HSBC UK Bank plc

Pillar 3 Disclosures at 31 December 2021

HSBC

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Presentation of information

This document comprises the 2021 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.

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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 IFRS 9 transitional basis.

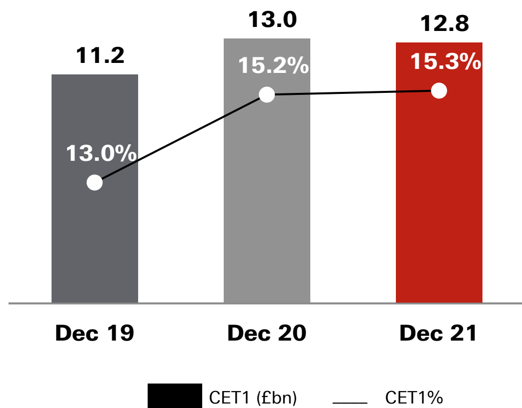
b. All figures within this table have been prepared on an IFRS 9 transitional basis.

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

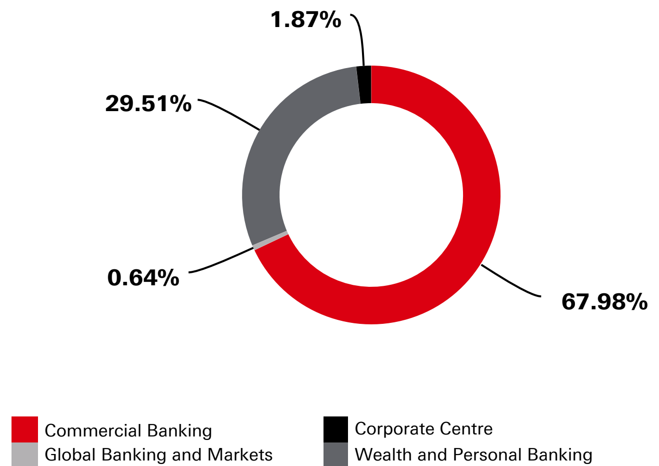
Highlights

Common equity tier 1 ('CET1') ratio increased to 15.3% from 15.2% at December 2020. The increase in CET1 was attributable to a reduction in RWAs and to profits net of dividends, partially offset by the capital impact of lower levels of loan loss provisioning as the economy recovered from the pandemic (leading to both a reduction in IFRS9 transitional relief, and an increase in excess expected loss deduction).

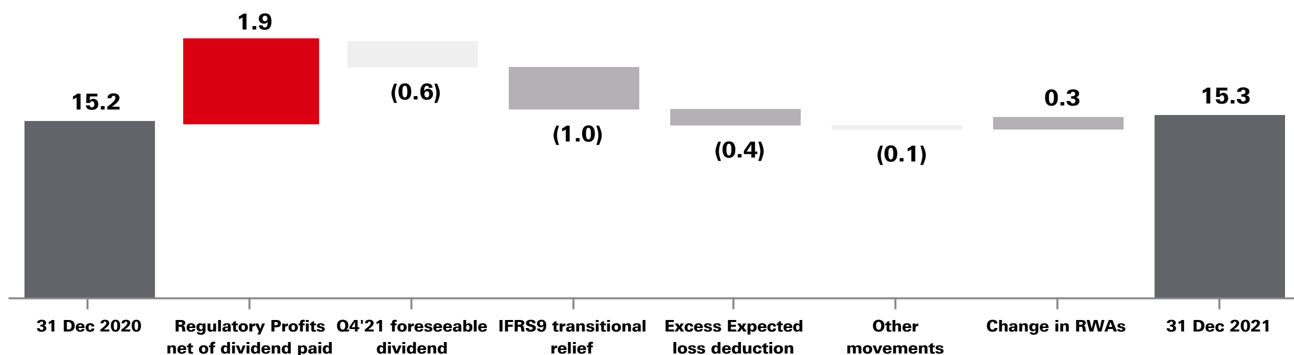
Common equity tier 1: £12.8bn and 15.3%



Risk-weighted assets % by global business £83.72bn



Common equity tier 1 ratio movement, %



Key metrics

Table 1: Key metrics (KM1/IFRS9-FL)

Ref*		At 31 December 2021	At 31 December 2020
	Available capital (£m)		
1	Common equity tier 1 capital^	**12,813**	12,963
2	CET1 capital as if IFRS 9 transitional arrangements had not been applied	**12,797**	11,856
3	Tier 1 capital^	**15,067**	15,197
4	Tier 1 capital as if IFRS 9 transitional arrangements had not been applied	**15,051**	14,091
5	Total regulatory capital^	**18,067**	18,171
6	Total capital as if IFRS 9 transitional arrangements had not been applied	**18,051**	17,505
	Risk-weighted assets ('RWAs') (£m)		
7	Total RWAs^	**83,723**	85,477
8	Total RWAs as if IFRS 9 transitional arrangements had not been applied	**83,710**	85,530
	Capital ratios (%)		
9	CET1^	**15.3**	15.2
10	CET1 as if IFRS 9 transitional arrangements had not been applied	**15.3**	13.9
11	Total Tier 1^	**18.0**	17.8
12	Tier 1 as if IFRS 9 transitional arrangements had not been applied	**18.0**	16.5
13	Total capital^	**21.6**	21.3
14	Total capital as if IFRS 9 transitional arrangements had not been applied	**21.6**	20.5
	Additional CET1 buffer requirements as a percentage of RWA (%)		
	Capital conservation buffer requirement	**2.50**	2.50
	Countercyclical buffer requirement	**0.00**	0.00
	Other Systemically Important Institutions ('O-SII') buffer requirement	**1.00**	1.00
	Total of bank CET1 specific buffer requirements	**3.50**	3.50
	Total capital requirement (%)[1]		
	Total capital requirement (Pillar 1 + Pillar 2A)	**12.6**	12.5
	CET1 available after meeting the bank's minimum capital requirements	**8.2**	8.1
	Leverage ratio[2]		
15	Total leverage ratio exposure measure (£m)	**358,237**	317,196
16	Leverage ratio (%)^	**4.2**	4.8
17	Leverage ratio as if IFRS 9 transitional arrangements had not been applied (%)	**4.2**	4.5

* *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 *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 2021, as per the PRA's Individual Capital Guidance based on a point in time assessment, was 4.57% of RWAs, of which 2.57% was met by CET1.*

2 *The leverage ratio is calculated using the CRR II end point basis for capital.*

We have adopted the regulatory transitional arrangements in CRR II for IFRS 9, including paragraph four of article 473a. These transitional arrangements 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 impact 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.

Any add-back must be tax affected and accompanied by a recalculation of capital deduction thresholds, exposure and RWAs. The impact is calculated separately for portfolios using the standardised ('STD') and internal-ratings based ('IRB') approaches.

For IRB portfolios, there is no add-back to capital unless loan loss allowances exceed regulatory 12-month expected losses.

The EU's CRR 'Quick Fix' relief package enacted in June 2020 increased from 70% to 100% the relief that banks may take for loan loss allowances recognised since 1 January 2020 on the non-credit-impaired book.

In the current period, the add-back to the capital base amounted to £16m under the STD approach. At 31 December 2020, the add-back to the capital base was £1,074m under the IRB approach and £32m under the STD approach. The reduction in the add back resulted from a release of IFRS9 loan loss provisions in 2021 due to the improvement in the UK macro economic outlook.

Where applicable, our reporting throughout this document also reflects government relief schemes intended to mitigate the impact of the Covid-19 outbreak.

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	**12,813**	**15,067**	**18,067**
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 2021	**12,797**	**15,051**	**18,051**
Reported balance using IFRS 9 transitional arrangements	12,963	15,197	18,171
ECL reversed under transitional arrangements for IFRS 9	1,106	1,106	666
– Standardised approach	32	32	18
– IRB approach	1,074	1,074	648
Reported balance excluding IFRS 9 transitional arrangements at 31 December 2020	11,857	14,091	17,505

Table 3: Pillar 1 overview

	At 31 December 2021		At 31 December 2020	
	RWAs	**Capital required[1]**	RWAs	Capital required[1]
	£m	**£m**	£m	£m
Credit risk	**72,817**	**5,825**	74,690	5,975
Counterparty credit risk	**129**	**10**	122	10
Market risk	**170**	**14**	156	12
Operational risk	**10,607**	**849**	10,509	841
Total	**83,723**	**6,698**	85,477	6,838

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 2021		At 31 December 2020	
	RWAs	**Capital required**	RWAs	Capital required
	£m	**£m**	£m	£m
Wealth and Personal Banking ('WPB')	**24,705**	**1,976**	25,061	2,005
Commercial Banking ('CMB')	**56,918**	**4,553**	58,362	4,669
Global Banking and Markets ('GBM')	**537**	**43**	600	48
Corporate Centre	**1,563**	**126**	1,454	116
Total	**83,723**	**6,698**	85,477	6,838

1 *Please refer to page 5 of our* Annual Report and Accounts 2021 *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 and in the PRA Rulebook for the UK banking industry.

The Basel framework is structured around three 'pillars': the 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.

Following the end of the transitional period, any reference to EU regulations and directives (including technical standards) should be read as a reference to the UK's version of such regulation and/or directive, as onshored into UK law under the European Union (Withdrawal) Act 2018, as amended.

Our *Pillar 3 Disclosures at 31 December 2021* 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 and references

To give insight into movements during the year, we provide comparative figures for the previous year or period. In all tables where the term 'capital requirements' is used, this represents the minimum total capital charge set at 8% of RWAs by article 92 of the Capital Requirements Regulation. Table name references and row numbering in tables identify those prescribed in the relevant EBA guidelines 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 plc 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 2021* 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 2021.*

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

Amendments to the Capital Requirements Regulation ('CRR II') and the Basel III Reforms

The Basel Committee on Banking Supervision ('Basel') completed the Basel III Reforms in July 2020 when it published the final revisions to the CVA framework. In the UK, a two stage approach to implementation has been adopted for these changes.

The CRR II represents the first tranche of changes to implement the Basel III Reforms, including the changes to the standardised approach for measuring counterparty risk, the equity investments in funds rules, amendments to the large exposures rules, the new leverage ratio rules and the implementation of the net stable funding ratio. During 2021, the PRA finalised the CRR II for implementation on 1 January 2022.

In addition, the PRA has reversed the beneficial changes to the treatment of software assets that were implemented as part of the EU's response to Covid-19. From 1 January 2022, software assets must be deducted in full from CET1 capital.

The remaining reforms are scheduled for implementation by Basel on 1 January 2023. This includes the changes to the RWA rules on credit risk, market risk, operational risk and credit valuation adjustments and the implementation of an RWA floor based upon the standardised approach. Given the PRA is not expected to consult on these other elements until the second half of 2022, this increases the likelihood that the UK's implementation will be delayed.

The UK's withdrawal from the EU

In 2020, the PRA granted transitional provisions which allowed firms to delay the effect of any rule changes arising from the UK's withdrawal from the EU, with limited exceptions, until 31 March 2022.

Credit risk

In order to address concerns about the variability and comparability of RWAs under the IRB approach, the EU developed a series of amendments to the framework, known as the IRB repair package. The majority of these were developed and finalised while the UK was a member of the EU and therefore were implemented in the UK by the PRA on 1 January 2022. However, there were some elements of the EU's package that were not in force when the UK ceased to be subject to EU law. These include the EU's technical standards on economic downturns, the European Banking Authority's ('EBA') guidelines on credit risk mitigation for the advanced IRB ('A-IRB') approach, and the EU's final technical standards on risk weighting specialised lending exposures.

The PRA has confirmed that it would not be implementing the technical standards on specialised lending. Similarly, it will not implement the EBA's guidelines on credit risk mitigation in the A-IRB approach in 2022, although it may consider reflecting the guidelines as part of its implementation of the Basel III Reforms.

In July 2021, the PRA published its final policy on the flooring of risk weights of UK mortgages subject to the IRB approach. From 1 January 2022, exposures to UK residential mortgages, excluding those in default, are subject to an exposure-weighted average portfolio risk weight of at least 10%.

Capital buffers

The FPC in its December 2021 Financial Stability Report confirmed that it is increasing the UK's countercyclical capital buffer rate from 0% to 1%. This rate will come into effect on 13 December 2022 in line with the usual 12-month implementation period. Absent a material change in the outlook for UK's financial stability, the FPC expects to increase the rate further to 2% in Q2 2022, which would take effect 12 months later.

Other developments

In November 2021, the FPC published a consultation with proposals to amend the framework for the other systemically important institutions ('O-SII') buffer. It plans to change the metric used to determine O-SII buffer rates from total assets to the UK leverage exposure measure and to recalibrate the thresholds used to determine O-SII buffer rates.

Environmental, social and governance ('ESG') risk

Globally, regulators and standard setters continue to publish multiple proposals and discussion papers on ESG topics. These include publications in the UK by Her Majesty's Treasury ('HMT'), the Department for Business, Energy and Industrial Strategy and the Financial Conduct Authority on the implementation of climate-related financial disclosures that are aligned to the Taskforce on Climate-related Financial Disclosure ('TCFD'). This work is supported by the development of green taxonomies by bodies, such as the newly-formed Green Technical Advisory Group in the UK. Further work by the TCFD included the new disclosure guidance on metrics, targets and transition plans.

In June 2021, the Bank of England launched the climate biennial exploratory scenario exercise. This aims to test the resilience of financial institutions and their business models to transition and physical risks depending upon the speed of government policy action. The impact is based on an end-2020 static balance sheet and is assumed to take place over the period 2021 to 2050 focusing on credit risk. The Bank of England is expected to publish the results of the exercise in May 2022.

In October 2021, HMT published a Roadmap setting out the government's long-term ambition to green the financial system and align it with the UK's net-zero commitment. This included the planned implementation of sustainable disclosure requirements and the implementation of a UK green taxonomy, which is subject to consultation in the first quarter of 2022.

Risk management

Our risk management framework

We aim to use a comprehensive risk management approach across the organisation and across all risk types, underpinned by our culture and values. This is outlined in our risk management framework, including the key principles and practices that we employ in managing material risks, both financial and non-financial.

Non-financial risk includes some of the most material risks HSBC UK faces, such as cyber-attacks, poor customer outcomes, loss of data and the current Covid-19 pandemic. Actively managing non-financial risks is crucial to serving our customers effectively and having a positive impact on society. During 2021, we continued to strengthen the control environment and our approach to the management of non-financial risks, as broadly set out in our risk management framework. The management of non-financial risks focuses on governance and risk appetite, providing a single view of the non-financial risks that matter most, and associated controls. It incorporates a risk management system designed to enable the active management of non-financial risks. Our ongoing focus is on simplifying our approach to non-financial risk management, while driving more effective oversight and better end-to-end identification and management of risks. This is overseen by the Operational and Resilience Risk function, headed by the HSBC UK Head of Operational and Resilience Risk.

Our risk management framework fosters continuous monitoring of the risk environment, and promotes risk awareness and a sound

operational and strategic decision making and escalation process. It also ensures we have a consistent approach to monitoring, managing and mitigating the risks we accept and incur in our activities, with clear accountabilities. We continue to actively review and develop our risk management framework and enhance our approach to managing risk, through our activities with regard to: people and capabilities; governance; reporting and management information; credit risk management models; and data.

Further information on our risk management framework, and the management and mitigation is set out from page 17 of our Annual Report and Accounts 2021.

Risk culture

We understand the importance of a strong culture. Our culture refers to our shared attitudes, values and standards that shape behaviours related to risk awareness, risk taking and risk management. 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. The fostering of a strong culture is a key responsibility of our senior executives.

Our culture is also reinforced by our approach to remuneration. Individual awards, including those for senior executives, are based on compliance with our values and the achievement of financial and non-financial objectives, which are aligned to our risk appetite and global 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 six times during 2021.

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'). The CRO is supported by the Risk Management Meeting ('RMM') of HSBC UK's Executive Committee.

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 our people have a role to play in risk management. These roles are defined using the three lines of defence model, which takes into account our business and functional structures.

We use a defined executive risk governance structure to ensure appropriate oversight and accountability for risk, which facilitates the reporting and escalation to the RMM.

The activities of the Risk Committee are set out from page 60 of our Annual Report and Accounts 2021.

Risk appetite

Risk appetite is a key component of our management of risk. It describes the type and quantum of risk that the group is willing to accept in achieving its strategic goals. At HSBC, risk appetite is managed through a global risk appetite framework and articulated in a risk appetite statement ('RAS'), which is reviewed and approved by the Board twice per year to make sure it remains fit for purpose.

Our risk appetite informs our strategic and financial planning process, defining the desired forward-looking risk profile of the group. It is also integrated within other risk management tools, such as stress testing, to ensure consistency in risk management.

Further information about our risk appetite is set out on page 17 of our Annual Report and Accounts 2021.

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 and those to meet our own internal requirements. Our stress testing is supported by dedicated teams and infrastructure.

Our testing programme assesses our capital and liquidity strength through a rigorous examination of our resilience to external shocks. Both the internal and regulatory driven stress tests help us to understand and mitigate risks, and informs our decision about capital and liquidity levels.

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 2021.

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 maintaining and reviewing the effectiveness of risk management and internal control systems, and for determining the aggregate level and risk types they are willing to accept in achieving the HSBC UK's business objectives. On behalf of the Board, the Risk Committee has responsibility for the oversight of risk management and internal controls other than for financial reporting, and the Audit Committee has responsibility for oversight of risk management and internal controls over financial reporting.

The Board of Directors, through the Audit Committee and the Risk Committee receive regular updates and confirmation that management has taken, or was taking, the necessary actions to remediate any failings or weaknesses identified through the operation of our framework of controls.

Further information on our key risk management and internal control procedures is set out on page 18 of our Annual Report and Accounts 2021.

Regulatory reporting processes and controls

The quality of regulatory reporting remains a key priority for management and regulators. Notably, the PRA published a Dear CEO letter addressed to UK regulated banks, which highlighted areas of concern over the processes firms use to deliver regulatory returns. Recent sanctions issued by the PRA demonstrate their intent in this respect. We are progressing with a comprehensive programme to strengthen our processes, improve consistency, and enhance controls on various aspects of regulatory reporting. In addition, we are undergoing an independent external review of our credit risk RWA process. As a result of these initiatives, there may be an impact on some of our regulatory ratios, such as the CET1 and Liquidity coverage ratio ('LCR').

