# Barclays Bank Ireland PLC
# Pillar 3 Report

31 December 2019

# Contents

Introduction

Foreword 3
Summary of risk profile 5
Notes on basis of preparation 6
Scope of application of Basel rules 8

Risk and capital position review

Analysis of treasury and capital risk 16
Analysis of credit risk 33
Analysis of counterparty credit risk 67
Analysis of market risk 78
Analysis of operational risk 83

Barclays Bank Ireland's approach to managing risks

Risk management strategy, governance and risk culture 87
Management of credit risk and the internal ratings-based approach 99
Management of credit risk mitigation techniques and counterparty credit risk 119
Management of market risk 123
Management of treasury and capital risk 132
Management of operational risk 140
Management of model risk 145
Management of conduct risk 147
Management of reputation risk 149
Management of legal risk 151

Appendices

Appendix A – PD, LGD, RWA and exposure by country 153
Appendix B – Analysis of impairment 157
Appendix C – Countercyclical buffer 158
Appendix D – Disclosure on asset encumbrance 159
Appendix E – Disclosures on remuneration 160
Appendix F – CRD IV References 166
Appendix G – EBA and BCBS reference 173
Index of tables 178
Abbreviations used 180

## Foreword

Section 10.1 of the Basel Committee on Banking Supervision's Basel Framework introduces disclosure requirements for banks as follows:

*The provision of meaningful information about common key risk metrics to market participants is a fundamental tenet of a sound banking system. It reduces information asymmetry and helps promote comparability of banks' risk profiles within and across jurisdictions.*

*Pillar 3 of the Basel Framework aims to promote market discipline through regulatory disclosure requirements. These requirements enable market participants to access key information relating to a bank's regulatory capital and risk exposures in order to increase transparency and confidence about a bank's exposure to risk and the overall adequacy of its regulatory capital.*

## Expansion of Barclays Bank Ireland PLC

Barclays has been operating in Ireland since 1978. Based in Dublin, we have historically provided corporate banking services to corporate clients, including top-tier Irish corporations, multi-nationals and financial institutions.

Barclays is a British universal bank, diversified by different types of business. The European operations of the Barclays Group (the Group) are integral to the strategic ambitions of Barclays International, which is comprised of the Group's top tier Corporate and Investment Bank, Global Barclaycard business and Private Bank.

Following the UK's decision to withdraw from the European Union (EU), the Group has taken the necessary steps to preserve market access for our clients in the EU 27 countries.

- The Group delivers a broad range of products and services to clients across Europe. We value these relationships and our priority has been to minimise disruption and preserve our clients' ability to continue to transact with Barclays.
- Due to the loss of passporting from the UK, new transactions performed for EU clients under the existing UK passports will need to be carried out by an EEA regulated entity following the UK's withdrawal from the EU. Loss of passporting also impacts the ability of entities domiciled in any of the EU 27 countries to access the UK.
- Barclays' strategy is to continue to offer its core products and services to its EU clients by expanding Barclays Bank Ireland plc (the "Bank" or "BBI") to encompass the activities that the Barclays' Group undertakes today across our EU footprint.

Barclays has therefore implemented its plans to expand the Bank due to the UK's withdrawal from the EU.

BBI has become the legal entity serving EU clients, incorporating an EU branch network.

## Regulatory and legal approvals

The Bank received confirmation of its extended banking license in October 2018. The authorisation for Client Assets went through a separate notification, which was confirmed on 30 November 2018.

Branch passports for the nine jurisdictions in which BBI has branches have been reviewed and confirmed. Freedom of Services passports for all EU27 and EEA countries have been submitted and confirmed.

The expansion of the Bank's activities commenced in December 2018 with the transfer of the German branch of its immediate parent, Barclays Bank PLC ("BBPLC"), to the Bank. BBPLC subsequently migrated all of its EU branches in France, Italy, Portugal, Spain, Sweden and the Netherlands to the Bank during the first quarter of 2019. The migration of the branches detailed above included (among other things) the transfer of the Barclaycard Germany credit card and personal loan business, an Italian mortgage portfolio (which is being allowed to naturally run-off) and all EEA deposits booked in the transferred branches.

In November 2019, the Bank's Luxembourg branch obtained a license to conduct regulated activities and in February 2020 the Bank's Belgium branch (which was registered in May 2019) obtained a license to conduct regulated activities

BBPLC and the Bank separately received approval from the High Court of England and Wales on 29 January 2019 to transfer certain Corporate and Investment Banking  and Private Banking business (including related contracts, assets, liabilities and other positions) to the Bank under Part VII of the UK Financial Services and Markets Act 2000 (the "Part VII"). The Part VII enabled the transfer and/or duplication of certain legal relationships and contracts that were in place with the clients of BBPLC and Barclays Capital Securities Limited (BCSL) (another subsidiary of BBPLC) to the Bank without the need for new documentation to be signed. The effective window under the Part VII to effect the transfer of client positions or business or duplication of contracts ended on 26 July 2019 and, accordingly no further transfers to the Bank will be undertaken under the Part VII.

Additional contracts, positions, assets and liabilities have also separately been transferred to the Bank from BB PLC by bilateral agreement with individual clients during the course of 2019.  This has resulted in significant numbers of clients of the Corporate and Investment Banking and Private Banking businesses moving their activity to the Bank during 2019.

EU clients who faced BBPLC or BCSL historically will face BBI going forward.

## Further client migration activity

Where existing BBPLC clients are yet to migrate to BBI, we intend to take a phased approach and currently anticipate the remaining clients to migrate during 2020. Clients that have already migrated to BBI, or who migrate during 2020, will also in some cases transfer their existing positions during 2020 and 2021.

The final outcome of the negotiations between the UK and EU and any settlement reached in respect of financial services remain uncertain, and as a result we are ready to refine our plans in light of external developments and will continue to work closely with regulators, clients, colleagues and other stakeholders to ensure that we are able to respond appropriately to any outcome.

# Capital position and risk management in 2019

Our first disclosure contains extensive information on risk as well as capital management.

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

The CET1 Ratio decreased to 14.5% (December 2018: 15.9%) as a result of an increase of € 11.8bn in the level of risk weighted assets attributed primarily to the transfer of the EU business, partly offset by CET1 capital issuance of €1.6bn.

The leverage ratio decreased to 5.7% (December 2018: 8.6%) primarily driven by a €40.3bn increase in total exposures, offset by an increase of €1.9bn in Tier 1 Capital during the year

# Summary of risk profile

## This section presents a high-level summary of BBI's risk profile.

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

BBI 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 Bank operated in line with its risk appetite. The following risk metrics reflect the risk profile of BBI:

*Common Equity Tier 1 ratio (see page 17)*

*14.5%*

*2018: 15.9%*

*CRR leverage ratio (see page17)*

*5.7%*

*2018: 8.6%*

*Management Value at Risk (see page 80)*

*€0.2m*

*2018: Nil*

*Common Equity Tier 1 capital (see page 17)*

*€2,569m*

*2018: €960m*

*Liquidity pool (see page 17)*

*€14,873m*

*2018: €6,129m*

*Liquidity coverage ratio (see page 17)*

*187%*

*2018: 344%*

*Risk weighted assets (see page 17)*

*€17,879m*

*2018: €6,046m*

## Pillar 3 report regulatory framework

The Pillar 3 report is prepared in accordance with the Capital Requirements Regulation and Capital Requirement 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 8 for a more detailed description.*

### Basis of preparation

Under Article 13 of the CRR a "large subsidiary" of an EU parent institution is required to make certain disclosures from Part Eight of the CRR. BBI now meets the criteria of a large subsidiary; total assets in excess of €30 billion). This is the first time that the Bank has had to publish its own Pillar 3 report. In previous year's the Bank's positions would have been included as part of the Barclays Group Pillar 3 report. BBI's disclosures continue to be included in the BPLC Group Pillar 3 Report.

The Bank was designated (i) as a "Significant Institution" by the European Central Bank and (ii) as an "Other-Systemically Important Institution ("O-SII) by the Central Bank of Ireland. Therefore it has decided, in the interests of transparency, to make disclosures over and above those required by Article 13 of the CRR.

➡ *See page 78 of the Annual Report for a more detailed description of the migration of business between BBplc and BBI.*

### Developments in Regulatory environment

### Implementation of Capital Requirements Regulation II (CRRII)

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.

### 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.

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

The Bank does not currently have an individual MREL requirement. However, it will be subject to general requirement that gone-concern capital (Additional Tier 1, Tier 2 and qualifying elements of senior non-preferred debt (so-called Tier 3 capital) exceed 16% of RWAs.

### Disclosure of Non-performing exposure (NPEs) and forborne exposure

This report includes three tables Table 45 to Table 47 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, forborne exposures and foreclosed assets.

### Presentation of risk data in the Pillar 3 disclosures versus the Annual Report and Accounts

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

### Credit losses

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

### Scope of application

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

### Definition of credit exposures

- Credit exposure, or 'Exposure at Default' (EAD) is defined as the estimate of the amount at risk in the event of a default (before any recoveries) or through the decline in value of an asset. This estimate takes account of contractual commitments related to undrawn amounts.

- In contrast, an asset in BBI's balance sheet is reported as a drawn balance only. This is one of the reasons why exposure values in the Pillar 3 report will differ from asset values as reported in the Annual Report.

# Notes on basis of preparation

## Validation and sign-off

For the year ended 31 December 2019, the Bank has operated a framework of disclosure controls and procedures in place to support the approval of the Bank's Pillar 3 disclosure.

*See 'Appendix F for a reference to BBI compliance with the CRD IV.*

The Bank 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 entity's external financial disclosures. A governance committee is responsible for reviewing the Bank's regulatory reports and disclosures such as this Pillar 3 report to ensure that they have been prepared in line with their relevant internal control frameworks.

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

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

……………………… ………………………….

**Rhys Kiff**
Chief Risk Officer

**Keith Smithson**
Chief Financial Officer

# Scope and application of Basel rules

Tables 1 and 2 show the scope of permission and calculation approaches that summarises the various approaches to calculate RWAs, and BBI's 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 7 shows how IFRS balances contribute to the regulatory scope of consolidation on a line-by-line basis.

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

# Application of the Basel framework

## Overview of Pillar 3

The Pillar 3 requirements as defined by the Basel Committee have been implemented by the EU as part of the Capital Requirement Regulation and Capital Requirement Directive, (“CRR” and “CRDIV” also known as the “CRDIV legislative package”).

The framework is made up of three pillars:

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

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

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

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

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

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

## Approaches to calculating capital requirements under CRD IV and the Capital Requirements Regulations (CRR)

### Calculation of capital for credit risk

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

- Standardised approach: assesses capital requirements using standard industry-wide risk weightings based on a detailed classification of asset types, ratings and maturity
- Internal Ratings-Based approach (IRB): assesses capital requirements using the Bank’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 i.e. Advanced IRB (AIRB).

*See page 33 for more details on capital requirements for credit risk.*

### Calculation of capital for counterparty credit risk

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

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

*See page 67 for more details on capital requirements for counterparty credit risk exposures.*

### Calculation of credit valuation adjustment capital charge

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

- Standardised approach: takes account of the external credit rating of each counterparty, and incorporates the effective maturity and EAD from the CCR calculation (outlined above)
- Advanced approach: this approach requires the calculation of the charge as; a) a 10-day 99% value at risk (VaR) measure for the current two-year period; and b) the same measure for a stressed period. The sum of the two VaR measures is scaled by the VaR multiplier (3.4 at year end) to yield the capital charge

*See page 77 for more details on CVA*

# Application of the Basel framework

## Calculation of capital for market risk

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

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

➔ *See page 78 for more details on capital requirements for market risk.*

## 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 Standardised approach (TSA) is applied by the Bank, where the capital requirement is calculated as a percentage of the income. Typically a credit institution will use an average of three years of historical income. However, as the Bank is going through a transition phase, BBI's historical income would not be representative. Therefore the Bank has received permission from the ECB under Article 3187, paragraph 4 to use:

- an average of three years of historical income for those business lines where that historical income can be clearly identified, for example the Barclaycard Germany business which was previously booked in BBplc; or
- an average of three years projected income for those business lines where historical income is not clearly identifiable, for example from the Bank's Markets business. During 2019 the measurement was based on projected income is estimated on a pro-forma basis from the 2018 Medium Term Plan (MTP), i.e. the underlying assumption is that all client migrations have taken place. At 31 December 2019 a pro-forma income statement was not prepared as part of the 2019 MTP therefore estimates based on MTP projections were used.

➔ *See page 83 for more details on capital requirements for operational risk.*

## Calculation of capital for large exposures

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

## Regulatory minimum capital and leverage requirements

### Capital & Leverage

BBI is required to maintain a CET1 ratio comprising:

- a Pillar 1 requirement of 4.5%;
- a Pillar 2 requirement (P2R) of 3.63% of Risk Weighted Assets (RWAs) plus an 'execution risk', related to the transfer of activities from the Bank's parent to BBI, of the higher of €200million or 0.76% of RWAs; and
- a combined buffer requirement.

This CET1 requirement excludes Pillar 2 guidance (P2G) which is not publicly disclosed. The combined buffer requirement includes a capital conservation buffer (CCB) of 2.5%, a countercyclical buffer (CCyB) requirement of 0.23% and an additional capital buffer of 0.25%. National authorities determine the appropriate countercyclical buffer that should be applied to exposures in their jurisdiction. As at 31 December 2019, the Financial Policy Committee (FPC) and the Central Bank of Ireland (CBI) have introduced countercyclical buffers of 1% for United Kingdom and Ireland exposures respectively.

BBI's Pillar 2R and O-SII buffer requirements are subject to annual review by the Single Supervisory Mechanism (SSM) and CBI respectively. The current Pillar 2R requirement as per the Joint Risk Assessment and Decision (JRAD) Process between the Central Bank of Ireland and Prudential Regulation Authority is based on a point in time assessment. All capital, RWA and leverage calculations reflect the Bank's interpretation of the current rules.

The European Commission have proposed the introduction of a binding leverage requirement of 3% as part of the introduction of the second phase of the CRR. It is anticipated that the binding leverage requirement will be applicable from 2021 pending final agreement of the proposals at EU level.

### BCBS Standards

In December 2017, the BCBS finalised 'Basel III' (the BCBS international regulatory framework for banks), with the majority of the December 2017 changes expected to be implemented by 1 January 2022.

The BCBS's finalisation of Basel III, noted above, among other things, eliminated model-based approaches for certain categories of risk-weighted assets (RWAs) (for example, operational risk RWAs, CVA volatility and credit risk RWAs for equity exposures), revised the standardised approach's risk weights for a variety of exposure categories, replaced the four current approaches for operational risk (including the advanced measurement approach) with a single standardised measurement approach, established 72.5% of standardised approach RWAs for exposure categories as a floor for RWAs calculated under advanced approaches (referred to as the "output floor", with a five-year phase-in period).

In January 2019, the BCBS issued an update to the new market risk framework, including rules made as a result of its "fundamental review of the trading book" (FRTB). The implementation of this framework will be 1 January 2022.

# Application of the Basel framework

The BCBS has also published final standards on the securitisation framework, which took effect in the EU from 01 January 2019, with a one year grandfathering period for existing transactions.

In November 2016 the European Commission adopted a proposal (commonly referred to as CRD V) to begin the legislative process for introducing these standards within the EU. Political agreement on this 'Risk Reduction Measures' package was reached in December 2018. These proposals, would, among other things, implement FRTB by overhauling existing rules relating to standardised and advanced market risk and the rules governing the inclusion of positions in the regulatory trading book. The proposals would also enhance rules for counterparty credit risk, in line with BCBS proposals finalised in 2014, strengthen requirements relating to leverage and large exposures and introduce a net stable funding ratio (NSFR), requiring banks to fund their assets with stable sources of funds.

CRD V also proposes to require that where (i) two or more credit institutions or investment firms established in the EU have a common parent undertaking established outside the EU and (ii) the group has been identified as a G-SIB or has entities in the EU (whether subsidiaries or branches) with total assets of at least €30 billion, the group must establish an intermediate parent undertaking ('IPU'), authorised and established in, and subject to the supervision of, an EU member state. Political agreement permitting two IPUs, where structural reform within the head office jurisdiction would not enable a single IPU to operate, was agreed in December 2018.

# Scope of permission for calculation approaches

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

The Bank has regulatory approval to use Group 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 BBI 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

| | Credit risk (see Table 22) | | | Counterparty credit risk excl. CVA (see Table 52) | | | | |
|---|---|---|---|---|---|---|---|---|
| As at 31 December 2019 | RWA €m | Average risk weight | EAD post-CRM €m | RWA €m | Average risk weight | EAD post-CRM €m | Advanced Internal Ratings Based (IRB) approaches | Standardised approach |
| | 12,636 | 32% | 40,048 | 1,800 | 35% | 5,103 | Most Investment Bank Portfolios<br>High quality liquidity pool assets<br>Germany retail credit cards<br>Italy Home Loans | European Corporate Portfolio<br>Germany retail consumer loans |

The Bank has permission to use the Internal Model Method (IMM) to calculate its counterparty credit risk exposures.  The permission is comprehensive and applies to the majority of its trades and portfolios.

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 | 322 | BBI calculates Credit Valuation Adjustment (CVA) risk for all contracts in scope as defined by article 382 of the Capital Requirements Regulation. BBI has permission to use an internal model for the specific risk of debt instruments and therefore is allowed to use the Advanced method for CVA for such instruments where applicable.  The Standardised method for CVA is used otherwise. |
| Market risk | 766 | As explained on page 123, 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 BBI to use models mirrors that of Barclays Group via agreed temporary tolerance; see Table 9 on page 23 for capital requirements related to each approach and risk category.<br>BBI 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 rates, and equity prices.<br>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. BBI has permission to model specific market risk, including credit spread, migration, and default risks, for certain legal entities and product types. Where BBI does not have permission to use a model, the Standardised Approach is applied. |
| Operational risk | 2,235 | BBI 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 123.

| | Carrying values as reported in published financial statements | Carrying values under scope of regulatory consolidation | Subject to the credit risk framework | Subject to the CCR framework | Subject to the securitisation framework | Subject to the market risk framework[1] | Not subject to capital requirements or subject to deduction from capital[2] |
|---|---|---|---|---|---|---|---|
| **As at 31 December 2019** | €m | €m | €m | €m | €m | €m | €m |
| **Assets** | | | | | | | |
| Cash and balances at central banks | 12,788 | 12,788 | 12,788 | - | - | - | - |
| Cash collateral and settlement balances | 8,935 | 8,935 | 3,035 | 5,414 | - | 2,271 | 486 |
| Loans and advances at amortised cost | 13,682 | 13,682 | 13,574 | 53 | - | - | 55 |
| Reverse repurchase agreements and other similar secured lending | 2,946 | 2,946 | - | 2,946 | - | - | - |
| Trading portfolio assets | 1,042 | 1,042 | 236 | - | - | 806 | - |
| Financial assets at fair value through the income statement | 1,794 | 1,794 | 413 | 1,381 | - | 1,363 | - |
| Derivative financial instruments | 27,329 | 27,329 | - | 27,329 | - | 27,060 | - |
| Financial assets at fair value through other comprehensive income | - | - | - | - | - | - | - |
| Investments in associates and joint ventures | - | - | - | - | - | - | - |
| Goodwill and intangible assets | 38 | 38 | - | - | - | - | 38 |
| Property, plant and equipment | 116 | 116 | 116 | - | - | - | - |
| Current tax assets | 2 | 2 | 2 | - | - | - | - |
| Deferred tax assets | 148 | 148 | 148 | - | - | - | - |
| Retirement benefit assets | - | - | - | - | - | - | - |
| Other assets | 225 | 225 | 225 | - | - | - | - |
| **Total assets** | **69,045** | **69,045** | **30,537** | **37,123** | **-** | **31,500** | **579** |
| **Liabilities** | | | | | | | |
| Deposits at amortised cost | 20,630 | 20,630 | - | 684 | - | - | 20,630 |
| Cash collateral and settlement balances | 9,374 | 9,374 | - | 6,447 | - | 1,888 | 2,927 |
| Repurchase agreements and other similar secured borrowing | 1,255 | 1,255 | - | 1 | - | - | 1,254 |
| Debt securities in issue | 849 | 849 | - | - | - | - | 849 |
| Subordinated liabilities | 891 | 891 | - | - | - | - | 891 |
| Trading portfolio liabilities | 283 | 283 | - | - | - | 283 | - |
| Financial liabilities designated at fair value | 4,702 | 4,702 | - | 1,885 | - | 3,416 | 1,286 |
| Derivative financial instruments | 27,153 | 27,153 | - | 27,153 | - | 26,817 | - |
| Current tax liabilities | 19 | 19 | - | - | - | - | 19 |
| Deferred tax liabilities | - | - | - | - | - | - | - |
| Retirement benefit liabilities | 52 | 52 | - | - | - | - | 52 |
| Other liabilities | 515 | 515 | - | - | - | - | 515 |
| Provisions | 32 | 32 | - | - | - | - | 32 |
| **Total liabilities** | **65,755** | **65,755** | **-** | **36,170** | **-** | **32,404** | **28,455** |

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

[1] The column “Subject to market risk framework” is based on trading book asset, as shown in the table “balance sheet split by trading and banking books” see page 79

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

# 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.

| | Total | Subject to the credit risk framework | Subject to the CCR framework | Subject to the securitisation framework |
|---|---|---|---|---|
| **As at 31 December 2019** | €m[1] | €m | €m | €m |
| **Assets carrying value amount under the scope of regulatory consolidation (as per template LI1)** | **67,660** | **30,537** | **37,123** | - |
| Liabilities carrying value amount under the regulatory scope of consolidation (as per template EU LI1) | 36,170 | - | 36,170 | - |
| Total net amount under the regulatory scope of consolidation | 31,491 | 30,537 | 953 | - |
| Off-balance-sheet amounts[2] | 24,231 | 8,579 | 6,388 | - |
| Differences in valuations | - | - | | - |
| Differences due to different netting rules | (3,927) | - | (3,927) | - |
| Differences due to consideration of provisions | 293 | 293 | | - |
| Differences due to prudential filters | | - | | - |
| Differences between input balance and modelled regulatory output | 3,351 | 1,401 | 1,950 | - |
| Regulatory exclusion –CCP trades for a client where Barclays acts as clearing member on behalf of a counterparty | (196) | - | (196) | - |
| Credit Enhancement Exposure for Sponsor trades | | - | | - |
| Exposures of Synthetic Securitisation trades | | - | | - |
| Other | 338 | 338 | | - |
| **Exposure amounts considered for regulatory purposes** | **55,581** | **41,148** | **5,168** | - |

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

[1] 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”.

[2] 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.

Risk and capital position review

# Contents

| | |
|---|---|
| Analysis of treasury and capital risk | 16 |
| Analysis of credit risk | 33 |
| Analysis of counterparty credit risk | 67 |
| Analysis of market risk | 78 |
| Analysis of operational risk | 83 |

# Analysis of treasury and capital risk

*This section details BBI's capital position providing information on capital resources, requirements, leverage and liquidity*

## Key Metrics

| 2019 Common Equity Tier 1 ratio | 2019 CRR leverage ratio | 2019 Liquidity coverage ratio |
|---|---|---|
| 14.5% | 5.7% | 187% |
| 2018: 15.9% | 2018: 8.6% | 2018: 344% |

# Analysis of treasury and capital risk

Table 5: KM1 - Key metrics and movements

| | | As at 31 December 2019<br>€m | As at 31 December 2018<br>€m |
|---|---|---|---|
| | **Available capital (amounts)** | | |
| 1 | Common Equity Tier 1 (CET1) [1] | 2,599 | 960 |
| 1a | Fully loaded Expected Credit Loss (ECL) accounting model [2] | 2,552 | 904 |
| 2 | Tier 1 | 3,164 | 1,260 |
| 2a | Fully loaded ECL accounting model Tier 1 | 3,117 | 1,204 |
| 3 | Total capital | 3,753 | 1,279 |
| 3a | Fully loaded ECL accounting model total capital | 3,730 | 1,224 |
| | **Risk-weighted assets (amounts)** | | |
| 4 | Total risk-weighted assets (RWA) [1] | 17,879 | 6,046 |
| 4a | Fully loaded ECL accounting model total risk-weighted assets (RWA) [2] | 17,849 | 6,046 |
| | **Risk-based capital ratios as a percentage of RWA** | | |
| 5 | Common Equity Tier 1 ratio (%) | 14.5% | 15.9% |
| 5a | Fully loaded ECL accounting model Common Equity Tier 1 (%) | 14.3% | 15.0% |
| 6 | Tier 1 ratio (%) | 17.7% | 20.8% |
| 6a | Fully loaded ECL accounting model Tier 1 ratio (%) | 17.5% | 19.9% |
| 7 | Total capital ratio (%) | 21.0% | 21.2% |
| 7a | Fully loaded ECL accounting model total capital ratio (%) | 20.9% | 20.2% |
| | **Additional CET1 buffer requirements as a percentage of RWA** | | |
| 8 | Capital conservation buffer requirement (%) | 2.5% | 1.9% |
| 9 | Countercyclical buffer requirement (%) | 0.2% | 0.0% |
| 10 | Bank O-SII buffer requirements (%)[3] | 0.3% | 0.0% |
| 11 | Total of bank CET1 specific buffer requirements (%) (row 8 + 9 + 10) | 3.0% | 1.9% |
| 12 | CET1 available after meeting the bank's minimum capital requirements (%) | 11.5% | 14.0% |
| | **CRR leverage ratio** | | |
| 13 | Total CRR leverage ratio exposure measure | 54,431 | 14,054 |
| 14 | Fully loaded CRR leverage ratio (%)[4] | 5.7% | 8.6% |
| | **Liquidity Coverage Ratio** | | |
| 15 | Total HQLA | 14,873 | 6,129 |
| 16 | Total net cash outflows | 7,933 | 1,780 |
| 17 | LCR ratio (%) | 187% | 344% |

[1] *CET1 capital and RWAs are calculated applying the IFRS9 transitional arrangements of the CRR as amended by the CRR II applicable as at the reporting date.*

[2] *Fully loaded CET1 capital and RWAs are calculated without applying the transitional arrangements of the CRR as amended by the CRR II applicable as at the reporting date.*

[3] *This is an additional capital buffer prescribed by the Central Bank of Ireland. The Bank was categorised as an O-SII or "Other Systemically Important Institution" on 2 December 2019. As a result the additional capital buffer of 0.25% will cease on 30 June 2020 and the Bank will be subject to an O-SII Buffer of 0.5% from 1 July 2020, rising to 0.75% on 1 July 2021.*

[4] *Fully loaded CRR Leverage Ratio is calculated without applying the transitional arrangements of the CRR as amended by the CRR II applicable as at the reporting date.*

# Analysis of treasury and capital risk

## Table 6: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† | As at 31 December 2019 Transitional position | As at 31 December 2019 Fully Loaded |
|---|---|---|---|---|
| | Common Equity Tier 1 capital: instruments and reserves | | €m | €m |
| 1 | Directly issued qualifying common share (and equivalent for non-joint stock companies) capital plus related stock surplus | *a* | 974 | 974 |
| 2 | Retained earnings | *b* | 1,699 | 1,699 |
| 3 | Accumulated other comprehensive income (and other reserves) | *c* | (132) | (132) |
| 4 | Adjustment to retained earnings for foreseeable dividends | | (2) | (2) |
| 5 | Scope of consolidation adjustment | | - | - |
| 6 | **Common Equity Tier 1 capital before regulatory adjustments** | | **2,539** | **2,539** |
| | Common Equity Tier 1 capital: regulatory adjustments | | | |
| 7 | Prudent valuation adjustments | | (15) | (15) |
| 9 | Other intangibles other than mortgage servicing rights (net of related tax liability) | *d* | (38) | (38) |
| 14 | Gains and losses due to changes in own credit risk on fair valued liabilities | *e* | 66 | 66 |
| | Adjustment under IFRS 9 transitional arrangements | | 47 | - |
| 28 | **Total regulatory adjustments to Common Equity Tier 1** | | **60** | **13** |
| 29 | **Common Equity Tier 1 capital (CET1)** | | **2,599** | **2,552** |
| | Additional Tier 1 capital: instruments | | | |
| 30 | Directly issued qualifying additional Tier 1 instruments plus related stock surplus | *f* | 565 | 565 |
| 31 | *Of which: classified as equity under applicable accounting standards* | *f* | 565 | 565 |
| 36 | **Additional Tier 1 capital before regulatory adjustments** | | **565** | **565** |
| 44 | **Additional Tier 1 capital (AT1)** | | 565 | 565 |
| 45 | **Tier 1 capital (T1 = CET1 + AT1)** | | **3,164** | **3,117** |
| | Tier 2 capital: instruments and provisions | | | |
| 46 | Directly issued qualifying Tier 2 instruments plus related stock surplus | *f* | 565 | 565 |
| 50 | Provisions | *g* | 48 | 48 |
| 51 | **Tier 2 capital before regulatory adjustments** | | **613** | **613** |
| | Tier 2 capital: regulatory adjustments | | | |
| | Adjustment under IFRS 9 transitional arrangements to T2 | *h* | (24) | - |
| 57 | **Total regulatory adjustments to Tier 2 capital** | | **(24)** | - |
| 58 | **Tier 2 capital (T2)** | | **589** | **613** |
| 59 | **Total regulatory capital (TC = T1 + T2)** | | **3,753** | **3,730** |
| 60 | **Total risk-weighted assets** | | **17,879** | **17,849** |

Notes:
† The references (a) - (h) identify balance sheet components in Table 7: CC2 – Reconciliation of regulatory capital to balance sheet on page 20 which are used in the calculation of regulatory capital.

# Analysis of treasury and capital risk

Table 6:CC1 – Composition of regulatory capital (continued)

| | | Ref† | As at 31 December 2019 Transitional position | As at 31 December 2019 Fully Loaded |
|---|---|---|---|---|
| | **Capital ratios and buffers** | | **€m** | **€m** |
| 61 | Common Equity Tier 1 (as a percentage of risk-weighted assets) | | 14.5% | 14.1% |
| 62 | Tier 1 (as a percentage of risk-weighted assets) | | 17.7% | 17.3% |
| 63 | Total capital (as a percentage of risk-weighted assets) | | 21.0% | 20.7% |
| 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) | | 3.0% | 3.0% |
| 65 | *Of which: capital conservation buffer requirement* | | 2.5% | 2.5% |
| 66 | *Of which: bank-specific countercyclical buffer requirement* | | 0.2% | 0.2% |
| | *Of which: Other Systemically Important Institutions (O-SII) buffer requirement* | | 0.3% | 0.3% |
| 68 | Common Equity Tier 1 (as a percentage of risk-weighted assets) available after meeting the bank's minimum capital requirements | | 11.5% | 11.1% |
| | **Applicable caps on the inclusion of provisions in Tier 2** | | | |
| 78 | Provisions eligible for inclusion in Tier 2 in respect of exposures subject to internal ratings-based approach (prior to application of cap) | | 48 | 48 |

# Analysis of treasury and capital risk

## Table 7: 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.

| | Ref† | Accounting balance sheet per published financial statements | Deconsolidation of insurance/other entities | Consolidation of banking associates/other entities | Balance sheet per regulatory scope of consolidation |
|---|---|---|---|---|---|
| **As at 31 December 2019** | | **€m** | **€m** | **€m** | **€m** |
| **Assets** | | | | | |
| Cash and balances at central banks | | 12,788 | - | - | 12,788 |
| Cash collateral and settlement balances | | 8,935 | - | - | 8,935 |
| Loans and advances at amortised cost | | 13,682 | - | - | 13,682 |
| Reverse repurchase agreements and other similar secured lending | | 2,946 | - | - | 2,946 |
| Trading portfolio assets | | 1,042 | - | - | 1,042 |
| Financial assets at fair value through the income statement | | 1,794 | - | - | 1,794 |
| Derivative financial instruments | | 27,329 | - | - | 27,329 |
| Financial assets at fair value through other comprehensive income | | - | - | - | - |
| Investments in associates and joint ventures | | - | - | - | - |
| Goodwill and intangible assets | | 38 | - | - | 38 |
| Of which: goodwill | | - | - | - | - |
| Of which: other intangibles (excluding MSRs) | *d* | 38 | - | - | 38 |
| Property, plant and equipment | | 116 | - | - | 116 |
| Current tax assets | | 2 | - | - | 2 |
| Deferred tax assets | | 148 | - | - | 148 |
| Retirement benefit assets | | - | - | - | - |
| Other assets | *e* | 225 | - | - | 225 |
| **Total assets** | | **69,045** | - | - | **69,045** |
| **Liabilities** | | | | | |
| Deposits at amortised cost | | 20,630 | - | - | 20,630 |
| Cash collateral and settlement balances | | 9,374 | - | - | 9,374 |
| Repurchase agreements and other similar secured borrowing | | 1,255 | - | - | 1,255 |
| Debt securities in issue | | 849 | - | - | 849 |
| Subordinated liabilities | | 891 | - | - | 891 |
| Trading portfolio liabilities | | 283 | - | - | 283 |
| Financial liabilities designated at FV | | 4,702 | - | - | 4,702 |
| Derivative financial instruments | | 27,153 | - | - | 27,153 |
| Current tax liabilities | | 19 | - | - | 19 |
| Deferred tax liabilities | | - | - | - | - |
| Retirement benefit liabilities | | 52 | - | - | 52 |
| Other liabilities | | 515 | - | - | 515 |
| Provisions | *g,h* | 32 | - | - | 32 |
| **Total liabilities** | | **65,755** | - | - | **65,755** |
| **Total Equity** | | | | | |
| Called up share capital and share premium | | 974 | - | - | 974 |
| Of which: amount eligible for CET1 | *a* | 974 | - | - | 974 |
| Other equity instruments | *f* | 565 | - | - | 565 |
| Other reserves | *c* | (116) | - | - | (116) |
| Retained earnings | *b* | 1,867 | - | - | 1,867 |
| Total equity excluding non-controlling interest | | 3,290 | - | - | 3,290 |
| Non-controlling interest | | - | - | - | - |
| **Total equity** | | **3,290** | - | - | **3,290** |
| **Total liability and equity** | | **69,045** | - | - | **69,045** |

Note:
† The references (a) - (h) identify balance sheet components that are used in the calculation of regulatory capital in Table 6:CC1 – Composition of regulatory capital on page 18.

# Analysis of treasury and capital risk

## IFRS 9 – Transitional capital arrangements

On 1 January 2018, IFRS9 transitional capital arrangements were implemented by Regulation (EU) 2017/2395. The Bank elected to apply the transitional arrangements 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 the 10% CET1 capital 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 8: 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

| | | As at<br>31 December 2019 | As at<br>31 December 2018 |
|---|---|---|---|
| | | €m | €m |
| | **Available capital (amounts)** | | |
| 1 | Common Equity Tier 1 (CET1) capital[a] | 2,599 | 960 |
| 2 | Common Equity Tier 1 (CET1) capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied | 2,552 | 904 |
| 3 | Tier 1 capital[b] | 3,164 | 1,260 |
| 4 | Tier 1 capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied | 3,117 | 1,204 |
| 5 | Total capital[b] | 3,753 | 1,279 |
| 6 | Total capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied | 3,730 | 1,224 |
| | **Risk-weighted assets (amounts)** | €m | €m |
| 7 | Total risk-weighted assets[1] | 17,879 | 6,046 |
| 8 | Total risk-weighted assets as if IFRS 9 or analogous ECLs transitional arrangements had not been applied | 17,849 | 6,046 |
| | **Capital ratios** | | |
| 9 | Common Equity Tier 1 (as a percentage of risk exposure amount) | 14.5% | 15.9% |
| 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 | 14.3% | 15.0% |
| 11 | Tier 1 (as a percentage of risk exposure amount) | 17.7% | 20.8% |
| 12 | Tier 1 (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied | 17.5% | 19.9% |
| 13 | Total capital (as a percentage of risk exposure amount) | 21.0% | 21.2% |
| 14 | Total capital (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied | 20.9% | 20.2% |
| | **Leverage ratio** | €m | €m |
| 15 | Leverage ratio total exposure measure | 54,431 | 14,054 |
| 16 | Leverage ratio[c] | 5.8% | 9.0% |
| 17 | Leverage ratio as if IFRS 9 or analogous ECLs transitional arrangements had not been applied | 5.7% | 8.6% |

Notes:

a Transitional CET1 capital and RWAs are calculated applying the transitional arrangements of the CRR. This includes IFRS 9 transitional arrangements.
b Transitional T1 and Total capital are calculated applying the transitional arrangements of the CRR. This includes IFRS 9 transitional arrangements.
c Leverage ratio is calculated applying the fully phased in treatment of the CRR.

# Analysis of treasury and capital risk

### Table 9: Risk weighted assets by risk type and business

This table shows risk weighted assets by risk type.

| Risk weighted | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Credit risk | | Counterparty credit risk | | | | Market risk | | Operational risk | Total RWAs |
| | Std | A-IRB | Std | A-IRB | Settlement risk | CVA | Std | IMA | TSA | |
| | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m |
| As at 31 December 2019 | 4,531 | 8,105 | 606 | 1,194 | 120 | 322 | - | 766 | 2,235 | 17,879 |
| As at 31 December 2018 | 1,980 | 3,261 | - | 6 | - | - | - | - | 799 | 6,046 |

### Table 10: OV1 - Overview of risk weighted assets by risk type and capital

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 | As at 31 December 2018 | As at 31 December 2019 | As at December 2018 |
| | | €m | €m | €m | €m |
| 1 | **Credit risk (excluding counterparty credit risk) (CCR)** | 12,636 | 5,241 | 1,011 | 419 |
| 2 | Of which standardised approach | 4,531 | 1,980 | 363 | 158 |
| 3 | Of which the foundation IRB (FIRB) approach | - | - | - | - |
| 4 | Of which the advanced IRB (AIRB) approach | 8,105 | 3,261 | 648 | 261 |
| 5 | Of which Equity IRB under the Simple risk-weight or the internal models approach | - | - | - | - |
| 6 | **CCR** | 2,122 | 6 | 170 | - |
| 7 | Of which mark to market | 436 | 6 | 35 | - |
| 8 | Of which original exposure | - | - | - | - |
| 9 | Of which standardised approach | - | - | - | - |
| 9a | Of which financial collateral comprehensive method | 2 | - | - | - |
| 10 | Of which internal model method | 1,313 | - | 105 | - |
| 11 | Of which risk exposure amount for contributions to the default fund of a CCP | 49 | - | 4 | - |
| 12 | Of which CVA | 322 | - | 26 | - |
| 13 | **Settlement risk** | 120 | - | 10 | - |
| 14 | **Securitisation exposures in banking book (after cap)** | - | - | - | - |
| 14a | Of which capital deduction approach (CAPD) | - | - | - | - |
| 14b | Of which look through approach (KIRB) | - | - | - | - |
| 15 | Of which IRB approach | - | - | - | - |
| 16 | Of which IRB supervisory formula approach (SFA) | - | - | - | - |
| 17 | Of which internal assessment approach (IAA) | - | - | - | - |
| 18 | Of which standardised approach | - | - | - | - |
| 19 | **Market risk** | 766 | - | 61 | - |
| 20 | Of which the standardised approach | - | - | - | - |
| 21 | Of which IMA | 766 | - | 61 | - |
| 22 | **Large exposures** | - | - | - | - |
| 23 | **Operational risk** | 2,235 | 799 | 179 | 64 |
| 24 | Of which basic indicator approach | - | - | - | - |
| 25 | Of which standardised approach | 2,235 | 799 | 179 | 64 |
| 26 | Of which advanced measurement approach | - | - | - | - |
| 27 | **Amounts below the thresholds for deduction (subject to 250% risk weight)** | - | - | - | - |
| 28 | **Floor Adjustments** | - | - | - | - |
| 29 | Total | 17,879 | 6,046 | 1,430 | 484 |

For further detail on movements in RWAs for each risk type please see Analysis of credit risk (page 33), Analysis of counterparty credit risk (page 67), Analysis of market risk (page 78), and Analysis of operational risk (page 83).

# Analysis of treasury and capital risk

### Table 11: Movements in risk weighted assets

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

| Risk Weighted Assets | Credit Risk<br>€m | Counterparty Credit Risk[a]<br>€m | Market Risk<br>€m | Operational Risk<br>€m | Total<br>€m |
|---|---|---|---|---|---|
| **As at 1 January 2019** | **5,241** | **6** | **-** | **799** | **6,046** |
| Book size | (1,204) | - | - | | (1,204) |
| Acquisitions and disposals | 8,509 | 2,236 | 766 | 1,492 | 13,003 |
| Book quality | 55 | - | - | - | 55 |
| Model updates | - | - | - | - | - |
| Methodology and policy | - | - | - | - | - |
| Foreign exchange movement | - | - | - | - | - |
| Other | 35 | | | (56) | (21) |
| **As at 31 December 2019** | **12,636** | **2,242** | **766** | **2,235** | **17,879** |

Notes:
[a] RWAs in relation to default fund contributions are included in counterparty credit risk.

Tables 12, 13 and 14 below show a subset of the information included in table 11, focused on positions captured under modelled treatment.

### Table 12: CR8 - RWA flow statement of credit risk exposures under the IRB approach

| | | RWA amount<br>€m | Capital requirements<br>€m |
|---|---|---|---|
| **1** | **As at 1 January 2019** | **3,261** | **261** |
| 2 | Asset size | (1,204) | (96) |
| 3 | Asset quality | 55 | 4 |
| 4 | Model updates | - | - |
| 5 | Methodology and policy | - | - |
| 6 | Acquisitions and disposals | 5,958 | 476 |
| 7 | Foreign exchange movements | - | - |
| 8 | Other | 35 | 3 |
| **9** | **As at 31 December 2019** | **8,105** | **648** |

# Analysis of treasury and capital risk

### Table 13: CCR7 - RWA flow statement of counterparty credit risk exposures under the IMM

The total in this table shows the contribution of IMM exposures to CCR RWAs (under both standardised and AIRB) and will not directly reconcile to CCR AIRB RWAs in table 9.

| | | RWA amount | Capital requirements |
|---|---|---|---|
| | | €m | €m |
| **1** | **As at 1 January 2019** | **6** | **1** |
| 2 | Asset size | - | - |
| 3 | Credit quality of counterparties | - | - |
| 4 | Model updates (IMM only) | - | - |
| 5 | Methodology and policy (IMM only) | - | - |
| 6 | Acquisitions and disposals | 1,188 | 95 |
| 7 | Foreign exchange movements | - | - |
| 8 | Other | - | - |
| **9** | **As at 31 December 2019** | **1,194** | **96** |

### Table 14: MR2-B - RWA flow statement of market risk exposures under the IMA

| | | VaR | SVaR | IRC | CRM | Other | Total RWA | Total Capital requirements |
|---|---|---|---|---|---|---|---|---|
| | | €m | €m | €m | €m | €m | €m | €m |
| 1 | As at 1 January 2019 | - | - | - | - | - | - | - |
| 2 | Movement in risk levels | - | - | - | - | - | - | - |
| 3 | Model updates/changes | - | - | - | - | - | - | - |
| 4 | Methodology and policy | - | - | - | - | - | - | - |
| 5 | Acquisitions and disposals | 107 | 283 | 375 | - | - | 766 | 61 |
| 6 | Other | - | - | - | - | - | - | - |
| **7** | **As at 31 December 2019** | **107** | **283** | **375** | **-** | **-** | **766** | **61** |

# 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 (including CVA)

- 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 (including 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 (including 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 (including 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 BBI 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.

