	LI3 Outline of the differences in the scopes of consolidation (entity by entity)	14
Table 6	KM1 - Key metrics and movements	16
Table 7	CC1 – Composition of regulatory capital	18
Table 8	CC2 – Reconciliation of regulatory capital to balance sheet	21
Table 9	IFRS 9-FL – Comparison of institutions’ own funds and capital and leverage ratios with and without the application of transitional arrangements for IFRS 9 or analogous ECLs	24
Table 10	Risk weighted assets by risk type and business	26
Table 11	OV1 – Overview of risk weighted assets by risk type and capital requirements	27
Table 12	Movements in risk weighted assets	28
Table 13	CR8 – RWA flow statement of credit risk exposures under the AIRB approach	28
Table 14	CCR7 – RWA flow statement of counterparty credit risk exposures under the IMM	29
Table 15	MR2-B – RWA flow statement of market risk exposures under the IMA	29
Table 16	Summary reconciliation of accounting assets and leverage ratio exposures	31
Table 17	Leverage ratio common disclosure	32
Table 18	Split-up of on balance sheet exposures (excluding derivatives, SFTs, and exempted exposures)	34
Table 19	KM2 – Key metrics – TLAC requirements (at resolution group level)	35
Table 20	TLAC 1 – TLAC composition for G-SIBs (at resolution group level)	36
Table 21	TLAC 3 – Resolution entity – creditor ranking at legal entity level	37
Table 22	TLAC2 – Material subgroup entity – creditor ranking at legal entity level	38
Table 23	TLAC2 – Material subgroup entity – creditor ranking at legal entity level	39
Table 24	LIQ1 – Liquidity Coverage ratio	40
Table 25	Functional currency of operations	42
Table 26	Net interest income sensitivity (AEaR) by business unit	44
Table 27	Net interest income sensitivity (AEaR) by currency	45
Table 28	Analysis of equity sensitivity	45
Table 29	PV1 – Prudent valuation adjustment	47
Table 30	Credit risk exposures – Note on pre- and post- credit risk mitigation (CRM) EAD	49
Table 31	CRB-B Total and average net amount of exposures	51
Table 32	Detailed view of credit risk RWAs and Capital Requirement	52
Table 33	CRB-C Geographic analysis of credit exposure	54
Table 34	CRB-D – Concentration of exposures by industry	58
Table 35	CRB-E – Residual maturity analysis credit exposures	62
Table 36	Exposures covered by guarantees and credit derivatives	66
Table 37	CR3 – CRM techniques	67
Table 38	CR4 Standardised – Credit Risk exposure and CRM effect	68
Table 39	CR7– Effect on RWA of credit derivatives used as CRM techniques (IRB)	69
Table 40	Relationship of long-term external credit ratings to credit quality steps under the Standardised approach	70
Table 41	Credit quality steps and risk weights under the standardised approach	70
Table 42	CR5-A Analysis of exposures by asset classes and risk weight pre-CCF and CRM under the standardised approach	71
Table 43	CR5-B Analysis of exposures by asset classes and risk weight post-CCF and CRM under the standardised approach	73
Table 44	Internal default grade probabilities and mapping to external ratings	75
Table 45	CR6 Credit risk exposures by exposure class and PD range for central governments and central banks IRB	76
Table 46	CR6 Credit risk exposures by exposure class and PD range for institutions	77
Table 47	CR6 Credit risk exposures by exposure class and PD range for corporates	78
Table 48	CR6 Credit risk exposures by exposure class and PD range for corporate of which: SMEs	79
Table 49	CR10 Corporate exposures subject to the slotting approach	80
Table 50	CR6 Credit risk exposures by exposure class and PD range for retail SME	82
Table 51	CR6 Credit risk exposures by exposure class and PD range for secured retail	83
Table 52	CR6 Credit risk exposures by exposure class and PD range for revolving retail	84
Table 53	CR6 Credit risk exposures by exposure class and PD range for other retail exposures	85
Table 54	CR1-A – Credit quality of exposures by exposure class and instrument	86