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 and Compliance 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.

We continue to invest significant resources in IT systems and processes in order to maintain and improve its risk management capabilities.

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 entity level risk and compliance functions in respect of risk governance and oversight, 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 HSBC UK Model Risk Committee ('MRC') is the primary committee responsible for the oversight of Model Risk within HSBC UK. It serves an important role in providing strategic direction on the management of models and their associated risks to HSBC UK's businesses and is an essential element of the governance structure for model risk management. MRC is supported by Model Oversight Forums ('MOF's') which are responsible for model risk management within their functional areas, including Wholesale credit risk and Wealth and personal banking risk.

The MRC meets regularly and reports to the HSBC UK RMM. It is chaired by the HSBC UK CRO and membership includes senior executives from Risk, Finance, Compliance and the HSBC UK businesses. Through its oversight of the MOFs, it identifies emerging risks for all aspects of the risk rating system, ensuring that model risk remains within our risk appetite and formally advises the HSBC UK RMM 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 across the Group, including HSBC UK. It also ensures that the performance of those models is transparent and that their limitations are visible to our key stakeholders. The development and use of data and models to meet local requirements in the UK are the responsibility of our businesses or functions, under the governance of our own management, subject to overall Group policy and oversight.

Regulatory and other expectations continue to evolve with regards to our capability and practice of model risk management.

Further information is available on page 58 of our Annual Report and Accounts 2021.

Linkage to the Annual Report and Accounts 2021

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	Deconsolidation of securitisation entities	Consolidation of banking associates/joint ventures	Regulatory balance sheet
		£m	£m	£m	£m
Assets					
Cash and balances at central banks		112,478	–	73	112,551
Items in the course of collection from other banks		299	–	–	299
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss		79	–	–	79
Derivatives		64	–	–	64
Loans and advances to banks		1,914	–	–	1,914
Loans and advances to customers		195,526	–	–	195,526
– of which: expected credit losses on IRB portfolios	*f*	*(1,843)*	–	–	*(1,843)*
Reverse repurchase agreements – non-trading		7,988	–	–	7,988
Financial investments		14,377	–	–	14,377
Prepayments, accrued income and other assets		9,136	–	21	9,157
– of which: retirement benefit assets	*g*	*6,745*	–	–	*6,745*
Interests in joint ventures		9	–	(9)	–
Goodwill and intangible assets	*d*	4,193	–	–	4,193
Total assets at 31 Dec 2021		**346,063**	**–**	**85**	**346,148**

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

	Ref †	Accounting balance sheet £m	Deconsolidation of securitisation entities £m	Consolidation of banking associates/joint ventures £m	Regulatory balance sheet £m
Liabilities and equity					
Liabilities					
Deposits by banks		11,180	—	73	11,253
Customer accounts		281,870	225	—	282,095
Repurchase agreements – non-trading		10,438	—	—	10,438
Items in the course of transmission to other banks		151	—	—	151
Derivatives		292	—	—	292
– *of which: debit valuation adjustment*	i	*8*	—	—	*8*
Debt securities in issue		900	(225)	—	675
Accruals, deferred income and other liabilities		1,674	—	12	1,686
Current tax liabilities		802	—	—	802
Provisions		495	—	—	495
– *of which: credit-related contingent liabilities and contractual commitments on IRB portfolios*	f	*81*	—	—	*81*
Deferred tax liabilities		1,969	—	—	1,969
Subordinated liabilities		12,487	—	—	12,487
– *of which: included in Tier 2*	j	*3,000*	—	—	*3,000*
Total liabilities at 31 Dec 2021		**322,258**	—	**85**	**322,343**
Equity					
Called up share capital	a	—	—	—	—
Share premium account	a	9,015	—	—	9,015
Other equity instruments	h	2,196	—	—	2,196
Other reserves	b, c, e	7,657	—	—	7,657
Retained earnings	b, c	4,877	—	—	4,877
Total shareholders' equity		**23,745**	—	—	**23,745**
Non-controlling interests	i	60	—	—	60
Total equity at 31 Dec 2021		**23,805**	—	—	**23,805**
Total liabilities and equity at 31 Dec 2021		**346,063**	—	**85**	**346,148**

† *The references (a) – (j) identify balance sheet components that are used in the calculation of regulatory capital in table 7.*
This table shows such items at their accounting values, which may be subject to analysis or adjustment in the calculation of regulatory capital shown 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 2021*.

The *Pillar 3 Disclosures at 31 December 2021* are prepared in accordance with regulatory capital adequacy concepts and rules, while the *Annual Report and Accounts 2021* 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 2021.

Table 6: Principal entities with a different regulatory and accounting scope of consolidation (LI3)

			At 31 December 2021			
			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 2021, 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 Committee ('ALCO').

Capital generation

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 under the Fourth Capital Requirements Regulation and Directive ('CRD IV'). 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 113 of our Annual Report and Accounts 2021.

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 our Annual Report and Accounts 2021.

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 2021.

Table 7: Own funds disclosure

Ref*		Ref †	At 31 December 2021 £m	2020 £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	**11,463**	10,934
3	Accumulated other comprehensive income (and other reserves)	c	**(544)**	700
5a	Independently reviewed interim net profits net of any foreseeable charge or dividend	b	**1,125**	(46)
6	**Common equity tier 1 capital before regulatory adjustments**		**21,059**	20,603
	Common equity tier 1 capital: regulatory adjustments			
7	Additional value adjustments[1]		**(13)**	(4)
8	Intangible assets (net of related deferred tax liability)	d	**(3,684)**	(3,662)
11	Fair value reserves related to gains or losses on cash flow hedges	e	**89**	(1)
12	Negative amounts resulting from the calculation of expected loss amounts	f	**(346)**	0
15	Defined benefit pension fund assets (net of related deferred tax liability)	g	**(4,519)**	(5,079)
UK-27a	**Other regulatory adjustments to CET1 capital (including IFRS 9 transitional adjustments when relevant)[2]**		**227**	1,106
28	**Total regulatory adjustments to common equity tier 1**		**(8,246)**	(7,640)
29	**Common equity tier 1 capital**		**12,813**	12,963
	Additional tier 1 ('AT1') capital: instruments			
30	Capital instruments and the related share premium accounts		**2,195**	2,196
31	– classified as equity under IFRSs	h	**2,195**	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	**59**	38
36	**Additional tier 1 capital before regulatory adjustments**		**2,254**	2,234
44	**Additional tier 1 capital**		**2,254**	2,234
45	**Tier 1 capital (T1 = CET1 + AT1)**		**15,067**	15,197
	Tier 2 capital: instruments and provisions			
46	Capital instruments and the related share premium accounts		**3,000**	2,915
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		**—**	52
51	**Tier 2 capital before regulatory adjustments**	j	**3,000**	2,967
57	**Total regulatory adjustments to tier 2 capital**		**—**	7
58	**Tier 2 capital**		**3,000**	2,974
59	**Total capital (TC = T1 + T2)**		**18,067**	18,171
60	**Total risk-weighted assets**		**83,723**	85,477
	Capital ratios and buffers			
61	Common equity tier 1		**15.3%**	15.2%
62	Tier 1		**18.0%**	17.8%
63	Total capital		**21.6%**	21.3%
64	Institution specific buffer requirement		**3.5%**	3.5%
65	– Capital conservation buffer requirement		**2.5%**	2.5%
66	– Countercyclical buffer requirement		**—%**	—%
67	– Other Systemically Important Institutions ('O-SII') buffer requirement		**1.0%**	1.0%
68	Common equity tier 1 available to meet buffers		**10.8%**	10.7%
	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)		**211**	200
	Applicable caps on the inclusion of provisions in tier 2			
77	Cap on inclusion of credit risk adjustments in T2 under standardised approach		**21**	25
79	Cap for inclusion of credit risk adjustments in T2 under internal ratings-based approach		**413**	422

* *The references identify the lines prescribed in the EBA template that are applicable and where there is a value.*
† *The references (a) – (j) 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.*
2 *We now report the IFRS 9 transitional arrangement as a regulatory adjustment in row UK-27a. We have restated rows 2,6,27a and 28 for 31 December 2020 for comparison.*

Leverage

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 4.2% at 31 December 2021, down from 4.8% at 31 December 2020. The decrease was largely due to growth in the balance sheet.

At 31 December 2021, our leverage ratio measured under the PRA's UK leverage framework was 6.3%. This measure excludes qualifying central bank balances and loans under the UK Bounce Back Loan scheme from the calculation of exposure.

At 31 December 2021, 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%. These additional buffers translated into capital values of £848m. We exceeded these leverage requirements.

The following tables provide a reconciliation of the total assets in our published balance sheet under IFRS and the total leverage exposure (Table 8) and a breakdown of on-balance sheet exposures excluding derivatives, Securities financing transactions ('SFT') and exempted exposures, by asset class (Table 10).

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

		At 31 December	
		2021	2020
Ref*		**£m**	£m
1	Total assets as per published financial statements	**346,063**	304,864
	Adjustments for:		
2	– consolidation of banking associates/joint ventures	**86**	97
4	– derivative financial instruments	**192**	107
5	– securities financing transactions ('SFT')	**216**	395
6	– off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	**18,027**	18,407
7	– other	**(6,347)**	(6,674)
8	**Total leverage ratio exposure**	**358,237**	317,196

* *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 December	
		2021	2020
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)	**340,071**	303,282
2	(Asset amounts deducted in determining Tier 1 capital)	**(8,321)**	(7,635)
3	**Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets)**	**331,750**	295,647
	Derivative exposures		
4	Replacement cost associated with all derivatives transactions (i.e. net of eligible cash variation margin)	**20**	49
5	Add-on amounts for potential future exposure associated with all derivatives transactions (mark-to-market method)	**236**	213
6	Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to IFRSs	**219**	300
7	(Deductions of receivables assets for cash variation margin provided in derivatives transactions)	**(219)**	(300)
11	**Total derivative exposures**	**256**	262
	Securities financing transaction exposures		
12	Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	**8,312**	2,620
13	(Netted amounts of cash payables and cash receivables of gross SFT assets)	**(319)**	(135)
14	Counterparty credit risk exposure for SFT assets	**211**	395
16	**Total securities financing transaction exposures**	**8,204**	2,880
	Other off-balance sheet exposures		
17	Off-balance sheet exposures at gross notional amount	**73,734**	75,860
18	(Adjustments for conversion to credit equivalent amounts)	**(55,707)**	(57,453)
19	**Total off-balance sheet exposures**	**18,027**	18,407
	Capital and total exposures		
20	**Tier 1 capital**	**15,067**	15,197
21	**Total leverage ratio exposure**	**358,237**	317,196
22	**Leverage ratio (%)**	**4.2**	4.8
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)

		At 31 December	
		2021	2020
Ref*		**£m**	£m
EU-1	**Total on-balance sheet exposures (excluding derivatives, SFTs and exempted exposures)**	**339,853**	302,983
EU-2	Trading book exposures	**—**	—
EU-3	Banking book exposures	**339,853**	302,983
	– of which:		
EU-5	*exposures treated as sovereigns*	***127,967***	*97,596*
EU-7	*institutions*	***2,051***	*1,841*
EU-8	*secured by mortgage of immovable property*	***117,731***	*110,420*
EU-9	*retail exposures*	***19,489***	*20,548*
EU-10	*corporate*	***54,645***	*54,569*
EU-11	*exposures in default*	***2,461***	*2,523*
EU-12	*other exposures (e.g. equity, securitisations and other non-credit obligation assets)*	***15,509***	*15,486*

* *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 December	30 September	31 December
	2021	2021	2020
	£m	£m	£m
UK leverage ratio exposure – quarterly average	**239,734**	228,833	236,674
	%	%	%
UK leverage ratio – quarterly average	**6.3**	6.7	6.2
UK leverage ratio – quarter end	**6.3**	6.5	6.5

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 Probability of default ('PD'), but subjects their quantified estimates of exposure at default ('EAD') and Loss given default ('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 IRB approach for the majority of its business. For Retail advanced IRB is primarily used, with foundation used for most of the wholesale portfolio. Some portfolios remain on the standardised approach: • pending the issuance of local regulations or model approval; • following the supervisory prescription of a non-IRB approach; or • under exemptions from IRB treatment.
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 framework prescribes the following approaches: • internal ratings-based approach ('SEC-IRBA'); • standardised approach ('SEC-SA'); • external ratings-based approach ('SEC-ERBA'); and • internal assessment approach ('IAA'). Where a split between IRB and standardised approaches is disclosed, exposures under the SEC-IRBA approach are mapped to IRB. Exposures under the other approaches are mapped to standardised.	Under the new framework: • Our originated positions are reported under SEC-IRBA. • Wherever broader approach categorisation is required, 'SEC-IRBA' is mapped to IRB approach and the remaining three approaches are mapped to standardised category.
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. 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.

Pillar 2 comprises Pillar 2A and Pillar 2B. 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 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. 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.

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.

Economic capital is the internally calculated capital requirement that we deem necessary to support the risks to which we are exposed. The economic capital assessment is a more risk-sensitive measure than the regulatory minimum, and takes account of the substantial diversification of risk accruing from our operations. Both the regulatory and the economic capital assessments rely upon the use of models that are integrated into our risk management processes. 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, to a 99.5% level of confidence for our pension risks, and to a 99.9% level of confidence for our operational risks.

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 commitments, 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 27 of our Annual Report and Accounts 2021;

Table 12: Overview of RWAs (OV1)

		At 31 December 2021		At 31 December 2020	
		RWAs	Capital required	RWAs	Capital required
		£m	£m	£m	£m
1	**Credit risk (excluding counterparty credit risk)**	71,430	5,714	73,287	5,863
2	– standardised approach	1,715	137	1,461	117
3	– foundation IRB approach	41,811	3,345	43,389	3,471
4	– advanced IRB approach	27,904	2,232	28,437	2,275
6	**Counterparty credit risk**	129	10	122	10
7	– mark-to-market	61	4	70	5
8	– original exposure	—	—	11	1
11	– risk exposure amount for contributions to the default fund of a central counterparty	48	4	21	2
12	– credit valuation adjustment	20	2	20	2
13	**Settlement risk**	—	—	—	—
14	**Securitisation exposures in the non-trading book**	859	69	904	72
15	– Internal Rating Based Approach (Sec-IRBA)	657	53	699	56
18	– Standardised Approach (Sec-IAA)	202	16	205	16
19	**Market risk**	170	14	156	12
20	– standardised approach	170	14	156	12
23	**Operational risk**	10,607	849	10,509	841
25	– standardised approach	10,607	849	10,509	841
27	**Amounts below the thresholds for deduction (subject to 250% risk weight)**	528	42	499	40
28	**Floor adjustment**	—	—	—	—
	Total	83,723	6,698	85,477	6,838

Further information on the movement in RWAs can be found on page 53 of our Annual Report and Accounts 2021*.*

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

	At 31 December 2021					At 31 December 2020				
	Net carrying value	**Average net carrying values**	**RWAs^**	**Capital required^**	**RWA Density**	Net carrying value	Average net carrying values	RWAs^	Capital required^	RWA Density
	£m	**£m**	**£m**	**£m**	**%**	£m	£m	£m	£m	%
IRB advanced approach	**198,336**	**196,479**	**26,332**	**2,107**	**14**	193,138	188,769	26,887	2,151	15
Central governments and central banks	**6,451**	**6,680**	**698**	**56**	**11**	7,348	7,328	807	65	11
Institutions	**1,360**	**1,293**	**202**	**16**	**18**	1,387	1,264	220	17	17
Corporates[1]	**11,740**	**12,088**	**6,209**	**497**	**59**	12,071	24,608	6,237	499	56
Corporates – specialised lending	**9,875**	**10,239**	**5,736**	**459**	**62**	10,401	10,528	5,585	447	57
Corporates – SME	**3**	**NA**	**—**	**—**	**16**	—	—	—	—	—
Corporates – other	**1,862**	**1,848**	**473**	**38**	**41**	1,670	14,080	652	52	48
Total retail	**178,785**	**176,418**	**19,223**	**1,538**	**12**	172,332	155,569	19,623	1,570	12
Secured by mortgages on immovable property – small- and medium sized enterprises ('SME')	***13***	***23***	***23***	***2***	***185***	*56*	376	*58*	*5*	*97*
Secured by mortgages on immovable property non-SME	***124,882***	***122,122***	***7,412***	***593***	***6***	*118,164*	106,071	*6,740*	*540*	*6*
Qualifying revolving retail	***37,912***	***38,472***	***5,095***	***408***	***20***	*38,767*	36,621	*5,430*	*434*	*20*
Other SME	***9,240***	***9,306***	***1,952***	***156***	***100***	*8,967*	6,125	*2,202*	*176*	*105*
Other non-SME	***6,738***	***6,495***	***4,741***	***379***	***73***	*6,378*	6,376	*5,193*	*415*	*79*
IRB securitisation positions	**2,276**	**2,297**	**658**	**52**	**29**	2,277	2,328	699	56	31
IRB non-credit obligation assets	**2,275**	**2,218**	**1,572**	**126**	**69**	2,280	1,952	1,550	124	68
IRB foundation approach	**74,343**	**76,046**	**41,811**	**3,345**	**71**	76,469	59,992	43,389	3,471	72
Corporates	**74,343**	**76,046**	**41,811**	**3,345**	**71**	76,469	59,992	43,389	3,471	72
Corporates – specialised lending	**—**	**—**	**—**	**—**	**—**	—	—	—	—	—
Corporates – SME	**13,028**	**NA**	**6,055**	**484**	**62**	—	—	—	—	—
Corporates – other	**61,315**	**73,441**	**35,756**	**2,861**	**73**	76,469	59,992	43,389	3,471	72
Standardised approach	**125,475**	**108,627**	**2,444**	**195**	**2**	92,908	69,126	2,165	173	2
Central governments and central banks	**119,958**	**103,527**	**528**	**42**	**—**	86,869	63,070	498	39	1
Regional government or local authorities	**—**	**92**	**—**	**—**	**—**	226	237	—	—	—
Public sector entities	**428**	**453**	**—**	**—**	**—**	663	885	—	—	—
International organisations	**—**	**6**	**—**	**—**	**—**	28	16	—	—	—
Institutions	**938**	**862**	**305**	**24**	**32**	667	693	182	15	27
Corporates	**500**	**425**	**270**	**22**	**74**	444	427	183	15	61
Retail	**2,046**	**1,424**	**921**	**74**	**63**	1,994	2,012	827	66	64
Secured by mortgages on immovable property	**241**	**285**	**91**	**7**	**38**	329	568	124	10	38
Exposures in default	**10**	**22**	**16**	**1**	**125**	50	75	72	6	141
Items associated with particularly high risk	**9**	**9**	**14**	**1**	**150**	9	8	14	1	150
Securitisation positions	**1,009**	**1,188**	**202**	**16**	**20**	1,367	815	205	16	15
Equity	**15**	**9**	**15**	**1**	**100**	—	—	—	—	100
Other items	**321**	**325**	**82**	**7**	**26**	262	320	60	5	23
Total	**402,705**	**385,667**	**72,817**	**5,825**	**19**	367,072	322,167	74,690	5,975	22

