HSBC UK Bank plc

Pillar 3 Disclosures at 31 December 2019

HSBC

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Presentation of information

This document comprises the 2019 Pillar 3 disclosures for HSBC UK Bank plc ('the bank') and its subsidiaries (together 'HSBC UK' or 'the group'). 'We', 'us' and 'our' refer to HSBC UK Bank plc together with its subsidiaries. References to 'HSBC Group' or 'the Group' within this document mean HSBC Holdings plc together with its subsidiaries.

When used in the terms 'shareholders' equity' and 'total shareholders' equity', 'shareholders' means holders of HSBC UK ordinary shares and capital securities issued by HSBC UK classified as equity.

The abbreviations '£m' and '£bn' represent millions and billions (thousands of millions) of GB pounds respectively.

Cautionary statement regarding forward-looking statement

The Pillar 3 disclosures at 31 December 2019 contain certain forward-looking statements with respect to HSBC UK's financial condition, strategy, plans, current goals, results of operations and business, including strategic priorities and financial, investment and capital targets described herein.

Statements that are not historical facts, including statements about the group's beliefs and expectations, are forward-looking statements. Words such as 'expects', 'anticipates', 'intends', 'plans', 'believes', 'seeks', 'estimates', 'potential' and 'reasonably possible', variations of these words and similar expressions are intended to identify forward-looking statements. These statements are based on current plans, estimates and projections, and therefore undue reliance should not be placed on them. Forward-looking statements speak only as of the date they are made. HSBC UK Bank plc makes no commitment to revise or update any forward-looking statements to reflect events or circumstances occurring or existing after the date of any forward-looking statement.

Forward-looking statements involve inherent risks and uncertainties. Readers are cautioned that a number of factors could cause actual results to differ, in some instances materially, from those anticipated or implied in any forward-looking statement.

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HSBC UK has adopted the European Union's ('EU') regulatory transitional arrangements for International Financial Reporting Standard ('IFRS') 9 Financial instruments. A number of the tables in this document report under this arrangement, as follows:

a. Some figures, indicated with ^, have been prepared on an IFRS9 transitional basis.

b. All figures within this table have been prepared on an IFRS 9 transitional basis.

All other tables report on the basis of full adoption of IFRS 9.

Introduction

Table 1: Comparison of own funds, capital and leverage ratios, with and without the application of transitional arrangements for IFRS 9 (IFRS9-FL)

			At 31 Dec	
		Footnotes	2019	2018
Ref*	**Available capital (£m)**	1		
1	Common equity tier 1 ('CET1') capital	^	**11,202**	11,700
2	CET1 capital as if IFRS 9 transitional arrangements had not been applied		**11,186**	11,687
3	Tier 1 capital	^	**13,453**	13,896
4	Tier 1 capital as if IFRS 9 transitional arrangements had not been applied		**13,437**	13,883
5	Total regulatory capital	^	**16,462**	16,826
6	Total capital as if IFRS 9 transitional arrangements had not been applied		**16,446**	16,813
	Risk-weighted assets ('RWAs') (£m)			
7	Total RWAs	^	**85,881**	91,839
8	Total RWAs as if IFRS 9 transitional arrangements had not been applied		**85,866**	91,832
	Capital ratios (%)	1		
9	CET1	^	**13.0**	12.7
10	CET1 as if IFRS 9 transitional arrangements had not been applied		**13.0**	12.7
11	Total tier 1	^	**15.7**	15.1
12	Tier 1 as if IFRS 9 transitional arrangements had not been applied		**15.6**	15.1
13	Total capital	^	**19.2**	18.3
14	Total capital as if IFRS 9 transitional arrangements had not been applied		**19.1**	18.3
	Additional CET1 buffer requirements as a percentage of RWA (%)			
	Capital conservation buffer requirement		**2.50**	1.88
	Countercyclical buffer requirement		**0.97**	0.96
	Systemic risk buffer		**1.00**	0.00
	Total of bank CET1 specific buffer requirements		**4.47**	2.84
	Total capital requirement (%)	2		
	Total capital requirement (Pillar 1 + Pillar 2A)		**12.2**	12.7
	CET1 available after meeting the bank's minimum capital requirements		**6.2**	6.2
	Leverage ratio	3		
15	Total leverage ratio exposure measure (£m)		**268,271**	246,659
16	Leverage ratio (%)	^	**5.0**	5.6
17	Leverage ratio as if IFRS 9 transitional arrangements had not been applied (%)		**5.0**	5.6

* *The references in this and subsequent tables identify the lines prescribed in the European Banking Authority ('EBA') templates where applicable and where there is a value.*

^ *Figures have been prepared on an IFRS 9 transitional basis.*

1 *The capital figures and ratios are calculated in accordance with the revised Capital Requirements Regulation and Directive as implemented ('CRR II'). Prior period capital figures and ratios are reported on a Capital Requirements Regulation and Directive ('CRD IV') transitional basis.*

2 *Total capital requirement is defined as the sum of Pillar 1 and Pillar 2A capital requirements set by the Prudential Regulation Authority ('PRA'). Our Pillar 2A requirement at 31 December 2019, as per the PRA's Individual Capital Guidance based on a point in time assessment, was 4.19% of RWAs, of which 2.35% was met by CET1.*

3 *The leverage ratio is calculated using the CRR II end point basis for capital. Prior period leverage ratios are calculated on the CRD IV end point basis for capital.*

We have adopted the regulatory transitional arrangements, including paragraph four within article 473a of the Capital Requirements Regulation, published by the EU on 27 December 2017 for IFRS 9 'Financial Instruments'. These permit banks to add back to their capital base a proportion of the impact that IFRS 9 has upon their loan loss allowances during the first five years of use. The proportion that banks may add back started at 95% in 2018, and reduces to 25% by 2022. The impact of IFRS 9 on loan loss allowances is defined as:

- the increase in loan loss allowances on day one of IFRS 9 adoption; and
- any subsequent increase in expected credit losses ('ECL') in the non-credit-impaired book thereafter.

The impact is calculated separately for portfolios using the standardised ('STD') and internal ratings based ('IRB') approaches and, for IRB portfolios, there is no add-back to capital unless loan loss allowances exceed regulatory 12-month expected losses. Any add-back must be tax affected and accompanied by a recalculation of capital deduction thresholds, exposure and RWAs.

In the current period, the add-back to the capital base amounted to £16m under the STD approach.

Table 2: Reconciliation of capital with and without IFRS 9 transitional arrangements applied

	CET1	T1	Total own funds
	£m	£m	£m
Reported balance using IFRS 9 transitional arrangements	**11,202**	**13,453**	**16,462**
ECL reversed under transitional arrangements for IFRS 9	**16**	**16**	**16**
– Standardised approach	**16**	**16**	**16**
– IRB approach	**—**	**—**	**—**
Reported balance excluding IFRS 9 transitional arrangements at 31 December 2019	**11,186**	**13,437**	**16,446**
Reported balance using IFRS 9 transitional arrangements	11,700	13,896	16,826
ECL reversed under transitional arrangements for IFRS 9	13	13	13
– Standardised approach	8	8	8
– IRB approach	5	5	5
Reported balance excluding IFRS 9 transitional arrangements at 31 December 2018	11,687	13,883	16,813

Table 3: Pillar 1 overview

	At 31 December 2019		At 31 December 2018	
	RWAs	**Capital required[1]**	RWAs	Capital required[1]
	£m	**£m**	£m	£m
Credit risk	**75,353**	**6,028**	81,135	6,491
Counterparty credit risk	**198**	**16**	66	5
Market risk	**27**	**2**	38	3
Operational risk	**10,303**	**824**	10,600	848
Total	**85,881**	**6,870**	91,839	7,347

1 *'Capital required', here and in all tables where the term is used, represents the minimum total capital charge set at 8% of RWAs by article 92 of the Capital Requirements Regulation.*

Table 4: RWAs by global business[1]

	At 31 December 2019		At 31 December 2018	
	RWAs	**Capital required**	RWAs	Capital required
	£m	**£m**	**£m**	**£m**
Retail Banking and Wealth Management ('RBWM')	**22,067**	**1,765**	21,370	1,710
Commercial Banking ('CMB')	**59,677**	**4,774**	66,009	5,281
Global Banking and Markets	**365**	**29**	60	5
Global Private Banking	**1,793**	**143**	1,924	154
Corporate Centre	**1,979**	**158**	2,476	198
At 31 Dec	**85,881**	**6,870**	91,839	7,347

1 *Please refer to page 3 of our* Annual Report and Accounts 2019 *for a description of the activities of our global businesses.*

Pillar 3 disclosures

Regulatory framework for disclosures

We are supervised on a consolidated basis in the UK by the PRA.

We have calculated capital for prudential regulatory reporting purposes using the Basel III framework of the Basel Committee on Banking Supervision ('Basel') as implemented by the EU in CRR II.

The Basel framework is structured around three 'pillars': Pillar 1 minimum capital requirements and Pillar 2 supervisory review process are complemented by Pillar 3 market discipline. The aim of Pillar 3 is to produce disclosures that allow market participants to assess the scope of application by banks of the Basel framework and the rules in their jurisdiction, their capital condition, risk exposures and risk management processes, and hence their capital adequacy.

Our *Pillar 3 Disclosures at 31 December 2019* comprises both quantitative and qualitative information required under Pillar 3. They are made in accordance with Part Eight of CRR II and the EBA guidelines on disclosure requirements.

These disclosures are supplemented by specific additional requirements of the PRA and discretionary disclosures on our part.

Comparatives

To give insight into movements during the year, we provide comparative figures for the previous year or period. The references in tables identify the lines prescribed in the relevant EBA template where applicable and where there is a value.

Where disclosures have been enhanced, or are new, we do not generally restate nor provide prior year comparatives. Wherever specific rows and columns in the tables prescribed by the EBA or Basel are not applicable or are immaterial to our activities, we omit them and follow the same approach for comparative disclosures.

Frequency and location

We publish comprehensive Pillar 3 disclosures annually on the Group website www.hsbc.com, concurrently with the release of our Annual Report and Accounts, and summarised Pillar 3 disclosures at the half year in the HSBC UK Bank Interim Report.

Pillar 3 requirements may be met by inclusion in other disclosure media. Where we adopt this approach, references are provided to the relevant pages of our *Annual Report and Accounts 2019* or other locations. We continue to engage in the work of the UK authorities and industry associations to improve the transparency and comparability of our disclosures.

Material risks

Pillar 3 requires all material risks to be disclosed to provide a comprehensive view of a bank's risk profile. In addition to the

disclosure in this document, other information on material risks can be found in our *Annual Report and Accounts 2019*.

Capital buffers

The geographical breakdown and institution specific countercyclical buffer disclosure is provided in Appendix II. The HSBC Group G-SIB indicators disclosure is published annually on the HSBC website www.hsbc.com.

Regulatory developments

The UK's withdrawal from the EU

As a result of the decision of the referendum on 23 June 2016, the UK left the EU on 31 January 2020. In order to smooth the transition, the UK remains subject to EU law during an implementation period, which is currently expected to end on 31 December 2020. This implementation period may be extended by a further two years, subject to political agreement.

In preparation for the UK leaving without an agreement, a series of statutory instruments were made to transpose into UK law all of the EU laws and regulations that were directly applicable to UK firms on exit day. Although these statutory instruments were prepared for the UK leaving without a deal, it is anticipated that they will form the basis of the UK's regulation after the implementation period has ended; however, these may be subject to change to reflect the introduction of new EU law during the implementation period and the terms of any trade deal between the UK and the EU.

The Basel Committee

In December 2017, the Basel Committee on Banking Supervision published the Basel III Reforms. The package aims for a 1 January 2022 implementation, with a five-year transitional provision for the output floor. This floor ensures that, at the end of the transitional period, banks' total RWAs are no lower than 72.5% of those generated by the standardised approaches. The final standards will need to be transposed into the relevant local law before coming into effect.

The Capital Requirements Regulation amendments

In June 2019, the EU enacted the final rules amending the Capital Requirements Regulation, known as the CRR II. This was the EU's implementation of the Financial Stability Board's ('FSB') requirements for Total Loss Absorbing Capacity ('TLAC'), known in Europe as the Minimum Requirements for Own Funds and Eligible Liabilities ('MREL'). Furthermore, it also included changes to the own funds regime.

The CRR II will also implement the first tranche of changes to the EU's legislation to reflect the Basel III Reforms, including the revisions to the new leverage ratio rules. The CRR II rules will follow a phased implementation with significant elements entering into force in 2021, in advance of Basel's timeline.

In the UK, only the parts of the CRR II that are in force at the end of the Brexit implementation period will be transposed into UK law. As a result, any elements that are scheduled to enter into force after the end of the implementation period will need to be implemented separately by the UK.

The EU's implementation of the Basel III Reforms

The remaining elements of the Basel III Reforms will be implemented in the EU by a further set of amendments to the Capital Requirements Regulation ('CRR III'). In 2019, the European Commission ('EC') began consulting on the implementation of the CRR III, which will include reforms to credit risk, operational risk, and the output floor. The EC is expected to produce a draft CRR III text in the second quarter of 2020. The EU implementation will then be subject to an extensive negotiation process with the EU Council and Parliament. As a result, the final form of the rules remains unclear.

It is expected that the Brexit implementation period will have been completed before the CRR III enters into EU law. As a result, the UK will have to implement the remaining Basel III Reforms independently under UK law.

Other developments

In December 2019, the UK's Financial Policy Committee ('FPC') issued the latest Financial Stability Report. In the report, the FPC announced that it will increase the UK's countercyclical buffer from 1% to 2% on 16 December 2020, in order to give the UK more flexibility in times of future stress. It considers that the UK remains in a standard risk environment and as a result, the total loss absorbing capacity in the banking system should remain unchanged, notwithstanding the buffer increase. To this end, the PRA will consult in 2020 on proposals to reduce Pillar 2A requirements to reflect the additional resilience associated with a higher buffer.

The FPC also announced a review of IFRS 9 and stress testing to ensure that there is a permanent solution to avoid unwarranted capital increases as a result of the interaction between the two. This may result in amendments to minimum capital requirements and TLAC.

In June 2017, the PRA published its final policy statement setting out revisions to the way that firms model probability of default ('PD') and loss given default ('LGD') for residential mortgage exposures. To mitigate cyclicality, banks must replace pure 'Through the Cycle' and 'Point in Time' models with a hybrid approach. The changes will need to be implemented by the end of 2020.

In July 2019, the Bank of England ('BoE') published its Resolvability Assessment Framework ('RAF'), which requires firms to develop capabilities to address eight identified barriers to resolvability. Banks are required to assess their resolvability in accordance with the BoE's criteria, submit this assessment by October 2020 and publish a summary by June 2021. Contemporaneously, the BoE will disclose its assessment of each firm's resolvability. The deadline for full compliance with the RAF framework is 1 January 2022.

In April 2019, the PRA issued statements setting out its expectations of how firms should manage the financial risks from climate change, focusing on governance, risk management, scenario analysis and disclosure areas. In particular, there is a requirement that the risk associated with climate change should be assessed and captured in firms' Pillar 2 assessments. The PRA also announced in December 2019 that the effects of climate change will be included in its 2021 stress test and are currently consulting on the form it might take.

Risk management

Our risk management framework

We use an enterprise-wide risk management framework across the organisation and across all risk types.

The framework fosters continuous monitoring of the risk environment, and promotes risk awareness and sound operational and strategic decision making. It also ensures we have a consistent approach to monitoring, managing and mitigating the risks we accept and incur in our activities.

Further information on our risk management framework, and the management and mitigation is set out from page 17 of our Annual Report and Accounts 2019.

Risk culture

We recognise the importance of a strong risk culture, the fostering of which is a key responsibility of senior executives. Our risk culture is reinforced by our values and the Global Standards programme. It is instrumental in aligning the behaviours of individuals with our attitude to assuming and managing risk, which helps to ensure that our risk profile remains in line with our risk appetite.

Our risk culture is further reinforced by our approach to remuneration. Individual awards, including those for senior executives, are based on compliance with the Group Values and the achievement of financial and non-financial objectives that are aligned to our risk appetite and strategy.

Risk governance

Our Board has ultimate responsibility for the effective management of risk and approves HSBC UK's risk appetite. It is advised on risk-related matters by the Risk Committee. The Risk Committee met formally eight times during 2019.

The activities of the Risk Committee are set out from page 56 of our Annual Report and Accounts 2019.

Executive accountability for the ongoing monitoring, assessment and management of the risk environment, and the effectiveness of the risk management framework resides with HSBC UK's Chief Risk Officer ('CRO'). He is supported by the Risk Management Meeting ('RMM') of HSBC UK's Executive Committee. The HSBC UK RMM is chaired by the HSBC UK CRO and membership includes the Chief Executive Officer ('CEO'), the Business heads of CMB, RBWM and Private Bank and senior executives from Risk, Finance, Audit and Regulatory Compliance.

Regular Financial Crime Risk Management meetings of the Executive Committee, chaired by the CEO, are held to ensure effective enterprise wide management of financial crime risk within HSBC UK and to support the CEO in discharging these financial crime responsibilities.

Day-to-day responsibility for risk management is delegated to senior managers with individual accountability for decision making. These senior managers are supported by global functions. All employees have a role to play in risk management. These roles are defined using the three lines of defence model, which delineates management accountabilities and responsibilities for risk management and the control environment.

Our executive risk governance structures ensure appropriate oversight and accountability for risk, which facilitates the reporting and escalation to the RMM.

Risk appetite

Risk appetite is a key component of our management of risk. It describes the type and quantum of risk that HSBC UK is willing to accept in achieving its medium and long-term strategic goals. In HSBC UK, risk appetite is managed through a risk appetite framework and articulated in a risk appetite statement ('RAS'), which is approved annually by the Board on the advice of the Risk Committee.

HSBC UK's risk appetite informs our strategic and financial planning process, defining our desired forward-looking risk profile. It is also integrated within other risk management tools, such as the top and emerging risks report and stress testing, to ensure consistency in risk management.

Further information about our risk appetite is set out on page 18 of our Annual Report and Accounts 2019.

Stress testing

HSBC UK operates a wide-ranging stress testing programme that supports our risk management and capital planning. It includes execution of stress tests mandated by our regulators. Our stress testing is supported by dedicated teams and infrastructure.

Our testing programme assesses our capital strength and our resilience to external shocks. It also helps us understand and mitigate risks, and informs our decision about capital levels. As well as taking part in regulatory driven stress tests, we conduct our own internal stress tests.

Our stress testing programme is overseen by the Risk Committee, and results are reported, where appropriate, to the RMM and Risk Committee.

Further information about stress testing and details of HSBC UK's regulatory stress test results are set out from page 18 of our Annual Report and Accounts 2019.

HSBC UK Risk function

We have a dedicated Risk function, headed by the CRO, which is responsible for our risk management framework. This includes establishing policy, monitoring risk profiles, and forward-looking risk identification and management. HSBC UK Risk is structured to ensure appropriate coverage across our operations. It is independent from the global businesses, including sales and trading functions, helping to ensure balance in risk/ return decisions. Our Risk function operates in line with the three lines of defence model.

Risk management and internal control systems

The Board of Directors are responsible for providing entrepreneurial leadership of the bank within a framework of prudent and effective controls which enables risks to be assessed and managed. This includes providing ongoing assurance that the risk management systems put in place within HSBC UK are appropriate to match its risk profile and strategy. On behalf of the Board, the Audit Committee has responsibility for oversight of internal controls over financial reporting, and the Risk Committee has responsibility for oversight of risk management and internal controls other than for financial reporting.

Further information on our key risk management and internal control procedures is set out on page 56 of our Annual Report and Accounts 2019*, where the Report of the Directors on the effectiveness of internal controls can also be found.*

Risk measurement and reporting systems

The risk measurement and reporting systems used within HSBC UK are designed to help ensure that risks are comprehensively captured with all the attributes necessary to support well-founded decisions, that those attributes are accurately assessed, and that information is delivered in a timely manner for those risks to be successfully managed and mitigated.

Risk measurement and reporting systems used within HSBC UK are also subject to a governance framework designed to ensure that their build and implementation are fit for purpose and functioning appropriately.

Risk information systems development is a key responsibility of the Group's Global Risk function, while the development and operation of risk rating and management systems and processes are ultimately subject to the oversight of the Group's Board.

The Group continues to invest significant resources in IT systems and processes in order to maintain and improve its risk management capabilities. A number of key initiatives and projects to enhance consistent data aggregation, reporting and management, and work towards meeting the Group's Basel Committee data obligations are in progress. Group standards govern the procurement and operation of systems used in its subsidiaries including HSBC UK, to process risk information within business lines and risk functions.

Risk measurement and reporting structures deployed at Group level are applied throughout global businesses and major operating subsidiaries including HSBC UK, through a common operating model for integrated risk management and control. This model sets out the respective responsibilities of Group, global business, region and country level risk functions in respect of risk governance and oversight, compliance risks, approval authorities and lending guidelines, global and local scorecards, management information and reporting, and relations with third parties such as regulators, rating agencies and auditors.