# Analysis of treasury and capital risk

### 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.

## Leverage ratio and exposures

BBI is required to disclose a Capital Requirements Regulation (CRR) leverage ratio, which is based on the end point CRR definition of tier 1 capital and the CRR definition of leverage exposure.

The following leverage tables show the components of the leverage ratio using the CRR definition for the leverage exposure and Tier 1 capital, on a fully loaded basis as at 31 December 2019.

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

# Analysis of treasury and capital risk

## Table 15: LR1 - Summary reconciliation of accounting assets and leverage ratio exposures

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

| | | As at 31 December 2019 | As at 31 December 2018 |
|---|---|---|---|
| | | €m | €m |
| 1 | Total assets as per published financial statements | 69,045 | 12,609 |
| 2 | Adjustment for entities which are consolidated for accounting purposes but are outside the scope of regulatory consolidation | - | - |
| 4 | Adjustments for derivative financial instruments | (22,617) | 22 |
| 5 | Adjustments for securities financing transactions (SFTs) | 64 | - |
| 6 | Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures) | 7,992 | 1,326 |
| 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) | - | - |
| 7 | Other adjustments | (53) | (42) |
| **8** | **Total leverage ratio exposure** | 54,431 | 14,054 |

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.

# Analysis of treasury and capital risk

## Table 16: LR2 - Leverage ratio common disclosure

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

| | | 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) | 37,409 | 12,609 |
| 2 | Asset amounts deducted in determining tier 1 capital | (53) | (42) |
| **3** | **Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets)** | **37,356** | **12,567** |
| **Derivative exposures** | | | |
| 4 | Replacement cost associated with *all* derivatives transactions (i.e. net of eligible cash variation margin) | 1,700 | 2 |
| 5 | Add-on amounts for PFE associated with *all* derivatives transactions (mark-to-market method) | 10,487 | 19 |
| 7 | Deductions of receivables assets for cash variation margin provided in derivatives transactions | (5,034) | - |
| 8 | Exempted CCP leg of client-cleared trade exposures | (2,440) | - |
| 9 | Adjusted effective notional amount of written credit derivatives | 14,945 | - |
| 10 | Adjusted effective notional offsets and add-on deductions for written credit derivatives | (14,945) | - |
| **11** | **Total derivative exposures** | **4,712** | **22** |
| **Securities financing transaction exposures** | | | |
| 12 | Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions | 5,829 | - |
| 13 | Netted amounts of cash payables and cash receivables of gross SFT assets | (1,522) | - |
| 14 | Counterparty credit risk exposure for SFT assets | 64 | - |
| **16** | **Total securities financing transaction exposures** | **4,371** | **-** |
| **Other off-balance sheet exposures** | | | |
| 17 | Off-balance sheet exposures at gross notional amount | 21,893 | 5,970 |
| 18 | Adjustments for conversion to credit equivalent amounts | (13,901) | 4,645 |
| **19** | **Other off-balance sheet exposures** | **7,992** | **1,326** |
| **Capital and total exposures** | | | |
| 20 | Tier 1 capital | 3,087 | 1,204 |
| **21** | **Total leverage ratio exposures** | **54,431** | **14,054** |
| **Leverage ratio** | | | |
| **22** | **Leverage ratio** | 5.7% | 8.6% |

| **Choice on transitional arrangements and amount of derecognised fiduciary items** | | |
|---|---|---|
| EU-23 | Choice on transitional arrangements for the definition of the capital measure | Fully phased in |

# Analysis of treasury and capital risk

Table 17: Split-up of on balance sheet exposures (excluding derivatives, SFTs, and exempted exposures)

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

| | | As at 31 December 2019 | As at 31 December 2018 |
|---|---|---|---|
| | | €m | €m |
| EU-1 | Total on-balance sheet exposures (excluding derivatives, SFTs, and exempted exposures), of which: | 31,547 | 12,749 |
| EU-2 | Trading book exposures | 3,077 | - |
| EU-3 | Banking book exposures, of which: | 28,470 | 12,749 |
| EU-4 | Covered bonds | - | - |
| EU-5 | Exposures treated as sovereigns | 13,021 | 6,220 |
| EU-6 | Exposures to regional governments, MDB, international organisations and PSE NOT treated as sovereigns | - | - |
| EU-7 | Institutions | 2,779 | 1,275 |
| EU-8 | Secured by mortgages of immovable properties | 5,831 | - |
| EU-9 | Retail exposures | 3,775 | 3,655 |
| EU-10 | Corporate | 2,503 | 1,208 |
| EU-11 | Exposures in default | 238 | 186 |
| EU-12 | Other exposures (e.g. equity, securitisations, and other non-credit obligation assets) | 323 | 204 |

# Analysis of treasury and capital risk

Table 18: 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 December 2019<br>€m | 31 December 2018<br>€m |
| **Liquidity buffer** | 14,873 | 6,129 |
| **Total net cash outflows** | 7,933 | 1,780 |
| **Liquidity coverage ratio (%) (period end)** | 187% | 344% |

## Liquidity coverage ratio (average)

| | | Total unweighted value (average) | | Total weighted value (average) | |
|---|---|---|---|---|---|
| | | 31 December 2019 | 31 December 2018 | 31 December 2019 | 31 December 2018 |
| Number of data points used in calculation of averages | | 12 | 12 | 12 | 12 |
| **High-quality liquid assets** | | €m | €m | €m | €m |
| 1 | Total high-quality liquid assets (HQLA) | | | 14,873 | 6,129 |
| Cash outflows | | | | | |
| 2 | **Retail deposits and deposits from small business customers, of which:** | 1,677 | 1,035 | 165 | 104 |
| 3 | *Stable deposits* | 53 | - | 3 | - |
| 4 | *Less stable deposits* | 1,624 | 1,035 | 163 | 104 |
| 5 | **Unsecured wholesale funding, of which:** | 11,020 | 4,012 | 5,629 | 2,169 |
| 6 | *Operational deposits (all counterparties) and deposits in networks of cooperative banks* | 1,891 | 745 | 473 | 186 |
| 7 | *Non-operational deposits (all counterparties)* | 9,129 | 3,267 | 5,156 | 1,983 |
| 8 | *Unsecured debt* | - | - | - | - |
| **9** | **Secured wholesale funding** | 3,290 | | 356 | - |
| **10** | **Additional requirements, of which:** | 15,699 | 936 | 5,092 | 94 |
| 11 | *Outflows related to derivative exposures and other collateral requirements* | 3,280 | - | 3,280 | - |
| 12 | *Outflows related to loss of funding on debt products* | 145 | - | 145 | - |
| 13 | *Credit and liquidity facilities* | 12,275 | 936 | 1,668 | 94 |
| **14** | **Other contractual funding obligations** | - | - | - | - |
| **15** | **Other contingent funding obligations** | 8,522 | 4,648 | 470 | 239 |
| **16** | **Total cash outflows** | | | 11,356 | 2,606 |
| Cash inflows | | | | - | - |
| **17** | **Secured lending (e.g. reverse repos)** | 5,691 | - | 251 | - |
| **18** | **Inflows from fully performing exposures** | 1,393 | 1,059 | 948 | 826 |
| 19 | Other cash inflows | 2,581 | - | 2,581 | - |
| **20** | **Total cash inflows** | 9,665 | 1,059 | 3,780 | 826 |
| | *Fully exempt inflows* | - | - | - | - |
| | *Inflows subject to 90% cap* | - | - | - | - |
| | *Inflows subject to 75% cap* | 9,665 | 1,059 | 3,780 | 826 |
| **21** | **Liquidity buffer** | | | 14,873 | 6,129 |
| **22** | **Total net cash outflows** | | | 7,933 | 1,780 |
| **23** | **Liquidity coverage ratio (%) (average)** | | | 187% | 344% |

# Analysis of treasury and capital risk

As at 31 December 2019, the Bank's LCR was 187%, equivalent to a surplus of €6.1bn to 110% regulatory requirement, as shown on Table 18: LIQ1. The strong liquidity position reflects BBI's prudent approach given the continued macroeconomic uncertainty. The Bank also continued to maintain surpluses to its internal liquidity requirements.

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

As at 31 December 2019, 84% of the liquidity pool consisted of EUR cash, with the remaining 16% comprising of high quality EUR and USD government securities held on reverse repo.

The strong deposit franchise in BBI is a primary funding source for the Bank. The successful launch of the BBI CP programme, along with an existing portfolio of Schuldschein notes and unsecured intercompany funding facilities, compliment the well diversified and stable sources of funding for BBI.

BBI maintains 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, BBI has direct access to US, European and Asian capital markets through Barclays Group. As a result, wholesale funding is well diversified by product, maturity, geography and currency.

Key sources of wholesale funding for BBI include money market and commercial paper. BBI also has access to ECB monetary policy operations such as MRO and TLTRO.

## Table 19: 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.

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.

| | | Interest rates | Credit | Total | Of which in the trading book | Of which in the banking book |
|---|---|---|---|---|---|---|
| | | €m | €m | €m | €m | €m |
| | **As at 31 December 2019** | | | | | |
| 1 | Closeout uncertainty, of which: | 1 | 9 | 10 | 4 | 6 |
| 2 | Mid-market value | 1 | 9 | 10 | 4 | 6 |
| 3 | Closeout cost | - | - | - | - | - |
| 4 | Concentration | - | - | - | - | - |
| 5 | Early termination | - | - | - | - | - |
| 6 | Model risk | - | - | - | - | - |
| 7 | Operational risk | - | 1 | 1 | 1 | 1 |
| 8 | Investing and funding costs | 3 | - | 3 | 2 | - |
| 9 | Unearned credit spreads | 1 | - | 1 | 1 | - |
| 10 | Future administrative costs | - | - | - | - | - |
| 11 | Other | - | - | - | - | - |
| 12 | **Total adjustment** | **5** | **10** | **15** | **8** | **7** |

*Note:*

*A diversification reduction factor of 50% is applied to uncertainty after all regulatory exclusions and offsets, where permitted by CRR and Commission Delegated Regulation (EU) 2016/101.*

# Analysis of credit risk

*This section details BBI's 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

*2019 Risk weighted assets for credit risk*

***€12.6bn***

*2018: €5.2 billion*

# Analysis of credit risk

## Analysis of capital requirements and exposures for credit risk

### Table 20: Credit risk exposures – Note on pre- and post- credit risk mitigation (CRM) EAD

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

RWAs and post-CRM exposures are analysed by business in Table 22 on page 37. Pre-CRM exposures are further analysed by geography in Table 23 on page 38, by industry in Table 24 on page 40, and residual maturity in Table 25 on page 42. Information on the impact of CRM on EAD is set out on pages 42 to 46.

| Credit exposure class | | | | |
|---|---|---|---|---|
| | EAD pre-CRM[a] | | EAD post-CRM[a] | |
| | Year end | Average[b] | Year end | Average[b] |
| **As at 31 December 2019** | €m | €m | €m | €m |
| **Standardised approach** | | | | |
| Central governments or central banks | 165 | 122 | 165 | 122 |
| Regional governments or local authorities | - | 15 | - | 15 |
| Public sector entities | 6 | 5 | 6 | 5 |
| Multilateral development banks | - | - | - | - |
| International organisations | - | - | - | - |
| Institutions | 76 | 67 | 76 | 66 |
| Corporates | 2,936 | 2,618 | 2,898 | 2,590 |
| Retail | 2,011 | 1,918 | 2,011 | 1,917 |
| Secured by mortgages | 9 | 37 | 9 | 37 |
| Exposures in default | 118 | 137 | 118 | 137 |
| Items associated with high risk | - | - | - | - |
| Covered bonds | - | - | - | - |
| Securitisation positions | - | - | - | - |
| Collective investment undertakings | - | - | - | - |
| Equity positions | - | - | - | - |
| Other items | 17 | 133 | 17 | 133 |
| **Total Standardised Approach Credit Risk Exposure** | 5,338 | 5,052 | 5,300 | 5,022 |
| **Advanced IRB approach** | - | - | - | - |
| Central governments or central banks | 12,957 | 14,775 | 12,957 | 14,775 |
| Institutions | 3,528 | 4,128 | 3,528 | 4,128 |
| Corporates | 6,687 | 5,263 | 6,687 | 5,263 |
| Retail | 11,372 | 12,279 | 11,372 | 12,279 |
| - Small and medium-sized enterprises (SMEs) | - | - | - | - |
| - Secured by real estate collateral | 6,787 | 7,762 | 6,787 | 7,762 |
| - Qualifying revolving retail | 4,585 | 4,509 | 4,585 | 4,509 |
| - Other retail | - | 8 | - | 8 |
| Equity | - | - | - | - |
| Securitisation positions | - | - | - | - |
| Non-credit obligation assets | 204 | 126 | 204 | 126 |
| **Total advanced IRB credit risk exposure** | 34,748 | 36,571 | 34,748 | 36,571 |
| **Total credit exposure** | 40,086 | 41,623 | 40,048 | 41,593 |

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

# Analysis of credit risk

Table 20: Credit risk exposures – Note on pre- and post- credit risk mitigation (CRM) EAD continued

| | EAD pre-CRM | | EAD post-CRM | |
|---|---|---|---|---|
| | Year end | Average | Year end | Average |
| **As at 31 December 2018** | €m | €m | €m | €m |
| **Standardised approach** | | | | |
| Central governments or central banks | - | - | - | - |
| Regional governments or local authorities | - | - | - | - |
| Public sector entities | - | - | - | - |
| Multilateral development banks | - | - | - | - |
| International organisations | - | - | - | - |
| Institutions | 5 | 4 | 5 | 4 |
| Corporates | 483 | 278 | 478 | 203 |
| Retail | 1,597 | 399 | 1,597 | 399 |
| Secured by mortgages | - | - | - | - |
| Exposures in default | 15 | 4 | 15 | 4 |
| Items associated with high risk | - | - | - | - |
| Covered bonds | - | - | - | - |
| Securitisation positions | - | - | - | - |
| Collective investment undertakings | - | - | - | - |
| Equity positions | - | - | - | - |
| Other items | 175 | 50 | 175 | 50 |
| **Total Standardised Approach Credit Risk Exposure** | 2,275 | 735 | 2,270 | 660 |
| **Advanced IRB approach** | | | | |
| Central governments or central banks | 6,220 | 1,952 | 6,220 | 1,952 |
| Institutions | 1,467 | 1,960 | 1,467 | 1,960 |
| Corporates | 1,516 | 1,685 | 1,516 | 1,685 |
| Retail | 4,430 | 1,108 | 4,430 | 1,108 |
| - Small and medium-sized enterprises (SMEs) | - | - | - | - |
| - Secured by real estate collateral | - | - | - | - |
| - Qualifying revolving retail | 4,430 | 1,108 | 4,430 | 1,108 |
| - Other retail | - | - | - | - |
| Equity | - | - | - | - |
| Securitisation positions | - | - | - | - |
| Non-credit obligation assets | 28 | 7 | 28 | 7 |
| **Total advanced IRB credit risk exposure** | 13,661 | 6,712 | 13,661 | 6,712 |
| **Total credit exposure** | 15,936 | 7,447 | 15,931 | 7,372 |

# Analysis of credit risk

### Table 21: CRB-B Total and average net amount of exposures

This table provides the total and the average amount of net exposures over the period by exposure class. The “Net value of exposure” column represents gross exposures pre-CRM and CCF.

| | | Net value of exposures as at 31 December 2019 | Average net exposures as at 31 December 2019 | Net value of exposures as at 31 December 2018 | Average net exposures as at 31 December 2018 |
|---|---|---|---|---|---|
| | | €m | €m | €m | €m |
| 1 | Central governments or central banks | 13,079 | 14,806 | 6,220 | 1,820 |
| 2 | Institutions | 5,300 | 5,355 | 1,480 | 1,871 |
| 3 | Corporates | 11,099 | 9,205 | 1,866 | 2,018 |
| 4 | Of Which: Specialised Lending | 168 | 250 | 349 | 443 |
| 5 | Of Which: SMEs | 1 | 1 | - | - |
| 6 | Retail | 13,681 | 14,497 | 6,495 | 1,624 |
| 7 | Secured by real estate property | 6,720 | 7,685 | - | - |
| 8 | SME | - | - | - | - |
| 9 | Non-SMEs | 6,720 | 7,685 | - | - |
| 10 | Qualifying Revolving | 6,961 | 6,804 | 6,495 | 1,624 |
| 11 | Other Retail | - | 8 | - | - |
| 12 | SME | - | - | - | - |
| 13 | Non-SMEs | - | 8 | - | - |
| 14 | Equity | - | - | - | - |
| 15 | **Total IRB Approach** | 43,159 | 43,863 | 16,061 | 7,332 |
| 16 | Central governments or central banks | 180 | 135 | - | - |
| 17 | Regional governments or local authorities | - | 15 | - | - |
| 18 | Public sector entities | 9 | 7 | - | - |
| 19 | Multilateral development banks | - | - | - | - |
| 20 | International organisations | - | - | - | - |
| 21 | Institutions | 79 | 70 | 5 | 4 |
| 22 | Corporates | 6,088 | 5,384 | 613 | 278 |
| 23 | Of Which: SMEs | 365 | 475 | 4 | 1 |
| 24 | Retail | 2,122 | 2,180 | 1,822 | 455 |
| 25 | Of Which: SMEs | - | 1 | - | - |
| 26 | Secured by mortgages on immovable property | 9 | 38 | - | - |
| 27 | Of Which: SMEs | 3 | 3 | - | - |
| 28 | Exposures in default | 126 | 149 | 15 | 4 |
| 29 | Items associated with particularly high risk | - | - | - | - |
| 30 | Covered bonds | - | - | - | - |
| 31 | Claims on institutions and corporates with a short-term credit assessment | - | - | - | - |
| 32 | Collective investments undertakings | - | - | - | - |
| 33 | Equity exposures | - | - | - | - |
| 34 | Other exposures | 17 | 133 | 175 | 50 |
| 35 | **Total standardised approach** | 8,630 | 8,111 | 2,630 | 791 |
| 36 | **Total** | 51,789 | 51,975 | 18,691 | 8,122 |

Note:

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

For details of key movements, see Table 30.

# Analysis of credit risk

Table 22: Detailed view of credit risk RWAs and Capital Requirement

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

| | As at 31 December 2019 | | | As at 31 December 2018 | | |
|---|---|---|---|---|---|---|
| | EAD | RWA | Capital requirements | EAD | RWA | Capital requirements |
| | €m | €m | €m | €m | €m | €m |
| **Credit risk** | | | | | | |
| **Standardised approach** | | | | | | |
| Central governments or central banks | 165 | 7 | 1 | - | - | - |
| Regional governments or local authorities | - | - | - | - | - | - |
| Public sector entities | 6 | 6 | 1 | - | - | - |
| Multilateral development banks | - | - | - | - | - | - |
| International organisations | - | - | - | - | - | - |
| Institutions | 76 | 55 | 4 | 5 | 5 | - |
| Corporates | 2,898 | 2,821 | 226 | 478 | 478 | 38 |
| Retail | 2,011 | 1,508 | 121 | 1,597 | 1,198 | 96 |
| Secured by mortgages | 9 | 5 | - | - | - | - |
| Exposures in default | 118 | 126 | 10 | 15 | 16 | 1 |
| Items associated with high risks | - | - | - | - | - | - |
| Covered bonds | - | - | - | - | - | - |
| Securitisation positions | - | - | - | - | - | - |
| Collective investment undertakings | - | - | - | - | - | - |
| Equity positions | - | - | - | - | - | - |
| Other items | 17 | 3 | - | 175 | 283 | 23 |
| **Total standardised approach credit risk exposure** | 5,300 | 4,531 | 363 | 2,270 | 1,980 | 158 |
| **Advanced IRB approach** | | | | | | |
| Central governments or central banks | 12,957 | 592 | 47 | 6,220 | 220 | 18 |
| Institutions | 3,528 | 170 | 14 | 1,467 | 112 | 9 |
| Corporates | 6,687 | 2,728 | 218 | 1,516 | 1,184 | 95 |
| Retail | 11,372 | 4,164 | 333 | 4,430 | 1,717 | 137 |
| - Small and medium-sized enterprises (SMEs) | - | - | - | - | - | - |
| - Secured by real estate collateral | 6,787 | 2,506 | 200 | - | - | - |
| - Qualifying revolving retail | 4,585 | 1,658 | 133 | 4,430 | 1,717 | 137 |
| - Other retail | - | - | - | - | - | - |
| Equity | - | - | - | - | - | - |
| Securitisation positions | - | - | - | - | - | - |
| Non-credit obligation assets | 204 | 451 | 36 | 28 | 28 | 2 |
| **Total advanced IRB credit risk exposure** | 34,748 | 8,105 | 648 | 13,661 | 3,261 | 261 |
| **Total credit risk weighted assets** | 40,048 | 12,636 | 1,011 | 15,931 | 5,241 | 419 |

# Analysis of credit risk

Table 23: 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.

| | Europe excl. UK | Germany | Italy | France | Ireland | UK | Americas | United States | Asia | India | Africa and Middle East | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **As at 31 December 2019** | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m |
| Central governments or central banks | 13,079 | 10,886 | 153 | 134 | 1,700 | - | - | - | - | - | - | 13,079 |
| Institutions | 783 | - | - | 364 | 257 | 4,463 | 16 | 14 | 20 | - | 18 | 5,300 |
| Corporates | 10,227 | 1,038 | 121 | 3,963 | 2,064 | 411 | 453 | 403 | 1 | - | 7 | 11,099 |
| Retail | 13,665 | 6,964 | 6,686 | 2 | - | 9 | 4 | 3 | 1 | - | 2 | 13,681 |
| Equity | - | - | - | - | - | - | - | - | - | - | - | - |
| **Total IRB approach** | 37,754 | 18,888 | 6,960 | 4,463 | 4,021 | 4,883 | 473 | 420 | 22 | - | 27 | 43,159 |
| Central governments or central banks | 173 | - | - | 173 | - | 7 | - | - | - | - | - | 180 |
| Regional governments or local authorities | - | - | - | - | - | - | - | - | - | - | - | - |
| Public sector entities | 9 | - | 9 | - | - | - | - | - | - | - | - | 9 |
| Multilateral development banks | - | - | - | - | - | - | - | - | - | - | - | - |
| International organisations | - | - | - | - | - | - | - | - | - | - | - | - |
| Institutions | 29 | - | 22 | 5 | 3 | - | - | - | 50 | 50 | - | 79 |
| Corporates | 5,706 | 538 | 1,657 | 1,232 | 323 | 199 | 131 | 126 | 52 | 52 | - | 6,088 |
| Retail | 2,122 | 2,122 | - | - | - | - | - | - | - | - | - | 2,122 |
| Secured by mortgages on immovable property | 9 | - | 7 | - | - | - | - | - | - | - | - | 9 |
| Exposures in default | 126 | 28 | 71 | 3 | - | - | - | - | - | - | - | 126 |
| Items associated with particularly high risk | - | - | - | - | - | - | - | - | - | - | - | - |
| Covered bonds | - | - | - | - | - | - | - | - | - | - | - | - |
| Claims on institutions and corporates with a short-term credit assessment | - | - | - | - | - | - | - | - | - | - | - | - |
| Collective investment undertakings | - | - | - | - | - | - | - | - | - | - | - | - |
| Equity positions | - | - | - | - | - | - | - | - | - | - | - | - |
| Other items | 17 | - | 17 | - | - | - | - | - | - | - | - | 17 |
| **Total Standardised approach** | 8,191 | 2,688 | 1,783 | 1,413 | 326 | 206 | 131 | 126 | 102 | 102 | - | 8,630 |
| | | | | | | 5,089 | | | | | | |
| **Total** | 45,946 | 21,576 | 8,743 | 5,876 | 4,347 | | 604 | 546 | 124 | 102 | 27 | 51,789 |

# Analysis of credit risk

Table 23: CRB-C Geographic analysis of credit exposure continued

| | Europe excl. UK | Ireland | France | Germany | Netherlands | UK | Americas | United States | Asia | Japan | Africa and Middle East | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **As at 31 December 2018** | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m |
| Central governments or central banks | 6,220 | 540 | - | 5,680 | - | - | - | - | - | - | - | 6,220 |
| Institutions | 129 | 129 | - | - | - | 1,351 | - | - | - | - | - | 1,480 |
| Corporates | 1,737 | 1,715 | - | 22 | - | 129 | - | - | - | - | - | 1,866 |
| Retail | 6,495 | - | - | 6,495 | - | - | - | - | - | - | - | 6,495 |
| Equity | - | - | - | - | - | - | - | - | - | - | - | - |
| **Total IRB approach** | 14,581 | 2,384 | - | 12,197 | - | 1,480 | - | - | - | - | - | 16,061 |
| Central governments or central banks | - | - | - | - | - | - | - | - | - | - | - | - |
| Regional governments or local authorities | - | - | - | - | - | - | - | - | - | - | - | - |
| Public sector entities | - | - | - | - | - | - | - | - | - | - | - | - |
| Multilateral development banks | - | - | - | - | - | - | - | - | - | - | - | - |
| International organisations | - | - | - | - | - | - | - | - | - | - | - | - |
| Institutions | 5 | 5 | - | - | - | - | - | - | - | - | - | 5 |
| Corporates | 567 | 534 | 2 | 23 | 8 | 41 | 5 | 5 | - | - | - | 613 |
| Retail | 1,822 | - | - | 1,822 | - | - | - | - | - | - | - | 1,822 |
| Secured by mortgages on immovable property | - | - | - | - | - | - | - | - | - | - | - | - |
| Exposures in default | 15 | 1 | - | 14 | - | - | - | - | - | - | - | 15 |
| Items associated with particularly high risk | - | - | - | - | - | - | - | - | - | - | - | - |
| Covered bonds | - | - | - | - | - | - | - | - | - | - | - | - |
| Claims on institutions and corporates with a short-term credit assessment | - | - | - | - | - | - | - | - | - | - | - | - |
| Collective investment undertakings | - | - | - | - | - | - | - | - | - | - | - | - |
| Equity positions | - | - | - | - | - | - | - | - | - | - | - | - |
| Other items | 175 | 104 | - | 71 | - | - | - | - | - | - | - | 175 |
| **Total Standardised approach** | 2,584 | 644 | 2 | 1,930 | 8 | 41 | 5 | 5 | - | - | - | 2,630 |
| **Total** | **17,165** | **3,028** | **2** | **14,127** | **8** | **1,521** | **5** | **5** | **-** | **-** | **-** | **18,691** |

# Analysis of credit risk

### Table 24: 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 obligor or counterparty.

| | Agriculture, forestry and fishing | Mining and quarrying | Manufacturing | Electricity, gas, steam and air conditioning supply | Water supply | Construction | Wholesale and retail trade | Transport and storage | Accommodation and food service activities | Information and communication | Real estate activities | Professional, scientific and technical activities | Administrative and support service activities | Public administration and defence, compulsory social security | Education | Human health services and social work activities | Arts, entertainment and recreation | Other services | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **As at 31 December 2019** | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m |
| 1 Central Governments or central banks | - | - | - | - | - | - | - | - | - | - | - | - | - | 53 | - | - | - | 13,026 | 13,079 |
| 2 Institutions | - | - | - | 331 | 100 | - | - | 121 | - | - | - | - | - | - | - | - | - | 4,748 | 5,300 |
| 3 Corporates | - | 898 | 3,297 | 1,617 | 134 | 334 | 538 | 377 | 220 | 1,153 | 709 | 227 | 15 | - | - | 31 | 209 | 1,340 | 11,099 |
| 6 Retail | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 13,681 | 13,681 |
| 5 Equity | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **15 Total IRB Approach** | **-** | **898** | **3,297** | **1,948** | **234** | **334** | **538** | **498** | **220** | **1,153** | **709** | **227** | **15** | **53** | **-** | **31** | **209** | **32,795** | **43,159** |
| 16 Central governments or central banks | - | - | - | - | - | - | - | - | 53 | - | - | - | - | 120 | - | - | - | 7 | 180 |
| 17 Regional governments or local authorities | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 18 Public sector entities | - | - | - | 9 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 9 |
| 19 Multilateral development banks | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 20 International organisations | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 21 Institutions | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 79 | 79 |
| 22 Corporates | - | 879 | 1,895 | 378 | 156 | 387 | 416 | 71 | 70 | 407 | 12 | 373 | 236 | 17 | - | 29 | 3 | 758 | 6,088 |
| 24 Retail | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 2,122 | 2,122 |
| 26 Secured by mortgages on immovable property | - | - | - | - | - | - | - | - | - | - | 3 | - | - | - | - | - | - | 7 | 9 |
| 28 Exposures in default | - | 29 | 3 | - | - | - | 2 | - | - | - | - | - | 2 | - | - | - | - | 91 | 126 |
| 29 Items associated with particularly high risk | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 30 Covered bonds | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 31 Claims on institutions and corporate with a short-term credit assessment | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 32 Collective investments undertakings(CIU) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 33 Equity exposures | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 34 Other exposures | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 17 | 17 |
| **35 Total Standardised approach** | **-** | **908** | **1,897** | **388** | **156** | **387** | **417** | **71** | **123** | **407** | **14** | **373** | **238** | **137** | **-** | **29** | **3** | **3,081** | **8,630** |
| **36 Total** | **-** | **1,806** | **5,193** | **2,336** | **391** | **722** | **956** | **569** | **343** | **1,560** | **723** | **600** | **253** | **190** | **-** | **59** | **212** | **35,876** | **51,789** |

# Analysis of credit risk

Table 24: CRB -D - Concentration of exposures by industry continued

| | | Agriculture, forestry and fishing | Mining and quarrying | Manufacturing | Electricity, gas, steam and air conditioning supply | Water supply | Construction | Wholesale and retail trade | Transport and storage | Accommodation and food service activities | Information and communication | Real estate activities | Professional, scientific and technical activities | Administrative and support service activities | Public administration and defence, compulsory social security | Education | Human health services and social work activities | Arts, entertainment and recreation | Other services | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **As at 31 December 2018** | | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m |
| 1 | Central Governments or central banks | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 6,220 | 6,220 |
| 2 | Institutions | - | - | - | - | 100 | - | - | - | - | - | - | - | - | - | - | - | - | 1,380 | 1,480 |
| 3 | Corporates | - | 25 | 481 | 89 | 11 | 25 | 533 | 77 | 55 | 0 | 336 | 58 | 76 | - | - | - | 100 | - | 1,866 |
| 6 | Retail | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 6,495 | 6,495 |
| 5 | Equity | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **15** | **Total IRB Approach** | **-** | **25** | **481** | **89** | **111** | **25** | **533** | **77** | **55** | **0** | **336** | **58** | **76** | **-** | **-** | **-** | **100** | **14,095** | **16,061** |
| 16 | Central governments or central banks | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 17 | Regional governments or local authorities | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 18 | Public sector entities | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 19 | Multilateral development banks | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 20 | International organisations | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 21 | Institutions | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 5 | 5 |
| 22 | Corporates | - | - | 68 | | 2 | 120 | 101 | 9 | 78 | 60 | 60 | - | 24 | - | - | 29 | | 62 | 613 |
| 24 | Retail | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1,822 | 1,822 |
| 26 | Secured by mortgages on immovable property | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 28 | Exposures in default | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | 14 | 15 |
| 29 | Items associated with particularly high risk | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 30 | Covered bonds | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 31 | Claims on institutions and corporate with a short-term credit assessment | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 32 | Collective investments undertakings(CIU) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 33 | Equity exposures | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 34 | Other exposures | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 175 | 175 |
| **35** | **Total Standardised approach** | **-** | **-** | **68** | **-** | **2** | **120** | **101** | **9** | **78** | **60** | **60** | **-** | **25** | **-** | **-** | **29** | **-** | **2,078** | **2,630** |
| **36** | **Total** | **-** | **25** | **549** | **89** | **113** | **145** | **634** | **86** | **133** | **60** | **396** | **58** | **101** | **-** | **-** | **29** | **100** | **16,244** | **18,691** |

# Analysis of credit risk

Table 25: 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.

| | | Net Exposure Value | | | | | |
|---|---|---|---|---|---|---|---|
| | | On Demand | < = 1 year | > 1 year < = 5 years | > 5 years | No stated maturity | Total |
| **As at 31 December 2019** | | €m | €m | €m | €m | €m | €m |
| 1 | Central Governments or central banks | 12,650 | 376 | 53 | - | - | **13,079** |
| 2 | Institutions | 2,122 | 1,033 | 399 | 1,746 | - | **5,300** |
| 3 | Corporates | 59 | 951 | 10,007 | 82 | - | **11,099** |
| 4 | Retail | 6,960 | 55 | 254 | 6,412 | - | **13,681** |
| 5 | Equity | - | - | - | - | - | - |
| 6 | **Total IRB Approach** | **21,791** | **2,415** | **10,713** | **8,240** | - | **43,159** |
| 7 | Central governments or central banks | 16 | 83 | 74 | - | 7 | **180** |
| 8 | Regional governments or local authorities | - | - | - | - | - | - |
| 9 | Public sector entities | - | 7 | 2 | - | - | **9** |
| 10 | Multilateral development banks | - | - | - | - | - | - |
| 11 | International organisations | - | - | - | - | - | - |
| 12 | Institutions | 5 | 72 | 2 | - | - | **79** |
| 13 | Corporates | 441 | 2,059 | 3,134 | 454 | - | **6,088** |
| 14 | Retail | 2,101 | - | - | - | 21 | **2,122** |
| 15 | Secured by mortgages on immovable property | - | - | 3 | 6 | - | **9** |
| 16 | Exposures in default | 13 | 3 | 24 | 72 | 14 | **126** |
| 17 | Items associated with particularly high risk | - | - | - | - | - | - |
| 18 | Covered bonds | - | - | - | - | - | - |
| 19 | Claims on institutions and corporate with a short-term credit assessment | - | - | - | - | - | - |
| 20 | Collective investments undertakings | - | - | - | - | - | - |
| 21 | Equity exposures | - | - | - | - | - | - |
| 22 | Other exposures | - | - | - | - | 17 | **17** |
| 23 | **Total standardised approach** | **2,576** | **2,224** | **3,239** | **532** | **59** | **8,630** |
| 24 | **Total** | **24,367** | **4,639** | **13,952** | **8,772** | **59** | **51,789** |

# Analysis of credit risk

Table 25: CRB–E - Residual maturity analysis credit exposures continued

| | | Net Exposure Value | | | | | |
|---|---|---|---|---|---|---|---|
| | | On Demand | < = 1 year | > 1 year < = 5 years | > 5 years | No stated maturity | Total |
| As at 31 December 2018 | | €m | €m | €m | €m | €m | €m |
| 1 | Central Governments or central banks | - | 6,220 | - | - | - | 6,220 |
| 2 | Institutions | - | 1,367 | 113 | - | - | 1,480 |
| 3 | Corporates | - | 375 | 1,410 | 81 | - | 1,866 |
| 4 | Retail | 6,495 | - | - | - | - | 6,495 |
| 5 | Equity | - | - | - | - | - | - |
| 6 | **Total IRB Approach** | **6,495** | **7,962** | **1,523** | **81** | **-** | **16,061** |
| 7 | Central governments or central banks | - | - | - | - | - | - |
| 8 | Regional governments or local authorities | - | - | - | - | - | - |
| 9 | Public sector entities | - | - | - | - | - | - |
| 10 | Multilateral development banks | - | - | - | - | - | - |
| 11 | International organisations | - | - | - | - | - | - |
| 12 | Institutions | 5 | - | - | - | - | 5 |
| 13 | Corporates | 46 | 147 | 312 | 108 | - | 613 |
| 14 | Retail | 1,822 | - | - | - | - | 1,822 |
| 15 | Secured by mortgages on immovable property | - | - | - | - | - | - |
| 16 | Exposures in default | - | 15 | - | - | - | 15 |
| 17 | Items associated with particularly high risk | - | - | - | - | - | - |
| 18 | Covered bonds | - | - | - | - | - | - |
| 19 | Claims on institutions and corporate with a short-term credit assessment | - | - | - | - | - | - |
| 20 | Collective investments undertakings | - | - | - | - | - | - |
| 21 | Equity exposures | - | - | - | - | - | - |
| 22 | Other exposures | - | - | - | - | 175 | 175 |
| 23 | **Total standardised approach** | **1,873** | **162** | **312** | **108** | **175** | **2,630** |
| 24 | **Total** | **8,368** | **8,124** | **1,835** | **189** | **175** | **18,691** |

# Analysis of credit risk

## Credit risk mitigation

BBI employs a range of techniques and strategies to actively mitigate credit risks. Within the regulatory framework this is commonly referred to as credit risk mitigation (CRM) and is fully discussed on page 119 of this document. In the case of collateral, the recognition of the mitigant is reflected through regulatory calculations in several different ways. This is dependent on the nature of the collateral and the underlying approach applied to the exposure.

### Table 26: Exposures covered by guarantees and credit derivatives

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

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

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

Financial collateral includes, but is not exclusive of, cash, debt securities, equities and gold, that can be used to directly reduce credit exposures subject to the Standardised approach. The impact of financial collateral CRM can be observed in Table 20 on page 34, as a component of the difference between EAD pre-CRM and EAD-post CRM.

| Credit exposure class | Exposures covered by unfunded credit protection | | Exposures covered by funded credit protection |
|---|---|---|---|
| | Standardised | Advanced IRB | Advanced IRB |
| | €m | €m | €m |
| **As at 31 December 2019** | | | |
| Central governments or central banks | - | - | - |
| Institutions | - | **24** | - |
| Corporates | - | **2,808** | **2** |
| Retail | - | **3,369** | **16,280** |
| Exposures in default | - | - | - |
| Items associated with high risk | - | - | - |
| Securitisation positions | - | - | - |
| Non-credit obligation assets | - | - | - |
| **Total** | - | **6,201** | **16,282** |

At 31 December 2018 the Bank's parent had provided BBI with a €150 million Large Exposures guarantee in respect of third party exposures in excess of 25% of own funds.

### Table 27: 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.

| | | Exposures unsecured – Carrying amount | Exposures to be secured | Exposures secured by collateral | Exposures secured by financial guarantees | Exposures secured by credit derivatives |
|---|---|---|---|---|---|---|
| **As at 31 December 2019** | | €m | €m | €m | €m | €m |
| 1 | Total loans | 7,314 | 7,190 | 6,607 | 583 | - |
| 2 | Total debt securities | - | - | - | - | - |
| 2a | Others | 15,137 | - | - | - | - |
| 3 | **Total exposures** | 22,451 | 7,190 | 6,607 | 583 | - |
| 4 | Of which defaulted | 187 | 71 | 71 | - | - |
| **As at 31 December 2018** | | | | | | |
| 1 | Total loans | 334 | 327 | 327 | - | - |
| 2 | Total debt securities | - | - | - | - | - |
| 2a | Others | - | - | - | - | - |
| 3 | **Total exposures** | 334 | 327 | 327 | - | - |
| 4 | Of which defaulted | - | - | - | - | - |

# Analysis of credit risk

Table 28: 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 credit exposure class. This table includes exposures subject to the Standardised approach only.

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

| | | Exposures before CCF and CRM | | Exposures post-CCF and CRM | | RWA and RWA density | |
|---|---|---|---|---|---|---|---|
| | | On-balance sheet amount | Off-balance sheet amount | On-balance sheet amount | Off-balance sheet amount | RWA | RWA density |
| | | €m | €m | €m | €m | €m | €m |
| | **As at 31 December 2019** | | | | | | |
| 1 | Central governments or central banks | 165 | 15 | 165 | - | 7 | 4% |
| 2 | Regional governments or local authorities | - | - | - | - | - | 0% |
| 3 | Public sector entities | - | 9 | - | 6 | 6 | 100% |
| 4 | Multilateral development banks | - | - | - | - | - | 0% |
| 5 | International Organisations | - | - | - | - | - | 0% |
| 6 | Institutions | 27 | 52 | 27 | 49 | 55 | 73% |
| 7 | Corporates | 1,343 | 4,745 | 1,305 | 1,593 | 2,821 | 97% |
| 8 | Retail | 2,011 | 111 | 2,011 | - | 1,508 | 75% |
| 9 | Secured by mortgages on immovable property | 9 | - | 9 | - | 5 | 53% |
| 10 | Exposures in default | 110 | 16 | 110 | 8 | 126 | 107% |
| 11 | Items associated with particularly high risk | - | - | - | - | - | 0% |
| 12 | Covered Bonds | - | - | - | - | - | 0% |
| 13 | Claims on institutions and corporate with a short-term credit assessment | - | - | - | - | - | 0% |
| 14 | Claims in the form of CIU | - | - | - | - | - | 0% |
| 15 | Equity exposures | - | - | - | - | - | 0% |
| 16 | Other items | 17 | - | 17 | - | 3 | 16% |
| 17 | **Total** | 3,682 | 4,948 | 3,644 | 1,656 | 4,531 | 86% |
| | **As at 31 December 2018** | | | | | | |
| 1 | Central governments or central banks | - | - | - | - | - | - |
| 2 | Regional governments or local authorities | - | - | - | - | - | - |
| 3 | Public sector entities | - | - | - | - | - | - |
| 4 | Multilateral development banks | - | - | - | - | - | - |
| 5 | International Organisations | - | - | - | - | - | - |
| 6 | Institutions | 5 | - | 5 | - | 5 | 97% |
| 7 | Corporates | 354 | 258 | 349 | 129 | 478 | 100% |
| 8 | Retail | 1,597 | 225 | 1,597 | - | 1,198 | 75% |
| 9 | Secured by mortgages on immovable property | - | - | - | - | - | - |
| 10 | Exposures in default | 15 | - | 15 | - | 16 | 102% |
| 11 | Items associated with particularly high risk | - | - | - | - | - | - |
| 12 | Covered Bonds | - | - | - | - | - | - |
| 13 | Claims on institutions and corporate with a short-term credit assessment | - | - | - | - | - | - |
| 14 | Claims in the form of CIU | - | - | - | - | - | - |
| 15 | Equity exposures | - | - | - | - | - | - |
| 16 | Other items | 175 | - | 175 | - | 283 | 162% |
| 17 | **Total** | 2,147 | 483 | 2,142 | 129 | 1,980 | 87% |

Further information about the key drivers for RWA are provided in Table 22.

# Analysis of credit risk

### Table 29 CR7– Effect on RWA of credit derivatives used as CRM techniques (IRB)

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

| | | Pre-credit derivatives RWAs | | Actual RWAs | |
|---|---|---|---|---|---|
| | | As at 31 December 2019 | As at December 2018 | As at 31 December 2019 | As at December 2018 |
| | | €m | €m | €m | €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** | **8,105** | **3,261** | **8,105** | **3,261** |
| 8 | Central governments and central banks | 592 | 220 | 592 | 220 |
| 9 | Institutions | 170 | 112 | 170 | 112 |
| 10 | Corporates - SME | 1 | - | 1 | - |
| 11 | Corporates - Specialised Lending | 126 | 187 | 126 | 187 |
| 12 | Corporates - Other | 2,601 | 996 | 2,601 | 996 |
| 13 | Retail - Secured by real estate SME | - | - | - | - |
| 14 | Retail - Secured by real estate non-SME | 2,506 | - | 2,506 | - |
| 15 | Retail - Qualifying revolving | 1,658 | 1,717 | 1,658 | 1,717 |
| 16 | Retail - Other SME | - | - | - | - |
| 17 | Retail - Other non-SME | - | - | - | - |
| 18 | Equity IRB | - | - | - | - |
| 19 | Other non-credit obligation assets | 451 | 29 | 451 | 29 |
| **20** | **Total** | **8,105** | **3,261** | **8,105** | **3,261** |

Numbers are aligned to the 'Detailed view of credit risk RWAs and Capital Requirement' table. Please see Table 22 for further information on key movements.

