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SECURITIES AND EXCHANGE COMMISSION

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Report of Foreign Private Issuer

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For the month of February 2019

HSBC Holdings plc

42nd Floor, 8 Canada Square, London E14 5HQ, England

(Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F).

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Pillar 3 Disclosures at 31 December 2018

Contents

	Page
Introduction	3
Key metrics	3
Regulatory framework for disclosures	4
Pillar 3 disclosures	4
Regulatory developments	4
Accounting developments	5
Risk management	5
Linkage to the Annual Report and Accounts 2018	7
Capital and RWAs	14
Capital management	14
Own funds	14
Leverage ratio	16
Pillar 1 capital requirements and RWA flow	17
Pillar 2 and ICAAP	19
Credit risk	20
Overview and responsibilities	20
Credit risk management	20
Credit risk models governance	20
Credit quality of assets	20
Risk mitigation	34
Global risk	38
Wholesale risk	40
Retail risk	46
Model performance	51
Counterparty credit risk	55
Counterparty credit risk management	55
Securitisation	58
HSBC securitisation strategy	58
HSBC securitisation activity	58
Monitoring of securitisation positions	58
Securitisation accounting treatment	59
Securitisation regulatory treatment	59
Analysis of securitisation exposures	59
Market risk	61
Overview of market risk in global businesses	61
Market risk governance	62
Market risk measures	62
Market risk capital models	64
Prudent valuation adjustment	65
Structural foreign exchange exposures	66
Interest rate risk in the banking book	66
Operational risk	67
Overview and objectives	67
Organisation and responsibilities	67
Developments during 2018	67
Measurement and monitoring	68

Other risks	69
Pension risk	69
Non-trading book exposures in equities	69
Risk management of insurance operations	69
Liquidity and funding risk	69
Reputational risk	75
Sustainability risk	75
Business risk	75
Dilution risk	75
Remuneration	75

Appendices

		Page
I	Additional tables	76
II	Asset encumbrance	102
III	Summary of disclosures withheld	102

Other Information

Abbreviations	103
Cautionary statement regarding forward-looking statements	105
Contacts	105

Certain defined terms

Unless the context requires otherwise, ‘HSBC Holdings’ means HSBC Holdings plc and ‘HSBC’, the ‘Group’, ‘we’, ‘us’ and ‘our’ refer to HSBC Holdings together with its subsidiaries. Within this document the Hong Kong Special Administrative Region of the People’s Republic of China is referred to as ‘Hong Kong’. When used in the terms ‘shareholders’ equity’ and ‘total shareholders’ equity’, ‘shareholders’ means holders of HSBC Holdings ordinary shares and those preference shares and capital securities issued by HSBC Holdings classified as equity. The abbreviations ‘$m’ and ‘$bn’ represent millions and billions (thousands of millions) of US dollars respectively.

Tables

		Ref	Page
1	Key metrics (KM1/IFRS9-FL)	a	3
2	Reconciliation of capital with and without IFRS 9 transitional arrangements applied		3
3	Reconciliation of balance sheets – financial accounting to regulatory scope of consolidation		8
4	Principal entities with a different regulatory and accounting scope of consolidation (LI3)		10
5	Differences between accounting and regulatory scopes of consolidation and mapping of financial statement categories with regulatory risk categories (LI1)		11
6	Main sources of differences between regulatory exposure amounts and carrying values in financial statements (LI2)	a	13
7	Own funds disclosure	b	14
8	Summary reconciliation of accounting assets and leverage ratio exposures (LRSum)	b	16
9	Leverage ratio common disclosure (LRCom)	a	16
10	Leverage ratio – Split of on-balance sheet exposures (excluding derivatives, SFTs and exempted exposures) (LRSpl)	a	17
11	Overview of RWAs (OV1)	b	18
12	RWA flow statements of credit risk exposures under the IRB approach (CR8)		18
13	RWA flow statements of CCR exposures under IMM (CCR7)		19
14	RWA flow statements of market risk exposures under IMA (MR2-B)		19
15	Credit quality of exposures by exposure classes and instruments (CR1-A)		21
16	Credit quality of exposures by industry or counterparty types (CR1-B)		23
17	Credit quality of exposures by geography (CR1-C)		24
18	Ageing of past-due unimpaired and impaired exposures (CR1-D)		25
19	Non-performing and forborne exposures (CR1-E)		25
20	Credit risk exposure – summary (CRB-B)	a	26
21	Geographical breakdown of exposures (CRB-C)		27
22	Concentration of exposures by industry or counterparty types (CRB-D)		29
23	Maturity of on-balance sheet exposures (CRB-E)		33
24	Amount of past due unimpaired and credit-impaired exposures by geographical region		34
25	Credit risk mitigation techniques – overview (CR3)		35
26	Standardised approach – credit conversion factor ('CCF') and credit risk mitigation ('CRM') effects (CR4)	b	36
27	Standardised approach – exposures by asset class and risk weight (CR5)	b	37
28	IRB – Effect on RWA of credit derivatives used as CRM techniques (CR7)		37
29	Credit derivatives exposures (CCR6)		38
30	Wholesale IRB credit risk models		41
31	IRB models – estimated and actual values (wholesale)		42
32	IRB models – corporate PD models – performance by CRR grade		42
33	Material retail IRB risk rating systems		46
34	IRB models – estimated and actual values (retail)		49
35	Wholesale IRB exposure – back-testing of probability of default (PD) per portfolio (CR9)		51

		Ref	Page
36	Retail IRB exposure – back-testing of probability of default (PD) per portfolio (CR9)		53
37	Counterparty credit risk exposure – by exposure class, product and geographical region		56
38	Counterparty credit risk – RWAs by exposure class, product and geographical region		57
39	Securitisation exposure – movement in the year		60
40	Securitisation – asset values and impairments		60
41	Market risk under standardised approach (MR1)		61
42	Market risk under IMA (MR2-A)		61

43	IMA values for trading portfolios (MR3)		64
44	Prudential valuation adjustments (PV1)		66
45	Operational risk RWAs		67
46	Non-trading book equity investments		69
47	Level and components of HSBC Group consolidated liquidity coverage ratio (LIQ1)		72
48	Analysis of on-balance sheet encumbered and unencumbered assets		73
49	Wholesale IRB exposure – by obligor grade		76
50	PD, LGD, RWA and exposure by country/territory		77
51	Retail IRB exposure – by internal PD band		84
52	IRB expected loss and CRAs – by exposure class	b	85
53	Credit risk RWAs – by geographical region	b	86
54	IRB exposure – credit risk mitigation		87
55	Standardised exposure – credit risk mitigation		87
56	Standardised exposure – by credit quality step	a	88
57	Changes in stock of general and specific credit risk adjustments (CR2-A)		88
58	Changes in stock of defaulted loans and debt securities (CR2-B)		88
59	IRB – Credit risk exposures by portfolio and PD range (CR6)	a	89
60	Specialised lending on slotting approach (CR10)		94
61	Analysis of counterparty credit risk exposure by approach (excluding centrally cleared exposures) (CCR1)		95
62	Credit valuation adjustment (CVA) capital charge (CCR2)		95
63	Standardised approach – CCR exposures by regulatory portfolio and risk weights (CCR3)		95
64	IRB – CCR exposures by portfolio and PD scale (CCR4)		96
65	Impact of netting and collateral held on exposure values (CCR5-A)		98
66	Composition of collateral for CCR exposure (CCR5-B)		98
67	Exposures to central counterparties (CCR8)		98
68	Securitisation exposures in the non-trading book (SEC1)		99
69	Securitisation exposures in the trading book (SEC2)		99
70	Securitisation exposures in the non-trading book and associated capital requirements – bank acting as originator or sponsor (SEC3)		100
71	Securitisation exposures in the non-trading book and associated capital requirements – bank acting as investor (SEC4)		101
72	Asset encumbrance		102

The Group has adopted the EU's regulatory transitional arrangements for International Financial Reporting Standard ('IFRS') 9 Financial instruments. A number of tables in this document report under this arrangement as follows:
a. Some figures for 2018 (indicated with ^) within this table 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 numbers on the basis of full adoption of IFRS 9.