Risk analytics and model governance

HSBC UK Risk, in conjunction with HSBC Global Risk, manages a number of analytics disciplines supporting the development and management of models, including those for risk rating, scoring, economic capital and stress testing covering different risk types and business segments. The analytics functions formulate technical responses to industry developments and regulatory policy in the field of risk analytics, develop risk models, and oversee model development and use toward our implementation targets for IRB approaches.

The RMM provides and governance on the management of models and is the primary committee responsible for the oversight of model risk within HSBC UK. The RMM is an essential element of the governance structure for model risk management and identifies emerging risks for all aspects of the risk rating system. The RMM formally advises HSBC UK's Risk Committee on any material model related issues.

Models are also subject to an independent validation process and governance oversight by the Model Risk Management team within Risk. The team provides robust challenge to the modelling approaches used. It also ensures that the performance of those models is transparent and that their limitations are visible to key stakeholders.

Linkage to the Annual Report and Accounts 2019

Structure of the regulatory group

Participating interests in banking associates / joint ventures are proportionally consolidated for regulatory purposes by including our share of assets, liabilities, profit and loss, and RWAs in accordance with the PRA's application of EU legislation.

Table 5: Reconciliation of balance sheets – financial accounting to regulatory scope of consolidation

	Ref †	Accounting balance sheet £m	Deconsolidation of securitisation entities £m	Consolidation of banking associates / joint ventures £m	Regulatory balance sheet £m
Assets					
Cash and balances at central banks		**37,030**	—	72	37,102
Items in the course of collection from other banks		**504**	—	—	504
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss		**66**	—	—	66
Derivatives		**121**	—	—	121
Loans and advances to banks		**1,389**	—	—	1,389
Loans and advances to customers		**183,056**	—	—	183,056
– *of which: expected credit losses on IRB portfolios*	*f*	***(1,664)***	—	—	*(1,664)*
Reverse repurchase agreements – non-trading		**3,014**	—	—	3,014
Financial investments		**19,737**	—	—	19,737
Prepayments, accrued income and other assets		**8,203**	—	15	8,218
– *of which: retirement benefit assets*	*g*	***5,836***	—	—	*5,836*
Interests in joint ventures		**9**	—	(9)	—
Goodwill and intangible assets	*d*	**3,973**	—	—	3,973
Total assets at 31 Dec 2019		**257,102**	—	78	257,180
Liabilities and equity					
Liabilities					
Deposits by banks		**529**	—	70	599
Customer accounts		**216,214**	225	—	216,439
Repurchase agreements – non-trading		**98**	—	—	98
Items in the course of transmission to other banks		**343**	—	—	343
Derivatives		**201**	—	—	201
Debt securities in issue		**3,142**	(225)	—	2,917
Accruals, deferred income and other liabilities		**1,834**	—	8	1,842
Current tax liabilities		**410**	—	—	410
Provisions		**1,325**	—	—	1,325
– *of which: credit-related contingent liabilities and contractual commitments on IRB portfolios*	*f*	***75***	—	—	*75*
Deferred tax liabilities		**1,222**	—	—	1,222
Subordinated liabilities		**9,533**	—	—	9,533
– *of which: included in tier 2*	*k*	***3,009***	—	—	*3,009*
Total liabilities at 31 Dec 2019		**234,851**	—	78	234,929
Equity					
Share premium account	*a*	**9,015**	—	—	9,015
Other equity instruments	*h*	**2,196**	—	—	2,196
Other reserves	*b, c, e*	**7,688**	—	—	7,688
Retained earnings	*b, c*	**3,292**	—	—	3,292
Total shareholders' equity		**22,191**	—	—	22,191
Non-controlling interests	*i*	**60**	—	—	60
Total equity at 31 Dec 2019		**22,251**	—	—	22,251
Total liabilities and equity at 31 Dec 2019		**257,102**	—	78	257,180

† *The references (a) – (k) identify balance sheet components that are used in the calculation of regulatory capital in table 7.*

Measurement of regulatory exposures

This section sets out the main reasons why the measurement of regulatory exposures is not directly comparable with the financial information presented in our *Annual Report and Accounts 2019*.

The *Pillar 3 Disclosures at 31 December 2019* are prepared in accordance with regulatory capital adequacy concepts and rules, while the *Annual Report and Accounts 2019* are prepared in accordance with International Financial Reporting Standards ('IFRSs'). The purpose of the regulatory balance sheet is to provide a point-in-time ('PIT') value of all on-balance sheet assets.

The regulatory exposure value includes an estimation of risk, and is expressed as the amount expected to be outstanding if or when the counterparty defaults.

Moreover, regulatory exposure classes are based on different criteria from accounting asset types and are therefore not comparable on a line by line basis.

Table 6 shows the difference between the accounting and regulatory scope of consolidation.

The regulatory consolidation also excludes special purpose entities ('SPEs') where significant risk has been transferred to third parties. Exposures to these SPEs are risk-weighted as securitisation positions for regulatory purposes.

Participating interests in banking associates / joint ventures are proportionally consolidated for regulatory purposes by including our share of assets, liabilities, profit and loss, and RWAs in accordance with the PRA's application of EU legislation.

A full list of entities included in the scope of consolidation is set out on page 118 of our Annual Report and Accounts 2019*.*

Table 6: Outline of the differences in the scopes of consolidation (entity by entity) (LI3)

			At 31 Dec 2019			
			Method of regulatory consolidation			
	Principal activities	Method of accounting consolidation	**Fully consolidated**	**Proportional consolidation**	**Neither consolidated nor deducted**	**Deducted from capital subject to thresholds**
Associates						
Vaultex UK Limited	Cash management services	Equity		●		
SPEs excluded from the regulatory consolidation						
Neon Portfolio Distribution DAC	Securitisation	Fully			●	

Capital and Leverage

Capital management

Approach and policy

HSBC UK's objective in managing capital is to maintain appropriate levels of capital to support our business strategy and meet regulatory and stress testing related requirements.

HSBC UK manages its capital to ensure that it exceeds current and expected future requirements. Throughout 2019, the group complied with the PRA's regulatory capital adequacy requirements, including those relating to stress testing.

The policy on capital management is underpinned by the capital management framework and the internal capital adequacy assessment process ('ICAAP'), which enable the group to manage its capital in a consistent manner. The framework incorporates a number of different capital measures that govern the management and allocation of capital within HSBC Group. These capital measures are defined as follows:

- invested capital is the equity capital provided to the group by HSBC Group;
- economic capital is the internally calculated capital requirement that is deemed necessary by the group to support the risks to which it is exposed; and
- regulatory capital is the minimum level of capital that the group is required to hold in accordance with the rules established by the PRA.

The following risks managed through the capital management framework have been identified as material: credit, market, operational, interest rate risk in the banking book, pensions and residual risks.

Stress testing

Stress testing is incorporated into the capital management framework, and is an important component of understanding the sensitivity of the core assumptions in the group's capital plans to the adverse effect of extreme, but plausible, events. Stress testing allows senior management to formulate its response, including risk mitigating actions, in advance of conditions starting to reflect the stress scenarios identified.

Actual market stresses in the past and prevailing economic and political risks have been used to inform the capital planning process and further develop the scenarios employed by the group in its internal stress tests.

Other stress tests are also carried out, both at the request of regulators and by the regulators themselves, using their prescribed assumptions. The group takes into account the results of all such regulatory stress testing when assessing its internal capital requirements.

Risks to capital

Outside the stress testing framework, a list of principal risks is regularly evaluated for their effect on our capital ratios. In addition, other risks may be identified that have the potential to affect our RWAs and/or capital position. The downside or upside scenarios are assessed against our capital management objectives and mitigating actions are assigned as necessary.

The group's approach to managing its capital position has been to ensure the bank, its regulated subsidiaries and the group exceed current regulatory requirements, and that it is well placed to meet expected future capital requirements.

Risk-weighted asset targets

We establish RWA targets for our business lines through our annual planning process in accordance with HSBC Group's strategic direction and risk appetite. As these targets are deployed to lower levels of management, action plans for implementation are developed. These may include growth strategies, active portfolio management, restructuring, business and/or customer-level reviews, RWA accuracy and allocation initiatives and risk mitigation.

Business performance against RWA targets is monitored through regular reporting to the Asset and Liability Management Committee ('ALCO').

Capital generation

HSBC UK Holdings Limited, a 100% subsidiary of HSBC Holdings plc, is the sole primary provider of equity capital to the group and provides non-equity capital where necessary. Capital generated in excess of planned requirements is returned to the shareholder in the form of dividends.

Overview of regulatory capital framework

Main features of CET1, AT1 and T2 instruments issued by HSBC UK

All capital securities included in the regulatory capital base of the group have been issued as fully compliant CRD IV securities. For regulatory purposes, the group's capital base is divided into three main categories, namely Common Equity Tier 1, Additional Tier 1 and Tier 2, depending on the degree of permanence and loss absorbency exhibited. The main features of capital securities issued by the group are described below.

Tier 1 capital ('T1')

Tier 1 capital comprises shareholders' equity, related non-controlling interests (subject to limits) and qualifying capital instruments, after certain regulatory adjustments.

Common Equity Tier 1 ('CET1')

Called up ordinary shares issued by the bank to its parent are fully paid up and the proceeds of issuance are immediately and fully available. There is no obligation to pay a coupon or dividend to the shareholder arising from this type of capital. The share capital is available for unrestricted and immediate use to cover any risks and losses.

Additional Tier 1 capital ('AT1')

Qualifying AT1 instruments are perpetual securities on which there is no obligation to apply a coupon and, if not paid, the coupon is not cumulative. Such securities do not carry voting rights but rank higher than ordinary shares for coupon payments and in the event of a winding up. Fully compliant CRD IV AT1 instruments issued by the group include a provision whereby the instrument will be written down in whole in the event that either the bank's or group's CET1 ratio falls below 7.00%.

These instruments are accounted for as equity. Further details of qualifying CRR II AT1 instruments can be found in Note 23 – Called up share capital and other equity instruments of the Notes on the Financial Statements on page 112 of our Annual Report and Accounts 2019.

Tier 2 capital ('T2')

Tier 2 capital comprises eligible capital securities and other qualifying Tier 2 capital securities subject to limits.

Perpetual and term subordinated debt

Tier 2 capital securities are either perpetual subordinated securities or dated securities on which there is an obligation to pay coupons.

These instruments or subordinated loans comprise dated loan capital repayable at par on maturity and must have an original maturity of at least five years. Some subordinated loan capital may be called and redeemed by the issuer subject to prior consent from the PRA. If not redeemed, interest coupons payable may step up or become floating rate related to interbank offered rates. For regulatory purposes, it is a requirement that Tier 2 instruments are amortised on a straight-line basis in their final five years to maturity, thus reducing the amount of capital that is recognised for regulatory purposes.

Further details of these instruments can be found in Note 20 – Subordinated Liabilities of the Notes on the Financial Statements on page 105 of the our Annual Report and Accounts 2019.

A list of the main features of our capital instruments in accordance with Annex III of the Commission Implementing Regulation 1423/2013 is published on the HSBC Group website, www.hsbc.com with reference to our balance sheet on 31 December 2019.

Table 7: Own funds disclosure

Ref*		Ref †	At 31 Dec 2019 £m	At 31 Dec 2018 £m
	Common equity tier 1 ('CET1') capital: instruments and reserves			
1	Capital instruments and the related share premium accounts		**9,015**	9,015
	– ordinary shares	a	**9,015**	9,015
2	Retained earnings	b	**10,978**	10,713
3	Accumulated other comprehensive income (and other reserves)	c	**(211)**	(399)
5a	Independently reviewed interim net profits net of any foreseeable charge or dividend	b	**161**	562
6	**Common equity tier 1 capital before regulatory adjustments**		**19,943**	19,891
	Common equity tier 1 capital: regulatory adjustments			
7	Additional value adjustments[1]		**(5)**	(8)
8	Intangible assets (net of related deferred tax liability)	d	**(3,972)**	(3,808)
11	Fair value reserves related to gains or losses on cash flow hedges	e	**14**	31
12	Negative amounts resulting from the calculation of expected loss amounts	f	**(401)**	(25)
15	Defined benefit pension fund assets (net of related deferred tax liability)	g	**(4,377)**	(4,381)
28	**Total regulatory adjustments to common equity tier 1**		**(8,741)**	(8,191)
29	**Common equity tier 1 capital**		**11,202**	11,700
	Additional tier 1 ('AT1') capital: instruments			
30	Capital instruments and the related share premium accounts		**2,196**	2,196
31	– classified as equity under IFRSs	h	**2,196**	2,196
34	Qualifying tier 1 capital included in consolidated AT1 capital (including minority interests not included in CET1) issued by subsidiaries and held by third parties	i	**55**	—
36	**Additional tier 1 capital before regulatory adjustments**		**2,251**	2,196
44	**Additional tier 1 capital**		**2,251**	2,196
45	**Tier 1 capital (T1 = CET1 + AT1)**		**13,453**	13,896
	Tier 2 capital: instruments and provisions			
46	Capital instruments and the related share premium accounts		**2,935**	2,930
48	Qualifying own funds instruments included in consolidated T2 capital (including minority interests and AT1 instruments not included in CET1 or AT1) issued by subsidiaries and held by third parties		**74**	—
51	**Tier 2 capital before regulatory adjustments**	k	**3,009**	2,930
58	**Tier 2 capital**		**3,009**	2,930
59	**Total capital (TC = T1 + T2)**		**16,462**	16,826
60	**Total risk-weighted assets**		**85,881**	91,839
	Capital ratios and buffers			
61	Common equity tier 1		**13.0%**	12.7%
62	Tier 1		**15.7%**	15.1%
63	Total capital		**19.2%**	18.3%
64	Institution specific buffer requirement		**4.47%**	2.84%
65	– Capital conservation buffer requirement		**2.50%**	1.88%
66	– Countercyclical buffer requirement		**0.97%**	0.96%
67	– Systemic risk buffer		**1.00%**	—%
68	Common equity tier 1 available to meet buffers		**8.5%**	8.2%
	Amounts below the threshold for deduction (before risk weighting)			
75	Deferred tax assets arising from temporary differences (amount below 10% threshold, net of related tax liability)		**231**	255
	Applicable caps on the inclusion of provisions in tier 2			
77	Cap on inclusion of credit risk adjustments in T2 under standardised approach		**25**	26
79	Cap for inclusion of credit risk adjustments in T2 under internal ratings-based approach		**430**	465

* *The references identify the lines prescribed in the EBA template that are applicable and where there is a value.*
† *The references (a) – (k) identify balance sheet components in table 5 that are used in the calculation of regulatory capital.*
1 *Additional value adjustments are calculated on all assets measured at fair value and subsequently deducted from CET1.*

Leverage ratio

The leverage ratio was introduced into the Basel III framework as a non-risk-based limit, to supplement risk-based capital requirements. It aims to constrain the build-up of excess leverage in the banking sector, introducing additional safeguards against model risk and measurement errors. This ratio has been implemented in the EU for reporting and disclosure purposes but, at this stage, has not been set as a binding requirement.

The PRA's leverage ratio requirement applies from 1 January 2019 to UK ring-fenced banks.

The risk of excess leverage is managed as part of the global risk appetite framework and monitored using a leverage ratio metric within the RAS. The RAS articulates the aggregate level and types of risk that HSBC UK is willing to accept in its business activities in order to achieve its strategic business objectives. The RAS is monitored via the risk appetite profile report, which includes comparisons of actual performance against the risk appetite and tolerance thresholds assigned to each metric, to ensure that any excessive risk is highlighted, assessed and mitigated appropriately. The risk appetite profile report is presented monthly to the RMM.

Our leverage ratio calculated in accordance with the Capital Requirements Regulation was 5.0% at 31 December 2019, down from 5.6% at 31 December 2018. The decrease was largely due to growth in the balance sheet.

At 31 December 2019, our leverage ratio measured under the PRA's UK leverage framework was 5.8%. This measure excludes qualifying central bank balances from the calculation of exposure. At 31 December 2019, our UK minimum leverage ratio requirement of 3.25% under the PRA's UK leverage framework was supplemented by an additional leverage ratio buffer of 0.4% and a countercyclical leverage ratio buffer of 0.3%. These additional buffers translated into capital values of £812m and £788m respectively. We exceeded these leverage requirements.

Table 8: Summary reconciliation of accounting assets and leverage ratio exposures (LRSum)

		At	
		31 Dec 2019	31 Dec 2018
Ref*		**£m**	£m
1	Total assets as per published financial statements	**257,102**	238,939
	Adjustments for:		
2	– consolidation of banking associates/joint ventures	**78**	86
4	– derivative financial instruments	**81**	222
5	– securities financing transactions ('SFT')	**383**	4
6	– off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	**18,003**	13,589
7	– other	**(7,376)**	(6,181)
8	**Total leverage ratio exposure**	**268,271**	246,659

* *The references identify the lines prescribed in the EBA template. Lines represented in this table are those lines which are applicable and where there is a value.*

Table 9: Leverage ratio common disclosure (LRCom)

		At	
		31 Dec 2019	31 Dec 2018
Ref*		**£m**	£m
	On-balance sheet exposures (excluding derivatives and SFTs)		
1	On-balance sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral)	**255,420**	237,571
2	(Asset amounts deducted in determining Tier 1 capital)	**(8,751)**	(8,214)
3	**Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets)**	**246,669**	229,357
	Derivative exposures		
4	Replacement cost associated with all derivatives transactions (i.e. net of eligible cash variation margin)	**38**	13
5	Add-on amounts for potential future exposure associated with all derivatives transactions (mark-to-market method)	**164**	133
6	Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to IFRSs	**168**	141
7	(Deductions of receivables assets for cash variation margin provided in derivatives transactions)	**(168)**	—
11	**Total derivative exposures**	**202**	287
	Securities financing transaction exposures		
12	Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	**3,697**	3,422
13	(Netted amounts of cash payables and cash receivables of gross SFT assets)	**(683)**	—
14	Counterparty credit risk exposure for SFT assets	**383**	4
16	**Total securities financing transaction exposures**	**3,397**	3,426
	Other off-balance sheet exposures		
17	Off-balance sheet exposures at gross notional amount	**71,815**	73,311
18	(Adjustments for conversion to credit equivalent amounts)	**(53,812)**	(59,722)
19	**Total off-balance sheet exposures**	**18,003**	13,589
	Capital and total exposures		
20	**Tier 1 capital**	**13,454**	13,896
21	**Total leverage ratio exposure**	**268,271**	246,659
22	**Leverage ratio (%)**	**5.0**	5.6
EU-23	Choice of transitional arrangements for the definition of the capital measure	**Fully phased-in**	Fully phased-in

* *The references identify the lines prescribed in the EBA template. Lines represented in this table are those lines which are applicable and where there is a value.*

Table 10: Leverage ratio – Split of on-balance sheet exposures (excluding derivatives, SFTs and exempted exposures) (LRSpl)

Ref*		At 31 Dec 2019 £m
EU-1	**Total on-balance sheet exposures (excluding derivatives, SFTs and exempted exposures)**	**255,252**
EU-2	Trading book exposures	**–**
EU-3	Banking book exposures	**255,252**
	Of which:	
EU-5	*exposures treated as sovereigns*	**56,171**
EU-7	*institutions*	**1,660**
EU-8	*secured by mortgage of immovable property*	**102,265**
EU-9	*retail exposures*	**16,688**
EU-10	*corporate*	**60,908**
EU-11	*exposures in default*	**2,188**
EU-12	*other exposures (e.g. equity, securitisations and other non-credit obligation assets)*	**15,372**

* *The references identify the lines prescribed in the EBA template. Lines represented in this table are those lines which are applicable and where there is a value.*

Table 11: UK Leverage ratio

	For the period ending	
	31 Dec 2019 £m	30 Sep 2019 £m
UK leverage ratio exposure – quarterly average	**230,376**	228,687
	%	%
UK leverage ratio – quarterly average	**5.8**	5.9
UK leverage ratio – quarter end	**5.8**	5.8

Pillar 1

Pillar 1 covers the capital resources requirements for credit risk, market risk and operational risk. Credit risk includes Counterparty credit risk ('CCR') and securitisation requirements. These requirements are expressed in terms of RWAs. The table provides information on the scope of permissible approaches and our adopted approach by risk type.