## Credit quality analysis of Standardised exposures

### Credit rating agencies

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

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

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

# Analysis of credit risk

## 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. After assignment to a quality step, exposure class and maturity are then used to determine the risk weight percentage. Exposures cannot be assigned a risk weight lower than that of the sovereign risk of the country in which the asset is located. The following table is a simplified version of the risk weight allocation process.

Table 30: 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 31: Credit quality steps and risk weights under the standardised approach

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

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

Notes:
a 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.
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).

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%).

# Analysis of credit risk

Table 32: 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.

| | | 0% | 2% | 4% | 10% | 20% | 35% | 50% | 70% | 75% | 100% | 150% | 250% | 370% | 1250% | Others | Deducted | Total | of which: Unrated |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | €m | €m | €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 | 173 | - | - | - | - | - | - | - | - | 7 | - | - | - | - | - | - | 180 | 180 |
| 2 | Regional governments or local authorities | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | Public sector entities | - | - | - | - | - | - | - | - | - | 9 | - | - | - | - | - | - | 9 | 9 |
| 4 | Multilateral development banks | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 5 | International Organisations | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 | Institutions | - | - | - | - | 27 | - | - | - | - | 52 | - | - | - | - | - | - | 79 | 78 |
| 7 | Corporates | - | - | - | - | 64 | - | 376 | - | - | 5,461 | 187 | - | - | - | - | - | 6,088 | 3,814 |
| 8 | Retail | - | - | - | - | - | - | - | - | 2,122 | - | - | - | - | - | - | - | 2,122 | 2,122 |
| 9 | Secured by mortgages on immovable property | - | - | - | - | - | 7 | - | - | - | 3 | - | - | - | - | - | - | 9 | 9 |
| 10 | Exposures in default | - | - | - | - | - | - | - | - | - | 103 | 23 | - | - | - | - | - | 126 | 123 |
| 11 | Items associated with particularly high risk | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 | Covered Bonds | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 13 | Claims on institutions and corporate with a short-term credit assessment | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 | Claims in the form of CIU | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 15 | Equity exposures | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 | Other items | 3 | - | - | - | 14 | - | - | - | - | - | - | - | - | - | - | - | 17 | 17 |
| **17** | **Total** | **176** | **-** | **-** | **-** | **105** | **7** | **376** | **-** | **2,122** | **5,635** | **210** | **-** | **-** | **-** | **-** | **-** | **8,630** | **6,354** |

# Analysis of credit risk

Table 32: CR5-A Analysis of exposures by asset classes and risk weight pre-CCF and CRM under the standardised approach continued

| | | 0% | 2% | 4% | 10% | 20% | 35% | 50% | 70% | 75% | 100% | 150% | 250% | 370% | 1250% | Others | Deducted | Total | of which: Unrated |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | €m | €m | €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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2 | Regional governments or local authorities | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | Public sector entities | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 | Multilateral development banks | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 5 | International Organisations | - | - | - | - | - | | | | - | 5 | - | - | - | - | - | - | 5 | 5 |
| 6 | Institutions | - | - | - | - | - | - | - | - | - | 613 | - | - | - | - | - | - | 613 | 606 |
| 7 | Corporates | - | - | - | - | - | - | - | - | 1,822 | - | - | - | - | - | - | - | 1,822 | 1,822 |
| 8 | Retail | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 9 | Secured by mortgages on immovable property | - | - | - | - | - | - | - | - | - | 15 | - | - | - | - | - | - | 15 | 15 |
| 10 | Exposures in default | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 11 | Items associated with particularly high risk | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 | Covered Bonds | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 13 | Claims on institutions and corporate with a short-term credit assessment | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 | Claims in the form of CIU | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 15 | Equity exposures | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 | Other items | - | - | - | - | - | - | - | - | - | 103 | - | 72 | - | - | - | - | 175 | 175 |
| **17** | **Total** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **1,822** | **736** | **-** | **72** | **-** | **-** | **-** | **-** | **2,630** | **2,623** |

# Analysis of credit risk

Table 33: 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 32 and exposure at default post-CRM below is the impact of financial collateral and CCF as described in Table 28.

| | 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[1] | 157 | - | - | - | - | - | - | - | - | 7 | - | - | - | - | 165 | 165 |
| 2 Regional governments or local authorities | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 Public sector entities | - | - | - | - | - | - | - | - | - | 6 | - | - | - | - | 6 | 6 |
| 4 Multilateral development banks | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 5 International Organisations | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 Institutions | - | - | - | - | 27 | - | - | - | - | 49 | - | - | - | - | 76 | 75 |
| 7 Corporates | - | - | - | - | 38 | - | 190 | - | - | 2,566 | 104 | - | - | - | 2,898 | 1,876 |
| 8 Retail | - | - | - | - | - | - | - | - | 2,011 | - | - | - | - | - | 2,011 | 2,011 |
| 9 Secured by mortgages on immovable property | - | - | - | - | - | 7 | - | - | - | 3 | - | - | - | - | 9 | 9 |
| 10 Exposures in default | - | - | - | - | - | - | - | - | - | 102 | 16 | - | - | - | 118 | 115 |
| 11 Items associated with particularly high risk | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 Covered Bonds | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 13 Claims on institutions and corporate with a short-term credit assessment | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 Claims in the form of CIU | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 15 Equity exposures | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 Other items | 3 | - | - | - | 14 | - | - | - | - | - | - | - | - | - | 17 | 17 |
| 17 **Total** | **160** | **-** | **-** | **-** | **79** | **7** | **190** | **-** | **2,011** | **2,733** | **120** | **-** | **-** | **-** | **5,300** | **4,274** |

# Analysis of credit risk

Table 33: CR5-B Analysis of exposures by asset classes and risk weight post-CCF and CRM under the standardised approach continued

| | | 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 banks1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2 | Regional governments or local authorities | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | Public sector entities | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 | Multilateral development banks | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 5 | International Organisations | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 | Institutions | - | - | - | - | - | - | - | - | - | 5 | - | - | - | - | 5 | 5 |
| 7 | Corporates | - | - | - | - | - | - | - | - | - | 478 | - | - | - | - | 478 | 471 |
| 8 | Retail | - | - | - | - | - | - | - | - | 1,597 | - | - | - | - | - | 1,597 | 1,597 |
| 9 | Secured by mortgages on immovable property | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 | Exposures in default | - | - | - | - | - | - | - | - | - | 15 | - | - | - | - | 15 | 15 |
| 11 | Items associated with particularly high risk | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 | Covered Bonds | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 13 | Claims on institutions and corporate with a short-term credit assessment | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 | Claims in the form of CIU | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 15 | Equity exposures | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 | Other items | - | - | - | - | - | - | - | - | - | 103 | - | 72 | - | - | 175 | 175 |
| 17 | **Total** | - | - | - | - | - | - | - | - | 1,597 | 601 | - | 72 | - | - | 2,270 | 2,264 |

# Analysis of credit risk

## Credit quality analysis of IRB exposures

The following section provides breakdowns of inputs into risk weighted asset calculations. Please note that risk weights and risk factors may be volatile in granular breakdowns of wholesale exposures, especially in categories that are more sparsely populated. This is often due to the addition or removal of a relatively large exposure to or from narrow categories when its risk factors are different to the category average. This happens in the normal course of business, for instance, following new lending, repayments, or syndications. See page 110 for a discussion of IRB models.

Table 34: Internal default grade probabilities and mapping to external ratings

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

| EBA PD Range | Internal | Default Probability | | | Financial statements | | |
|---|---|---|---|---|---|---|---|
| % | DG Band | >Min | Mid | <=Max | description | Moody’s | Standard and Poor's |
| 0.00 to < 0.15 | 1 | 0.00% | 0.01% | 0.02% | Strong | 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% | Strong | Baa2 | BBB |
| | 7 | 0.20% | 0.23% | 0.25% | | Baa2 | BBB |
| 0.25 to < 0.50 | 8 | 0.25% | 0.28% | 0.30% | Strong | Baa3 | BBB- |
| | 9 | 0.30% | 0.35% | 0.40% | | Baa3 | BBB- |
| | 10 | 0.40% | 0.45% | 0.50% | | Ba1 | BB+ |
| 0.50 to < 0.75 | 11 | 0.50% | 0.55% | 0.60% | Strong | Ba1 | BB |
| | 12 | 0.60% | - | - | | Ba2 | BB |
| 0.75 to < 2.50 | 12 | - | 0.90% | 1.20% | Satisfactory | Ba2 | BB- |
| | 13 | 1.20% | 1.38% | 1.55% | | Ba3 | BB- |
| | 14 | 1.55% | 1.85% | 2.15% | | Ba3 | B+ |
| | 15 | 2.15% | - | - | | B1 | B+ |
| 2.50 to < 10.00 | 15 | - | 2.60% | 3.05% | Satisfactory | 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% | Higher risk | Caa2 | CCC+ |
| | 20 | 11.35% | 15.00% | 18.65% | | Caa2 | CCC |
| | 21 | 18.65% | 30.00% | 100.00% | | 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 both the trading and banking books. Separate tables are provided for the following credit exposure classes: central governments and central banks (Table 35), institutions (Table 36), corporates (Table 37), corporates subject to slotting (Table 39), secured retail (Table 40) and revolving retail (Table 41).

BBI's 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 35: CR6 Credit risk exposures by exposure class and PD range for central governments and central banks IRB

| | Original on-balance sheet gross exposure | Off-balance sheet exposures pre CCF | Average CCF | EAD post CRM and post CCF | Average PD | Number of obligors | Average LGD | Average Maturity | RWA | RWA Density | EL | Value Adjustment and Provisions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | €m | €m | % | €m | % | | % | Years | €m | % | €m | €m |
| **As at 31 December 2019** | | | | | | | | | | | | |
| 0.00 to < 0.15 | 12,651 | 223 | 45.0% | 12,751 | 0.0% | 7 | 45.7% | 1 | 498 | 3.9% | 1 | |
| 0.15 to < 0.25 | 206 | - | 0.0% | 206 | 0.2% | 2 | 46.3% | 2 | 94 | 45.7% | - | |
| 0.25 to < 0.50 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 0.50 to < 0.75 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 0.75 to < 2.50 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 2.50 to < 10.00 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 10.00 to < 100.00 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 100.00 (Default) | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| **Total** | 12,857 | 223 | 45.0% | 12,957 | 0.0% | 9 | 45.7% | 1 | 592 | 4.6% | 1 | - |
| **As at 31 December 2018** | | | | | | | | | | | | |
| 0.00 to < 0.15 | 6,220 | - | 0.0% | 6,220 | 0.0% | 2 | 45.4% | 1 | 220 | 3.5% | - | |
| 0.15 to < 0.25 | - | - | 0.0% | - | 0.2% | - | 0.0% | - | - | 0.0% | - | |
| 0.25 to < 0.50 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 0.50 to < 0.75 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 0.75 to < 2.50 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 2.50 to < 10.00 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 10.00 to < 100.00 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 100.00 (Default) | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| **Total** | 6,220 | - | 0.0% | 6,220 | 0.0% | 2 | 45.7% | 1 | 220 | 3.5% | - | - |

# Analysis of credit risk

Table 36: CR6 Credit risk exposures by exposure class and PD range for institutions

| | Original on-balance sheet gross exposure | Off-balance sheet exposures pre CCF | Average CCF | EAD post CRM and post CCF | Average PD | Number of obligors | Average LGD | Average Maturity | RWA | RWA Density | EL | Value Adjustment and Provisions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | €m | €m | % | €m | % | | % | Years | €m | % | €m | €m |
| **As at 31 December 2019** | | | | | | | | | | | | |
| 0.00 to < 0.15 | 3,105 | 2,191 | 17.3% | 3,524 | 0.1% | 43 | 9.3% | 4 | 165 | 4.7% | - | |
| 0.15 to < 0.25 | - | - | 0.0% | - | 0.2% | 1 | 45.0% | 1 | - | 46.0% | - | |
| 0.25 to < 0.50 | 1 | 1 | 100.0% | 2 | 0.3% | 2 | 51.3% | 1 | 2 | 73.3% | - | |
| 0.50 to < 0.75 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 0.75 to < 2.50 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 2.50 to < 10.00 | - | 2 | 96.1% | 2 | 3.5% | 3 | 57.7% | 2 | 3 | 177.6% | - | |
| 10.00 to < 100.00 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 100.00 (Default) | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| **Total** | 3,106 | 2,194 | 17.4% | 3,528 | 0.1% | 49 | 9.4% | 4 | 170 | 4.8% | - | - |
| **As at 31 December 2018** | | | | | | | | | | | | |
| 0.00 to < 0.15 | 1,270 | 210 | 59.1% | 1,467 | 0.0% | 3 | 50.0% | 1 | 112 | 7.7% | - | |
| 0.15 to < 0.25 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 0.25 to < 0.50 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 0.50 to < 0.75 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 0.75 to < 2.50 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 2.50 to < 10.00 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 10.00 to < 100.00 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 100.00 (Default) | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| **Total** | 1,270 | 210 | 59.1% | 1,467 | 0.0% | 3 | 50.0% | 1 | 112 | 7.7% | - | - |

# Analysis of credit risk

Table 37: CR6 Credit risk exposures by exposure class and PD range for corporates

| | Original on-balance sheet gross exposure | Off-balance sheet exposures pre CCF | Average CCF | EAD post CRM and post CCF | Average PD | Number of obligors | Average LGD | Average Maturity | RWA | RWA Density | EL | Value Adjustment and Provisions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | €m | €m | % | €m | % | | % | Years | €m | % | €m | €m |
| **As at 31 December 2019** | | | | | | | | | | | | |
| 0.00 to < 0.15 | 194 | 6,091 | 53.0% | 3,442 | 0.1% | 69 | 27.5% | 3 | 724 | 21.0% | 1 | |
| 0.15 to < 0.25 | 160 | 2,220 | 62.3% | 1,542 | 0.2% | 29 | 32.9% | 3 | 595 | 38.6% | 2 | |
| 0.25 to < 0.50 | 346 | 970 | 46.4% | 853 | 0.3% | 51 | 39.0% | 3 | 572 | 67.1% | 2 | |
| 0.50 to < 0.75 | 59 | 64 | 79.2% | 97 | 0.6% | 5 | 56.3% | 2 | 102 | 104.4% | - | |
| 0.75 to < 2.50 | 291 | 138 | 44.5% | 355 | 1.4% | 16 | 40.5% | 3 | 377 | 106.3% | 3 | |
| 2.50 to < 10.00 | 82 | 273 | 41.3% | 196 | 5.1% | 43 | 26.3% | 3 | 151 | 77.4% | 4 | |
| 10.00 to < 100.00 | 20 | 19 | 45.0% | 28 | 18.5% | 3 | 44.6% | 1 | 75 | 265.3% | 2 | |
| 100.00 (Default) | 2 | - | 0.0% | 2 | 100.0% | 1 | 56.3% | 3 | 5 | 200.1% | 1 | |
| **Total** | 1,154 | 9,775 | 54.2% | 6,515 | 0.5% | 217 | 31.5% | 3 | 2,601 | 39.9% | 15 | (8) |
| **As at 31 December 2018** | | | | | | | | | | | | |
| 0.00 to < 0.15 | 205 | 263 | 55.9% | 374 | 0.0% | 16 | 52.8% | 3 | 168 | 45.0% | - | |
| 0.15 to < 0.25 | 127 | 259 | 60.7% | 290 | 0.2% | 8 | 56.5% | 3 | 241 | 83.3% | - | |
| 0.25 to < 0.50 | 353 | 332 | 58.8% | 574 | 0.3% | 20 | 42.1% | 2 | 422 | 73.5% | 1 | |
| 0.50 to < 0.75 | 137 | 103 | 64.2% | 203 | 0.6% | 9 | 55.6% | 3 | 261 | 128.4% | 1 | |
| 0.75 to < 2.50 | 26 | 55 | 78.4% | 69 | 1.7% | 4 | 42.3% | 2 | 80 | 115.7% | 1 | |
| 2.50 to < 10.00 | 5 | - | 50.0% | 5 | 2.8% | 3 | 60.3% | 3 | 11 | 217.5% | - | |
| 10.00 to < 100.00 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 100.00 (Default) | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| **Total** | 854 | 1,012 | 61.1% | 1,516 | 0.4% | 60 | 49.4% | 3 | 1,184 | 78.1% | 3 | (1) |

# Analysis of credit risk

Table 38: CR6 Credit risk exposures by exposure class and PD range for corporate of which: SMEs

| | Original on-balance sheet gross exposure | Off-balance sheet exposures pre CCF | Average CCF | EAD post CRM and post CCF | Average PD | Number of obligors | Average LGD | Average Maturity | RWA | RWA Density | EL | Value Adjustment and Provisions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | €m | €m | % | €m | % | | % | Years | €m | % | €m | €m |
| **As at 31 December 2019** | | | | | | | | | | | | |
| 0.00 to < 0.15 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 0.15 to < 0.25 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 0.25 to < 0.50 | - | - | 0.0% | - | 0.4% | 2 | 65.1% | 3 | - | 84.2% | - | |
| 0.50 to < 0.75 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 0.75 to < 2.50 | - | 1 | 49.5% | - | 0.9% | 2 | 51.7% | 1 | - | 64.7% | - | |
| 2.50 to < 10.00 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 10.00 to < 100.00 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 100.00 (Default) | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| **Total** | - | 1 | 47.2% | 1 | 0.6% | 4 | 58.6% | 2 | 1 | 76.7% | - | - |
| **As at 31 December 2018** | | | | | | | | | | | | |
| 0.00 to < 0.15 | - | - | 50.0% | - | 0.0% | 1 | 50.0% | 12 | - | 7.6% | - | |
| 0.15 to < 0.25 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 0.25 to < 0.50 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 0.50 to < 0.75 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 0.75 to < 2.50 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 2.50 to < 10.00 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 10.00 to < 100.00 | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| 100.00 (Default) | - | - | 0.0% | - | 0.0% | - | 0.0% | - | - | 0.0% | - | |
| **Total** | - | - | 50.0% | - | 0.6% | 1 | 50.0% | 12 | - | 7.6% | - | - |

# Analysis of credit risk

Table 39: 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.

| Regulatory categories | | Remaining maturity | On-balance sheet amount | Off-balance sheet amount | Risk weight | Exposure amount | RWA | Expected losses |
|---|---|---|---|---|---|---|---|---|
| **As at 31 December 2019** | | | €m | €m | % | €m | €m | €m |
| Category 1 | Strong | Less than 2.5 years | 5 | - | 50% | 5 | 3 | - |
| | | Equal to or more than 2.5 years | 121 | 10 | 70% | 134 | 94 | 1 |
| Category 2 | Good | Less than 2.5 years | - | - | 70% | - | - | - |
| | | Equal to or more than 2.5 years | 32 | - | 90% | 32 | 29 | - |
| Category 3 | Satisfactory | Less than 2.5 years | - | - | 115% | - | - | - |
| | | Equal to or more than 2.5 years | - | - | 115% | - | - | - |
| 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 | 5 | - | 0% | 5 | 3 | - |
| | | Equal to or more than 2.5 years | 153 | 10 | 0% | 166 | 123 | 1 |
| **As at 31 December 2018** | | | | | | | | |
| Category 1 | Strong | Less than 2.5 years | 186 | 17 | 50% | 196 | 98 | - |
| | | Equal to or more than 2.5 years | 71 | 50 | 70% | 101 | 71 | - |
| Category 2 | Good | Less than 2.5 years | - | 25 | 70% | 25 | 18 | - |
| | | Equal to or more than 2.5 years | - | - | 90% | - | - | - |
| Category 3 | Satisfactory | Less than 2.5 years | - | - | 115% | - | - | - |
| | | Equal to or more than 2.5 years | - | - | 115% | - | - | - |
| 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 | 186 | 42 | 0% | 221 | 116 | - |
| | | Equal to or more than 2.5 years | 71 | 50 | 0% | 101 | 71 | - |

# Analysis of credit risk

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

| | Original on-balance sheet gross exposure | EAD post CRM and post CCF | Average PD | Number of obligors | Average LGD | Average Maturity | RWA | RWA Density | EL | Value Adjustment and Provisions |
|---|---|---|---|---|---|---|---|---|---|---|
| | €m | €m | % | | % | Years | €m | % | €m | €m |
| **As at 31 December 2019** | | | | | | | | | | |
| 0.00 to < 0.15 | 4,364 | 4,407 | 0.1% | 50,795 | 22.1% | 17 | 1,048 | 23.8% | 9 | |
| 0.15 to < 0.25 | 1,410 | 1,424 | 0.2% | 17,124 | 22.3% | 16 | 500 | 35.1% | 5 | |
| 0.25 to < 0.50 | 340 | 344 | 0.3% | 4,042 | 23.5% | 16 | 175 | 50.8% | 2 | |
| 0.50 to < 0.75 | 127 | 129 | 0.6% | 1,473 | 26.1% | 17 | 56 | 43.6% | 2 | |
| 0.75 to < 2.50 | 230 | 232 | 1.1% | 2,603 | 27.3% | 18 | 142 | 61.2% | 6 | |
| 2.50 to < 10.00 | 50 | 50 | 5.1% | 671 | 24.6% | 18 | 118 | 234.1% | 5 | |
| 10.00 to < 100.00 | 95 | 96 | 37.5% | 1,105 | 24.2% | 18 | 394 | 412.4% | 29 | |
| 100.00 (Default) | 104 | 105 | 100.0% | 1,046 | 29.1% | 11 | 73 | 69.9% | 30 | |
| **Total** | 6,720 | 6,787 | 2.3% | 78,859 | 22.6% | 17 | 2,506 | 36.9% | 88 | (65) |

There were no credit risk exposures by exposure class and PD range for secured retail as at 31 December 2018

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

| | Original on-balance sheet gross exposure | Off-balance sheet exposures pre CCF | Average CCF | EAD post CRM and post CCF | Average PD | Number of obligors | Average LGD | Average Maturity | RWA | RWA Density | EL | Value Adjustment and Provisions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | €m | €m | % | €m | % | | % | Years | €m | % | €m | €m |
| **As at 31 December 2019** | | | | | | | | | | | | |
| 0.00 to < 0.15 | 383 | 3,913 | 0.0% | 2,404 | 0.0% | 870,998 | 75.8% | - | 109 | 4.5% | 2 | |
| 0.15 to < 0.25 | 94 | 201 | 0.0% | 161 | 0.2% | 42,398 | 75.9% | - | 27 | 17.0% | 1 | |
| 0.25 to < 0.50 | 407 | 382 | 0.0% | 532 | 0.4% | 91,341 | 78.8% | - | 143 | 27.0% | 4 | |
| 0.50 to < 0.75 | 161 | 47 | 0.0% | 179 | 0.5% | 19,617 | 81.9% | - | 272 | 152.4% | 13 | |
| 0.75 to < 2.50 | 823 | 130 | 0.0% | 936 | 1.2% | 112,453 | 83.2% | - | 499 | 53.3% | 18 | |
| 2.50 to < 10.00 | 194 | 16 | 0.0% | 207 | 4.7% | 37,439 | 79.1% | - | 348 | 167.9% | 21 | |
| 10.00 to < 100.00 | 39 | 2 | 0.0% | 41 | 25.6% | 8,732 | 77.1% | - | 145 | 354.6% | 22 | |
| 100.00 (Default) | 125 | 44 | 0.0% | 125 | 100.0% | 25,807 | 49.2% | - | 115 | 91.3% | 54 | |
| **Total** | 2,226 | 4,735 | 0.0% | 4,585 | 3.5% | 1,208,785 | 77.3% | - | 1,658 | 36.2% | 135 | (216) |
| **As at 31 December 2018** | | | | | | | | | | | | |
| 0.00 to < 0.15 | 382 | 3,442 | 0.0% | 2,207 | 0.0% | 780,724 | 77.2% | - | 117 | 5.3% | 2 | |
| 0.15 to < 0.25 | 126 | 258 | 0.0% | 220 | 0.2% | 56,984 | 78.3% | - | 30 | 13.8% | 1 | |
| 0.25 to < 0.50 | 320 | 303 | 0.0% | 432 | 0.4% | 74,471 | 81.1% | - | 143 | 33.1% | 5 | |
| 0.50 to < 0.75 | 164 | 57 | 0.0% | 189 | 0.6% | 21,001 | 0.6% | - | 52 | 27.4% | 1 | |
| 0.75 to < 2.50 | 892 | 147 | 0.0% | 1,023 | 1.4% | 123,108 | 84.3% | - | 800 | 78.2% | 35 | |
| 2.50 to < 10.00 | 186 | 14 | 0.0% | 33 | 5.7% | 7,291 | 79.3% | - | 116 | 352.3% | 22 | |
| 10.00 to < 100.00 | 32 | 2 | 0.0% | 198 | 28.3% | 36,593 | 79.3% | - | 342 | 173.3% | 19 | |
| 100.00 (Default) | 128 | 43 | 0.0% | 128 | 100.0% | 27,277 | 100.0% | - | 116 | 90.9% | 55 | |
| **Total** | 2,229 | 4,266 | 0.0% | 4,430 | 3.8% | 1,127,449 | 78.9% | - | 1,717 | 38.8% | 140 | (221) |

# Analysis of credit risk

Table 42: CR1-A – Credit quality of exposures by exposure class and instrument

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

| | As at 31 December 2019 | Defaulted exposures | Non-defaulted exposure | Specific credit risk adjustment | General credit risk adjustment | Credit risk adjustment charges in the period | Net values | Accumulated write-offs |
|---|---|---|---|---|---|---|---|---|
| | | €m | €m | €m | €m | €m | €m | €m |
| 1 | Central governments or central banks | - | 13,079 | - | - | - | 13,079 | - |
| 2 | Institutions | - | 5,300 | - | - | - | 5,300 | - |
| 3 | Corporates | 2 | 11,097 | 8 | - | 8 | 11,091 | - |
| 4 | Of which Specialised lending | - | 168 | - | - | - | 168 | - |
| 5 | Of which SMEs | - | 1 | - | - | - | 1 | - |
| 6 | Retail | 273 | 13,408 | 281 | - | 281 | 13,400 | 52 |
| 7 | Secured by real estate property | 104 | 6,616 | 65 | - | 65 | 6,655 | - |
| 8 | SMEs | - | - | - | - | - | - | - |
| 9 | Non-SMEs | - | - | - | - | - | - | - |
| 10 | Qualifying revolving | 169 | 6,792 | 216 | - | 216 | 6,745 | 52 |
| 11 | Other retail | - | - | - | - | - | - | - |
| 12 | SMEs | - | - | - | - | - | - | - |
| 13 | Non-SMEs | - | - | - | - | - | - | - |
| 14 | Equity | - | - | - | - | - | - | - |
| 15 | **Total IRB approach** | 275 | 42,884 | 289 | - | 289 | 42,870 | 52 |
| 16 | Central governments or central banks | - | 180 | - | - | - | 180 | - |
| 17 | Regional governments or local authorities | - | - | - | - | - | - | - |
| 18 | Public sector entities | - | 9 | - | - | - | 9 | - |
| 19 | Multilateral development banks | - | - | - | - | - | - | - |
| 20 | International organisations | - | - | - | - | - | - | - |
| 21 | Institutions | - | 84 | 5 | - | 5 | 79 | - |
| 22 | Corporates | 64 | 6,104 | 16 | - | 16 | 6,130 | 2 |
| 23 | Of which: SMEs | - | 367 | 2 | - | 2 | 365 | - |
| 24 | Retail | 165 | 2,157 | 35 | - | 35 | 2,206 | 24 |
| 25 | Of which: SMEs | - | - | - | - | - | - | - |
| 26 | Secured by mortgages on immovable property | - | 10 | 1 | - | 1 | 9 | - |
| 27 | Of which: SMEs | - | 3 | - | - | - | 3 | - |
| 28 | Exposures in default | 229 | - | 103 | - | 103 | 126 | - |
| 29 | Items associated with particularly high risk | - | - | - | - | - | - | - |
| 30 | Covered bonds | - | - | - | - | - | - | - |
| 31 | Claims on institutions and corporates with a short-term credit assessment | - | - | - | - | - | - | - |
| 32 | Collective investments undertakings | - | - | - | - | - | - | - |
| 33 | Equity exposures | - | - | - | - | - | - | - |
| 34 | Other exposures | - | 17 | - | - | - | 17 | - |
| 35 | **Total standardised approach** | 229 | 8,561 | 160 | - | 139 | 8,630 | 26 |
| 36 | **Total** | 504 | 51,445 | 449 | - | 428 | 51,500 | 78 |
| 37 | Of which: Loans | 445 | 14,481 | 422 | - | 422 | 14,504 | 78 |
| 38 | Of which: Debt securities | - | - | - | - | - | - | - |
| 38a | Of which: Other exposures | - | 15,137 | - | - | - | 15,137 | - |
| 39 | Of which: Off-balance-sheet exposures | 59 | 21,827 | 27 | - | 28 | 21,859 | - |

# Analysis of credit risk

Table 42: CR1-A – Credit quality of exposures by exposure class and instrument continued

| | As at 31 December 2018 | Defaulted exposures | Non-defaulted exposure | Specific credit risk adjustment | General credit risk adjustment | Credit risk adjustment charges in the period | Net values | Accumulated write-offs |
|---|---|---|---|---|---|---|---|---|
| | | €m | €m | €m | €m | €m | €m | €m |
| 1 | Central governments or central banks | - | 6,220 | - | - | - | 6,220 | - |
| 2 | Institutions | - | 1,480 | - | - | - | 1,480 | - |
| 3 | Corporates | - | 1,866 | 1 | - | 1 | 1,864 | - |
| 4 | Of which  Specialised lending | - | 349 | - | - | - | 349 | - |
| 5 | Of which SMEs | - | - | - | - | - | - | - |
| 6 | Retail | 171 | 6,323 | 221 | - | 221 | 6,102 | - |
| 7 | Secured by real estate property | - | - | - | - | - | - | - |
| 8 | SMEs | - | - | - | - | - | - | - |
| 9 | Non-SMEs | - | - | - | - | - | - | - |
| 10 | Qualifying revolving | - | - | - | - | - | - | - |
| 11 | Other retail | - | - | - | - | - | - | - |
| 12 | SMEs | - | - | - | - | - | - | - |
| 13 | Non-SMEs | - | - | - | - | - | - | - |
| 14 | Equity | - | - | - | - | - | - | - |
| 15 | Total IRB approach | 171 | 15,889 | 223 | - | 223 | 15,666 | - |
| 16 | Central governments or central banks | - | - | - | - | - | - | - |
| 17 | Regional governments or local authorities | - | - | - | - | - | - | - |
| 18 | Public sector entities | - | - | - | - | - | - | - |
| 19 | Multilateral development banks | - | - | - | - | - | - | - |
| 20 | International organisations | - | - | - | - | - | - | - |
| 21 | Institutions | - | 5 | - | - | - | 5 | - |
| 22 | Corporates | - | 613 | 3 | - | 3 | 609 | - |
| 23 | Of which:  SMEs | - | 4 | - | - | - | 4 | - |
| 24 | Retail | 50 | 1,859 | 73 | - | 73 | 1,859 | - |
| 25 | Of which:  SMEs | - | - | - | - | - | - | - |
| 26 | Secured by mortgages on immovable property | - | - | - | - | - | - | - |
| 27 | Of which:  SMEs | - | - | - | - | - | - | - |
| 28 | Exposures in default | 1 | - | 1 | - | 1 | - | - |
| 29 | Items associated with particularly high risk | - | - | - | - | - | - | - |
| 30 | Covered bonds | - | - | - | - | - | - | - |
| 31 | Claims on institutions and corporates with a short-term credit assessment | - | - | - | - | - | - | - |
| 32 | Collective investments undertakings | - | - | - | - | - | - | - |
| 33 | Equity exposures | - | - | - | - | - | - | - |
| 34 | Other exposures | - | 175 | - | - | - | 175 | - |
| 35 | Total standardised approach | 51 | 2,652 | 78 | - | 78 | 2,648 | - |
| 36 | Total | 223 | 18,541 | 300 | - | 300 | 18,315 | - |
| 37 | Of which: Loans | 129 | 12,489 | 300 | - | 300 | 12,189 | - |
| 38 | Of which: Debt securities | - | - | - | - | - | - | - |
| 38a | Of which: Other exposures | - | 175 | - | - | - | 175 | - |
| 39 | Of which:  Off-balance-sheet exposures | 43 | 5,927 | - | - | - | 5,970 | - |

# Analysis of credit risk

Table 43: CR1-B – Credit quality of exposures by industry or counterparty types

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

| | | Defaulted exposures | Non-defaulted exposures | Specific credit risk adjustment | General credit risk adjustment | Credit risk adjustment charges in the period | Net values | Accumulated write-offs |
|---|---|---|---|---|---|---|---|---|
| As at 31 December 2019 | | €m | €m | €m | €m | €m | €m | €m |
| 1 | Agriculture, forestry and fishing | - | - | - | - | - | - | - |
| 2 | Mining and quarrying | 38 | 1,779 | 12 | - | 12 | 1,805 | - |
| 3 | Manufacturing | 3 | 5,199 | 9 | - | 9 | 5,192 | 2 |
| 4 | Electricity, gas, steam and air conditioning supply | - | 2,337 | 2 | - | 2 | 2,335 | - |
| 5 | Water supply | - | 391 | - | - | - | 391 | - |
| 6 | Construction | - | 722 | - | - | - | 722 | - |
| 7 | Wholesale and retail trade | 2 | 955 | 1 | - | 1 | 955 | - |
| 8 | Transport and storage | - | 569 | - | - | - | 569 | - |
| 9 | Accommodation and food service activities | - | 343 | 1 | - | 1 | 342 | - |
| 10 | Information and communication | - | 1,560 | 1 | - | 1 | 1,559 | - |
| 11 | Real estate activities | 1 | 723 | 2 | - | 2 | 723 | - |
| 12 | Professional, scientific and technical activities | 2 | 598 | 1 | - | 1 | 599 | - |
| 13 | Administrative and support service activities | 5 | 252 | 5 | - | 5 | 253 | - |
| 14 | Public administration and defence, compulsory social security | - | 190 | - | - | - | 190 | - |
| 15 | Education | - | - | - | - | - | - | - |
| 16 | Human health services and social work activities | - | 60 | - | - | - | 59 | - |
| 17 | Arts, entertainment and recreation | - | 212 | - | - | - | 212 | - |
| 18 | Other services | 454 | 35,552 | 416 | - | 416 | 35,593 | 76 |
| 19 | **Total** | 505 | 51,444 | 450 | - | 450 | 51,499 | 78 |
| **As at 31 December 2018** | | | | | | | | |
| 1 | Agriculture, forestry and fishing | - | - | - | - | - | - | - |
| 2 | Mining and quarrying | - | 25 | - | - | - | 25 | - |
| 3 | Manufacturing | - | 497 | - | - | - | 497 | - |
| 4 | Electricity, gas, steam and air conditioning supply | - | 141 | 3 | - | 3 | 138 | - |
| 5 | Water supply | - | 113 | - | - | - | 113 | - |
| 6 | Construction | - | 145 | - | - | - | 145 | - |
| 7 | Wholesale and retail trade | - | 633 | 1 | - | 1 | 633 | - |
| 9 | Transport and storage | - | 86 | - | - | - | 86 | - |
| 10 | Accommodation and food service activities | - | 133 | - | - | - | 133 | - |
| 11 | Information and communication | - | 60 | - | - | - | 60 | - |
| 12 | Real estate activities | 1 | 397 | 1 | - | 1 | 397 | - |
| 13 | Professional, scientific and technical activities | - | 58 | - | - | - | 58 | - |
| 14 | Administrative and support service activities | - | 74 | - | - | - | 74 | - |
| 15 | Public administration and defence, compulsory social security | - | - | - | - | - | - | - |
| 16 | Education | - | - | - | - | - | - | - |
| 17 | Human health services and social work activities | - | 29 | - | - | - | 29 | - |
| 18 | Arts, entertainment and recreation | - | 100 | - | - | - | 99 | - |
| 19 | Other services | 222 | 16,048 | 295 | - | 295 | 15,754 | - |
| 20 | Total | 223 | 18,541 | 300 | - | 300 | 18,242 | - |

# Analysis of credit risk

Table 44: CR1-C – Credit quality of exposures by geography

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

| | Defaulted exposures | Non-defaulted exposures | Specific credit risk adjustment | General credit risk adjustment | Credit risk adjustment charges of the period | Net values | Accumulated write-offs |
|---|---|---|---|---|---|---|---|
| As at 31 December 2019 | €m | €m | €m | €m | €m | €m | €m |
| **Europe** | **501** | **45,603** | **445** | **-** | **445** | **45,658** | **78** |
| Germany | 228 | 21,418 | 287 | - | 287 | 21,359 | 75 |
| Italy | 225 | 8,579 | 125 | - | 125 | 8,679 | 1 |
| France | 6 | 5,875 | 7 | - | 7 | 5,874 | - |
| Ireland | 1 | 4,348 | 6 | - | 6 | 4,342 | - |
| **UK** | **4** | **5,087** | **4** | **-** | **4** | **5,088** | **-** |
| **Americas** | **1** | **603** | **1** | **-** | **1** | **603** | **-** |
| United States | 1 | 546 | 1 | - | 1 | 545 | - |
| **Asia** | **-** | **124** | **-** | **-** | **-** | **124** | **-** |
| India | - | 102 | - | - | - | 102 | - |
| **Africa and Middle East** | **-** | **27** | **-** | **-** | **-** | **26** | **-** |
| **Total** | **505** | **51,444** | **450** | **-** | **450** | **51,499** | **78** |
| As at 31 December 2018 | | | | | | | |
| **Europe** | **223** | **17,016** | **300** | **-** | **300** | **16,716** | **-** |
| Germany | 222 | 13,979 | 295 | - | 295 | 13,684 | - |
| France | - | 2 | - | - | - | - | - |
| Italy | - | - | - | - | - | - | - |
| Switzerland | - | - | - | - | - | - | - |
| **UK** | **-** | **1,520** | **-** | **-** | **-** | **1,520** | **-** |
| **Americas** | **-** | **5** | **-** | **-** | **-** | **5** | **-** |
| United States | - | 5 | - | - | - | 5 | - |
| **Asia** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| India | - | - | - | - | - | - | - |
| **Africa and Middle East** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| **Total** | **223** | **18,541** | **300** | **-** | **300** | **18,240** | **-** |

# Analysis of credit risk

Table 45: 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 | |
|---|---|---|---|---|---|---|---|---|
| | | Non Performing forborne | | | | | | |
| | Performing forborne | Total | Of which: defaulted | Of which: impaired | On performing forborne exposures | On non-performing forborne exposures | Total | Of which collateral and financial guarantees received on non-performing exposures with forbearance measures |
| As at 31 December 2019 | €m | €m | €m | €m | €m | €m | €m | €m |
| 1 **Loans and Advances** | 4 | 213 | 72 | 206 | - | (70) | 100 | 100 |
| 2 Central banks | - | - | - | - | - | - | - | - |
| 3 General governments | - | - | - | - | - | - | - | - |
| 4 Credit institutions | - | - | - | - | - | - | - | - |
| 5 Other financial corporations | - | - | - | - | - | - | - | - |
| 6 Non-financial corporations | 2 | 23 | 23 | 23 | - | (10) | - | - |
| 7 Households | 2 | 190 | 49 | 183 | - | (60) | 100 | 100 |
| 8 **Debt securities** | - | - | - | - | - | - | - | - |
| 9 **Loan commitments given** | - | 3 | - | 3 | - | - | - | - |
| 10 **Total** | **4** | **216** | **72** | **209** | **-** | **(70)** | **100** | **100** |

Table 46: Credit quality of performing and non-performing exposures by past due days

| | Gross carrying amount/nominal amount | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Performing exposures | | | | Non-performing exposures | | | | | |
| | Total | Not past due or past due ≤ 30 days | Past due > 30 days ≤ 90 days | Total | Unlikely to pay that are not past due or are past due ≤ 90 days | Past due > 90 days ≤ 180 days | Past due > 180 days ≤ 1 year | Past due > 1 year ≤ 5 years | Past due > 5 years | Of which defaulted |
| As at 31 December 2019 | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m |
| 1 **Loans and advances** | 38,245 | 38,175 | 71 | 529 | 249 | 57 | 67 | 153 | 3 | 505 |
| 2 Central banks | 12,826 | 12,826 | - | - | - | - | - | - | - | - |
| 3 General governments | 478 | 478 | - | - | - | - | - | - | - | - |
| 4 Credit institutions | 5,916 | 5,916 | - | - | - | - | - | - | - | - |
| 5 Other financial corporations | 6,125 | 6,125 | - | 13 | - | - | - | 13 | - | 13 |
| 6 Non-financial corporations | 2,444 | 2,444 | - | 40 | 20 | - | 4 | 14 | 3 | 40 |
| 7 Of which SMEs | - | - | - | 4 | - | - | - | 4 | - | 4 |
| 8 Households | 10,456 | 10,386 | 71 | 476 | 229 | 57 | 63 | 126 | - | 452 |
| 9 **Debt securities** | - | - | - | - | - | - | - | - | - | - |
| 10 Central banks | - | - | - | - | - | - | - | - | - | - |
| 11 General governments | - | - | - | - | - | - | - | - | - | - |
| 12 Credit institutions | - | - | - | - | - | - | - | - | - | - |
| 13 Other financial corporations | - | - | - | - | - | - | - | - | - | - |
| 14 Non-financial corporations | - | - | - | - | - | - | - | - | - | - |
| 15 **Off-balance-sheet exposures** | 20,606 | | | 74 | | | | | | 74 |
| 16 Central banks | - | | | - | | | | | | - |
| 17 General governments | 16 | | | - | | | | | | - |
| 18 Credit institutions | 858 | | | - | | | | | | - |
| 19 Other financial corporations | 1,262 | | | - | | | | | | - |
| 20 Non-financial corporations | 13,639 | | | 24 | | | | | | 24 |
| 21 Households | 4,831 | | | 50 | | | | | | 50 |
| 22 **Total** | **58,851** | **38,175** | **71** | **603** | **249** | **57** | **67** | **153** | **3** | **579** |

# Analysis of credit risk

Table 47: Performing and non-performing exposures

| | 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 | | | | | |
| | Total | Of which stage 1 | Of which stage 2 | Total | Of which stage 2 | Of which stage 3 | Total | Of which stage 1 | Of which stage 2 | Total | Of which stage 2 | Of which stage 3 | Accumulated partial write-off | On performing exposures | On non-performing exposures |
| As at 31 December 2019 | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m |
| 1 **Loans and advances** | 38,245 | 36,428 | 1,819 | 527 | 21 | 505 | (224) | (40) | (184) | (204) | (3) | (200) | - | 9,288 | 235 |
| 2 Central banks | 12,826 | 12,826 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 General governments | 478 | 478 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 Credit institutions | 5,916 | 5,916 | - | - | - | - | - | - | - | - | - | - | - | 2,946 | - |
| 5 Other financial corporations | 6,125 | 6,119 | 7 | 13 | - | 13 | (1) | (1) | - | (4) | - | (4) | - | 15 | 9 |
| 6 Non-financial corporations | 2,444 | 2,202 | 243 | 40 | - | 40 | (12) | (6) | (6) | (23) | - | (23) | - | 237 | 5 |
| 7 Of which SMEs | - | - | - | 4 | - | 4 | - | - | - | (4) | - | (4) | - | - | - |
| 8 Households | 10,456 | 8,887 | 1,569 | 474 | 21 | 452 | (211) | (33) | (178) | (177) | (3) | (173) | - | 6,090 | 221 |
| 9 **Debt securities** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 Central banks | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 11 General governments | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 Credit institutions | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 13 Other financial corporations | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 Non-financial corporations | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 15 **Off-balance-sheet exposures** | 20,606 | 19,595 | 1,010 | 74 | - | 74 | (10) | (4) | (6) | - | - | - | | - | - |
| 16 Central banks | - | - | - | - | - | - | - | - | - | - | - | - | | - | - |
| 17 General governments | 16 | 16 | - | - | - | - | - | - | - | - | - | - | | - | - |
| 18 Credit institutions | 858 | 836 | 22 | - | - | - | - | - | - | - | - | - | | - | - |
| 19 Other financial corporations | 1,262 | 1,259 | 2 | - | - | - | - | - | - | - | - | - | | - | - |
| 20 Non-financial corporations | 13,639 | 12,823 | 816 | 24 | - | 24 | (10) | (4) | (6) | - | - | - | | - | - |
| 21 Households | 4,831 | 4,661 | 170 | 50 | - | 50 | - | - | - | - | - | - | | - | - |
| 22 **Total** | **58,851** | **56,023** | **2,829** | **601** | **21** | **579** | **(234)** | **(44)** | **(190)** | **(204)** | **(3)** | **(200)** | **-** | **9,288** | **235** |

# Analysis of credit risk

### Table 48: CR2-B - Changes in the stock of defaulted and impaired loans and debt securities

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

| | | Gross carrying value defaulted exposures[a] |
|---|---|---|
| | | €m |
| 1 | **As at 1 January 2019** | **192** |
| 2 | Loans and debt securities that have defaulted or impaired since the last reporting period | 187 |
| 3 | Returned to non-defaulted status | (48) |
| 4 | Amounts written off | (49) |
| 5 | Other changes[b] | 249 |
| 10 | **As at 31 December 2019** | **531** |

Notes:

a Defaulted exposures are defined as all stage 3 impaired gross loans and debt securities under IFRS9 and any stage 1 and stage 2 gross loans and debt securities under IFRS9 more than 90 days past due.
b Other changes include repayments and disposals net drawdowns.