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

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

2 *We have started reporting Corporate SME exposures from 31 December 2021. Average net carrying values will be reported from 2022 onwards.*

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	—	6,451	—	—	(1)	6,451
2	Institutions	—	1,363	3	—	(5)	1,360
3	Corporates	2,533	84,542	992	159	(494)	86,083
4	– *of which: specialised lending*	*349*	*9,707*	*181*	—	*(15)*	*9,875*
5	– *of which: SME*	—	*13,123*	*92*	—	*91*	*13,031*
6	– *of which: Others*	*2,184*	*61,712*	*719*	*159*	*(570)*	*63,177*
7	Retail	1,444	178,269	928	410	(387)	178,785
8	– Secured by real estate property – SME	8	5	1	—	1	12
9	– Secured by real estate property – Non-SME	669	124,381	166	—	(1)	124,884
10	– Qualifying revolving retail	175	38,146	409	205	(109)	37,912
11	– Other retail	592	15,737	352	205	(278)	15,977
12	*– of which SME*	*498*	*8,906*	*165*	*71*	*(108)*	*9,239*
13	*– of which Non-SME*	*94*	*6,831*	*187*	*134*	*(170)*	*6,738*
15	**Total IRB approach**	3,977	270,625	1,923	569	(887)	272,679
16	Central governments and central banks	—	119,958	—	—	—	119,958
18	Public sector entities	—	428	—	—	—	428
21	Institutions	—	938	—	—	—	938
22	Corporates	—	500	—	—	(1)	500
24	Retail	—	2,057	11	—	(15)	2,046
25	– *of which: SMEs*	—	*1,312*	—	—	—	*1,312*
26	Secured by mortgages on immovable property	—	242	1	—	—	241
28	Exposures in default	14	—	4	3	(1)	10
29	Items associated with particularly high risk	—	9	—	—	—	9
33	Equity exposures	—	15	—	—	—	15
34	Other exposures	—	321	—	—	—	321
35	**Total standardised approach**	14	124,468	16	3	(17)	124,466
36	**Total at 31 December 2021**	3,991	395,093	1,939	573	(904)	397,145
	– *of which: loans*	*3,691*	*308,061*	*1,853*	*573*	*(753)*	*309,899*
	– *of which: debt securities*	*28*	*14,419*	*2*	—	*(4)*	*14,445*
	– *of which: off-balance sheet exposures*	*272*	*72,066*	*84*	—	*(147)*	*72,254*

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

		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	—	7,349	1	—	5	7,348
2	Institutions	—	1,395	7	—	2	1,388
3	Corporates	2,574	87,575	1,609	341	1,096	88,540
4	*– of which: specialised lending*	*503*	*10,088*	*190*	—	*34*	*10,401*
5	*– of which: SME*	—	—	—	—	—	—
6	*– of which: Others*	*2,071*	*77,487*	*1,419*	*341*	*1,062*	*78,139*
7	Retail	1,264	172,843	1,775	167	1,002	172,332
8	– Secured by real estate property – SME	13	44	—	—	(9)	57
9	– Secured by real estate property – Non-SME	693	117,641	171	2	73	118,163
10	– Qualifying revolving retail	264	39,259	756	97	424	38,767
11	– Other retail	294	15,899	848	68	514	15,345
12	*– of which SME*	*142*	*9,166*	*341*	*14*	*179*	*8,967*
13	*– of which Non-SME*	*152*	*6,733*	*507*	*54*	*335*	*6,378*
14	Equity	—	—	—	—	—	—
15	Total IRB approach	3,838	269,162	3,392	508	2,105	269,608
16	Central governments and central banks	—	86,870	1	—	1	86,869
17	Regional governments or local authorities	—	226	—	—	—	226
18	Public sector entities	—	663	—	—	—	663
21	Institutions	—	667	—	—	—	667
22	Corporates	—	445	1	—	(7)	444
24	Retail	—	2,017	23	—	13	1,994
25	*– of which: SMEs*	—	*1,147*	*10*	—	—	*1,137*
26	Secured by mortgages on immovable property	—	329	—	—	—	329
28	Exposures in default	58	—	8	2	3	50
29	Items associated with particularly high risk	—	9	—	—	—	9
34	Other exposures	—	262	—	—	—	262
35	Total standardised approach	58	91,516	33	2	10	91,541
36	Total at 31 December 2020	3,896	360,678	3,425	510	2,115	361,149
	– of which: loans	*3,558*	*267,048*	*3,209*	*510*	*2,000*	*267,397*
	– of which: debt securities	—	*19,120*	*6*	—	*4*	*19,114*
	– of which: off-balance sheet exposures	*337*	*74,049*	*210*	—	*111*	*74,176*

1 Securitisation positions and non-credit obligation assets are not included in this table.
2 We have started reporting Corporate SME exposures in our Q4 2021 disclosures.

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	**149**	**4,654**	**15**	**—**	**—**	**4,788**
2	Mining & oil extraction	**38**	**1,113**	**10**	**—**	**(28)**	**1,141**
3	Manufacturing	**263**	**12,461**	**226**	**155**	**(87)**	**12,498**
4	Utilities	**1**	**931**	**3**	**—**	**(2)**	**929**
5	Water supply	**—**	**402**	**1**	**—**	**—**	**401**
6	Construction	**138**	**3,648**	**35**	**—**	**(39)**	**3,751**
7	Wholesale & retail trade	**433**	**17,069**	**124**	**—**	**(75)**	**17,378**
8	Transportation & storage	**113**	**3,199**	**42**	**4**	**(22)**	**3,270**
9	Accommodation & food services	**633**	**7,938**	**203**	**—**	**(13)**	**8,368**
10	Information & communication	**11**	**663**	**48**	**—**	**31**	**626**
11	Financial & insurance	**6**	**122,065**	**6**	**—**	**(14)**	**122,065**
12	Real estate	**567**	**16,388**	**208**	**—**	**(41)**	**16,747**
13	Professional activities	**69**	**6,409**	**34**	**—**	**(61)**	**6,444**
14	Administrative service	**319**	**10,476**	**64**	**—**	**(360)**	**10,731**
15	Public admin & defence	**—**	**8,958**	**1**	**—**	**(3)**	**8,957**
16	Education	**37**	**1,412**	**21**	**—**	**—**	**1,428**
17	Human health & social work	**131**	**2,721**	**36**	**—**	**9**	**2,816**
18	Arts & entertainment	**95**	**1,720**	**75**	**65**	**97**	**1,740**
19	Other services	**35**	**1,499**	**11**	**—**	**(2)**	**1,523**
20	Personal	**953**	**170,351**	**776**	**349**	**(294)**	**170,528**
21	Extraterritorial bodies	**—**	**1,016**	**—**	**—**	**—**	**1,016**
22	**Total at 31 December 2021**	**3,991**	**395,093**	**1,939**	**573**	**(904)**	**397,145**
1	Agriculture	134	4,511	32	—	(4)	4,613
2	Mining & oil extraction	114	1,157	32	—	19	1,239
3	Manufacturing	233	13,770	496	230	423	13,507
4	Utilities	4	807	5	—	(9)	806
5	Water supply	—	405	—	—	—	405
6	Construction	81	4,568	69	—	(68)	4,580
7	Wholesale & retail trade	416	19,454	193	8	58	19,677
8	Transportation & storage	99	2,922	63	—	20	2,958
9	Accommodation & food services	314	9,175	212	—	167	9,277
10	Information & communication	14	587	13	—	8	588
11	Financial & insurance	14	84,038	19	—	10	84,033
12	Real estate	635	16,612	241	—	124	17,006
13	Professional activities	98	5,684	86	3	58	5,696
14	Administrative service	344	9,204	358	—	262	9,190
15	Public admin & defence	—	14,787	2	—	(32)	14,785
16	Education	18	1,321	21	—	11	1,318
17	Human health & social work	75	2,525	36	—	3	2,564
18	Arts & entertainment	155	1,926	88	57	167	1,993
19	Other services	14	1,432	15	—	4	1,431
20	Personal	1,134	164,690	1,444	212	894	164,380
21	Extraterritorial bodies	—	1,103	—	—	—	1,103
22	Total at 31 December 2020	3,896	360,678	3,425	510	2,115	361,149

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	**3,838**	**376,512**	**1,894**	**573**	**(887)**	**378,456**
Other Europe	**74**	**5,825**	**23**	**—**	**(16)**	**5,876**
United States of America	**54**	**6,516**	**15**	**—**	**5**	**6,555**
Other	**25**	**6,240**	**7**	**—**	**(6)**	**6,258**
Total at 31 December 2021	**3,991**	**395,093**	**1,939**	**573**	**(904)**	**397,145**
United Kingdom	3,691	341,461	3,364	510	2,088	341,789
Other Europe	119	5,992	38	—	10	6,073
United States of America	30	7,427	12	—	6	7,445
Other	56	5,797	12	—	10	5,841
Total at 31 December 2020	3,896	360,678	3,425	510	2,115	361,149

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	
	2021	2020
	United Kingdom[1]	United Kingdom[1]
	£m	£m
Past due but not impaired exposures	**621**	494
– personal	**316**	442
– corporate and commercial	**305**	52
– financial	**—**	—
Impaired exposures	**4,340**	3,971
– personal	**1,128**	1,270
– corporate and commercial	**3,191**	2,651
– financial	**21**	50
Impairment allowances and other credit risk provisions	**(1,939)**	(3,424)
– personal	**(776)**	(1,468)
– corporate and commercial	**(1,160)**	(1,909)
– financial	**(3)**	(47)

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

	At 31 December	
	2021	2020
	United Kingdom[1]	United Kingdom[1]
	£m	£m
Specific credit risk adjustments at 1 January	**3,424**	1,755
Amounts written off	**(573)**	(510)
– personal	**(345)**	(181)
– corporate and commercial	**(227)**	(329)
– financial	**(1)**	—
Recoveries of amounts written off in previous years	**100**	83
– personal	**88**	71
– corporate and commercial	**12**	12
Charge to income statement	**(888)**	2,175
– personal	**(344)**	902
– corporate and commercial	**(505)**	1,239
– financial	**(39)**	34
Exchange and other movements	**(124)**	(79)
Specific credit risk adjustments at 31 December	**1,939**	3,424

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

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.

ECLs include impairment allowances (or provisions, against commitments and guarantees) calculated for a 12-month period (‘12-month ECL’), for the remaining life of an exposure (‘lifetime ECL’), and on financial assets that are considered to be in default or otherwise credit impaired. ECLs resulting from default events that are possible:

- within the next 12 months are recognised for financial instruments in stage 1; and
- beyond 12 months are recognised for financial instruments in stages 2 and 3.

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 2021			At 31 December 2020		
		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						
Central governments and central banks	—	—	(1)	—	—	5
Institutions	—	2	(5)	—	5	2
Corporates	1,376	901	(494)	1,498	1,146	1,096
Retail	673	800	(387)	813	1,167	1,002
– secured by mortgages on immovable property SME	5	1	1	11	—	(9)
– secured by mortgages on immovable property non-SME	84	152	(1)	79	132	73
– qualifying revolving retail	284	345	(110)	351	488	424
– other SME	146	141	(108)	149	216	179
– other non-SME	154	161	(169)	223	331	335
Total	2,049	1,703	(887)	2,311	2,318	2,105

1 Excludes securitisation exposures because EL is not calculated for this exposure class.
2 Based on the country of the lender, all amounts shown in the above table are in the UK.

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

		12 months to 31 December 2021		12 months to 31 December 2020	
		Accumulated specific credit risk adjustments	**Accumulated general credit risk adjustments**	Accumulated specific credit risk adjustments	Accumulated general credit risk adjustments
		£m	**£m**	£m	£m
1	**Opening balance at the beginning of the period**	**3,424**	**—**	1,755	—
2	Increases/decreases due to amounts set aside for estimated loan losses during the period[1]	**(912)**	**—**	2,179	—
4	Decreases due to amounts taken against accumulated credit risk adjustments	**(573)**	**—**	(510)	—
9	**Closing balance at the end of the period**	**1,939**	**—**	3,424	—
10	Recoveries on credit risk adjustments recorded directly to the statement of profit or loss	**100**	**—**	83	—

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)

		12 months to 31 December	
		2021	2020
		Gross carrying value	Gross carrying value
		£m	£m
1	**Defaulted loans and debt securities at the beginning of the period**	**3,591**	3,206
2	Loans and debt securities that have defaulted since the last reporting period	**1,664**	2,192
3	Returned to non-defaulted status	**(502)**	(489)
4	Amounts written off	**(573)**	(510)
7	Repayments	**(462)**	(808)
6	**Defaulted loans and debt securities at the end of the period**	**3,718**	3,591

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 pages 44 and 47 of our Annual Report and Accounts 2021*.*

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.

For commercial real estate, where the facility exceeds regulatory threshold requirements, Group policy requires an independent review of the valuation at least every three years, or more frequently as the need arises. Revaluations are sought where, for example, material concerns arise in relation to the performance of

the collateral. CRE revaluation also occurs commonly in circumstances where an obligor's credit quality has declined sufficiently to cause 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 types of provider of guarantees are banks, other financial institutions and corporates. The creditworthiness of providers of unfunded credit risk mitigation is taken into consideration as part of the guarantor's risk profile. 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.

The value of exposure fully or partly covered by eligible financial collateral 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	**119,954**	**6**	**128,723**	**39**	**529**	**—**
2	Regional governments or local authorities	**—**	**—**	**88**	**—**	**—**	**—**
3	Public sector entities	**428**	**—**	**428**	**—**	**—**	**—**
6	Institutions	**938**	**—**	**938**	**—**	**305**	**32**
7	Corporates	**402**	**98**	**349**	**18**	**270**	**74**
8	Retail	**1,437**	**620**	**1,437**	**37**	**921**	**63**
9	Secured by mortgage on immovable property	**241**	**—**	**241**	**—**	**91**	**38**
10	Exposures in default	**13**	**1**	**13**	**—**	**16**	**125**
11	Higher-risk categories	**9**	**—**	**9**	**—**	**14**	**150**
15	Equity	**15**	**—**	**15**	**—**	**15**	**100**
16	Other items	**321**	**—**	**321**	**—**	**82**	**26**
17	**At 31 December 2021**	**123,758**	**725**	**132,562**	**94**	**2,243**	**2**
1	Central governments or central banks	86,870	—	96,035	66	498	1
2	Regional governments or local authorities	226	—	226	—	—	—
3	Public sector entities	663	—	663	—	—	—
6	Institutions	667	—	667	—	182	27
7	Corporates	370	75	296	4	183	61
8	Retail	1,378	639	1,258	39	827	64
9	Secured by mortgage on immovable property	329	—	329	—	124	38
10	Exposures in default	50	7	49	2	72	141
11	Higher-risk categories	9	—	9	—	14	150
16	Other items	262	—	262	—	60	23
17	At 31 December 2020	90,852	721	99,822	111	1,960	2

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

2 *Central governments and central banks – Exposures post-CCF and CRM include guarantees provided as part of the UK Government Covid support programmes.*

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

	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	**6,451**	**—**	**—**	**—**	**—**
Institutions	**1,225**	**135**	**27**	**108**	**—**
Corporates	**39,137**	**46,946**	**41,152**	**5,794**	**—**
Retail	**44,965**	**133,820**	**125,903**	**7,917**	**—**
Total	**91,778**	**180,901**	**167,082**	**13,819**	**—**
Exposures under the STD approach[1,2]					
Central governments and central banks[3]	**119,748**	**—**	**—**	**—**	**—**
Institutions	**938**	**—**	**—**	**—**	**—**
Corporates	**219**	**281**	**44**	**237**	**—**
Retail	**1,069**	**977**	**977**	**—**	**—**
Secured by mortgages on immovable property	**—**	**241**	**241**	**—**	**—**
Exposures in default	**10**	**—**	**—**	**—**	**—**
Items associated with particularly high risk[4]	**9**	**—**	**—**	**—**	**—**
Regional governments or local authorities	**—**	**—**	**—**	**—**	**—**
Public sector entities	**222**	**205**	**—**	**205**	**—**
International Organisations	**—**	**—**	**—**	**—**	**—**
Other	**—**	**—**	**—**	**—**	**—**
At 31 December 2021	**122,215**	**1,704**	**1,262**	**442**	**—**
Exposures under the IRB approach[1,2]					
Central governments and central banks	7,412	1	—	1	—
Institutions	1,281	45	37	9	—
Corporates	42,337	46,666	41,615	5,051	—
Retail	47,225	125,714	117,427	8,287	—
Securitisation positions	—	—	—	—	—
Non-credit obligation assets	—	—	—	—	—
Total	98,255	172,426	159,079	13,348	—
Exposures under the STD approach[1,2]					
Central governments and central banks[3]	86,670	—	—	—	—
Institutions	667	—	—	—	—
Corporates	68	376	36	340	—
Retail	1,599	419	—	419	—
Secured by mortgages on immovable property	—	329	329	—	—
Exposures in default	50	7	—	7	—
Items associated with particularly high risk[4]	9	—	—	—	—
Regional governments or local authorities	226	—	—	—	—
Public sector entities	663	—	—	—	—
Equity	28	—	—	—	—
Other	—	—	—	—	—
At 31 December 2020	89,980	1,131	365	766	—