Pillar 3 Disclosures at 31 December 2018

Introduction

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

			At					
Ref*		Footnotes	31 Dec 2018	30 Sep 2018	30 Jun 2018	31 Mar 2018	1 Jan 2018	31 Dec[1] 2017
	Available capital ($bn)	2						
1	Common equity tier 1 ('CET1') capital	^	121.0	123.1	122.8	129.6	127.3	126.1
2	CET1 capital as if IFRS 9 transitional arrangements had not been applied		120.0	122.1	121.8	128.6	126.3	N/A
3	Tier 1 capital	^	147.1	149.3	147.1	157.1	152.1	151.0
4	Tier 1 capital as if IFRS 9 transitional arrangements had not been applied		146.1	148.3	146.1	156.1	151.1	N/A
5	Total regulatory capital	^	173.2	178.1	176.6	185.2	183.1	182.4
6	Total capital as if IFRS 9 transitional arrangements had not been applied		172.2	177.1	175.6	184.2	182.1	N/A
	Risk-weighted assets ('RWAs') ($bn)							
7	Total RWAs		865.3	862.7	865.5	894.4	872.1	871.3
8	Total RWAs as if IFRS 9 transitional arrangements had not been applied		864.7	862.1	864.9	893.8	871.6	N/A
	Capital ratios (%)	2						
9	CET1	^	14.0	14.3	14.2	14.5	14.6	14.5
10	CET1 as if IFRS 9 transitional arrangements had not been applied		13.9	14.2	14.1	14.4	14.5	N/A
11	Total tier 1	^	17.0	17.3	17.0	17.6	17.4	17.3
12	Tier 1 as if IFRS 9 transitional arrangements had not been applied		16.9	17.2	16.9	17.5	17.3	N/A
13	Total capital	^	20.0	20.7	20.4	20.7	21.0	20.9
14	Total capital as if IFRS 9 transitional arrangements had not been applied		19.9	20.6	20.3	20.6	20.9	N/A
	Additional CET1 buffer requirements as a percentage of RWA (%)							
	Capital conservation buffer requirement		1.88	1.88	1.88	1.88	N/A	1.25
	Countercyclical buffer requirement		0.56	0.45	0.46	0.34	N/A	0.22
	Bank G-SIB and/or D-SIB additional requirements		1.50	1.50	1.50	1.50	N/A	1.25
	Total of bank CET1 specific buffer requirements		3.94	3.83	3.84	3.72	N/A	2.72

	Total capital requirement (%)							
	Total capital requirement	3	10.9	11.5	11.5	11.5	N/A	N/A
	CET1 available after meeting the bank's minimum capital requirements	4	7.9	7.8	7.7	8.0	N/A	8.0
	Leverage ratio	5						
15	Total leverage ratio exposure measure ($bn)	^	2,614.9	2,676.4	2,664.1	2,707.9	2,556.4	2,557.1
16	Leverage ratio (%)	^	5.5	5.4	5.4	5.6	5.6	5.6
17	Leverage ratio as if IFRS 9 transitional arrangements had not been applied (%)		5.5	5.4	5.3	5.5	5.6	N/A
	Liquidity Coverage Ratio ('LCR')	6						
	Total high-quality liquid assets ($bn)		567.2	533.2	540.2	533.1	N/A	512.6
	Total net cash outflow ($bn)		368.7	334.1	341.7	338.5	N/A	359.9
	LCR ratio (%)	7	153.8	159.6	158.1	157.5	N/A	142.2

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

1 Figures presented as reported under IAS 39 'Financial instruments: recognition & measurement' at 31 December 2017.

2 Capital figures and ratios are reported on the CRD IV transitional basis for additional tier 1 and tier 2 capital in accordance with articles 484-92 of the Capital Requirements Regulation.

3 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 2018, as per the PRA's Individual Capital Guidance based on a point in time assessment, was 2.9% of RWAs, of which 1.6% was met by CET1. On 1 January 2019, our Pillar 2A requirement increased to 3.0% of RWAs, of which 1.7% must be met by CET1.

4 The minimum requirements represent the total capital requirement to be met by CET1.

5 Leverage ratio is calculated using the CRD IV end point basis for additional tier 1 capital.

6 The EU's regulatory transitional arrangements for IFRS 9 'Financial instruments' in article 473a of the Capital Requirements Regulation do not apply to liquidity coverage measures.

7 LCR is calculated as at the end of each period rather than using average values. Refer to page 132 of the Annual Report and Accounts 2018 for further detail.

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

	At 31 Dec 2018		
	CET1	Tier 1	Total own funds
	$bn	$bn	$bn
Reported balance using IFRS 9 transitional arrangements	121.0	147.1	173.2
Expected credit losses ('ECL') reversed under transitional arrangements for IFRS 9	(1.2)	(1.2)	(1.2)
– Standardised ('STD') approach	(1.2)	(1.2)	(1.2)
– Internal ratings based ('IRB') approach	—	—	—
Tax impacts	0.3	0.3	0.3
Changes in amounts deducted from CET1 for deferred tax assets and significant investments	(0.1)	(0.1)	(0.1)
– amounts deducted from CET1 for deferred tax assets	—	—	—
– amounts deducted from CET1 for significant investments	(0.1)	(0.1)	(0.1)
Reported balance excluding IFRS 9 transitional arrangements	120.0	146.1	172.2

Regulatory framework for disclosures

HSBC is supervised on a consolidated basis in the United Kingdom ('UK') by the Prudential Regulation Authority ('PRA'), which receives information on the capital adequacy of, and sets capital requirements for, the Group as a whole. Individual banking subsidiaries are directly regulated by their local banking supervisors, who set and monitor their local capital adequacy requirements. In most jurisdictions, non-banking financial subsidiaries are also subject to the supervision and capital requirements of local regulatory authorities.

At a consolidated group level, we calculated capital for prudential regulatory reporting purposes throughout 2018 using the Basel III framework of the Basel Committee ('Basel') as implemented by the European Union ('EU') in the amended Capital Requirements Directive and Regulation ('CRD IV'), and in the PRA's Rulebook for the UK banking industry. The regulators of Group banking entities outside the EU are at varying stages of implementation of the Basel Committee's framework, so local regulation in 2018 may have been on the basis of Basel I, II or III.

The Basel Committee's 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 Committee's framework and the rules in their jurisdiction, their capital condition, risk exposures and risk management processes, and hence their capital adequacy.

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

The PRA's final rules adopted national discretions in order to accelerate significantly the transition timetable to full 'end point' CRD IV compliance.

Pillar 3 disclosures

HSBC's Pillar 3 Disclosures at 31 December 2018 comprise information required under Pillar 3, both quantitative and qualitative. They are made in accordance with Part 8 of the Capital Requirements Regulation within CRD IV and the European Banking Authority's ('EBA') final standards on revised Pillar 3 disclosures issued in December 2016. These disclosures are supplemented by specific additional requirements of the PRA and discretionary disclosures on our part.

The Pillar 3 disclosures are governed by the Group's disclosure policy framework as approved by the Group Audit Committee ('GAC'). Information relating to the rationale for withholding certain disclosures is provided in Appendix III.

In our disclosures, to give insight into movements during the year, we provide comparative figures for the previous year or period, analytical review of variances and 'flow' tables for capital requirements.

Where disclosures have been enhanced, or are new, we do not generally restate or provide prior year comparatives.

Wherever specific rows and columns in the tables prescribed by the EBA or Basel are not applicable or immaterial to HSBC's activities, we omit them and follow the same approach for comparative disclosures.

We publish comprehensive Pillar 3 disclosures annually on the HSBC website www.hsbc.com, concurrently with the release of our Annual Report and Accounts 2018. Similarly, a separate Pillar 3 document is also published at half-year concurrently with the release of our Interim Report disclosure. Quarterly earnings releases also include regulatory information in line with the guidelines on the frequency of regulatory disclosures.