Risk category	Scope of permissible approaches	Approach adopted by HSBC UK
Credit risk	The Basel framework applies three approaches of increasing sophistication to the calculation of Pillar 1 credit risk capital requirements. The most basic level, the standardised approach, requires banks to use external credit ratings to determine the risk weightings applied to rated counterparties. Other counterparties are grouped into broad categories and standardised risk weightings are applied to these categories. The next level, the foundation IRB ('FIRB') approach, allows banks to calculate their credit risk capital requirements on the basis of their internal assessment of a counterparty's PD, but subjects their quantified estimates of exposure at default ('EAD') and LGD to standard supervisory parameters. Finally, the advanced IRB ('AIRB') approach allows banks to use their own internal assessment in both determining PD and quantifying EAD and LGD.	HSBC UK has adopted the advanced IRB approach for the majority of its business. Some portfolios remain on the standardised or foundation IRB approaches: • pending the issuance of local regulations or model approval; • following the supervisory prescription of a non-advanced approach; or • under exemptions from IRB treatment. On 1 January 2020, exposures subject to the UK corporate loss-given-default model moved from the advanced to the foundation approach.
Counterparty credit risk	Four approaches to calculating CCR and determining exposure values are defined by the Basel framework: mark-to-market, original exposure, standardised and Internal Model Method. These exposure values are used to determine capital requirements under one of the credit risk approaches: standardised, FIRB or AIRB.	HSBC UK uses the mark-to-market approach for CCR.
Equity	For the non-trading book, equity exposures can be assessed under standardised or IRB approaches.	For HSBC UK, all equity exposures are assessed under the standardised approach.
Securitisation	The Basel Framework specifies two methods for calculating credit risk requirements for securitisation positions in the non-trading book: the standardised approach and the IRB approach, which incorporates the Ratings Based Method, the Internal Assessment Approach and the Supervisory Formula Method. Securitisation positions in the trading book are treated within market risk, using the CRD IV standard rules.	For the positions in the securitisation non-trading book, HSBC UK uses the IRB approach, and within this the Ratings Based Method.
Market risk	Market risk capital requirements can be determined under either the standard rules or the Internal Models Approach. The latter involves the use of internal Value at Risk models to measure market risks and determine the appropriate capital requirement.	For HSBC UK, the market risk capital requirement is measured using the standardised rules.
Operational risk	The Basel framework allows firms to calculate their operational risk capital requirement under the basic indicator approach, the standardised approach or the advanced measurement approach.	HSBC UK uses the standardised approach in determining operational risk capital requirement.

Pillar 2 and ICAAP

Pillar 2

We conduct an ICAAP to determine a forward-looking assessment of our capital requirements given our business strategy, risk profile, risk appetite and capital plan. This process incorporates the group's risk management processes and governance framework. Our base capital plan undergoes stress testing. This, coupled with our economic capital framework and other risk management practices, is used to assess our internal capital adequacy requirements and inform our view of our internal capital planning buffer. The ICAAP is formally approved by the HSBC UK Board of Directors ('Board'), which has the ultimate responsibility for the effective management of risk and approval of our risk appetite.

The ICAAP is reviewed by the PRA as part of its supervisory review and evaluation process, which occurs periodically to enable the regulator to define the total capital requirement ('TCR') or minimum capital requirements for the group, and to define the PRA buffer, where required. Under the PRA's revised Pillar 2 regime, the capital planning buffer has been replaced with a PRA buffer. This is not intended to duplicate the CRD IV buffers and, where necessary will be set according to the vulnerability of a bank in a stress scenario, as assessed through the annual PRA stress testing exercise.

The processes of internal capital adequacy assessment and supervisory review lead to a final determination by the PRA of TCR and any PRA buffer that may be required.

Within Pillar 2, Pillar 2A considers, in addition to the minimum capital requirements for Pillar 1 risks described above, any supplementary requirements for those risks and any requirements for risk categories not captured by Pillar 1. The risk categories to be covered under Pillar 2A depend on the specific circumstances of a firm and the nature and scale of its business.

Pillar 2B consists of guidance from the PRA on the capital buffer a firm would require in order to remain above its TCR in adverse circumstances that may be largely outside the firm's normal and direct control, for example during a period of severe but plausible downturn stress, when asset values and the firm's capital surplus may become strained. This is quantified via any PRA buffer requirement the PRA may consider necessary. The assessment of this is informed by stress tests and a rounded judgement of a firm's business model, also taking into account the PRA's view of a firm's options and capacity to protect its capital position under stress, for instance through capital generation. Where the PRA assesses a firm's risk management and governance to be significantly weak, it may also increase the PRA buffer to cover the risks posed by those weaknesses until they are addressed. The PRA buffer is intended to be drawn upon in times of stress, and its use is not of itself a breach of capital requirements that would trigger automatic restrictions on distributions. In specific circumstances, the PRA should agree a plan with a firm for its restoration over an agreed timescale.

Internal capital adequacy assessment

The Board approves the group ICAAP, and together with RMM, it examines the group's risk profile from both regulatory and economic capital viewpoints, aiming to ensure that capital resources:

- remain sufficient to support our risk profile and outstanding commitments;
- exceed current regulatory requirements, and that the group is well placed to meet those expected in the future;
- allow the group to remain adequately capitalised in the event of a severe economic downturn stress scenario; and
- remain consistent with our strategic and operational goals, and our shareholder and investor expectations.

The minimum regulatory capital that we are required to hold is determined by the rules and guidance established by the PRA. These capital requirements are a primary influence shaping the business planning process, in which RWA targets are established for the global businesses in accordance with the group's strategic direction and risk appetite.

The economic capital assessment is a more risk-sensitive measure than the regulatory minimum, as it covers a wide range of risks accruing from our operations. Both the regulatory and the economic capital assessments rely upon the use of models that are integrated into our management of risk. Our economic capital models are calibrated to quantify the level of capital that is sufficient to absorb potential losses over a one-year time horizon to a 99.95% level of confidence for our banking and trading activities, and to a 99.5% level of confidence for our pension risks.

The ICAAP and its constituent economic capital calculations are examined by the PRA as part of its supervisory review and evaluation process. This examination informs the regulator's view of our Pillar 2 capital requirements.

Preserving our strong capital position remains a priority, and the level of integration of our risk and capital management helps to optimise our response to business demand for regulatory and economic capital. Risks that are explicitly assessed through economic capital are credit risk, including CCR, market and operational risk, non-trading book interest rate risk, pension risk, residual risk and structural foreign exchange risk.

Credit risk

Overview

Credit risk is the risk of financial loss if a customer or counterparty fails to meet a payment obligation under a contract. It arises principally from direct lending, trade finance and leasing business, but also from off-balance sheet products, such as guarantees and credit derivatives, and from the group's holdings of debt and other securities.

The tables below set out details of the credit risk exposures by exposure class and approach.

Further explanation of the group's approach to managing credit risk (including details of past due and impaired exposures, and its approach to credit risk impairment) can be found from page 24 of our Annual Report and Accounts 2019;

Table 12: Overview of RWAs (OV1)

		At 31 Dec 2019	
		RWAs	Capital
		£m	£m
1	**Credit risk (excluding counterparty credit risk)**	**74,220**	**5,937**
2	– standardised approach	**1,376**	**110**
3	– foundation IRB approach	**5,665**	**453**
4	– advanced IRB approach	**67,179**	**5,374**
6	**Counterparty credit risk**	**198**	**16**
7	– mark-to-market	**60**	**5**
8	– original exposure	**84**	**7**
11	– risk exposure amount for contributions to the default fund of a central counterparty	**31**	**2**
12	– credit valuation adjustment	**23**	**2**
14	**Securitisation exposures in the non-trading book**	**596**	**48**
15	– IRB ratings based method	**76**	**6**
14a	– exposures subject to the new securitisation framework[1]	**520**	**42**
19	**Market risk**	**27**	**2**
20	– standardised approach	**27**	**2**
23	**Operational risk**	**10,303**	**824**
25	– standardised approach	**10,303**	**824**
27	**Amounts below the thresholds for deduction (subject to 250% risk weight)**	**537**	**43**
	Total	**85,881**	**6,870**

1 *On 1 January 2019, a new securitisation framework came into force in the EU for new transactions. Existing positions are subject to 'grandfathering' provisions and will transfer to the new framework on 1 January 2020.*

Further information on the movement in RWAs can be found on page 53 of our Annual Report and Accounts 2019.

Table 13: Credit risk exposure – summary (CRB-B)

		At 31 December 2019					At 31 December 2018				
		Net carrying value	Average net carrying values	RWAs^	Capital required^	RWA Density	Net carrying value	Average net carrying values	RWAs^	Capital required^	RWA Density
	Footnotes	£m	£m	£m	£m	%	£m	£m	£m	£m	%
IRB advanced approach		**245,612**	**240,215**	**65,900**	**5,272**	**30**	244,482	239,490	72,618	5,809	33
Central governments and central banks		**6,596**	**6,817**	**683**	**55**	**10**	6,161	4,763	640	51	10
Institutions		**1,007**	**981**	**134**	**11**	**14**	683	756	167	13	25
Corporates	1	**78,988**	**80,236**	**45,008**	**3,600**	**68**	83,005	82,106	52,636	4,211	76
Total retail		**159,021**	**152,181**	**20,075**	**1,606**	**13**	154,633	151,865	19,175	1,534	13
Secured by mortgages on immovable property – small and medium sized		***1,714***	***1,673***	***830***	***66***	***54***	*1,755*	*1,700*	*1,029*	*82*	*66*
Secured by mortgages on immovable property non-SME		***107,495***	***101,543***	***5,404***	***433***	***5***	*102,104*	*100,266*	*4,886*	*391*	*5*
Qualifying revolving retail		***38,625***	***38,313***	***5,708***	***457***	***22***	*40,169*	*39,182*	*5,577*	*446*	*21*
Other SME		***4,055***	***3,985***	***2,905***	***232***	***96***	*4,140*	*4,338*	*3,004*	*240*	*97*
Other non-SME		***7,132***	***6,667***	***5,228***	***418***	***71***	*6,465*	*6,379*	*4,679*	*375*	*71*
IRB securitisation positions		**3,177**	**1,398**	**596**	**48**	**19**	1,053	1,108	153	12	15
IRB non-credit obligation assets		**2,011**	**2,025**	**1,279**	**102**	**64**	2,147	2,324	1,386	111	65
IRB foundation approach		**11,415**	**10,105**	**5,665**	**453**	**61**	9,533	9,259	4,931	394	65
Corporates		**11,415**	**10,105**	**5,665**	**453**	**61**	9,533	9,259	4,931	394	65
Standardised approach		**53,212**	**45,000**	**1,913**	**153**	**4**	43,052	44,401	2,047	165	5
Central governments and central banks		**48,245**	**40,463**	**537**	**43**	**1**	38,605	40,772	637	51	2
Regional government or local authorities		**256**	**210**	**—**	**—**	—	182	120	—	—	—
Public sector entities		**1,023**	**1,051**	**—**	**—**	—	832	598	—	—	—
Institutions		**776**	**739**	**163**	**13**	**21**	989	522	233	19	24
Corporates		**476**	**510**	**294**	**24**	**78**	614	379	494	40	98
Retail		**865**	**837**	**340**	**27**	**70**	848	863	320	26	71
Secured by mortgages on immovable property		**977**	**447**	**353**	**28**	**37**	294	258	123	10	47
Exposures in default		**72**	**64**	**101**	**8**	**142**	63	64	94	7	144
Items associated with particularly high risk		**8**	**8**	**12**	**1**	**150**	8	8	12	1	150
Other items		**514**	**671**	**113**	**9**	**22**	617	817	134	11	22
Total		**315,427**	**298,743**	**75,353**	**6,028**	**26**	300,267	296,582	81,135	6,491	30

1 *Corporates includes specialised lending exposures which are reported in more detail in Table 40.*

Credit quality

The following tables present information on the credit quality of exposures by exposure class and by industry.

Table 14: Credit quality of exposures by exposure classes and instruments[1] (CR1-A)

		Gross carrying values of					
		Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustments	Write-offs in the year	Credit risk adjustment charges of the period	Net carrying values
		£m	£m	£m	£m	£m	£m
1	Central governments and central banks	—	6,596	—	—	—	6,596
2	Institutions	—	1,008	1	—	1	1,007
3	Corporates	1,961	89,292	850	190	216	90,403
4	*– of which: specialised lending*	*581*	*11,327*	*194*	—	*26*	*11,714*
6	*– of which: Others*	*1,380*	*77,954*	*656*	*190*	*190*	*78,678*
7	Retail	1,194	158,715	888	278	458	159,021
8	– Secured by real estate property - SME	35	1,691	12	—	(6)	1,714
9	– Secured by real estate property - Non-SME	733	106,874	112	2	7	107,495
10	– Qualifying revolving retail	219	38,814	408	126	226	38,625
11	– Other retail	207	11,336	356	150	231	11,187
12	*– of which SME*	*122*	*4,088*	*155*	*85*	*113*	*4,055*
13	*– of which Non-SME*	*85*	*7,248*	*201*	*65*	*118*	*7,132*
15	**Total IRB approach**	3,155	255,611	1,739	468	675	257,027
16	Central governments and central banks	—	48,245	—	—	—	48,245
17	Regional governments or local authorities	—	256	—	—	—	256
18	Public sector entities	—	1,023	—	—	—	1,023
21	Institutions	—	776	—	—	—	776
22	Corporates	—	486	10	—	7	476
24	Retail	—	868	3	—	(1)	865
25	*– of which: SMEs*	—	*157*	—	—	—	*157*
26	Secured by mortgages on immovable property	—	977	—	—	—	977
28	Exposures in default	72	3	3	3	4	72
29	Items associated with particularly high risk	8	—	—	1	1	8
34	Other exposures	—	514	—	—	—	514
35	**Total standardised approach**	80	53,148	16	4	11	53,212
36	**Total at 31 Dec 2019**	3,235	308,759	1,755	472	686	310,239
	– of which: loans	*2,960*	*218,866*	*1,696*	*472*	*696*	*220,130*
	– of which: debt securities	—	*19,445*	*1*	—	—	*19,444*
	– of which: off-balance sheet exposures	*275*	*69,672*	*58*	—	*(10)*	*69,889*

1 *Securitisation positions and non-credit obligation assets are not included in this table.*

Table 15: Credit quality of exposures by industry or counterparty types[1] (CR1-B)

		Gross carrying values of					
		Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustments	Write-offs in the year	Credit risk adjustment charges of the period	Net carrying values
		£m	£m	£m	£m	£m	£m
1	Agriculture	91	4,130	16	2	(8)	4,205
2	Mining & oil extraction	2	1,635	7	—	(6)	1,630
3	Manufacturing	177	13,604	260	71	139	13,521
4	Utilities	77	762	14	—	3	825
5	Water supply	—	524	—	—	—	524
6	Construction	253	3,341	127	2	12	3,467
7	Wholesale & retail trade	304	16,214	131	9	19	16,387
8	Transportation & storage	89	2,572	42	—	27	2,619
9	Accommodation & food services	98	7,943	38	87	62	8,003
10	Information & communication	9	570	5	—	1	574
11	Financial & insurance	6	43,127	4	—	(1)	43,129
12	Real estate	603	18,006	170	18	48	18,439
13	Professional activities	45	5,909	34	—	(33)	5,920
14	Administrative service	131	8,794	75	—	(25)	8,850
15	Public admin & defence	—	16,819	1	—	21	16,818
16	Education	9	1,367	10	—	(6)	1,366
17	Human health & social work	102	1,828	28	—	(7)	1,902
18	Arts & entertainment	18	1,921	11	39	42	1,928
19	Other services	11	1,039	8	—	—	1,042
20	Personal	1,210	157,907	774	244	398	158,343
21	Extraterritorial bodies	—	747	—	—	—	747
22	**Total at 31 December 2019**	3,235	308,759	1,755	472	686	310,239

1 *Securitisation positions and non-credit obligation assets are not included in this table.*

Table 16: Credit quality of exposures by geography[1, 2] (CR1-C)

	Gross carrying values of					
	Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustments	Write-offs in the year[3]	Credit risk adjustment charges of the period[3]	Net carrying values
	£m	£m	£m	£m	£m	£m
United Kingdom	**3,079**	**289,403**	**1,715**	**472**	**687**	**290,767**
Other Europe	**108**	**9,549**	**30**	**—**	**7**	**9,627**
United States of America	**7**	**6,835**	**5**	**—**	**(1)**	**6,837**
Other	**41**	**2,972**	**5**	**—**	**(7)**	**3,008**
Total at 31 December 2019	**3,235**	**308,759**	**1,755**	**472**	**686**	**310,239**

1 Amounts shown by geographical region and country/territory in this table are based on the country/territory of residence of the counterparty.
2 Securitisation positions and non-credit obligation assets are not included in this table.
3 Presented on a year-to-date basis.

Past due unimpaired and credit-impaired exposures

The table below analyses past due unimpaired and credit-impaired exposures on a regulatory consolidation basis using accounting values. There are no material differences between the regulatory and accounting scope of consolidation.

All amounts past due more than 90 days are considered credit impaired even where regulatory rules deem default as 180 days past due.

Table 17: Amount of past due, impaired exposures and related allowances by industry sector and by geographical region

	At 31 December	
	2019	2018
	United Kingdom[1]	United Kingdom[1]
	£m	£m
Past due but not impaired exposures	**575**	505
– personal	**391**	391
– corporate and commercial	**184**	114
Impaired exposures	**3,626**	3,048
– personal	**1,282**	1,230
– corporate and commercial	**2,315**	1,728
– financial	**29**	90
Impairment allowances and other credit risk provisions	**(1,755)**	(1,544)
– personal	**(744)**	(569)
– corporate and commercial	**(994)**	(941)
– financial	**(17)**	(34)

1 Amounts shown by geographical region in this table are based on the country of the lender.

Table 18: Movement in specific credit risk adjustments by industry sector and by geographical region

	2019	2018
	United Kingdom[1]	United Kingdom[1,2]
	£m	£m
Specific credit risk adjustments at 1 January	**1,544**	—
Amounts transferred from HSBC Bank plc	**—**	1,404
Amounts written off	**(472)**	(233)
– personal	**(199)**	(131)
– corporate and commercial	**(272)**	(102)
– financial	**(1)**	—
Recoveries of amounts written off in previous years	**78**	52
– personal	**66**	44
– corporate and commercial	**12**	8
Charge to income statement	**686**	362
– personal	**374**	231
– corporate and commercial	**310**	130
– financial	**2**	1
Exchange and other movements	**(81)**	(41)
Specific credit risk adjustments at 31 December	**1,755**	1,544

1 Amounts shown by geographical region in this table are based on the country of the lender.
2 Figures represent the 6 month period from the date of legal separation (1 July 2018) to 31 December 2018.

Expected loss ('EL') and credit risk adjustments ('CRAs')

We analyse credit loss experience in order to assess the performance of our risk measurement and control processes, and to inform our understanding of the implications for risk and capital management of dynamic changes occurring in the risk profile of our exposures.

When comparing EL with measures of expected credit losses ('ECL') under IFRS 9, it is necessary to take into account differences in the definition and scope of each. Below are examples of matters that can give rise to material differences in the way economic, business and methodological drivers are reflected quantitatively in the accounting and regulatory measures of loss.

In general, HSBC UK calculates ECL using three main components, a PD, an EAD and an LGD.

ECL includes impairment allowances (or provision in the case of commitments and guarantees) for the 12-month ECL and lifetime ECL, and on financial assets that are considered to be in default or otherwise credit impaired.

ECL resulting from default events that are possible within the next 12 months are recognised for financial instruments in stage 1.

An assessment of whether credit risk has increased significantly since initial recognition is performed at each reporting period by considering the change in the risk of default occurring over the remaining life of the financial instrument.

Unless identified at an earlier stage, all financial assets are deemed to have suffered a significant increase in credit risk when 30 days past due.

ECL resulting from default events that are possible beyond 12 months ('Lifetime ECL') are recognised for financial instruments in stages 2 & 3.

Changes in ECL and other credit impairment charges represent the movement in the ECL during the year including write-offs, recoveries and foreign exchange. EL represents the one-year regulatory expected loss accumulated in the book at the balance sheet date.

CRAs encompass the impairment allowances or provisions balances, and changes in expected credit losses and other credit impairment charges.

Table 19 sets out for IRB credit exposures the EL, CRA balances and actual loss experience reflected in the charges for CRAs.

The group leverages the Basel IRB framework where possible, with re-calibration to meet the differing IFRS 9 requirements as follows:

Model	Regulatory capital	IFRS 9
PD	• Through the cycle (represents long-run average PD throughout a full economic cycle) • The definition of default includes a backstop of 90+ days past due, although this has been modified to 180+ days past due for some portfolios, particularly UK mortgages	• Point in time (based on current conditions, adjusted to take into account estimates of future conditions that will impact PD) • Default backstop of 90+ days past due for all portfolios
EAD	• Represents the current balance including any interest accrued to date plus the expected balance not currently utilised (off-balance sheet amount) that would be utilised at the time of default and appropriate for an economic downturn	• Amortisation captured for term products
LGD	• Downturn LGD (consistent losses expected to be suffered during a severe but plausible economic downturn) • Regulatory floors may apply to mitigate risk of underestimating downturn LGD due to lack of historical data • Discounted using cost of capital • All collection costs included	• Expected LGD (based on estimate of loss given default including the expected impact of future economic conditions such as changes in value of collateral) • No floors • Discounted using the original effective interest rate of the loan • Only costs associated with obtaining/selling collateral included
Other		• Discounted back from point of default to balance sheet date

Table 19: IRB expected loss and CRA – by exposure class and by region

	At 31 December 2019			At 31 December 2018		
		CRA[1]			CRA[1]	
	Expected loss[1]	**Balances**	**Charge for the year**	Expected loss[1]	Balances	Charge for the year
	£m	**£m**	**£m**	£m	£m	£m
IRB exposure classes						
Institutions	**—**	**1**	**1**	—	—	—
Corporates	**1,309**	**850**	**216**	905	826	135
Retail	**799**	**888**	**458**	651	710	218
– secured by mortgages on immovable property SME	**27**	**12**	**(6)**	21	18	(1)
– secured by mortgages on immovable property non-SME	**64**	**112**	**7**	65	108	(12)
– qualifying revolving retail	**333**	**408**	**226**	263	307	101
– other SME	**205**	**155**	**113**	176	130	43
– other non-SME	**170**	**201**	**118**	126	147	87
Total	**2,108**	**1,739**	**675**	1,556	1,536	353

1 *Excludes securitisation exposures because EL is not calculated for this exposure class.*

Based on the country of the lender, amounts shown in the above table are in the UK.