### Table 49: CR2-A – Changes in the stock of general and specific credit risk adjustments

This table shows the movement in the impairment allowance in 2019.

| | | Accumulated specific credit risk adjustment [a] | Accumulated general credit risk adjustment |
|---|---|---|---|
| | | €m | €m |
| 1 | **As 1 January 2019** | 293 | - |
| 2 | Increases due to amounts set aside for estimated loan losses during the period[b] | 185 | - |
| 3 | Decreases due to amounts reversed for estimated loan losses during the period[c] | (49) | - |
| 4 | Decreases due to amounts taken against accumulated credit risk adjustments | - | - |
| 5 | Transfers between credit risk adjustments | - | - |
| 6 | Impact of exchange rate differences | - | - |
| 7 | Business combinations, including acquisitions and disposals of subsidiaries | - | - |
| 9 | Other adjustments | 8 | - |
| 10 | **As at 31 December 2019** | 437 | - |
| 11 | Recoveries on credit risk adjustments recorded directly to the statement of profit or loss | (2) | - |
| 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.

## 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. There is no difference between IFRS and regulatory allowance for impairments as of 2019 year end.

### Table 50: Regulatory adjustments to statutory Impairment

| **As at 31 December 2019** | €m |
|---|---|
| **IFRS allowance for impairment** | **437** |
| Scope of consolidation | - |
| **Regulatory impairment allowance** | **437** |

# Analysis of credit risk

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

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

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

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

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

### Regulatory Expected Loss

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

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

### Actual Loss

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

Table 51: Analysis of expected loss versus actual losses for IRB exposures

| IRB Exposure Class | EL<br>€m | ELBE<br>€m | Total expected loss at 31 December 2018<br>€m | Total actual loss at 31 December 2019<br>€m |
|---|---|---|---|---|
| Central governments or central banks | - | - | - | - |
| Institutions | - | - | - | - |
| Corporates | 3 | - | 3 | - |
| Retail | 84 | 55 | 140 | |
| - SME | - | - | - | - |
| - Secured by real estate collateral | - | - | - | - |
| - Qualifying revolving retail | 84 | 55 | 140 | |
| - Other retail | - | - | - | - |
| Equity | - | - | - | - |
| Securitisation positions | - | - | - | - |
| Non-credit obligation assets | - | - | - | - |
| **Total IRB** | **88** | **55** | **143** | - |

| | EL<br>€m | ELBE<br>€m | Total expected loss at 31 December 2017<br>€m | Total actual loss at 31 December 2018<br>€m |
|---|---|---|---|---|
| Central governments or central banks | - | - | - | - |
| Institutions | - | - | - | - |
| Corporates | 5 | - | 5 | 4 |
| Retail | - | - | - | - |
| - SME | - | - | - | - |
| - Secured by real estate collateral | - | - | - | - |
| - Qualifying revolving retail | - | - | - | - |
| - Other retail | - | - | - | - |
| Equity | - | - | - | - |
| Securitisation positions | - | - | - | - |
| Non-credit obligation assets | - | - | - | - |
| Total IRB | 5 | - | 5 | - |

# Analysis of counterparty credit risk

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

## Key Metrics

*Risk weighted assets*

*for counterparty credit risk*

***€1.8bn***

*2018: €6 million*

- Counterparty credit risk (CCR) RWAs are primarily generated by the following IFRS account classifications: financial assets designated at fair value; derivative financial instruments; reverse repurchase agreements and other similar secured lending.
- CVA has been included as part of the CCR RWAs disclosures.

# Analysis of counterparty credit risk

## Counterparty risk exposures

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

The following tables analyse counterparty credit risk exposures and risk weighted assets split by regulatory exposure class

Table 52: Detailed view of counterparty credit risk RWAs and Capital Requirement

|  | EAD | RWA | Capital Requirements |
|---|---|---|---|
| **As at 31 December 2019** | €m | €m | €m |
| **Counterparty credit risk exposure class** | - | - | - |
| **Standardised approach** | - | - | - |
| Central governments or central banks | - | - | - |
| Regional governments or local authorities | - | - | - |
| Public sector entities | - | - | - |
| Multilateral development banks | - | - | - |
| International organisations | - | - | - |
| Institutions | 440 | 20 | 2 |
| Corporates | 537 | 537 | 43 |
| Retail | - | - | - |
| Secured by mortgages | - | - | - |
| Exposures in default | - | - | - |
| Items associated with high risk | - | - | - |
| Covered bonds | - | - | - |
| Securitisation positions | - | - | - |
| Collective investment undertakings | - | - | - |
| Equity positions | - | - | - |
| Other items | - | - | - |
| **Total Standardised Approach Credit Risk Exposure** | 977 | 557 | 45 |
| **Advanced IRB approach** | - | - | - |
| Central governments or central banks | 364 | 43 | 3 |
| Institutions | 1,643 | 628 | 50 |
| Corporates | 2,032 | 523 | 42 |
| Retail | - | - | - |
| - Small and medium enterprises (SME) | - | - | - |
| - Secured by real estate collateral | - | - | - |
| - Qualifying revolving retail | - | - | - |
| - Other retail | - | - | - |
| Equity | - | - | - |
| Securitisation positions | - | - | - |
| Non-credit obligation assets | - | - | - |
| **Total Advanced IRB Credit Risk Exposure** | 4,039 | 1,194 | 95 |
| Default fund contributions | 87 | 49 | 4 |
| **Total Counterparty Credit Risk** | 5,103 | 1,800 | 144 |

# Analysis of counterparty credit risk

Table 52: Detailed view of counterparty credit risk RWAs and Capital Requirement *continued*

| | EAD | RWA | Capital Requirements |
|---|---|---|---|
| **As at 31 December 2018** | €m | €m | €m |
| **Counterparty credit risk exposure class** | | | |
| **Standardised approach** | | | |
| Central governments or central banks | - | - | - |
| Regional governments or local authorities | - | - | - |
| Public sector entities | - | - | - |
| Multilateral development banks | - | - | - |
| International organisations | - | - | - |
| Institutions | - | - | - |
| Corporates | - | - | - |
| Retail | - | - | - |
| Secured by mortgages | - | - | - |
| Exposures in default | - | - | - |
| Items associated with high risk | - | - | - |
| Covered bonds | - | - | - |
| Securitisation positions | - | - | - |
| Collective investment undertakings | - | - | - |
| Equity positions | - | - | - |
| Other items | - | - | - |
| **Total Standardised Approach Credit Risk Exposure** | - | - | - |
| **Advanced IRB approach** | - | - | - |
| Central governments or central banks | - | - | - |
| Institutions | - | - | - |
| Corporates | - | - | - |
| Retail | 19 | 4 | - |
| - Small and medium enterprises (SME) | 3 | 2 | - |
| - Secured by real estate collateral | - | - | - |
| - Qualifying revolving retail | - | - | - |
| - Other retail | - | - | - |
| Equity | - | - | - |
| Securitisation positions | - | - | - |
| Non-credit obligation assets | - | - | - |
| **Total Advanced IRB Credit Risk Exposure** | - | - | - |
| Default fund contributions | - | - | - |
| **Total Counterparty Credit Risk** | 22 | 6 | - |

# Analysis of counterparty credit risk

### Table 53: CCR1 – Analysis of CCR exposure by approach

This table provides the CCR regulatory requirements split between the method and main parameters used. This tables excludes default fund contribution and as such cannot be directly reconciled to Table 52.

| | | Notional | Replacement cost/current market value | Potential future credit exposure | EEPE | Multiplier | EAD post CRM | RWAs |
|---|---|---|---|---|---|---|---|---|
| **As at 31 December 2019** | | €m | €m | €m | €m | | €m | €m |
| 1 | Mark to market | | 506 | 2,183 | | | 1,506 | 436 |
| 2 | Original exposure | - | | | | | - | - |
| 3 | Standardised approach | | - | | | | - | - |
| 4 | IMM (for derivatives and SFTs) | | | | 2,527 | 1.4 | 3,538 | 1,312 |
| 5 | Of which securities financing transactions | | | | 103 | 1.4 | 144 | 15 |
| 6 | Of which derivatives and long settlement transactions | | | | 2,424 | 1.4 | 3,394 | 1,297 |
| 7 | Of which from contractual cross-product netting | | | | - | | - | - |
| 8 | Financial collateral simple method (for SFTs) | | | | | | - | - |
| 9 | Financial collateral comprehensive method (for SFTs) | | | | | | 36 | 3 |
| 10 | VaR for SFTs | | | | | | - | - |
| 11 | **Total** | | | | | | | 1,751 |
| **As at 31 December 2018** | | | | | | | | |
| 1 | Mark to market | | 2 | 20 | | | 22 | 6 |
| 2 | Original exposure | - | | | | | - | - |
| 3 | Standardised approach | | - | | | | - | - |
| 4 | IMM (for derivatives and SFTs) | | | | - | - | - | - |
| 5 | Of which securities financing transactions | | | | - | - | - | - |
| 6 | Of which derivatives and long settlement transactions | | | | - | - | - | - |
| 7 | Of which from contractual cross-product netting | | | | - | | - | - |
| 8 | Financial collateral simple method (for SFTs) | | | | | | - | - |
| 9 | Financial collateral comprehensive method (for SFTs) | | | | | | - | - |
| 10 | VaR for SFTs | | | | | | - | - |
| 11 | **Total** | | | | | | | 6 |

# Analysis of counterparty credit risk

Table 54: 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. There were no exposures subject to the Standardised approach at 31 December 2018.

| Exposures by regulatory portfolio and risk | 0% | 2% | 4% | 10% | 20% | 35% | 50% | 70% | 75% | 100% | 150% | 250% | 370% | 1250% | Others | Deducted | Total | of which: Unrated |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **As at 31 December 2019** | | | | | | | | | | | | | | | | | | |
| 1 Central governments or central banks | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2 Regional governments or local authorities | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 Public sector entities | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 Multilateral development banks | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 5 International Organisations | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 Institutions | - | 377 | - | - | 63 | - | - | - | - | - | - | - | - | - | - | - | 440 | 440 |
| 7 Corporates | - | - | - | - | - | - | - | - | - | 537 | - | - | - | - | - | - | 537 | 537 |
| 8 Retail | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 9 Secured by mortgages on immovable property | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 Exposures in default | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 11 Items associated with particularly high risk | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 Covered Bonds | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 13 Claims on institutions and corporate with a short-term credit assessment | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 Claims in the form of CIU | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 15 Equity exposures | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 Other items | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 17 **Total** | - | 377 | - | - | 63 | - | - | - | - | 537 | - | - | - | - | - | - | 977 | 977 |

# 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 55), institutions (Table 56), corporates (Table 57).

Table 55: CCR4 Counterparty credit risk exposures by portfolio and PD range for central governments and central banks

| | EAD post CRM | Average PD | Number of obligors | Average LGD | Average Maturity | RWA | RWA Density | Expected Loss | Value Adjustment and Provisions |
|---|---|---|---|---|---|---|---|---|---|
| | €m | % | | % | | €m | % | €m | €m |
| **As at 31 December 2019** | | | | | | | | | |
| 0.00 to < 0.15 | 353 | 0.0% | 10 | 45.0% | 3 | 38 | 10.7% | - | - |
| 0.15 to < 0.25 | 7 | 0.2% | 1 | 55.4% | 1 | 3 | 44.1% | - | - |
| 0.25 to < 0.50 | 4 | 0.3% | 1 | 48.0% | 2 | 2 | 55.0% | - | - |
| 0.50 to < 0.75 | - | 0.0% | - | 0.0% | - | - | 0.0% | - | - |
| 0.75 to < 2.50 | - | 0.0% | - | 0.0% | - | - | 0.0% | - | - |
| 2.50 to < 10.00 | - | 0.0% | - | 0.0% | - | - | 0.0% | - | - |
| 10.00 to < 100.00 | - | 0.0% | - | 0.0% | - | - | 0.0% | - | - |
| 100.00 (Default) | - | 0.0% | - | 0.0% | - | - | 0.0% | - | - |
| **Total** | 364 | 0.0% | 12 | 45.2% | 3 | 43 | 11.8% | - | - |
| **As at 31December 2018** | | | | | | | | | |
| 0.00 to < 0.15 | - | - | - | - | - | - | - | - | - |
| 0.15 to < 0.25 | - | - | - | - | - | - | - | - | - |
| 0.25 to < 0.50 | - | - | - | - | - | - | - | - | - |
| 0.50 to < 0.75 | - | - | - | - | - | - | - | - | - |
| 0.75 to < 2.50 | - | - | - | - | - | - | - | - | - |
| 2.50 to < 10.00 | - | - | - | - | - | - | - | - | - |
| 10.00 to < 100.00 | - | - | - | - | - | - | - | - | - |
| 100.00 (Default) | - | - | - | - | - | - | - | - | - |
| **Total** | - | - | - | - | - | - | - | - | - |

# Analysis of counterparty credit risk

Table 56: CCR4 Counterparty credit risk exposures by portfolio and PD range for institutions

| | EAD post CRM | Average PD | Number of obligors | Average LGD | Average Maturity | RWA | RWA Density | Expected Loss | Value Adjustment and Provisions |
|---|---|---|---|---|---|---|---|---|---|
| | €m | % | | % | | €m | % | €m | €m |
| **As at 31 December 2019** | | | | | | | | | |
| 0.00 to < 0.15 | 1,620 | 0.1% | 66 | 46.0% | 3 | 605 | 37.3% | - | - |
| 0.15 to < 0.25 | 8 | 0.2% | 8 | 45.0% | 2 | 5 | 61.1% | - | - |
| 0.25 to < 0.50 | 2 | 0.4% | 4 | 57.1% | 2 | 2 | 81.1% | - | - |
| 0.50 to < 0.75 | 1 | 0.7% | 2 | 45.5% | 1 | 1 | 99.4% | - | - |
| 0.75 to < 2.50 | - | 0.9% | 4 | 45.0% | 1 | - | 37.7% | - | - |
| 2.50 to < 10.00 | 11 | 2.6% | 4 | 45.0% | 2 | 15 | 136.8% | - | - |
| 10.00 to < 100.00 | - | 0.0% | - | 0.0% | - | - | 0.0% | - | - |
| 100.00 (Default) | - | 0.0% | - | 0.0% | - | - | 0.0% | - | - |
| **Total** | 1,643 | 0.1% | 88 | 46.0% | 3 | 628 | 38.2% | - | - |
| **As at 31 December 2018** | | | | | | | | | |
| 0.00 to < 0.15 | 19 | 0.0% | 1 | - | - | 4 | 21.8% | - | - |
| 0.15 to < 0.25 | - | - | - | - | - | - | - | - | - |
| 0.25 to < 0.50 | - | - | - | - | - | - | - | - | - |
| 0.50 to < 0.75 | - | - | - | - | - | - | - | - | - |
| 0.75 to < 2.50 | - | - | - | - | - | - | - | - | - |
| 2.50 to < 10.00 | - | - | - | - | - | - | - | - | - |
| 10.00 to < 100.00 | - | - | - | - | - | - | - | - | - |
| 100.00 (Default) | - | - | - | - | - | - | - | - | - |
| **Total** | 19 | - | 1 | - | - | 4 | - | - | - |

# Analysis of counterparty credit risk

Table 57: CCR4 Counterparty credit risk exposures by portfolio and PD range for corporates

| | EAD post CRM | Average PD | Number of obligors | Average LGD | Average Maturity | RWA | RWA Density | Expected Loss | Value Adjustment and Provisions |
|---|---|---|---|---|---|---|---|---|---|
| | €m | % | | % | | €m | % | €m | €m |
| **As at 31 December 2019** | | | | | | | | | |
| 0.00 to < 0.15 | 1,679 | 0.1% | 398 | 45.7% | 2 | 354 | 21.0% | - | - |
| 0.15 to < 0.25 | 298 | 0.2% | 87 | 49.7% | 2 | 133 | 44.5% | - | - |
| 0.25 to < 0.50 | 33 | 0.3% | 21 | 49.0% | 1 | 17 | 52.4% | - | - |
| 0.50 to < 0.75 | 3 | 0.6% | 10 | 45.9% | 1 | 2 | 65.5% | - | - |
| 0.75 to < 2.50 | 18 | 1.0% | 5 | 51.2% | 2 | 16 | 92.9% | - | - |
| 2.50 to < 10.00 | 1 | 6.7% | 4 | 45.5% | 2 | 1 | 138.7% | - | - |
| 10.00 to < 100.00 | - | 0.0% | - | 0.0% | - | - | 0.0% | - | - |
| 100.00 (Default) | - | 0.0% | - | 0.0% | - | - | 0.0% | - | - |
| **Total** | 2,032 | 0.1% | 525 | 46.4% | 2 | 523 | 25.7% | 1 | - |
| **As at 31 December 2018** | | | | | | | | | |
| 0.00 to < 0.15 | - | - | - | - | - | - | - | - | - |
| 0.15 to < 0.25 | - | - | - | - | - | - | - | - | - |
| 0.25 to < 0.50 | 3 | - | 3 | - | - | 2 | 54.8% | - | - |
| 0.50 to < 0.75 | - | - | - | - | - | - | - | - | - |
| 0.75 to < 2.50 | - | - | - | - | - | - | - | - | - |
| 2.50 to < 10.00 | - | - | - | - | - | - | - | - | - |
| 10.00 to < 100.00 | - | - | - | - | - | - | - | - | - |
| 100.00 (Default) | - | - | - | - | - | - | - | - | - |
| **Total** | 3 | - | 3 | - | - | 2 | 54.8% | - | - |

# Analysis of counterparty credit risk

### Table 58: CCR5-A - Impact of netting and collateral held on exposure values

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

| | | Gross positive fair value or net carrying amount | Netting benefits | Netted current credit exposure | Collateral held | Net credit exposure |
|---|---|---|---|---|---|---|
| As at 31 December 2019 | | €m | €m | €m | €m | €m |
| 1 | Derivatives | 31,564 | 25,319 | 6,245 | 8,780 | 1,418 |
| 2 | SFTs | 10,079 | 10,015 | 64 | - | 64 |
| 3 | Cross-product netting | - | - | - | - | - |
| 4 | **Total** | 41,643 | 35,334 | 6,309 | 8,780 | 1,482 |
| As at 31 December 2018 | | | | | | |
| 1 | Derivatives | 2 | - | 2 | - | 2 |
| 2 | SFTs | - | - | - | - | - |
| 3 | Cross-product netting | - | - | - | - | - |
| 4 | **Total** | 2 | - | 2 | - | 2 |

### Table 59: 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. At 31 December 2018 no collateral had been posted or received in relation to CCR exposures, therefore a comparable table has not been provided.

| | | Collateral used in derivative transactions | | | | Collateral used in SFTs | |
|---|---|---|---|---|---|---|---|
| | | Fair value of collateral received | | Fair value of posted collateral | | | |
| | | Segregated | Unsegregated | Segregated | Unsegregated | Fair value of collateral received | Fair value of posted collateral |
| As at 31 December 2019 | | €m | €m | €m | €m | €m | €m |
| 1 | Cash | - | 6,428 | - | 5,179 | - | 64 |
| 2 | Debt | 1,058 | 846 | 52 | 720 | - | - |
| 3 | Equity | - | 447 | - | - | - | - |
| 4 | Others | - | - | - | - | - | - |
| | **Total** | 1,058 | 7,721 | 52 | 5,899 | - | 64 |

## Credit derivative notionals

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

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

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

Credit derivatives booked arising from clearing activities performed on behalf of external counterparties are not reported in this table as BBI does not have any long/short exposures to 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 BBI's own credit standing.

Notional exposure from intermediation activities mainly comprises derivatives executed by clients and associated hedges.

The Bank had no credit derivatives outstanding at 31 December 2018, therefore comparable amounts have not been provided for Table 60 and Table 61.

# Analysis of counterparty credit risk

Table 60: Notional exposure associated with credit derivative contracts

| Outstanding amount of exposure held: | Own credit portfolio | | Intermediation activities | |
|---|---|---|---|---|
| Credit derivative product type | As protection purchaser | As protection seller | As protection purchaser | As protection seller |
| As at 31 December 2019 | €m | €m | €m | €m |
| Credit default swaps | 25 | - | 25,676 | 20,668 |
| Total return swaps | - | - | 321 | 267 |
| Total | 25 | - | 25,997 | 20,935 |

Table 61: CCR6 - Credit derivatives exposures

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

| | Credit derivative hedges | | |
|---|---|---|---|
| | Protection bought | Protection sold | Other credit derivatives |
| | €m | €m | €m |
| **As at 31 December 2019** | | | |
| **Notionals** | | | |
| Single-name credit default swaps | 25 | - | 14,662 |
| Index credit default swaps | - | - | 31,682 |
| Total return swaps | - | - | 588 |
| Credit options | - | - | 5,159 |
| Other credit derivatives | - | - | - |
| **Total notionals** | 25 | - | 52,091 |
| **Fair values** | (3) | - | (105) |
| **Positive fair value (asset)** | - | - | 733 |
| **Negative fair value (liability)** | (3) | - | (838) |

# Analysis of counterparty credit risk

Table 62: CCR8 Exposures to CCPs

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

At 31 December 2018 the Bank had no exposure to CCP's therefore a comparable table has not been provided.

| | | As at 31 December 2019 | |
|---|---|---|---|
| | | EAD post CRM | RWAs |
| | | €m | €m |
| 1 | **Exposures to QCCPs (total)** | | 56 |
| 2 | Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which | - | - |
| 3 | (i) OTC derivatives | 377 | 8 |
| 4 | (ii) Exchange-traded derivatives | - | - |
| 5 | (iii) SFTs | - | - |
| 6 | (iv) Netting sets where cross-product netting has been approved | - | - |
| 7 | Segregated initial margin | - | |
| 8 | Non-segregated initial margin | - | - |
| 9 | Prefunded default fund contributions | 87 | 49 |
| 10 | Alternative calculation of own funds requirements for exposures | | - |
| 11 | **Exposures to non-QCCPs (total)** | | - |
| 12 | Exposures for trades at non-QCCPs (excluding initial margin and default fund contributions); of which | - | - |
| 13 | (i) OTC derivatives | - | - |
| 14 | (ii) Exchange-traded derivatives | - | - |
| 15 | (iii) SFTs | - | - |
| 16 | (iv) Netting sets where cross-product netting has been approved | - | - |
| 17 | Segregated initial margin | - | |
| 18 | Non-segregated initial margin | - | - |
| 19 | Prefunded default fund contributions | - | - |
| 20 | Unfunded default fund contributions | - | - |

## Credit value adjustments

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

Table 63: CCR2 Credit valuation adjustment (CVA) capital charge

Two approaches can be used to calculate the adjustment:

- Standardised approach: this approach takes account of the external credit rating of each counterparty, and incorporates the effective maturity and EAD from the calculation of the CCR
- Advanced approach: this approach requires the calculation of the charge as a) a 10-day 99% Value at Risk (VaR) measure for the current one-year period and b) the same measure for a stressed period. The sum of the two VaR measures is scaled by the VaR multiplier (3.4 at year end) to yield the capital charge.

Credit valuation adjustment (CVA) capital charge

| | | Exposure value | RWA |
|---|---|---|---|
| | | €m | €m |
| As at 31 December 2019 | | | |
| 1 | Total portfolios subject to the Advanced Method | **1,374** | **322** |
| 2 | (i) VaR component (including the 3x multiplier) | | **61** |
| 3 | (ii) Stressed VaR component (including 3x multiplier) | | **261** |
| 4 | All portfolios subject to the Standardised Method | - | - |
| EU4 | Based on original exposure method | | |
| **5** | **Total subject to the CVA capital charge** | 1,374 | 322 |

# Analysis of market risk

*This section contains key disclosures describing BBI's market risk profile, highlighting regulatory as well as management measures.*

## Key Metrics

***2019 Risk weighted assets for market risk***

***€766m***

*2018: €Nil*

- Market risk RWAs are primarily generated by the following IFRS account classifications: Trading portfolio assets and liabilities; and derivative financial instruments.
- The Bank had no Market Risk at 31 December 2018 therefore comparatives have not been provided in this section

# 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 an overview of BBI, where assets and liabilities on the BBI'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.

Table 64: Balance sheet split by trading and banking books

| As at 31 December 2019 | Banking book[a]<br>€m | Trading book<br>€m | Total<br>€m |
|---|---|---|---|
| Cash and balances at central banks | 12,788 | - | 12,788 |
| Cash collateral and settlement balances | 6,664 | 2,271 | 8,935 |
| Loans and advances at amortised cost | 13,682 | - | 13,682 |
| Reverse repurchase agreements and other similar secured lending | 2,946 | - | 2,946 |
| Trading portfolio assets | 236 | 806 | 1,042 |
| Financial assets at fair value through the income statement | 431 | 1,363 | 1,794 |
| Derivative financial instruments | 269 | 27,060 | 27,329 |
| Financial assets at fair value through other comprehensive income | - | - | - |
| Investments in associates and joint ventures | - | - | - |
| Goodwill and intangible assets | 38 | - | 38 |
| Property, plant and equipment | 116 | - | 116 |
| Current tax assets | 2 | - | 2 |
| Deferred tax assets | 148 | - | 148 |
| Retirement benefit assets | - | - | - |
| Other assets | 225 | - | 225 |
| **Total assets** | **37,545** | **31,500** | **69,045** |
| | | | |
| Deposits at amortised cost | 19,419 | 684 | 20,103 |
| Cash collateral and settlement balances | 7,486 | 1,888 | 9,374 |
| Repurchase agreements and other similar secured borrowing | 1,255 | - | 1,255 |
| Debt securities in issue | 849 | - | 849 |
| Subordinated liabilities | 891 | - | 891 |
| Trading portfolio liabilities | - | 283 | 283 |
| Financial liabilities designated at FV | 1,286 | 3,416 | 4,702 |
| Derivative financial instruments | 336 | 26,817 | 27,153 |
| Current tax liabilities | 19 | - | 19 |
| Deferred tax liabilities | - | - | - |
| Retirement benefit liabilities | 52 | - | 52 |
| Other liabilities | 515 | - | 515 |
| Provisions | 32 | - | 32 |
| **Total liabilities** | **32,140** | **33,088** | **65,228** |

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 BBI holds debt and equity securities respectively, either as financial assets designated at fair value or as available for sale.

Assets and liabilities which are included in the market risk regulatory measures are included within the trading book.

# Analysis of market risk

## Traded market risk review

### Review of management measures

The following disclosures provide details on management measures of market risk. See the risk management section on page 123 for more detail on management measures and the differences when compared to regulatory measures.

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

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

| Management VaR (95%) | Year ended 31 December 2019 | | |
|---|---|---|---|
| | Average | High[a] | Low[a] |
| | €m | €m | €m |
| Credit risk | 0.11 | 0.22 | - |
| Interest rate risk | 0.10 | 0.19 | 0.03 |
| Equity risk | 0.01 | 0.11 | - |
| Basis risk | 0.12 | 0.24 | 0.01 |
| Spread risk | 0.01 | 0.08 | - |
| Foreign exchange risk | 0.04 | 0.23 | - |
| Commodity risk | - | - | - |
| Inflation risk | 0.00 | 0.03 | - |
| Diversification effect[a] | (0.18) | | |
| **Total management VaR** | 0.23 | 0.38 | 0.03 |

Notes

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

## Review of regulatory measures

The following disclosures provide details on regulatory measures of market risk.

BBI's market risk capital requirement comprises of two elements:

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

The table below summarises the regulatory market risk measures, under the internal models approach.

Table 66: MR3 - Analysis of Regulatory VaR, SVaR, IRC and Comprehensive Risk Measure

| Analysis of Regulatory VaR, SVaR, IRC and Comprehensive Risk Measure | | | | |
|---|---|---|---|---|
| | Year-end | Avg. | Max | Min |
| **As at 31 December 2019** | €m | €m | €m | €m |
| Regulatory VaR (1-day) | 0.81 | 0.57 | 1.07 | 0.05 |
| Regulatory VaR (10-day)[a] | 2.56 | 1.82 | 3.37 | 0.17 |
| SVaR (1-day) | 2.15 | 1.65 | 3.54 | 0.46 |
| SVaR (10-day)[a] | 6.81 | 5.20 | 11.20 | 1.44 |
| IRC | 29.85 | 7.92 | 37.79 | - |
| Comprehensive Risk Measure | - | - | - | - |

Notes:

[a] 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.

There was no VaR, SVaR, IRC and Comprehensive Risk Measure as at 31 December 2018.

# Analysis of market risk

Table 67: Breakdown of the major regulatory risk measures by portfolio

| As at 31 December 2019 | Macro<br>€m | Equities<br>€m | Credit<br>€m | Banking<br>€m | Group Treasury<br>€m | Financial Resource Management<br>€m | Fixed Income Financing<br>€m |
|---|---|---|---|---|---|---|---|
| Regulatory VaR (1-day) | 0.09 | 0.01 | 0.23 | - | 0.01 | 0.88 | - |
| Regulatory VaR (10-day) | 0.28 | 0.05 | 0.72 | - | 0.02 | 2.78 | - |
| SVaR (1-day) | 0.23 | 0.05 | 0.55 | - | 0.01 | 1.85 | - |
| SVaR (10-day) | 0.72 | 0.14 | 1.73 | - | 0.04 | 5.86 | - |
| IRC | - | - | 30.29 | - | - | 2.58 | - |
| Comprehensive Risk Measure | - | - | - | - | - | - | - |

The table above 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.

## Capital requirements for market risk

The table below shows the elements of capital requirements and risk weighted assets under the market risk framework as defined in the CRR. The Bank 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 66, 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 68: Market risk own funds requirements

| | | RWA | Capital requirements |
|---|---|---|---|
| | | As at 31 December 2019 | As at 31 December 2019 |
| | | €m | €m |
| 1 | **Internal models approach** | 766 | 61 |
| 2 | VaR | 107 | 9 |
| 3 | SVaR | 282 | 22 |
| 4 | Incremental risk charge | 375 | 30 |
| 5 | Comprehensive risk measure | - | - |
| 6 | Risks not in VaR | 2 | - |
| 7 | **Standardised approach** | - | - |
| 8 | Interest rate risk (general and specific) | - | - |
| 9 | Equity risk (general and specific) | - | - |
| 10 | Foreign exchange risk | - | - |
| 11 | Commodity risk | - | - |
| 12 | Specific interest rate risk of securitisation position | - | - |
| 13 | **Total** | 766 | 61 |

There was no RWA related to market risk own funds as at 2018 year end.

# Analysis of market risk

Table 69: MR2-A - Market risk under internal models approach

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

| | | RWA | Capital requirements |
|---|---|---|---|
| | | As at 31 December 2019 | As at 31 December 2019 |
| | | €m | €m |
| **1** | **VaR** (higher of values a and b) | 107 | 9 |
| (a) | Previous day's VaR (Article 365(1) (VaRt-1)) | 38 | 3 |
| (b) | Average of the daily VaR (Article 365(1)) on each of the preceding sixty business days (VaRavg) x multiplication factor ((mc) in accordance with Article 366) | 107 | 9 |
| **2** | **SVaR** (higher of values a and b) | 282 | 22 |
| (a) | Latest SVaR (Article 365(2) (sVaRt-1)) | 150 | 12 |
| (b) | Average of the SVaR (Article 365(2) during the preceding sixty business days (sVaRavg) x multiplication factor (ms) (Article 366) | 282 | 22 |
| **3** | Incremental risk charge -**IRC** (higher of values a and b) | 375 | 30 |
| (a) | Most recent IRC value (incremental default and migration risks section 3 calculated in accordance with Section 3 articles 370/371) | 375 | 30 |
| (b) | Average of the IRC number over the preceding 12 weeks | 315 | 25 |
| **4** | Comprehensive Risk Measure (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 | 2 | - |
| **6** | **Total** | 766 | 61 |

# Analysis of operational risk

***This section contains details of capital requirements for operational risk, expressed as RWAs, and an analysis of the BBI's operational risk profile, including events which have had a significant impact in 2019.***

## Key Metrics

*75% of BBI's 2019 net reportable operational risk events by number had a loss value of €58,754 (£50,000) or less*

*38% of 2019 Operational Risk events by number are due to External Fraud*

*64% of 2019 losses are from events aligned to Execution, Delivery and Process Management*

### *2019 Risk Weighted Assets for operational risk*

***€2.2bn***

***2018: €0.8bn***

### *Summary of performance in the period*

Total reportable Operational Risk losses during 2019 were €1.8m.

# Analysis of operational risk

## Operational risk - risk weighted assets

The following table details BBI's operational risk RWAs. BBI calculates its operational risk capital requirement using the Standardised Approach.

Table 70: Risk weighted assets for operational risk

| | As at 31 December 2019 | As at 31 December 2018 |
|---|---|---|
| | €m | €m |
| **Operational Risk** | | |
| Basic Indicator Approach | - | - |
| Standardised Approach | 2,235 | 799 |
| Advanced Measurement Approach | - | - |
| **Total operational risk RWAs** | 2,235 | 799 |

## Operational risk profile

Reflective of the recent expansion of activities across a wider array of business lines, BBI's operational risk profile has many similarities with that of the broader Barclays Group.

Within operational risk, there are a large number of small risk events. In 2019, 75% (2018: 50%) of BBI's reportable operational risk events by volume had a value of less than €58,754 (£50,000[b]) each. Cumulatively, events under this threshold accounted for only 60% (2018:100%) of BBI's total net operational risk losses.

During 2019, BBI undertook significant expansion activity, including transfers of business activities, customers and transactions from other entities in the Barclays Group. The operational risk profile of BBI has changed accordingly. The analysis below presents BBI's operational risk events by Basel event category:

- Execution, Delivery and Process Management impacts increased to €1.21m (2018: insignificant) and accounted for 64% (2018: insignificant) 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 50% of total events by volume (2018: 50%).
- Consistent with the expanded business profile of BBI, External Fraud has become a category with a high frequency of events at 38% of total events in 2019 (2018: insignificant). 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 decreased to 18% of total 2019 losses (2018:100%), reflecting the broader array of BBI businesses and the associated variety of risk events.
- Business Disruption and System Failures accounted for an increased share at 18% of total impacts (2018: insignificant), with frequency of events at 13% of total operational risk events in 2019 (2018: 50%), again reflecting the broader array of BBI businesses and the associated variety of risk events.

BBI and 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 and BBI. 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/BBI's customers, market impact and reputational damage. In common with the rest of the Financial Services industry, BBI and 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/BBI.

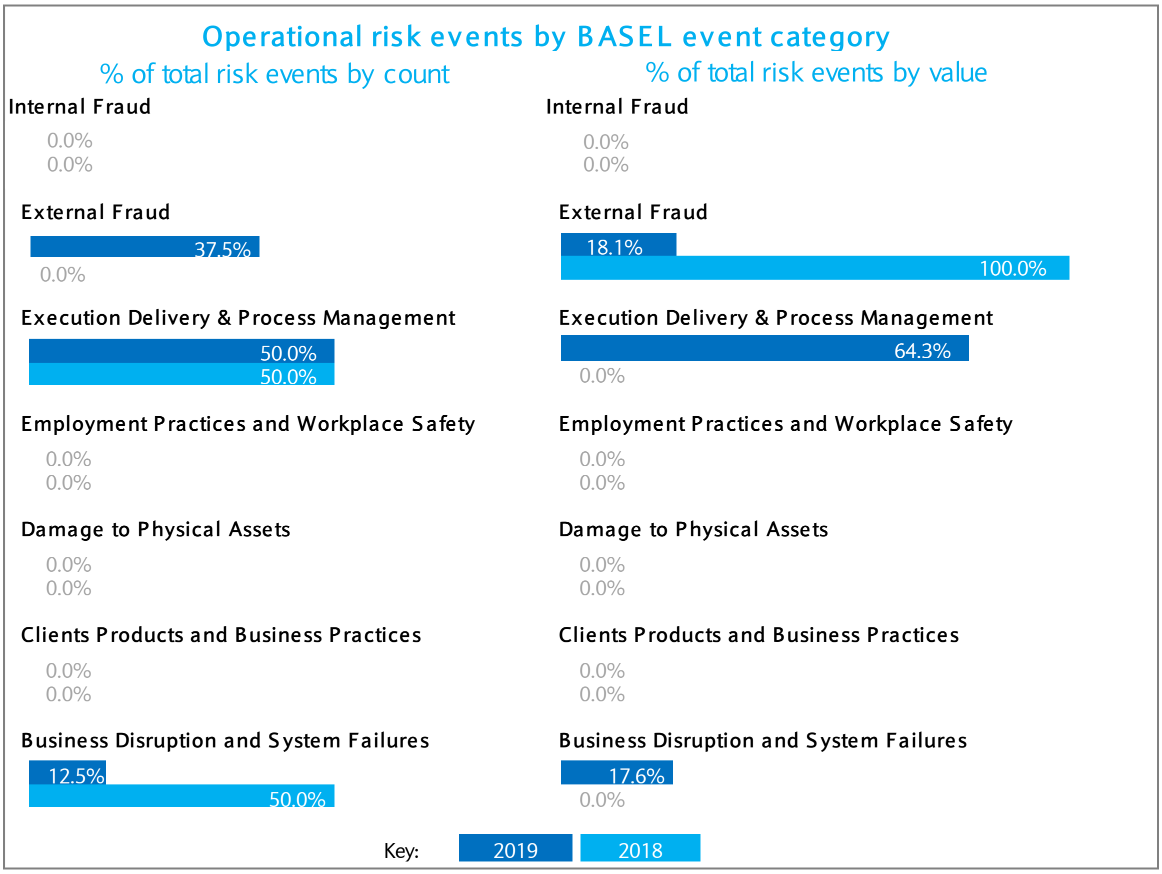
# Analysis of operational risk

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 hacktivists.  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 Europe, UK and the US 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 BBI and/or 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 BBI and the Group.

For further information, refer to operational risk management section (pages 140 to 144).

# Analysis of operational risk



Operational risk events by BASEL event category

Note

a. The data disclosed includes operational risk losses for reportable events having net impact of > €11,758 (£10,000[b]) 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

b. EUR/ GBP exchange rate 1.17580

c. High value, low value External Fraud events are generally recorded as aggregate events, thus excluded from the Impact and Volume analysis. If they were to be included, the proportional share of External Fraud by Impact and by Volume would increase, with External Fraud the most significant Basel Event category for 2019.

# Risk management strategy, governance and risk culture

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

- 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 88 to 89)
- 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 90 to 92
- A discussion of how our risk management strategy is designed to foster a strong risk culture is contained on pages 93 to 94
- Pages 94 to 98 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.

BBI's approach to managing risks

# Risk management strategy, governance and risk culture

## The Bank's risk management strategy

### Introduction

The activities of the Bank entail risk taking, every day, throughout its business. BBI earns returns by taking risks, and a significant component of risk management is to ensure that pricing/returns are proportionate to the risks assumed. This section introduces these risks, and outlines arrangements for identifying and managing them. These include roles and responsibilities, frameworks, policies and standards, assurance and lessons learned processes. The Bank's approach to fostering a strong risk culture is also described.

### Enterprise Risk Management Framework (ERMF)

The ERMF sets the strategic direction for risk management by defining standards, objectives and responsibilities for all areas of the Bank. It supports senior management in effective risk management and in developing a strong risk culture. The Bank's ERMF is adapted from and consistent with the Barclays Group ERMF as approved by the Barclays plc Board on the recommendation of the Barclays Chief Risk Officer. This is then reviewed and formally adopted by the Bank's Board with modifications where needed at local legal entity level.

The ERMF sets out:

- Segregation of duties: The ERMF defines a "Three Lines of Defence" model.
- Principal risks faced by the Bank. This list guides the organisation of the risk management function, and the identification, management and reporting of risks.
- Risk appetite requirements: This helps define the level of risk we are willing to undertake in our business.
- Roles and responsibilities for risk management: The ERMF sets out the accountabilities of the Bank's CEO and other senior managers, as well as the Bank's committees.

The ERMF is complemented by Frameworks, Policies and Standards, which 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 firm. 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

All colleagues are responsible for understanding and managing risks within the context of their individual roles and responsibilities, as set out below.

**First Line of Defence**

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

- identifying the risks in their activities and developing appropriate policies, standards and controls
- operating within any and all limits which the Risk and Compliance functions establish over the exposures and activities of the first line; and
- escalating risk events to senior managers in Risk and Compliance.

**Second Line of Defence**

The Second Line of Defence comprises employees of Risk and Compliance. 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 Bank, and to monitor the performance of the First Line against these limits and constraints. Note that the First Line may also set limits for a number of their activities related to operational risk. These will remain subject to supervision by the Second Line.

**Third Line of Defence**

The Third Line of Defence comprises employees of Internal Audit. They provide independent assurance to the Bank's Board and Executive Management over the effectiveness of governance, risk management and control.

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

# Risk management strategy, governance and risk culture

## Principal risks

The ERMF identifies eight Principal Risks and sets out associated responsibilities and risk management standards.