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 the Annual Report and Accounts 2018 or other locations.

We continue to engage in the work of the UK authorities and industry associations to improve the transparency and comparability of UK banks' Pillar 3 disclosures.

Regulatory developments

The UK's withdrawal from the EU

In August 2018, Her Majesty's Treasury ('HMT') commenced the process of 'onshoring' the current EU legislation to ensure that there is legal continuity in the event of the UK leaving the EU. This involved the publication of draft Statutory Instruments across a wide range of financial services legislation; this included the key prudential legislation for banking groups: the Capital Requirements Regulation and Capital Requirements Directive.

One of the key effects of onshoring will be to treat the EU in the same manner as the EU currently treats non-European Economic Area countries. Under the draft provisions published by HMT, the PRA will be given the

power to grant transitional provisions to delay the implementation of these changes for up to two years, should the UK leave the EU without an agreement on 29 March 2019.
The Bank of England ('BoE') and the PRA published a package of consultations in October and December 2018, setting out the changes required to the PRA's rules and technical standards as a result of the UK's withdrawal. It also included proposals on the exercise of the transitional powers; however the precise scope of these remains uncertain.
There are certain pieces of EU legislation that are in progress, but are not yet live, that will not enter automatically into UK law if it withdraws from the EU without an agreement. The Financial Services (Implementation of Legislation) Bill is currently progressing through the UK Parliament to empower HMT to make regulations in the UK to bring into force certain specified EU legislation that remains in progress on 29 March 2019.
RWAs and leverage ratio
Basel Committee
In December 2017, Basel published revisions to the Basel III framework. The final package includes:
- widespread changes to the risk weights under the standardised approach to credit risk;
- a change in the scope of application of the internal ratings based ('IRB') approach to credit risk, together with changes to the IRB methodology;
- the replacement of the operational risk approaches with a single methodology;
- an amended set of rules for the credit valuation adjustment ('CVA') capital framework;
- an aggregate output capital floor that ensures that banks' total RWAs are no lower than 72.5% of those generated by the standardised approaches; and
- changes to the exposure measure for the leverage ratio, together with the imposition of a leverage ratio buffer for global systemically important banks ('G-SIB'). This will take the form of a tier 1 capital buffer set at 50% of the G-SIB's RWAs capital buffer.

Further refinements to the leverage ratio exposure measure for centrally cleared derivatives and disclosure of daily-average exposure measures are also under consideration.
Following a recalibration, Basel published the final changes to the market risk RWA regime, the Fundamental Review of the Trading book ('FRTB'), in January 2019. The new regime contains a more clearly defined trading book boundary, the introduction of an internal models approach based upon expected shortfall models, capital requirements for non-modellable risk factors, and a more risk-sensitive standardised approach that can serve as a fall-back for the internal models method.

Pillar 3 Disclosures at 31 December 2018

Basel has announced that the package will be implemented on 1 January 2022, with a five-year transitional provision for the output floor, commencing at a rate of 50%. The final standards will need to be transposed into the relevant local law before coming into effect.

HSBC continues to evaluate the final package. Given that the package contains a significant number of national discretions, the possible outcome is uncertain.

European Union

In the EU, Basel's reforms are being implemented through revisions to the Capital Requirements Regulation and the Capital Requirements Directive. The first tranche of Basel's reforms, collectively referred to as CRR2, is expected to follow a phased implementation commencing in 2019; however, it has yet to enter into law. It includes the changes to the market risk rules under the FRTB, revisions to the counterparty credit risk framework and the new leverage ratio rules.

The CRR2 is included within the scope of the Financial Services (Implementation of Legislation) Bill. If passed by the UK Parliament, this would empower HMT to bring CRR2 into UK law even if it is not in force in the EU on exit day.

In May 2018, the European Commission commenced the process of implementing the second tranche of Basel's reforms, collectively known as CRR3, by requesting that the EBA report on the adoption of the remaining reforms on the EU's banking sector and the wider economy. This tranche will include Basel's reforms in relation to credit risk, operational risk and CVA, together with the output floor. The EBA's final report on the details of the EU's adoption of the reforms is not due to be published until the end of June 2019.

Separately, in January 2019, the EU published final proposals for a prudential backstop for non-performing loans, which will result in a deduction from CET1 capital when a minimum impairment coverage requirement is not met. This regime is expected to be implemented in the first half of 2019.

The EU continues to work on its 'IRB Repair' programme, issuing in November 2018 near final guidance on the specification of economic downturn for the purposes of the loss given default modelling and the final rules on the specification of the definition of default.

In January 2019, the new securitisation framework came into force in the EU for new transactions. Existing transactions will be subject to the framework on 1 January 2020. This regime introduces changes to the methodology for determining RWAs for securitisation positions, with beneficial treatments for simple, transparent and standardised securitisation transactions.

Bank of England

In October 2018, the PRA published a consultation on its supervisory expectations and approach to the financial risks from climate change. This focused on its expectations of firms on the incorporation of the risk from climate change into risk management practices and stress testing, as well as firms' climate change disclosures and internal governance. The PRA has indicated that it expects that the material financial risks from climate change should be included within Pillar 2.

Capital resources, macroprudential, recovery & resolution and total loss absorbing capacity

Financial Stability Board

In June 2018, the Financial Stability Board ('FSB') published a call for feedback on the technical implementation of its standard on total loss absorbing capacity ('TLAC') for G-SIBs in resolution ('the TLAC standard'). This will assess whether the implementation of the TLAC standard is proceeding as envisaged and may be used as a basis to develop further implementation guidance.

Also in June 2018, the FSB published two sets of final guidelines. The first sets out principles to assist authorities as they operationalise resolution strategies and the second covers the development of resolution funding plans for G-SIBs.

Basel Committee

In July 2018, Basel published a revised assessment methodology, updating its 2013 rules, for the G-SIB capital buffer. The revised methodology will take effect in 2021 and the resulting capital buffer will be applied in January 2023.

European Union

In addition to the changes to RWAs, CRR2 will implement the EU's version of the FSB's TLAC standard for G-SIBs, which is in the form of minimum requirements for own funds and eligible liabilities ('MREL'). Several changes are also introduced in the own funds calculation and eligibility criteria. Similar applicability issues will arise in relation to the UK's withdrawal from the EU.

Bank of England

In June 2018, the BoE published its approach to setting MREL within groups, known as internal MREL, and its final policy on selected outstanding MREL policy matters. These requirements came into effect on 1 January 2019. The PRA also published its expectations for MREL reporting, which are also now in force.

In December 2018, the BoE published a consultation on its approach to assessing resolvability. This outlines how it assesses resolvability through its established policies and further proposes new principles on funding and operational continuity in resolution and firms' restructuring capabilities, as well as management, governance and communication capabilities. Simultaneously, the PRA published a consultation on resolution assessments and public disclosure by firms. Together, these publications contain proposals to form a Resolvability Assessment Framework, presented as the final element in the UK's resolution regime.

In addition, a number of changes have come into effect since late 2018:

- The legislative framework for UK ring-fencing took effect on 1 January 2019. HSBC completed the process to set up its ring-fenced bank, HSBC UK Bank plc ('HBUK'), in July 2018, six months ahead of the legal deadline.
- The PRA's final rules on group risk and double leverage came into effect on 1 January 2019. Firms are required to consider both elements as part of the Pillar 2 process. In June 2018, the PRA also published modifications to its intra-group large exposures framework, which came into force with immediate effect.
- In November 2018, the UK Countercyclical Capital Buffer rate increased from 0.5% to 1%. The Hong Kong rate increased from 1.875% to 2.5% with effect from 1 January 2019.

Accounting developments

IFRS 9 Financial instruments

HSBC adopted the requirements of IFRS 9 Financial Instruments on 1 January 2018, with the exception of the provisions relating to the presentation of gains and losses on financial liabilities designated at fair value, which were adopted from 1 January 2017.