Table 20: Changes in stock of general and specific credit risk adjustments (CR2-A)

		Footnotes	12 months to 31 December 2019	
			Accumulated specific credit risk adjustments	Accumulated general credit risk adjustments
			£m	£m
1	**Opening balance at the beginning of the period**		**1,544**	–
2	Increases due to amounts set aside for estimated loan losses during the period	1	**836**	–
3	Decreases due to amounts reversed for estimated loan losses during the period	1	**(153)**	–
4	Decreases due to amounts taken against accumulated credit risk adjustments		**(472)**	–
9	**Closing balance at the end of the period**		**1,755**	–
10	Recoveries on credit risk adjustments recorded directly to the statement of profit or loss		**78**	–

1 *Following adoption of IFRS 9 'Financial Instruments', the movement due to amounts set aside for estimated loan losses during the period has been reported on a net basis.*

Table 21: Changes in stock of defaulted loans and debt securities (CR2-B)

		2019
		Gross carrying value
		£m
1	**Defaulted loans and debt securities at the beginning of the period**	**2,604**
2	Loans and debt securities that have defaulted since the last reporting period	**1,785**
3	Returned to non-defaulted status	**(416)**
4	Amounts written off	**(472)**
7	Repayments	**(295)**
6	**Defaulted loans and debt securities at the end of the period**	**3,206**

Risk mitigation

Our approach when granting credit facilities is to do so on the basis of capacity to repay, rather than placing primary reliance on credit risk mitigants. Depending on a customer's standing and the type of product, facilities may be provided unsecured.

Mitigation of credit risk is a key aspect of effective risk management and takes many forms. Our general policy is to promote the use of credit risk mitigation, justified by commercial prudence and capital efficiency. Detailed policies cover the acceptability, structuring and terms with regard to the availability of credit risk mitigation, such as in the form of collateral security. These policies, together with the setting of suitable valuation parameters, are subject to regular review to ensure that they are supported by empirical evidence and continue to fulfil their intended purpose.

Collateral

The most common method of mitigating credit risk is to take collateral. In our retail residential and commercial real estate ('CRE') businesses, a mortgage over the property is usually taken to help secure claims. Physical collateral is also taken in various forms of specialised lending and leasing transactions where income from the physical assets that are financed is also the principal source of facility repayment. In the commercial and industrial sectors, charges are created over business assets such as premises, stock and debtors. Loans to private banking clients may be made against a pledge of eligible marketable securities, cash or real estate. Facilities to SMEs are commonly granted against guarantees given by their owners and/or directors.

Further information regarding charges held over residential and commercial property can be found from page 40 of our Annual Report and Accounts 2019.

Financial collateral

HSBC UK provides customers with working capital management products. Some of these products have loans and advances to customers and customer accounts where we have rights of offset, and comply with the regulatory requirements for on-balance sheet netting. Under on-balance sheet netting, the customer accounts are treated as cash collateral and the effects of this collateral are incorporated in our LGD estimates. For risk management purposes, the net exposures are subject to limits that are monitored, and the relevant customer agreements are subject to review and update, as necessary, to ensure the legal right of offset remains appropriate.

Other forms of credit risk mitigation

Facilities to SMEs are commonly granted against guarantees given by their owners and/or directors. Guarantees may be taken from third parties where the group extends facilities without the benefit of any alternative form of security, e.g. where it issues a bid or performance bond in favour of a non-customer at the request of another bank.

In our corporate lending, we also take guarantees from corporates and export credit agencies. Corporates normally provide guarantees as part of a parent/subsidiary or common parent relationship and span a number of credit grades. Export credit agencies will normally be investment grade.

Policy and procedures

Policies and procedures govern the protection of our position from the outset of a customer relationship; for instance, in requiring standard terms and conditions or specifically agreed documentation permitting the offset of credit balances against debt obligations, and through controls over the integrity, current valuation and, if necessary, realisation of collateral security.

Valuing collateral

Valuation strategies are established to monitor collateral mitigants to ensure that they continue to provide the anticipated secure secondary repayment source. In the residential mortgage business, HSBC UK policy prescribes revaluation at intervals of up to three years, or more frequently where market conditions are subject to significant change. Residential property collateral values are determined through a combination of professional appraisals, house price indices or statistical analysis.

Local market conditions determine the frequency of valuation for CRE. Revaluations are sought where, for example, as part of the regular credit assessment of the obligor, material concerns arise in relation to the performance of the collateral. CRE revaluation also commonly occurs where a decline in the obligor's credit quality gives cause for concern that the principal payment source may not fully meet the obligation.

Recognition of risk mitigation under the IRB approach

Within an IRB approach, risk mitigants are considered in two broad categories: first, those that reduce the intrinsic PD of an obligor; and second, those that affect the estimated recoverability of obligations and thus LGD.

The first typically include full parental guarantees – where one obligor within a group of companies guarantees another. This is usually factored into the estimate of the latter's PD, as it is expected that the guarantor will intervene to prevent a default. PD estimates are also subject to a 'sovereign ceiling', constraining the risk ratings assigned to obligors in higher risk countries if only partial parental support exists. In certain jurisdictions, typically those on the Foundation IRB approach, certain types of third-party guarantee are also recognised through substitution of the obligor's PD by the guarantor's PD.

In the second category, LGD estimates are affected by a wider range of collateral, including cash, charges over real estate property, fixed assets, trade goods, receivables and floating charges such as mortgage debentures. Unfunded mitigants, such as third-party guarantees, are also taken into consideration in LGD estimates where there is evidence that they reduce loss expectation.

The main providers of guarantees are banks, other financial institutions and corporates, the latter typically in support of subsidiaries of their company group. The nature of such customers and transactions is very diverse and the creditworthiness of guarantors accordingly spans a wide spectrum. The creditworthiness of providers of unfunded credit risk mitigation is taken into consideration as part of the guarantor's risk profile when; for example, assessing the risk of other exposures such as direct lending to the guarantor. Internal limits for such contingent exposure are approved in the same way as direct exposures.

EAD and LGD values, in the case of individually assessed exposures, are determined by reference to internal risk parameters based on the nature of the exposure. For retail portfolios, credit risk mitigation data is incorporated into the internal risk parameters for exposures and feeds into the calculation of the EL band value summarising both customer delinquency and product or facility risk. Credit and credit risk mitigation data form inputs submitted by all HSBC UK offices to centralised databases. A range of collateral recognition approaches are applied to IRB capital treatments:

- unfunded protection, which includes credit derivatives and guarantees, is reflected through adjustment or determination of PD or LGD;
- eligible financial collateral is taken into account in LGD models (under Advanced IRB) or by adjusting regulatory LGD values (under Foundation IRB). The adjustment to LGD for the latter is based on the degree to which the exposure value would be adjusted if the Financial Collateral Comprehensive Method were applied; and
- for all other types of collateral, including real estate, the LGD for exposures calculated under the IRB advanced approach is calculated by models. For IRB foundation, base regulatory LGDs are adjusted depending on the value and type of the asset taken as collateral relative to the exposure. The types of eligible mitigant recognised under the IRB foundation approach are more limited.

Recognition of risk mitigation under the standardised approach

Where credit risk mitigation is available in the form of an eligible guarantee, non-financial collateral or credit derivatives, the exposure is divided into covered and uncovered portions. The covered portion, which is determined after applying an appropriate 'haircut' for currency and maturity mismatches (and for omission of restructuring clauses for credit derivatives, where appropriate) to the amount of the protection provided, attracts the risk weight of the protection provider. The uncovered portion attracts the risk weight of the obligor. For exposures fully or partially covered by eligible financial collateral, the value of the exposure is adjusted under the financial collateral comprehensive method using supervisory volatility adjustments, including those arising from currency mismatch, which are determined by the specific type of collateral (and, in the case of eligible debt securities, their credit quality) and its liquidation period. The adjusted exposure value is subject to the risk weight of the obligor.

Table 22: Standardised approach – credit conversion factor ('CCF') and credit risk mitigation ('CRM') effects (CR4)

		Exposures before CCF and CRM		Exposures post-CCF and CRM		RWAs and RWA density	
		On-balance sheet amount	Off-balance sheet amount	On-balance sheet amount	Off-balance sheet amount	RWAs	RWA density
		£m	£m	£m	£m	£m	%
	Asset classes[1]						
1	Central governments or central banks	**48,244**	**1**	**48,244**	**1**	**537**	**1**
2	Regional governments or local authorities	**257**	**–**	**257**	**–**	**–**	**–**
3	Public sector entities	**1,023**	**–**	**1,023**	**–**	**–**	**–**
6	Institutions	**776**	**–**	**776**	**–**	**163**	**21**
7	Corporates	**286**	**191**	**286**	**91**	**294**	**78**
8	Retail	**485**	**379**	**485**	**–**	**340**	**70**
9	Secured by mortgage on immovable property	**957**	**20**	**957**	**4**	**353**	**37**
10	Exposures in default	**71**	**–**	**71**	**–**	**101**	**142**
11	Higher-risk categories	**8**	**–**	**8**	**–**	**12**	**150**
16	Other items	**516**	**–**	**516**	**–**	**113**	**22**
17	**At 31 December 2019**	**52,623**	**591**	**52,623**	**96**	**1,913**	**4**

1 *Securitisation positions are not included in this table.*

Table 23: Credit risk mitigation techniques - IRB and Standardised (CR3)

	Footnotes	31 December 2019				
		Exposures unsecured: carrying amount	Exposures secured: carrying amount	Secured by:		
				collateral	financial guarantees	credit derivatives
		£m	£m	£m	£m	£m
Exposures under the IRB approach	1,2					
Central governments and central banks		6,596	—	—	—	—
Institutions		986	21	21	—	—
Corporates		44,797	45,605	43,216	2,389	—
Retail		48,530	110,492	110,394	98	—
Total		100,909	156,118	153,631	2,487	—
Exposures under the STD approach	1,2					
Central governments and central banks	3	48,030	—	—	—	—
Institutions		775	—	—	—	—
Corporates		366	110	8	102	—
Retail		862	3	3	—	—
Secured by mortgages on immovable property		963	14	14	—	—
Exposures in default		66	6	6	—	—
Items associated with particularly high risk	4	—	8	8	—	—
Regional governments or local authorities		257	—	—	—	—
Public sector entities		1,023	—	—	—	—
Total		52,342	141	39	102	—

1 *This table includes both on and off-balance sheet exposures.*
2 *Securitisation positions are not included in this table.*
3 *Deferred tax assets are excluded from the exposure.*
4 *Equities are excluded from the exposure.*

Asset encumbrance

The following tables disclose on-balance sheet encumbered and unencumbered assets and off-balance sheet collateral (represented by median values of monthly data points in 2019), as required by Commission Delegated Regulation (EU) 2017/2295.

Table 24: Asset encumbrance A – Assets

		At 31 December 2019							
		Carrying amount of encumbered assets		Fair value of encumbered assets		Carrying amount of unencumbered assets		Fair value of unencumbered assets	
		Total	Of which: *notionally eligible EHQLA and HQLA*	Total	Of which: *notionally eligible EHQLA and HQLA*	Total	Of which: *EHQLA and HQLA*	Total	Of which: *EHQLA and HQLA*
		£m	£m	£m	£m	£m	£m	£m	£m
010	Assets of the reporting institution	3,043	*2,444*			248,125	*45,938*		
020	Loans on demand	—	—			34,159	*32,107*		
030	Equity instruments	—	—			8	—		
040	Debt securities	2,854	*2,444*	2,854	*2,444*	14,820	*13,197*	14,820	*13,197*
	of which:								
060	*– asset-backed securities*	*263*	—	*263*		*690*	—	*690*	
070	*– issued by general governments*	*2,229*	*2,229*	*2,229*	*2,229*	*11,434*	*11,434*	*11,434*	*11,434*
080	*– issued by financial corporations*	*621*	*215*	*620*	*215*	*2,997*	*1,763*	*2,997*	*1,763*
090	*– issued by non-financial corporations*	*4*	—	*4*	—	*360*	—	*360*	—
100	Loans and advances other than loans on demand	—	—	—	—	186,162	—	186,162	—
110	*of which: mortgage loans*	—	—	—	—	*124,868*	—	*124,868*	—
120	Other assets	189	—			12,976	*634*		

Table 25: Asset encumbrance B – Collateral received

		At 31 December 2019			
		Fair value of encumbered collateral received or own debt securities issued		Fair value of collateral received or own debt securities issued available for encumbrance	
		Total	Of which: *notionally eligible EHQLA and HQLA*	Total	Of which: *EHQLA and HQLA*
		£m	£m	£m	£m
130	Assets of the reporting institution	—	—	6,372	*4,821*
160	Debt securities	—	—	4,989	*4,821*
	of which:				
190	*– issued by general governments*	—	—	3,085	*2,918*
200	*– issued by financial corporations*	—	—	1,898	*1,898*
210	*– issued by non-financial corporations*	—	—	6	*5*
230	Other collateral received	—	—	1,383	—
250	Total assets, collateral received and own debt securities issued	3,043	*2,444*		

Table 26: Asset encumbrance C – Encumbered assets/collateral received and associated liabilities

		At 31 December 2019	
		Matching liabilities, contingent liabilities or securities lent	Assets, collateral received and own debt securities issued other than covered bonds and ABSs encumbered
		£m	£m
010	Carrying amount of selected financial liabilities	716	1,295

Importance of encumbrance

We are a deposit-led bank and hence the majority of our funding is from customer current accounts and customer savings deposits payable on demand or at short notice. Given this structural unsecured funding position, we have less requirement to fund ourselves in secured markets, and therefore our overall low level of encumbrance reflects this position. There is monitoring against a limit on the level of asset encumbrance.

Non-performing and forborne exposures

The following tables are presented in accordance with the EBA's 'Final guidelines on disclosure of non-performing and forborne exposures'.

The EBA defines non-performing exposures as exposures with material amounts that are more than 90 days past due or exposures where the debtor is assessed as unlikely to pay its credit obligations in full without the realisation of collateral, regardless of the existence of any past due amounts or number days past due. Any debtors that are in default for regulatory purposes or impaired under the applicable accounting framework are always considered as non-preforming exposures. *The Annual Report and Accounts 2019* does not define non-performing exposures, however the definition of credit impaired (stage 3) is aligned to the EBA's definition of non-performing exposures.

The EBA defines forborne exposures as exposures where the bank has made concessions toward a debtor that is experiencing or about to experience financial difficulties in meeting its financial commitments. In our *Annual Report and Accounts 2019*, forborne exposures are reported as 'renegotiated loans'. This term is aligned to the EBA definition of forborne exposure except in its treatment of 'cures'.

Under the EBA definition, exposures cease to be reported as forborne if they pass three tests:

- the forborne exposure must have been considered to be performing for a 'probation period' of at least two years;
- regular payments of more than an insignificant aggregate amount of principal or interest have been made during at least half of the probation period; and
- no exposure to the debtor is more than 30 days past due at the end of the probation period.

In our *Annual Report and Accounts 2019*, renegotiated loans retain this classification until maturity or de-recognition.

Table 27: Credit quality of forborne exposures

		At 31 December 2019							
		Gross carrying amount/nominal amount				Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions		Collateral received and financial guarantees received on forborne exposures	
		Performing forborne	Non-performing forborne			On performing forborne exposures	On non-performing forborne exposures	Total	*Of which forborne non-performing exposures*
			Total	*Of which: defaulted*	*Of which: impaired*				
		£m	£m	£m	£m	£m	£m	£m	£m
1	**Loans and advances**	522	1,408	*1,408*	*1,408*	(19)	(364)	968	*735*
5	Other financial corporations	–	2	*2*	*2*	(19)	(277)	2	*2*
6	Non-financial corporations	522	934	*934*	*934*	–	(87)	653	*420*
7	Households	–	472	*472*	*472*	–	–	313	*313*
10	**Total**	522	1,408	*1,408*	*1,408*	(19)	(364)	968	*735*

The following table presents an analysis of performing and non-performing exposures by days past due. The gross non-performing loan ratio at 31 December 2019 was 1.4%.

Table 28: Credit quality of performing and non-performing exposures by past due days

		At 31 December 2019											
		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 but not past due or past due ≤	Past due > 90 days ≤ 180 days	Past due > 180 days ≤ 1 year	Past due > 1 year ≤ 2 years	Past due > 2 years ≤ 5 years	Past due > 5 years ≤ 7 years	Past due > 7 years	*Of which: defaulted*
		£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
1	**Loans and advances**	**222,316**	**222,105**	**211**	**3,206**	**2,288**	**326**	**251**	**100**	**220**	**16**	**5**	**3,206**
2	Central banks	**36,936**	**36,936**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
3	General governments	**5**	**5**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
4	Credit institutions	**1,140**	**1,140**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
5	Other financial corporations	**5,664**	**5,664**	**–**	**20**	**13**	**–**	**4**	**2**	**1**	**–**	**–**	**20**
6	Non-financial corporations	**62,104**	**62,042**	**62**	**1,984**	**1,659**	**131**	**53**	**42**	**97**	**2**	**–**	**1,984**
7	*of which: SMEs*	***248***	***248***	**–**	***4***	**–**	**–**	**–**	**–**	***3***	**–**	***1***	***4***
8	Households	**116,467**	**116,318**	**149**	**1,202**	**616**	**195**	**194**	**56**	**122**	**14**	**5**	**1,202**
9	**Debt securities**	**20,269**	**20,269**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
10	Central banks	**531**	**531**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
11	General governments	**17,058**	**17,058**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
12	Credit institutions	**2,311**	**2,311**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
13	Other financial corporations	**369**	**369**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
15	**Off-balance-sheet exposures**	**66,875**	**N/A**	**N/A**	**410**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**410**
18	Credit institutions	**31**	**N/A**	**N/A**	**–**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**–**
19	Other financial corporations	**1,212**	**N/A**	**N/A**	**1**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**1**
20	Non-financial corporations	**28,263**	**N/A**	**N/A**	**330**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**330**
21	Households	**37,369**	**N/A**	**N/A**	**79**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**79**
22	**Total**	**309,460**	**242,374**	**211**	**3,616**	**2,288**	**326**	**251**	**100**	**220**	**16**	**5**	**3,616**

The following table provides information on the instruments that were cancelled in exchange for collateral obtained by taking possession and on the value of the collateral obtained by taking possession. The value at initial recognition represents the gross carrying amount of the collateral obtained by taking possession at initial recognition on the balance sheet. Accumulated negative changes is the accumulated impairment or negative change on the initial recognition value of the collateral obtained by taking possession including amortisation in the case of property, plant and equipment and investment properties.

Table 29: Collateral obtained by taking possession and execution processes

		At 31 December 2019	
		Collateral obtained by taking possession	
		Value at initial recognition	Accumulated negative changes
		£m	£m
1	Property, plant and equipment	**–**	**–**
2	Other than Property, plant and equipment	**3**	**–**
3	– residential immovable property	**3**	**–**
8	**Total**	**3**	**–**

The following table provides information on the gross carrying amount of exposures and related impairment with further detail on the IFRS 9 stage, accumulated partial write off and collateral. The IFRS 9 stages have the following characteristics:

- stage 1: unimpaired and without significant increase in credit risk on which a 12-month allowance for ECL is recognised;
- stage 2: a significant increase in credit risk has been experienced since initial recognition on which a lifetime ECL is recognised;
- stage 3: objective evidence of impairment, and are therefore considered to be in default or otherwise credit impaired on which a lifetime ECL is recognised. Purchased or originated credit-impaired exposures are included in stage 3.

Refer to the section 'EL and credit risk adjustments' on page 17 for further information on IFRS 9.

Credit-impaired (stage 3) exposures are disclosed on page 37 of our Annual Report and Accounts 2019.