Each of the principal risks is overseen by an accountable executive within the Bank 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 refers to the maximum loss under stress that the Bank is willing to incur by assuming principal risks. The Board sets the risk appetite for the Bank.

The Bank's risk appetite must also be within any limits set by its ultimate parent, Barclays plc.

Mandate & Scale Exposure Controls are a portfolio risk management approach that reviews and controls business activities, checking they are within Barclays mandate (i.e. aligned with expectations), and are of an appropriate scale (relative to the risk and reward of the underlying activities) reflecting the Bank's approved Risk Appetite.

The Legal Entity CROs, including the BBI CRO, propose the allocation of Risk Appetite and associated limits to control Risk Appetite to the Group CRO.

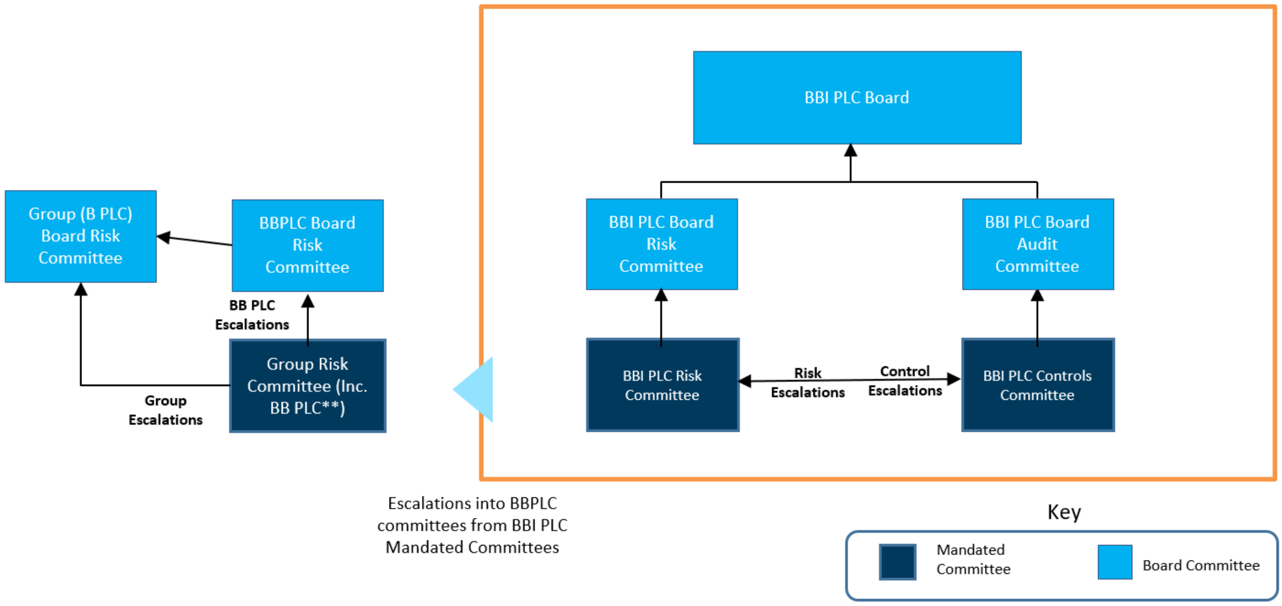
BBI's assessment of its Total Risk Appetite capacity is calculated as the difference between its target capital rate for that year and its own minimum hurdle rate. Group Risk Appetite constraints are not considered at the BBI level when making its demand for Risk Appetite allocation from Group. This total capacity is the level at which maximum Risk Appetite limits are set during the annual approval cycle, though sub-limits can also be set and adjusted periodically, if necessary. The Group CRO recommends the allocation of Risk Appetite and associated limits to control Risk Appetite to the Group Board Risk Committee (BRC) for approval. Once allocation of Total Risk Appetite for BBI is approved by the Group BRC, BBI's Total Risk Appetite and individual Risk Appetite limits are presented to the BBI BRC for approval by the BBI CRO.

# Risk management strategy, governance and risk culture

## Roles and responsibilities in the management of risk

### Risk committees

The Bank's Product/Risk Type Committees consider risk matters relevant to their business, and escalate as required to the Bank's Board Committees and the Bank's Board.


BBI PLC Board
BBI PLC Board Risk Committee
BBI PLC Board Audit Committee
BBI PLC Risk Committee
Risk Escalations
Control Escalations
BBI PLC Controls Committee
Group (B PLC) Board Risk Committee
BBPLC Board Risk Committee
BB PLC Escalations
Group Risk Committee (Inc. BB PLC**)
Group Escalations
Escalations into BBPLC committees from BBI PLC Mandated Committees
Key
Mandated Committee
Board Committee

### The Board

The Barclays Bank Ireland PLC Board receives regular information on the Bank's risk profile, and has ultimate responsibility for risk appetite and capital plans, within the parameters set by the Barclays PLC Board. One of the responsibilities of the Bank's Board is the approval of risk appetite allocated to the Bank. The Bank's Board is also responsible for the adoption of the ERMF.

There are two Board-level committees which oversee the application of the ERMF and review and monitor risk across the Bank. These are: the Barclays Bank Ireland PLC Board Risk Committee and the Barclays Bank Ireland PLC Board Audit Committee. Additionally, the Barclays Bank Ireland PLC Board Remuneration Committee oversees pay practices focusing on aligning pay to sustainable performance in line with Group Policies. Finally,

- The Barclays Bank Ireland PLC Board Risk Committee (BRC): The BRC monitors the Bank'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 Bank's CRO regularly presents a report to the BRC summarising developments in the risk environment and performance trends in the key portfolios. The BRC receives regular reports on risk methodologies, the effectiveness of the risk management framework, and the Bank'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 Bank's CRO or senior risk managers in the businesses. The Chair of the BRC provides a verbal update at Barclays Bank Ireland PLC Board meetings.

  All members are independent non-executive Directors. The Chair of the BRC also sits on the BAC.

- The Barclays Bank Ireland PLC Board Audit Committee (BAC): The BAC receives regular reports on the effectiveness of internal control systems, on material control issues of significance, and 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 and the Bank's policies and methodologies. The Chair of the BAC also sits on the BRC.

- The Barclays Bank Ireland PLC Board Remuneration Committee (RemCo): The RemCo receives a detailed report on risk management performance and risk profile, and proposals on ex-ante and ex-post risk adjustments to variable remuneration. These inputs are considered in the setting of performance incentives.

A small number of risk management committees, supported by reporting processes, include representation from Barclays Group risk management executives, as well as from the operating entities (including Barclays Bank Ireland plc) as appropriate. This is typically to consider matters that are relevant to the risk profile of the Barclays Group, and/or where it is appropriate to make decisions that apply uniformly across the Barclays Group (for instance, the Barclays Group Impairment Committee approves impairment results).

## Role of Barclays Group Risk Management Processes and Committees in Barclays Bank Ireland PLC

The Barclays Group Risk teams and Board Committees conduct risk management activity, and oversight, in respect of Barclays Bank Ireland PLC:

- Barclays Group Board allocates a portion of the overall risk appetite to Barclays Bank Ireland PLC;
- Certain Barclays Group Committees and executives review, and take decisions on, matters, events or transactions originating in Barclays Bank Ireland plc that are relevant to the risk profile of the Barclays Group
- Barclays Group-wide risk policies are owned by the Barclays Group Risk Function teams, and adopted by Barclays Group. Entity-specific requirements are agreed with the Barclays Group where local regulations would otherwise preclude adoption, or to clarify or emphasise particular aspects and outlined with respective appendices.

## 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 chairs. Topics that are regularly covered include:

- Risk profile
- Risk perspective on medium-term plans and strategy
- Risk Appetite
- Results of stress tests
- Risk and Conduct inputs into remuneration decisions
- Other technical topics, e.g. Model risk.

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

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

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

## Roles and responsibilities in the management of risk

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

### Barclays Bank Ireland PLC Chief Executive Officer (CEO)

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

Specifically, a crucial role of the CEO is to appoint the most senior risk owners at the executive level including the Barclays Bank Ireland PLC Chief Risk Officer and the Barclays Bank Ireland PLC General Counsel. They must work with them to embed a strong risk culture within the legal entity, with particular regard to the identification, escalation and management of risk matters.

### Barclays Bank Ireland PLC Chief Risk Officer (CRO)

The Barclays Bank Ireland PLC CRO leads the Risk Function across the legal entity. Specific accountabilities include:

- preparing and recommending the legal entity Risk Appetite to the Board Risk Committee
- providing accurate, transparent and timely reporting of the actual Risk Profile of the legal entity relative to the set Risk Appetite to the Board
- bringing a risk perspective to compensation decisions
- reporting to all the relevant stakeholders on the legal entity's' risk positions, adherence to Risk Appetite and enterprise wide risks and controls.

**Barclays Bank Ireland PLC Chief Compliance Officer**

The Barclays Bank Ireland PLC Chief Compliance Officer is accountable to the Barclays Bank Ireland PLC CEO for the strategic and function leadership of the Compliance Function. The Chief Compliance Officer is a member of the legal entity Executive Committee, enabling the Compliance Function to discharge its responsibilities properly and independently. Oversight specific accountabilities include:

- managing the Bank's conduct and reputation risks and escalating to the Board where appropriate
- setting minimum standards through compliance policies applicable globally and monitoring breaches, especially for Conduct and Reputation Risks and Financial Crime
- inputting into compensation structures, objectives and performance management of employees who can expose the Bank to significant risk
- implementing a robust and effectively managed whistleblowing process on an entity-wide basis
- using mandate to access any part of the legal entity and any information, bringing to the attention of line and senior management or the Board, as appropriate, any situation that is of concern from a Conduct or Reputation Risk management perspective that could materially violate the approved Risk Appetite guidelines.

**Barclays Bank Ireland PLC General Counsel**

The Barclays Bank Ireland PLC General Counsel provides legal advice and guidance to the Bank on the adoption of the Group Legal Risk Framework.

**Barclays Bank Ireland PLC Chief Controls Officer**

The Barclays Bank Ireland PLC Chief Controls Officer, reporting to the Barclays Bank Ireland PLC Chief Operating Officer, is responsible for overseeing the practical implementation of operational, conduct and reputation risk controls and control methodologies across the Bank. The Chief Controls Office has the following key responsibilities:

- reviewing tolerances for non-financial operational risk exposures set by the business, and maintaining their appropriateness;
- maintaining the standard for the creation and maintenance of all control documentation in the Bank; and
- overseeing the execution of control framework requirements consistently across the Bank. Execution includes recording risk events, issues, and the completion of risk and control self-assessments.

## Frameworks, Policies and Standards

Frameworks, policies and standards set out the governance around the Bank's 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 Bank. Policies describe "what" must be done; and
- 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 Barclays 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. The BBI CRO is responsible for embedding the frameworks, policies and associated standards within BBI. These frameworks, policies and associated standards are adapted to ensure they comply with any bespoke requirements of the jurisdictions where the Bank operates and the local regulatory frameworks which the Bank must adhere to. These must be subject to limits, monitored, reported on and escalated as required.

The Barclays Group Chief Compliance Officer is likewise accountable for Conduct Risk and Reputation Risk, and the Barclays Group General Counsel for Legal Risk. Similar to the BBI CRO, the BBI Chief Compliance Officer and the BBI Head of Legal are accountable for ensuring their respective frameworks, policies and associated standards are embedded within their functions and throughout the Bank as appropriate. The Barclays Group CRO and Barclays Group Chief Compliance Officer have the right to require amendments to any Frameworks, Policies or Standards in the Barclays Group, for any reason, including inconsistencies or contradictions among them.

Frameworks, Policies and Standards are subject to review by the Bank's principle risk accountable executives at least annually. These will then be recommended for adoption by the Bank's Board with modifications where needed at local legal entity level.

## Assurance

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

Internal Audit is responsible for the independent review of risk management and the control environment. Its objective is to provide reliable, valued and timely assurance to the Board and executive management over the effectiveness of controls, mitigating current and evolving material risks and thus enhancing the control culture within the Bank.

# Risk management strategy, governance and risk culture

The Barclays Bank Ireland PLC Board Audit Committee reviews and approves Internal Audit's plans and resources, and evaluates the effectiveness of Internal Audit. An assessment by independent external advisers is also carried out periodically.

## Effectiveness of risk management arrangements

The embedding of the ERMF is monitored by executive and board committees as described above. The ERMF and its component Principal Risks are subject to control testing assurance reviews to confirm its effectiveness or identify issues to be mitigated. Management and the Board are satisfied that these arrangements are appropriate given the risk profile of the Barclays 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 Barclays Group, including BBI, seek 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 Barclays Group 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 88), 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 Barclays Group
- Standardised Templates to report conclusions consistently to relevant management fora and committees
- Use of a central system to record completed Lessons Learned Assessments and to facilitate sharing across the Barclays 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 Bank identifies, escalates and manages risk matters.

The Bank 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 Bank'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 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 Group's employees, customers and clients, governments and regulators, business partners, suppliers, competitors and the broader community.

## Embedding of a values-based, conduct culture

Conduct, culture and values remain a priority of the Bank and Barclays Group Executive Committees who receive regular, detailed information from the business lines, and clearly communicate their intentions and the Barclays Group's progress to all colleagues. The effectiveness of the risk and control environment, for which all colleagues are responsible, depends on the continued embedment of strong values. Colleagues must be willing to meet their risk management responsibilities and escalate issues on a timely basis.

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

### Other risk culture drivers

In addition to values and conduct, we consider the following determinants of risk culture:

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

### Barclays Group-wide risk management tools

To support the Bank's 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 Bank's strategy. The following describes in further detail the management tools used as part of this process.

#### Risk Appetite

Risk appetite refers to the maximum loss under stress that the Bank is willing to incur by assuming principal risks. The Board sets the risk appetite for the Bank.

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

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

The Risk Appetite of the Bank 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 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 2019 the key financial parameters are listed below.

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

Based on the specified Risk Appetite, BBI develops both stress loss and mandate & scale limits to control specific activities, the most material of which are approved by the Board.

#### Stress testing

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. Using limits and triggers helps mitigate the risk of concentrations which would be out of line with expectations, and which may lead to unexpected losses of a scale that would be detrimental to the stability of the relevant business line or the Bank. 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.

## Risk management strategy, governance and risk culture

The mandate and scale framework is used to:

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

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

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

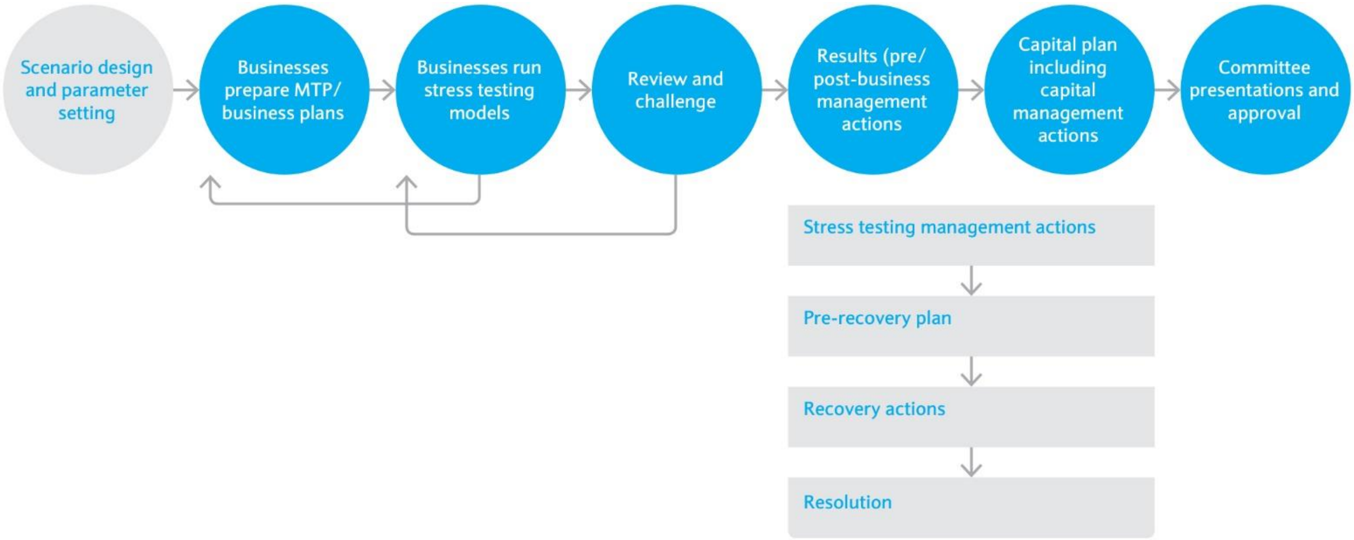
Limits reflect the nature of the risk being managed and controlled and are measured by total financing limits, LGD, stress loss or other metrics as appropriate. There is explicit identification of the exposures that are captured by limits and any material exclusion must be agreed. Limits are reviewed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

- the Bank's Risk Appetite
- current exposure/MTP forecasts
- risk return considerations
- senior risk management judgement.

### Stress testing

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

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


Scenario design and parameter setting
Businesses prepare MTP/ business plans
Businesses run stress testing models
Review and challenge
Results (pre/ post-business management actions
Capital plan including capital management actions
Committee presentations and approval
Stress testing management actions
Pre-recovery plan
Recovery actions
Resolution

The Bank's stress testing process begins with a detailed scenario setting process, with the Risk Committee agreeing the scenario considering the range of vulnerabilities facing the entity. 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 Bank.

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 on page 96. 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.

## Risk management strategy, governance and risk culture

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

The overall stress testing results are reviewed and signed off by the Board, following review by the Group-wide Stress Testing Steering Committee in addition to the Bank's Risk Committee and the Board Risk Committee.

Summary of methodologies for the Bank's stress testing by risk

| Principal Risk | Stress testing approach |
|---|---|
| Credit risk | 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.<br>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.<br>Credit risk weighted assets: The impact of the scenarios is calculated via a combination of business volumes and using similar factors to impairment drivers above, as well as the regulatory calculation and the level of pro-cyclicality of underlying regulatory credit risk models. |
| Market risk | Trading book losses: Market risk factors on the balance sheet are stressed using specific market risk shocks (and are used for the CCR analysis, above). The severity of the shocks applied are dependent on the liquidity of the market under stress, e.g. illiquid positions are assumed to have a longer holding period than positions in liquid markets. |
| Treasury and Capital Risk | **Funding risk:**<br>The risk of a mismatch between assets and liabilities, leading to funding difficulties, is assessed. Businesses apply scenario variables to forecasts of customer loans and advances and deposits levels, taking into account management actions to mitigate the impact of the stress which may affect business volumes. The Bank's funding requirement under stress is then estimated and takes into account lower availability of funds in the market.<br>The analysis of treasury and capital risk also contributes to the estimate of stressed income and costs:<br>• Stress impact on non-interest income is primarily driven by lower projected business volumes and hence lower income from fees and commissions<br>• 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.<br>• 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<br>**Capital Risk:**<br>Capital risk is assessed by taking all modelled risk impacts as part of the stress test (as listed above) into consideration when assessing the Bank'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.<br>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. |

| Principal Risk | Stress testing approach |
|---|---|
| | **Liquidity Risk:**<br>Liquidity risk is assessed by the internal liquidity risk metric (LRA), which analyses specific liquidity risk drivers such as wholesale funding and contingent funding needs based on the below scenarios:<br>• Barclays idiosyncratic liquidity scenario: Barclays faces a loss of market confidence while the market overall is not impacted<br>• Market wide liquidity stress scenario: All financial institutions are impacted by a market wide loss of confidence<br>• Combined liquidity stress scenario: A simultaneous Barclays idiosyncratic and market liquidity stress scenario<br>Long term liquidity stress scenario: Barclays is unable for a prolonged period of time to access the capital market on a regular basis. |
| Operational risk | Operational risk loss projections take into account the effect of the stressed economic scenario. Operational risk is also included in the reverse stress testing framework through scenario assessment of idiosyncratic operational risk events. |
| Model risk | 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 | Stress projections of future losses for conduct risk matters are estimated by exercising expert judgment in accordance with the methodology provided by regulatory bodies (EBA, ECB, and PRA). |
| Reputation risk | Reputation risk is not quantified or stressed |
| Legal risk | Legal risk is not quantified or stressed |

The stress testing framework also includes reverse stress testing techniques, which aim to identify the circumstances under which the Bank'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 German cards business employs stressed assumptions of loss rates to determine profitability hurdles for new accounts. 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 Bank stress tests, the Bank also runs regulatory stress tests. As a "significant institution" the Bank will be subject to the European Banking Authority (EBA) stress testing regime.

## Risk management in the setting of strategy

The risk appetite and (internal) stress testing processes described above form the basis of the risk review of the Medium Term Plan (MTP), performed annually. The MTP embeds the Bank'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 and the Bank's risk profile and setting of risk appetite.

- The MTP risk review process includes a review of the proposed risk appetite by the business, including assessment of business plans under stress which is used to inform the MTP.
- If the business' plans entail too high a level of risk, management can challenge them. This assessment is based on a comparison of the businesses' own risk appetite assessment reflected in their business plans ('bottom-up' risk appetite) with the central risk team's view ('top-down' risk appetite) based on the financial constraints set by the Group's or the Bank's Board, depending on the limit.

## Risk management strategy, governance and risk culture

- 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.
- Risk review meetings are held with the accountable executives of each business, where they present their business plans to the CRO and the CFO. The findings from the risk reviews are discussed, including the risk appetite proposals and stress testing results. Businesses may be required to change their business plans as a result of these meetings.
- Interim internal capital adequacy assessments inform the capital planning process and are reviewed during the Risk Review meetings. These assessments are refreshed based on year-end positions and reflected in the ICAAP.
- The MTP Risk Review further reviews the Risk Register outlining the risk profile of businesses to confirm the completeness of risk appetite, capital adequacy assessments and the Bank’s internal stress test.

The BRC has overall responsibility for reviewing the Bank’s risk profile and making appropriate recommendations to the Board. The Board is ultimately responsible for approving the MTP and the Bank’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 the Bank stays within it 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 100 to 109 cover the aspects of BBI's risk management framework specific to credit risk, including committees and reporting structure

Pages 110 to **Error! Bookmark not defined.** detail 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 Bank from the failure of clients, customers or counterparties, including sovereigns, to fully honour their obligations to the Bank, including the whole and timely payment of principal, interest, collateral and other receivables.

## Overview

The credit risk that Barclays Bank Ireland PLC (“BBI”) 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:

1 maintain a framework of controls to oversee credit risk;

2 identify, assess and measure credit risk clearly and accurately across BBI and within each separate business, from the level of individual facilities up to the total portfolio;

3 control and plan credit risk taking in line with external stakeholder expectations and avoiding undesirable concentrations;

4 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.

The credit risk management teams are accountable to the BBI Head of Credit Risk and the BBI CRO.

**Barclays Bank Ireland PLC Board Risk Committee**

- Considers and recommends the Bank’s risk appetite for wholesale and retail credit risk to the Board
- Review the Banks risk profile for wholesale and retail credit on behalf of the Board
- Reviews the management of the Bank’s wholesale and retail credit risk
- Commissions, receives and considers reports on key financial and non-financial risk issues in the Bank

↑

**Barclays Bank Ireland PLC Risk Committee**

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

↑ ↑

**Risk Management Committee**

- Oversees activities and manages 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

→

**Credit Risk Management Forum**

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

## Roles and responsibilities

The responsibilities of the credit risk management teams in the businesses, the sanctioning team and other shared services include: sanctioning new credit agreements (principally wholesale); setting 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 and maintaining robust collections and recovery processes/units for retail portfolios.

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. Notable transactions require notification to BBI CEO and BBI CRO, where Principal Risk Gross Distribution amount exceeds EUR 2bn for Investment Grade and EUR 1bn for Non-Investment Grade credits.

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

The role of the Central Risk function in the Bank is to provide bank-wide direction, oversight and challenge of credit risk taking. Group Credit 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. The Group Framework, Policies and Standards are reviewed and recommended for adoption by the Bank’s principle risk accountable executive.

## Reporting

BBI 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 BBI although it is also exposed to other forms of credit risk. 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 BBI constantly reviews its concentration in a number of areas including, for example, geography 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.

### Monitoring performance and asset quality

Trends in the quality of BBI’s loan portfolio are monitored in a number of ways including tracking loan loss rate and coverage ratios.

Coverage Ratio, or Expected Credit Loss as a percentage of Exposure, is one of the key credit risk management tool used by the Bank to assess its level of impairment. The table below provides information on the level of ECL Coverage for all of the Bank’s exposures that use a model to estimate ECL, with the exception of Treasury assets. The Bank deploys five models in the course of its assessment; the table below provides the results of two of these: the weighted scenario and a severe downside scenario, which assumes a global depression, unemployment reaching 9% and considerable deterioration in the value of assets including house prices. Further details on the methodology, assumptions used and impacts of stresses on macroeconomic variables are set out in the Bank’s Annual Report on pages 31 to 37.

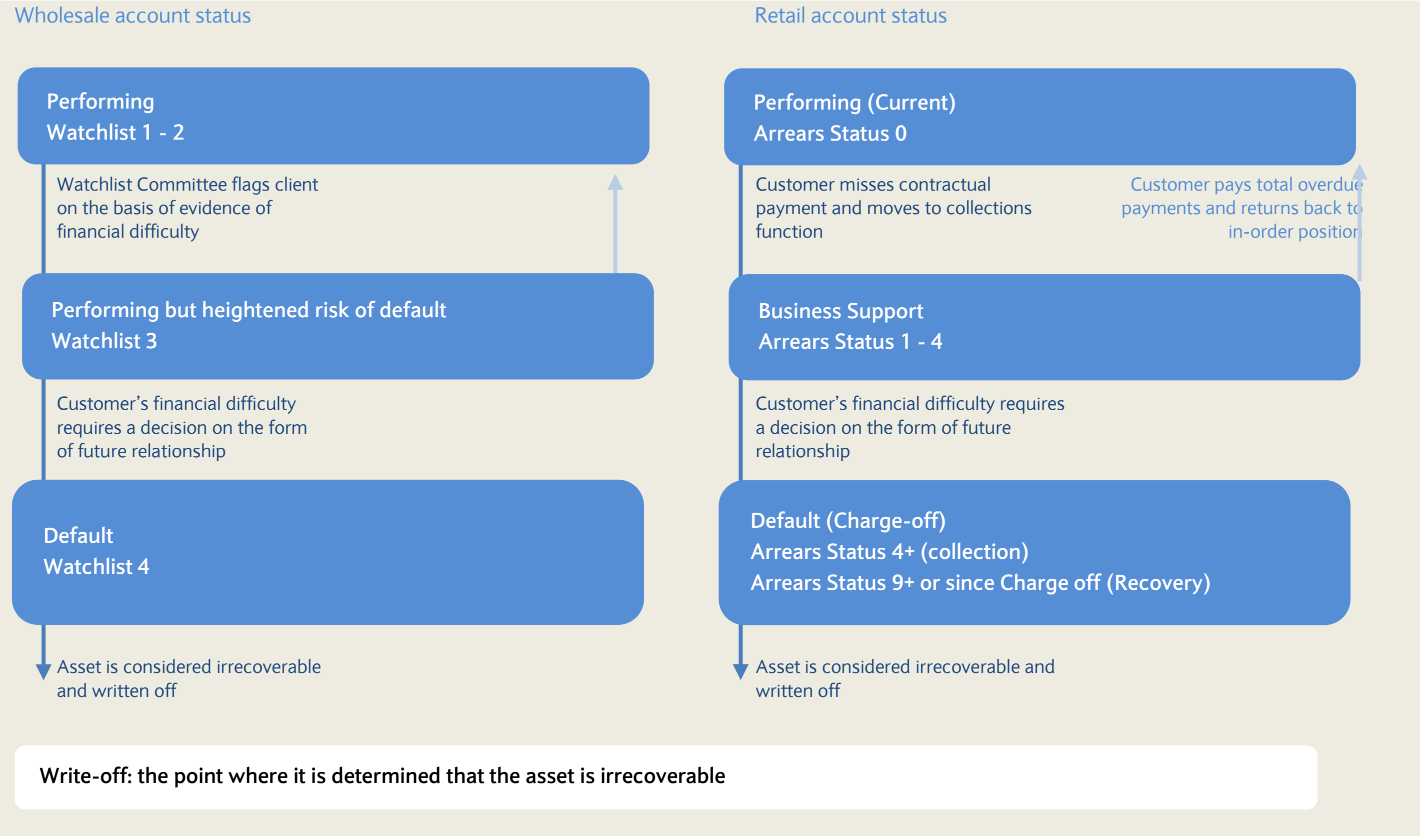
**As at 31 December 2019**

| | | Retail mortgages | | Credit card & unsecured lending | | Wholesale Credit | |
|---|---|---|---|---|---|---|---|
| | | Weighted | Downside | Weighted | Downside | Weighted | Downside |
| Stage 1 | | | | | | | |
| Model Exposure | €m | 5,663 | 5,636 | 4,843 | 5,077 | 7,754 | 6,794 |
| Model ECL | €m | 5 | 6 | 27 | 37 | 8 | 14 |
| Coverage | % | 0.1 | 0.1 | 0.6 | 0,7 | 0.1 | 0.2 |
| Stage 2 | | | | | | | |
| Model Exposure | €m | 581 | 608 | 1,012 | 1,811 | 757 | 1,717 |
| Model ECL | €m | 41 | 54 | 141 | 356 | 15 | 36 |
| Coverage | % | 7.1 | 8.8 | 13.9 | 19.6 | 2.0 | 2.1 |
| Stage 3 | | | | | | | |
| Model Exposure | €m | 178 | 178 | 164 | 164 | - | - |
| Model ECL | €m | 18 | 18 | 111 | 111 | - | - |
| Coverage | % | 10.3 | 10.3 | 67.4 | 67.4 | - | - |
| Model ECL – All Stages | €m | 64 | 79 | 279 | 509 | 23 | 50 |

### Monitoring weaknesses in portfolios

## Management of credit risk and the internal ratings-based approach

While the basic principles for monitoring weaknesses in Wholesale and Retail exposures are broadly similar, they reflect the differing nature of the assets. As a matter of policy, all facilities granted to Corporate or Wholesale counterparties are subject to a review on, at least, an annual basis, even when they are performing satisfactorily.



Wholesale account status

Performing
Watchlist 1 - 2

Watchlist Committee flags client on the basis of evidence of financial difficulty

Performing but heightened risk of default
Watchlist 3

Customer’s financial difficulty requires a decision on the form of future relationship

Default
Watchlist 4

Asset is considered irrecoverable and 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 in-order position

Business Support
Arrears Status 1 - 4

Customer’s financial difficulty requires a decision on the form of future relationship

Default (Charge-off)
Arrears Status 4+ (collection)
Arrears Status 9+ or since Charge off (Recovery)

Asset is considered irrecoverable and written off

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

**Wholesale portfolios**[1]

Within the Wholesale portfolios, the Basel definitions of default are used as default indicators which have been aligned to the IFRS9. Definitions of default used by the Group, and adopted by the Bank, are:

- The Bank puts the credit obligation on a non-accrued status;
- The Bank makes a charge-off or account specific identified impairment resulting from a significant perceived decline in credit quality;
- The Bank sells the credit obligation at a material credit-related economic loss;
- The Bank triggers a petition for obligor’s bankruptcy or similar order;
- The Bank becomes aware of the obligor having sought or having been placed in bankruptcy or similar protection where this would avoid or delay repayment of the credit obligation to the Bank;
- The Bank becomes aware of an acceleration of an obligation by a firm;
- where the obligor is a bank – revocation of authorisation;
- where the obligor is a sovereign – trigger of default definition of an approved External Credit Assessment Institution (ECAI) such as a rating agency;
- Obligor past due more than 90 days on any material credit obligation to the Bank.

Wholesale accounts that are deemed to contain heightened levels of risk are recorded on graded watchlists (WL) comprising four categories graded in line with the perceived severity of the risk attached to the lending, and its probability of default. Examples of heightened levels of risk may include, for example:

- a material reduction in profits;
- a material reduction in the value of collateral held;
- a decline in net tangible assets in circumstances which are not satisfactorily explained;

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

- 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 counterparties in higher levels of WL, default, collection or insolvency.

Their mandate is to maximise shareholder value, ideally via working intensively with the counterparty to help them to either return to financial health or, in the cases of insolvency, obtain the orderly and timely recovery of impaired debts. Where a counterparty’s financial health gives grounds for concern, it is immediately placed into the appropriate category.

**Retail portfolios**

Within the Retail portfolios, which tend to comprise homogeneous assets, statistical techniques more readily allow potential credit weaknesses to be monitored on a portfolio basis. 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 Investment Banking, the decision can be taken by the Barclays International Watch List Committee or the Bank’s credit risk team.

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

For Italian 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.

# Management of credit risk and the internal ratings-based approach

## 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 BBI'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.

## Foreclosures in process and properties in possession

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

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' (Italy) refers to the properties where the customer continues to retain legal title but where BBI has enforced the possession order as part of the foreclosure process to allow for the disposal of the asset, or the court has ordered the auction of the property.

## Writing off assets

Write-off refers to the point where it is determined that the asset is irrecoverable, it is no longer considered economically viable to try and recover the asset, it is deemed immaterial, or full and final settlement is reached and a shortfall remains. In the event of write-off, the customer balance is removed from the balance sheet and the impairment reserve held against the asset is released.

The timing and extent of write-offs may involve some element of subjective judgement. Nevertheless, a write-off will often be prompted by a specific event, such as the inception of insolvency proceedings or other formal recovery action, which makes it possible to establish that some or the entire advance is beyond realistic prospect of recovery. The position of impaired loans is also reviewed at least quarterly to make sure that irrecoverable advances are being written off in a prompt and orderly manner and in compliance with any local regulations.

For Retail portfolios, the timings of the write-off points are established based on the type of loan. For unsecured, assets in the recoveries book will be written-off if the required qualifying repayments are not made within a rolling twelve-month period. For secured loans, the shortfall after the receipt of the proceeds from the disposal of the collateral is written off within three months of that date if no repayment schedule has been agreed with the borrower. Such assets are only written off once all the necessary procedures have been completed and the amount of the loss has been determined.

Subsequent recoveries of amounts previously written off are written back and hence decrease the amount of the reported loan impairment charge in the income statement.

In 2019, total write-offs of impaired financial assets increased by €45 million to €49 million (2018: €4 million).

## Assessment of impairment under IFRS9

From 1 January 2018, a new accounting standard, IFRS 9, became effective which prescribes the rules for measuring impairment allowances for financial assets. Under the IFRS9 accounting standard, BBI assesses and recognises 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 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.

BBI 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 deteriorated risk 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:

**1. 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.

**2. Qualitative Test**

For personal banking assets managed under Retail Portfolios, accounts meeting the portfolios 'high risk' criteria, 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 a Significant Increase in Credit Risk ('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.

**3. 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.

The Bank raises 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 accounts in forbearance, regardless of whether classified as performing or non-performing for EBA reporting purposes. 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.

The Bank raises 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 £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 new standard into businesses, management requires frequent periodic reviews of ECL performance across BBI 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

BBI'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.

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:

   - Monitoring the performance of the model, which includes comparing predicted ECL versus flow into stage 3 and coverage ratios; 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.

   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 and oversight conducted within the Bank.  Economic scenarios are regenerated at a minimum annually, to align with the Bank's medium term planning exercise, but also if the external consensus of the relevant economies materially worsen. 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 Bank's Impairment Forum consists of members from both Finance and Risk and is attended by both the Bank's Chief Financial Officer and Chief Risk Officer. The Forum is responsible for overseeing impairment policy and practice across the Bank and supports the CFO and CRO in their role of approving impairment results. Reported results and key issues are communicated to the Board Audit Committee and the Board Risk Committee, both of which have an oversight role and provide challenge of key assumptions, including the basis of the scenarios adopted.

## 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. BBI 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, BBI 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 BBI's current market terms, the concession would not amount to forbearance. For example, a commercially balanced restructure within the BBI's current terms which involves the granting of concessions and receiving risk mitigation/structural enhancement of benefit to BBI 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 BBI 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.

Non-Performing debtors are defined as:

- More than 90 days past due.
- Assessed as unlikely to pay credit obligations in full without realisation of collateral, regardless of the existence of any past due amount or of the number of days past due.
- Credit impaired.
- Performing forborne debtors granted additional forbearance measures or becoming more than 30 days past-due on a facility obligation.

Performing debtors are classified as debtors that are 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 forborne for a minimum 24 months before forborne status may be reviewed. The minimum time spent in forbearance for a case that is Non-Performing at the point forbearance is granted is therefore 36 months.

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.

**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 BBI 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 BBI 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 87 of our Annual Report.

## 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 BBI. 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 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
- no account should be re-aged more than once within any twelve-month period, or more than twice 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 IFRS9 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.

### 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 BBI 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.

### 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 Group Credit Risk Management function. Environmental issues are considered in credit risk assessment, and environmental risk standards are included in the Wholesale Credit Risk Control Framework. The direction and guidance is adopted by the Bank and its Credit Risk function.

The 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 the Bank takes commercial land as collateral. In many jurisdictions, enforcement of a commercial mortgage by the Bank, leading to possession, potentially renders the Bank liable for the costs of remediating a site if deemed by the regulator to be contaminated, including for pre-existing conditions. The Bank'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 the Bank, if realisation of the security were to become likely.

**Indirect risk** can arise when environmental issues may impact the creditworthiness of the borrower. For instance, incremental costs may be incurred in upgrading a business' operations to meet emerging environmental regulations or tightening standards. In other circumstances, failure to meet those standards may lead to fines. Environmental impacts on businesses may also include shifts in the market demand for goods or services generated by our customers, or changing supply chain pressures. Environmental considerations affecting our clients can be varied. The Bank has developed a series of environmental risk briefing notes, covering ten broad industry headings ranging from Agriculture and Fisheries to Oil and Gas, from Mining and Metals to Utilities and Waste Management. These briefing notes are available to colleagues in business development and credit risk functions across the organisation, outlining the nature of environmental and social risks of which to be aware, as well as the factors which mitigate those risks.

The growing importance of climate change as a source of indirect risk is increasingly being recognized in credit policy discussions. Climate risk can arise as physical risk, where changing weather patterns may adversely impact a client's operations, their access to critical resources, their supply chains or their distribution networks. It can also be a transition risk if movement to a lower carbon economy increases the costs or reduces the demand for their products or services. Climate risks are assessed at a relationship level or on a transactional level, such as assessing a client's perspective on the potential impacts of the climate change agenda on their operations, and the extent to which such impacts are reflected in their business planning assumptions.

Barclays is a member of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD), and signed the Statement of Support for the TCFD Recommendations, which were published in June 2017. The TCFD recommendations aim to improve the disclosure of information to allow investors, regulators and other stakeholders to better assess and manage the risks and opportunities resulting from climate change; we rely on appropriate disclosures from clients to inform our own climate-related sector risk management. Clear understanding and analysis of potential financial risks and opportunities in short, medium and longer term horizons is still at an early stage. We anticipate that disclosures will continue to develop over time, supported by improved analytical tools, data and market practice. This will support Barclays as a user of climate disclosures across industry sectors and subsequently inform our own disclosures as a preparer.

## Internal ratings based (IRB) approach

# Management of credit risk and the internal ratings-based approach

The IRB approach largely relies on internal models to derive the risk parameters/components used in determining the capital requirement for a given exposure. The main risk components include measures of the probability of default (PD), loss given default (LGD) and the exposure at default (EAD). The IRB approach is divided into three alternative applications: Own-Estimates, Supervisory Estimates and Specialised Lending:

Own-Estimates IRB (OEIRB): Barclays uses its own models to estimate PD, LGD and EAD to calculate given risk exposures for various asset classes and the associated Risk Weighted Assets (RWAs).

Supervisory IRB (SIRB): Barclays uses its own PD estimates, but relies on supervisory estimates for other risk components. The SIRB approach is particularly used to floor risk parameters for wholesale credit exposures where default data scarcity may impact the robustness of the model build process.

Specialised Lending IRB: For specialised lending exposures for which PD cannot be modelled reliably, Barclays uses a set of risk weights defined in the relevant regulation, and takes into account a range of prescribed risk factors.

While in the past the industry has used the terms ‘Advanced’, ‘Foundation’ and ‘Slotting’ IRB, the current enforcing regulation (the Capital Requirements Regulation) does not use these terms.

## The IRB calculation for credit risk

For both OEIRB and SIRB approaches, Barclays uses the regulatory prescribed risk-weight functions for the purposes of deriving capital requirements.

In line with regulatory requirements, Long Run Average PD and downturn LGD and CF (Conversion Factor) estimates are used for each customer/facility to determine regulatory capital for all exposures in scope.

For the purpose of pricing and existing customer management, point in time (PIT) PD, LGD and EAD are generally used as these represent the best estimates of risk given the current position in the credit cycle. Whilst Long Run Average PDs are always tested at grade/pool level, PIT PDs are also used for the calculation of capital on certain retail unsecured products, in line with regulation.

## Applications of internal ratings

The three components – PD, LGD and CF – are the building blocks used in a variety of applications that measure credit risk across the entire portfolio:

- credit approval: PD models are used in the approval process in both retail and wholesale portfolios. In high-volume retail portfolios, application and behaviour scorecards are frequently used as decision-making tools. In wholesale and some retail mortgage portfolios, PD models are used to direct applications to an appropriate credit-sanctioning level
- credit grading: this was originally introduced in the early 1990s to provide a common measure of risk across Barclays Group. Barclays now 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 34 on page 52.
- 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 Barclays Group’s risk appetite framework. See page 94
- impairment calculation: under IFRS9, ECL outputs are produced based on PD, EAD and CF IRB feeder models, with scenario and weighting. See page 104
- collections and recoveries: model outputs are used to identify segments of the portfolio where collection and recovery efforts should be prioritised
- economic capital calculation: most economic capital 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, Barclays complements its internal models suite with external models and rating agencies' information. A model hierarchy is in place requiring users/credit officers to adopt a consistent approach/model to rate each counterparty based on the asset class type and the nature of the transaction.

### Wholesale PD models

Barclays employs a range of methods in the construction of these models:

- statistical models are used for our high volume portfolios such as small or medium enterprises (SME). The models are typically built using large amounts of internal data, combined with supplemental data from external data suppliers where available. Wherever external data is sourced to validate or enhance internally held data, similar data quality standards to those applicable to the internal data management are enforced.
- structural models incorporate, in their specification, the elements of the industry-accepted Merton framework to identify the distance to default for a counterparty. This relies upon the modeller having access to specific time series data or data proxies for the portfolio. Data samples used to build and validate these models are typically constructed by appropriately combining data sets from internal default observations with comparable externally obtained data sets from commercial providers such as rating agencies and industry data gathering consortia.
- expert lender models are used for those parts of the portfolio where there is insufficient internal or external data to support the construction of a statistically robust model. These models utilise the knowledge and in-depth expertise of the senior credit officers dealing with the specific customer type being modelled. For all portfolios with a low number of default observations, Barclays 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 Bank'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.
- 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 Barclays 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.

Under the Three Lines of Defence approach stated in the ERMF, the actions of all parties with responsibilities under the GMRP, adopted by BBI, 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 (e.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 Barclays' recovery policies. Comparisons are performed by product seniority and security status and for other breakdowns of the portfolio. Model outputs are also compared to the long-run average of observed LGD. The time-lapse between facility default and the closure of recovery is varied and may be long. In the construction of observed LGD, recoveries are discounted back to the date of default at a conservative interest rate, following regulatory guidance of at least 9%. As noted above, regulatory floors are in place for the LGD used in calculating regulatory capital for exposure types where few default observations are available.