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

Table 24: Asset encumbrance A – Assets

	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
At 31 December 2021								
010 Assets of the reporting institution	9,850	5,981			315,734	107,322		
020 Loans on demand	–	–			99,855	98,220		
030 Equity instruments	–	–	–	–	11	–	11	–
040 Debt securities	6,012	5,981	6,012	5,981	8,859	8,467	8,857	8,468
– of which:								
050 covered bonds	–	–	–	–	–	–	–	–
060 asset-backed securities	–	–	–	–	320	–	320	–
070 issued by general governments	6,002	5,971	6,002	5,970	6,341	6,088	6,341	6,088
080 issued by financial corporations	10	10	10	10	2,066	1,929	2,066	1,929
090 issued by non-financial corporations	–	–	–	–	–	–	–	–
100 Loans and advances other than loans on demand	3,811	–	3,686	–	193,523	–	–	–
110 – of which: mortgage loans	3,686	–	3,686	–	136,746	–	–	–
120 Other assets	27	–	–	–	13,486	635	–	–
At 31 December 2020								
010 Assets of the reporting institution	6,270	6,018			280,125	73,470		
020 Loans on demand	–	–			55,239	54,733		
030 Equity instruments	–	–	–	–	5	–	5	–
040 Debt securities	6,136	6,018	6,136	6,018	20,005	18,042	20,005	18,043
– of which:								
050 covered bonds	–	–	–	–	–	–	–	–
060 asset-backed securities	–	–	–	–	723	–	723	–
070 issued by general governments	6,110	6,000	6,110	6,000	16,300	15,253	16,300	15,253
080 issued by financial corporations	26	18	26	18	3,575	2,733	3,575	2,733
090 issued by non-financial corporations	–	–	–	–	–	–	–	–
100 Loans and advances other than loans on demand	–	–	–	–	190,862	–	–	–
110 – of which: mortgage loans	–	–	–	–	134,103	–	–	–
120 Other assets	134	–	–	–	14,014	695	–	–

Table 25: Asset encumbrance B – Collateral received

	Fair value of encumbered collateral received or own debt securities issued		Fair value of collateral received or own debt securities issued available for encumbrance	
	Total	Of which: notionally eligible EHQLA and HQLA	Total	Of which: EHQLA and HQLA
	£m	£m	£m	£m
At 31 December 2021				
130 Assets of the reporting institution	2,956	2,918	1,947	1,599
160 Debt securities	2,956	2,918	1,947	1,599
– of which:				
190 –issued by general governments	2,942	2,917	1,932	1,599
200 –issued by financial corporations	14	1	14	–
210 –issued by non-financial corporations	–	–	1	–
230 Other collateral received	–	–	–	–
250 **Total assets, collateral received and own debt securities issued**	12,807	8,898	–	–
At 31 December 2020				
130 Assets of the reporting institution	876	1,016	2,957	1,349
160 Debt securities	876	1,016	2,780	1,349
– of which:				
190 –issued by general governments	827	998	2,763	1,347
200 –issued by financial corporations	49	18	15	2
210 –issued by non-financial corporations	–	–	2	–
230 Other collateral received	–	–	177	–
250 Total assets, collateral received and own debt securities issued	7,147	6,437	–	–

Table 26: Asset encumbrance C – Encumbered assets/collateral received and associated liabilities[1]

		Matching liabilities, contingent liabilities or securities lent	Assets, collateral received and own debt securities issued other than covered bonds and ABSs encumbered
		£m	£m
	At 31 December 2021		
010	Carrying amount of selected financial liabilities	**9,599**	**10,862**
	At 31 December 2020		
010	Carrying amount of selected financial liabilities	4,659	5,118

1 The values in these tables are the average of quarterly data points in the year.

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 'Guidelines on disclosure of non-performing and forborne exposures'. In 2022 we will adopt the EBA 'Guidelines on the application of definition of default under Article 178 (EBA/GL/2016/07)'

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 2021* definition of stage 3 credit impaired 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 2021*, forborne exposures are reported as 'renegotiated loans'. HSBC UK classes loans as forborne when we modify the contractual payment terms where we have significant concerns about the borrowers' ability to meet contractual payments when due.

Under our existing disclosures non-payment concessions, for example covenant waivers, while potential indicators of impairment do not currently trigger identification as forborne loans. However, in 2022, we intend to include non-payment concessions as a new forborne loans classification.

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 2021*, renegotiated loans retain this classification until maturity or de-recognition.

Under EBA and PRA guidelines, the short-term Covid-19 support measures to customers through market-specific measures under the current credit policy framework does not trigger identification as non-performing or forborne. Covid-19 support measures are assessed under the existing rules to determine default or whether forbearance has been granted.

Table 27: Credit quality of forborne exposures

		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	
			Non-performing forborne						
		Performing forborne	Total	*Of which: defaulted*	*Of which: impaired*	On performing forborne exposures	On non-performing forborne exposures	Total	*Of which: forborne non-performing exposures*
		£m	£m	£m	£m	£m	£m	£m	£m
1	**Loans and advances**	**113**	**1,664**	***1,664***	***1,664***	**(3)**	**(218)**	**1,076**	***1,017***
2	Central banks	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
3	General governments	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
4	Credit institutions	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
5	Other financial corporations	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
6	Non-financial corporations	**113**	**1,153**	***1,153***	***1,153***	**(3)**	**(126)**	**783**	***724***
7	Households	**—**	**511**	***511***	***511***	**—**	**(92)**	**293**	***293***
10	**At 31 December 2021**	**113**	**1,664**	***1,664***	***1,664***	**(3)**	**(218)**	**1,076**	***1,017***
1	Loans and advances	252	1,407	*1,407*	*1,407*	(10)	(276)	855	*743*
2	Central banks	—	—	—	—	—	—	—	—
3	General governments	—	—	—	—	—	—	—	—
4	Credit institutions	—	—	—	—	—	—	—	—
5	Other financial corporations	—	—	—	—	—	—	—	—
6	Non-financial corporations	252	862	*862*	*862*	(10)	(156)	513	*401*
7	Households	—	545	*545*	*545*	—	(120)	342	*342*
10	At 31 December 2020	252	1,407	*1,407*	*1,407*	(10)	(276)	855	*743*

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 2021 was 1.3%.

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

		Gross carrying amount/nominal amount											
		Performing exposures			Non-performing exposures								
		Total	Not past due or past due ≤ 30 days	Past due > 30 days ≤ 90 days	Total	Unlikely to pay but not past due or past due ≤ 90 days	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**	**315,223**	**314,994**	**229**	**4,027**	**3,134**	**394**	**248**	**31**	**189**	**22**	**9**	***4,027***
2	Central banks	**113,717**	**113,717**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	***–***
3	General governments	**1**	**1**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	***–***
4	Credit institutions	**1,308**	**1,308**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	***–***
5	Other financial corporations	**9,112**	**9,112**	**–**	**5**	**5**	**–**	**–**	**–**	**–**	**–**	**–**	***5***
6	Non-financial corporations	**60,819**	**60,697**	**122**	**2,970**	**2,588**	**267**	**43**	**29**	**24**	**19**	**–**	***2,970***
7	*– of which: SMEs*	***18,216***	***18,095***	***121***	***364***	***54***	***267***	***43***	***–***	***–***	***–***	***–***	***364***
8	Households	**130,266**	**130,159**	**107**	**1,052**	**541**	**127**	**205**	**2**	**165**	**3**	**9**	***1,052***
9	**Debt securities**	**14,602**	**14,602**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	***–***
10	Central banks	**219**	**219**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	***–***
11	General governments	**12,379**	**12,379**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	***–***
12	Credit institutions	**1,780**	**1,780**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	***–***
13	Other financial corporations	**224**	**224**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	***–***
14	Non-financial corporations	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	***–***
15	**Off-balance-sheet exposures**	**70,390**	**N/A**	**N/A**	**295**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	***295***
16	Central banks	**–**	**N/A**	**N/A**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	***–***
17	General governments	**–**	**N/A**	**N/A**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	***–***
18	Credit institutions	**95**	**N/A**	**N/A**	**–**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	***–***
19	Other financial corporations	**912**	**N/A**	**N/A**	**–**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	***–***
20	Non-financial corporations	**29,252**	**N/A**	**N/A**	**220**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	***220***
21	Households	**40,131**	**N/A**	**N/A**	**75**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	***75***
22	**At 31 December 2021**	**400,215**	**329,596**	**229**	**4,322**	**3,134**	**394**	**248**	**31**	**189**	**22**	**9**	***4,322***
1	Loans and advances	270,448	270,288	160	3,591	2,716	192	375	9	282	15	2	*3,591*
2	Central banks	77,182	77,182	–	–	–	–	–	–	–	–	–	*–*
3	General governments	1	1	–	–	–	–	–	–	–	–	–	*–*
4	Credit institutions	259	259	–	–	–	–	–	–	–	–	–	*–*
5	Other financial corporations	5,309	5,309	–	30	21	–	–	–	9	–	–	*30*
6	Non-financial corporations	64,656	64,640	16	2,358	2,182	44	30	8	86	7	1	*2,358*
8	Households	123,041	122,897	144	1,203	513	148	345	1	187	8	1	*1,203*
9	Debt securities	19,736	19,736	–	–	–	–	–	–	–	–	–	*–*
10	Central banks	28	28	–	–	–	–	–	–	–	–	–	*–*
11	General governments	16,422	16,422	–	–	–	–	–	–	–	–	–	*–*
12	Credit institutions	2,619	2,619	–	–	–	–	–	–	–	–	–	*–*
13	Other financial corporations	667	667	–	–	–	–	–	–	–	–	–	*–*
14	Non-financial corporations	–	–	–	–	–	–	–	–	–	–	–	*–*
15	Off-balance-sheet exposures	73,120	N/A	N/A	374	N/A	N/A	N/A	N/A	N/A	N/A	N/A	*374*
16	Central banks	–	N/A	N/A	–	–	–	–	–	–	–	–	*–*
17	General governments	–	N/A	N/A	–	–	–	–	–	–	–	–	*–*
18	Credit institutions	17	N/A	N/A	–	N/A	N/A	N/A	N/A	N/A	N/A	N/A	*–*
19	Other financial corporations	1,154	N/A	N/A	12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	*12*
20	Non-financial corporations	32,181	N/A	N/A	295	N/A	N/A	N/A	N/A	N/A	N/A	N/A	*295*
21	Households	39,768	N/A	N/A	67	N/A	N/A	N/A	N/A	N/A	N/A	N/A	*67*
22	At 31 December 2020	363,304	290,024	160	3,965	2,716	192	375	9	282	15	2	*3,965*

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 2021		At 31 December 2020	
		Collateral obtained by taking possession		Collateral obtained by taking possession	
		Value at initial recognition	Accumulated negative changes	Value at initial recognition	Accumulated negative changes
		£m	£m	£m	£m
1	Property, plant and equipment	–	–	–	–
2	Other than Property, plant and equipment	1	–	1	–
3	– residential immovable property	1	–	1	–
4	– commercial Immovable property	–	–	–	–
5	– movable property (auto, shipping, etc.)	–	–	–	–
6	– equity and debt instruments	–	–	–	–
7	– other	–	–	–	–
8	**Total**	1	–	1	–

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: These financial assets are unimpaired and without a significant increase in credit risk. A 12-month allowance for ECL is recognised;
- Stage 2: A significant increase in credit risk has been experienced since initial recognition. A lifetime ECL is recognised;
- Stage 3: There is objective evidence of impairment and the financial assets are therefore considered to be in default or otherwise credit impaired. A lifetime ECL is recognised;
- Purchased or originated credit-impaired: Financial assets purchased or originated at a deep discount are seen to reflect incurred credit losses. A lifetime ECL is recognised.

Refer to the section 'EL and credit risk adjustments' on page 21 for further information on IFRS 9.

Credit-impaired (stage 3) exposures are disclosed on page 32 of our Annual Report and Accounts 2021.

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

		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					
			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	Accumu-lated partial write-off	On perfor-ming expo-sures	On non-perfor-ming expo-sures
		£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
1	**Loans and advances**	**315,223**	***296,783***	***18,440***	**4,027**	**—**	***4,027***	**(1,007)**	***(315)***	***(692)***	**(848)**	**—**	***(848)***	**(334)**	**159,317**	**2,228**
2	Central banks	**113,717**	***113,717***	—	—	—	—	—	—	—	—	—	—	—	—	—
3	General governments	**1**	***1***	—	—	—	—	—	—	—	—	—	—	—	—	—
4	Credit institutions	**1,308**	***1,308***	—	—	—	—	—	—	—	—	—	—	—	**1,163**	—
5	Other financial corporations	**9,112**	***9,037***	***75***	**5**	—	***5***	**(3)**	***(2)***	***(1)***	—	—	—	—	**7,307**	**5**
6	Non-financial corporations	**60,819**	***45,815***	***15,004***	**2,970**	—	***2,970***	**(529)**	***(191)***	***(338)***	**(556)**	—	***(556)***	**(334)**	**32,828**	**1,623**
7	*– Of which: SMEs*	***18,216***	***16,230***	***1,986***	***364***	—	***364***	***(151)***	***(51)***	***(100)***	***(36)***	—	***(36)***	—	***13,085***	***316***
8	Households	**130,266**	***126,905***	***3,361***	**1,052**	—	***1,052***	**(475)**	***(122)***	***(353)***	**(292)**	—	***(292)***	—	**118,019**	**600**
9	**Debt securities**	**14,602**	***14,602***	—	—	—	—	**(2)**	***(2)***	—	—	—	—	—	—	—
10	Central banks	**219**	***219***	—	—	—	—	—	—	—	—	—	—	—	—	—
11	General governments	**12,379**	***12,379***	—	—	—	—	**(1)**	***(1)***	—	—	—	—	—	—	—
12	Credit institutions	**1,780**	***1,780***	—	—	—	—	**(1)**	***(1)***	—	—	—	—	—	—	—
13	Other financial corporations	**224**	***224***	—	—	—	—	—	—	—	—	—	—	—	—	—
14	Non-financial corporations	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15	**Off-balance-sheet exposures**	**70,392**	***64,605***	***3,615***	**295**	—	***276***	**(60)**	***(33)***	***(26)***	**(22)**	—	***(18)***	—	**11,033**	**33**
16	Central banks	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
17	General governments	**2**	***2***	—	—	—	—	—	—	—	—	—	—	—	—	—
18	Credit institutions	**95**	***95***	—	—	—	—	**(1)**	***(1)***	—	—	—	—	—	—	—
19	Other financial corporations	**912**	***759***	***104***	—	—	—	—	—	—	—	—	—	—	**27**	—
20	Non-financial corporations	**29,252**	***23,915***	***3,215***	**220**	—	***201***	**(50)**	***(24)***	***(25)***	**(22)**	—	***(18)***	—	**5,565**	**27**
21	Households	**40,131**	***39,834***	***296***	**75**	—	***75***	**(9)**	***(8)***	***(1)***	—	—	—	—	**5,441**	**6**
22	**At 31 December 2021**	**400,217**	***375,988***	***22,055***	**4,322**	**—**	***4,303***	**(1,069)**	***(350)***	***(718)***	**(870)**	**—**	***(866)***	**(334)**	**170,350**	**2,261**
1	Loans and advances	270,448	*241,642*	*28,806*	3,591	—	*3,591*	(2,118)	*(467)*	*(1,651)*	(1,074)	—	*(1,074)*	(237)	150,631	1,340
2	Central banks	77,182	*77,180*	*2*	—	—	—	(1)	*(1)*	—	—	—	—	—	—	—
3	General governments	1	*1*	—	—	—	—	—	—	—	—	—	—	—	—	—
4	Credit institutions	259	*259*	—	—	—	—	—	—	—	—	—	—	—	80	—
5	Other financial corporations	5,309	*4,530*	*779*	30	—	*30*	(35)	*(5)*	*(30)*	(7)	—	*(7)*	—	3,114	7
6	Non-financial corporations	64,656	*43,501*	*21,155*	2,358	—	*2,358*	(1,028)	*(300)*	*(728)*	(673)	—	*(673)*	(237)	37,111	675
8	Households	123,041	*116,171*	*6,870*	1,203	—	*1,203*	(1,054)	*(161)*	*(893)*	(394)	—	*(394)*	—	110,326	658
9	Debt securities	*19,736*	*19,736*	—	—	—	—	(7)	*(7)*	—	—	—	—	—	—	—
10	Central banks	28	*28*	—	—	—	—	—	—	—	—	—	—	—	—	—
11	General governments	16,422	*16,422*	—	—	—	—	(6)	*(6)*	—	—	—	—	—	—	—
12	Credit institutions	2,619	*2,619*	—	—	—	—	(1)	*(1)*	—	—	—	—	—	—	—
13	Other financial corporations	667	*667*	—	—	—	—	—	—	—	—	—	—	—	—	—
14	Non-financial corporations	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15	Off-balance-sheet exposures	73,120	*64,119*	*6,723*	374	—	*310*	(173)	*(88)*	*(85)*	(49)	—	*(49)*	—	11,489	45
16	Central banks	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
17	General governments	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
18	Credit institutions	17	*16*	—	—	—	—	—	—	—	—	—	—	—	—	—
19	Other financial corporations	1,154	*1,064*	*84*	12	—	*12*	(2)	*(1)*	*(1)*	—	—	—	—	136	—
20	Non-financial corporations	32,181	*23,574*	*6,337*	295	—	*231*	(155)	*(72)*	*(83)*	(49)	—	*(49)*	—	5,500	38
21	Households	39,768	*39,465*	*302*	67	—	*67*	(16)	*(15)*	*(1)*	—	—	—	—	5,853	7
22	At 31 December 2020	363,304	*325,497*	*35,529*	3,965	—	*3,901*	(2,298)	*(562)*	*(1,736)*	(1,123)	—	*(1,123)*	(237)	162,120	1,385