Table 30: Performing and non-performing exposures and related provisions

		31 December 2019														
		Gross carrying amount/nominal amount						Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions							Collaterals and financial guarantees received	
		Performing exposures			Non-performing exposures			Performing exposures			Non-performing exposures			Accumulated partial write-off	On performing exposures	On non-performing exposures
			of which: stage 1	*of which: stage 2*		*of which: stage 2*	*of which: stage 3*		*of which: stage 1*	*of which: stage 2*		*of which: stage 2*	*of which: stage 3*			
		£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
1	**Loans and advances**	222,316	*209,137*	*13,179*	3,206	–	*3,206*	(842)	*(216)*	*(626)*	(839)	–	*(839)*	(45)	134,937	1,419
2	Central banks	36,936	*36,936*	–	–	–	–	–	–	–	–	–	–	–	–	–
3	General governments	5	*5*	–	–	–	–	–	–	–	–	–	–	–	–	–
4	Credit institutions	1,140	*1,140*	–	–	–	–	(1)	*(1)*	–	–	–	–	–	–	–
5	Other financial corporations	5,664	*5,266*	*398*	20	–	*20*	(6)	*(3)*	*(3)*	(1)	–	*(1)*	–	3,901	10
6	Non-financial corporations	62,104	*53,391*	*8,713*	1,984	–	*1,984*	(373)	*(135)*	*(238)*	(561)	–	*(561)*	(45)	29,736	715
7	*Of which: SMEs*	*248*	–	–	*4*	–	*4*	*(1)*	–	*(1)*	–	–	–	–	–	*3*
8	Households	116,467	*112,399*	*4,068*	1,202	–	*1,202*	(462)	*(77)*	*(385)*	(277)	–	*(277)*	–	101,300	694
9	**Debt securities**	20,269	*20,269*	–	–	–	–	–	–	–	–	–	–	–	–	–
10	Central banks	531	*531*	–	–	–	–	–	–	–	–	–	–	–	–	–
11	General governments	17,058	*17,058*	–	–	–	–	–	–	–	–	–	–	–	–	–
12	Credit institutions	2,311	*2,311*	–	–	–	–	–	–	–	–	–	–	–	–	–
13	Other financial corporations	369	*369*	–	–	–	–	–	–	–	–	–	–	–	–	–
15	**Off-balance-sheet exposures**	66,875	*62,068*	*2,609*	410	–	*384*	(48)	*(28)*	*(20)*	(20)	–	*(20)*	–	10,834	18
18	Credit institutions	31	*29*	–	–	–	–	–	–	–	–	–	–	–	–	–
19	Other financial corporations	1,212	*1,073*	*101*	1	–	*1*	–	–	–	–	–	–	–	61	–
20	Non-financial corporations	28,263	*23,968*	*2,138*	330	–	*304*	(42)	*(22)*	*(20)*	(20)	–	*(20)*	–	5,965	14
21	Households	37,369	*36,998*	*370*	79	–	*79*	(6)	*(6)*	–	–	–	–	–	4,808	4
22	**Total**	309,460	*291,474*	*15,788*	3,616	–	*3,590*	(890)	*(244)*	*(646)*	(859)	–	*(859)*	(45)	145,771	1,437

Concentration risk

Concentrations of credit risk arise when a number of counterparties or exposures have comparable economic characteristics, or such counterparties are engaged in similar activities or operate in the same geographical areas or industry sectors so that their collective ability to meet contractual obligations is uniformly affected by changes in economic, political or other conditions.

We use a number of controls and measures to minimise undue concentration of exposure in our portfolios across industries. These include portfolio and counterparty limits, approval and review controls, and stress testing. The following tables present information on the concentration of exposures by geography and industry.

Table 31: Geographical breakdown of exposures (CRB-C)

		Net carrying values[1,2]				
		UK	Other Europe	United States of America	Other geographical areas	Total
		£m	£m	£m	£m	£m
	IRB approach exposure classes					
1	Central governments and central banks	**102**	**—**	**5,630**	**864**	**6,596**
2	Institutions	**838**	**95**	**—**	**74**	**1,007**
3	Corporates	**84,579**	**3,564**	**918**	**1,342**	**90,403**
4	Retail	**158,366**	**212**	**114**	**329**	**159,021**
6	**Total IRB approach**	**243,885**	**3,871**	**6,662**	**2,609**	**257,027**
	Standardised approach exposure classes					
7	Central governments and central banks	**43,831**	**4,414**	**—**	**—**	**48,245**
8	Regional governments or local authorities	**—**	**256**	**—**	**—**	**256**
9	Public sector entities	**—**	**1,023**	**—**	**—**	**1,023**
12	Institutions	**210**	**19**	**173**	**374**	**776**
13	Corporates	**416**	**44**	**2**	**14**	**476**
14	Retail	**855**	**—**	**—**	**10**	**865**
15	Secured by mortgages on immovable property	**976**	**—**	**—**	**1**	**977**
16	Exposures in default	**72**	**—**	**—**	**—**	**72**
17	Items associated with particularly high risk	**8**	**—**	**—**	**—**	**8**
22	Other items	**514**	**—**	**—**	**—**	**514**
23	**Total standardised approach**	**46,882**	**5,756**	**175**	**399**	**53,212**
	At 31 Dec 2019	**290,767**	**9,627**	**6,837**	**3,008**	**310,239**
	IRB approach exposure classes					
1	Central governments and central banks	—	—	4,423	1,738	6,161
2	Institutions	471	204	—	8	683
3	Corporates	86,272	3,700	1,175	1,391	92,538
4	Retail	154,132	162	118	221	154,633
6	Total IRB approach	240,875	4,066	5,716	3,358	254,015
	Standardised approach exposure classes					
7	Central governments and central banks	36,295	2,310	—	—	38,605
8	Regional governments or local authorities	—	182	—	—	182
9	Public sector entities	—	832	—	—	832
12	Institutions	467	8	214	300	989
13	Corporates	447	146	2	19	614
14	Retail	847	—	—	1	848
15	Secured by mortgages on immovable property	292	1	—	1	294
16	Exposures in default	60	3	—	—	63
17	Items associated with particularly high risk	8	—	—	—	8
22	Other items	617	—	—	—	617
23	Total standardised approach	39,033	3,482	216	321	43,052
	At 31 Dec 2018	279,908	7,548	5,932	3,679	297,067

1 *Amounts shown by geographical region in this table are based on the country of residence of the counterparty.*
2 *Securitisation positions and non-credit obligation assets are not included in this table.*

Table 32: Concentration of exposures by industry or counterparty types (CRB-D) (continued)

	Net carrying values[1]	Agriculture £m	Mining and oil extraction £m	Manu-facturing £m	Utilities £m	Water supply £m	Construction £m	Wholesale & retail trade £m	Transpor-tation & storage £m	Accom-modation & food services £m	Infor-mation & commun-ication £m	Financial & insurance £m
	IRB approach											
1	Central governments and central banks	–	–	–	–	–	–	–	–	–	–	140
2	Institutions	–	–	–	–	–	–	–	–	–	–	935
3	Corporates	3,463	1,623	12,956	816	522	3,384	15,817	2,552	7,763	564	2,091
4	Retail	728	6	375	9	2	76	444	46	218	9	81
6	**Total IRB approach**	4,191	1,629	13,331	825	524	3,460	16,261	2,598	7,981	573	3,247
	STD approach											
7	Central governments and central banks	–	–	–	–	–	–	–	–	–	–	37,896
8	Regional governments or local authorities	–	–	–	–	–	–	–	–	–	–	38
9	Public sector entities	–	–	–	–	–	–	–	–	–	–	581
10	Multilateral development banks	–	–	–	–	–	–	–	–	–	–	–
11	International organisations	–	–	–	–	–	–	–	–	–	–	–
12	Institutions	–	–	–	–	–	–	–	–	–	–	776
13	Corporates	10	–	138	–	–	3	86	2	20	1	77
14	Retail	4	1	52	–	–	4	40	19	2	–	–
15	Secured by mortgages on immovable property	–	–	–	–	–	–	–	–	–	–	–
16	Exposures in default	–	–	–	–	–	–	–	–	–	–	–
17	Items associated with particularly high risk	–	–	–	–	–	–	–	–	–	–	–
18	Covered bonds	–	–	–	–	–	–	–	–	–	–	–
19	Claims on institutions and corporates with a short-term credit assessment	–	–	–	–	–	–	–	–	–	–	–
20	Collective investment undertakings	–	–	–	–	–	–	–	–	–	–	–
21	Equity exposures	–	–	–	–	–	–	–	–	–	–	–
22	Other exposures	–	–	–	–	–	–	–	–	–	–	514
23	**Total STD approach**	14	1	190	–	–	7	126	21	22	1	39,882
24	**At 31 Dec 2019**	4,205	1,630	13,521	825	524	3,467	16,387	2,619	8,003	574	43,129

	Net carrying values[1]	Real estate £m	Professional activities £m	Administ-rative service £m	Public admin & defence £m	Education £m	Human health & social work £m	Arts & entertain-ment £m	Other services £m	Personal £m	Extra-territorial bodies £m	Total £m
	IRB approach											
1	Central governments and central banks	–	–	–	5,784	–	–	–	–	–	672	6,596
2	Institutions	–	–	–	–	–	–	–	–	–	72	1,007
3	Corporates	18,295	5,912	8,825	24	1,177	1,790	1,853	973	–	3	90,403
4	Retail	–	–	–	2	189	110	71	65	156,590	–	159,021
6	**Total IRB approach**	18,295	5,912	8,825	5,810	1,366	1,900	1,924	1,038	156,590	747	257,027
	STD approach											
7	Central governments and central banks	–	–	–	10,348	–	–	1	–	–	–	48,245
8	Regional governments or local authorities	–	–	–	218	–	–	–	–	–	–	256
9	Public sector entities	–	–	–	442	–	–	–	–	–	–	1,023
12	Institutions	–	–	–	–	–	–	–	–	–	–	776
13	Corporates	132	1	3	–	–	1	1	1	–	–	476
14	Retail	–	7	22	–	–	1	2	3	708	–	865
15	Secured by mortgages on immovable property	–	–	–	–	–	–	–	–	977	–	977
16	Exposures in default	12	–	–	–	–	–	–	–	60	–	72
17	Items associated with particularly high risk	–	–	–	–	–	–	–	–	8	–	8
22	Other exposures	–	–	–	–	–	–	–	–	–	–	514
23	**Total STD approach**	144	8	25	11,008	–	2	4	4	1,753	–	53,212
24	**At 31 Dec 2019**	18,439	5,920	8,850	16,818	1,366	1,902	1,928	1,042	158,343	747	310,239

Table 32: Concentration of exposures by industry or counterparty types (CRB-D) (continued)

	Net carrying values[1]	Agriculture	Mining and oil extraction	Manufac-turing	Utilities	Water supply	Construction	Wholesale & retail trade	Transpor-tation & storage	Accom-modation & food services	Infor-mation & commun-ication	Financial & insurance
		£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
	IRB approach exposure classes											
1	Central governments and central banks	—	—	—	—	—	—	—	—	—	—	232
2	Institutions	—	—	—	—	—	—	—	—	—	—	683
3	Corporates	3,486	1,680	14,007	788	638	3,935	15,394	2,628	7,841	510	2,083
4	Retail	728	6	283	9	1	76	469	63	230	8	89
6	Total IRB approach	4,214	1,686	14,290	797	639	4,011	15,863	2,691	8,071	518	3,087
	Standardised approach exposure classes											
7	Central governments and central banks	—	—	—	—	—	—	—	—	—	—	33,352
8	Regional governments or local authorities	—	—	—	—	—	—	—	—	—	—	—
9	Public sector entities	—	—	—	—	—	—	—	—	—	—	832
12	Institutions	—	—	—	—	—	—	—	—	—	—	989
13	Corporates	7	—	56	—	—	2	69	2	29	—	166
14	Retail	4	—	34	—	—	4	27	16	3	1	—
15	Secured by mortgages on immovable property	—	—	—	—	—	—	—	—	—	—	9
16	Exposures in default	—	—	3	—	—	—	5	—	—	—	—
17	Items associated with particularly high risk	—	—	—	—	—	—	—	—	—	—	—
22	Other exposures	—	—	—	—	—	—	—	—	—	—	617
23	Total STD approach	11	—	93	—	—	6	101	18	32	1	35,965
24	At 31 Dec 2018	4,225	1,686	14,383	797	639	4,017	15,964	2,709	8,103	519	39,052

	Net carrying values[1]	Real estate	Professional activities	Administ-rative service	Public admin & defence	Education	Human health & social work	Arts & entertain-ment	Other services	Personal	Extra-territorial bodies	Total
		£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
	IRB approach exposure classes											
1	Central governments and central banks	—	—	—	5,379	—	—	—	—	—	550	6,161
2	Institutions	—	—	—	—	—	—	—	—	—	—	683
3	Corporates	17,967	5,652	9,602	17	1,228	1,890	2,368	823	—	1	92,538
4	Retail	167	4	4	1	43	114	81	67	152,190	—	154,633
6	Total IRB approach	18,134	5,656	9,606	5,397	1,271	2,004	2,449	890	152,190	551	254,015
	STD approach exposure classes											
7	Central governments and central banks	—	—	—	5,252	—	—	1	—	—	—	38,605
8	Regional governments or local authorities	—	—	—	182	—	—	—	—	—	—	182
9	Public sector entities	—	—	—	—	—	—	—	—	—	—	832
12	Institutions	—	—	—	—	—	—	—	—	—	—	989
13	Corporates	16	96	155	—	1	13	1	1	—	—	614
14	Retail	—	6	10	—	—	—	1	4	738	—	848
15	Secured by mortgages on immovable property	—	—	—	—	—	—	—	—	285	—	294
16	Exposures in default	—	—	—	—	—	—	—	—	55	—	63
17	Items associated with particularly high risk	—	—	—	—	—	—	—	—	8	—	8
22	Other exposures	—	—	—	—	—	—	—	—	—	—	617
23	Total STD approach	16	102	165	5,434	1	13	3	5	1,086	—	43,052
24	At 31 Dec 2018	18,150	5,758	9,771	10,831	1,272	2,017	2,452	895	153,276	551	297,067

1 Securitisation positions and non-credit obligation assets are not included in this table.

Table 33: Maturity of on-balance sheet exposures

		Net carrying values[1]					
		On demand	Less than 1 year	Between 1 and 5 years	More than 5 years	Undated	Total
			£m	£m	£m	£m	£m
	IRB approach						
1	Central governments and central banks	**—**	**186**	**4,587**	**1,823**	**—**	**6,596**
2	Institutions	**123**	**53**	**680**	**28**	**—**	**884**
3	Corporates	**9,239**	**12,072**	**31,970**	**8,614**	**—**	**61,895**
4	Retail	**8,451**	**1,139**	**8,242**	**100,519**	**—**	**118,351**
6	**Total IRB approach**	**17,813**	**13,450**	**45,479**	**110,984**	**—**	**187,726**
	Standardised approach						
7	Central governments and central banks	**33,735**	**7,961**	**2,004**	**4,329**	**215**	**48,244**
8	Regional government or local authorities	**—**	**38**	**218**	**—**	**—**	**256**
9	Public sector entities	**—**	**170**	**853**	**—**	**—**	**1,023**
12	Institutions	**—**	**776**	**—**	**—**	**—**	**776**
13	Corporates	**10**	**188**	**71**	**17**	**—**	**286**
14	Retail	**69**	**105**	**291**	**21**	**—**	**486**
15	Secured by mortgages on immovable property	**—**	**23**	**5**	**930**	**—**	**958**
16	Exposures in default	**3**	**18**	**43**	**7**	**—**	**71**
17	Items associated with particularly high risk	**—**	**8**	**—**	**—**	**—**	**8**
22	Other items	**—**	**504**	**10**	**—**	**2**	**516**
23	**Total standardised approach**	**33,817**	**9,791**	**3,495**	**5,304**	**217**	**52,624**
24	**At 31 Dec 2019**	**51,630**	**23,241**	**48,974**	**116,288**	**217**	**240,350**
	IRB approach						
1	Central governments and central banks	—	821	4,742	598	—	6,161
2	Institutions	131	85	407	—	—	623
3	Corporates	10,108	11,801	32,353	8,771	—	63,033
4	Retail	8,550	1,047	8,072	94,427	—	112,096
6	Total IRB approach	18,789	13,754	45,574	103,796	—	181,913
	Standardised approach						
7	Central governments and central banks	32,472	1,553	1,869	2,456	254	38,604
8	Regional government or local authorities	—	106	76	—	—	182
9	Public sector entities	—	133	662	37	—	832
12	Institutions	—	989	—	—	—	989
13	Corporates	105	105	316	13	—	539
14	Retail	80	58	293	13	—	444
15	Secured by mortgages on immovable property	—	29	23	200	—	252
16	Exposures in default	3	7	46	7	—	63
17	Items associated with particularly high risk	—	8	—	—	—	8
22	Other items	—	603	11	—	3	617
23	Total standardised approach	32,660	3,591	3,296	2,726	257	42,530
24	At 31 Dec 2018	51,449	17,345	48,870	106,522	257	224,443

1 *Securitisation positions and non-credit obligation assets are not included in this table.*

Qualitative disclosures on banks' use of external credit ratings under the standardised approach for credit risk

The standardised approach is applied where exposures do not qualify for use of an IRB approach and/or where an exemption from IRB has been granted. The standardised approach requires banks to use risk assessments prepared by external credit assessment institutions ('ECAIs') or ECAs to determine the risk weightings applied to rated counterparties.

ECAI risk assessments are used within the group as part of the determination of risk weightings for the following classes of exposure:

- central governments and central banks;
- regional governments and local authorities;
- institutions;
- corporates;
- securitisation positions; and
- short-term claims on institutions and corporates.

We have nominated three ECAIs for this purpose – Moody's Investor Service ('Moody's'), Standard and Poor's rating agency ('S&P') and Fitch Ratings ('Fitch'). In addition to this, we use Dominion Bond Rating Service ('DBRS') specifically for securitisation positions.

We have not nominated ECAs.

Data files of external ratings from the nominated ECAIs are matched with customer records in our centralised credit database.

When calculating the risk-weighted value of an exposure using ECAI risk assessments, risk systems identify the customer in question and look up the available ratings in the central database according to the rating selection rules. The systems then apply the prescribed credit quality step mapping to derive the relevant risk weight. All other exposure classes are assigned risk weightings as prescribed in the PRA's Rulebook.

Credit quality step	Moody's assessment	S&P's assessment	Fitch's assessment	DBRS assessment
1	Aaa to Aa3	AAA to AA–	AAA to AA–	AAA to AAL
2	A1 to A3	A+ to A–	A+ to A–	AH to AL
3	Baa1 to Baa3	BBB+ to BBB–	BBB+ to BBB–	BBBH to BBBL
4	Ba1 to Ba3	BB+ to BB–	BB+ to BB–	BBH to BBL
5	B1 to B3	B+ to B–	B+ to B–	BH to BL
6	Caa1 and below	CCC+ and below	CCC+ and below	CCCH and below

Exposures to, or guaranteed by, central governments and central banks of European Economic Area ('EEA') states and denominated in local currency are risk-weighted at 0% using the standardised approach, provided they would be eligible under that approach for a 0% risk weighting.

Table 41 provides further detail on the risk weighting of our standardised non-counterparty credit exposures.

Application of the IRB Approach

Our IRB credit risk rating framework incorporates obligor likelihood to default expressed in PD, and loss severity in the event of default expressed in EAD and LGD. These measures are used to calculate regulatory EL and capital requirements. They are also used with other inputs to inform rating assessments for the purposes of credit approval and many other purposes, for example:

- credit approval and monitoring: IRB models are used in the assessment of customer and portfolio risk in lending decisions;
- risk appetite: IRB measures are an important element in identifying risk exposure at facility, customer, sector and portfolio level;
- pricing: IRB parameters are used in pricing tools for new transactions and reviews; and
- economic capital and portfolio management: IRB parameters are used in the economic capital model that has been implemented across the HSBC Group.

Credit risk models governance

All new or materially changed IRB capital models require the PRA's approval, and throughout the group such models fall directly under the remit of the global functional Model Oversight Committee ('MOC'), operating in line with HSBC UK's model risk policy, and under the oversight of the Global MOC. Additionally, the global functional MOCs are responsible for the approval of stress testing models used for regulatory stress testing exercises such as those carried out by the EBA and the BoE.

Both the Wholesale and RBWM MOCs require all credit risk models for which they are responsible to be approved by delegated senior managers with notification to the committees that retain the responsibility for oversight.

Global Risk sets internal standards for the development, validation, independent review, approval, implementation and performance monitoring of credit risk rating models. Independent reviews of our models are performed by our Independent Model Review function which is separate from our Risk Analytics functions that are responsible for the development of models.

Compliance with Group standards is subject to examination by Risk oversight and review from within the Risk function itself, and by Internal Audit.

Roll-out of the IRB approach

At 31 December 2019, 79% of the exposures were treated under AIRB, 4% under FIRB and 17% under the standardised approach.

Dilution risk

Dilution risk is the risk that an amount receivable is reduced through cash or non-cash credit to the obligor, and arises mainly from factoring and invoice discounting transactions.

Where there is recourse to the seller, we treat these transactions as loans secured by the collateral of the debts purchased and do not report dilution risk for them. For our non-recourse portfolio, we do not report any dilution risk as we obtain an indemnity from the seller that indemnifies us against this risk. Moreover, factoring transactions involve lending at a discount to the face value of the receivables that provides protection against dilution risk.

Wholesale risk

The wholesale risk rating system

This section describes how we operate our credit risk analytical models and use IRB metrics in the wholesale customer business.

PDs for wholesale customer segments (that is central governments and central banks, financial institutions and corporate customers) and for certain individually assessed personal customers are derived from a Customer Risk Rating '(CRR') master scale of 23 grades. Of these, 21 are non-default grades representing varying degrees of strength of financial condition, and two are default grades. Each CRR has a PD range associated with it as well as a mid-point PD.

The score generated by a credit risk rating model for the obligor is mapped to a corresponding PD and master-scale CRR. The CRR is then reviewed by a credit approver who, taking into account information such as the most recent events and market data, makes the final decision on the rating. The rating assigned reflects the approver's overall view of the obligor's credit standing.