To assess model discrimination, the IVU compares the rank-ordering of model predictions to that of observed LGD and calculates the Spearman's Rank correlation coefficient and other measures of discrimination.

**Wholesale CF models**

To assess model calibration, the conversion factors observed in internal data are compared to model predictions, both in downturn periods as defined by the regulator, and on a long-run average basis. Comparisons are performed separately for different product types. Validation focuses on internal data, with external data used as a benchmark, because conversion factors are related to banks' facility management practices. Particular care is used in separating cases where facility limits changed between the date of observation and default, as these can lead to measurements of conversion factors that take extreme values. As a benchmark only, total predicted exposure at default for all defaulted facilities is compared to realised exposure at default. This comparison is done because it is relatively insensitive to extreme values for observed CF on some facilities. The primary validation tests are performed on 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, and the portfolio level LGD floor).

The primary validation tests are performed on facility-weighted rather than exposure-weighted basis, however, in line with the relevant regulations.

**Retail CF models**

The calibration of the overall CF is assessed through the expected against actual comparison by default flow and stock population respectively. The downturn CF appropriateness is further assessed to 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.

## Credit Risk IRB models performance back testing - estimated versus actual

The following tables compare the PDs and LGDs estimated by the BBI'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 146.

**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. CRD IV compliant models are currently under development for the BBI portfolios 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.

For the Retail book (Italy Mortgages and Germany Cards), the estimated PDs are compared with the simple average of historical annual default rates over the past 5 years, starting Nov'14. However for the Wholesale book, "average historical annual default" is calculated based on one year of data; using the actual position of BBI prior to the migration of clients from our parent. Going forward we will build the history for the Wholesale book as incremental data with the BBI flag becomes available.

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.

Table 71: 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.

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 | | | | | | Number of obligors | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | EBA PD Range (%) | External Ratings Equivalent | | Weighted Average PD | Arithmetic Average PD by obligors | As at Nov'18 | As at Nov'19 | Defaulted obligors in the year | of which: new defaulted in the year | Average historical annual default |
| Wholesale | | Moody's | S&P | % | % | # | # | # | # | % |
| Central governments or central banks | 0.00 to <0.15 | Aaa,Aa1,Aa2, Aa3,A1,A2, A3,Baa1 | AAA, AA+,AA,AA-,A+,A,A-,BBB+ | 0.03% | 0.03% | 1 | 5 | - | - | 0.00% |
| | 0.15 to <0.25 | Baa2 | BBB | 0.00% | 0.00% | - | 1 | - | - | 0.00% |
| | 0.25 to <0.50 | Baa3,Ba1 | BBB-, BB+ | 0.00% | 0.00% | - | - | - | - | 0.00% |
| | 0.50 to <0.75 | Ba1,Ba2 | BB | 0.00% | 0.00% | - | - | - | - | 0.00% |
| | 0.75 to <2.50 | Ba2,Ba3,B1 | BB-,B+ | 0.00% | 0.00% | - | - | - | - | 0.00% |
| | 2.50 to <10.00 | B1,B2,B3, Caa1,Caa2 | B+,B,B-,CCC+ | 0.00% | 0.00% | - | - | - | - | 0.00% |
| | 10.00 to <100.00 | Caa2,Caa3, Ca, C | CCC,CCC+, CCC,CC+,CC, C | 0.00% | 0.00% | - | - | - | - | 0.00% |
| | 100.00 (default) | D | D | 100.00% | 100.00% | - | - | | | |
| Financial 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% | 4 | 397 | - | - | 0.00% |
| | 0.15 to <0.25 | Baa2 | BBB | 0.00% | 0.00% | - | 61 | - | - | 0.00% |
| | 0.25 to <0.50 | Baa3,Ba1 | BBB-, BB+ | 0.00% | 0.00% | - | 3 | - | - | 0.00% |
| | 0.50 to <0.75 | Ba1,Ba2 | BB | 0.00% | 0.00% | - | 1 | - | - | 0.00% |
| | 0.75 to <2.50 | Ba2,Ba3,B1 | BB-,B+ | 0.00% | 0.00% | - | 1 | - | - | 0.00% |
| | 2.50 to <10.00 | B1,B2,B3, Caa1,Caa2 | B+,B,B-,CCC+ | 0.00% | 0.00% | - | 3 | - | - | 0.00% |
| | 10.00 to <100.00 | Caa2,Caa3, Ca, C | CCC,CCC+, CCC,CC+,CC, C | 0.00% | 0.00% | - | - | - | - | 0.00% |
| | 100.00 (default) | D | D | 100.00% | 100.00% | - | - | | | |

## Management of credit risk and the internal ratings-based approach

| Asset Class | | | | | | Number of obligors | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | EBA PD Range (%) | External Ratings Equivalent | | Weighted Average PD | Arithmetic Average PD by obligors | As at Nov'18 | As at Nov'19 | Defaulted obligors in the year | of which: new defaulted in the year | Average historical annual default |
| Wholesale | | Moody's | S&P | % | % | # | # | # | # | % |
| Corporate | 0.00 to <0.15 | Aaa,Aa1,Aa2,Aa3,A1,A2,A3,Baa1 | AAA, AA+,AA,AA-,A+,A,A-,BBB+ | 0.06% | 0.07% | 15 | 84 | - | - | 0.00% |
| | 0.15 to <0.25 | Baa2 | BBB | 0.21% | 0.21% | 7 | 28 | - | - | 0.00% |
| | 0.25 to <0.50 | Baa3,Ba1 | BBB-, BB+ | 0.33% | 0.32% | 14 | 22 | - | - | 0.00% |
| | 0.50 to <0.75 | Ba1,Ba2 | BB | 0.64% | 0.60% | 7 | 4 | - | - | 0.00% |
| | 0.75 to <2.50 | Ba2,Ba3,B1 | BB-,B+ | 1.85% | 1.85% | 1 | 6 | - | - | 0.00% |
| | 2.50 to <10.00 | B1,B2,B3,Caa1,Caa2 | B+,B,B-,CCC+ | 3.59% | 5.23% | 3 | 14 | 1 | - | 33.33% |
| | 10.00 to <100.00 | Caa2,Caa3,Ca,C | CCC,CCC+,CCC-,CC+,CC,C | 0.00% | 0.00% | - | 1 | - | - | 0.00% |
| | 100.00 (default) | D | D | 100.00% | 100.00% | 3[2] | - | | | |
| 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+ | 0.11% | 0.11% | 66,891 | 53,239 | 128 | - | 0.08% |
| | 0.15 to <0.25 | Baa2 | BBB | 0.19% | 0.19% | 18,845 | 15,161 | 60 | - | 0.14% |
| | 0.25 to <0.50 | Baa3,Ba1 | BBB-, BB+ | 0.28% | 0.28% | 4,622 | 3,728 | 38 | - | 0.33% |
| | 0.50 to <0.75 | Ba1,Ba2 | BB | 0.62% | 0.62% | 1,684 | 1,402 | 20 | - | 0.59% |
| | 0.75 to <2.50 | Ba2,Ba3,B1 | BB-,B+ | 1.12% | 1.14% | 2,862 | 2,470 | 104 | - | 1.46% |
| | 2.50 to <10.00 | B1,B2,B3,Caa1,Caa2 | B+,B,B-,CCC+ | 5.12% | 5.14% | 657 | 560 | 76 | - | 7.00% |
| | 10.00 to <100.00 | Caa2,Caa3,Ca,C | CCC,CCC+,CCC-,CC+,CC,C | 31.65% | 31.77% | 824 | 1,108 | 176 | - | 23.60% |
| | 100.00 (default) | D | D | 100.00% | 100.00% | 556 | 960 | - | - | 0.00% |

[2] These 3 exposures, all of which have a di-minimus exposure value, were designated to the standardised credit risk approach during the year

# Management of credit risk and the internal ratings-based approach

| Asset Class | | | | | | Number of obligors | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | EBA PD Range (%) | External Ratings Equivalent | | Weighted Average PD | Arithmetic Average PD by obligors | As at Nov'18 | As at Nov'19 | Defaulted obligors in the year | of which: new defaulted in the year | Average historical annual default |
| Retail | | Moody's | S&P | % | % | # | # | # | # | % |
| Qualifying Revolving Retail | 0.00 to <0.15 | Aaa,Aa1,Aa2,Aa3,A1,A2,A3,Baa1 | AAA, AA+,AA,AA-,A+,A,A-,BBB+ | 0.07% | 0.07% | 726,412 | 816,697 | 156 | 35 | 0.03% |
| | 0.15 to <0.25 | Baa2 | BBB | 0.19% | 0.19% | 68,240 | 73,253 | 58 | 8 | 0.13% |
| | 0.25 to <0.50 | Baa3,Ba1 | BBB-, BB+ | 0.36% | 0.35% | 76,600 | 74,816 | 157 | 9 | 0.24% |
| | 0.50 to <0.75 | Ba1,Ba2 | BB | 0.63% | 0.62% | 37,733 | 37,933 | 139 | 0 | 0.46% |
| | 0.75 to <2.50 | Ba2,Ba3,B1 | BB-,B+ | 1.37% | 1.39% | 157,971 | 152,424 | 1,391 | 67 | 1.13% |
| | 2.50 to <10.00 | B1,B2,B3,Caa1,Caa2 | B+,B,B-,CCC+ | 4.98% | 5.10% | 55,315 | 46,582 | 2,107 | 1 | 4.28% |
| | 10.00 to <100.00 | Caa2,Caa3,Ca,C | CCC,CCC+,CCC-,CC+,CC,C | 35.74% | 34.33% | 19,476 | 12,201 | 6,093 | 0 | 33.87% |
| | 100.00 (default) | D | D | 100.00% | 100.00% | 27,522 | 25,519 | - | - | |

| 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 | 0 | 0% | 0% |
| Corporate Bank | 0 | 0% | 0% |
| Retail | | | |
| Secured by Real Estate | 120 | 21% | 65% |
| Qualifying Revolving Retail | 12,078 | 84% | 67% |

## 2019 AIRB models back testing summary

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

### Wholesale

- No defaults observed in either the 'Central Governments or Central Banks' or the 'Institutions' asset classes.
- The Corporate asset class continues to maintain low default rates across IRB exposures with estimated PDs being higher (conservative) compared to actual default rates across all PD ranges except one (the penultimate non-defaulted range). Only one default is observed in this range during the observation period.
- For the LGD models, there are no resolved cases for the reporting period.
- New PD and LGD models are being developed to comply with CRD IV requirements for the material wholesale portfolios and are planned to be submitted to Barclays Group's primary supervisor, the PRA, during 2020. Subsequently, full approval will be sought from the ECB.

### Secured by Real Estate

- This covers the Mortgage portfolio for Italy. Rank ordering is maintained across PD ranges.
- Both the PD (0.48% vs. 0.62%) and LGD (21% vs. 65%) 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 Germany Cards portfolio. The estimated PDs rank order well across the portfolio.
- For Germany Cards, the PD model overestimates (1.13% estimated vs. 0.88% actual) at an overall level. The LGD model overestimates (84% estimated vs. 67% actual), primarily driven by debt sales at better-than-anticipated prices. 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.

# 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 121 a high level description of the types of counterparty credit exposures incurred in the course of the Bank's activity supplements the analytical tables on pages 67 to 77.
- 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 120.

# Management of counterparty credit risk and credit risk mitigation techniques

## Credit risk mitigation

BBI 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.

BBI 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 BBI for exposures with a full range of counterparties. For instance, businesses may take property, cash or other physical assets as collateral for exposures to retailers, property companies or other client types.

### Netting and set-off

In most jurisdictions within which BBI 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, BBI'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.

### Collateral

BBI 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 BBI or another party; and finance lease receivables, for which typically BBI retains legal title to the leased asset and has the right to repossess the asset on the default of the borrower.
- **derivatives:** BBI also often seeks to enter into a margin agreement (e.g. Credit Support Annex) with counterparties with which BBI 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. BBI 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 BBI 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.
  - Detailed policies are in place to appropriately recognise and record credit risk mitigation.

Risk transfer can also be used to reduce risk concentrations within portfolios lowering the impact of stress events.

# Management of counterparty credit risk and credit risk mitigation techniques

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 Bank 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 Bank'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.

### Managing concentrations within credit risk mitigation

Credit risk mitigation taken by BBI 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 Bank's 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. See page 120 for more information on collateral, valuation and monitoring of concentrations.

## Counterparty credit risk

### Derivative counterparty credit exposures

BBI 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.

BBI 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 BBI'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 BBI protection in situations where BBI'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.

# Management of counterparty credit risk and credit risk mitigation techniques

'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 BBI 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. Barclays Group policy requires all netting arrangements to be legally documented. The ISDA Master Agreement is the 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 Bank'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 BBI has ISDA master agreements, the collateral document will be the ISDA CSA. The collateral document must give Barclays the power to realise any collateral placed with it in the event of the failure of the counterparty.

# Management of market risk

***This section describes the governance structure specific to the management of market risks, as well as a discussion of measurement techniques.***

- Market risks are varied, and a range of techniques must be used to manage them. From page 124 we provide an overview of the market risks we incur across BBI
- The governance structure specific to market risks is discussed on page 124.

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

- Market risk, the risk of BBI being impacted by changes in the level or volatility of positions in the trading book, is covered on pages 125 to 131. 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 potential adverse changes in the value of the Bank'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, BBI will look to hedge against the value 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

**Barclays Bank Ireland PLC Board Risk Committee**

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

**Barclays Bank Ireland PLC Risk Committee**

- Monitors the risk profile with respect to financial risk appetite
- Debates and agrees actions on the financial risk profile and risk strategy across the Bank
- Considers issues escalated by risk type heads and business risk directors

**Risk Management Committee**

- Reviews market risk appetite proposals from the business
- Oversees the management of the Bank's market risk profile
- Reviews arising market or regulatory issues
- Reviews state of implementation of the risk frameworks in the businesses

Market risk resides primarily in the Markets and Treasury businesses. These businesses have the mandate to assume market risk. Market risk oversight and challenge is provided by business committees and BBI 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 oversee 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 Board Risk Committee (BRC) approves market risk appetite. The CRO is responsible for the Market Risk control processes and, agrees with the business a limit framework within the context of the approved market risk appetite.

The Market Risk Committee approves and makes recommendations concerning the BBI market risk profile. This includes overseeing the operation of the Market Risk Framework and associated policies and standards; reviewing market or regulatory issues and limits and utilisation. The committee is chaired by the Head of Market Risk 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 Market Risk covering the business is responsible for implementing the Market Risk control processes.

# Management of market risk

### Risk management in the setting of strategy

Appetite for market risk is recommended by the risk function to BRC for approval by the Board. Mandate and scale limits are set to control levels of market risk and ensure that BBI remains within the BRC approved risk appetite. Barclays Group runs an annual Group-wide stress testing exercise which BBI participates in. The aim is to measure the impact to BBI's fundamental business plan, and is used to manage the wider strategy.

See page 97 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 BBI risk appetite constraint. See page 93 for more detail on risk culture.

## Management of market risk, mitigation and hedging policies

The risk management governance structure informs the risk identification process and governs the management and measurement for market risk. 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. Treasury supports the businesses in managing their non-traded market 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 BBI is exposed to due to unfavourable changes in asset prices. The primary tools to control the 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 BBI 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 is narrower as it applies only to trading book positions approved by the ECB and banking book FX and Commodity positions.

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

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:

# Management of market risk

| Risk factor | Description |
|---|---|
| Interest rate | Risk arises from changes in the level or shape of interest rate curves and volatilities 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 changed 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 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, especially for risks that are not suitable for capture within VaR, such as correlation risk. 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 80 for a review of Management VaR in 2019.

**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.

## Management of market risk

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.

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:

- 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.

### 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 Barclays Group maintains a Trading Book Policy which BBI adheres to, 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 BBI's market risk regulatory models are assigned the highest model materiality rating. Consequently, the Regulatory VaR model is subject to annual re-approval by the Independent Validation Unit. The Independent Validation Unit makes an assessment of model assumptions and considers evidence of model suitability provided by the model owner. The following table summarises the models used for market risk regulatory purposes and the applicable regulatory thresholds.

**Valuation standards**

CRR article 105 defines regulatory principles which need to be applied to fair value assets and liabilities, in order to determine a prudent valuation. The Prudent Valuation Adjustment (PVA) is applied to accounting fair values where there are a range of plausible alternative valuations. It is calculated in accordance with Article 105 of the CRR, and includes (where relevant) adjustments for the following factors: unearned credit spreads, close-out costs, operational risk, market price uncertainty, early termination, investing and funding costs, future administrative costs and model risk. The PVA includes adjustment for all fair valued financial instruments and commodities, irrespective of whether they are in the trading or banking book.

# Management of market risk

Page 98 of the annual report 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. |

### 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 | 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. BBI 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 BBI to supervise the total market risk across BBI, including all trading books and some banking books.

Regulatory VaR is fundamentally the same as the Management VaR (see page 125), with the key differences listed above.

### Stressed Value at Risk (SVaR)

- Estimates the potential loss arising from unfavourable market movements in a stressed environment.
- Identical in scope to Regulatory VaR, but calibrated over a one-year stressed period.
- Regulatory capital is allocated to individual businesses. For regulatory capital calculation purposes BBI 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 and the Incremental Risk Charge on an undiversified basis.

The SVaR model is similar to the VaR model used by BBI, with the exception that the SVaR model must be calibrated to a one-year period of significant financial stress (‘the SVaR period’). BBI 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 BBI’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.

BBI'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.

BBI'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.

BBI's IRC model assumes that ratings transitions, defaults and any spread increases occur on an instantaneous basis.

See page 80 for a review of regulatory measures in 2019.

Table 72: 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;<br>€107m | 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;<br>€281m | 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;<br>€375m | 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 |
| RNIV | 0 Model<br>€2m | N/A | Commensurate with stress testing liquidity horizons |

## Regulatory back testing

Back testing is the method by which BBI 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. BBI 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, the results shown in the table and graph below (also included are the Group's results as the exception count and status is currently derived from the consolidated Barclays Bank Plc and Barclays Capital Securities Ltd rather than BBI). Regulatory back testing compares Regulatory VaR at 99% confidence level (one-day holding period equivalent) to actual and hypothetical[3] changes in portfolio value as defined in CRR Article 366.

Currently BBI exception count and status is maintained in line with Barclays Group, whose primary regulator is the PRA. The PRA define green status as consistent with a good working VaR model and is achieved for models that have four or fewer back testing exceptions in a 250-day period. Back testing counts the number of days when a loss exceeds the corresponding VaR estimate, measured at the 99% regulatory confidence level. Barclays regulatory DVaR model status was amber for the periods February to April and August to December 2019 and green for the rest of the year.

The table below shows the Barclays Group VaR back testing exceptions as at 31 December 2019.

| | Actual P&L | | Hypo P&L | |
|---|---|---|---|---|
| Legal Entity | Total Exceptions | Status [a] | Total Exceptions | Status [a] |
| BBPlc Trading and BCSL | 0 | G | 5 | A |
| BBI[b] | 0 | G | 5 | A |

Note
a Status is accurate as of year-end.
b BBI exception count and status is maintained in line with its parent entity until sufficient time series is available.

[3] Hypothetical changes in portfolio value are the change in the value of the portfolio held at the end of the previous day using market data at the end of the current day

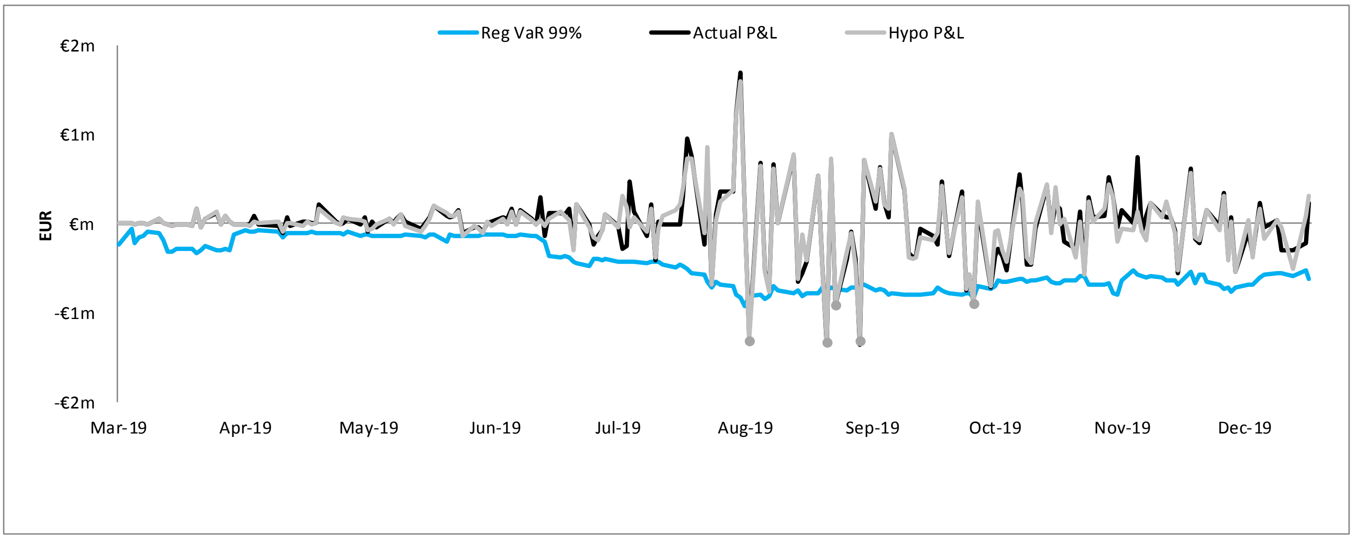
## Management of market risk

The charts below show VaR for BBI. 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. Overall back testing for the consolidated legal entity was in the amber zone for the periods February to April and August to December 2019 and green for the rest of the year. The number of back testing exceptions is not considered as indicating any concerns with the VaR model.

### BBI



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

BBI'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 continually assessed for completeness using either market convention, regulatory guidance, or portfolio monitoring; 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 (which BBIPLC adopts to) 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.

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 model, which is intended to capture certain risks not adequately covered by VaR.

For regulatory capital these RNIVs are aggregated without any offsetting or diversification benefit.

# Management of market risk

## 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 BBI level, asset class level, for example, interest rate risk, and at business level, for example, rates trading. Stress limits and portfolio sensitivity limits are also used to control risk appetite.

BBI limits are reported to the BRC and are set at the BBI level for total management VaR and primary stress. These are then cascaded down by risk managers in order to meet the BBI risk appetite and primary stress. Mandate and Scale limits are then cascaded down to the businesses in order to support compliance with the overall risk appetite constraint of the entity.

Each 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 control functions in the trading businesses with oversight provided by BBI Market Risk.

Throughout 2019, BBI 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. Summaries are presented at Market Risk Sub 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 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 133 to 135.
- Capital risk, including how the risk of insufficient capital and leverage ratios and pension risk are managed, is discussed on pages 135 to 137.
- The management of Interest rate risk in the banking book is discussed on pages 137 to 139.

# Management of treasury and capital risk

## Treasury and capital risk

**Liquidity risk:** The risk that the Bank 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 Bank 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 Bank’s pension plans.

**Interest rate risk in the banking book:** The risk that the Bank is exposed to capital or income volatility because of a mismatch between the interest rate exposures of its (non-traded) assets and liabilities.

## Overview

BBI Treasury manages treasury and capital risk exposure on a day-to-day basis with the Asset and Liability Committee (ALCO) acting as the principal management body. To enforce effective oversight and segregation of duties and in line with the ERMF, the Treasury and Capital Risk function is responsible for oversight of key capital, liquidity, interest rate risk in the banking book (IRRBB) and pension risk management activities. The following describes the structure and governance associated with the risk types within the Treasury and Capital Risk function.

## Organisation and structure

Barclays Bank Ireland PLC Board Risk Committee
- Reviews and recommends the Bank’s risk appetite for treasury and capital risk to the Board
- Reviews material issues impacting treasury and capital risk
- Recommends the approval of ICAAP and ILAAP to the Board

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

## Liquidity risk management

## Overview

The efficient management of liquidity is essential to BBI in retaining the confidence of the financial markets and maintaining the sustainability of the business. There is a control framework in place for managing liquidity risk and this is designed to maintain liquidity resources that are sufficient in amount and quality and funding tenor profile that is adequate to meet the liquidity risk appetite as expressed by the Board based on internal and regulatory liquidity metrics.

This is achieved via a combination of policy formation, review and governance, analysis, stress testing, limit setting and monitoring. Together, these meet internal and regulatory requirements.

## Roles and responsibilities

The Treasury and Capital Risk function is responsible for the management and governance of the liquidity risk mandate defined by the Board. Treasury has the primary responsibility for managing liquidity risk within the set risk appetite and for the production of the ILAAP.

BBI’s comprehensive control framework for managing the Bank’s liquidity risk 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 Bank’s balance sheet and contingent liabilities and the Recovery Plan. Limit setting and transfer pricing are tools that are designed to control the level of liquidity risk taken and drive the appropriate mix of funds. Together, these tools reduce the likelihood that a liquidity stress event could lead to an inability to meet the Bank’s obligations as they fall due. The control framework is subject to internal conformance testing and internal audit review.

The Board approves the Bank’s funding plan, internal stress tests and results of regulatory stress tests, and the Bank’s Recovery Plan. The ALCO is responsible for monitoring and managing liquidity risk in line with the Bank’s funding management objectives, funding plan and risk frameworks. The Risk Committee monitors and reviews the liquidity risk profile and control environment, providing second line oversight of the management of liquidity risk. The Board Risk Committee reviews the risk profile, and annually reviews risk appetite and the impact of stress scenarios on the Bank’s funding plan/forecast in order to agree its projected funding abilities.

BBI maintains a range of management actions for use in a liquidity stress, these are documented in the Bank’s 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.

# Management of treasury and capital risk

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

| Ongoing business management | Early signs/mild stress | Severe stress | Recovery |
|---|---|---|---|
| ▪ stress testing and planning<br>▪ liquidity limits<br>▪ early warning indicators | ▪ monitoring and review<br>▪ management actions requiring minimal business rationalisation | ▪ monitoring and review<br>▪ management actions with limited impact on franchise | ▪ activate appropriate recovery options to restore the capital and/or liquidity position of the entity |

## Risk Appetite and planning

The Bank has established a Liquidity Risk Appetite (LRA) over internally derived liquidity stress tests to represent the level of liquidity risk it 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 four stress scenarios. Barclays Bank Ireland has defined an internal short term LRA stress test metric.

The LRA for internal stress tests is approved by the Board. The LRA is reviewed on a continuous basis and is subject to formal review at least annually as part of the Individual Liquidity Adequacy Assessment Process (ILAAP).

Statement of Liquidity Risk Appetite: For 2019, the Board has approved that BBI 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
- LCR 30 days minimum ratio 110% (Pillar 1 basis)

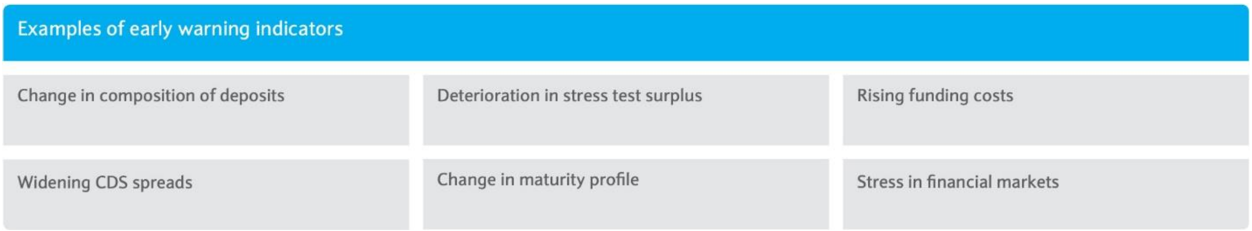
The stress outflows are used to determine the size of the Bank's Liquidity Pool, which represents those resources immediately available to meet outflows in a stress. In addition to the liquidity pool, the control framework and policy provides for other management actions, including generating liquidity from other liquid assets on BBI's balance sheet in order to meet additional stress outflows, or to preserve or restore the Liquidity Pool in the event of a liquidity stress.

## Liquidity limits

The Bank manages limits on a variety of on and off-balance sheet exposures. These limits serve to control the overall extent and composition of liquidity risk taken by managing exposure to the cash outflows. At this stage in its growth BBI relies on overall risk appetite limits rather than more granular liquidity limits which are being implemented over time.

## Early warning indicators

Treasury FLM monitors a range of market indicators for early signs of liquidity risk either in the market or specific to the Bank, a sample of which are shown in the table below. These are designed to immediately identify the emergence of increased liquidity risk to maximise the time available to execute appropriate mitigating actions. Early warning indicators are used as part of the assessment of whether to invoke the Bank's Recovery Plan, which provides a framework for how the liquidity stress would be managed.



| Examples of early warning indicators | | |
|---|---|---|
| Change in composition of deposits | Deterioration in stress test surplus | Rising funding costs |
| Widening CDS spreads | Change in maturity profile | Stress in financial markets |

## Recovery & resolution planning

The Bank maintains an entity Recovery Plan (RP) which is designed to provide a framework to effectively manage a severe financial stress. The RP is proportionate to the nature, scale and complexity of the business and is tested to evaluate that it is operationally robust. The RP details the escalation and invocation process for the plan, including integration with:

i) BAU monitoring of capital and liquidity Early Warning Indictors (EWI) to detect signs of approaching financial stress;

ii) existing processes within Treasury and Risk to respond to mild/moderate stress; and

iii) a governance process for formally invoking the RP.

The RP would be formally invoked by the Board and would be overseen and executed by the Barclays Bank Ireland Crisis Leadership Team (BBICLT), a flexible committee of senior management for responding to all types of stress events. In invoking and executing the plan, the BBICLT (in consultation with the Board) would assess the likely impact of the stress event on the Bank and determine the appropriate response for the nature and severity of the stress. The RP includes a range of recovery options to respond to financial stresses of varying severity and includes detailed information on financial and non-financial impacts of options and a communications plan.

### Liquidity risk governance

A control framework is in place for Liquidity Risk under which the Treasury function operates. The control framework describes liquidity risk management processes, associated policies and controls that Barclays Group has implemented to manage liquidity risk within the Liquidity Risk Appetite and is subject to annual review. Internal architecture is in place to record and measure our group wide liquidity metrics reporting

The Board sets the Liquidity Risk Appetite based on the internal liquidity risk stress test model and external regulatory requirements namely the Liquidity Coverage Ratio (LCR). The Liquidity Risk Appetite is represented as the level of risk the Bank 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 control framework and policy for liquidity risk.

## Capital risk management

### Overview

Capital risk is managed through ongoing monitoring and management of the capital position, regular stress testing and a robust capital governance framework.

### Roles and responsibilities

The management of capital risk is integral to the Bank’s approach to financial stability and sustainability management, and is embedded in the way businesses and legal entities operate.

Capital risk management is underpinned by a control framework and policy. The capital management strategy, outlined in Barclays Bank Ireland capital plans, is developed in alignment with the control framework and policy for capital risk, and is implemented consistently in order to deliver on Barclays Bank Ireland’s objectives.

The Board approves the Bank’s capital plan, internal stress tests and results of regulatory stress tests, and the Bank’s recovery plan. The ALCO is responsible for monitoring and managing capital risk in line with the Bank’s capital management objectives, capital plan and risk frameworks. The Risk Committee monitors and reviews the capital risk profile and control environment, providing second line oversight of the management of capital risk. The Board Risk Committee reviews the risk profile, and annually reviews risk appetite and the impact of stress scenarios on the Bank’s capital plan/forecast in order to agree BBI‘s projected capital adequacy.

Local management assures compliance with an entity’s minimum regulatory capital requirements by reporting to the local Asset and Liability Committees with oversight also from the Risk Committee.

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 CRO. Production of the Bank’s ICAAP is the responsibility of BBI Treasury.

In 2019, the Bank complied with all regulatory minimum capital requirements.

| Primary objectives | Core practices |
|---|---|
| Maintain adequate capital for the Bank to withstand the impact of the risks that may arise under normal and stressed conditions. | Meet minimum regulatory requirements in all jurisdictions<br>Maintain capital buffers over regulatory minimums<br>Perform internal and regulatory stress tests<br>Develop contingency plans for severe and extreme stresses, which include stress management actions and recovery actions. |
| Maintain adequate capital to cover Barclays Bank Ireland's current and forecast business needs and associated risks in order to provide a viable and sustainable business offering. | Maintain capital ratios aligned with rating agency expectations. |
| | -Maintain a capital plan on a short-term and medium-term basis aligned with the Bank’s strategic objectives, balancing capital generation of the business with business growth and shareholder distributions. |

# Management of treasury and capital risk

## Capital risk management strategy

The Bank's capital management strategy is driven by its strategic aims and the risk appetite set by the Board. BBI's objectives are achieved through well embedded capital management practices.

### Capital planning and allocation

The Bank assesses its capital requirements on multiple bases, with the capital plan set in consideration of its 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 Bank Ireland 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.

The ECB determines the regulatory capital requirements for Barclays Bank Ireland. Under these regulatory frameworks, capital requirements are set in consideration of the level of risk that BBI is exposed to and the factors above, and are measured through both risk-based Risk Weighted Assets (RWAs) and leverage-based metrics. An internal assessment of the Bank's capital adequacy is undertaken through the Internal Capital Adequacy Assessment Process (ICAAP) and is used to inform the Bank's capital requirements.

The Bank expects to meet the minimum requirements for capital and leverage at all times and also holds an internal buffer sized according to its assessment of capital risk.

Through the capital planning process, capital limits allocations are approved by the Executive Committee, taking into consideration the risk appetite and strategic aims of the Bank. Regulated legal entities are, at a minimum, capitalised by BBPLC to meet their current and forecast regulatory and business requirements.

### Monitoring and reporting

Capital is managed and monitored to maintain that BBI's 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 the Bank. Treasury are responsible for complying with these limits as the first line of deference for the management of capital risk. Limits are monitored through appropriately governed committees in the first and second line of defence.

To support compliance with risk limits, Treasury monitor capital risks against Bank-specific and macroeconomic early warning indicators and report on these to the ALCO. 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 management's strategic and day-to-day business decision making.

### Stress testing and risk mitigation

Internal group-wide stress testing is undertaken to quantify and understand the impact of sensitivities on the capital plan and capital ratios arising from stressed macroeconomic conditions. Recent economic, market and peer institution stresses are used to inform the assumptions developed for internal stress tests and to assess the effectiveness of mitigation strategies.

The Bank is expected to be subject to supervisory stress testing exercises, designed to assess the resilience of banks to adverse economic or financial developments and ensure that they have robust, forward-looking capital planning processes that account for the risks associated with their business profile. Assessment by regulators is on both a quantitative and qualitative basis, the latter focusing on such elements as data provision, stress testing capability including model risk management and internal management processes and controls.

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

### Transferability of capital

Surplus capital held in BBI 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, tax implications and approval by the Bank's Board. 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

The Bank has capital resources and risk weighted assets mainly denominated in euro currency. Changes in foreign exchange rates result in changes in the euro equivalent value of foreign currency denominated capital resources and RWAs. Due to the composition of the balance sheet being largely euro, BBI's CET1 ratio is not materially sensitive to foreign currency movements.

### Pension risk

The Bank maintains a number of defined benefit pension schemes for past and current employees. The ability of the pension fund to meet pension payments is maintained through investments and contributions.

Pension risk arises because the estimated market value of the pension fund assets might decline; investment returns might reduce; or the estimated value of the pension liabilities might increase. Barclays Bank Ireland monitors the pension risks arising from its defined benefit pension schemes and works with Trustees to address shortfalls. In these circumstances Barclays Bank Ireland could be required or might choose to make extra contributions to the pension fund. Barclays Bank Ireland's main defined benefit scheme was closed to future accrual in 2012, however a smaller plan in Hamburg remains open to new members, while another small plan in Portugal is closed to new members but still accruing benefits for a small number of employees.

**Management of pension risk**

Due to the legal structure of Barclays' DB pension funds and the role of the Trustees Risk Appetite cannot be determined or enforced with regard to Pension Risk. However, whilst Risk Appetite cannot be controlled for individual schemes Barclays must ensure that the Risk Appetite at Group and entity levels is calibrated to accommodate exposure to pension risk.

**Pension Forums**

The Pension Executive Board (PEB) has accountability for the effective operation of pensions across Barclays Group and Barclays Bank Ireland. 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 Barclays Group and the Bank'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 financial assumptions used for the calculation of the pension scheme liabilities used in Barclays Bank Ireland disclosures.
- Representation and input at key pension forums.
- Input into Barclays Bank Ireland's ICAAP for pension risk.
- Input into Barclays Bank Ireland's strategic planning and stress test exercises.
- Provide independent oversight of the pension risk profiles from Barclays Bank Ireland's perspective.
- Coordinates response to regulatory initiatives, developments and proposals on pensions, which may include inputs from material overseas schemes.

## Interest rate risk in the banking book management

### Overview

Banking book operations generate non-traded market risk, primarily through the mismatch between the duration of assets and liabilities and where interest rates on products reset at different dates. As per the Bank's policy to remain within the defined risk appetite, interest rate and FX risks residing in the banking books of the businesses are transferred to Treasury where they are centrally managed. Currently these risks are transferred to Treasury via funding arrangements and interest rate or FX swaps. However, the businesses remain susceptible to non-traded market risk from six key sources:

- **Repricing/residual risk:** the impact from the mismatch between the run-off of product balances and the associated interest rate hedges or from un-hedged liquidity buffer investments.
- **Structural risk:** the change to the net interest income on rolling structural hedge replenishment due to adverse movements in interest rates, assuming that the balance sheet remains constant.
- **Prepayment risk:** the potential loss in value if actual prepayment or early withdrawal behaviour from customers deviates from the expected or contractually agreed behaviour, which may result in a hedge or funding adjustment at a cost to BBI. Exposures are typically considered (where appropriate) net of any applicable offsetting early repayment charges. This risk principally relates to early repayment of fixed rate loans or withdrawal from fixed rate savings products.

# Management of treasury and capital risk

- **Recruitment risk:** the potential loss in value if the actual completion or drawdown behaviour from customers deviates from the expected behaviour, which may result in a hedge or funding adjustment at a cost to the Bank. This risk principally relates to the completion timing around BBI's fixed rate pipeline process.
- **Margin compression risk:** the effect of internal or market forces on the Bank's net margin where, for example, in a low (or negative) rate environment a fall in interest rates may further decrease interest income earned on the assets whereas funding costs may not be reduced given the already minimum level of interest rates.
- **Lag risk:** arises from the delay in repricing customer rates for certain variable/managed rate products, following an underlying change to market interest rates. This is typically driven by either regulatory constraints around customer notification on pricing changes, processing time for BBI's notification systems or contractual agreements within a product's terms and conditions.

## Roles and responsibilities

The non-traded market risk team provides risk management oversight and monitoring of all non-traded market risk in Treasury and the customer banking books, which specifically includes:

- Interest rate risk assessment in the customer banking books.
- Review and challenge the behavioural assumptions used in hedging and transfer pricing.
- Risk management of the liquidity buffer investments and funding activities.
- Oversight of balance sheet hedging.
- Review of residual risk in the hedge accounting solution and hedging of net investments.
- Proposal and monitoring of risk limits to manage traded and non-traded market risk within the agreed risk appetite.

The ALCO is responsible for monitoring and managing IRRBB risk in line with the Bank's management objectives and risk frameworks. The Risk Committee monitors and reviews the IRRBB risk profile and control environment, providing second line oversight of the management of IRRBB risk. The Board Risk Committee 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 BBI.

## Management of IRRBB

BBI seeks to minimise interest rate risk in the banking book and maintain it is within the agreed risk appetite. Therefore, the primary control for IRRBB is calculating the risk measures described below and monitoring risk exposure vs. defined limits. Limits are set at an aggregate business level and then cascaded down.

Barclays uses a range of complementary technical approaches to measure IRRBB as described below. The risk is measured and controlled using both an income based metric (EaR) and value based metrics (EVE, Economic Capital and VaR).

## Summary of measures for non-traded market risk

| Measure | Definition |
|---|---|
| Earnings at risk (EaR) | A measure of the potential change in Net Interest Income (NII) due to an adverse interest rate movement over a predefined time horizon. |
| Economic value of equity (EVE) | A measure of the potential change in value of expected future cash flows due to adverse interest rate movement, based on the existing balance sheet run-off profile. |
| Economic capital | A measure of the potential loss from a severe stress scenario over a predefined time horizon at a particular confidence level. |
| Value at risk (VaR) | A measure of the potential loss of value arising from unfavourable market movements at a specific confidence level, if current positions were to be held unchanged for the predefined holding period. |
| Stress testing | A measure to assess risk exposures under severely adverse market scenarios. |

### Annual Earnings at Risk (AEaR)

AEaR measures the sensitivity of net interest income over a one-year period. It is calculated as the difference between the estimated income using the expected 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, more closely matching the expected product life-cycle.

AEaR sensitivity is calculated for the entire banking book. The metric provides a measure of how interest rate risk may impact the Bank's earnings, providing a simple comparison between risk and returns. The main disadvantage of the metric is its short-term focus, as it only measures the impact on a position in the first 12 months. In order to counter this, the Bank has implemented additional economic value risk metrics.

### Economic Value of Equity (EVE)

EVE calculates the change in the present value of BBI's expected cash-flows from a parallel upward or downward interest rate (100bps) 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 applied to the entire banking book, that is, the same coverage as AEaR, and covers 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.

### Economic Capital (for recruitment, prepayment and residual risk)

Economic Capital consistent models, based on VaR methodologies, are used to measure unexpected losses to a 99% confidence interval over a one-year holding period. Within non-traded market risk, this measure aims to capture recruitment, prepayment and residual risks for banking book products (see definitions on page 138). Economic Capital metrics typically measure variations in economic value from specific sources of risk, for example, prepayment risk Economic Capital for fixed rate mortgages predicts the cost of hedging in order to reduce any mismatch exposure resulting from the impact of unexpected customer prepayment levels.

Limits are set against Economic Capital metrics and breaches trigger mitigating actions to reduce exposure to appropriate levels. Economic Capital modelling is typically applied only to contractually fixed rate products, with the majority of variable and administered rate portfolios not subject to an Economic Capital measure.

Advantages of Economic Capital are that it can calculate unexpected losses to an appropriate degree of confidence given the nature of the risks, and that it covers sources of loss beyond the scope of other models (one-year period for AEaR, only existing business being considered for EVE, etc.). However, as with any statistical model, the choice of the distribution may drive under-prediction of very extreme events, i.e. the real distribution may be fat-tailed. To mitigate this, Barclays Group continues to improve its models using longer time series of historical data to capture extreme moves.

### 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 ten-year equally weighted historical period, at a 99% confidence level, assuming a one year holding period.

Weekly VaR is used to measure residual interest risks within banking book portfolios. The calculation generates one week returns over the past ten years and then converts from weekly to annual using a constant factor. This number then defines the Economic Capital for the gap risk.

### Stress testing

All non-traded market risk positions are subject to the Bank's annual stress testing exercise, where scenarios based on adverse economic parameters are used to determine the potential impact of the positions on results and the balance sheet.

# Management of operational risk

***The sources of operational risks, and how those risks are managed, are detailed in this section.***

The types of risks that are classified as operational risks are described on page 142.