The IFRS 9 classification and measurement of financial assets and the recognition and measurement of expected credit losses ('ECL') differ from the previous approach under IAS 39 'Financial Instruments: Recognition and Measurement' and IAS 37 'Provisions, Contingent Liabilities and Contingent Assets'.

As prior periods have not been restated, comparative periods remain in accordance with the legacy accounting standards and are therefore not necessarily comparable to the IFRS 9 amounts recorded for 2018.

The adoption of IFRS 9 has not resulted in any significant change to HSBC's business model or that of our four global businesses. This includes our strategy, country presence, product offerings and target customer segments.

Existing stress testing and regulatory models, skills and expertise were adapted in order to meet IFRS 9 requirements. Data from various client, finance and risk systems have been integrated and validated. As a result of IFRS 9 adoption, management has additional insight and measures not previously utilised, which over time, may influence our risk appetite and risk management processes.

For regulatory reporting, the Group has adopted the transitional arrangements (including paragraph 4 of CRR article 473a) published by the EU on 27 December 2017 for IFRS 9 Financial Instruments. These permit banks to add back to their capital base a proportion of the impact that IFRS 9 has upon their loan loss allowances during the first five years of use. The proportion that banks may add back starts at 95% in 2018, and reduces to 25% by 2022.

The impact of IFRS 9 on loan loss allowances is defined as:

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

The impact is calculated separately for portfolios using the STD and IRB approaches. For IRB portfolios, there is no add-back to capital unless loan loss allowances exceed regulatory 12-month expected losses. Any add-back must be tax effected and accompanied by a recalculation of capital deduction thresholds, exposure and risk-weighted assets (‘RWAs’).

Additional details on IFRS 9 are disclosed on page 224]of the Annual Report and Accounts 2018.

IFRS 16 Leases

From 1 January 2019, IFRS 16 Leases will replace IAS 17 Leases. IFRS 16 requires lessees to capitalise most leases within the scope of the standard, similar to how finance leases were accounted for under IAS 17. Lessees will recognise a right-of-use (‘ROU’) asset and a corresponding financial liability on the balance sheet. The asset will be amortised over the length of the lease, and the financial liability measured at amortised cost. Lessor accounting remains substantially the same as under IAS 17.

HSBC expects to adopt IFRS 16 using a modified retrospective approach where the cumulative effect of applying the standard is recognised in the opening balance of retained earnings.

For regulatory reporting, the ROU assets will not be deducted from regulatory capital; instead they will be risk-weighted at 100%.

For further information about the Group’s implementation of IFRS 16, refer to Note 1 of the Annual Report and Accounts 2018.

Risk management

Our risk management framework

We use an enterprise-wide risk management framework across the organisation and across all risk types. It is underpinned by our risk culture and is reinforced by the HSBC Values and our Global Standards programme.

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

Further information on our risk management framework is set out on page 73 of the Annual Report and Accounts 2018. The management and mitigation of principal risks facing the Group is described in our top and emerging risks on page 69 of the Annual Report and Accounts 2018.

Commentary on hedging strategies and associated processes can be found in the Market risk and Securitisation sections of this document. Additionally, a comprehensive overview of this topic can be found in Note 1.2(h) on page 229 of the Annual Report and Accounts 2018.

Risk culture

HSBC has long recognised the importance of a strong risk culture, the fostering of which is a key responsibility of senior executives. Our risk culture is reinforced by the HSBC Values and our Global Standards programme. It is instrumental in aligning the behaviours of individuals with our attitude to assuming and managing risk,

which helps to ensure that our risk profile remains in line with our risk appetite.

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

Further information on risk and remuneration is set out on pages 69 and 199 of the Annual Report and Accounts 2018.

Risk governance

The Board has ultimate responsibility for the effective management of risk and approves HSBC’s risk appetite. It is advised on risk-related matters by the Group Risk Committee (‘GRC’) and the Financial System Vulnerabilities Committee (‘FSVC’).

The activities of the GRC and the FSVC are set out on pages 161 to 163 of the Annual Report and Accounts 2018.

Executive accountability for the ongoing monitoring, assessment and management of the risk environment, and the effectiveness of the risk management framework resides with the Group Chief Risk Officer. He is supported by the Risk Management Meeting (‘RMM’) of the Group Management Board.

The management of financial crime risk resides with the Group Chief Compliance Officer. He is supported by the Financial Crime Risk Management Meeting.

Further information is available on page 85 of the Annual Report and Accounts 2018.

Day-to-day responsibility for risk management is delegated to senior managers with individual accountability for decision making. These senior managers are supported by global functions. All employees have a role to play in risk management. These roles are defined using the three lines of defence model, which takes into account the Group’s business and functional structures.

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

Further information about the Group’s three lines of defence model and executive risk governance structures is available on page 75 of the Annual Report and Accounts 2018.

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 medium- and long-term strategic goals. In HSBC, risk appetite is managed through a global risk appetite framework and articulated in a risk appetite statement (‘RAS’), which is approved biannually by the Board on the advice of the GRC.

The Group‘s 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 the top and emerging risks report and stress testing, to ensure consistency in risk management.

Information about our risk management tools is set out on page 74 of the Annual Report and Accounts 2018. Details of the Group’s overarching risk appetite are set out on page 69 of the Annual Report and Accounts 2018.

Stress testing

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

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

The Group stress testing programme is overseen by the GRC, and results are reported, where appropriate, to the RMM and GRC.

Further information about stress testing and details of the Group's regulatory stress test results are set out on page 76 of the Annual Report and Accounts 2018.

Global Risk function

We have a dedicated Global Risk function, headed by the Group Chief Risk Officer, which is responsible for the Group's risk management framework. This includes establishing global policy, monitoring risk profiles, and forward-looking risk identification and management. Global Risk is made up of sub-functions covering all risks to our operations. It is independent from the global businesses, including sales and trading functions, helping to ensure balance in risk/return decisions. The Global Risk function operates in line with the three lines of defence model.

For further information see page 74 of the Annual Report and Accounts 2018.

Risk management and internal control systems

The 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 Group's business objectives. On behalf of the Board, the GAC has responsibility for oversight of risk management and internal controls over financial reporting, and the GRC has responsibility for oversight of risk management and internal controls other than for financial reporting.

The Directors, through the GRC and the GAC, conduct an annual review of the effectiveness of our system of risk management and internal control. The GRC and the GAC received confirmation that executive management has taken or is taking the necessary actions to remedy any failings or weaknesses identified through the operation of our framework of controls.

HSBC's key risk management and internal control procedures are described on page 164 of the Annual Report and Accounts 2018, where the Report of the Directors on the effectiveness of internal controls can also be found.

Risk measurement and reporting systems

Our risk measurement and reporting systems 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 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 Global Risk function, while the development and operation of risk rating and management systems and processes are ultimately subject to the oversight of the Board.

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

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

Risk analytics and model governance

The Global Risk function 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, develops HSBC's global risk models, and oversees local model development and use around the Group toward our implementation targets for IRB approaches.

The Global Model Oversight Committee (‘Global MOC’) is the primary committee responsible for the oversight of Model Risk globally within HSBC. It serves an important role in providing strategic direction on the management of models and their associated risks to HSBC's businesses globally and is an essential element of the governance structure for model risk management. Global MOC is supported by Functional MOCs at the Global and Regional levels which are responsible for model risk management within their functional areas, including wholesale credit risk, market risk, retail risk, and finance.

The Global MOC meets regularly and reports to RMM. It is chaired by the Group CRO and membership includes the CEOs of the Global Businesses, and senior executives from Risk, Finance and global businesses. Through its oversight of the functional MOCs, it identifies emerging risks for all aspects of the risk rating system, ensuring that model risk is managed within our risk appetite statement, and formally advises 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 Global Risk. The team provides robust challenge to the modelling approaches used across the Group. It also ensures that the performance of those models is transparent and that their limitations are visible to key stakeholders.

The development and use of data and models to meet local requirements are the responsibility of global businesses or functions, as well as regional and/or local entities under the governance of their own management, subject to overall Group policy and oversight.