The mid-point PD associated with the finally assigned CRR is then used in the regulatory capital calculation.

Relationship managers may propose a different CRR from that indicated through an override process which must be approved by the Credit function. Overrides for each model are recorded and monitored as part of the model management process.

The CRR is assigned at an obligor level, which means that separate exposures to the same obligor are generally subject to a single, consistent rating. Unfunded credit risk mitigants, such as guarantees, may also influence the final assignment of a CRR to an obligor. The effect of unfunded risk mitigants is considered for IRB and standardised approaches in table 23.

If an obligor is in default on any material credit obligation to the group, all of the obligor's facilities from the group are considered to be in default.

Under the IRB approach, obligors are grouped into grades that have similar PD or anticipated default frequency. The anticipated default frequency may be estimated using all relevant information at the relevant date (PIT rating system) or be free of the effects of the credit cycle (TTC rating system).

We generally utilise a hybrid approach of PIT and through the cycle ('TTC'). That is, while models are calibrated to long-run default rates, obligor ratings are reviewed annually, or more frequently if necessary, to reflect changes in their circumstances and/or their economic operating environment.

Our policy requires approvers to downgrade ratings on expectations, but to upgrade them only on performance. This leads to expected defaults typically exceeding actual defaults.

For EAD and LGD estimation, operating entities are permitted, subject to overview by Risk, to use our own modelling approaches to suit conditions in their jurisdictions. Risk provides co-ordination, benchmarks, and promotion of best practice on EAD and LGD estimation.

EAD is estimated to a 12-month forward time horizon and represents the current exposure, plus an estimate for future increases in exposure and the realisation of contingent exposures post-default.

LGD is based on the effects of facility and collateral structure on outcomes post-default. This includes such factors as the type of client, the facility seniority, the type and value of collateral, past recovery experience and priority under law. It is expressed as a percentage of EAD.

Wholesale models

To determine credit ratings for the different types of wholesale obligor, multiple models and scorecards are used for PD, LGD, and EAD. These models may be differentiated by customer segment and/or customer size. For example, PD models are differentiated

for all of our key customer segments, including large, medium and small-sized corporates.

The two major drivers of model methodology are the nature of the portfolio and the availability of internal or external data on historical defaults and risk factors. For some historically low-default portfolios, e.g. sovereign and financial institutions, a model will rely more heavily on external data and/or the input of an expert panel. Where sufficient data is available, models are built on a statistical basis, although the input of expert judgement may still form an important part of the overall model development methodology.

Our approach to EAD and LGD encompasses global models for central governments and central banks, and for institutions, as exposures to these customer types are managed centrally by Global Risk. The PRA requires all firms to apply an LGD floor of 45% for senior unsecured exposure to sovereign entities. This floor was applied to reflect the relatively few loss observations across all firms in relation to these obligors. This floor is applied for the purposes of regulatory capital reporting.

In the same guidance, the PRA also indicated that it considered income-producing real estate to be an asset class that would be difficult to model. As a result, RWAs for our UK CRE portfolio are calculated using the supervisory slotting approach. Under the supervisory slotting approach the bank allocates exposures to one of five categories. Each category then has fixed pre-determined RWA and EL percentages.

None of the EAD models currently require a calibration for a downturn, as analysis shows that utilisation decreases during a downturn because credit stress is accompanied by more intensive limit monitoring and facility reduction.

Table 34 sets out the key characteristics of the significant wholesale credit risk models that drive the capital calculation split by regulatory wholesale asset class, with their associated RWAs, including the number of models for each component, the model method or approach and the number of years of loss data used.

Table 34: Wholesale IRB credit risk models

Portfolio	Exposure class	RWA £m	Compo-nent model	Number of material component models	Model description and methodology	Number of years loss data	Regulatory Floors
Large corporates (HSBC Group-wide Model)	Corporates, institutions	45.3	PD	1	A statistical model built on 15 years of data. The model uses financial information, macroeconomic information and market-driven data, and is complemented by a qualitative assessment.	15	PD >0.03%
UK corporates			PD	3	Corporates that fall below the global large corporate threshold are rated through UK PD models, which reflect UK country specific circumstances and cover Mid-sized and Small Corporates. These models use financial information, behavioural data and qualitative information to derive a statistically built PD.	>10	PD >0.03%
All corporates			LGD	2	UK statistical models covering all corporates, including global large corporates, developed using historical loss/recovery data and various data inputs, including collateral information, customer type and geography.	>7	Floored at foundation IRB LGD value
			EAD	1	UK statistical models covering all corporates, including global large corporates, developed using historical utilisation information and various data inputs, including product type and geography.	>7	EAD must be at least equal to the current utilisation of the balance at account level

1 *Excludes specialised lending exposures subject to supervisory slotting approach (see table 40).*

The UK corporate models are used by all UK subsidiaries of HSBC Group (incl. HSBC UK Bank plc and HSBC Bank plc) and therefore information provided in the following table is on this basis.

Table 35: IRB models – estimated and actual values (wholesale)[1]

		At 31 December 2019					
		PD[2]		LGD[3]		EAD[4]	
		Estimated	Actuals	Estimated[5]	Actuals[5]	Estimated	Actuals
	Footnotes	%	%	%	%	%	%
Corporates models	6	1.54	1.49	29.63	24.87	1.18	0.78

1 *Data represents an annual view, analysed at 30 September.*
2 *Estimated PD for all models is average PD calculated on the number of obligors covered by the model(s).*
3 *Estimated and actual LGD represent defaulted populations. Average LGD values are EAD-weighted.*
4 *Expressed as a percentage of total EAD, which includes all defaulted and non-defaulted exposures for the relevant population.*
5 *For corporates models, estimated and actual LGD represent the average LGD for customers who have defaulted and been resolved in the period.*
6 *Covers the combined populations of the global large corporates model, all UK IRB models for large, medium and small corporates, and non-bank financial institutions. The estimated and observed PDs were calculated only for unique obligors.*

The following table sets out IRB exposures by obligor grade for central governments and central banks, institutions and corporates, all of which are assessed using our 23-grade CRR master scale. We benchmark the master scale against the ratings of external rating agencies. Each CRR band is associated with an external rating grade by reference to long-run default rates for that grade, represented by the average of issuer-weighted historical default rates. The correspondence between the agency long-run default rates and the PD ranges of our master scale is obtained by matching a smoothed curve based on those default rates with our master scale reference PDs. This association between internal and external ratings is indicative and may vary over time. In these tables, the ratings of S&P are cited for illustration purposes, although we also benchmark against other agencies' ratings in an equivalent manner.

Table 36: Wholesale IRB exposure – by obligor grade

			Central governments and central			Institutions			Corporates[2]		
Default risk	CRR	PD range	Average net carrying values[1]	Undrawn commit-ments	Mapped external rating	Average net carrying values[1]	Undrawn commit-ments	Mapped external rating	Average net carrying values[1]	Undrawn commit-ments	Mapped external rating
		%	£m	£m		£m	£m		£m	£m	
Default risk											
Minimal	0.1	0.000 to 0.010	6,219	–	AAA	95	–	AAA	–	–	AAA
	1.1	0.011 to 0.028	598	–	AA+ to AA	190	21	AA+ to AA	84	1	AA+ to AA
	1.2	0.029 to 0.053	–	–	AA- to A+	178	49	AA- to A+	1,025	458	AA- to A+
Low	2.1	0.054 to 0.095	–	–	A	87	–	A	2,860	2,360	A
	2.2	0.096 to 0.169	–	–	A-	408	51	A-	8,270	4,295	A-
Satisfactory	3.1	0.170 to 0.285	–	–	BBB+	17	–	BBB+	12,704	5,009	BBB+
	3.2	0.286 to 0.483	–	–	BBB	2	–	BBB	11,568	3,331	BBB
	3.3	0.484 to 0.740	–	–	BBB-	–	–	BBB-	8,749	2,901	BBB-
Fair	4.1	0.741 to 1.022	–	–	BB+	–	–	BB+	7,655	1,388	BB+
	4.2	1.023 to 1.407	–	–	BB	2	2	BB	6,454	1,466	BB
	4.3	1.408 to 1.927	–	–	BB-	–	–	BB-	5,394	1,522	BB-
Moderate	5.1	1.928 to 2.620	–	–	BB-	–	–	BB-	4,356	1,369	BB-
	5.2	2.621 to 3.579	–	–	B+	–	–	B+	3,438	1,087	B+
	5.3	3.580 to 4.914	–	–	B	–	–	B	2,674	828	B
Significant	6.1	4.915 to 6.718	–	–	B	–	–	B	1,321	366	B
	6.2	6.719 to 8.860	–	–	B-	2	–	B-	798	134	B-
High	7.1	8.861 to 11.402	–	–	CCC+	–	–	CCC+	477	73	CCC+
	7.2	11.403 to 15.000	–	–	CCC+	–	–	CCC+	190	34	CCC+
Special Management	8.1	15.001 to 22.000	–	–	CCC+	–	–	CCC+	165	40	CCC+
	8.2	22.001 to 50.000	–	–	CCC+	–	–	CCC+	56	28	CCC+
	8.3	50.001 to 99.999	–	–	CCC to C	–	–	CCC to C	45	8	CCC to C
Default	9/10	100.000	–	–	Default	–	–	Default	997	185	Default
At 31 December 2019			6,817	–		981	123		79,280	26,883	

1 Average net carrying value are calculated by aggregating the net carrying values of the last five quarters and dividing by five.
2 Corporates excludes specialised lending exposures subject to supervisory slotting approach.

PD, LGD, RWA and exposure by country/territory

The following tables analyse the exposure-weighted average PD, exposure-weighted average LGD, RWAs and exposure by location of the lending subsidiary or branch. They exclude specialised lending exposures subject to the supervisory slotting approach, securitisation exposures and non-credit obligations.

All exposures are reported as UK, based on the location of the lender.

Table 37: PD, LGD, RWA and exposure by country/territory

	At 31 December 2019			
	Exposure-weighted average PD	Exposure-weighted average LGD	Exposure value	RWAs
	%	%	£m	£m
Wholesale IRB Advanced approach				
All asset classes	3.00	38.1	63,434	39,784
Central governments and central banks	0.01	45.0	6,596	683
Institutions	0.07	27.4	938	134
Corporates	3.40	37.5	55,900	38,967
Wholesale IRB Foundation approach				
All asset classes	2.83	39.5	9,280	5,665
Corporates	2.83	39.5	9,280	5,665
Retail IRB approach				
All asset classes	1.35	31.3	149,241	20,075
Retail secured by mortgages on immovable property SME	4.25	36.8	1,528	830
Retail secured by mortgages on immovable property Non-SME	0.94	15.4	111,175	5,404
Retail QRRE	1.69	79.3	26,185	5,708
Other SME	8.10	81.3	3,028	2,905
Other non-SME	2.99	79.5	7,325	5,228

Table 38: IRB Advanced – Credit risk exposures by portfolio and PD range (CR6)

PD scale	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	RWAs	RWA density	Expected loss	Value adjustments and provisions
	£m	£m	%	£m	%		%	years	£m	%	£m	£m
AIRB – Central government and central banks												
0.00 to <0.15	6,596	–	24.6	6,596	0.01	17	45.0	3.57	683	10	–	–
0.15 to <0.25	–	–	–	–	–	–	–	–	–	–	–	–
0.25 to <0.50	–	–	–	–	–	–	–	–	–	–	–	–
0.50 to <0.75	–	–	–	–	–	–	–	–	–	–	–	–
0.75 to <2.50	–	–	–	–	1.20	1	45.0	1.00	–	96	–	–
2.50 to <10.00	–	–	–	–	–	–	–	–	–	–	–	–
10.00 to <100.00	–	–	–	–	–	–	–	–	–	–	–	–
100.00 (Default)	–	–	–	–	–	–	–	–	–	–	–	–
Sub-total	6,596	–	24.6	6,596	0.01	18	45.0	3.57	683	10	–	–
AIRB – Institutions												
0.00 to <0.15	884	122	43.4	937	0.07	281	27.4	2.15	133	14	–	1
0.15 to <0.25	–	–	57.0	–	0.22	3	47.1	1.00	–	40	–	–
0.25 to <0.50	–	–	50.0	–	0.37	5	45.0	5.00	–	93	–	–
0.50 to <0.75	–	–	–	–	0.63	3	45.0	1.00	–	71	–	–
0.75 to <2.50	–	2	7.1	1	1.20	5	44.9	1.96	1	110	–	–
2.50 to <10.00	–	–	–	–	3.05	1	45.0	1.00	–	133	–	–
10.00 to <100.00	–	–	–	–	–	–	–	–	–	–	–	–
100.00 (Default)	–	–	–	–	–	–	–	–	–	–	–	–
Sub-total	884	124	43.0	938	0.07	298	27.4	2.15	134	14	–	1
AIRB – Corporate – Specialised Lending (excluding Slotting)[1]												
0.00 to <0.15	7	6	57.0	10	0.13	1	18.0	1.82	1	12	–	–
0.15 to <0.25	158	59	4.5	161	0.22	3	27.6	4.68	70	43	–	–
0.25 to <0.50	57	75	42.8	89	0.37	1	35.0	2.81	38	42	–	–
0.50 to <0.75	104	6	24.9	105	0.63	6	18.4	4.32	45	43	–	–
0.75 to <2.50	30	73	54.2	69	1.52	3	37.9	4.94	80	116	1	1
2.50 to <10.00	–	–	–	–	–	–	–	–	–	–	–	–
10.00 to <100.00	–	–	–	–	–	–	–	–	–	–	–	–
100.00 (Default)	–	–	–	–	–	–	–	–	–	–	–	–
Sub-total	356	219	36.2	434	0.56	14	28.3	4.18	234	54	1	1
AIRB – Corporate – Other												
0.00 to <0.15	5,673	6,962	53.3	9,407	0.11	2,900	37.7	2.57	2,807	30	5	4
0.15 to <0.25	6,935	4,656	49.7	9,289	0.22	4,596	39.0	2.70	4,425	48	10	8
0.25 to <0.50	5,847	2,944	47.9	7,251	0.37	4,749	36.5	2.60	4,084	56	12	11
0.50 to <0.75	4,101	1,982	46.2	4,969	0.63	3,486	37.9	2.60	3,524	71	14	11
0.75 to <2.50	13,704	5,184	47.0	16,148	1.41	18,115	37.0	2.57	14,537	90	97	107
2.50 to <10.00	5,409	2,293	45.8	6,442	4.65	4,278	35.5	2.27	7,509	117	110	89
10.00 to <100.00	747	174	45.0	825	18.01	798	40.9	2.35	1,587	192	71	54
100.00 (Default)	1,060	170	43.9	1,135	100.00	1,218	46.6	2.16	260	23	559	284
Sub-total	43,476	24,365	49.2	55,466	3.42	40,140	37.5	2.55	38,733	70	878	568
Wholesale AIRB – Total at 31 Dec 2019[2]	51,312	24,708	49.1	63,434	3.00	40,470	38.1	2.66	39,784	63	879	570

1 *Slotting exposures are disclosed in Table 40: Specialised lending on slotting approach (CR10).*
2 *The Wholesale AIRB Total includes non-credit obligation assets amounting to £2,011m of original exposure and EAD, and £1,279m of RWAs.*

Table 39: IRB Foundation – Credit risk exposures by portfolio and PD range (CR6)

PD scale	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	RWAs	RWA density	Expected loss	Value adjust-ments and provisions^
	£m	£m	%	£m	%		%	years	£m	%	£m	£m
FIRB – Corporate – Other												
0.00 to <0.15	**1,238**	**147**	**18.9**	**1,296**	**0.09**	**254**	**43.7**	**1.99**	**321**	**25**	**1**	**1**
0.15 to <0.25	**1,149**	**295**	**0.7**	**1,148**	**0.22**	**792**	**39.6**	**1.22**	**388**	**34**	**1**	**1**
0.25 to <0.50	**1,526**	**311**	**8.1**	**1,544**	**0.37**	**947**	**38.1**	**1.12**	**691**	**45**	**3**	**2**
0.50 to <0.75	**1,322**	**913**	**1.9**	**1,332**	**0.63**	**659**	**39.2**	**0.97**	**760**	**57**	**4**	**2**
0.75 to <2.50	**2,686**	**487**	**1.7**	**2,681**	**1.38**	**2,707**	**38.8**	**0.98**	**2,065**	**77**	**18**	**13**
2.50 to <10.00	**953**	**122**	**4.6**	**959**	**4.46**	**464**	**38.7**	**0.83**	**1,124**	**117**	**19**	**11**
10.00 to <100.00	**185**	**9**	**1.9**	**185**	**16.06**	**111**	**37.8**	**0.75**	**316**	**171**	**14**	**6**
100.00 (Default)	**135**	**15**	**—**	**135**	**100.00**	**116**	**40.2**	**1.59**	**—**	**—**	**55**	**41**
Sub-total	**9,194**	**2,299**	**3.7**	**9,280**	**2.83**	**6,050**	**39.5**	**1.16**	**5,665**	**61**	**115**	**77**
FIRB – Total at 31 Dec 2019	**9,194**	**2,299**	**3.7**	**9,280**	**2.83**	**6,050**	**39.5**	**1.16**	**5,665**	**61**	**115**	**77**

^ *Figures have been prepared on an IFRS 9 transitional basis.*

Table 40: Specialised lending on slotting approach (CR10)

Regulatory categories	Remaining maturity	On-balance sheet amount	Off-balance sheet amount	Risk weight	Exposure amount	RWAs	Expected loss
		£m	£m	%	£m	£m	£m
Category 1 – Strong	Less than 2.5 years	**4,836**	**807**	**50**	**5,231**	**2,615**	**—**
	Equal to or more than 2.5 years	**2,988**	**729**	**70**	**3,320**	**2,314**	**14**
Category 2 – Good	Less than 2.5 years	**690**	**64**	**70**	**721**	**503**	**3**
	Equal to or more than 2.5 years	**372**	**58**	**90**	**391**	**347**	**3**
Category 3 – Satisfactory	Less than 2.5 years	**95**	**6**	**115**	**97**	**103**	**3**
	Equal to or more than 2.5 years	**53**	**2**	**115**	**54**	**55**	**2**
Category 4 – Weak	Less than 2.5 years	**40**	**1**	**250**	**41**	**97**	**3**
	Equal to or more than 2.5 years	**3**	**—**	**250**	**3**	**7**	**—**
Category 5 – Default	Less than 2.5 years	**371**	**9**	**—**	**549**	**—**	**274**
	Equal to or more than 2.5 years	**15**	**—**	**—**	**27**	**—**	**13**
At 31 Dec 2019	Less than 2.5 years	**6,032**	**887**		**6,639**	**3,318**	**283**
	Equal to or more than 2.5 years	**3,431**	**789**		**3,795**	**2,723**	**32**
Category 1 – Strong	Less than 2.5 years	4,130	912	50	4,539	2,261	—
	Equal to or more than 2.5 years	4,001	750	70	4,236	2,950	16
Category 2 – Good	Less than 2.5 years	648	78	70	669	467	3
	Equal to or more than 2.5 years	351	31	90	359	318	3
Category 3 – Satisfactory	Less than 2.5 years	121	17	115	128	140	3
	Equal to or more than 2.5 years	206	4	115	208	227	6
Category 4 – Weak	Less than 2.5 years	43	1	250	45	103	4
	Equal to or more than 2.5 years	17	1	250	19	43	2
Category 5 – Default	Less than 2.5 years	175	8	—	313	—	156
	Equal to or more than 2.5 years	41	—	—	50	—	25
At 31 Dec 2018	Less than 2.5 years	5,117	1,016		5,694	2,971	166
	Equal to or more than 2.5 years	4,616	786		4,872	3,538	52

Table 41: Standardised exposure – by credit quality step

	At 31 Dec 2019		
	Original exposure[1]	Exposure value	RWAs^
	£m	£m	£m
Central governments and central banks			
Credit quality step 1	48,024	48,024	–
Credit quality step unrated	220	220	537
Total	48,244	48,244	537
Institutions			
Credit quality step unrated	776	776	163
Total	776	776	163
Corporates			
Credit quality step 1	–	97	19
Credit quality step unrated	476	280	275
Total	476	377	294

1 Figures presented are based on the credit quality step of the immediate borrower.
^ Figures have been prepared on an IFRS 9 transitional basis.

Retail risk

Retail risk rating systems

The most material risk rating systems for which we disclose details of modelling methodology and performance data represent RWAs of £13.0m or 65% of the total retail IRB RWA.

PD models are developed using statistical estimation based on a minimum of five years of historical data. Where models are developed based on a PIT approach, the model outputs become effectively TTC through the application of buffer or model adjustments as agreed with the PRA.

EAD models are also developed using at least five years of historical observations and typically adopt one of two approaches:

- For closed-end products without the facility for additional drawdowns, EAD is estimated as the outstanding balance of accounts at the time of observation.
- For products with the facility for additional drawdowns, EAD is estimated as the outstanding balance of accounts at the time of observation plus a credit conversion factor applied to the undrawn portion of the facility.