Governance, management and measurement techniques are covered on pages 141 to 144.

# Management of operational risk

## Operational risk

The risk of loss to the Bank from inadequate or failed processes, systems, human factors or due to external events (for example, fraud) where the root cause is not due to credit or market risks.

## Overview

The management of operational risk has three key objectives:

- Deliver an operational risk capability owned and used by business leaders which is pragmatic, relevant, and enables business leaders to make sound risk decisions over the long term.
- Provide the frameworks and policies 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 BBI and Barclays Group strategy, the stated risk tolerance and stakeholder needs.

BBI has regulatory approval to use the Standardised Approach (TSA) for operational risk regulatory capital purposes. BBI and the Barclays Group operates within a strong system of internal controls that enables business to be transacted and risk taken without exposing Barclays Group to unacceptable potential losses or reputational damages. Barclays Group has an overarching Enterprise Risk Management Framework (ERMF) that sets out the approach to internal governance, and which is adopted by BBI.

Organisation and structure

| | |
|---|---|
| Barclays Bank Ireland PLC Board Risk Committee<br>- Approves operational risk framework<br>- Oversees operational risk capital<br>- Recommends and monitors operational risk appetite and the residual risk position, supported by feedback from the Barclays Bank Ireland PLC Board Audit Committee | Barclays Bank Ireland PLC Board Audit Committee<br>- Oversees the operating effectiveness of the control environment<br>- Oversees remediation of control issues<br>- Gives feedback to the Barclays Bank Ireland 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 Bank Ireland PLC Risk Committee<br>- Reviews and recommends risk appetite across operational risk to the Barclays Bank Ireland PLC Board<br>- Monitors the BBI risk profile and the utilisation of risk appetite<br>- Reviews deep dives of specific risks as requested<br>- Reviews remediation plan and actions taken, and agrees any further action required<br>- Escalates to the Barclays Bank Ireland PLC Board level | Barclays Bank Ireland PLC Controls Committee<br>- Oversees the effectiveness of the control environment<br>- Reviews and recommends the control framework<br>- Oversees control remediation activities<br>- Oversees the execution of the Operational Risk Management Framework consistently across BBI<br>- Oversees risk and internal control matters including significant issues<br>- Escalates to Barclays Bank Ireland PLC Board level |
| Barclays Bank Ireland PLC Business Risk & Control Fora<br>- Manage and oversee the risk and control environments at BBI business unit / function /country level<br>- Escalate to Barclays Bank Ireland PLC Risk and Control Committees | |

# Management of operational risk

BBI adopts the Barclays Group Operational Risk Framework, leveraging Barclays Group-wide and implementing BBI – specific processes as appropriate: Operational risk comprises a number of specific risk categories defined as follow:

- **Data Management & Information Risk:** The risk that Barclays information is not captured, retained, used or protected in accordance with its value and legal and regulatory requirements.
- **Financial Reporting Risk**: The risk of a material misstatement or omission within Barclays' 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 Barclays 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.
- **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 Barclays Group or a Barclays Group's 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 Barclays 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 Barclays is liable, or of reputational damage on tax matters with key stakeholders such as tax authorities, regulators, shareholders or the public. Tax cost includes tax, interest or penalties levied by a taxing authority.
- **Technology Risk**: The risk 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 Barclays 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 BBI and/or the broader Barclays Group with an underlying financial instrument (e.g. mortgage, derivative product, trade product etc.) in consideration.

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, including capital adequacy 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.

Barclays also recognises that there are certain threats/risk drivers that are more thematic and have the potential to impact Barclays' strategic objectives. These are Enterprise Risk Themes which require an overarching and integrated risk management approach. Including:

1. **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.
2. **Data**: Aligned to the data strategy of Barclays and encompassing data risks to Barclays from multiple risk categories, including data management, data architecture, data security & protection, data resilience, data retention and data privacy.
3. **Execution**: The risk of failing to deliver and implement the agreed initiatives, priorities and business outcomes required to deliver Barclays' strategy within agreed timelines.
4. **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 Barclays Group Head of Operational Risk is responsible for establishing, owning and maintaining an appropriate Barclays Group-wide Operational Risk Management Framework and for overseeing the portfolio of operational risk across Barclays Group. The BBI Head of Operational Risk is responsible for recommending BBI's adoption of the Operational Risk Framework, ensuring BBI-specific requirements are recognised through BBI Addenda where appropriate, and is responsible for monitoring the portfolio of operational risk across BBI.

# Management of operational risk

Operational Risk Management (ORM) acts in a Second Line of Defence capacity, and is responsible for defining and overseeing the implementation of the framework and monitoring Barclays' operational risk profile. ORM alerts management when risk levels exceed acceptable 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 Barclays Group Operational Risk Profile Forum, the Board Risk Committee, the Board Audit Committee, 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 Risk Committee, and the Board Risk Committee.

Operational risk framework

The Operational Risk Framework comprises a number of elements which allow Barclays to manage and measure its operational risk profile and to calculate the amount of operational risk capital that Barclays 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 identifies and assesses the risks which are inherent in the material processes operated by Barclays. Managers in the business use the RCSA approach to evaluate the key 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. These risk assessments are monitored on a regular basis to maintain that each business understands the risks it faces.

### Risk events

An operational risk event is any circumstance where, through the lack or failure of a control, Barclays has actually, or could have, made a loss. The definition includes situations in which Barclays 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 Tolerance

The Board approves an Operational Risk Tolerance Statement on an annual basis, establishing the level of operational risk that is acceptable in pursuit of the Bank's strategic objectives.

Operational risks are assessed and monitored against the Board approved Operational Risk Tolerance, 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 Tolerance.

### Key indicators

Key indicators (KIs) are metrics which allow the Operational Risk Profile to be measured and monitored against Management's Risk Tolerance. 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 the relevant Board Risk, Board Audit and the Board Committees.

### Operational risk measurement

The Bank assesses its Operational Risk Capital requirements using the Standardised Approach (TSA).

### 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

BBI 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. Strong model risk culture, appropriate technological environment, and adequate focus on understanding and resolving model limitations are crucial components.

## Organisation and structure

Strategically, BBI uses the same models as are used for Group generally. Where possible, it is intended to maintain this approach to ensure consistency of Barclays capital assessment, risk management processes and risk measurement.

BBI is fully aligned to the Group for the purposes of managing model risk under the umbrella of Model Risk Management. It has adopted the frameworks, policies and procedures as well as leveraging Group models and model development capability. The models used by BBI are subject to IVU (Independent Validation Unit) review and validation processes against internal standards, regulatory requirements as well as internal model documentation and governance processes.

Accountability for risk models lies within BBI Risk function with a Head of Risk Models reporting directly to the CRO. The Head of Risk Models is accountable for ensuring that BBI Risk Models remain appropriate for the BBI portfolio, as well as complying with all aspects of Barclays model risk governance. The Head of Risk Models is supported by a board designated Committee, the Risk Model Review Committee (RMRC).

BBI manages model risk as an enterprise level risk similar to other principal risks. Barclays 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 Barclays 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, as well as vendor models and stress testing challenger models.

The Board designated the Risk Model Review Committee (RMRC) to facilitate Senior Management decision-making and oversight of models and their associated processes.  All risk models used by BBI are in scope.

## Roles and responsibilities

The key model risk management activities include:

- Correctly identifying models across all relevant areas of Barclays Group, and recording models in the Barclays Group Models Database (GMD), the Barclays 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, and 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.
- 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, 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 Bank defines, manages and mitigates conduct risk with the goal of providing positive customer and client outcomes, protecting market integrity and promoting effective competition. This includes taking reasonable steps to assure that Barclays culture and strategy are appropriately aligned to these goals; its products and services are reasonably designed and delivered to meet the needs of customers and clients; promoting the fair and orderly operation of the markets in which Barclays does business; and that Barclays does not commit or facilitate money laundering, terrorist financing, bribery and corruption or breaches of economic sanctions.

Conduct Risk incorporates Market Integrity, Customer Protection, Financial Crime and Product and Services Lifecycle Governance risks.

## Organisation and structure

The governance of conduct risk within Barclays Group is fulfilled through management committees operated by the first and second lines of defence with clear escalation and reporting lines to the Board.

The Barclays Group Risk Committee is the most senior executive body responsible for reviewing and monitoring the effectiveness of Barclays Group's management of conduct risk.

Within the Bank the Conduct and Reputational Risk Committee, a subcommittee of the BBI's Executive Committee, is dedicated to providing executive oversight of conduct and reputation risk within BBI.

The committee manages decisions by consensus with a majority of members agreeing on a proposed course of action. In the event that a consensus decision cannot be reached, the Chair may make the final decisions or recommendation.

The Conduct and Reputational Risk Committee escalates issues to BBI's ExCo. The committee oversees the provision of a quarterly report to the Executive Committee and the Board Risk Committee including insights from conduct risk data and metrics, to ensure sufficient visibility on the part of the Board and the Executive Committee into conduct and reputational risk matters.

Conduct risk is also discussed at the BBI Controls Committee which reports to the BBI Risk Committee as well as the Barclays Group Controls Committee.

## Roles and responsibilities

The Conduct Risk Management Framework (CRMF) outlines how Barclays Group manages and measures its conduct risk profile.

The CRMF is supported by Conduct Risk Policies and Standards, owned by Compliance, detailing Conduct Risk Management objectives and mandatory minimum control requirements for managing Conduct Risk.

The BBI Chief Compliance Officer is responsible for providing effective oversight, management and escalation of Conduct Risk in line with the Conduct Risk Management Framework.

The Chief Compliance Officer is required to establish independent second line oversight in relation to the implementation of the CRMF within the Bank, including any necessary monitoring and assurance mechanisms.

Business and Function Management are responsible for implementing the requirements outlined in the CRMF, which includes implementing any additional documentation, such as Business Procedures, necessary to address the related Conduct Risk Policies and Standards, and all relevant regulatory requirements. Businesses and Functions are then responsible for ensuring the effectiveness of controls they operate and how well these are implemented. Any identified non-compliance must be recorded in line with the Barclays Controls Framework.

Business and Function Management must every quarter establish and review their Conduct Risk Profile, including Control Environment Assessment, informed by a range of risk assessment data points including Key Indicators, Emerging Risks, and the outcome of the Strategic Risk Assessments (SRAs), Financial Crime Risk Assessments (FCRAs), Risk and Control Self-Assessments (RCSAs) and Change Risk Impact Assessments. These tools are designed to help evaluate the severity of Conduct Risk Barclays is exposed to, along with the design and effectiveness of any relevant controls.

# 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, event, decision or business relationship will reduce trust in the Bank’s integrity and/or competence.

# Management of reputation risk

## Reputation risk

Reputation Risk is the risk that an action, transaction, investment, event, decision, or business relationship will reduce trust in the Bank's integrity and/or competence.

## Overview

A reduction of trust in Barclays Group's integrity and competence may reduce the attractiveness of Barclays 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 governance of Reputation Risk within Barclays is fulfilled through management committees, clear escalation and reporting lines to the Board level committees.

The Barclays Group Board Risk Committee is the most senior governance body responsible for reviewing and monitoring the effectiveness of Barclays Group's management of reputation risk. Within Barclays Bank Ireland Plc the Conduct and Reputational Risk Committee, a subcommittee of the BBI Executive Committee, is dedicated to providing executive oversight of conduct and reputation risk within BBI.

The committee manages decisions by consensus with a majority of members agreeing on a proposed course of action. In the event that a consensus decision cannot be reached, the Chair may make the final decisions or recommendation.

The Conduct and Reputational Risk Committee escalates issues to BBI's ExCo. The committee oversees the provision of a quarterly report to the Executive Committee and the Board Risk Committee including insights from conduct risk data and metrics, to ensure sufficient visibility on the part of the Board and the Executive Committee into conduct and reputational risk matters.

## Roles and responsibilities

Barclays' reputation is its most precious asset, fundamental to business success and long term sustainability. The effective identification and management of Reputation Risk in conducting our business and in our decision making is therefore an imperative for all employees. Reputation Risk considerations must be an integral part of our strategic and financial planning, new business and product approval, risk assessments and other key decision making processes. Reputation Risk is not static and consideration of Reputation Risk must be continuous and dynamic.

The BBI Chief Compliance Officer is responsible for providing effective oversight, management and escalation of Reputation Risk in line with the Reputational Risk Management Framework. The BBI Chief Compliance Officer is responsible for;

- Ensuring the Bank's Reputation Risks are effectively managed and escalated to the Board where appropriate.
- Setting minimum standards for Reputation Risk through policies applicable globally and monitor compliance with these minimum standards.
- Using their mandate to access any part of the organisation and any information, to bring to the attention of line and senior management or the Board, as appropriate, any situation that is of concern from a Reputation Risk management perspective or that could materially violate approved Risk Tolerance guidelines.

Business and Function management are responsible for ensuring adherence to the Reputation Risk Management Framework and related Policies and Standards as well as the Barclays Control Framework as it relates to the Reputation Risk Horizontal.

Business and Function management are also responsible for escalating and reporting any risks, issues or dispensations, waivers or Breaches (DWBs) and are required to present their Reputation Risk profile subject to review and challenge by Compliance, and updates on any Critical and Major Risk Events and Issues to the Conduct and Reputational Risk Committee on at least a quarterly basis.

Internal Audit as the third line of defence provides independent assurance on the effectiveness of Reputation Risk management to the Board and senior management.

# 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 Bank 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 Bank to meet its legal obligations including regulatory or contractual requirements.

## Overview

The Bank has no tolerance for willful breaches of laws, regulations or other legal obligations. However, the multitude of laws and regulations across Europe are highly dynamic and their application to particular circumstances is often unclear; this results in a level of inherent legal risk, for which Barclays Bank Ireland PLC has limited tolerance.

## Organisation, roles and responsibilities

The Bank'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 Bank receives legal support from appropriate legal professionals. The senior management of the Legal Function oversees, monitors and challenges legal risk across the Bank. The Legal Function does not sit in any of the Three Lines of Defence but supports them all.

The Barclays 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 Board sets the risk appetite for the Bank. The Board Risk Committee is responsible for reviewing and monitoring the effectiveness of risk management across the Bank. Escalation paths from this committee exist to the Barclays Group Risk Committee and BBPLC Board Risk Committee.

# 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 73: PD, LGD, RWA and exposure values by country for IRB - all asset

| Country | PD<br>% | LGD<br>% | RWA<br>€m | Exposure<br>€m | Country | PD<br>% | LGD<br>% | RWA<br>€m | Exposure<br>€m |
|---|---|---|---|---|---|---|---|---|---|
| Germany | 0.99% | 53.4% | 2618 | 16880 | Turkey | 2.67% | 50.9% | 4 | 2 |
| Italy | 2.21% | 23.1% | 2572 | 6986 | Saudi Arabia | 0.08% | 44.9% | 3 | 13 |
| Ireland | 0.16% | 47.9% | 1318 | 3790 | Switzerland | 4.29% | 22.5% | 3 | 9 |
| France | 0.23% | 31.5% | 703 | 3164 | Gibraltar | - | 6.2% | 3 | 5 |
| United Kingdom | 0.14% | 15.9% | 644 | 4350 | Hungary | 0.26% | 47.3% | 2 | 4 |
| Finland | 0.41% | 38.5% | 398 | 835 | Hong Kong | 0.04% | 45.0% | 2 | 15 |
| Spain | 0.17% | 28.4% | 101 | 528 | Denmark | 0.04% | 44.4% | 2 | 10 |
| Norway | 1.29% | 24.0% | 94 | 340 | Canada | 0.24% | 7.1% | 2 | 25 |
| Luxembourg | 0.25% | 41.5% | 83 | 556 | South Africa | 0.31% | 49.8% | 1 | 2 |
| United States | 1.16% | 26.8% | 67 | 195 | Australia | 0.06% | 44.6% | 1 | 8 |
| Netherlands | 0.13% | 30.1% | 56 | 252 | Liechtenstein | 0.04% | 45.0% | 1 | 10 |
| Portugal | 0.17% | 39.1% | 53 | 138 | Qatar | 0.06% | 60.0% | 1 | 2 |
| Austria | 0.14% | 31.0% | 52 | 227 | Kuwait | 0.03% | 45.0% | 1 | 5 |
| Jersey | 0.23% | 56.3% | 24 | 45 | Thailand | 0.22% | 52.5% | 1 | 1 |
| Sweden | 0.04% | 45.0% | 16 | 115 | Singapore | 0.06% | 52.6% | - | 1 |
| Greece | 2.60% | 45.0% | 14 | 10 | Japan | 0.10% | 40.8% | - | 1 |
| Belgium | 0.42% | 44.9% | 5 | 27 | Brazil | 0.29% | 17.7% | - | - |
| Malta | 0.04% | 44.9% | 4 | 27 | China | 0.15% | 15.9% | - | - |

Table 73a: PD, LGD, RWA and exposure values by country for IRB - central governments and central banks

| Country | PD<br>% | LGD<br>% | RWA<br>€m | Exposure<br>€m | Country | PD<br>% | LGD<br>% | RWA<br>€m | Exposure<br>€m |
|---|---|---|---|---|---|---|---|---|---|
| Germany | 0.01% | 45.0% | 365 | 11,006 | United States | - | - | - | - |
| Ireland | 0.03% | 50.0% | 145 | 1,700 | Sweden | - | - | - | - |
| Italy | 0.20% | 45.0% | 53 | 153 | Australia | - | - | - | - |
| Portugal | 0.13% | 48.4% | 46 | 99 | Denmark | - | - | - | - |
| Luxembourg | 0.01% | 45.0% | 11 | 70 | Singapore | - | - | - | - |
| France | 0.01% | 45.0% | 11 | 173 | Norway | - | - | - | - |
| Spain | 0.01% | 45.0% | 3 | 114 | Belgium | - | - | - | - |
| Hungary | 0.27% | 48.0% | 2 | 4 | Hong Kong | - | - | - | - |
| Netherlands | 0.01% | 45.0% | - | 2 | China | - | - | - | - |
| United Kingdom | - | - | - | - | Austria | - | - | - | - |
| Canada | - | - | - | - | Brazil | - | - | - | - |
| Switzerland | - | - | - | - | Turkey | - | - | - | - |
| Japan | - | - | - | - | Finland | - | - | - | - |
| South Africa | - | - | - | - | Greece | - | - | - | - |
| Kuwait | - | - | - | - | Saudi Arabia | - | - | - | - |
| Thailand | - | - | - | - | Qatar | - | - | - | - |
| Liechtenstein | - | - | - | - | Malta | - | - | - | - |
| Jersey | - | - | - | - | Gibraltar | - | - | - | - |

# Appendix A – PD, LGD, RWA and Exposures by country

## Table 73b: PD, LGD, RWA and exposure values by country for IRB - institutions

| | PD | LGD | RWA | Exposure | | PD | LGD | RWA | Exposure |
|---|---|---|---|---|---|---|---|---|---|
| Country | % | % | €m | €m | Country | % | % | €m | €m |
| United Kingdom | 0.06% | 13.0% | 442 | 3,970 | Denmark | 0.04% | 45.0% | 1 | 8 |
| France | 0.07% | 45.9% | 155 | 507 | Sweden | 0.04% | 45.0% | 1 | 6 |
| Germany | 0.05% | 46.7% | 62 | 145 | Netherlands | 0.04% | 45.0% | 1 | 2 |
| Ireland | 0.04% | 53.6% | 50 | 228 | Liechtenstein | 0.04% | 45.0% | 1 | 10 |
| Spain | 0.07% | 45.3% | 21 | 47 | Australia | 0.04% | 45.0% | - | 3 |
| Greece | 2.60% | 45.0% | 14 | 10 | Qatar | 0.08% | 60.0% | - | 2 |
| Austria | 0.04% | 45.0% | 12 | 83 | Canada | 0.06% | 45.0% | - | 2 |
| United States | 0.04% | 57.7% | 9 | 14 | Singapore | 0.04% | 60.0% | - | 1 |
| Luxembourg | 0.04% | 48.8% | 7 | 55 | Japan | 0.05% | 45.1% | - | - |
| Belgium | 0.04% | 45.0% | 4 | 24 | Switzerland | 0.06% | 60.0% | - | - |
| Turkey | 3.38% | 60.0% | 4 | 2 | Malta | - | - | - | - |
| Saudi Arabia | 0.08% | 45.1% | 3 | 13 | Jersey | - | - | - | - |
| Portugal | 1.28% | 45.0% | 3 | 2 | China | - | - | - | - |
| Hong Kong | 0.04% | 45.0% | 2 | 15 | Brazil | - | - | - | - |
| Norway | 0.03% | 50.1% | 2 | 8 | Hungary | - | - | - | - |
| South Africa | 0.32% | 51.3% | 1 | 2 | Kuwait | - | - | - | - |
| Finland | 0.04% | 45.0% | 1 | 9 | Thailand | - | - | - | - |
| Italy | 0.20% | 45.0% | 1 | 2 | Gibraltar | - | - | - | - |

## Table 73c: PD, LGD, RWA and exposure values by country for IRB - corporates

| | PD | LGD | RWA | Exposure | | PD | LGD | RWA | Exposure |
|---|---|---|---|---|---|---|---|---|---|
| Country | % | % | €m | €m | Country | % | % | €m | €m |
| Ireland | 0.29% | 45.3% | 1,124 | 1,862 | Canada | 0.26% | 3.4% | 1 | 23 |
| France | 0.28% | 27.6% | 537 | 2,482 | Denmark | 0.07% | 45.0% | 1 | 2 |
| Germany | 0.45% | 39.1% | 532 | 1,141 | Kuwait | 0.03% | 45.0% | 1 | 5 |
| Finland | 0.41% | 38.4% | 396 | 826 | Australia | 0.08% | 45.0% | 1 | 4 |
| United Kingdom | 0.95% | 47.5% | 200 | 371 | Thailand | 0.13% | 60.0% | 1 | 1 |
| Norway | 1.32% | 23.4% | 93 | 333 | Qatar | 0.04% | 60.0% | - | 1 |
| Spain | 0.23% | 21.1% | 76 | 366 | Hong Kong | 0.06% | 60.0% | - | - |
| Luxembourg | 0.31% | 40.0% | 65 | 431 | Japan | - | - | - | - |
| United States | 0.97% | 24.3% | 57 | 177 | South Africa | - | - | - | - |
| Netherlands | 0.13% | 29.9% | 55 | 247 | Switzerland | - | - | - | - |
| Austria | 0.20% | 22.9% | 40 | 144 | Greece | - | - | - | - |
| Jersey | 0.23% | 56.3% | 24 | 45 | Saudi Arabia | - | - | - | - |
| Italy | 0.23% | 23.7% | 19 | 77 | Singapore | - | - | - | - |
| Sweden | 0.04% | 45.0% | 15 | 110 | China | - | - | - | - |
| Portugal | 0.22% | 13.7% | 5 | 36 | Brazil | - | - | - | - |
| Malta | 0.04% | 45.0% | 4 | 26 | Turkey | - | - | - | - |
| Gibraltar | - | 6.2% | 3 | 5 | Hungary | - | - | - | - |
| Belgium | 0.08% | 47.4% | 1 | 3 | Liechtenstein | - | - | - | - |

# Appendix A – PD, LGD, RWA and Exposures by country

### Table 73d: PD, LGD, RWA and exposure values by country for IRB - SME retail

| | PD | LGD | RWA | Exposure | | PD | LGD | RWA | Exposure |
|---|---|---|---|---|---|---|---|---|---|
| Country | % | % | €m | €m | Country | % | % | €m | €m |
| Ireland | - | - | - | - | Spain | - | - | - | - |
| United Kingdom | - | - | - | - | Sweden | - | - | - | - |
| United States | - | - | - | - | Australia | - | - | - | - |
| Germany | - | - | - | - | Denmark | - | - | - | - |
| Italy | - | - | - | - | Singapore | - | - | - | - |
| Japan | - | - | - | - | Norway | - | - | - | - |
| South Africa | - | - | - | - | Belgium | - | - | - | - |
| France | - | - | - | - | Hong Kong | - | - | - | - |
| Netherlands | - | - | - | - | China | - | - | - | - |
| Canada | - | - | - | - | Austria | - | - | - | - |
| Switzerland | - | - | - | - | Brazil | - | - | - | - |
| Luxembourg | - | - | - | - | Turkey | - | - | - | - |
| Portugal | - | - | - | - | Finland | - | - | - | - |
| Greece | - | - | - | - | Hungary | - | - | - | - |
| Saudi Arabia | - | - | - | - | Kuwait | - | - | - | - |
| Qatar | - | - | - | - | Thailand | - | - | - | - |
| Malta | - | - | - | - | Liechtenstein | - | - | - | - |
| Jersey | - | - | - | - | Gibraltar | - | - | - | - |

### Table 73e: PD, LGD, RWA and exposure values by country for IRB - secured retail

| | PD | LGD | RWA | Exposure | | PD | LGD | RWA | Exposure |
|---|---|---|---|---|---|---|---|---|---|
| Country | % | % | €m | €m | Country | % | % | €m | €m |
| Italy | 2.28% | 22.6% | 2,499 | 6,753 | Singapore | 0.19% | 13.1% | - | - |
| Switzerland | 4.31% | 22.3% | 3 | 9 | Australia | 0.11% | 22.0% | - | - |
| United Kingdom | 5.12% | 23.2% | 2 | 9 | Sweden | 0.10% | 19.0% | - | - |
| United States | 14.85% | 26.5% | 1 | 4 | Finland | 0.62% | 20.4% | - | - |
| Germany | 0.17% | 25.5% | - | 3 | China | 0.15% | 15.9% | - | - |
| France | 0.62% | 19.3% | - | 2 | Saudi Arabia | 0.12% | 15.2% | - | - |
| Turkey | 0.51% | 23.4% | - | 1 | South Africa | 0.09% | 13.7% | - | - |
| Netherlands | 0.18% | 22.3% | - | 1 | Norway | 0.09% | 20.3% | - | - |
| Belgium | 20.47% | 22.4% | - | 1 | Austria | 0.09% | 23.0% | - | - |
| Spain | 0.13% | 20.7% | - | 1 | Portugal | 0.10% | 11.0% | - | - |
| Luxembourg | 0.14% | 24.7% | - | 1 | Canada | 0.64% | 12.6% | - | - |
| Thailand | 0.57% | 24.6% | - | - | Greece | - | - | - | - |
| Brazil | 0.29% | 17.7% | - | - | Qatar | - | - | - | - |
| Malta | 0.62% | 24.0% | - | - | Jersey | - | - | - | - |
| Denmark | 0.12% | 24.9% | - | - | Hong Kong | - | - | - | - |
| Ireland | 0.62% | 23.4% | - | - | Kuwait | - | - | - | - |
| Hungary | 0.14% | 29.7% | - | - | Liechtenstein | - | - | - | - |
| Japan | 0.34% | 19.7% | - | - | Gibraltar | - | - | - | - |

# Appendix A – PD, LGD, RWA and Exposures by country

## Table 73f: PD, LGD, RWA and Exposure values by country for IRB - revolving retail

| | PD | LGD | RWA | Exposure | | PD | LGD | RWA | Exposure |
|---|---|---|---|---|---|---|---|---|---|
| Country | % | % | €m | €m | Country | % | % | €m | €m |
| Germany | 3.51% | 77.3% | 1,658 | 4,585 | Spain | - | - | - | - |
| Ireland | - | - | - | - | Sweden | - | - | - | - |
| United States | - | - | - | - | Australia | - | - | - | - |
| United Kingdom | - | - | - | - | Denmark | - | - | - | - |
| Italy | - | - | - | - | Singapore | - | - | - | - |
| Japan | - | - | - | - | Norway | - | - | - | - |
| South Africa | - | - | - | - | Belgium | - | - | - | - |
| France | - | - | - | - | Hong Kong | - | - | - | - |
| Netherlands | - | - | - | - | China | - | - | - | - |
| Canada | - | - | - | - | Austria | - | - | - | - |
| Switzerland | - | - | - | - | Brazil | - | - | - | - |
| Luxembourg | - | - | - | - | Turkey | - | - | - | - |
| Portugal | - | - | - | - | Finland | - | - | - | - |
| Greece | - | - | - | - | Hungary | - | - | - | - |
| Saudi Arabia | - | - | - | - | Kuwait | - | - | - | - |
| Qatar | - | - | - | - | Thailand | - | - | - | - |
| Malta | - | - | - | - | Liechtenstein | - | - | - | - |
| Jersey | - | - | - | - | Gibraltar | - | - | - | - |

## Table 73g: PD, LGD, RWA and exposure values by country for IRB - other retail exposures

| | PD | LGD | RWA | Exposure | | PD | LGD | RWA | Exposure |
|---|---|---|---|---|---|---|---|---|---|
| Country | % | % | €m | €m | Country | % | % | €m | €m |
| Ireland | - | - | - | - | Spain | - | - | - | - |
| United Kingdom | - | - | - | - | Sweden | - | - | - | - |
| United States | - | - | - | - | Australia | - | - | - | - |
| Germany | - | - | - | - | Denmark | - | - | - | - |
| Italy | - | - | - | - | Singapore | - | - | - | - |
| Japan | - | - | - | - | Norway | - | - | - | - |
| South Africa | - | - | - | - | Belgium | - | - | - | - |
| France | - | - | - | - | Hong Kong | - | - | - | - |
| Netherlands | - | - | - | - | China | - | - | - | - |
| Canada | - | - | - | - | Austria | - | - | - | - |
| Switzerland | - | - | - | - | Brazil | - | - | - | - |
| Luxembourg | - | - | - | - | Turkey | - | - | - | - |
| Portugal | - | - | - | - | Finland | - | - | - | - |
| Greece | - | - | - | - | Hungary | - | - | - | - |
| Saudi Arabia | - | - | - | - | Kuwait | - | - | - | - |
| Qatar | - | - | - | - | Thailand | - | - | - | - |
| Malta | - | - | - | - | Liechtenstein | - | - | - | - |
| Jersey | - | - | - | - | Gibraltar | - | - | - | - |

# Appendix B – Analysis of impairment

## IFRS Impairment

The following tables are presented using the IFRS consolidation rather than the regulatory consolidation basis. See page 104 for background on impairment.

Table 74: 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 | Past due | Total | Gross exposure assessed for impairment | Allowance for Impairment |
|---|---|---|---|---|---|
| | €m | €m | €m | €m | €m |
| **As at 31 December 2019** | | | | | |
| Traded loans | 236 | - | 236 | - | - |
| Financial assets designated at fair value through the income statement | 399 | 34 | 433 | - | - |
| Financial assets designated at fair value through other comprehensive income | - | - | - | - | - |
| Cash collateral and settlement balances | 8,935 | - | 8,935 | 8,935 | - |
| **Gross loans and advances at amortised cost:** | - | - | - | - | - |
| Home Loans | 6,127 | 179 | 6,306 | 6,306 | 70 |
| Credit cards, unsecured and other retail lending | 4,122 | 375 | 4,497 | 4,497 | 329 |
| Corporate loans | 3,173 | 133 | 3,306 | 3,306 | 36 |
| **Total Gross loans and advances at amortised cost** | 13,422 | 687 | 14,109 | 14,109 | 435 |
| **Total** | 22,992 | 721 | 23,713 | 23,044 | 435 |

Table 75: 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 | Past due | Total | Gross exposure assessed for impairment | Allowance for Impairment |
|---|---|---|---|---|---|
| | €m | €m | €m | €m | €m |
| **As at 31 December 2019** | | | | | |
| UK | 2,743 | 2 | 2,745 | 2,745 | 1 |
| Europe | 20,110 | 716 | 20,826 | 20,157 | 434 |
| Americas | 63 | 3 | 66 | 66 | - |
| Africa and Middle East | 23 | - | 23 | 23 | - |
| Asia | 53 | - | 53 | 53 | - |
| **Total** | 22,992 | 721 | 23,713 | 23,044 | 435 |

# Appendix C – Countercyclical Capital Buffer

Table 76: Countercyclical capital buffer

The below table shows the geographical distribution of credit exposures relevant to the calculation of the countercyclical buffer in line with CRR Article 440.

Note that exposures in the below table are prepared in accordance with CRD, Article 140. Hence exclude exposures to central governments/banks, regional governments, local authorities, public sector entities, multilateral development banks, international organisations and institutions and as such the exposure values differ to those found in the Analysis of credit risk section.

| | General Credit Exposures | | Trading book exposures | | Securitisation exposures | | Own Funds requirements | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Exposure Value for SA | Exposure Value for IRB | Sum of long and short positions for trading book exposures for SA | Value of trading book exposures for internal models | Exposure Value for SA | Exposure Value for IRB | Of which: General credit exposures | Of which: Trading book exposures | Of which: Securitisation exposures | Total | Own Funds Requirements weights | Counter-cyclical capital buffer rate |
| **Breakdown by Country** | €m | €m | €m | €m | €m | €m | €m | €m | €m | €m | % | % |
| Czech Republic (CZ) | - | - | - | - | - | - | - | - | - | - | - | 1.50% |
| Denmark (DK) | 80 | 2 | - | - | - | - | 6 | - | - | 6 | 0.65% | 1.00% |
| France(FR) | 569 | 2,503 | - | - | - | - | 90 | - | - | 90 | 9.07% | - |
| Ireland (IE) | 246 | 1,854 | - | - | - | - | 109 | - | - | 109 | 11.02% | 1.00% |
| Norway (NO) | 220 | 333 | - | - | - | - | 25 | - | - | 25 | 2.52% | 2.50% |
| Slovakia (SK) | - | - | - | - | - | - | - | - | - | - | - | 1.50% |
| Sweden (SE) | 7 | 112 | - | - | - | - | 2 | - | - | 2 | - | 2.50% |
| United Kingdom (UK) | 155 | 335 | - | - | - | - | 23 | - | - | 23 | 2.35% | 1.00% |
| Hong Kong (HK) | - | - | - | - | - | - | - | - | - | - | - | 2.00% |
| **Total (countries with existing CCyB rate)** | **1,277** | **5,139** | **-** | **-** | **-** | **-** | **256** | **-** | **-** | **256** | **25.79%** | |
| Finland (FI) | 81 | 826 | - | - | - | - | 38 | - | - | 38 | 3.85% | n/a |
| Germany (DE) | 2,324 | 5,751 | - | - | - | - | 322 | - | - | 322 | 32.47% | n/a |
| Italy (IT) | 760 | 6,861 | - | - | - | - | 257 | - | - | 257 | 25.88% | n/a |
| Luxembourg (LU) | 184 | 365 | - | - | - | - | 19 | - | - | 19 | 1.89% | n/a |
| Netherlands (NL) | 375 | 250 | - | - | - | - | 35 | - | - | 35 | 3.50% | n/a |
| Spain (ES) | 342 | 389 | - | - | - | - | 35 | - | - | 35 | 3.57% | n/a |
| United States (US) | 64 | 210 | - | - | - | - | 10 | - | - | 10 | 1.00% | n/a |
| **Total (countries with own funds requirements weights 1% or above)** | **4,131** | **14,652** | **-** | **-** | **-** | **-** | **717** | **-** | **-** | **717** | **72.17%** | |
| **Total (rest of the world less than 1% requirement)** | **182** | **300** | **-** | **-** | **-** | **-** | **20** | **-** | **-** | **20** | **2.04%** | **n/a** |
| **Total** | **5,590** | **20,091** | **-** | **-** | **-** | **-** | **993** | **-** | **-** | **993** | **100.00%** | |

| Amount of institution-specific countercyclical capital buffer | |
|---|---|
| Total risk exposure amount | **€17,879** |
| Institution specific countercyclical buffer rate | **0.23%** |
| Institution specific countercyclical buffer requirement | **€41m** |

# Appendix D – Disclosure on asset encumbrance

Asset encumbrance arises from collateral pledged against secured funding and other collateralised obligations. BBI funds a portion of trading portfolio assets and other securities via repurchase agreements and other similar borrowing and pledges a portion of customer loans and advances as collateral in securitisations. BBI monitors the mix of secured and unsecured funding sources within the BBI's funding plan and seeks to efficiently utilise available collateral to raise secured funding and meet other collateral requirements. The encumbered assets below will not agree to those disclosed in the Annual Report (Note 35 for Assets pledged, collateral received and assets transferred).

## Template A - Assets

| | | Carrying amount of encumbered assets | Fair value of encumbered assets | Carrying amount of non-encumbered assets | Fair value of non-encumbered assets |
|---|---|---|---|---|---|
| | | 010 | 040 | 060 | 090 |
| | | €m | €m | €m | €m |
| 010 | **Assets of the institution** | **5,920** | **-** | **37,869** | **-** |
| 030 | Equity instruments | **-** | **-** | **-** | **-** |
| 040 | Debt securities | **-** | **-** | **8** | **8** |
| 120 | Other assets | **-** | **-** | **9,867** | **-** |

## Template B - Collateral received

| | | Fair value of encumbered collateral received or own debt securities issued | Fair value of collateral received or own debt securities issued available for encumbrance |
|---|---|---|---|
| | | 010 | 040 |
| | | €m | €m |
| 130 | **Collateral received by the institution** | **698** | **377** |
| 150 | Equity instruments | **-** | **90** |
| 160 | Debt securities | **698** | **241** |
| 230 | Other collateral received | **-** | **-** |
| 240 | Own debt securities issued other than own covered bonds or ABSs | **-** | **-** |

## Template C - Encumbered assets/collateral received and associated liabilities

| | | Matching liabilities, contingent liabilities or securities lent | Assets, collateral received and own debt securities issued other than covered bonds and ABSs encumbered |
|---|---|---|---|
| | | 010 | 030 |
| | | €m | €m |
| 010 | **Carrying amount of selected financial liabilities** | **5,861** | **6,667** |

# Appendix E - Disclosures on remuneration

## Barclays Bank Ireland 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 mandate of the Board Remuneration Committee (the 'Committee') is included in the Directors' Report in the 2019 Annual Report. No external consultants provide services to the Committee.

The Committee held three scheduled meetings during 2019 and all members were present at each meeting:

| Member | Eligible meeting<br>(excluding ad hoc meetings) |
|---|---|
| Eoin O'Driscoll (Chair) | 3/3 |
| Tom Huertas | 3/3 |
| Helen Keelan | 3/3 |

The 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 Remuneration Report.

## Performance and remuneration

Barclays' remuneration philosophy, below, has been adopted by the Committee and links remuneration to achieving sustained high performance and creating long-term value. The remuneration philosophy applies to all employees (including those identified as material risk takers ('MRTs')) within BBI 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 the Barclays' Values and contribute to Barclays' success are rewarded accordingly.

This is achieved by basing performance assessment on clear standards of delivery and behaviour, and 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.

## Barclays' remuneration philosophy

| | |
|---|---|
| Attract and retain talent needed to deliver Barclays' strategy | Long-term success depends on the talent of our employees. This means attracting and retaining an appropriate range of talent to deliver against our strategy, and paying the right amount for that talent |
| Align pay with investor and other stakeholder interests | Remuneration should be designed with appropriate consideration of the views, rights and interests of stakeholders. This means listening to our shareholders, other investors, regulators, government, customers and employees and ensuring their views are appropriately considered in remuneration decision-making |
| Reward sustainable performance | Sustainable performance means making a positive contribution to stakeholders, in both the short and longer term, playing a valuable role in society |
| Support Barclays' Values and culture | Results must be achieved in a manner consistent with our Values. Our Values and culture should drive the way that business is conducted |
| Align with risk appetite, risk exposure and conduct expectations | Designed to reward employees for achieving results in line with the Bank's risk appetite and conduct expectations |
| Be fair, transparent and as simple as possible | We are committed to ensuring pay is fair, simple and transparent for all our stakeholders. This means all employees and stakeholders should understand how we reward our employees and fairness should be a lens through which we make remuneration decisions |

# Appendix E – Disclosures on remuneration

## 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 work of the Remuneration Review Panel (the “Panel”) 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 and the President of Barclays Bank PLC. It applies Barclays’ 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 BBI’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:<br>(i) there is reasonable evidence of employee misbehaviour or material error, and/or<br>(ii) the Bank 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. |

In addition to reductions to individuals’ bonuses, the Committee considers collective adjustments to the incentive pool for specific risk and conduct events. Adjustments to the incentive pool also 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.

## 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 MRTs is subject to the 2:1 maximum ratio of variable to fixed remuneration.

The remuneration of employees engaged in control functions is set independently from the business and for certain senior employees is approved by the Committee. Remuneration for control function employees is less weighted towards variable remuneration compared to front-office employees and variable remuneration is 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 (RBP)**

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**

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.

The ability to recognise performance through variable remuneration enables the Group, Barclays Bank PLC and BBI to control their 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.

The typical deferral structures are:

| For MRTs: | |
|---|---|
| Incentive award | Amount deferred |
| < £500,000 | 40% of total award |
| £500,000 to £1,000,000 | 60% of total award |
| ≥ £1,000,000 | 60% up to £1,000,000<br>100% above £1,000,000 |

| For de minimis MRTs/non-MRTs | |
|---|---|
| Incentive award | Amount deferred |
| Up to £65,000 | 0% |
| > £65,000 | Graduated level of deferral |

Deferred bonuses are generally delivered in equal portions as deferred cash and 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.

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.

**Share plans**

Alignment of MRTs with shareholders is achieved through deferral of incentive pay. Additional shareholding is encouraged through the all-employee share plans.

## Total Remuneration

### Total Remuneration for the financial year

| | All Employees |
|---|---|
| Number of individuals | 1,660 |
| Fixed remuneration (€m) | 167 |
| Variable remuneration (€m) | 52 |
| Total remuneration (€m) | 219 |

## 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 members of the BBI Board and BBI's employees whose professional activities could have a material impact on BBI's risk profile. A total of 101 individuals were MRTs in 2019. 'Senior management' means members of the BBI Board (Executive Directors and Non-Executive Directors) and members of the BBI Executive Committee in accordance with Article 3(9) of CRDIV.

## Appendix E – Disclosures on remuneration

BBI's major business areas are Corporate and Investment Banking ("CIB") and Consumer, Cards and Payments ("CCP"). 'BBI Other' includes internal control functions and corporate functions.

The following set of tables set out the remuneration disclosures for individuals identified as MRTs for BBI.

Remuneration for the financial year

| | Senior management[a] | Other MRTs | | |
|---|---|---|---|---|
| | | CIB | CCP | BBI Other |
| **Fixed remuneration** [b] | | | | |
| Number of individuals | 22 | 42 | 2 | 35 |
| Total fixed remuneration (€m) | 7.7 | 16.9 | 0.4 | 7.0 |
| Fixed cash remuneration (€m) [c] | 7.7 | 16.9 | 0.4 | 7.0 |
| Fixed remuneration in shares (€m) | - | - | - | - |
| of which subject to holding period (€m) | - | - | - | - |
| **Variable remuneration** [b] | | | | |
| Number of individuals | 16 | 41 | 2 | 30 |
| Total variable remuneration (€m) | 5.3 | 16.6 | 0.1 | 1.4 |
| Total cash bonus (€m) | 2.6 | 8.6 | 0.1 | 1.0 |
| of which deferred (€m) | 1.4 | 4.2 | - | 0.2 |
| Total share bonus (€m) | 2.7 | 8.0 | - | 0.4 |
| of which deferred or subject to holding period (€m) | 2.7 | 8.0 | - | 0.4 |
| **Total remuneration (€m)** | 13.0 | 33.5 | 0.5 | 8.4 |

Notes:

[a] As senior management is comprised of members of the Barclays Bank Ireland PLC Board and members of the Barclays Bank Ireland 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.