Linkage to the Annual Report and Accounts
2018

Structure of the regulatory group

Subsidiaries engaged in insurance activities are excluded from the regulatory consolidation by excluding assets, liabilities and post-acquisition reserves. The Group’s investments in these insurance subsidiaries are recorded at cost and deducted from CET1 capital (subject to thresholds).

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 are proportionally consolidated for regulatory purposes by including our share of assets, liabilities, profit and loss, and risk-weighted assets in accordance with the PRA’s application of EU legislation. Non-participating significant investments, along with non-financial associates, are deducted from capital (subject to thresholds).

Table 3: Reconciliation of balance sheets – financial accounting to regulatory scope of consolidation

	Ref †	Accounting balance sheet $m	Deconsolidation of insurance/ other entities $m	Consolidation of banking associates $m	Regulatory balance sheet $m
Assets					
Cash and balances at central banks		162,843	(39)	191	162,995
Items in the course of collection from other banks		5,787	—	—	5,787
Hong Kong Government certificates of indebtedness		35,859	—	—	35,859
Trading assets		238,130	(1,244)	—	236,886
Financial assets designated and otherwise mandatorily measured at fair value		41,111	(28,166)	502	13,447
– of which: debt securities eligible as Tier 2 issued by Group FSEs that are outside the regulatory scope of consolidation	r	424	(424)	—	—
Derivatives		207,825	(70)	102	207,857
Loans and advances to banks		72,167	(1,264)	1,462	72,365
– of which: lending to FSEs eligible as Tier 2	r	52	—	—	52
Loans and advances to customers		981,696	(1,530)	12,692	992,858
– of which:					
lending eligible as Tier 2 to Group FSEs outside the regulatory scope of consolidation	r	117	(117)	—	—
expected credit losses on IRB portfolios	h	(6,405)	—	—	(6,405)
Reverse repurchase agreements – non-trading		242,804	(3)	542	243,343
Financial investments		407,433	(61,228)	3,578	349,783
Capital invested in insurance and other entities		—	2,306	—	2,306
Prepayments, accrued income and other assets		110,571	(5,968)	247	104,850
– of which: retirement benefit assets	j	7,934	—	—	7,934
Current tax assets		684	(23)	26	687
Interests in associates and joint ventures		22,407	(398)	(4,144)	17,865
– of which: positive goodwill on acquisition	e	492	(13)	—	479
Goodwill and intangible assets	e	24,357	(7,281)	—	17,076
Deferred tax assets	f	4,450	161	1	4,612
Total assets at 31 Dec 2018		2,558,124	(104,747)	15,199	2,468,576
Liabilities and equity					
Liabilities					
Hong Kong currency notes in circulation		35,859	—	—	35,859
Deposits by banks		56,331	1	229	56,561
Customer accounts		1,362,643	2,586	13,790	1,379,019
Repurchase agreements – non-trading		165,884	—	—	165,884
Items in course of transmission to other banks		5,641	—	—	5,641
Trading liabilities		84,431	—	—	84,431
Financial liabilities designated at fair value		148,505	(4,347)	36	144,194
– of which:					
included in tier 1	n	411	—	—	411
included in tier 2	o, q, i	12,499	—	—	12,499
Derivatives		205,835	116	81	206,032
– of which: debit valuation adjustment	i	152	—	—	152
Debt securities in issue		85,342	(1,448)	—	83,894

Accruals, deferred income and other liabilities		97,380	(2,830)	691	95,241
Current tax liabilities		718	(22)	4	700
Liabilities under insurance contracts		87,330	(87,330)	—	—
Provisions		2,920	(9)	44	2,955
– of which: credit-related contingent liabilities and contractual commitments on IRB portfolios	h	395	—	—	395
Deferred tax liabilities		2,619	(1,144)	1	1,476
Subordinated liabilities		22,437	2	323	22,762
– of which:					
included in tier 1	l, n	1,786	—	—	1,786
included in tier 2	o, q	20,584	—	—	20,584
Total liabilities at 31 Dec 2018		2,363,875	(94,425)	15,199	2,284,649
Equity					
Called up share capital	a	10,180	—	—	10,180
Share premium account	a, l	13,609	—	—	13,609
Other equity instruments	k, l	22,367	—	—	22,367
Other reserves	c, g	1,906	1,996	—	3,902
Retained earnings	b, c	138,191	(11,387)	—	126,804
Total shareholders' equity		186,253	(9,391)	—	176,862
Non-controlling interests	d, m, n, p	7,996	(931)	—	7,065
Total equity at 31 Dec 2018		194,249	(10,322)	—	183,927
Total liabilities and equity at 31 Dec 2018		2,558,124	(104,747)	15,199	2,468,576

1 The references (a) – (r) identify balance sheet components that are used in the calculation of regulatory capital in Table 7: Own funds disclosure on page 14.

Pillar 3 Disclosures at 31 December 2018

Table 3: Reconciliation of balance sheets – financial accounting to regulatory scope of consolidation (continued)

	Ref †	Accounting balance sheet $m	Deconsolidation of insurance/ other entities $m	Consolidation of banking associates $m	Regulatory balance sheet $m
Assets					
Cash and balances at central banks		180,624	(38)	1,174	181,760
Items in the course of collection from other banks		6,628	—	2	6,630
Hong Kong Government certificates of indebtedness		34,186	—	—	34,186
Trading assets		287,995	(359)	1	287,637
Financial assets designated at fair value		29,464	(28,674)	—	790
– of which: debt securities eligible as Tier 2 issued by Group FSEs that are outside the regulatory scope of consolidation	r	324	(324)	—	—
Derivatives		219,818	(128)	57	219,747
Loans and advances to banks		90,393	(2,024)	1,421	89,790
– of which: lending to FSEs eligible as Tier 2	r	74	—	—	74
Loans and advances to customers		962,964	(3,633)	12,835	972,166
– of which:					
lending eligible as Tier 2 to Group FSEs outside the regulatory scope of consolidation	r	117	(117)	—	—
impairment allowances on IRB portfolios	h	(5,004)	—	—	(5,004)
Reverse repurchase agreements – non-trading		201,553	—	1,854	203,407
Financial investments		389,076	(61,480)	3,325	330,921
Capital invested in insurance and other entities		—	2,430	—	2,430
Prepayments, accrued income and other assets		67,191	(4,202)	267	63,256
– of which: retirement benefit assets	j	8,752	—	—	8,752
Current tax assets		1,006	(5)	—	1,001
Interests in associates and joint ventures		22,744	(370)	(4,064)	18,310
– of which: positive goodwill on acquisition	e	521	(14)	(1)	506
Goodwill and intangible assets	e	23,453	(6,937)	—	16,516
Deferred tax assets	f	4,676	170	—	4,846
Total assets at 31 Dec 2017		2,521,771	(105,250)	16,872	2,433,393
Liabilities and equity					
Liabilities					
Hong Kong currency notes in circulation		34,186	—	—	34,186
Deposits by banks		69,922	(86)	695	70,531
Customer accounts		1,364,462	(64)	14,961	1,379,359
Repurchase agreements – non-trading		130,002	—	—	130,002
Items in course of transmission to other banks		6,850	—	—	6,850
Trading liabilities		184,361	867	—	185,228
Financial liabilities designated at fair value		94,429	(5,622)	—	88,807
– of which:					
included in tier 1	n	459	—	—	459
included in tier 2	o, q, i	23,831	—	—	23,831
Derivatives		216,821	69	51	216,941

– of which: debit valuation adjustment	i	59	—	—	59
Debt securities in issue		64,546	(2,974)	320	61,892
Accruals, deferred income and other liabilities		45,907	(211)	622	46,318
Current tax liabilities		928	(81)	—	847
Liabilities under insurance contracts		85,667	(85,667)	—	—
Provisions		4,011	(17)	223	4,217
– of which: credit-related contingent liabilities and contractual commitments on IRB portfolios	h	220	—	—	220
Deferred tax liabilities		1,982	(1,085)	—	897
Subordinated liabilities		19,826	1	—	19,827
– of which:					
included in tier 1	l, n	1,838	—	—	1,838
included in tier 2	o, q	17,561	—	—	17,561
Total liabilities at 31 Dec 2017		2,323,900	(94,870)	16,872	2,245,902
Equity					
Called up share capital	a	10,160	—	—	10,160
Share premium account	a, l	10,177	—	—	10,177
Other equity instruments	k, l	22,250	—	—	22,250
Other reserves	c, g	7,664	1,236	—	8,900
Retained earnings	b, c	139,999	(10,824)	—	129,175
Total shareholders' equity		190,250	(9,588)	—	180,662
Non-controlling interests	d, m, n, p	7,621	(792)	—	6,829
Total equity at 31 Dec 2017		197,871	(10,380)	—	187,491
Total liabilities and equity at 31 Dec 2017		2,521,771	(105,250)	16,872	2,433,393

† The references (a) – (r) identify balance sheet components that are used in the calculation of regulatory capital in Table 7: Own funds disclosure on page 14.