LGD estimates have more variation, particularly in respect of the time period that is used to quantify economic downturn assumptions.

Table 42: Material retail IRB risk rating systems

Portfolio	Exposure class	RWA £bn	Component model	Number of material component models	Model description and methodology	Number of years loss data[1]	Applicable Pillar 1 regulatory thresholds and overlays
UK HSBC residential mortgages	Retail – secured by mortgages on immovable property non-SME	4.06	PD	1	Statistical model built on internal behavioural data and credit bureau information. Underlying PiT model is calibrated to the latest observed PD. An adjustment is then applied to generate the long run PD based on a combination of historically observed misalignment of the underlying model and expert judgement.	7–10	PD floor of 0.03%
			LGD	1	Statistical estimates of loss and probability of possession in combination with the workout process and using the 1990's recession in benchmarking the downturn LGD.	> 10	LGD floor of 10% at portfolio level
			EAD	1	Logical model that uses the sum of the balance at observation plus further unpaid interest that could accrue before default (up to 6 payments).	7–10	EAD must at least be equal to current balance
UK First Direct residential mortgages	Retail – secured by mortgages on immovable property non-SME	0.60	PD	2	Underlying PiT PD model is a segmented scorecard. An adjustment is then applied based on observed misalignment in the underlying model (with some additional conservatism applied).	7–10	PD floor of 0.03%
			LGD	1	Underlying model is component based (LGD, forced sale haircut and the time between default and property sale). A downturn adjustment is applied through a 30% drop from peak house price plus adjustments to the other components in the model, including a 10% forced sale.	> 10	LGD floor of 10% at portfolio level
			EAD	2	There are two separate EAD models – one for standard capital repayment mortgages and one for offset mortgages which offers a revolving loan facility.	7–10	EAD must at least be equal to current balance
UK HSBC credit cards	Retail – qualifying revolving	2.28	PD	1	Statistical model built on internal behavioural data and credit bureau information. Underlying PiT model is calibrated to latest observed PD. An adjustment is then applied to generate the long run PD based on historically observed misalignment of the underlying model.	7–10	PD floor of 0.03%
			LGD	1	Statistical model based on forecasting the amount of expected future recoveries and segmented by default status	7–10	
			EAD	1	Statistical model which directly estimates the EAD for different segments of the portfolio using either balance or limit as key input.	7–10	EAD must at least be equal to current balance
UK HSBC personal loans	Retail – other non-SME	3.60	PD	1	Statistical model built on internal behavioural data and credit bureau information. Underlying PiT model is calibrated to latest observed PD. An adjustment is then applied to generate the long run PD based on historic observed misalignment of the underlying model.	7–10	PD floor of 0.03%
			LGD	1	Statistical model based on forecasting the amount of expected future recoveries and segmented by default status.	7–10	
			EAD	1	EAD = Current Balance, as this has been shown to provide suitable conservatism and accuracy	7–10	EAD must at least be equal to current balance
UK business banking	Retail – other SME	2.48	PD	1	Statistical model built on internal behavioural data and credit bureau information. Underlying PiT model is calibrated to latest observed PD. An adjustment is then applied to generate the long run PD based on historically observed misalignment of the underlying model.	7–10	PD floor of 0.03%
			LGD	2	Two sets of models – one for secured and another for unsecured exposures. The secured model uses the value to loan as a key component for estimation, while the unsecured model estimates the amount of future recoveries and undrawn portion.	7–10	
			EAD	1	Statistical model using segmentation according to limit and utilisation and estimation of the undrawn exposure.	7–10	EAD must at least be equal to current balance

Retail credit models

We disclose information on our most material models. The actual and estimated values are derived from model monitoring and calibration processes. Our analytics teams adopt back-testing criteria specific to local conditions in order to assess the accuracy of their models.

The following table presents estimated and actual values from the back-testing of our material IRB models.

The PD presented here is expressed on an obligor count basis consisting of non-defaulted obligors at the time of observation. The LGD and EAD refer to observations for the defaulted population, being the appropriate focus of an assessment of these models' performance. The LGD values represent the amount of loss as a percentage of EAD, and are calculated based on defaulted accounts that were fully resolved or have completed the modelled recovery outcome period at the reporting date. The EAD values of the defaulted exposures are presented as a percentage of the total EAD, which includes all defaulted and non-defaulted exposures for the relevant population. The regulatory PD and LGD floors (0.03% and 10% respectively) are only applied during final capital calculation and are not reflected in the estimates below.

For our residential mortgage portfolios, the estimates include required regulatory downturn adjustments. In conducting the back-testing, our residential mortgage LGD models consider repossession rates over a 36-month period starting at the date of default. For both our HSBC UK and First Direct branded residential mortgages, LGD estimates and LGD actual values remained low and stable in 2019.

Table 43: IRB models – estimated and actual values (retail)[1]

	At 31 December 2019					
	PD		LGD		EAD	
	Estimated	Actuals	Estimated	Actuals	Estimated	Actuals
	%	%	%	%	%	%
UK						
– HSBC residential mortgage	**0.33**	**0.29**	**9.17**	**0.32**	**0.29**	**0.28**
– FD residential mortgages	**0.42**	**0.34**	**7.42**	**1.85**	**0.93**	**0.74**
– HSBC credit card	**1.06**	**1.05**	**91.29**	**88.58**	**1.51**	**1.48**
– HSBC personal loans	**2.54**	**2.19**	**83.61**	**61.79**	**2.26**	**2.10**
– Business Banking (Retail SME)	**2.95**	**2.92**	**78.23**	**55.48**	**2.54**	**2.31**

1 *Data represents an annual view, analysed at September 2019*

Table 44: Retail IRB exposure – by internal PD band

		At 31 December 2019	
	PD range	Average net carrying values[1]	Undrawn commitments
	%	£m	£m
Retail SME exposure secured by mortgages on immovable property		**1,673**	**314**
Band 1	0.000 to 0.483	**363**	**93**
Band 2	0.484 to 1.022	**440**	**99**
Band 3	1.023 to 4.914	**715**	**101**
Band 4	4.915 to 8.860	**81**	**15**
Band 5	8.861 to 15.000	**32**	**3**
Band 6	15.001 to 50.000	**7**	**1**
Band 7	50.001 to 100.000	**35**	**2**
Retail non-SME exposure secured by mortgages on immovable property		**101,543**	**6,919**
Band 1	0.000 to 0.483	**95,923**	**6,420**
Band 2	0.484 to 1.022	**2,356**	**226**
Band 3	1.023 to 4.914	**1,832**	**222**
Band 4	4.915 to 8.860	**280**	**21**
Band 5	8.861 to 15.000	**145**	**3**
Band 6	15.001 to 50.000	**300**	**8**
Band 7	50.001 to 100.000	**707**	**19**
Qualifying revolving retail exposure		**38,313**	**31,065**
Band 1	0.000 to 0.483	**30,913**	**28,168**
Band 2	0.484 to 1.022	**3,460**	**1,847**
Band 3	1.023 to 4.914	**3,230**	**876**
Band 4	4.915 to 8.860	**333**	**70**
Band 5	8.861 to 15.000	**126**	**31**
Band 6	15.001 to 50.000	**108**	**32**
Band 7	50.001 to 100.000	**143**	**41**
Other retail SME exposure		**3,985**	**2,225**
Band 1	0.000 to 0.483	**818**	**753**
Band 2	0.484 to 1.022	**604**	**482**
Band 3	1.023 to 4.914	**1,883**	**793**
Band 4	4.915 to 8.860	**324**	**85**
Band 5	8.861 to 15.000	**150**	**38**
Band 6	15.001 to 50.000	**151**	**43**
Band 7	50.001 to 100.000	**55**	**31**
Other retail non-SME exposure		**6,667**	**148**
Band 1	0.000 to 0.483	**3,515**	**130**
Band 2	0.484 to 1.022	**1,210**	**5**
Band 3	1.023 to 4.914	**1,623**	**11**
Band 4	4.915 to 8.860	**175**	**—**
Band 5	8.861 to 15.000	**55**	**—**
Band 6	15.001 to 50.000	**25**	**—**
Band 7	50.001 to 100.000	**64**	**2**
Total retail exposure		**152,181**	**40,671**
Band 1	0.000 to 0.483	**131,532**	**35,564**
Band 2	0.484 to 1.022	**8,070**	**2,659**
Band 3	1.023 to 4.914	**9,283**	**2,003**
Band 4	4.915 to 8.860	**1,193**	**191**
Band 5	8.861 to 15.000	**508**	**75**
Band 6	15.001 to 50.000	**591**	**84**
Band 7	50.001 to 100.000	**1,004**	**95**

1 *Average net carrying values are calculated by aggregating the net carrying values of the last five quarters and dividing by five.*

Table 45: IRB – Credit risk exposures by portfolio and PD range (CR6)

PD scale	Original on-balance sheet gross exposure £m	Off-balance sheet exposures pre-CCF £m	Average CCF %	EAD post-CRM and post-CCF £m	Average PD %	Number of obligors	Average LGD %	Average maturity years	RWAs £m	RWA density %	Expected loss £m	Value adjustments and provisions^ £m
AIRB – Secured by mortgages on immovable property SME												
0.00 to <0.15	5	1	19.0	6	0.13	174	35.6	–	1	9	–	–
0.15 to <0.25	85	27	36.3	94	0.22	2,217	35.8	–	13	14	–	–
0.25 to <0.50	189	65	41.6	216	0.37	4,869	36.7	–	46	21	–	–
0.50 to <0.75	205	59	37.4	227	0.63	5,294	36.6	–	70	31	1	–
0.75 to <2.50	577	113	36.8	620	1.44	12,706	36.7	–	326	53	4	2
2.50 to <10.00	278	43	33.1	292	4.33	5,523	37.0	–	297	102	6	4
10.00 to <100.00	38	5	35.4	39	18.12	902	36.9	–	65	165	3	1
100.00 (Default)	33	2	34.8	34	100.00	713	39.3	–	12	35	13	4
Sub-total	1,410	315	37.3	1,528	4.25	32,398	36.8	–	830	54	27	11
AIRB – Secured by mortgages on immovable property non-SME												
0.00 to <0.15	86,480	5,270	103.1	94,884	0.06	793,380	15.7	–	2,602	3	10	11
0.15 to <0.25	5,840	840	103.1	6,885	0.23	43,472	14.9	–	469	7	2	3
0.25 to <0.50	3,072	309	103.2	3,486	0.38	23,372	14.0	–	322	9	2	2
0.50 to <0.75	1,486	149	103.2	1,682	0.62	11,216	11.9	–	185	11	1	2
0.75 to <2.50	1,925	229	103.2	2,210	1.37	15,186	10.6	–	368	17	3	4
2.50 to <10.00	683	91	103.2	797	4.67	7,210	7.6	–	205	26	3	4
10.00 to <100.00	488	11	102.6	513	31.12	5,842	9.6	–	256	50	15	12
100.00 (Default)	714	19	90.4	719	100.00	8,828	8.0	–	996	138	28	73
Sub-total	100,688	6,918	103.1	111,176	0.94	908,506	15.3	–	5,403	5	64	111
AIRB – Qualifying revolving retail exposures												
0.00 to <0.15	2,318	22,312	58.4	15,357	0.06	9,407,351	77.4	–	605	4	11	32
0.15 to <0.25	476	2,786	62.2	2,209	0.22	1,554,487	81.4	–	253	11	5	4
0.25 to <0.50	694	3,079	52.3	2,304	0.35	1,268,072	82.6	–	419	18	7	8
0.50 to <0.75	1,037	1,412	50.4	1,698	0.64	659,689	84.5	–	482	28	10	12
0.75 to <2.50	1,980	1,072	78.1	2,817	1.46	1,173,986	82.4	–	1,462	52	37	86
2.50 to <10.00	975	300	91.1	1,249	4.51	526,167	78.6	–	1,370	110	49	98
10.00 to <100.00	285	76	90.7	354	32.61	228,596	80.1	–	725	205	102	76
100.00 (Default)	193	27	26.9	197	100.00	150,172	77.5	–	392	199	112	81
Sub-total	7,958	31,064	58.8	26,185	1.69	14,968,520	79.3	–	5,708	22	333	397
AIRB – Other SME												
0.00 to <0.15	49	260	36.6	141	0.09	98,846	90.6	–	23	16	–	–
0.15 to <0.25	33	173	44.0	108	0.23	75,913	85.7	–	34	31	–	–
0.25 to <0.50	67	321	50.6	226	0.38	134,189	87.3	–	103	45	1	1
0.50 to <0.75	61	261	56.4	205	0.61	124,095	87.1	–	119	58	1	1
0.75 to <2.50	546	706	49.1	881	1.52	319,158	81.3	–	728	83	12	9
2.50 to <10.00	880	392	45.0	1,048	4.68	169,295	78.8	–	1,138	109	49	37
10.00 to <100.00	255	83	59.6	300	20.59	74,165	83.6	–	463	154	58	48
100.00 (Default)	93	28	98.3	118	100.00	15,854	60.8	–	298	251	84	56
Sub-total	1,984	2,224	48.6	3,027	8.10	1,011,515	81.3	–	2,906	96	205	152
AIRB – Other non-SME												
0.00 to <0.15	1,131	108	100.0	1,237	0.11	138,546	68.3	–	325	26	2	10
0.15 to <0.25	1,082	15	100.0	1,097	0.22	147,462	79.0	–	450	41	3	4
0.25 to <0.50	1,418	8	100.0	1,426	0.37	155,085	79.6	–	758	53	5	7
0.50 to <0.75	694	3	100.0	698	0.61	69,156	84.8	–	499	72	4	7
0.75 to <2.50	2,061	8	92.9	2,069	1.32	249,918	82.8	–	2,002	97	24	25
2.50 to <10.00	524	5	65.9	527	4.67	74,888	86.0	–	702	133	21	40
10.00 to <100.00	186	–	100.0	186	37.17	27,951	86.2	–	315	169	59	44
100.00 (Default)	83	2	99.7	85	100.00	9,913	66.1	–	177	208	52	59
Sub-total	7,179	149	98.4	7,325	2.99	872,919	79.5	–	5,228	71	170	196
Retail AIRB – Total at 31 Dec 2019	119,219	40,670	65.8	149,241	1.35	17,793,858	31.2	–	20,075	13	799	867

^ *Figures have been prepared on an IFRS 9 transitional basis.*

Model performance

Model validation is subject to global internal standards designed to support a comprehensive quantitative and qualitative process within a cycle of model monitoring and validation that includes:

- investigation of model stability;
- model performance measured through testing the model's outputs against actual outcomes; and
- model use within the business, e.g. user input data quality, override activity and the assessment of results from key controls around the usage of the rating system as a whole within the overall credit process.

Models are validated against a series of metrics and triggers approved by the appropriate governance committee. Model performance metrics, and any remedial actions in the event of a trigger breach, are reported at the Wholesale and RBWM MOCs that are responsible for overseeing the models used within HSBC UK.

Counterparty credit risk

Overview

Counterparty credit risk ('CCR') is the risk that the counterparty to a transaction may default before completing the satisfactory settlement of the transaction. It arises on derivatives, securities financing transactions and exposures to central counterparties ('CCP') in both the trading and non-trading books.

Four approaches may be used under CRD IV to calculate exposure values for CCR: mark-to-market, original exposure, standardised and Internal Model Method ('IMM'). HSBC UK uses the mark-to-market approach to determine CCR exposures. Under this approach, EAD is calculated as current exposure plus regulatory add-ons.

Table 46: Counterparty credit risk – RWAs by exposure class and product

	At 31 December					
	2019			2018		
	EAD pre CRM	**RWAs**	**Capital required**	EAD pre CRM	RWAs	Capital required
	£m	**£m**	**£m**	£m	£m	£m
By exposure class						
IRB advanced approach	**89**	**44**	**4**	72	31	2
Standardised approach	**388**	**78**	**6**	34	7	1
– institutions	**388**	**78**	**6**	34	7	1
Credit Valuation Adjustment ('CVA') standardised	**—**	**23**	**2**	—	23	2
CCP standardised	**1,079**	**53**	**4**	240	5	—
Total	**1,556**	**198**	**16**	346	66	5
By Product						
– derivatives	**710**	**60**	**5**	178	40	3
– SFTs	**846**	**84**	**7**	168	3	—
– CVA standardised	**—**	**23**	**2**	—	23	2
– CCP default funds	**—**	**31**	**2**	—	—	—
Total	**1,556**	**198**	**16**	346	66	5

Credit valuation adjustment

CVA represent the risk of loss as a result of adverse changes to the credit quality of counterparties in derivative transactions. HSBC UK applies the standardised approach for CVA. Certain counterparty exposures are exempt from CVA, such as non-financial counterparties and sovereigns.

Collateral arrangements

Our policy is to revalue all traded transactions and associated collateral positions on a daily basis. An independent collateral management function manages the collateral process, including pledging and receiving collateral and investigating disputes and non-receipts.

Table 47: Impact of netting and collateral held on exposure values (CCR5-A)

		Gross positive fair value or net carrying amount	Netting benefits	Netted current credit exposure	Collateral held	Net credit exposure
		£m	£m	£m	£m	£m
1	Derivatives	1,575	865	710	—	710
2	SFTs	5,130	—	5,130	4,284	846
3	**At 31 December 2019**	6,705	865	5,840	4,284	1,556

Credit rating downgrade

A credit rating downgrade clause in a Master Agreement or a credit rating downgrade threshold clause in a credit support annex ('CSA') is designed to trigger an action if the credit rating of the affected party falls below a specified level. These actions may include the requirement to pay or increase collateral, the termination of transactions by the non-affected party or the assignment of transactions by the affected party.

HSBC UK has no such clauses.

Wrong-way risk

Wrong-way risk occurs when a counterparty's exposures are adversely correlated with its credit quality.

There are two types of wrong-way risk:

- General wrong-way risk occurs when the probability of counterparty default is positively correlated with general risk factors, for example, where a counterparty is resident and/or incorporated in a higher-risk country and seeks to sell a non-domestic currency in exchange for its home currency.
- Specific wrong-way risk occurs in self-referencing transactions. These are transactions in which exposure is driven by capital or financing instruments issued by the counterparty and occurs where exposure from HSBC's perspective materially increases as the value of the counterparty's capital or financing instruments referenced in the contract decreases. It is our policy that specific wrong-way transactions are approved on a case-by-case basis.

We use a range of tools to monitor and control wrong-way risk, including requiring the business to obtain prior approval before undertaking wrong-way risk transactions outside pre-agreed guidelines.

Securitisation

Securitisation strategy

HSBC UK acts as originator and liquidity provider to our own originated securitisations, as well as those of third parties. Our strategy is to use securitisation to meet our needs for aggregate funding or capital management, to the extent that market, regulatory treatments and other conditions are suitable, and for customer facilitation. We do not provide support to our originated securitisations, and it is not our policy to do so.

Securitisation activity

Our roles in the securitisation process are as follows:

- originator: where we originate the assets being securitised, either directly or indirectly; and
- investor: where we hold a legacy investment in a securitisation transaction.

HSBC UK as originator

We use SPEs to mitigate the capital absorbed by some of the customer loans and advances we have originated. Credit instruments are used to transfer the credit risk associated with such customer loans and advances to an SPE, using an approach commonly known as synthetic securitisation by which the SPE uses a financial guarantee as protection for HSBC UK.

HSBC UK as investor

We have legacy exposure to third-party residential mortgage backed securitisations. These were transferred from HSBC Bank plc as part of the legal separation on 1 July 2018.

Monitoring of securitisation positions

Securitisation positions are managed by a dedicated team that uses a combination of market standard systems and third-party data providers to monitor performance data and manage market and credit risks.

Liquidity risk of securitised assets is consistently managed as part of the group's liquidity and funding risk management framework.

Valuation of securitisation positions

The process of valuing our investments in securitisation exposures primarily focuses on quotations from third parties, observed trade levels and calibrated valuations from market standard models.

Our hedging and credit risk mitigation strategy, with regards to retained securitisation exposures, is to continually review our positions.

Securitisation accounting treatment

For accounting purposes, we consolidate structured entities (including SPEs) when the substance of the relationship indicates that we control them; that is, we are exposed, or have rights, to variable returns from our involvement with the structured entity and have the ability to affect those returns through our power over the entity.

Securitisation regulatory treatment

For regulatory purposes, any reduction in RWAs that would be achieved by our own originated securitisations must receive the PRA's permission and be justified by a commensurate transfer of credit risk to third parties. If achieved, the associated SPEs and underlying assets are not consolidated but exposures to them, including derivatives or liquidity facilities, are risk-weighted as securitisation positions.

We use the IRB approach for our non-trading book securitisation positions.