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	**97**	**177**	**4,883**	**1,294**	**6,451**
2	Institutions	**800**	**224**	**1**	**335**	**1,360**
3	Corporates	**81,726**	**2,372**	**1,212**	**773**	**86,083**
4	Retail	**174,446**	**607**	**458**	**3,274**	**178,785**
6	**Total IRB approach**	**257,069**	**3,380**	**6,554**	**5,676**	**272,679**
	Standardised approach exposure classes					
7	Central governments and central banks	**118,148**	**1,810**	**—**	**—**	**119,958**
9	Public sector entities	**—**	**428**	**—**	**—**	**428**
12	Institutions	**229**	**155**	**—**	**554**	**938**
13	Corporates	**373**	**102**	**1**	**24**	**500**
14	Retail	**2,042**	**2**	**—**	**2**	**2,046**
15	Secured by mortgages on immovable property	**240**	**—**	**—**	**1**	**241**
16	Exposures in default	**10**	**—**	**—**	**—**	**10**
17	Items associated with particularly high risk	**9**	**—**	**—**	**—**	**9**
21	Equity	**15**	**—**	**—**	**—**	**15**
22	Other items	**321**	**—**	**—**	**—**	**321**
23	**Total standardised approach**	**121,387**	**2,497**	**1**	**581**	**124,466**
	At 31 Dec 2021	**378,456**	**5,877**	**6,555**	**6,257**	**397,145**
	IRB approach exposure classes					
1	Central governments and central banks	54	—	6,094	1,200	7,348
2	Institutions	1,025	125	1	237	1,388
3	Corporates	83,755	2,740	915	1,130	88,540
4	Retail	168,464	662	368	2,838	172,332
6	Total IRB approach	253,298	3,527	7,378	5,405	269,608
	Standardised approach exposure classes					
7	Central governments and central banks	85,312	1,557	—	—	86,869
8	Regional governments or local authorities	—	226	—	—	226
9	Public sector entities	—	663	—	—	663
12	Institutions	124	81	67	395	667
13	Corporates	419	16	—	9	444
14	Retail	1,987	4	—	3	1,994
15	Secured by mortgages on immovable property	328	—	—	1	329
16	Exposures in default	50	—	—	—	50
17	Items associated with particularly high risk	9	—	—	—	9
22	Other items	262	—	—	—	262
23	Total standardised approach	88,491	2,547	67	436	91,541
	At 31 Dec 2020	341,789	6,074	7,445	5,841	361,149

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)

	Net carrying values[1]	Agriculture £m	Mining and oil extraction £m	Manu-facturing £m	Utilities £m	Water supply £m	Construc-tion £m	Wholesale & retail trade £m	Transporta-tion & storage £m	Accom-modation & food services £m	Infor-mation & communi-cation £m	Financial & insurance £m
	IRB approach											
1	Central governments and central banks	—	—	—	—	—	—	—	—	—	—	1,086
2	Institutions	—	—	—	—	—	—	—	—	—	—	1,266
3	Corporates	3,883	1,130	11,841	909	395	2,403	15,275	2,854	7,582	546	2,378
4	Retail	412	7	420	12	5	1,295	1,792	372	676	74	82
6	**Total IRB approach**	**4,295**	**1,137**	**12,261**	**921**	**400**	**3,698**	**17,067**	**3,226**	**8,258**	**620**	**4,812**
	STD approach											
7	Central governments and central banks	—	—	—	—	—	—	—	—	—	—	115,433
8	Regional governments or local authorities	—	—	—	—	—	—	—	—	—	—	—
9	Public sector entities	—	—	—	—	—	—	—	—	—	—	377
10	Multilateral development banks	—	—	—	—	—	—	—	—	—	—	—
11	International organisations	—	—	—	—	—	—	—	—	—	—	—
12	Institutions	—	—	—	—	—	—	—	—	—	—	938
13	Corporates	20	—	123	—	—	12	36	7	20	1	158
14	Retail	473	4	114	8	1	41	275	37	90	5	11
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	—	—	—	—	—	—	—	—	—	—	15
22	Other exposures	—	—	—	—	—	—	—	—	—	—	321
23	**Total STD approach**	**493**	**4**	**237**	**8**	**1**	**53**	**311**	**44**	**110**	**6**	**117,253**
24	**At 31 Dec 2021**	**4,788**	**1,141**	**12,498**	**929**	**401**	**3,751**	**17,378**	**3,270**	**8,368**	**626**	**122,065**

	Net carrying values[1]	Real estate £m	Professional activities £m	Adminis-trative 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	—	—	—	4,712	—	—	—	—	—	653	6,451
2	Institutions	—	—	—	33	61	—	—	—	—	—	1,360
3	Corporates	16,007	5,848	9,177	36	1,175	2,302	1,399	942	—	1	86,083
4	Retail	670	534	1,412	7	170	377	301	563	169,604	—	178,785
6	**Total IRB approach**	**16,677**	**6,382**	**10,589**	**4,788**	**1,406**	**2,679**	**1,700**	**1,505**	**169,604**	**654**	**272,679**
	STD approach											
7	Central governments and central banks	—	—	—	4,117	—	45	1	—	—	362	119,958
8	Regional governments or local authorities	—	—	—	—	—	—	—	—	—	—	—
9	Public sector entities	—	—	—	51	—	—	—	—	—	—	428
12	Institutions	—	—	—	—	—	—	—	—	—	—	938
13	Corporates	9	29	50	—	2	28	2	3	—	—	500
14	Retail	61	33	92	1	20	64	37	15	664	—	2,046
15	Secured by mortgages on immovable property	—	—	—	—	—	—	—	—	241	—	241
16	Exposures in default	—	—	—	—	—	—	—	—	10	—	10
17	Items associated with particularly high risk	—	—	—	—	—	—	—	—	9	—	9
22	Other exposures	—	—	—	—	—	—	—	—	—	—	321
23	**Total STD approach**	**70**	**62**	**142**	**4,169**	**22**	**137**	**40**	**18**	**924**	**362**	**124,466**
24	**At 31 Dec 2021**	**16,747**	**6,444**	**10,731**	**8,957**	**1,428**	**2,816**	**1,740**	**1,523**	**170,528**	**1,016**	**397,145**

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

	Net carrying values[1]	Agriculture £m	Mining and oil extraction £m	Manufac-turing £m	Utilities £m	Water supply £m	Construction £m	Wholesale & retail trade £m	Transporta-tion & storage £m	Accom-modation & food services £m	Infor-mation & communi-cation £m	Financial & insurance £m
	IRB approach exposure classes											
1	Central governments and central banks	—	—	—	—	—	—	—	—	—	—	578
2	Institutions	—	—	—	—	—	—	—	—	—	—	1,388
3	Corporates	3,851	1,233	12,359	788	401	2,599	16,095	2,566	8,503	510	2,247
4	Retail	403	6	852	12	4	1,926	3,173	357	681	73	139
6	Total IRB approach	4,254	1,239	13,211	800	405	4,525	19,268	2,923	9,184	583	4,352
	Standardised approach exposure classes											
7	Central governments and central banks	—	—	—	—	—	—	—	—	—	—	78,287
8	Regional governments or local authorities	—	—	—	—	—	—	—	—	—	—	—
9	Public sector entities	—	—	—	—	—	—	—	—	—	—	388
12	Institutions	—	—	—	—	—	—	—	—	—	—	667
13	Corporates	—	—	171	—	—	16	51	8	6	1	63
14	Retail	359	—	122	6	—	38	349	26	82	4	14
15	Secured by mortgages on immovable property	—	—	—	—	—	—	—	—	—	—	—
16	Exposures in default	—	—	3	—	—	1	9	1	5	—	—
17	Items associated with particularly high risk	—	—	—	—	—	—	—	—	—	—	—
22	Other exposures	—	—	—	—	—	—	—	—	—	—	262
23	Total STD approach	359	—	296	6	—	55	409	35	93	5	79,681
24	At 31 Dec 2020	4,613	1,239	13,507	806	405	4,580	19,677	2,958	9,277	588	84,033

	Net carrying values[1]	Real estate £m	Professional activities £m	Adminis-trative 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 exposure classes											
1	Central governments and central banks	—	—	—	5,678	—	82	—	—	—	1,010	7,348
2	Institutions	—	—	—	—	—	—	—	—	—	—	1,388
3	Corporates	16,964	5,632	9,015	80	1,129	2,032	1,658	876	—	2	88,540
4	Retail	—	—	—	7	169	381	305	534	163,310	—	172,332
6	Total IRB approach	16,964	5,632	9,015	5,765	1,298	2,495	1,963	1,410	163,310	1,012	269,608
	STD approach exposure classes											
7	Central governments and central banks	—	—	—	8,519	—	—	—	—	—	63	86,869
8	Regional governments or local authorities	—	—	—	226	—	—	—	—	—	—	226
9	Public sector entities	—	—	—	275	—	—	—	—	—	—	663
12	Institutions	—	—	—	—	—	—	—	—	—	—	667
13	Corporates	10	26	79	—	2	5	3	3	—	—	444
14	Retail	31	37	93	—	18	63	25	18	709	—	1,994
15	Secured by mortgages on immovable property	—	—	—	—	—	—	—	—	329	—	329
16	Exposures in default	1	1	3	—	—	1	2	—	23	—	50
17	Items associated with particularly high risk	—	—	—	—	—	—	—	—	9	—	9
22	Other exposures	—	—	—	—	—	—	—	—	—	—	262
23	Total STD approach	42	64	175	9,020	20	69	30	21	1,070	91	91,541
24	At 31 Dec 2020	17,006	5,696	9,190	14,785	1,318	2,564	1,993	1,431	164,380	1,103	361,149

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

Table 33: Maturity of on-balance sheet exposures

		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	**—**	**1,307**	**2,491**	**2,653**	**—**	**6,451**
2	Institutions	**56**	**168**	**793**	**96**	**—**	**1,113**
3	Corporates	**7,514**	**13,799**	**27,643**	**7,407**	**—**	**56,363**
4	Retail	**6,550**	**1,687**	**9,607**	**119,379**	**—**	**137,223**
6	**Total IRB approach**	**14,120**	**16,961**	**40,534**	**129,535**	**—**	**201,150**
	Standardised approach						
7	Central governments and central banks	**111,905**	**1,865**	**243**	**5,821**	**118**	**119,952**
8	Regional government or local authorities	**—**	**—**	**—**	**—**	**—**	**—**
9	Public sector entities	**—**	**177**	**250**	**—**	**—**	**427**
12	Institutions	**—**	**938**	**—**	**—**	**—**	**938**
13	Corporates	**15**	**196**	**136**	**55**	**—**	**402**
14	Retail	**29**	**17**	**520**	**861**	**—**	**1,427**
15	Secured by mortgages on immovable property	**—**	**8**	**9**	**223**	**—**	**240**
16	Exposures in default	**2**	**1**	**3**	**4**	**—**	**10**
17	Items associated with particularly high risk	**—**	**9**	**—**	**—**	**—**	**9**
21	Equity	**—**	**—**	**—**	**—**	**15**	**15**
22	Other items	**—**	**299**	**23**	**—**	**—**	**322**
23	**Total standardised approach**	**111,951**	**3,510**	**1,184**	**6,964**	**133**	**123,742**
24	**At 31 Dec 2021**	**126,071**	**20,471**	**41,718**	**136,499**	**133**	**324,892**
	IRB approach						
1	Central governments and central banks	—	322	3,955	3,071	—	7,348
2	Institutions	121	156	873	86	—	1,236
3	Corporates	6,839	11,459	29,894	9,923	—	58,115
4	Retail	5,994	1,854	10,768	110,837	—	129,453
6	Total IRB approach	12,954	13,791	45,490	123,917	—	196,152
	Standardised approach						
7	Central governments and central banks	75,719	3,470	1,889	5,591	200	86,869
8	Regional government or local authorities	—	25	201	—	—	226
9	Public sector entities	—	15	648	—	—	663
12	Institutions	—	667	—	—	—	667
13	Corporates	15	218	27	109	—	369
14	Retail	132	90	286	847	—	1,355
15	Secured by mortgages on immovable property	—	13	9	307	—	329
16	Exposures in default	11	5	10	18	—	44
17	Items associated with particularly high risk	—	9	—	—	—	9
22	Equity	—	—	—	—	—	—
23	Other items	—	245	17	—	—	262
24	Total standardised approach	75,877	4,757	3,115	6,872	200	90,821
	At 31 Dec 2020	88,831	18,548	48,605	130,789	200	286,973

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 the European Economic Area ('EEA') states are risk weighted at 0% provided that they are denominated and funded in local currency or qualify for that weight by virtue of their external rating.

Table 40 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 such models fall directly under the remit of the business and functional MOFs, operating in line with HSBC UK's model risk policy. Additionally, the business and functional MOFs are responsible for the approval of stress testing models used for regulatory stress testing exercises such as those carried out by the Bank of England.

Both the Wholesale and Retail MOFs 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.

Model Risk Management 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 standards is subject to examination by Risk oversight and review from within the Risk function itself, and by Internal Audit.

Utilisation of the IRB approach

At 31 December 2021, 49% of the exposures were treated under AIRB, 16% under FIRB and 35% 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 regulatory permissions and 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. Where the exposures are subject to the Foundation IRB approach EAD and LGD estimates are determined using regulatory parameters.

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.

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 £bn	Component 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	48.9	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%

The UK corporate models are used by all UK subsidiaries of HSBC Group (including 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]

	PD[2]	
	Estimated	Actuals
At 31 December 2021	%	%
Corporates models[3]	**1.89**	**1.46**
At 31 December 2020		
Corporates models[3]	1.49	1.43

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 *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.

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 36: PD, LGD, RWA and exposure by country/territory

	Exposure-weighted average PD	Exposure-weighted average LGD	Exposure value	RWAs
At 31 December 2021	**%**	**%**	**£m**	**£m**
Wholesale IRB Advanced approach				
All asset classes	**0.96**	**38.8**	**9,245**	**1,673**
Central governments and central banks	**0.01**	**44.9**	**6,451**	**698**
Institutions	**0.06**	**26.7**	**1,120**	**202**
Corporates	**5.23**	**23.2**	**1,674**	**773**
Wholesale IRB Foundation approach				
All asset classes	**4.82**	**37.7**	**58,967**	**41,811**
Central governments and central banks	**—**	**—**	**—**	**—**
Institutions	**1.67**	**45.0**	**—**	**—**
Corporates	**4.82**	**37.7**	**58,967**	**41,811**
Retail IRB approach				
All asset classes	**1.04**	**28.8**	**163,654**	**19,223**
Retail secured by mortgages on immovable property SME	**73.84**	**66.5**	**13**	**23**
Retail secured by mortgages on immovable property Non-SME	**0.78**	**15.5**	**129,141**	**7,412**
Retail QRRE	**1.32**	**79.6**	**26,039**	**5,095**
Other SME	**7.21**	**85.3**	**1,959**	**1,952**
Other non-SME	**3.27**	**72.9**	**6,502**	**4,741**
At 31 December 2020				
Wholesale IRB Advanced approach				
All asset classes	0.98	38.8	10,339	1,823
Central governments and central banks	0.01	45.0	7,349	807
Institutions	0.07	26.0	1,277	220
Corporates	5.80	22.0	1,713	796
Wholesale IRB Foundation approach				
All asset classes	4.71	38.1	60,562	43,389
Central governments and central banks	—	—	—	—
Institutions	—	—	—	—
Corporates	4.71	38.1	60,562	43,389
Retail IRB approach				
All asset classes	1.28	30.0	157,669	19,624
Retail secured by mortgages on immovable property SME	33.36	50.1	60	58
Retail secured by mortgages on immovable property Non-SME	0.86	15.7	122,334	6,741
Retail QRRE	1.82	79.6	26,618	5,430
Other SME	7.31	85.2	2,090	2,202
Other non-SME	4.67	78.1	6,567	5,193

Table 37: IRB Advanced – 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 – Central government and central banks												
0.00 to <0.15	6,451	–	31.8	6,451	0.01	76	45.0	3.4	698	10.8	–	–
0.15 to <0.25	–	–	–	–	–	–	–	–	–	–	–	–
0.25 to <0.50	–	–	–	–	–	–	–	–	–	–	–	–
0.50 to <0.75	–	–	–	–	0.63	–	45.0	1.0	–	71.6	–	–
0.75 to <2.50	–	–	–	–	–	–	–	–	–	–	–	–
2.50 to <10.00	–	–	–	–	3.05	–	45.0	1.0	–	134.3	–	–
10.00 to <100.00	–	–	–	–	–	–	–	–	–	–	–	–
100.00 (Default)	–	–	–	–	–	–	–	–	–	–	–	–
Sub-total	6,451	–	31.8	6,451	0.01	76	45.0	3.4	698	10.8	–	–
AIRB – Institutions												
0.00 to <0.15	1,105	231	43.5	1,118	0.06	506	27.0	2.8	200	17.9	–	2
0.15 to <0.25	–	–	33.9	–	0.22	–	31.0	2.3	–	19.5	–	–
0.25 to <0.50	–	–	97.1	–	0.37	–	45.0	5.0	–	92.6	–	–
0.50 to <0.75	10	10	57.0	2	0.63	6	45.0	1.8	2	83.8	–	–
0.75 to <2.50	–	–	6.8	–	1.63	–	44.0	1.0	–	98.2	–	–
2.50 to <10.00	–	6	–	–	3.27	2	45.0	1.0	–	117.0	–	–
10.00 to <100.00	–	–	–	–	–	–	–	–	–	–	–	–
100.00 (Default)	–	–	–	–	–	–	–	–	–	–	–	–
Sub-total	1,115	247	42.6	1,120	0.06	514	27.0	2.8	202	18.0	–	2
AIRB – Corporate – Specialised Lending (excluding Slotting)[1]												
0.00 to <0.15	5	12	57.0	12	0.13	1	18.0	2.2	1	10.3	–	–
0.15 to <0.25	108	75	43.7	141	0.22	11	28.0	4.0	41	28.6	1	1
0.25 to <0.50	107	82	57.0	154	0.37	3	41.0	3.8	99	64.3	–	–
0.50 to <0.75	89	46	57.0	115	0.63	10	41.0	4.1	91	79.5	–	–
0.75 to <2.50	75	37	57.0	96	1.31	5	23.0	4.6	68	70.3	–	–
2.50 to <10.00	–	–	–	–	–	–	–	–	–	–	–	–
10.00 to <100.00	–	–	–	–	–	–	–	–	–	–	–	–
100.00 (Default)	–	–	–	–	–	–	–	–	–	–	–	–
Sub-total	384	252	53.0	518	0.56	30	34.0	4.0	300	57.8	1	1
AIRB – Corporate – Other												
0.00 to <0.15	178	130	51.1	257	0.08	93	15.0	2.0	35	13.8	–	–
0.15 to <0.25	135	18	45.1	142	0.21	174	17.0	1.3	22	15.1	–	–
0.25 to <0.50	128	18	76.4	143	0.38	122	20.0	2.0	41	28.4	–	–
0.50 to <0.75	78	1	44.9	83	0.63	101	21.0	1.6	27	33.1	–	–
0.75 to <2.50	366	34	110.3	385	1.79	21,535	20.0	1.5	178	46.6	1	–
2.50 to <10.00	62	638	–	62	3.87	57	17.0	1.4	31	49.8	–	–
10.00 to <100.00	11	–	566.7	11	17.87	20	20.0	1.0	10	90.7	–	–
100.00 (Default)	72	–	856.3	72	100.00	18	21.0	1.0	129	179.2	7	6
Sub-total	1,030	839	14.9	1,155	7.34	22,127	19.0	1.6	473	41.0	8	6
AIRB – Corporate – SME												
0.00 to <0.15	–	–	–	–	0.13	–	37.0	1.0	–	12.8	–	–
0.15 to <0.25	2	2	21.0	2	0.22	25	15.0	1.6	–	7.0	–	–
0.25 to <0.50	–	–	–	–	0.37	–	45.0	1.0	–	1,484.1	–	–
0.50 to <0.75	–	–	45.4	–	0.63	–	45.0	1.0	–	37.5	–	–
0.75 to <2.50	–	–	57.0	–	0.91	6	36.0	4.1	–	59.6	–	–
2.50 to <10.00	–	–	–	–	3.69	–	45.0	1.0	–	72.5	–	–
10.00 to <100.00	–	–	–	–	–	–	–	–	–	–	–	–
100.00 (Default)	–	–	–	–	–	–	–	–	–	–	–	–
Sub-total	2	2	22.3	2	0.33	25	17.0	1.9	–	15.9	–	–
Wholesale AIRB – Total at 31 December 2021[2]	8,982	1,340	27.1	9,246	0.96	22,771	39.0	3.0	1,673	18.1	9	9