Index of tables

Table		Page
Table 55	CR1-B – Credit quality of exposures by industry or counterparty types	90
Table 56	CR1-C – Credit quality of exposures by geography	92
Table 57	Credit Quality of Forborne Exposures	94
Table 58	Credit quality of performing and non-performing exposures by past due days	95
Table 59	Performing and non-performing exposures and related provisions	97
Table 60	Collateral obtained by taking possession and execution processes	99
Table 61	CR2-B – Changes in the stock of defaulted and impaired loans and debt securities	100
Table 62	CR2-A – Changes in the stock of general and specific credit risk adjustments	100
Table 63	Regulatory adjustments to statutory Impairment	101
Table 64	Analysis of expected loss versus actual losses for IRB exposures	102
Table 65	Fair value of and gains and losses on equity investments	103
Table 66	Detailed view of counterparty credit risk RWAs and Capital Requirement	105
Table 67	CCR1 – Analysis of CCR exposure by approach	109
Table 68	CCR3 Counterparty credit risk exposures by exposure classes and risk weight under standardised approach	110
Table 69	CCR4 Counterparty credit risk exposures by portfolio and PD range for central governments and central banks	112
Table 70	CCR4 Counterparty credit risk exposures by portfolio and PD range for institutions	113
Table 71	CCR4 Counterparty credit risk exposures by portfolio and PD range for corporates	114
Table 72	CR10 - Corporate exposures subject to specialised lending IRB	115
Table 73	CCR5-A – Impact of netting and collateral held on exposure values	117
Table 74	CCR5-B – Composition of collateral for exposures to CCR	117
Table 75	Notional exposure associated with credit derivative contracts	116
Table 76	CCR6 – Credit derivatives exposures	119
Table 77	CCR8 Exposures to CCPs	120
Table 78	CCR2 Credit valuation adjustment (CVA) capital charge	121
Table 79	Balance sheet split by trading and banking books	123
Table 80	The daily average, maximum and minimum values of management VaR	124
Table 81	Analysis of Regulatory VaR, SVaR, IRC and CRM	125
Table 82	Breakdown of the major regulatory risk measures by portfolio	126
Table 83	Market risk own funds requirements	127
Table 84	MR1 – Market risk under standardised approach	128
Table 85	MR2-A – Market risk under internal models approach	128
Table 86	Reconciliation of exposures and capital requirements relating to securitisations	131
Table 87	Securitisation activity during the year	132
Table 88	Assets awaiting securitisation	133
Table 89	Outstanding amount of exposures securitised - Asset value and impairment charges	134
Table 90	Securitisation exposures – by exposure class	136
Table 91	Securitisation exposures – by capital approach	138
Table 92	Re-securitisation exposures - by risk weight band	140
Table 93	Aggregate amount of securitised positions retained or purchased by geography – banking book	142
Table 94	Aggregate amount of securitised positions retained or purchased by geography – trading book	143
Table 95	Risk weighted assets for operational risk	145
No table no	Operational risk profile (inc. operational risk events)	147
Table 96	IRB credit risk models' selected features	170
Table 97	Analysis of expected performance versus actual results	172
Table 98	Market risk models selected features	183
Table 99	PD, LGD, RWA and Exposure values by country for IRB – all asset classes	212
Table 99a	PD, LGD, RWA and Exposure values by country for IRB – central governments & central banks	213
Table 99b	PD, LGD, RWA and Exposure values by country for IRB – institutions	214
Table 99c	PD, LGD, RWA and Exposure values by country for IRB – corporates	215
Table 99d	PD, LGD, RWA and Exposure values by country for IRB – SME retail	216
Table 99e	PD, LGD, RWA and Exposure values by country for IRB – secured retail	217
Table 99f	PD, LGD, RWA and Exposure values by country for IRB – revolving retail	218
Table 99g	PD, LGD, RWA and Exposure values by country for IRB – other retail exposures	219
Table 100	Analysis of impaired and past due exposures and allowance for impairment by exposure type	216
Table 101	Geographic analysis of impaired and past due exposures and allowance for impairment	217
Table 102	Countercyclical capital buffer	218
No table no	Asset encumbrance	221
No table no	Remuneration	223
No table no	CRD IV reference	231

Note

1 Pages 90 to 123 of the Annual Report (which is available at www.barclays.com/annualreport) include information required to be disclosed on remuneration in accordance with CRR article 450.

Forward-looking statements

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. Forward-looking statements can be made in writing but also may be made verbally by members of the management of the Group (including, without limitation, during management presentations to financial analysts) in connection with this document. Examples of forward-looking statements include, among others, statements or guidance regarding or relating to the Group's future financial position, income growth, assets, impairment charges, provisions, business strategy, capital, leverage and other regulatory ratios, payment of dividends (including dividend payout ratios and expected payment strategies), projected levels of growth in the banking and financial markets, projected costs or savings, any commitments and targets, estimates of capital expenditures, plans and objectives for future operations, projected employee numbers, IFRS impacts 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. The forward-looking statements speak only as at the date on which they are made and such statements may be affected by changes in legislation, the development of standards and interpretations under IFRS, including 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, 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 applicable to past, current and future periods; UK, US, Eurozone and global macroeconomic and business conditions; the effects of any 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 entity within the Group or any securities issued by such entities; the potential for one or more countries exiting the Eurozone; instability as a result of the exit by the UK from the European Union and the disruption that may subsequently result in the UK and globally; 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 financial position, future results, dividend payments, capital, leverage or other regulatory ratios or other financial and non-financial metrics or performance measures may differ materially from the statements or 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 2019), which are available on the SEC's website at www.sec.gov.

Subject to our obligations under the applicable laws and regulations of any relevant jurisdiction, (including, without limitation, the UK and the US), 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.