Analysis of securitisation exposures

Table 48: Securitisation exposure – movement in the year

	Total at 1 Jan	Movement in year		Total at 31 Dec
		As originator	As investor	
	£m	£m	£m	£m
Aggregate amount of securitisation exposures				
Residential mortgages	1,017	–	(118)	899
Loans to corporates and SMEs	–	2,278	–	2,278
2019	1,017	2,278	(118)	3,177

Table 49: Securitisation – asset values and impairments

	At 31 December 2019		
	Underlying assets		Securitisation exposures impairment
	Total	Impaired and past due	
	£m	£m	£m
As originator	2,500	–	–
– loans to corporates and SMEs	2,500	–	–
Total	2,500	–	–

Table 50: Securitisation exposures in the non-trading book (SEC1)

		Bank acts as originator			Bank acts as investor		
		Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total
		£m	£m	£m	£m	£m	£m
1	Retail (total)	–	–	–	899	–	899
2	– residential mortgage	–	–	–	899	–	899
6	Wholesale (total)	–	2,278	2,278	–	–	–
7	– loans to corporates	–	2,278	2,278	–	–	–
	Total at 31 Dec 2019	–	2,278	2,278	899	–	899
	– *of which:*						
	securitisations under the new framework	–	*2,278*	*2,278*	–	–	–
	securitisations under the pre-existing framework	–	–	–	*899*	–	*899*

The following table presents our exposure in the non-trading book and associated regulatory capital requirements where we act as originator.

Table 51: Securitisation exposures in the non-trading book and associated capital requirements – bank acting as originator (under the new framework) (SEC3)

		Exposure values (by risk weight bands)					Exposure values (by regulatory approach)				
		≤20% RW	>20% to 50% RW	>50% to 100% RW	>100% to 1,250% RW	1,250% RW	SEC-IRBA	SEC-ERBA	SEC IAA	SEC-SA	1,250%
		£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
9	**Synthetic securitisation**	2,263	–	–	2	13	2,265	–	–	–	13
10	Securitisation	2,263	–	–	2	13	2,265	–	–	–	13
12	– wholesale	2,263	–	–	2	13	2,265	–	–	–	13
1	**Total at 31 Dec 2019**	2,263	–	–	2	13	2,265	–	–	–	13

		RWAs (by regulatory approach)					Capital charge after cap				
		SEC-IRBA	SEC-	SEC IAA	SEC-SA	1,250%	SEC-IRBA	SEC-ERBA	SEC IAA	SEC-SA	1,250%
		£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
9	**Synthetic securitisation**	364	–	–	–	156	29	–	–	–	13
10	Securitisation	364	–	–	–	156	29	–	–	–	13
12	– wholesale	364	–	–	–	156	29	–	–	–	13
1	**Total at 31 Dec 2019**	364	–	–	–	156	29	–	–	–	13

The following table presents our exposure in the non-trading book and associated regulatory capital requirements where we act as an investor, firstly under the pre-existing framework followed by the revised framework.

Table 52: Securitisation exposures in the non-trading book and associated capital requirements – bank acting as investor (under the pre-existing framework) (SEC4)

		Exposure values (by risk weight bands)					Exposure values (by regulatory approach)			
		≤20% RW	>20% to 50% RW	>50% to 100% RW	>100% to 1,250% RW	1,250% RW	IRB RBM (including IAA)	IRB SFA	SA	1,250%
		£m	£m	£m	£m	£m	£m	£m	£m	£m
2	**Traditional securitisation**	887	12	–	–	–	899	–	–	–
3	Securitisation	887	12	–	–	–	899	–	–	–
4	– retail underlying	887	12	–	–	–	899	–	–	–
1	**Total at 31 Dec 2019**	887	12	–	–	–	899	–	–	–

		RWAs (by regulatory approach)				Capital charge after cap			
		IRB RBM (including IAA)	IRB SFA	SA	1,250%	IRB RBM (including IAA)	IRB SFA	SA	1,250%
		£m	£m	£m	£m	£m	£m	£m	£m
2	**Traditional securitisation**	76	–	–	–	6	–	–	–
3	Securitisation	76	–	–	–	6	–	–	–
4	– retail underlying	76	–	–	–	6	–	–	–
1	**Total at 31 Dec 2019**	76	–	–	–	6	–	–	–

Market risk

Overview

Market risk is the risk that movements in market risk factors, including foreign exchange rates, commodity prices, interest rates, credit spreads and equity prices, will reduce the group's income or the value of its portfolios. Market risk is measured using the standardised approach for position risk under CRD IV.

The table below sets out details of the group's market risk exposures by type and approach.

Further explanation of the group's approach to managing market risk can be found from page 46 of the HSBC UK Bank plc Annual Report and Accounts 2019.

Table 53: Market risk under standardised approach (MR1)

		At 31 December			
		2019		2018	
		RWAs	**Capital required**	RWAs	Capital required
		£m	**£m**	£m	£m
	Outright products				
1	Interest rate risk (general and specific)	**2**	**–**	1	–
3	Foreign exchange risk	**25**	**2**	37	3
9	**Total**	**27**	**2**	38	3

Non-Financial Risk

Overview

Non-Financial risk is the risk to achieving our strategy or objectives as a result of inadequate or failed internal processes, people and systems, or from external events. Sound non-financial risk management is central to achieving good outcomes for our customers.

Non-Financial risk is relevant to every aspect of our business. and is managed through the operational risk management framework. It covers a wide spectrum of risks, such as resilience risk, financial crime and fraud, regulatory compliance, reporting and tax risk, legal risk, model risk, people risk and failure in other principle risk processing. Losses arising from breaches of regulation and law, unauthorised activities, error, omission, inefficiency, fraud, systems failure or external events all fall within the definition of non-financial risk.

Further explanation of the group's approach to managing non-financial risk is set out on page 17 of our Annual Report and Accounts 2019*.*

Operational risk is part of Non-Financial risk.

Table 54: Operational risk RWAs and capital required

	At 31 December			
	2019		2018	
	RWAs	**Capital required**	RWAs	Capital required
	£m	**£m**	£m	£m
Own funds requirement for operational risk – assessed on the standardised approach	**10,303**	**824**	10,600	848

Other risks

Interest rate risk in the banking book

Interest Rate Risk in the Banking Book ('IRRBB') is the potential adverse impact of changes in interest rates on earnings and capital. The component of IRRBB that can be economically neutralised in the market is transferred to Balance Sheet Management ('BSM') to manage, in accordance with internal transfer pricing rules. In its management of IRRBB, the group aims to balance mitigating the impact of future interest rate movements against the cost of hedging. The monitoring of the projected net interest income and economic value of equity sensitivity under varying interest rate scenarios is a key part of this.

Further details of our IRRBB can be found on page 48 of our Annual Report and Accounts 2019*.*

Non-trading book exposures in equities

The implementation of IFRS 9 resulted in the removal of the available-for-sale category; equity exposures therein have been classified as mandatorily measured at fair value through profit and loss. These investments are only held as a result of historic debt: equity swaps after a lending write-off has been made with the subsequent granting of equity in the company going forward. We have no deliberate strategy of holding such positions.

At 31 December 2019, we held equity investments of £8.8m. Our opening position at 1 January 2019 was £6.5m, meaning £2.3m has been reflected through profit and loss for the year. No disposals of equities were made in the period.

Liquidity and funding risk

Strategies and processes

HSBC UK has an internal liquidity and funding risk management framework ('LFRF'), which aims to allow it to withstand very severe liquidity stresses. It is designed to be adaptable to changing business models, markets and regulations.

The key aspects of the internal LFRF which is used to ensure that we maintain an appropriate overall liquidity risk profile are:

- liquidity and funding risk managed on a standalone basis without reliance on other members of the Group or central banks, unless pre-approved;
- minimum liquidity coverage ratio ('LCR') requirement; and
- minimum net stable funding ratio ('NSFR') requirement.

Structure and organisation

The Asset, Liability and Capital Management ('ALCM') team is responsible for the application of the LFRF within HSBC UK.

The elements of the LFRF are underpinned by a robust governance framework, the two major elements of which are:

- Asset and Liability Committee ('ALCO'); and
- Annual internal liquidity adequacy assessment ('ILAA') process used to validate risk tolerance and set risk appetite.

The final objective of the ILAA, approved by the Board of Directors, is to verify that the we have liquidity resources which are adequate in both amount and quality at all times, ensuring that there is no significant risk that our liabilities cannot be met as they fall due, maintaining a prudent funding profile.

Management of liquidity and funding risk

Liquidity coverage ratio

The LCR aims to ensure that a bank has sufficient unencumbered high-quality liquid assets ('HQLA') to meet its liquidity needs in a 30 calendar day liquidity stress scenario. For the calculation of the LCR, we follow the EU Regulation LCR Delegated Act 2015/61.

Net stable funding ratio

HSBC UK uses the NSFR as a basis for ensuring operating entities raise sufficient stable funding to support their business activities. The NSFR requires institutions to maintain a minimum amount of stable funding based on assumptions of asset liquidity.

Governance

ALCM apply the LFRF and are responsible for the implementation of Group-wide and local regulatory policy. BSM has responsibility for cash and liquidity management.

Liquidity Risk Management carry out independent review, challenge and assurance of the appropriateness of the risk management activities undertaken by ALCM and BSM. Their work includes setting control standards, advice on policy implementation, and review and challenge of reporting.

Internal Audit provide independent assurance that risk is managed effectively.

Structural foreign exchange exposures

Structural foreign exchange exposures represent the group's net investments in subsidiaries, branches and associates, the functional currencies of which are currencies other than sterling. An entity's functional currency is that of the primary economic environment in which the entity operates.

The group does not have investments in subsidiaries in non-sterling currencies.

Remuneration

As a wholly-owned subsidiary, HSBC UK is subject to the remuneration policy established by HSBC Group. Details of HSBC Group's remuneration policy, including details on the Remuneration Committee membership and its activities, the remuneration strategy, and remuneration structure of HSBC Identified Staff and Material Risk Takers ('MRT') are set out in the Remuneration Policy on the HSBC Group website (https://www.hsbc.com/our-approach/corporate-governance/remuneration) and in the Directors' Remuneration Report from page 184 of the HSBC Holdings plc *Annual Report and Accounts 2019*.

The following tables show the remuneration awards made to Identified Staff and MRTs in HSBC UK for 2019. Individuals have been identified as MRTs based on the qualitative and quantitative criteria set out in the Regulatory Technical Standard EU 604/2014. The tables below include the total remuneration of HSBC UK senior management and other individuals identified as HSBC UK MRTs based on their role and professional activities. This also includes certain individuals employed by the Group who have broader roles within HSBC, for example those with global roles.

Table 55: Senior management remuneration – fixed and variable amounts (REM1)

		Fixed (£m)			Variable[2] (£m)							
	Number of MRTs	Cash-based[1]	Share-based	Total	Cash-based	*Of which: deferred*	Share-based[3]	*Of which: deferred*	*Other forms*[3]	*Of which: deferred*	Total	Total (£m)
Executive Directors	3	3.0	–	3.0	1.1	*0.6*	1.2	*0.8*	–	–	2.3	5.3
Non-executive Directors	8	1.8	–	1.8	–	–	–	–	–	–	–	1.8
Senior management	15	6.8	–	6.8	2.3	*1.0*	2.4	*1.2*	–	–	4.7	11.5
Retail banking	56	15.5	–	15.5	4.3	*1.6*	3.9	*1.8*	–	–	8.2	23.7
Corporate functions	10	2.1	–	2.1	0.8	*0.2*	0.6	*0.3*	–	–	1.4	3.5
Independent control functions	15	3.1	–	3.1	0.8	*0.2*	0.4	*0.2*	–	–	1.2	4.3
Total	107	32.3	–	32.3	9.3	*3.6*	8.5	*4.3*	–	–	17.8	50.1

1 *Cash-based fixed remuneration is paid immediately.*
2 *Variable pay awarded in respect of 2019. In accordance with HSBC Holdings plc shareholder approval received on 23 May 2014 (98% in favour), for each MRT the variable component of remuneration for any one year is limited to 200% of fixed component of the total remuneration.*
3 *Share-based awards are made in HSBC Holdings plc shares. Vested shares are subject to a retention period of up to one year.*

Table 56: Senior management guaranteed bonus, sign-on and severance payments (REM2)

	Guaranteed bonus and sign on payments[1]		Severance payments[2]				
	Made during year (£m)	Number of beneficiaries	Awarded during year (£m)	Number of beneficiaries	Highest such award to a single person (£m)	Paid during year (£m)	Number of beneficiaries
Senior management	–	–	0.5	1	0.5	0.5	1
Retail banking	–	–	0.1	1	0.1	0.1	1
Corporate functions	–	–	0.7	1	0.7	0.7	1
Total	–	–	1.3	3	–	1.3	3

1 *No sign-on payments were made in 2019. A guaranteed bonus is awarded in exceptional circumstances for new hires, and in the first year only. The circumstances where HSBC UK would offer a guaranteed bonus would typically involve a critical new-hire, and would also depend on factors such as the seniority of the individual, whether the new-hire candidate has any competing offers and the timing of the hire during the performance year.*
2 *Includes payments such as payment in lieu of notice, statutory severance, outplacement service, legal fees, ex-gratia payments and settlements (excludes pre-existing benefit entitlements triggered on terminations).*

Table 57: Senior management deferred remuneration (REM3)

£m	Total outstanding[2]	*Of which: unvested*	*Of which: total outstanding deferred and retained exposed to ex post explicit and/or implicit adjustment*	Total amount of amendment during the year due to ex post implicit adjustment	Total amount of amendment during the year due to ex post explicit adjustment[3]	Total amount of deferred paid out in the financial year[4]
Cash						
Executive Directors	**1.7**	**1.7**	**1.7**	**—**	**—**	**0.3**
Senior management	**1.9**	**1.9**	**1.9**	**—**	**—**	**0.4**
Retail banking	**1.6**	**1.6**	**1.6**	**—**	**—**	**0.6**
Corporate functions	**0.1**	**0.1**	**0.1**	**—**	**—**	**—**
Independent control functions	**0.4**	**0.4**	**0.4**	**—**	**—**	**0.1**
Shares						
Executive Directors	**2.1**	**1.8**	**2.1**	**(0.2)**	**—**	**0.3**
Senior management	**3.1**	**2.4**	**3.1**	**(0.3)**	**—**	**0.6**
Retail banking	**3.3**	**2.9**	**3.3**	**(0.2)**	**—**	**1.5**
Corporate functions	**0.6**	**0.4**	**0.6**	**—**	**—**	**0.3**
Independent control functions	**0.5**	**0.4**	**0.5**	**—**	**—**	**0.3**

1 *This table provides details of balances and movements during performance year 2019. For details of variable pay awards granted for 2019, please refer to the remuneration tables above. Deferred remuneration is made in cash and/or shares. Share-based awards are made in HSBC Holdings plc shares.*
2 *Includes unvested deferred awards, and vested deferred awards subject to retention period as at 31 December 2019.*
3 *Includes any amendments due to malus or clawback.*
4 *Shares are considered as paid when they vest. Vested shares are valued using the sale price or the closing share price on the business day immediately preceding the vesting day.*

Table 58: Material risk takers' remuneration by band

	Management body[2]	All other	Total
€0 – 1,000,000	**8**	**88**	**96**
€1,000,000 – 1,500,000	**2**	**6**	**8**
€1,500,000 – 2,000,000	**—**	**2**	**2**
€2,000,000 – 2,500,000	**—**	**—**	**—**
€2,500,000 – 3,000,000	**—**	**—**	**—**
€3,000,000 – 3,500,000	**—**	**—**	**—**
€3,500,000 – 4,000,000	**1**	**—**	**1**

1 *Table prepared in euros in accordance with Article 450 of the European Union Capital Requirements Regulation, using the exchange rates published by the European Commission for financial programming and budget for December of the reported year as published on its website.*
2 *Management body represents the Board of HSBC UK Bank plc.*

Appendix I

Abbreviations

The following abbreviated terms are used throughout this document.

A	
ABS[1]	Asset-backed security
AIRB[1]	Advanced internal ratings based approach
ALCM	Asset, Liability and Capital Management
ALCO	Asset and Liability Management Committee
AT1	Additional tier 1 capital
B	
Basel	Basel Committee on Banking Supervision
BoE	Bank of England
BSM	Balance Sheet Management
C	
CCP	Central counterparty
CCR[1]	Counterparty credit risk
CEO	Chief Executive Officer
CET1[1]	Common equity tier 1
CMB	Commercial Banking, a global business
CRA[1]	Credit risk adjustment
CRD IV[1]	Capital Requirements Regulation and Directive
CRE[1]	Commercial real estate
CRM	Credit risk mitigation/mitigant
CRO	Chief Risk Officer
CRR[1]	Customer risk rating
CRR II	Revised Capital Requirements Regulation and Directive as implemented
CSA	Credit support annex
CVA	Credit valuation adjustment
D	
DBRS	Dominion Bond Rating Service
E	
EAD[1]	Exposure at default
EBA	European Banking Authority
EC	European Commission
ECAI	External Credit Assessment Institutions
ECL	Expected Credit Losses
EEA	European Economic Area
EL[1]	Expected loss
EU	European Union
EHQLA	Extremely high-quality liquid assets
EVE[1]	Economic value of equity
F	
FIRB[1]	Foundation internal ratings based approach
FPC[1]	Financial Policy Committee (UK)
H	
HQLA	High-Quality Liquid Assets
I	
ICAAP[1]	Internal Capital Adequacy Assessment Process
IFRSs	International Financial Reporting Standards
ILAA	Internal Liquidity Adequacy Assessment
IMM[1]	Internal Model Method
IRB[1]	Internal ratings based approach
IRRBB	Interest Rate Risk in the Banking Book
L	
LCR	Liquidity Coverage Ratio
LFRF	Liquidity and Funding Risk Management Framework
LGD[1]	Loss given default
M	
MOC	Model Oversight Committee
MREL	Minimum requirements for own funds and eligible liabilities
MRT	Material Risk Taker
N	
NSFR	Net Stable Funding Ratio
P	
PD[1]	Probability of default
PiT	Point-in-time
PRA[1]	Prudential Regulation Authority
R	
RAF	Resolvability assessment framework
RAS	Risk appetite statement
RBWM	Retail Bank and Wealth Management, a global business
RMM	Risk Management Meeting of HSBC UK
RWA[1]	Risk-weighted asset
S	
S&P	Standard and Poor's rating agency
SPE	Special purpose entity
STD[1]	Standardised approach
SFT[1]	Securities Financing Transactions
SME	Small- and medium-sized enterprise
T	
TCR	Total Capital Requirement
TLAC[1]	Total Loss Absorbing Capacity
TTC[1]	Through-the-cycle
T1	Tier 1 capital
T2	Tier 2 capital
U	
UK	United Kingdom

1 *Full definition included in Glossary on the HSBC Group website www.hsbc.com.*

Appendix II

Countercyclical capital buffer

The table below discloses the geographical distribution of credit exposures relevant to the calculation of the countercyclical buffer under Article 440 of the Regulation (EU) 575/2013.

	General credit exposures		Trading book exposures		Securitisation exposures		Own funds requirements				Share of total own funds require-ments	CCyB rate
	SA	IRB	Sum of long/short positions for SA	Internal models	SA	IRB	*of which: General credit exposures*	*of which: General trading book*	*of which: Securitis-ation exposures*	Total		
Country	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	%	%
Australia	—	52	—	—	—	—	3	—	—	3	—	—
Canada	—	8	—	—	—	—	—	—	—	—	—	—
Cayman Islands	—	19	—	—	—	—	2	—	—	2	—	—
China	—	85	—	—	—	—	2	—	—	2	—	—
Czech Republic	—	9	—	—	—	—	—	—	—	—	—	1.5
Egypt	—	5	—	—	—	—	—	—	—	—	—	—
France	—	62	—	—	—	—	4	—	—	4	—	0.3
Germany	—	90	—	—	—	—	3	—	—	3	—	—
Hong Kong	—	162	—	—	—	—	12	—	—	12	—	2.0
Iceland	—	—	—	—	—	—	—	—	—	—	—	1.8
India	—	6	—	—	—	—	—	—	—	—	—	—
Lithuania	—	—	—	—	—	—	—	—	—	—	—	1.0
Luxembourg	—	272	—	—	—	—	13	—	—	13	—	—
Malaysia	—	7	—	—	—	—	—	—	—	—	—	—
Malta	—	1	—	—	—	—	—	—	—	—	—	—
Mexico	—	1	—	—	—	—	—	—	—	—	—	—
Netherlands	—	547	—	—	—	—	20	—	—	20	—	—
Norway	—	122	—	—	—	—	14	—	—	14	—	2.5
Saudi Arabia	—	136	—	—	—	—	4	—	—	4	—	—
Singapore	—	74	—	—	—	—	5	—	—	5	—	—
Slovakia	—	7	—	—	—	—	—	—	—	—	—	1.5
Sweden	—	59	—	—	—	—	5	—	—	5	—	2.5
Turkey	—	23	—	—	—	—	1	—	—	1	—	—
United Arab Emirates	4	75	—	—	—	—	3	—	—	3	—	—
United Kingdom	2,364	221,725	—	—	—	3,177	5,601	—	48	5,649	—	1.0
United States	1	810	—	—	—	—	50	—	—	50	—	—
Other countries	48	2,826	—	—	—	—	119	—	—	119	—	2.5
Total	**2,417**	**227,183**	**—**	**—**	**—**	**3,177**	**5,861**	**—**	**48**	**5,909**	**—**	**16.5**

	2019
Total Risk Exposure Amount (£m)	85,881
Institution specific countercyclical capital buffer rate	0.97%
Institution specific countercyclical capital buffer requirement (£m)	833

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