Table 4: Principal entities with a different regulatory and accounting scope of consolidation (LI3)

	Principal activities	Method of accounting consolidation	Method of regulatory consolidation	Footnotes	At 31 Dec 2018 Total assets $m	At 31 Dec 2018 Total equity $m	At 31 Dec 2017 Total assets $m	At 31 Dec 2017 Total equity $m
Principal associates								
The Saudi British Bank	Banking services	Equity	Proportional consolidation	1	46,634	8,757	50,417	8,752
Principal insurance entities excluded from the regulatory consolidation								
HSBC Life (International) Ltd	Life insurance manufacturing	Fully consolidated	N/A		48,144	3,321	45,083	3,679
HSBC Assurances Vie (France)	Life insurance manufacturing	Fully consolidated	N/A		26,066	808	27,713	843
Hang Seng Insurance Company Ltd	Life insurance manufacturing	Fully consolidated	N/A		17,356	1,642	16,411	1,403
HSBC Insurance (Singapore) Pte Ltd	Life insurance manufacturing	Fully consolidated	N/A		4,335	493	4,425	706
HSBC Life (UK) Ltd	Life insurance manufacturing	Fully consolidated	N/A		2,026	157	2,115	196
HSBC Life Insurance Company Ltd	Life insurance manufacturing	Fully consolidated	N/A		1,208	70	1,113	87
HSBC Life Assurance (Malta) Ltd	Life insurance manufacturing	Fully consolidated	N/A		976	58	1,681	61
HSBC Seguros S.A. (Mexico)	Life insurance manufacturing	Fully consolidated	N/A		796	121	785	120
Principal SPEs excluded from the regulatory consolidation				2				
Regency Assets Ltd	Securitisation	Fully consolidated	N/A		6,548	—	7,466	—
Mazarin Funding Ltd	Securitisation	Fully consolidated	N/A		476	(21)	852	48
Metrix Portfolio Distribution Plc	Securitisation	Fully consolidated	N/A		296	—	326	—
Barion Funding Ltd	Securitisation	Fully consolidated	N/A		2	—	424	78

1 Total assets and total equity for 2018 are as at 30 September 2018.
2 These SPEs issued no or de minimis share capital.

Group entities that have different regulatory and accounting scope of consolidation are provided in table 4 with their total assets and total equity, on a stand-alone IFRS basis. The figures shown therefore include intra-Group balances. For associates, table 4 shows the total assets and total equity of the entity as a whole rather than HSBC's share in the entities' balance sheets.

For insurance entities, the present value of the in-force long-term insurance business asset of $7.1bn and the related deferred tax liability are only recognised on consolidation in financial reporting, and are therefore not included in the asset or equity positions for the stand-alone entities presented in table 4. In addition, these figures exclude any deferred acquisition cost assets that may be recognised in the entities' stand-alone financial reporting.

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 the Annual Report and Accounts 2018.

The Pillar 3 Disclosures at 31 December 2018 are prepared in accordance with regulatory capital adequacy concepts and rules, while the Annual Report and Accounts 2018 are prepared in accordance with 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 and 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.

The following tables show in two steps how the accounting values in the regulatory balance sheet link to regulatory exposure at default ('EAD').

In a first step, table 5 shows the difference between the accounting and regulatory scope of consolidation, and a breakdown of the accounting balances into the risk types that form the basis for regulatory capital requirements. Table 6 then shows the main differences between the accounting balances and regulatory exposures by regulatory risk type.

Pillar 3 Disclosures at 31 December 2018

Table 5: Differences between accounting and regulatory scopes of consolidation and mapping of financial statement categories with
regulatory risk categories (LI1)

			Carrying value of items				
	Carrying values as reported in published financial statements	Carrying values under scope of regulatory consolidation[1]	Subject to the credit risk framework	Subject to the counter-party credit risk framework[2]	Subject to the securitisation framework[3]	Subject to the market risk framework	Subject to deduction from capital or not subject to regulatory capital requirements
	$bn	$bn	$bn	$bn	$bn	$bn	$bn
Assets							
Cash and balances at central banks	162.8	163.0	163.0	—	—	—	—
Items in the course of collection from other banks	5.8	5.8	5.8	—	—	—	—
Hong Kong Government certificates of indebtedness	35.9	35.9	35.9	—	—	—	—
Trading assets	238.1	236.9	—	18.3	—	236.9	—
Financial assets designated and otherwise mandatorily measured at fair value	41.1	13.4	10.9	1.9	0.6	—	—
Derivatives	207.9	207.9	—	207.1	0.8	207.9	—
Loans and advances to banks	72.2	72.4	71.4	—	1.0	—	—
Loans and advances to customers	981.7	992.9	969.6	5.6	18.5	—	—
Reverse repurchase agreements – non-trading	242.8	243.3	—	243.3	—	—	—
Financial investments	407.4	349.8	347.8	—	2.0	—	—
Capital invested in insurance and other entities	—	2.3	1.5	—	—	—	0.8

Prepayments, accrued income and other assets	110.5	104.7	40.0	39.5	—	47.0	17.7
Current tax assets	0.7	0.7	0.7	—	—	—	—
Interests in associates and joint ventures	22.4	17.9	11.4	—	—	—	6.5
Goodwill and intangible assets	24.4	17.1	—	—	—	—	16.9
Deferred tax assets	4.5	4.6	6.8	—	—	—	(2.2)
Total assets at 31 Dec 2018	2,558.2	2,468.6	1,664.8	515.7	22.9	491.8	39.7
Liabilities							
Hong Kong currency notes in circulation	35.9	35.9	—	—	—	—	35.9
Deposits by banks	56.4	56.6	—	—	—	—	56.6
Customer accounts	1,362.6	1,379.0	—	—	—	—	1,379.0
Repurchase agreements – non-trading	165.9	165.9	—	165.9	—	—	—
Items in course of transmission to other banks	5.6	5.6	—	—	—	—	5.6
Trading liabilities	84.4	84.4	—	11.8	—	84.4	—
Financial liabilities designated at FV	148.6	144.2	—	—	—	58.0	86.2
Derivatives	205.9	206.0	—	206.0	—	206.0	—
Debt securities in issue	85.3	83.9	—	—	—	—	83.9
Accruals, deferred income, and other liabilities	97.4	95.2	—	41.0	—	41.0	54.2
Current tax liabilities	0.7	0.7	—	—	—	—	0.7
Liabilities under insurance contract	87.3	—	—	—	—	—	—
Provisions	2.9	3.0	0.6	—	—	—	2.4
	2.6	1.5	1.3	—	—	—	2.3

Deferred tax liabilities							
Subordinated liabilities	22.4	22.8	—	—	—	—	22.8
Total liabilities at 31 Dec 2018	2,363.9	2,284.7	1.9	424.7	—	389.4	1,729.6

Table 5: Differences between accounting and regulatory scopes of consolidation and mapping of financial statement categories with
regulatory risk categories (LI1) (continued)