Table 37: IRB Advanced – Credit risk exposures by portfolio and PD range (CR6) (continued)

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 – Central government and central banks												
0.00 to <0.15	7,349	—	24.8	7,349	0.01	74	45.0	3.6	807	11.0	—	—
0.15 to <0.25	—	—	—	—	—	1	45.0	4.9	—	59.8	—	—
0.25 to <0.50	—	—	—	—	—	—	—	—	—	—	—	—
0.50 to <0.75	—	—	—	—	—	—	—	—	—	—	—	—
0.75 to <2.50	—	—	—	—	1.20	2	45.0	2.4	—	94.9	—	—
2.50 to <10.00	—	—	—	—	4.20	1	45.0	2.4	—	148.3	—	—
10.00 to <100.00	—	—	—	—	—	—	—	—	—	—	—	—
100.00 (Default)	—	—	—	—	—	—	—	—	—	—	—	—
Sub-total	7,349	—	24.8	7,349	0.01	78	45.0	3.6	807	11.0	—	—
AIRB – Institutions												
0.00 to <0.15	1,172	138	25.5	1,208	0.06	1,555	25.0	2.1	153	12.6	—	1
0.15 to <0.25	66	—	73.7	66	0.22	6	45.0	4.9	65	98.2	—	4
0.25 to <0.50	—	—	51.2	—	0.37	6	45.0	4.9	—	91.6	—	—
0.50 to <0.75	3	1	2.2	1	0.63	7	45.0	1.2	1	75.2	—	—
0.75 to <2.50	1	9	10.5	1	0.88	15	45.0	1.0	1	82.9	—	—
2.50 to <10.00	—	4	—	—	3.25	2	45.0	1.0	—	117.5	—	—
10.00 to <100.00	—	—	—	—	—	—	—	—	—	—	—	—
100.00 (Default)	—	—	—	—	—	—	—	—	—	—	—	—
Sub-total	1,242	152	23.8	1,276	0.07	1,591	26.0	2.2	220	17.2	—	5
AIRB – Corporate – Specialised Lending (excluding Slotting)[1]												
0.00 to <0.15	7	6	57.0	11	0.13	1	18.0	1.0	1	7.1	—	—
0.15 to <0.25	136	141	57.0	216	0.22	6	32.0	3.9	83	38.6	—	—
0.25 to <0.50	—	—	—	—	—	—	—	—	—	—	—	—
0.50 to <0.75	76	12	57.0	83	0.63	6	19.0	3.8	29	35.3	—	—
0.75 to <2.50	42	29	44.2	54	1.25	2	20.0	4.4	31	56.4	—	—
2.50 to <10.00	—	—	—	—	—	—	—	—	—	—	—	—
10.00 to <100.00	—	—	—	—	—	—	—	—	—	—	—	—
100.00 (Default)	—	—	—	—	—	—	—	—	—	—	—	—
Sub-total	261	188	55.0	364	0.46	15	27.0	3.9	144	39.6	—	—
AIRB – Corporate – Other												
0.00 to <0.15	180	133	84.0	292	0.08	67	19.0	1.9	39	13.5	—	—
0.15 to <0.25	166	21	46.1	175	0.21	100	17.0	2.2	32	18.3	—	—
0.25 to <0.50	129	4	81.1	131	0.37	50	25.0	1.8	41	31.0	—	—
0.50 to <0.75	191	2	88.1	193	0.63	47	18.0	1.3	54	28.2	—	1
0.75 to <2.50	413	160	34.8	375	1.49	8,625	22.0	1.8	187	49.7	2	2
2.50 to <10.00	89	102	0.5	90	4.05	46	28.0	1.5	74	82.6	1	—
10.00 to <100.00	8	—	44.0	8	14.81	10	14.0	1.0	5	57.0	—	—
100.00 (Default)	77	5	161.0	85	100.00	27	26.0	1.2	220	259.4	5	5
Sub-total	1,253	427	44.5	1,349	7.24	8,940	21.0	1.7	652	48.4	8	8
Wholesale AIRB – Total at 31 Dec 2020	10,105	767	43.0	10,338	0.98	10,623	39.0	3.0	1,823	17.6	8	13

1 Slotting exposures are disclosed in Table 40: Specialised lending on slotting approach (CR10).
2 We have started reporting Corporate SME exposures from 31 December 2021.

Table 38: IRB Foundation – 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
FIRB – Corporate – Other												
0.00 to <0.15	**4,132**	**6,340**	**65.0**	**8,632**	**0.1**	**3,409**	**39.0**	**2.1**	**2,255**	**26**	**4**	**2**
0.15 to <0.25	**4,877**	**3,553**	**50.7**	**6,664**	**0.2**	**3,334**	**36.2**	**1.9**	**2,608**	**39**	**6**	**29**
0.25 to <0.50	**3,654**	**2,662**	**45.5**	**4,892**	**0.4**	**2,891**	**40.0**	**2.1**	**2,910**	**59**	**9**	**4**
0.50 to <0.75	**3,646**	**2,207**	**46.6**	**4,537**	**0.6**	**2,731**	**36.5**	**1.9**	**3,100**	**68**	**13**	**5**
0.75 to <2.50	**11,836**	**6,656**	**46.4**	**14,231**	**1.5**	**35,428**	**39.4**	**2.2**	**13,695**	**96**	**94**	**57**
2.50 to <10.00	**6,774**	**2,520**	**55.2**	**7,480**	**4.9**	**4,569**	**32.4**	**1.9**	**9,493**	**127**	**135**	**162**
10.00 to <100.00	**779**	**279**	**36.4**	**824**	**16.7**	**809**	**36.7**	**1.9**	**1,695**	**206**	**56**	**82**
100.00 (Default)	**1,916**	**196**	**50.9**	**1,886**	**100.0**	**1,698**	**39.8**	**2.1**	**—**	**—**	**754**	**308**
Sub-total	**37,614**	**24,413**	**52.7**	**49,146**	**5.4**	**54,869**	**37.6**	**2.0**	**35,756**	**73**	**1,071**	**649**
FIRB – Corporate – SME												
0.00 to <0.15	**564**	**247**	**25.3**	**599**	**0.1**	**1,271**	**40.0**	**2.7**	**163**	**27**	**—**	**—**
0.15 to <0.25	**1,544**	**534**	**18.1**	**1,560**	**0.2**	**2,593**	**39.0**	**2.4**	**505**	**32**	**2**	**1**
0.25 to <0.50	**1,760**	**526**	**21.1**	**1,744**	**0.4**	**2,861**	**38.4**	**2.5**	**717**	**41**	**3**	**2**
0.50 to <0.75	**1,516**	**386**	**22.7**	**1,486**	**0.6**	**2,257**	**38.0**	**2.8**	**831**	**56**	**5**	**2**
0.75 to <2.50	**3,389**	**800**	**29.4**	**3,153**	**1.4**	**5,686**	**38.4**	**2.5**	**2,289**	**73**	**24**	**14**
2.50 to <10.00	**1,158**	**240**	**25.3**	**938**	**4.7**	**2,276**	**38.5**	**2.5**	**995**	**106**	**25**	**32**
10.00 to <100.00	**380**	**78**	**49.6**	**339**	**18.0**	**734**	**38.4**	**2.3**	**555**	**164**	**34**	**23**
100.00 (Default)	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
Sub-total	**10,311**	**2,810**	**24.6**	**9,819**	**1.7**	**17,678**	**38.5**	**2.5**	**6,055**	**62**	**93**	**74**
FIRB – Total at 31 Dec 2021	**47,925**	**27,223**	**50.0**	**58,965**	**5.0**	**72,550**	**38.0**	**2.0**	**41,811**	**71**	**1,164**	**723**
FIRB – Corporate – Other												
0.00 to <0.15	4,169	5,884	66.1	8,143	0.1	3,719	41.0	2.4	2,557	31	4	3
0.15 to <0.25	6,114	4,591	54.8	8,540	0.2	4,881	35.0	2.2	3,245	38	8	6
0.25 to <0.50	5,450	3,227	48.5	6,908	0.4	4,815	38.4	2.3	3,654	53	12	10
0.50 to <0.75	4,665	2,713	46.0	5,644	0.6	4,086	37.9	2.4	3,716	66	16	12
0.75 to <2.50	16,948	8,547	37.0	18,594	1.4	37,093	38.1	2.3	16,096	87	116	221
2.50 to <10.00	8,023	3,056	45.7	8,922	4.4	6,618	38.5	2.4	11,152	125	168	208
10.00 to <100.00	1,942	559	27.8	2,000	14.8	1,408	33.7	1.8	2,969	148	122	95
100.00 (Default)	1,715	275	47.8	1,811	100.0	1,619	42.2	2.1	—	—	768	404
Sub-total	49,026	28,852	48.8	60,562	4.7	64,239	38.1	2.3	43,389	72	1,214	959
FIRB – Total at 31 Dec 2020	49,026	28,852	49.0	60,562	5.0	64,239	38.0	2.0	43,389	72	1,214	959

^ *Figures have been prepared on an IFRS 9 transitional basis.*
1 *We have started reporting Corporate SME exposures from 31 December 2021.*

Table 39: Specialised lending on slotting approach (CR10)

Regulatory categories	Remaining maturity	On-balance sheet amount £m	Off-balance sheet amount £m	Risk weight %	Exposure amount £m	RWAs £m	Expected loss £m
Category 1 – Strong	Less than 2.5 years	**2,919**	**712**	**50**	**3,335**	**1,609**	**—**
	Equal to or more than 2.5 years	**1,915**	**466**	**70**	**2,190**	**1,549**	**9**
Category 2 – Good	Less than 2.5 years	**1,888**	**145**	**70**	**1,981**	**1,361**	**8**
	Equal to or more than 2.5 years	**572**	**145**	**90**	**656**	**592**	**5**
Category 3 – Satisfactory	Less than 2.5 years	**216**	**3**	**115**	**224**	**253**	**6**
	Equal to or more than 2.5 years	**35**	**1**	**115**	**37**	**43**	**1**
Category 4 – Weak	Less than 2.5 years	**10**	**—**	**250**	**10**	**26**	**1**
	Equal to or more than 2.5 years	**1**	**—**	**250**	**1**	**3**	**—**
Category 5 – Default	Less than 2.5 years	**192**	**10**	**—**	**324**	**—**	**162**
	Equal to or more than 2.5 years	**10**	**—**	**—**	**20**	**—**	**10**
At 31 December 2021	Less than 2.5 years	**5,225**	**870**		**5,874**	**3,249**	**177**
	Equal to or more than 2.5 years	**2,533**	**612**		**2,904**	**2,187**	**25**
Category 1 – Strong	Less than 2.5 years	4,486	404	50	4,637	2,308	—
	Equal to or more than 2.5 years	2,179	465	70	2,349	1,619	9
Category 2 – Good	Less than 2.5 years	1,254	191	70	1,333	920	5
	Equal to or more than 2.5 years	435	66	90	441	394	4
Category 3 – Satisfactory	Less than 2.5 years	66	1	115	66	73	2
	Equal to or more than 2.5 years	42	4	115	42	46	1
Category 4 – Weak	Less than 2.5 years	29	1	250	30	73	2
	Equal to or more than 2.5 years	3	—	250	3	8	—
Category 5 – Default	Less than 2.5 years	319	2	—	473	—	237
	Equal to or more than 2.5 years	17	—	—	29	—	15
At 31 December 2020	Less than 2.5 years	6,154	599		6,539	3,374	246
	Equal to or more than 2.5 years	2,676	535		2,864	2,067	29

Table 40: Standardised exposure – by credit quality step

	At 31 December 2021			At 31 December 2020		
	Original exposure[1]	Exposure value	RWAs^	Original exposure[1]	Exposure value	RWAs^
	£m	£m	£m	£m	£m	£m
Central governments and central banks						
Credit quality step 1	**119,749**	**128,550**	**—**	86,670	95,900	—
Credit quality step unrated	**211**	**212**	**528**	201	201	499
Total	**119,960**	**128,762**	**528**	86,871	96,101	499
Institutions						
Credit quality step unrated	**938**	**938**	**305**	667	667	182
Total	**938**	**938**	**305**	667	667	182
Corporates						
Credit quality step 1	**—**	**119**	**24**	—	127	25
Credit quality step 3	**—**	**—**	**—**	130	3	3
Credit quality step unrated	**445**	**249**	**246**	315	170	155
Total	**445**	**368**	**270**	445	300	183

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 £13.7bn or 71% 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 41: 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	6.05	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 a combination of historic 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	0.51	PD	1	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	1	There are two separate model components – 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	1.92	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	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	3.21	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	1.97	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	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.

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 2021.

Table 42: IRB models – estimated and actual values (retail)[1]

	PD		LGD		EAD	
	Estimated	Actuals	Estimated	Actuals	Estimated	Actuals
At 31 December 2021	%	%	%	%	%	%
UK						
– HSBC residential mortgage	**0.32**	**0.19**	**7.25**	**0.15**	**0.16**	**0.15**
– first direct residential mortgages	**0.38**	**0.32**	**5.27**	**1.13**	**0.87**	**0.71**
– HSBC credit card	**0.92**	**0.95**	**91.30**	**88.71**	**1.40**	**1.32**
– HSBC personal loans	**3.27**	**2.32**	**85.61**	**70.30**	**2.63**	**2.51**
– Business Banking (Retail SME)	**2.67**	**3.11**	**78.59**	**56.09**	**2.01**	**1.62**
At 31 December 2020						
UK						
– HSBC residential mortgage	0.32	0.31	7.94	0.32	0.25	0.24
– first direct residential mortgages	0.39	0.29	5.94	1.74	0.83	0.64
– HSBC credit card	1.08	1.25	91.30	88.71	1.77	1.69
– HSBC personal loans	2.99	2.67	84.31	71.14	2.89	2.70
– Business Banking (Retail SME)	2.86	2.45	78.06	58.03	2.26	1.93

1 *Data represents an annual view, analysed at September 2021.*

Table 43: 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	–	–	–	–	–	–	–	–	–	–	–	–
0.15 to <0.25	–	–	–	–	–	–	–	–	–	–	–	–
0.25 to <0.50	–	–	–	–	–	–	–	–	–	–	–	–
0.50 to <0.75	–	–	–	–	–	–	–	–	–	–	–	–
0.75 to <2.50	–	–	15.0	–	2.00	–	96.0	–	–	128	–	–
2.50 to <10.00	1	–	–	1	5.00	17	78.0	–	2	188	–	–
10.00 to <100.00	3	2	11.0	3	17.00	38	73.0	–	8	318	–	–
100.00 (Default)	7	–	85.0	9	100.00	126	63.0	–	13	145	5	1
Sub-total	11	2	27.0	13	74.00	181	67.0	–	23	185	5	1
AIRB – Secured by mortgages on immovable property non-SME												
0.00 to <0.15	97,645	4,586	104.0	105,671	–	571,617	15.0	–	3,267	3	12	13
0.15 to <0.25	9,264	1,317	104.0	10,911	–	59,021	17.0	–	908	8	4	4
0.25 to <0.50	5,342	503	109.0	6,037	–	32,657	17.0	–	791	13	5	5
0.50 to <0.75	2,068	112	112.0	2,248	1.00	12,159	15.0	–	374	17	3	3
0.75 to <2.50	2,112	208	94.0	2,358	1.00	12,754	16.0	–	628	27	5	9
2.50 to <10.00	608	85	113.0	714	5.00	3,864	8.0	–	267	37	4	9
10.00 to <100.00	523	8	118.0	546	29.00	2,952	10.0	–	315	58	16	18
100.00 (Default)	652	17	22.0	656	100.00	3,550	13.0	–	862	131	35	91
Sub-total	118,214	6,836	104.0	129,141	1.00	698,574	15.0	–	7,412	6	84	152
AIRB – Qualifying revolving retail exposures												
0.00 to <0.15	2,380	24,010	60.0	16,793	–	8,483,386	78.0	–	659	4	10	17
0.15 to <0.25	409	2,393	69.0	2,055	–	1,038,000	83.0	–	275	13	5	6
0.25 to <0.50	621	2,886	57.0	2,220	–	1,121,564	84.0	–	461	21	8	10
0.50 to <0.75	747	1,187	58.0	1,442	1.00	728,436	85.0	–	437	30	9	18
0.75 to <2.50	1,313	1,019	77.0	2,120	1.00	1,071,160	83.0	–	1,166	55	32	81
2.50 to <10.00	652	293	107.0	993	5.00	501,520	81.0	–	1,151	116	42	71
10.00 to <100.00	193	44	99.0	253	30.00	127,684	79.0	–	552	218	75	48
100.00 (Default)	148	27	63.0	163	100.00	82,489	82.0	–	394	241	103	94
Sub-total	6,463	31,859	61.0	26,039	1.00	13,154,239	80.0	–	5,095	20	284	345
AIRB – Other SME												
0.00 to <0.15	3	55	68.0	40	–	15,084	95.0	–	8	19	–	29
0.15 to <0.25	6	86	49.0	47	–	17,638	95.0	–	15	32	–	–
0.25 to <0.50	19	203	62.0	146	–	54,347	95.0	–	69	47	1	–
0.50 to <0.75	18	124	69.0	103	1.00	38,512	94.0	–	64	62	1	–
0.75 to <2.50	3,235	1,080	45.0	948	2.00	352,878	84.0	–	858	91	15	14
2.50 to <10.00	2,058	350	47.0	465	5.00	173,513	83.0	–	663	143	34	23
10.00 to <100.00	1,538	132	44.0	137	22.00	51,051	88.0	–	238	174	33	27
100.00 (Default)	480	18	21.0	73	100.00	27,383	72.0	–	37	51	62	48
Sub-total	7,357	2,048	50.0	1,959	7.00	730,406	85.0	–	1,952	100	146	141
AIRB – Other non-SME												
0.00 to <0.15	438	635	58.0	806	–	91,615	15.0	–	29	4	–	–
0.15 to <0.25	1,103	39	57.0	1,123	–	127,665	79.0	–	425	38	2	2
0.25 to <0.50	500	39	10.0	504	–	57,324	75.0	–	238	47	1	1
0.50 to <0.75	954	37	5.0	954	1.00	108,428	84.0	–	655	69	5	5
0.75 to <2.50	2,133	53	8.0	2,133	1.00	242,226	80.0	–	1,988	93	23	22
2.50 to <10.00	744	13	88.0	752	5.00	85,414	87.0	–	978	130	29	45
10.00 to <100.00	141	1	93.0	140	34.00	15,965	85.0	–	239	170	39	24
100.00 (Default)	93	1	56.0	90	100.00	10,248	82.0	–	189	209	55	62
Sub-total	6,106	818	50.0	6,502	3.00	738,885	73.0	–	4,741	73	154	161
Retail AIRB – Total at 31 Dec 2021	138,151	41,563	68.0	163,654	1.00	15,322,286	29.0	–	19,223	12	673	800