## Appendix E - Disclosures on remuneration

| Deferred remuneration[a] - Senior management | | | |
|---|---|---|---|
| All figures in €m | Total | Cash | Shares |
| **Balance as at 1 January 2019** | 6.1 | 3.4 | 2.7 |
| Awarded in year | 3.9 | 1.4 | 2.5 |
| Adjusted through | - | - | - |
| ex post explicit adjustments [b] | - | - | - |
| ex post implicit adjustments [c] | 0.9 | 0.1 | 0.8 |
| Forfeited | - | - | - |
| Paid in year | (3.4) | (1.6) | (1.8) |
| **Balance as at 31 December 2019** [d] | 7.5 | 3.3 | 4.2 |
| of which vested | 0.9 | - | 0.9 |
| of which unvested | 6.6 | 3.3 | 3.3 |

| Deferred Remuneration - Other MRTs | | CIB | |
|---|---|---|---|
| All figures in €m | Total | Cash | Shares |
| **Balance as at 1 January 2019** | 12.1 | 6.3 | 5.8 |
| Awarded in year | 14.0 | 4.2 | 9.8 |
| Adjusted through | - | - | - |
| ex post explicit adjustments [b] | - | - | - |
| ex post implicit adjustments [c] | 2.4 | - | 2.4 |
| Forfeited | - | - | - |
| Paid in year | (9.1) | (3.4) | (5.7) |
| **Balance as at 31 December 2019** [d] | 19.4 | 7.1 | 12.3 |
| of which vested | 1.9 | - | 1.9 |
| of which unvested | 17.5 | 7.1 | 10.4 |

| Deferred Remuneration - Other MRTs | | BBI Other | |
|---|---|---|---|
| All figures in €m | Total | Cash | Shares |
| **Balance as at 1 January 2019** | 0.2 | 0.1 | 0.1 |
| Awarded in year | 0.2 | 0.1 | 0.1 |
| Adjusted through | - | - | - |
| ex post explicit adjustments [b] | - | - | - |
| ex post implicit adjustments [c] | - | - | - |
| Forfeited | - | - | - |
| Paid in year | (0.1) | (0.1) | - |
| **Balance as at 31 December 2019** [d] | 0.3 | 0.1 | 0.2 |
| of which vested | - | - | - |
| of which unvested | 0.3 | 0.1 | 0.2 |

Notes:

[a] No MRTs for “CCP” held deferred remuneration during 2019

[b] Total reduction due to direct adjustments such as malus and clawback.

[c] Total change in remuneration due to movements in share price or exchange rate during the year.

[d] All outstanding awards are exposed to ex post explicit and/or implicit adjustment.

# Appendix E – Disclosures on remuneration

## Joining and Severance Payments

| | Senior management | Other MRTs | | |
|---|---|---|---|---|
| | | CIB | CCP | BBI Other |
| **Sign-on awards** | | | | |
| Number of beneficiaries | - | - | - | - |
| Made during the year (€m) | - | - | - | - |
| **Buy-out awards** | | | | |
| Number of beneficiaries | - | 1 | - | - |
| Made during the year (€m) | - | 0.3 | - | - |
| **Severance awards** [a] | | | | |
| Number of beneficiaries | - | - | - | - |
| Made during the year (€m) | - | - | - | - |
| of which paid during the year (€m) | - | - | - | - |
| of which deferred (€m) | - | - | - | - |
| Highest individual award (€m) | - | - | - | - |

Notes:
[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 |
|---|---|
| Remuneration band | Number of MRTs |
| **€1,000,001 to €1,500,000** | 10 |
| **€1,500,001 to €2,000,000** | 3 |
| **€2,000,001 to €2,500,000** | 2 |
| **€2,500,001 to €3,000,000** | 1 |
| **€3,000,001 to €3,500,000** | - |
| **€3,500,001 to €4,000,000** | - |
| **€4,000,001 to €4,500,000** | - |
| **€4,500,001 to €5,000,000** | - |
| **€5,000,001 to €6,000,000** | - |

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

Table 77: CRD IV reference

| CRR ref. | High-level summary | Compliance reference |
|---|---|---|
| *Scope of disclosure requirements* | | |
| 431 (1) | Requirement to publish Pillar 3 disclosures | BBI 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 140 to 144 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. | BBI has has a framework of disclosure controls and procedures in place to support the approval of the Bank's Pillar 3 disclosure. |
| 431 (4) | Explanation of ratings decision upon request | BBI provides explanations of rating decisions to SMEs whose loan applications were declined in writing, and suggests alternative sources of finance. In the case of larger corporates, written explanations are not usually requested as direct discussions with relationship managers take place. |
| *Non-material, proprietary or confidential information* | | |
| 432 (1) | Institutions may omit information that is not material if certain conditions are respected. | Compliance with this provision is covered by BBI's framework. |
| 432 (2) | Institutions may omit information that is proprietary or confidential if certain conditions are respected. | Compliance with this provision is covered by BBI's framework. |
| 432 (3) | Where 432 (1) and (2) apply this must be stated in the disclosures, and more general information must be disclosed. | This table specifies where disclosures are omitted. |
| 432 (4) | Use of 432 (1) or (2) is without prejudice to scope of liability for failure to disclose material information | |
| *Frequency of disclosure* | | |
| 433 | Disclosures must be published once a year at a minimum, and more frequently if necessary. | Compliance with this provision is covered by BBI's framework. See under "Basis of preparation" (page 6). |
| *Means of disclosures* | | |
| 434 (1) | To include disclosures in one appropriate medium, or provide clear cross-references. | Most disclosures are contained within this document. Signposting directs the reader to other publications where appropriate. |
| 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. |
| *Risk management objectives and policies* | | |
| 435 (1) (a) | Disclose information on strategies and processes; organisational structure, reporting systems and risk mitigation/hedging. | Risk management strategy: page 87<br>Credit Risk: page 99<br>Market Risk: page 123<br>Operational Risk: page 140<br>Counterparty Credit Risk: page 119<br>Other Principal Risks:<br>Treasury and Capital – Capital: page 132<br>Treasury and Capital – Liquidity: page 132<br>Conduct Risk: page 147<br>Reputation Risk: page 149 |
| 435 (1) (b) | | |
| 435 (1) (c) | | |
| 435 (1) (d) | | |
| 435 (1) (e) | Inclusion of a declaration approved by the Board on adequacy of risk management arrangements. | See page 90. This statement covers all Principal Risks. |
| 435 (1) (f) | Inclusion of a concise risk statement approved by the Board. | Please see page 95. This statement covers all Principal Risks. |
| 435 (2) | Information on governance arrangements, including information on Board composition and recruitment, and risk committees. | See page 90 for a description of the risk committees. Pages 5 to 7 of the 2019 Annual Report contains information on Board composition, experience and recruitment. |
| 435 (2) (a) | Number of directorships held by directors. | Please see Page 5 to 7 of the 2019 Annual Report. |
| 435 (2) (b) | Recruitment policy of Board members, their experience and expertise. | Please see Page 5 to 7 of the 2019 Annual Report. |

## Appendix F – CRD IV reference

Table 77 (Continued)

| CRR ref. | High-level summary | Compliance reference |
|---|---|---|
| 435 (2) (c) | Policy on diversity of Board membership and results against targets. | Please see Page 5 to 7 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 Page 5 of the 2019 Annual Report. The Board Risk Committee met six times during 2019 |
| 435 (2) (e) | Description of information flow on risk to Board. | Figure on page 90 in the risk management strategy section illustrates the reporting structure to Board committees. |
| *Scope of application* | | |
| 436 (a) | Name of institution | See under "Foreword" page 3. |
| 436 (b) | Difference in basis of consolidation for accounting and prudential purposes, naming entities that are: | The Bank owns three nominee companies, each with a fully paid up share capital of €2.  These companies are not included in the accounting or prudential consolidation of the Bank. |
| 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 | |
| 436 (d) | Capital shortfalls in any subsidiaries outside of scope of consolidation | |
| 436 (e) | Making use of articles on derogations from a) prudential requirements or b) liquidity requirements for individual subsidiaries/entities | |
| *Own funds* | | |
| 437 (1) | Requirements regarding capital resources table | Page 18 / Table 6: Composition of regulatory capital<br>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. | BBI follows the implementation standards. |
| *Capital requirements* | | |
| 438 (a) | Summary of institution's approach to assessing adequacy of capital levels. | Discussions of capital calculations are contained in each risk type management section (credit, market and operational). |
| 438 (b) | Result of ICAAP on demand from authorities. | BBI has not received this request from its regulator. |
| 438 (c) | Capital requirement amounts for credit risk for each Standardised Approach exposure class. | Page 37/ Table 22: Detailed view of credit risk RWAs and Capital Requirement<br>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 37/ Table 22: Detailed view of credit risk RWAs and Capital Requirement<br>BBI has no equity investments, therefore a nil return for 2019 |
| 438 (d) (i) | | |
| 438 (d) (ii) | | |
| 438 (d) (iii) | | |
| 438 (d) (iv) | | |
| 438 (e) | Capital requirements amounts for market risk or settlement risk, or large exposures where they exceed limits | Capital requirements for market risk are disclosed in Page 81/ Table 68: 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 84 / Table 70: Risk weighted assets for operational risk |

# Appendix F – CRD IV reference

Table 77 (Continued)

| CRR ref. | High-level summary | Compliance reference |
|---|---|---|
| 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 57/ Table 39: Corporate exposures subject to the slotting approach |
| *Exposure to counterparty credit risk (CCR)* | | |
| 439 (a) | Description of process to assign internal capital and credit limits to CCR exposures. | Page 120 to 122 |
| 439 (b) | Discussion of process to secure collateral and establishing reserves. | Page 120 to 122 |
| 439 (c) | Discussion of management of wrong-way exposures. | Pages 122 |
| 439 (d) | Disclosure of collateral to be provided (outflows) in the event of a ratings downgrade. | Pages 132 to 137 |
| 439 (e) | Derivation of net derivative credit exposure. | Page 68 / Table 52: Detailed view of counterparty credit risk RWAs and Capital Requirement |
| 439 (f) | Exposure values for mark-to-market, original exposure, standardised and internal model methods. | Page 75 / Table 58Table 58: CCR5-A - Impact of netting and collateral held on exposure values |
| 439 (g) | Notional value of credit derivative hedges and current credit exposure by type of exposure. | Page 76/Table 60: Notional exposure associated with credit derivative contracts |
| 439 (h) | Notional amounts of credit derivative transactions for own credit, intermediation, bought and sold, by product type. | Page 76/Table 60: Notional exposure associated with credit derivative contracts |
| 439 (i) | Estimate of alpha, if applicable. | The alpha used by BBI is 1.4. See page 9. |
| *Capital buffers* | | |
| 440 (1) (a) | Geographical distribution of relevant credit exposures. | BBI's countercyclical buffer is currently set at 0.23%.<br>See page 157 / Table 75: Geographic analysis of impaired and past due exposures and allowance for impairment |
| 440 (1) (b) | Amount of the institution specific countercyclical capital buffer. | |
| 440 (2) | EBA will issue technical implementation standards related to 440 (1) | BBI will comply with the standards once applicable. |
| Indicators of global systemic importance | | |
| 441 (1) | Disclosure of the indicators of global systemic importance | BBI is not a Globally Systemic Important Institution, although it was designated an Other Systemically Important Institution by the CBI in 2019. |
| 441 (2) | EBA will issue technical implementation standards related to 441 (1) | BBI will comply with the standards once applicable. |
| *Credit risk adjustments* | | |
| 442 (a) | Disclosure of bank's definitions of past due and impaired. | Pages 100 to 106 provide a complete description of credit quality measures. |
| 442 (b) | Approaches for calculating credit risk adjustments. | Pages 99 to **Error! Bookmark not defined.** |
| 442 (c) | Disclosure of pre-CRM EAD by exposure class. | See points 442 (d), (e), and (f) below which break down this total. |
| 442 (d) | Disclosures of pre-CRM EAD by geography and exposure class. | Pages 38-38 / Table 23: CRB-C Geographic analysis of credit exposure |
| 442 (e) | Disclosures of pre-CRM EAD by industry and exposure class. | Page 40/ Table 24: Industry analysis of credit exposure |
| 442 (f) | Disclosures of pre-CRM EAD by residual maturity and exposure class. | Pages 42-42 / Table 25: 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 157 / Table 74: 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 157 / Table 75: Geographic analysis of impaired and past due exposures and allowance for impairment |

## Appendix F – CRD IV reference

Table 77 (Continued)

| CRR ref. | High-level summary | Compliance reference |
|---|---|---|
| 442 (i) | Reconciliation of changes in specific and general credit risk adjustments. | Page 65 / Table 49: Analysis of movement on impairment and amounts taken directly to profit and loss<br>Page 65 / Table 50: 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 65 / Table 49: Analysis of movement on impairment and amounts taken directly to profit and loss |
| *Unencumbered assets* | | |
| 443 | Disclosures on unencumbered assets | See page 159: Disclosures on asset encumbrance |
| *Use of ECAIs* | | |
| 444 (a) | Names of the ECAIs used in the calculation of Standardised Approach RWAs, and reasons for any changes | Page 47 |
| 444 (b) | Exposure classes associated with each ECAI | Page 47 |
| 444 (c) | Explanation of the process for translating external ratings into credit quality steps | Page 47 |
| 444 (d) | Mapping of external rating to credit quality steps | Page 47 / Table 30: Relationship of long-term external credit ratings to credit quality steps under the standardised approach<br>Page 47 / Table 31: Credit quality steps and risk weights under the standardised approach |
| 444 (e) | Exposure value pre- and post-credit risk mitigation, by credit quality step. | Pages 48 / Table 32: Credit quality step analysis of pre-CRM exposure and capital deductions under the standardised approach<br>Page 51 / Table: Credit quality step analysis of post-CRM exposure and capital deductions under the standardised approach |
| Exposure to market risk | | |
| 445 | Disclosure of position risk, large exposures exceeding limits, FX, settlement and commodities risk. | Page 81 / Table 68: Market risk own funds requirements |
| Operational risk | | |
| 446 | Disclosure of the scope of approaches used to calculate operational risk, discussion of advanced methodology and external factors considered. | Page 82 / Table 69: MR2-A - Market risk under internal models approach |
| *Exposure in equities not included in the trading book* | | |
| 447 (a) | Differentiation of exposures based on objectives | BBI does not have equity exposures not included in the trading book |
| 447 (b) | Recorded and fair value, and actual prices of exchange traded equity where it differs from fair value. | |
| 447 (c) | Types, nature and amounts of the relevant classes of equity exposures. | |
| 447 (d) | Realised cumulative gains and losses on sales over the period. | |
| 447 (e) | Total unrealised gains/losses, latent revaluation gains/losses, and amounts included within Tier 1 capital. | |
| *Exposure to interest rate risk on positions not included in the trading book* | | |
| 448 (a) | Nature of risk and key assumptions in measurement models. | Model assumptions on page 138 |
| 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. | Not provided |
| *Exposure to securitisation positions* | | |
| 449 | Exposure to securitisations positions. | BBI does not have exposure to securititsation positions |
| 449 (a) | Objectives in relation to securitisation activity. | |

## Appendix F – CRD IV reference

Table 77 (Continued)

| CRR ref. | High-level summary | Compliance reference |
|---|---|---|
| 449 (b) | Nature of other risks in securitised assets, including liquidity. | |
| 449 (c) | Risks in re-securitisation activity stemming from seniority of underlying securitisations and ultimate underlying assets. | |
| 449 (d) | The roles played by institutions in the securitisation process. | |
| 449 (e) | Indication of the extent of involvement in these roles. | |
| 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. | |
| 449 (g) | Description of the institution's policies with respect to hedging and unfunded protection, and identification of material hedge counterparties. | |
| 449 (h) | Approaches to calculation of RWA for securitisations mapped to types of exposures. | |
| 449 (i) | Types of SSPEs used to securitise third-party exposures, and list of SSPEs. | |
| 449 (j) | Summary of accounting policies for securitisations: | |
| 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. | |
| 449 (l) | Full description of Internal Assessment Approach. | |
| 449 (m) | Explanation of changes in quantitative disclosures. | |
| 449 (n) | Banking and trading book securitisation exposures: | |
| 449 (n) (i) | Amount of outstanding exposures securitised; | |
| 449 (n) (ii) | On balance sheet securitisation retained or purchased, and off-balance sheet exposures; | |
| 449 (n) (iii) | Amount of assets awaiting securitisation; | |
| 449 (n) (iv) | Early amortisation treatment; aggregate drawn exposures, capital requirements; | |
| 449 (n) (v) | Deducted or 1250%-weighted securitisation positions; | |
| 449 (n) (vi) | Amount of exposures securitised and recognised gains or losses on sales. | |
| 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; | |
| 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. | |

## Appendix F – CRD IV reference

Table 77 (Continued)

| CRR ref. | High-level summary | Compliance reference |
|---|---|---|
| 449 (p) | Impaired assets and recognised losses related to banking book securitisations, by exposure type | |
| 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 | |
| *Remuneration disclosures* | | |
| 450 | Remuneration | Appendix E contains the remuneration awards made to the Bank's Material Risk Takers. See the 2019 Annual Report for other remuneration disclosures. |
| *Leverage* | | |
| 451 (1) (a) | Leverage ratio, and breakdown of total exposure measure, including reconciliation to financial statements, and derecognised fiduciary items | Page 29 / Table 16: Leverage ratio common disclosure |
| 451 (1) (b) | | Page 29 / Table 16: Leverage ratio common disclosure |
| 451 (1) (c) | | Page 29 / Table 16: 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 132, management of capital risk. |
| 451 (1) (e) | | |
| 451 (2) | EBA to publish implementation standards for points above. | BBI will comply with the standards once applicable. |
| *Use of the IRB approach to credit risk* | | |
| 452 (a) | Permission for use of the IRB approach from authority | Pages 12 / Tables 1-2 |
| 452 (b) | Explanation of: | |
| 452 (b) (i) | Internal rating scales, mapped to external ratings; | Page 52 / Table 34: Internal default grade probabilities and mapping to external ratings |
| 452 (b) (ii) | Use of internal ratings for purposes other than capital requirement calculations; | Page 110 "Applications of internal ratings" |
| 452 (b) (iii) | Management and recognition of credit risk mitigation; | Pages 120 to 122 |
| 452 (b) (iv) | Controls around ratings systems. | Page 145. "Management of model risk within BBI – the control mechanisms for the rating system" |
| 452 (c) | Description of ratings processes for each IRB asset class, provided separately | Pages 111 to 113. Separate descriptions apply to retail and wholesale classes collectively; hence this is not repeated for each separate class. |
| 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; | Pages 53 / Table 35: IRB wholesale obligor grade disclosure for central governments & central banks |
| 452 (e) (ii) | Exposure-weighted average risk weight; | Pages 54 / Table 36: IRB wholesale obligor grade disclosure for institutions |
| 452 (e) (iii) | Undrawn commitments and average exposure values by asset class. | Pages 55 / Table 37: IRB wholesale obligor grade disclosure for corporates |
| 452 (f) | For retail exposure classes, same disclosures as under 452 (e), by risk grade or EL grade. | Pages 56 / Table 38 IRB retail obligor grade disclosure for SME<br>Pages 58 / Table 40: IRB retail obligor grade disclosure for secured retail<br>Pages 58 / Table 41: IRB retail obligor grade disclosure for revolving retail |
| 452 (g) | Actual specific risk adjustments for the period and explanation of changes. | Page 66 / Table 51: Impairment charges, other value adjustments and individual impairment charges for IRB exposures |
| 452 (h) | Commentary on drivers of losses in preceding period. | |

## Appendix F – CRD IV reference

Table 77 (Continued)

| CRR ref. | High-level summary | Compliance reference |
|---|---|---|
| 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 66 / Table 51: Analysis of expected loss versus actual losses for IRB exposures<br>Pages 115-117 / Table 71: 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, Pages 153-156 / Table 73: PD, LGD, RWA and exposure values by country for IRB - all asset |
| 452 (j) (ii) | | |
| *Use of credit risk mitigation techniques* | | |
| 453 (a) | Use of on- and off-balance sheet netting | Page 120 |
| 453 (b) | How collateral valuation is managed | Pages 120 to 122 |
| 453 (c) | Description of types of collateral used by BBI | Pages 120 to 122 |
| 453 (d) | Types of guarantor and credit derivative counterparty, and their creditworthiness | Pages 120 to 122 |
| 453 (e) | Disclosure of market or credit risk concentrations within risk mitigation exposures | Pages 120 to 122 |
| 453 (f) | For exposures under either the Standardised or Foundation IRB approach, disclose the exposure value covered by eligible collateral | Page 34 / Table 20 Collateral and guarantees for IRB approach |
| 453 (g) | Exposures covered by guarantees or credit derivatives | Page 44 / Table 26 |
| *Use of the Advanced Measurement Approaches to operational risk* | | |
| 454 | Description of the use of insurance or other risk transfer mechanisms to mitigate operational risk | Pages 120 to 122 |
| *Use of internal market risk models* | | |
| 455 (a) (i) | Disclosure of the characteristics of the market risk models. | Page 129 / Table 72: Market risk models selected features |
| 455 (a) (ii) | Disclosure of the methodology and description of all-price risk measure and incremental risk charge. | Page 129 |
| 455 (a) (iii) | Descriptions of stress tests applied to the portfolios. | Page 126 |
| 455 (a) (iv) | Methodology for back-testing and validating the models. | Pages 129 |
| 455 (b) | Scope of permission for use of the models. | Page 12 / 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 126 to 127 |
| 455 (d) | High/Low/Mean values over the year of VaR, sVaR, all-price risk measure and incremental risk charge. | Page 80 / Table 66: Analysis of regulatory VaR, SVaR, IRC and All Price Risk Measure |
| 455 (d) (i) | | |
| 455 (d) (ii) | | Page 80 / Table 65 The daily average, maximum and minimum values of management VaR |
| 455 (d) (iii) | | |
| 455 (e) | The elements of the own fund calculation. | Page 81 / Table 68: Market risk own funds requirements |
| 455 (f) | Weighted average liquidity horizons of portfolios covered by models. | Not provided. |
| 455 (g) | Comparison of end-of-day VaR measures compared with one-day changes in portfolio's value. | Page 130 |

| | | |
|---|---|---|
| *Reference to CRR amended by CRR II applicable as at the reporting date* | | |
| *Disclosure of own funds and eligible liabilities* | | |
| 437a | | |
| 437a (a) | Composition of own funds and eligible liabilities ranking in the creditor hierarchy main features | BBI does not have an MREL requirement, hence no disclosures have been made in this regard. |
| 437a (b) | | |
| 437a (c) | | |
| 437a (d) | | |
| *Disclosure of key metrics* | | |
| 447 (h) | Disclosure of key metrics for own funds and eligible liabilities | TLAC requirements do not apply to BBI |

# Appendix G - EBA and BCBS reference

EBA Pillar 3 compliance reference

| Table no | Page | High-level summary | Compliance reference |
|---|---|---|---|
| Table 3 | 13 | Present an outline of the difference in the basis of consolidation for accounting and prudential purposes | Template LI1<br>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 | 14 | Main sources of differences between regulatory exposure amounts and carrying values in financial statements | Template EU LI2<br>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 | 17 | Provide an overview of a bank's prudential regulatory metrics | Template KM1: Key metrics<br>Present an overview of prudential regulatory metrics as per the BCBS Pillar 3 disclosure requirements – consolidated and enhanced framework |
| Table 8 | 22 | | 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 10 | 23 | Overview of risk weighted assets by risk type and capital requirements | Template EU OV1<br>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 15 | 28 | Summary reconciliation of accounting assets and leverage ratio exposures | Template LRSum<br>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 16 | 29 | Leverage ratio common disclosure | Template LRCom<br>Leverage ratio calculation and includes additional breakdowns for the leverage exposure measure (as per Commission implementing regulation-EU 2016/200). |
| Table 17 | 30 | Split-up of on balance sheet exposures (excluding derivatives, SFTs and exempted exposures) | Template LRSpl<br>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) |

## Appendix G - EBA and BCBS reference

### EBA Pillar 3 compliance reference continued

| Table no | Page | High-level summary | Compliance reference |
|---|---|---|---|
| Table 18 | 31 | 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<br>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 19 | 32 | 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)<br>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 21 | 36 | Total and average net amount of exposures | Template EU CRB-B<br>Provide the total and the average amount of net exposures over the period by exposure class in accordance with Article 442(c ) |
| | | | |
| Table 23 | 38 | Geographical breakdown of exposures<br>Purpose: Provide a breakdown of exposures by geographical areas and | Template EU CRB-C<br>Provide a breakdown of exposures by geographical areas and exposure classes in accordance with Article 442(d ) |
| | | | |
| Table 24 | 40 | Concentration of exposures by industry or counterparty types | Template EU CRB-D<br>Provide a breakdown of exposures by industry or counterparty types and exposure classes in accordance with Article 442(e ) |
| | | | |
| Table 25 | 42 | Maturity of exposures | Template EU CRB-E<br>Provide a breakdown of net exposures by residual maturity and exposure classes in accordance with Article 442(f ) |
| | | | |
| Table 27 | 44 | Disclose the extent of the use of CRM techniques | Template EU CR3<br>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), |
| | | | |
| Table 28 | 45 | Credit risk exposure and CRM effects | Template EU CR4<br>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 29 | 46 | This table provides the effect on the RWAs of credit derivatives used as CRM techniques | Template EU CR7<br>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) |

# Appendix G - EBA and BCBS reference

## EBA Pillar 3 compliance reference continued

| Table no | Page | High-level summary | Compliance reference |
|---|---|---|---|
| Table 32 | 48 | 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<br>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 33 | 50 | 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<br>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 |
| | | | |
| Tables 35-41 | 53-58 | Analysis of credit risk exposures by exposure classes and PD grades | Template EU CR6<br>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 42 | 59 | This table provides Credit quality of exposures by exposure class and instrument | Template EU CR1-A<br>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 43 | 61 | This table present credit quality of exposures by industry or counterparty types | Template EU CR1-B<br>Provide a comprehensive picture of the credit quality of an institution's on-balance-sheet and off-balance0sheet exposures by industry in accordance with Article 442(g) |
| | | | |
| Table 44 | 62 | Credit quality of exposures by geography | Template EU CR1-C<br>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 45 | 63 | 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 46 | 63 | 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 47 | 64 | 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 48 | 65 | Table present changes in the stock of defaulted and impaired loans and debt securities | Template EU CR2-B<br>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 49 | 65 | Table present changes in the stock of general and specific credit risk adjustments | Template EU CR2-A<br>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 53 | 70 | Analysis of counterparty credit risk exposures by approach | Template EU CCR1<br>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 54 | 71 | Analysis of counterparty credit risk exposures by regulatory portfolio and risk weight under standardised approach | Template EU CCR3<br>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 55-57 | 72-74 | Analysis of counterparty credit risk exposures by exposure classes and PD grades | Template EU CCR4<br>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 NA | NA | 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)<br>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 58 | 75 | This table shows the impact of netting and collateral held on exposure values | Template EU CCR5A<br>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 59 | 75 | This table shows the composition of collateral for exposures to CCR | Template EU CCR5B<br>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 61 | 76 | This table shows credit derivatives exposures | Template EU CCR6<br>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 62 | 77 | This table shows the EAD and RWAs corresponding to exposures to central counterparties | Template EU CCR8<br>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 |

## Appendix G - EBA and BCBS reference

### EBA Pillar 3 compliance reference continued

| Table no | Page | High-level summary | Compliance reference |
|---|---|---|---|
| Table 63 | 77 | This table provide CVA regulatory calculations (with a breakdown by standardised and advanced approaches). | Template EU CCR2<br>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. |
| | | | |
| Table NA | NA | Present a comparison of the results of estimates from the regulatory VaR model | Template EU MR4<br>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 66 | 80 | 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<br>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 68 | 81 | Market risk Own funds requirements | Template MR1-A<br>Capital requirements and RWAs (as specified in Article 92(4)(b) in the CRR) |
| | | | |
| Table NA | NA | Market risk under standardised approach | Template MR1-B<br>Capital requirements and RWAs (as specified in Article 92(4) (b) in the CRR). |
| | | | |
| Table 69 | 82 | Market risk under internal models approach | Template MR2-A<br>Capital requirements and RWAs (as specified in Article 92(4) (b) of the CRR). |
| | | | |
| Table 71 | 115 | This table provides backtesting data to validate the reliability of PD calculations | Template EU CR9<br>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 76 | 158 | 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 |

# Index of Tables

| Table | | Page |
|---|---|---|
| Table 1 | The scope of the standardised and IRB approaches for credit and counterparty credit risk | 12 |
| Table 2 | Summary of the scope of application of regulatory methodologies for market and operational risk | 12 |
| Table 3 | LI1– Differences between accounting and regulatory scopes of consolidation and the mapping of financial statement categories with regulatory risk categories | 13 |
| Table 4 | LI2 – Main sources of differences between regulatory exposure amounts and carrying values in financial statements | 14 |
| Table 5 | KM1 - Key metrics and movements | 17 |
| Table 6 | CC1 – Composition of regulatory capital | 18 |
| Table 7 | CC2 – Reconciliation of regulatory capital to balance sheet | 20 |
| Table 8 | IFRS9-FL - Composition of with and without the IFRS9 transitional arrangements | 22 |
| Table 9 | Risk weighted assets by risk type and business | 23 |
| Table 10 | Overview of risk weighted assets by risk type and capital requirements | 23 |
| Table 11 | Movements in risk weighted assets | 24 |
| Table 12 | RWA flow statement of credit risk exposures under IRB | 24 |
| Table 13 | RWA flow statement of counterparty credit risk exposures under IMM | 25 |
| Table 14 | RWA flow statement of market risk exposures under an IMA | 25 |
| Table 15 | Summary reconciliation of accounting assets and leverage ratio exposures | 28 |
| Table 16 | Leverage ratio common disclosure | 29 |
| Table 17 | Split-up of on balance sheet exposures (excluding derivatives, SFTs and exempted exposures) | 30 |
| Table 18 | LIQ1 - Liquidity Coverage ratio | 31 |
| Table 19 | PV1 - Prudent valuation adjustment | 32 |
| Table 20 | Credit risk exposures – Note on pre- and post- credit risk mitigation (CRM) EAD | 34 |
| Table 21 | CRB-B Analysis of capital requirements and exposures for credit risk | 36 |
| Table 22 | Detailed view of credit risk RWAs by business | 37 |
| Table 23 | Geographic analysis of credit exposure | 38 |
| Table 24 | Industry analysis of credit exposure | 40 |
| Table 25 | Residual maturity analysis credit exposures | 42 |
| Table 26 | Exposures covered by guarantees and credit derivatives | 44 |
| Table 27 | CR3 – CRM techniques | 44 |
| Table 28 | CR4 Standardised – Credit Risk exposure and CRM effect | 45 |
| Table 29 | CR7– Effect on RWA of credit derivatives used as CRM techniques (IRB) | 46 |
| Table 30 | Relationship of long-term external credit ratings to credit quality steps under the Standardised approach | 47 |
| Table 31 | Credit quality steps and risk weights under the standardised approach | 47 |
| Table 32 | CR5A Analysis of exposures by asset classes and risk weight pre-CCF and CRM under the standardised approach | 48 |
| Table 33 | CR5B Analysis of exposures by asset classes and risk weight post-CCF and CRM under the standardised approach | 50 |
| Table 34 | Internal default grade probabilities and mapping to external ratings | 52 |
| Table 35 | CR6 Credit risk exposures by exposure class and PD range for central governments and central banks AIRB | 53 |
| Table 36 | CR6 Credit risk exposures by exposure class and PD range for institutions | 54 |
| Table 37 | CR6 Credit risk exposures by exposure class and PD range for corporates | 55 |
| Table 38 | CR6 Credit risk exposures by exposure class and PD range for corporate of which: SMEs | 56 |
| Table 39 | CR10 Corporate exposures subject to the slotting approach | 57 |
| Table 40 | CR6 Credit risk exposures by exposure class and PD range for secured retail | 58 |
| Table 41 | CR6 Credit risk exposures by exposure class and PD range for revolving retail | 58 |
| Table 42 | CR1-A – Credit quality of exposures by exposure class and instrument | 59 |
| Table 43 | CR1-B – Credit quality of exposures by industry or counterparty types | 61 |
| Table 44 | CR1-C – Credit quality of exposures by geography | 62 |
| Table 45 | Credit quality of forborne exposures | 63 |
| Table 46 | Credit quality of performing and non-performing exposures by past due days | 63 |
| Table 47 | Performing and non-performing exposures | 64 |
| No table no | Collateral obtained by taking possession and execution processes | - |
| Table 48 | CR2-B - Changes in the stock of defaulted and impaired loans and debt securities | 65 |
| Table 49 | CR2-A – Changes in the stock of general and specific credit risk adjustments | 65 |
| Table 50 | Regulatory adjustments to statutory Impairment | 65 |
| Table 51 | Analysis of expected loss versus actual losses for IRB exposures | 66 |
| Table 52 | Detailed view of counterparty credit risk RWAs and capital requirements | 68 |
| Table 53 | CCR1 – Analysis of CCR exposure by approach | 70 |
| Table 54 | CCR3 Counterparty credit risk exposures by regulatory portfolio and risk under standardised approach | 71 |
| Table 55 | CCR4 Counterparty credit risk exposures by portfolio and PD range for central governments and central banks | 72 |
| Table 56 | CCR4 Counterparty credit risk exposures by portfolio and PD range for corporates | 73 |
| Table 57 | CCR4 Counterparty credit risk exposures by portfolio and PD range for corporates | 74 |
| Table 58 | CCR5-A - Impact of netting and collateral held on exposure values | 75 |
| Table 59 | CCR5-B - Composition of collateral for exposures to CCR | 75 |
| Table 60 | Notional exposure associated with credit derivative contracts | 76 |
| Table 61 | CCR6 - Credit derivatives exposures | 76 |
| Table 62 | CCR8 Exposures to CCPs associated with credit derivative contracts | 77 |
| Table 63 | CCR2 Credit valuation adjustment (CVA) capital charge | 77 |
| Table 64 | Balance sheet split by trading and banking books | 79 |
| Table 65 | The daily average, maximum and minimum values of management VaR | 80 |
| Table 66 | MR3 - Analysis of regulatory DVaR, SVaR, IRC and All Price Risk Measure | 80 |
| Table 67 | Breakdown of regulatory risk measures by portfolio | 81 |
| Table 68 | Market Risk own funds requirements | 81 |
| No table no | MR1-Market Risk under standardised approach | - |
| Table 69 | MR2-A-Market risk under internal models approach | 82 |
| No table no | Functional currency of operations | - |
| No table no | Analysis of volatility of the available for sale portfolio in the liquidity pool | - |
| Table 70 | Risk weighted assets for operational risk | 84 |
| No table no | Operational risk profile (including. operational risk events) | - |
| No table | IRB credit risk models' selected features | - |
| Table 71 | Analysis of expected performance versus actual results | 115 |
| Table 72 | Market risk models selected features | 129 |

# Appendices
## Index of Tables

| | | |
|---|---|---|
| No table no | MR4 - Comparison of VaR estimates with gains/losses | - |
| Table 73 | PD, LGD, RWA and Exposure values by country for IRB - all asset classes | 153 |
| Table 73a | PD, LGD, RWA and Exposure values by country for IRB - central governments & central banks | 153 |
| Table 73b | PD, LGD, RWA and Exposure values by country for IRB - institutions | 154 |
| Table 73c | PD, LGD, RWA and Exposure values by country for IRB - corporates | 154 |
| Table 73d | PD, LGD, RWA and Exposure values by country for IRB - SME retail | 155 |
| Table 73e | PD, LGD, RWA and Exposure values by country for IRB - secured retail | 155 |
| Table 73f | PD, LGD, RWA and Exposure values by country for IRB - revolving retail | 156 |
| Table 73g | PD, LGD, RWA and Exposure values by country for IRB - other retail exposures | 156 |
| Table 74 | Analysis of impaired and past due exposures and allowance for impairment by exposure type | 157 |
| Table 75 | Geographic analysis of impaired and past due exposures and allowance for impairment | 157 |
| Table 76 | Countercyclical capital buffer | 158 |
| No table no | Asset encumbrance | - |
| No table no | Remuneration | - |

Note

1 Pages 127 to 128 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.

# Appendices
## Abbreviations used

| | |
|---|---|
| AEaR | Annual Earnings at Risk |
| ALCO | Asset & Liability Committee |
| AQR | Asset Quality Review |
| AIRB | Advanced internal ratings based |
| AT1 | Additional tier 1 |
| BAC | Board Audit Committee |
| BB PLC | Barclays Bank PLC |
| B PLC | Barclays PLC |
| BBI | Barclays Bank Ireland PLC |
| BCBS | Basel Committee on Banking Supervision |
| BCSL | Barclays Capital Securities Limited |
| BoE | Bank of England |
| bps | Basis points |
| BRC | Board Risk Committee |
| Brexit | UK's withdrawal from the EU |
| BRRD | Bank Recovery and Resolution Directive |
| CAPD | Capital deduction approach |
| CBI | Central Bank of Ireland |
| CCB | Capital conservation buffer |
| CCF | Credit conversion factor |
| CCR | Counterparty credit risk |
| CCyB | Countercyclical capital buffer |
| CDS | Credit default swap |
| CEO | Chief Executive Officer |
| CET1 | Common Equity Tier 1 |
| CFO | Chief Financial Officer |
| CIU | Collective investment undertaking |
| CLT | Crisis Leadership Team |
| CRD | Capital Requirements Directive |
| CRM | Credit risk mitigation |
| CRMF | Conduct Risk Management Framework |
| CRO | Chief Risk Officer |

| | |
|---|---|
| CRR | Capital Requirements Regulation |
| CSA | Credit Support Annex |
| CVA | Credit Valuation Adjustment |
| DBO | Defined benefit Obligation |
| DC | Defined contribution |
| DCF | Discounted Cash Flow |
| DDoS | Distributed denial of service |
| DGS | Deposit Guarantee Scheme |
| DIRT | Deposit Interest Retention Tax |
| DSVP | Deferred Share Value Plan |
| DTA | Deferred tax asset |
| DVaR | Daily Value at Risk |
| EAD | Exposure at Default |
| EaR | Earnings at Risk |
| EBA | European Banking Authority |
| EC | European Commission |
| ECAIs | External Credit Assessment Institutions |
| ECB | European Central Bank |
| ECL | Expected credit losses |
| EEA | European Economic Area |
| EFPE | Effective expected positive exposure |
| EIR | Effective interest rate |
| EL | Regulatory expected loss |
| ELBE | Expected loss best estimate |
| EMIR | European Market Infrastructure Regulation |
| EONIA | Euro Overnight Index Average |
| ERMF | Enterprise Risk Management Framework |
| EU | European Union |
| Euribor | Euro Inter Bank Offered Rate |
| EVE | Economic Value of Equity |
| EWI | Early warning indicator |
| FCA | Financial Conduct Authority |

# Appendices
## Abbreviations used

| | |
|---|---|
| FCCM | Financial Collateral Comprehensive Method |
| FCRA | Financial Crime Risk Assessment |
| FDIC | Federal Deposit Insurance Corporation |
| FFVA | Funding Fair Value Adjustment |
| FIRB | Foundation IRB |
| FLI | Forward looking information |
| FPC | Financial Policy Committee |
| FPC | Financial Policy Committee |
| FRB | Federal Reserve Board |
| FRTB | Fundamental Review of the Trading Book |
| FSB | Financial Stability Board |
| FTR | Funds Transfer Regulation |
| FVTPL | Fair Value Through Profit or Loss |
| FX | Foreign Exchange |
| F&P | Fitness and Probity |
| GDP | Gross domestic product |
| GDPR | General Data Protection Regulation |
| GHG | Global greenhouse gas emissions |
| GMD | Group Models Database |
| GMRP | Group Model Risk Policy |
| G-SIB | Global systemically important banks |
| HPI | House Price Index |
| HQLA | High quality liquid assets |
| IAA | Internal assessment approach |
| IAS | International Accounting Standards |
| IASB | International Accounting Standards Board |
| IBOR | Interbank Offered Rates |
| ICA | Investor Compensation Act |
| ICAAP | Internal Capital Adequacy Assessment Process |
| ICS | Investor Compensation Scheme |
| IFRIC | International Financial Reporting Interpretations Committee |
| IFRS | International Financial Reporting Standard |

| | |
|---|---|
| ILAAP | Internal Liquidity Adequacy Assessment Process |
| IMM | Internal Model Method |
| IOSCO | International Organisation of Securities Commissions |
| IPU | Intermediate parent undertaking |
| IRB | Internal ratings based |
| IRC | Incremental Risk Charge |
| IRRBB | Interest Rate Risk in the Banking Book |
| ISDA | International Swaps and Derivative Association |
| JRAD | Joint Risk and Assessment Decision |
| KIRB | Look through approach |
| KMP | Key management personnel |
| LCR | Liquidity Coverage Ratio |
| LGD | Loss Given Default |
| LIBOR | London Inter Bank Offered Rate |
| LRA | Liquidity Risk Appetite |
| LTV | Loan to Value |
| MAR | Market Abuse Regulation |
| MiFID | Markets in Financial Instruments Directive in Europe |
| MREL | Minimum Requirement for own Funds and Eligible Liabilities |
| MRT | Material Risk Taker |
| MSR | Mortgage Servicing Right(s) |
| MTM | Mark to Market |
| NII | Net interest income |
| NSFR | Net Stable Funding Ratio |
| O-SII | Other systemically important institution |
| OEIRB | Own-Estimates IRB |
| OTC | Over the Counter |
| PD | Probability of Default |
| PFE | Potential future exposure |
| POCI | Purchased or originated credit-impaired financial asset |
| PRA | Prudential Regulation Authority |

## Abbreviations used

| | |
|---|---|
| PSD2 | Payments Services Directive |
| PVA | Prudent Valuation Adjustment |
| P2G | Pillar 2 guidance |
| P2R | Pillar 2 requirement |
| QCCP | Qualifying central counterparty |
| RCSA | Risk and Control Self-Assessment |
| RoI | Republic of Ireland |
| RoW | Rest of World |
| RP | Recovery plan |
| RPI | Retail Price Index |
| RFR | Risk free rate |
| RoU | Right of Use |
| RWAs | Risk weighted assets |
| SCA | Strong Customer Authentication |
| SFA | Supervisory formula approach |
| SFT | Securities Financial Transaction |
| SICR | Significant Increase in Credit Risk |
| SME | Small or Medium Enterprise |
| SOFR | Secured Overnight Funding Rate |

| | |
|---|---|
| SONIA | Sterling Overnight Index Average |
| SPPI | Solely payments of principal and interest |
| SRA | Strategic risk assessment |
| SRB | Single Resolution Board |
| SREP | Supervisory Review & Evaluation Process |
| SRF | Single Resolution Fund |
| SRMR | Single Resolution Mechanism Regulations |
| SSM | Single Supervisory Mechanism |
| SVaR | Stressed Value at Risk |
| SVP | Share Value Plan |
| S&P | Standard and Poor's |
| TCFD | Financial Stability Board's Task Force on Climate-related Financial Disclosures |
| TLAC | Total Loss Absorbing Capacity |
| TSA | The Standardised Approach |
| T1 | Tier 1 capital |
| T2 | Tier 2 capital |
| UK | United Kingdom |
| US | United States |
| VaR | Value at Risk |