			Carrying value of items				
	Carrying values as reported in published financial statements	Carrying values under scope of regulatory consolidation[1]	Subject to the credit risk framework	Subject to the counter party credit risk framework[2]	Subject to the securitisation framework[3]	Subject to the market risk framework	Subject to deduction from capital or not subject to regulatory capital requirements
	$bn	$bn	$bn	$bn	$bn	$bn	$bn
Assets							
Cash and balances at central banks	180.6	181.8	164.7	—	—	—	—
Items in the course of collection from other banks	6.6	6.6	6.6	—	—	—	—
Hong Kong Government certificates of indebtedness	34.2	34.2	34.2	—	—	—	—
Trading assets	288.0	287.6	2.0	17.1	—	270.4	15.2
Financial assets designated at fair value	29.5	0.8	0.8	—	—	—	—
Derivatives	219.8	219.7	—	218.5	1.2	219.7	—
Loans and advances to banks	90.4	89.8	98.6	6.6	0.6	—	1.1
Loans and advances to customers	963.0	972.2	943.7	10.4	13.1	—	5.0
Reverse repurchase agreements – non-trading	201.6	203.4	—	203.4	—	—	—
Financial investments	389.1	330.9	324.1	—	6.5	—	0.3
Capital invested in insurance and other entities	—	2.4	1.6	—	—	—	0.8
Current tax assets	1.0	1.0	1.0	—	—	—	—
	67.1	63.4	42.0	3.8	0.1	13.3	6.0

Prepayments, accrued income and other assets								
Interests in associates and joint ventures	22.7	18.3	12.9	—	—	—	5.4	
Goodwill and intangible assets	23.5	16.5	—	—	—	—	16.4	
Deferred tax assets	4.7	4.8	6.3	—	—	—	(1.5	)
Total assets at 31 Dec 2017	2,521.8	2,433.4	1,638.5	459.8	21.5	503.4	48.7	
Liabilities								
Hong Kong currency notes in circulation	34.2	34.2	—	—	—	—	34.2	
Deposits by banks	69.9	70.5	—	—	—	—	70.5	
Customer accounts	1,364.5	1,379.4	—	—	—	—	1,379.4	
Repurchase agreements – non-trading	130.0	130.0	—	130.0	—	—	—	
Items in course of transmission to other banks	6.9	6.9	—	—	—	—	6.9	
Trading liabilities	184.4	185.2	—	10.6	—	172.2	13.0	
Financial liabilities designated at FV	94.4	88.8	—	—	—	—	88.8	
Derivatives	216.8	216.9	—	216.9	—	216.9	—	
Debt securities in issue	64.5	61.9	—	—	—	—	61.9	
Current tax liabilities	0.9	0.8	—	—	—	—	0.8	
Liabilities under insurance contract	85.7	—	—	—	—	—	—	
Accruals, deferred income, and other liabilities	45.9	46.3	—	—	—	—	46.3	
Provisions	4.0	4.2	0.3	—	—	—	3.9	
	2.0	0.9	1.3	—	—	—	1.7	

Deferred tax liabilities							
Subordinated liabilities	19.8	19.9	—	—	—	—	19.9
Total liabilities at 31 Dec 2017	2,323.9	2,245.9	1.6	357.5	—	389.1	1,727.3

1 The amounts shown in the column ‘Carrying values under scope of regulatory consolidation’ do not equal the sum of the amounts shown in the remaining columns of this table for line items ‘Derivatives’, ’Trading assets’ and ‘Prepayments, accrued income and other assets’ as some of the assets included in these items are subject to regulatory capital charges for both CCR and market risk.

2 The amounts shown in the column ‘Subject to the counterparty credit risk framework’ include both non-trading book and trading book.

3 The amounts shown in the column ‘Subject to the securitisation framework’ only include non-trading book. Trading book securitisation positions are included in the market risk column.

Pillar 3 Disclosures at 31 December 2018

Table 6: Main sources of differences between regulatory exposure amounts and carrying values in financial statements (LI2)

	Footnotes	Total $bn	Items subject to: Credit risk framework $bn	CCR framework $bn	Securitisation framework $bn
Carrying value of assets within scope of regulatory consolidation	1	2,428.9	1,664.8	515.7	22.9
Carrying value of liabilities within scope of regulatory consolidation	1	555.1	1.9	424.7	—
Net carrying value within scope of regulatory consolidation		1,873.8	1,662.9	91.0	22.9
Off-balance sheet amounts and potential future exposure for counterparty risk		829.8	277.2	64.0	10.9
Differences in netting rules		10.5	12.5	(2.0)	—
Differences due to financial collateral on standardised approach		(15.6)	(15.6)	—	—
Differences due to expected credit losses on IRB approach		6.2	6.2	—	—
Differences due to EAD modelling and other differences		2.9	4.3	—	(1.4)
Differences due to credit risk mitigation		7.3	—	7.3	—
Exposure values considered for regulatory purposes at 31 Dec 2018		2,714.9	1,947.5	160.3	32.4
Carrying value of assets within scope of regulatory consolidation	1	2,384.7	1,638.5	459.8	21.5
Carrying value of liabilities within scope of regulatory consolidation	1	520.7	1.6	357.5	—
Net carrying value within scope of regulatory consolidation		1,864.0	1,636.9	102.3	21.5
Off-balance sheet amounts and potential future exposure for counterparty risk		801.7	271.0	135.2	15.3
Differences in netting rules		10.4	9.3	1.1	—
Differences due to financial collateral on standardised approach		(14.7)	(14.7)	—	—
Differences due to expected credit losses on IRB approach		4.7	4.7	—	—
Differences due to EAD modelling and other differences		3.3	5.0	—	(1.7)
Differences due to credit risk mitigation		(71.1)	—	(71.1)	—
Exposure values considered for regulatory purposes at 31 Dec 2017		2,598.3	1,912.2	167.5	35.1

1 Excludes amounts subject to deduction from capital or not subject to regulatory capital requirements.

Explanations of differences between accounting and regulatory exposure amounts

Off-balance sheet amounts and potential future exposure for counterparty risk

Off-balance sheet amounts subject to credit risk and securitisation regulatory frameworks include undrawn portions of committed facilities, various trade finance commitments and guarantees. We apply a credit conversion factor ('CCF') to

these items and add potential future exposures (‘PFE’) for counterparty credit risk.
Differences in netting rules
The increase from carrying value due to differences in netting rules is the reversal of amounts deducted from gross loans and advances to customers in the published financial statements in accordance with the offsetting criteria of IAS 32 ‘Financial instruments: presentation’.
Differences due to financial collateral
Exposure value under the standardised approach is calculated after deducting credit risk mitigation whereas accounting value is before such deductions.
Differences due to expected credit losses
The carrying value of assets is net of credit risk adjustments. The regulatory exposure value under IRB approaches is before deducting credit risk adjustments.
Differences due to EAD modelling
The carrying value of assets is usually measured at amortised cost or fair value as at the balance sheet date. For certain IRB models, the exposure value used as EAD is the projected value over the next year.
Differences due to credit risk mitigation
In counterparty credit risk (‘CCR’), differences arise between accounting carrying values and regulatory exposure as a result of the application of credit risk mitigation and the use of modelled exposures.

Explanation of differences between accounting fair value and regulatory prudent valuation
Fair value is defined as the best estimate of the price that would be received to sell an asset or be paid to transfer a liability in an orderly transaction between market participants at the measurement date.
Some fair value adjustments already reflect valuation uncertainty to some degree. These are market data uncertainty, model uncertainty and concentration adjustments.
However, it is recognised that a variety of valuation techniques using stressed assumptions and combined with the range of plausible market parameters at a given point in time may still generate unexpected uncertainty beyond fair value.
A series of additional valuation adjustments (‘AVAs’) are therefore required to reach a specified degree of confidence (the ‘prudent value’) set by regulators that differs both in terms of scope and measurement from HSBC’s own quantification for disclosure purposes.
AVAs should consider at the minimum: market price uncertainty, bid/offer (close out) uncertainty, model risk, concentration, administrative cost, unearned credit spreads and investing and funding costs.
AVAs are not limited to level 3 exposures, for which a 95% uncertainty range is already computed and disclosed, but must also be calculated for any exposure for which the exit price cannot be determined with a high degree of certainty.