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

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	4	—	—	4	0.13	21	70.0	—	1	21	—	—
0.15 to <0.25	1	—	47.7	1	0.22	3	41.2	—	—	16	—	—
0.25 to <0.50	8	1	47.5	9	0.37	46	35.0	—	2	21	—	—
0.50 to <0.75	5	—	11.8	5	0.63	28	38.3	—	2	35	—	—
0.75 to <2.50	11	2	29.9	11	1.35	59	37.6	—	6	57	—	—
2.50 to <10.00	2	—	—	2	4.66	9	59.9	—	3	158	—	—
10.00 to <100.00	10	1	9.1	10	12.48	53	49.6	—	21	212	1	—
100.00 (Default)	12	—	263.1	18	100.00	97	63.4	—	23	125	10	—
Sub-total	53	4	37.4	60	33.36	314	50.1	—	58	97	11	—
AIRB – Secured by mortgages on immovable property non-SME												
0.00 to <0.15	92,089	5,513	103.7	100,960	0.06	585,434	15.5	—	3,053	3	11	12
0.15 to <0.25	8,081	1,133	106.7	9,522	0.21	55,215	18.0	—	770	8	4	5
0.25 to <0.50	4,719	399	110.7	5,296	0.36	30,711	16.7	—	607	11	3	4
0.50 to <0.75	1,799	145	106.8	2,001	0.60	11,605	14.6	—	282	14	2	2
0.75 to <2.50	2,177	233	113.1	2,480	1.36	14,382	14.3	—	573	23	5	7
2.50 to <10.00	660	85	114.3	769	4.69	4,459	9.1	—	258	34	4	5
10.00 to <100.00	598	10	116.8	625	29.69	3,626	10.2	—	349	56	19	14
100.00 (Default)	675	18	24.9	681	100.00	3,947	13.5	—	849	125	31	84
Sub-total	110,798	7,536	104.8	122,334	0.86	709,380	15.7	—	6,741	6	79	133
AIRB – Qualifying revolving retail exposures												
0.00 to <0.15	2,064	24,816	60.1	16,987	0.06	9,649,670	77.7	—	568	3	8	22
0.15 to <0.25	373	2,462	67.8	2,042	0.22	1,160,028	82.3	—	251	12	4	9
0.25 to <0.50	582	3,193	56.0	2,329	0.34	1,323,222	84.1	—	434	19	7	15
0.50 to <0.75	705	1,249	58.7	1,440	0.58	818,108	85.0	—	415	29	8	25
0.75 to <2.50	1,425	1,109	70.0	2,216	1.41	1,259,139	82.7	—	1,156	52	28	108
2.50 to <10.00	690	279	111.9	1,025	4.58	582,264	79.0	—	1,134	111	39	93
10.00 to <100.00	235	52	99.0	302	32.44	171,712	79.9	—	901	298	97	59
100.00 (Default)	267	22	53.6	277	100.00	157,302	85.8	—	570	206	160	157
Sub-total	6,341	33,182	61.1	26,618	1.82	15,121,446	79.6	—	5,429	20	351	488
AIRB – Other SME												
0.00 to <0.15	3	51	70.6	39	0.10	14,382	94.5	—	8	19	—	78
0.15 to <0.25	6	84	50.0	47	0.21	17,462	94.7	—	15	32	—	1
0.25 to <0.50	21	199	63.6	147	0.37	54,035	94.8	—	67	46	1	1
0.50 to <0.75	21	132	69.4	112	0.61	41,312	93.2	—	67	60	1	1
0.75 to <2.50	3,815	919	43.8	1,047	1.54	385,200	84.0	—	918	88	15	19
2.50 to <10.00	2,213	240	48.4	480	4.79	176,791	82.4	—	565	118	24	30
10.00 to <100.00	1,403	59	47.1	133	20.37	48,932	88.3	—	281	212	36	24
100.00 (Default)	134	8	55.3	85	100.00	31,384	75.0	—	281	329	72	62
Sub-total	7,616	1,692	50.1	2,090	7.31	769,498	85.2	—	2,202	105	149	216
AIRB – Other non-SME												
0.00 to <0.15	339	337	50.1	508	0.08	63,016	21.9	—	26	5	—	—
0.15 to <0.25	1,236	48	27.6	1,247	0.21	154,603	80.9	—	452	36	2	4
0.25 to <0.50	656	36	11.2	661	0.39	81,993	72.9	—	304	46	2	3
0.50 to <0.75	838	23	14.0	839	0.60	104,072	85.5	—	588	70	4	10
0.75 to <2.50	2,061	36	10.0	2,057	1.36	255,233	84.2	—	2,005	97	23	56
2.50 to <10.00	884	15	89.2	892	4.79	110,622	86.1	—	1,153	129	34	95
10.00 to <100.00	222	1	82.3	220	37.28	27,228	85.9	—	365	166	66	49
100.00 (Default)	151	1	49.5	143	100.00	17,750	84.0	—	300	210	92	113
Sub-total	6,387	497	41.7	6,567	4.67	814,516	78.1	—	5,193	79	223	330
Retail AIRB – Total at 31 Dec 2020	131,195	42,911	68.0	157,669	1.00	17,415,154	30.0	—	19,623	12	813	1,167

^ *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 Retail MOFs 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 44: Counterparty credit risk – RWAs by exposure class and product

	At 31 December					
	2021			2020		
	EAD pre CRM	**RWAs**	**Capital required**	EAD pre CRM	RWAs	Capital required
	£m	**£m**	**£m**	£m	£m	£m
By exposure class						
IRB advanced approach	**117**	**26**	**2**	45	14	1
– institutions	**117**	**26**	**2**	45	14	1
IRB foundation approach	**34**	**18**	**1**	70	43	3
– corporates	**34**	**18**	**1**	70	43	3
Standardised approach	**43**	**10**	**1**	32	7	1
– institutions	**43**	**10**	**1**	32	7	1
Credit Valuation Adjustment ('CVA') standardised	**—**	**21**	**2**	—	20	2
CCP standardised	**341**	**54**	**4**	883	38	3
Total	**535**	**129**	**10**	1,030	122	10
By Product						
– derivatives	**255**	**44**	**4**	619	70	5
– SFTs	**280**	**17**	**1**	411	11	1
– CVA standardised	**—**	**20**	**2**	—	20	2
– CCP default funds	**—**	**48**	**4**	—	21	2
Total	**535**	**129**	**11**	1,030	122	10

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 45: 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	**1,236**	**980**	**256**	**—**	**256**
2	SFTs	**20,768**	**—**	**20,768**	**20,488**	**280**
3	**At 31 December 2021**	**22,004**	**980**	**21,024**	**20,488**	**536**
1	Derivatives	2,658	2,038	620	—	620
2	SFTs	9,924	—	9,924	9,513	411
3	At 31 December 2020	12,582	2,038	10,544	9,513	1,031

Credit rating downgrade

A credit rating downgrade clause in a Master Agreement or a credit rating downgrade threshold clause in a credit support annex 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 UK'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 investor to securitisation positions. 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.

Securitisations on the banking book follow a detailed due diligence framework in accordance with the new securitisation framework. Wholesale credit risk conduct the credit approval process in line with HSBC Group policies and procedures. HSBC UK does not provide support to its originated or sponsored securitisation transactions as a policy.

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 securitise customer loans and advances and other debt that we have originated in order to diversify our sources of funding for asset origination and for capital efficiency purposes. In such cases, we transfer the loans and advances to the SPEs for cash, and the SPEs issue debt securities to investors to fund the cash purchases.

In addition, we use SPEs to mitigate the capital absorbed by some of the customer loans and advances we have originated. Credit derivatives and financial guarantees are used to transfer the credit risk associated with such customer loans and advances, using an approach commonly known as synthetic securitisation.

HSBC UK as investor

We have exposure to third-party securitisations in residential mortgage, consumer and trade receivables segments.

Monitoring of securitisation positions

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

The 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 underlying assets are de-recognised for regulatory purposes and any retained exposures to the securitisation, including derivatives or liquidity facilities, are risk-weighted as securitisation positions.

For all securitisation positions we follow the hierarchy of RWA calculation approaches as described in the securitisation framework. Our originated positions are all reported under the Internal Rating Based Approach ('Sec-IRBA').

Analysis of securitisation exposures

Table 46: 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	**666**	**—**	**(442)**	**224**
Loans to corporates and SMEs	**2,278**	**(2)**	**—**	**2,276**
Consumer loans	**550**	**—**	**(15)**	**535**
Trade receivables	**150**	**—**	**100**	**250**
Total 2021	**3,644**	**(2)**	**(357)**	**3,285**
Aggregate amount of securitisation exposures				
Residential mortgages	899	—	(233)	666
Loans to corporates and SMEs	2,278	—	—	2,278
Consumer loans	—	—	550	550
Trade receivables	—	—	150	150
Total 2020	3,177	—	467	3,644

Table 47: Securitisation – asset values and impairments

	At 31 December 2021			At 31 December 2020		
	Underlying assets		Securitisation exposures impairment	Underlying assets		Securitisation exposures impairment
	Total	Impaired and past due		Total	Impaired and past due	
	£m	£m	£m	£m	£m	£m
As originator	**2,500**	**—**	**—**	2,500	—	—
– loans to corporates and SMEs	**2,500**	**—**	**—**	2,500	—	—
Total	**2,500**	**—**	**—**	2,500	—	—

Table 48: 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)	**—**	**—**	**—**	**1,009**	**—**	**1,009**
2	– residential mortgage	**—**	**—**	**—**	**224**	**—**	**224**
4	– other retail exposures	**—**	**—**	**—**	**785**	**—**	**785**
6	Wholesale (total)	**—**	**2,276**	**2,276**	**—**	**—**	**—**
7	– loans to corporates	**—**	**2,276**	**2,276**	**—**	**—**	**—**
Total at 31 December 2021		**—**	**2,276**	**2,276**	**1,009**	**—**	**1,009**
1	Retail (total)	—	—	—	1,366	—	1,366
2	– residential mortgage	—	—	—	666	—	666
4	– other retail exposures	—	—	—	700	—	700
6	Wholesale (total)	—	2,278	2,278	—	—	—
7	– loans to corporates	—	2,278	2,278	—	—	—
Total at 31 December 2020		—	2,278	2,278	1,366	—	1,366

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

Table 49: 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**	**11**	**2,265**	**–**	**–**	**–**	**11**
10	Securitisation	**–**	**2,263**	**–**	**2**	**11**	**2,265**	**–**	**–**	**–**	**11**
12	– wholesale	**–**	**2,263**	**–**	**2**	**11**	**2,265**	**–**	**–**	**–**	**11**
1	**At 31 December 2021**	**–**	**2,263**	**–**	**2**	**11**	**2,265**	**–**	**–**	**–**	**11**
9	Synthetic securitisation	–	2,264	–	3	11	2,267	–	–	–	11
10	Securitisation	–	2,264	–	3	11	2,267	–	–	–	11
12	– wholesale	–	2,264	–	3	11	2,267	–	–	–	11
	At 31 December 2020	–	–	–	3	11	2,267	–	–	–	11

		RWAs (by regulatory approach)					Capital charge after cap				
		SEC-IRBA	SEC-ERBA	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**	**516**	**–**	**–**	**–**	**142**	**41**	**–**	**–**	**–**	**11**
10	Securitisation	**516**	**–**	**–**	**–**	**142**	**41**	**–**	**–**	**–**	**11**
12	– wholesale	**516**	**–**	**–**	**–**	**142**	**41**	**–**	**–**	**–**	**11**
1	**At 31 December 2021**	**516**	**–**	**–**	**–**	**142**	**41**	**–**	**–**	**–**	**11**
9	Synthetic securitisation	557	–	–	–	142	45	–	–	–	11
10	Securitisation	557	–	–	–	142	45	–	–	–	11
12	– wholesale	557	–	–	–	142	45	–	–	–	11
1	At 31 December 2020	557	–	–	–	142	45	–	–	–	11

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 50: 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	SEC-IRBA	SEC-ERBA	SEC IAA	SEC-SA	1,250%
		£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
2	**Traditional securitisation**	**734**	**275**	**–**	**–**	**–**	**–**	**–**	**–**	**1,009**	**–**
3	Securitisation	**734**	**275**	**–**	**–**	**–**	**–**	**–**	**–**	**1,009**	**–**
4	– retail underlying	**734**	**275**	**–**	**–**	**–**	**–**	**–**	**–**	**1,009**	**–**
1	**At 31 December 2021**	**734**	**275**	**–**	**–**	**–**	**–**	**–**	**–**	**1,009**	**–**

		RWAs (by regulatory approach)					Capital charge after cap				
		SEC-IRBA	SEC-ERBA	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
2	**Traditional securitisation**	**–**	**–**	**–**	**202**	**–**	**–**	**–**	**–**	**16**	**–**
3	Securitisation	**–**	**–**	**–**	**202**	**–**	**–**	**–**	**–**	**16**	**–**
4	– retail underlying	**–**	**–**	**–**	**202**	**–**	**–**	**–**	**–**	**16**	**–**
1	**At 31 December 2021**	**–**	**–**	**–**	**202**	**–**	**–**	**–**	**–**	**16**	**–**

Market risk

Overview

Market risk is the risk that movements in market risk factors, such as foreign exchange rates, commodity prices, interest rates, credit spreads and equity prices, will reduce the our income or the value of its portfolios. Market risk is measured using the standardised approach for position risk under CRR.

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 54 of the HSBC UK Bank plc Annual Report and Accounts 2021.

Table 51: Market risk under standardised approach (MR1)

		At 31 December			
		2021		2020	
		RWAs	**Capital required**	RWAs	Capital required
		£m	**£m**	£m	£m
	Outright products				
1	Interest rate risk (general and specific)	**47**	**4**	1	—
3	Foreign exchange risk	**123**	**10**	155	12
9	**Total**	**170**	**14**	156	12

Interest rate risk in the banking book ('IRRBB')

Interest rate risk in the banking book is the risk of an adverse impact to earnings or capital due to changes in market interest rates. It is generated by our non-traded assets and liabilities, specifically loans, deposits and financial instruments that are not held for trading intent.

Risk Management and Governance

Treasury monitors and controls interest rate risk in the banking book. This includes reviewing and challenging the interest rate management impacts of new product releases and the proposed behavioural assumptions used for hedging activities. Treasury is also responsible for maintaining and updating the transfer pricing framework, informing the Asset and Liability Committee ('ALCO') of the group's overall banking book interest rate risk exposure, and managing the balance sheet.

All interest rate risk must be identified, measured, monitored, managed and controlled by metrics within limits for each local entity. Key metrics used to monitor IRRBB include: projected net interest income ('NII') and economic value of equity ('EVE') sensitivities ('Δ') under varying interest rate scenarios as prescribed by the regulators. A stressed value at risk is used for the portfolio of liquid securities held by Markets Treasury that are accounted for at fair value through other comprehensive income.

EVE and NII sensitivities are monitored against thresholds at both entity and consolidated levels. Treasury is subject to independent oversight and challenge from Treasury Risk, Internal Audit and Model governance.

Stress Testing is used to assess how banks cope with severe economic scenarios, in particular looking at the bank's resilience to make sure they have enough capital to withstand extreme shocks. At HSBC, stress testing also forms a key part of our risk management framework. We run various internal and regulatory stress tests during the year which help us to identify the key economic risks the entity is exposed to and how they may impact on its financial and capital position in a severe economic shock. Identifying these risks allow the entity to actively assess and put in place effective risk management strategies to help mitigate those risks before they occur.

The results of the various stress tests also help to ensure that the group has adequate capital and liquidity to withstand extreme hypothetical economic shocks as defined in the stress scenarios and thus to help to determine our capital requirements under the ICAAP.

Economic Value of Equity and Net Interest Income Sensitivity

ΔNII applies varying interest rate scenarios (i.e. simulation modelling) whilst all other economic variables are held constant. Sensitivity of net interest income reflects the bank's sensitivity of earnings due to changes in market interest rates. This is assessed over 1 year and 5 years and is calculated on a quarterly basis.

ΔEVE represents the expected movement in EVE due to pre-specified interest rate shocks, where all other economic variables are held constant representing the present value of the future banking book cash flows that could be distributed to equity providers under a managed run-off scenario. This can be used to assess the economic capital required to support interest rate risk in the banking book and provides a comprehensive view of the potential long-term effects of changes in interest rates. Operating entities are required to monitor ΔEVE as a percentage of capital resources and this is calculated quarterly.

Active Management of IRRBB

IRRBB that can be hedged with marketable instruments is transferred, in accordance with Treasury's transfer pricing rules, to Markets Treasury to manage within market risk limits. IRRBB which cannot be managed with marketable instruments is managed between Treasury and the Global Businesses generating the interest rate risk. Markets Treasury safeguards the bank by ensuring risk remains within appetite and seeks to generate sustainable returns through the management of those risks within the risk appetite is set by Treasury Risk. Markets Treasury manages a variety of risks including duration, spread, cross currency basis, inflation and convexity utilising products including liquid fixed income securities, interest rate swaps, cross currency swaps, and money markets loans and deposits. Treasury Risk measures and monitors against limits the Markets Treasury activities using metrics including PVBP, CS01 and VaR on an intraday basis and controlled daily.

The large majority of Markets Treasury activity is on a banking book basis. The only Markets Treasury activity treated as trading is the use of FX swaps to manage cash. All returns generated by Markets Treasury are transferred to the Global Businesses.

Interest Rate Shock and Stress Scenarios Applied

ΔNII is indicative and based on scenarios and assumptions prescribed by the PRA instructions (Rule 9.4A of the PRA Rulebook: CRR Firms: Interest Rate Risk Arising from Non Trading Activities Instrument 2020 and in accordance with Article 448(1) CRR), which is completed and reported quarterly on a consolidated basis. This indicative base case projection of our NII (excluding insurance) is calculated under the following scenarios:

a. an immediate shock of +/-200bps for USD, EUR, HKD and +/-250bps for GBP to the current market-implied path of interest rates across all currencies (effects over one year)

b. Other currency shocks as per regulatory guidelines (effects over one year)

ΔEVE is based on the EBA Standard Outlier Test (SOT) +/-200bps shocks and the 6 BCBS Outlier Test shocks which is completed and reported on a quarterly basis:

a. Parallel Up

b. Parallel Down

c. Steepener

d. Flattener

e. Short rates shock up; and

f. Short rates shock down

Key Modelling Assumptions

For ΔEVE, commercial margins and other spread components are excluded from the interest cash flows calculation and all balance sheet items are discounted at the risk free rate; all CET1 instruments are excluded; interest rates floors start at -100bps for the overnight tenor and increase 5bps per year to 0bps for the 20year tenor; and 100% of the negative values are netted with 50% of the positive values by currency as per regulatory guidelines; bases on a run off balance sheet with behavioural assumptions applied.

For ΔNII, we assume a constant balance sheet; commercial margins are included; all forecasted market rates are based on implied forward rates from the spot curves at each quarter-end; all interest rate shocks are parallel shocks; behavioural assumptions and pass on assumptions are applied for managed rate products; customer pricing includes flooring where there are contractual obligations; and customer optionality including prepayment and early redemption risk is included where present.

Non-Maturing Deposits ('NMD') are funds that have no explicit maturity dates thus behaviouralisation assumptions are applied. Duration for NMD may differ from internal IRRBB metrics due to regulatory prescribed rules around the identification of core deposits, hence there is a difference in methodology between ARA and Pillar 3 disclosures (Template UK IRRBB1).

Interest rate risk that can be economically hedged is transferred to the Markets Treasury business. Hedging is generally executed through interest rate derivatives or fixed-rate government bonds. Any interest rate risk that Markets Treasury cannot economically hedge is not transferred and will remain within the Global Business where the risks originate.

The average repricing maturity for non-maturity deposits ('NMDs') in Q4'21 was 12 months. The longest repricing maturity for non-maturity deposits ('NMDs') in Q4'21 was 120 months.

As of 31 December 2021, the maximum decline in EVE is £901m from a parallel shock up which is 5.98% of tier 1 capital. The most adverse NII scenario over the next 12 months was the parallel shock down, this would result in a decrease of projected NII by £2,341m.

Further details of our IRRBB can be found on page 50 of our Annual Report and Accounts 2021.

Table 52:Quantitative information on IRRBB

£m	ΔEVE		ΔNII		Tier 1 Capital	
Period	**31 Dec 2021**	**31 Dec 2020**	**31 Dec 2021**	**31 Dec 2020**	**31 Dec 2021**	**31 Dec 2020**
Parallel shock up	**(901)**		**2,382**			
Parallel shock down	**357**		**(2,341)**			
Steepener shock	**(192)**					
Flattener shock	**47**					
Short rates shock up	**(249)**					
Short rates shock down	**176**					
Maximum	**(901)**	–	**(2,341)**	–		
Tier 1 capital					**15,067**	

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 broadly managed through the Risk Management Framework. Non-Financial risk covers a wide spectrum of issues, such as technology and cyber security, transaction processing, data risk, failure to manage third parties, building unavailability, failure to protect people and place from physical malevolent acts, business interruption and incident risk, workplace safety, financial crime and fraud, regulatory compliance, financial reporting and tax risk, legal risk, model risk and people risk.

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 19 of our Annual Report and Accounts 2021.

Operational risk capital requirements

Operational risk is part of Non-Financial risk.

Table 53: Operational risk RWAs and capital required

	At 31 December			
	2021		2020	
	RWAs	**Capital required**	RWAs	Capital required
	£m	**£m**	£m	£m
Own funds requirement for operational risk – assessed on the standardised approach	**10,607**	**849**	10,509	841

Other risks

Non-trading book exposures in equities

Equity exposures are 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 2021, we held equity investments of £14.3m. Our opening position at 1 January 2021 was £3.4m and £15.5m has been reflected through profit and loss for the year. Disposal 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 Treasury 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 process ('ILAAP') used to validate risk tolerance and set risk appetite.

The final objective of the internal liquidity adequacy assessment, 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. From 1 January 2022, HSBC has started managing funding risk based on the PRA's NSFR rules.

Governance

Treasury apply the LFRF and are responsible for for cash and liquidity management.

Treasury Risk Management carry out independent review, challenge and assurance of the appropriateness of the risk management activities undertaken by Treasury. They provide oversight and stewardship of liquidity management including setting policy and control standards.

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 practices established by HSBC. Details of HSBC Group's remuneration practices, 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') is available in the Directors' Remuneration Report from page 254 of the HSBC Holdings plc *Annual Report and Accounts 2021*.

The following tables show the remuneration awards made to Identified Staff and MRTs in HSBC UK for 2021. Individuals have been identified as MRTs as set out in the European Union Regulatory Technical Standard ('RTS') 2021/923. 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.

Remuneration awarded for the financial year (REM1)

£m	MB Supervisory function	MB Management function	Other senior management	Other identified staff
Number of Identified Staff	**8**	**3**	**13**	**54**
Total fixed remuneration	**1.6**	**2.8**	**6.5**	**15.1**
– *of which:* *cash-based*[1]	***1.6***	***2.8***	***6.5***	***15.1***
shares or equivalent ownership interests[2]	–	–	–	
Number of identified staff	–	**3**	**13**	**54**
Total variable remuneration [3,4]	–	**2.6**	**5.7**	**10**
– *of which:* *cash-based*	–	***0.9***	***2.7***	***5***
deferred	–	***0.5***	***1.4***	***2.2***
shares or equivalent ownership interests	–	***1.7***	***3.0***	***4.9***
deferred	–	***1.3***	***1.7***	***2.5***
share-linked instruments or equivalent non-cash instruments	–	–	–	***0.1***
deferred	–	–	–	***0.1***
other forms	–	–	–	–
deferred	–	–	–	–
Total (£m)	**1.6**	**5.4**	**12.2**	**25.1**

1 *Cash-based fixed remuneration is paid immediately.*
2 *Paid in HSBC shares. Vested shares are subject to a retention period of up to one year.*
3 *Variable pay awarded in respect of 2021. In accordance with 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.*
4 *9 identified staff members were exempt from the application of the remuneration structure requirements for MRTs under the PRA and FCA remuneration rules. Their total remuneration is £1.6m, of which £1.3m is fixed pay and £0.3m is variable remuneration.*

Special payments to staff whose professional activities have a material impact on institutions' risk profile (REM2)

£m	MB Supervisory function	MB Management function	Other senior management	Other identified staff
Guaranteed variable remuneration awards[1]				
Guaranteed variable remuneration awards - Number of identified staff	–	–	–	–
Guaranteed variable remuneration awards - Total amount	–	–	–	–
– *of which: guaranteed variable remuneration awards paid during the financial year, that are not taken into account in the bonus cap*	–	–	–	–
Severance payments awarded in previous periods, that have been paid out during the financial year - Number of identified staff[2]	–	–	–	–
Severance payments awarded in previous periods, that have been paid out during the financial year - Total amount	–	–	–	–
Severance payments awarded during the financial year				
Severance payments awarded during the financial year - Number of identified staff[2]	–	–	–	–
Severance payments awarded during the financial year - Total amount	–	–	–	–
– *of which: deferred*	–	–	–	–
severance payments paid during the financial year, that are not taken into account in the bonus cap	–	–	–	–
highest payment that has been awarded to a single person	–	–	–	–

1 *No guaranteed variable remuneration was awarded in 2021. HSBC would offer a guaranteed variable remuneration award in exceptional circumstances for new hires, and for the first year of employment only. It 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).*

Deferred remuneration at 31 December[1] (REM3)

Deferred and retained remuneration – £m	Total amount of deferred remuneration awarded for previous performance periods	*Of which due to vest in the financial year*	*Of which vesting in subsequent financial years*	Total amount of adjustment during the financial year due to ex post implicit adjustments	Total amount of deferred remuneration awarded before the financial year actually paid out in the financial year	Total of amount of deferred remuneration awarded for previous performance period that has vested but is subject to retention periods
MB Supervisory function	0.2	*0.2*	–	–	0.2	–
Cash-based	–	–	–	–	–	–
Shares or equivalent ownership interests	0.2	*0.2*	–	–	0.2	–
Share-linked instruments or equivalent non-cash instruments	–	–	–	–	–	–
Other forms	–	–	–	–	–	–
MB Management function	5.1	*0.3*	*4.8*	0.3	0.3	–
Cash-based	2.6	*0.2*	*2.4*	–	0.2	–
Shares or equivalent ownership interests	2.5	*0.1*	*2.4*	0.3	0.1	–
Share-linked instruments or equivalent non-cash instruments	–	–	–	–	–	–
Other forms	–	–	–	–	–	–
Other senior management	6.5	*0.5*	*6*	0.4	0.5	0.1
Cash-based	3.1	*0.3*	*2.8*	–	0.3	–
Shares or equivalent ownership interests	3.4	*0.2*	*3.2*	0.4	0.2	0.1
Share-linked instruments or equivalent non-cash instruments	–	–	–	–	–	–
Other forms	–	–	–	–	–	–
Other identified staff	11.5	*2.1*	*9.4*	0.6	2.1	0.2
Cash-based	5.5	*1.1*	*4.4*	–	1.1	–
Shares or equivalent ownership interests	6	*1*	*5*	0.6	1	0.2
Share-linked instruments or equivalent non-cash instruments	–	–	–	–	–	–
Other forms	–	–	–	–	–	–
Total amount	23.3	*3.1*	*20.2*	1.3	3.1	0.3

1 *This table provides details of balances and movements during performance year 2021. For details of variable pay awards granted for 2021, refer to the 'Remuneration awarded for the financial year' table. Deferred remuneration is made in cash and/or shares. Share-based awards are made in HSBC shares.*

Identified staff - Remuneration by band[1] (REM4)

	Identified staff that are high earners as set out in Article 450(i) CRR
€1,000,000 – 1,500,000	**5**
€1,500,000 – 2,000,000	**3**
€2,000,000 – 2,500,000	**3**
€2,500,000 – 3,000,000	**—**
€3,000,000 – 3,500,000	**—**
€3,500,000 – 4,000,000	**—**
€4,000,000 – 4,500,000	—
€4,500,000 – 5,000,000	**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.*

Remuneration of staff whose professional activities have a material impact on institutions' risk profile (REM5)

	Management body remuneration			Business areas				
£m	MB Supervisory function	MB Management function	Total MB	Retail banking	Corporate functions	Independent internal control functions	All other	Total
Total number of identified staff								**78**
– *of which:* *members of the MB*	***8***	***3***	***11***					
other senior management				***3***	***7***	***3***	***—***	
other identified staff				***28***	***8***	***18***		
Total remuneration of identified staff	**1.6**	**5.4**	**7**	**19.3**	**9.9**	**8**	**—**	
– *of which:* *variable remuneration*[1]	***—***	***2.6***	***2.6***	***8.2***	***4.5***	***3***	***—***	
fixed remuneration	***1.6***	***2.8***	***4.4***	***11.1***	***5.4***	***5***	***—***	

1 *Variable pay awarded in respect of 2021. In accordance with 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.*

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
ALCO	Asset and Liability Management Committee
AT1	Additional tier 1 capital
B	
Basel	Basel Committee on Banking Supervision
C	
CCP	Central counterparty
CCF	Credit conversion factor
CCR[1]	Counterparty credit risk
CCyB	Countercyclical Capital Buffer
CEO	Chief Executive Officer
CET1[1]	Common equity tier 1
CMB	Commercial Banking
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
CVA	Credit valuation adjustment
D	
DBRS	Dominion Bond Rating Service
E	
EAD[1]	Exposure at default
EBA	European Banking Authority
ECAI	External Credit Assessment Institutions
ECL	Expected Credit Losses
EEA	European Economic Area
EHQLA	Extremely high-quality liquid assets
EL1	Expected loss
ESG	Environmental, social and governance
EU	European Union
EVE	Economic value of equity
F	
FIRB[1]	Foundation internal ratings based approach
G	
GBM	Global Banking and Markets
H	
HMT	Her Majesty's Treasury
HQLA	High-Quality Liquid Assets
I	
ICAAP[1]	Internal Capital Adequacy Assessment Process
IFRSs	International Financial Reporting Standards
ILAAP	Internal Liquidity Adequacy Assessment Process
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	
MOF	Model Oversight Forum
MRC	Model Risk Committee
MRT	Material Risk Taker
N	
NII	Net interest income
NMD	Non-Maturing Deposits
NSFR	Net Stable Funding Ratio
O	
O-SII	Other Systemically Important Institutions
P	
PD[1]	Probability of default
PiT	Point-in-time
PRA[1]	Prudential Regulation Authority
R	
RAS	Risk appetite statement
RMM	Risk Management Meeting of HSBC UK
RWA[1]	Risk-weighted asset
S	
S&P	Standard and Poor's rating agency
SEC-IRBA	Securitisation - internal ratings-based approach
SEC-SA	Securitisation - standardised approach
SEC-ERBA	Securitisation - external ratings-based approach
SEC-IAA	Securitisation - internal assessment approach
SPE	Special purpose entity
STD[1]	Standardised approach
SFT[1]	Securities Financing Transactions
SME	Small- and medium-sized enterprise
T	
TCFD	Taskforce on Climate-related Financial Disclosure
TCR	Total Capital Requirement
TTC[1]	Through-the-cycle
T1	Tier 1 capital
T2	Tier 2 capital
U	
UK	United Kingdom
W	
WPB	Wealth and Personal Banking

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			Own funds requirements					
	SA	IRB	Sum of long/short positions for SA	Internal models	Securitisation positions in the banking book	*of which: General credit exposures*	*of which: General trading book*	*of which: Securitisation exposures*	Total	Share of total own funds requirements	CCyB rate
Country	£m	£m	£m	£m	£m	*£m*	*£m*	*£m*	£m	%	%
Australia	–	326	–	–	–	*6*	–	–	6	0	0.00
Bermuda	–	55	–	–	–	–	–	–	–	0	0.00
China	–	379	–	–	–	*3*	–	–	3	0	0.00
Curaçao	–	63	–	–	–	*4*	–	–	4	0	0.00
Cyprus	–	50	–	–	–	*3*	–	–	3	0	0.00
France	–	160	–	–	–	*4*	–	–	4	0	0.00
Germany	–	110	–	–	–	*3*	–	–	3	0	0.00
Guernsey	1	61	–	–	–	*4*	–	–	4	0	0.00
Hong Kong	–	1,228	–	–	–	*13*	–	–	13	0	1.00
Ireland	85	359	–	–	–	*17*	–	–	17	0	0.00
Isle Of Man	–	38	–	–	–	*2*	–	–	2	0	0.00
Italy	–	32	–	–	–	–	–	–	–	0	0.00
Jersey	–	244	–	–	–	*15*	–	–	15	0	0.00
Luxembourg	–	172	–	–	–	*12*	–	–	12	0	0.50
Malaysia	–	48	–	–	–	–	–	–	–	0	0.00
Monaco	–	21	–	–	–	*1*	–	–	1	0	0.00
Netherlands	–	760	–	–	–	*28*	–	–	28	0	0.00
Panama	–	56	–	–	–	–	–	–	–	0	0.00
Poland	–	93	–	–	–	*6*	–	–	6	0	0.00
Qatar	–	71	–	–	–	–	–	–	–	0	0.00
Saudi Arabia	–	191	–	–	–	*2*	–	–	2	0	0.00
Singapore	–	335	–	–	–	*4*	–	–	4	0	0.00
Sweden	–	76	–	–	–	*3*	–	–	3	0	0.00
Switzerland	–	251	–	–	–	*7*	–	–	7	0	0.00
United Arab Emirates	3	595	–	–	–	*6*	–	–	6	0	0.00
United Kingdom	1,350	237,252	–	–	3,285	*5,391*	–	*69*	5,460	96	0.00
United States	1	1,487	–	–	–	*65*	–	–	65	1	0.00
Virgin Islands, British	21	144	–	–	–	*5*	–	–	5	0	0.00
Other countries	3	698	–	–	–	*16*	–	–	16	0	
Total	1,464	245,354	–	–	3,285	*5,621*	–	*69*	5,690	100	

	2021
Total Risk Exposure Amount (£m)	83,723
Institution specific countercyclical capital buffer rate (%)	0.003
Institution specific countercyclical capital buffer requirement (£m)	2.8808

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