Capital and RWAs
Capital management
Approach and policy
Our approach to capital management is driven by our strategic and organisational requirements, taking into account the regulatory, economic and commercial environment. We aim to maintain a strong capital base to support the risks inherent in our business and invest in accordance with our strategy, meeting both consolidated and local regulatory capital requirements at all times.
Our capital management process culminates in the annual Group capital plan, which is approved by the Board. HSBC Holdings is the primary provider of equity capital to its subsidiaries and also provides them with non-equity capital where necessary. These investments are substantially funded by HSBC Holdings' issuance of equity and non-equity capital and by profit retention. As part of its capital management process, HSBC Holdings seeks to maintain a balance between the composition of its capital and its investment in subsidiaries. Subject to the above, there is no current or foreseen impediment to HSBC Holdings' ability to provide such investments.
Each subsidiary manages its own capital to support its planned business growth and meet its local regulatory requirements within the context of the Group capital plan. Capital generated by subsidiaries in excess of planned requirements is returned to HSBC Holdings, normally by way of dividends, in accordance with the Group's capital plan.
During 2018, consistent with the Group's capital plan, the Group's subsidiaries did not experience any significant restrictions on

paying dividends or repaying loans and advances, and none are envisaged with regard to planned dividends or payments. However, the ability of subsidiaries to pay dividends or advance monies to HSBC Holdings depends on, among other things, their respective local regulatory capital and banking requirements, exchange controls, statutory reserves, and financial and operating performance. None of our subsidiaries that are excluded from the regulatory consolidation have capital resources below their minimum regulatory requirement. HSBC Holdings has not entered into any Group Financial Support Agreements pursuant to the application of early intervention measures under the Bank Recovery and Resolution Directive.
All capital securities included in the capital base of HSBC have either been issued as fully compliant CRD IV securities (on an end point basis) or in accordance with the rules and guidance in the PRA's previous General Prudential Sourcebook, which are included in the capital base by virtue of application of the CRD IV grandfathering provisions. The main features of capital securities issued by the Group, categorised as tier 1 ('T1') capital and tier 2 ('T2') capital, are set out on the HSBC website, www.hsbc.com.
The values disclosed are the IFRS balance sheet carrying amounts, not the amounts that these securities contribute to regulatory capital. For example, the IFRS accounting and the regulatory treatments differ in their approaches to issuance costs, regulatory amortisation and regulatory eligibility limits prescribed under CRD IV.
A list of the main features of our capital instruments in accordance with Annex III of Commission Implementing Regulation 1423/2013 is also published on our website with reference to our balance sheet on 31 December 2018. This is in addition to the full terms and conditions of our securities, also available on our website.
For further details of our approach to capital management, please see page 148 of the Annual Report and Accounts 2018.
Own funds
Table 7: Own funds disclosure

			At 31 Dec 2018	CRD IV prescribed residual amount	Final CRD IV text
Ref*		Ref †	$m	$m	$m
	Common equity tier 1 ('CET1') capital: instruments and reserves				
1	Capital instruments and the related share premium accounts		22,384		22,384

	– ordinary shares	a	22,384		22,384
2	Retained earnings	b	121,180		121,180
3	Accumulated other comprehensive income (and other reserves)	c	3,368		3,368
5	Minority interests (amount allowed in consolidated CET1)	d	4,854		4,854
5a	Independently reviewed interim net profits net of any foreseeable charge or dividend	b	3,697		3,697
6	Common equity tier 1 capital before regulatory adjustments		155,483		155,483
	Common equity tier 1 capital: regulatory adjustments				
7	Additional value adjustments[1]		(1,180)		(1,180)
8	Intangible assets (net of related deferred tax liability)	e	(17,323)		(17,323)
10	Deferred tax assets that rely on future profitability excluding those arising from temporary differences (net of related tax liability)	f	(1,042)		(1,042)
11	Fair value reserves related to gains or losses on cash flow hedges	g	135		135
12	Negative amounts resulting from the calculation of expected loss amounts	h	(1,750)		(1,750)
14	Gains or losses on liabilities valued at fair value resulting from changes in own credit standing	i	298		298
15	Defined benefit pension fund assets	j	(6,070)		(6,070)
16	Direct and indirect holdings of own CET1 instruments[2]		(40)		(40)
19	Direct, indirect and synthetic holdings by the institution of the CET1 instruments of financial sector entities where the institution has a significant investment in those entities (amount above 10% threshold and net of eligible short positions)[3]		(7,489)		(7,489)
28	Total regulatory adjustments to common equity tier 1		(34,461)	—	(34,461)
29	Common equity tier 1 capital		121,022	—	121,022
	Additional tier 1 (‘AT1’) capital: instruments				
30	Capital instruments and the related share premium accounts		22,367	—	22,367
31	– classified as equity under IFRSs	k	22,367	—	22,367
33	Amount of qualifying items and the related share premium accounts subject to phase out from AT1	l	2,297	(2,297)	—

Pillar 3 Disclosures at 31 December 2018

Table 7: Own funds disclosure (continued)

Ref*		Ref †	At 31 Dec 2018 $m	CRD IV prescribed residual amount $m	Final CRD IV text $m
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	m, n	1,516	(1,298)	218
35	– of which: instruments issued by subsidiaries subject to phase out	n	1,298	(1,298)	—
36	Additional tier 1 capital before regulatory adjustments		26,180	(3,595)	22,585
	Additional tier 1 capital: regulatory adjustments				
37	Direct and indirect holdings of own AT1 instruments[2]		(60)		(60)
43	Total regulatory adjustments to additional tier 1 capital		(60)	—	(60)
44	Additional tier 1 capital		26,120	(3,595)	22,525
45	Tier 1 capital (T1 = CET1 + AT1)		147,142	(3,595)	143,547
	Tier 2 capital: instruments and provisions				
46	Capital instruments and the related share premium accounts	o	25,056		25,056
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	p, q	1,673	(1,585)	88
49	– of which: instruments issued by subsidiaries subject to phase out	q	1,585	(1,585)	—
51	Tier 2 capital before regulatory adjustments		26,729	(1,585)	25,144
	Tier 2 capital: regulatory adjustments				
52	Direct and indirect holdings of own T2 instruments[2]		(40)		(40)
55	Direct and indirect holdings by the institution of the T2 instruments and subordinated loans of financial sector entities where the institution has a significant investment in those entities (net of eligible short positions)	r	(593)	—	(593)
57	Total regulatory adjustments to tier 2 capital		(633)	—	(633)
58	Tier 2 capital		26,096	(1,585)	24,511
59	Total capital (TC = T1 + T2)		173,238	(5,180)	168,058
60	Total risk-weighted assets		865,318	—	865,318
	Capital ratios and buffers				
61	Common equity tier 1		14.0%		14.0%
62	Tier 1		17.0%		16.6%
63	Total capital		20.0%		19.4%
64	Institution specific buffer requirement		3.94%		5.19%
65	– capital conservation buffer requirement		1.88%		2.50%
66	– counter-cyclical buffer requirement		0.56%		0.69%
67a	– Global Systemically Important Institution (‘G-SII’) buffer		1.50%		2.00%
68	Common equity tier 1 available to meet buffers		7.9%		7.9%
	Amounts below the threshold for deduction (before risk weighting)				
72	Direct and indirect holdings of the capital of financial sector entities where the institution does not have a significant investment in those entities (amount below 10% threshold and net of eligible short positions)		2,534		
73	Direct and indirect holdings by the institution of the CET1 instruments of financial sector entities where the institution has a significant investment in		12,851		

	those entities (amount below 10% threshold and net of eligible short positions)	
75	Deferred tax assets arising from temporary differences (amount below 10% threshold, net of related tax liability)	4,956
	Applicable caps on the inclusion of provisions in tier 2	
77	Cap on inclusion of credit risk adjustments in T2 under standardised approach	2,200
79	Cap for inclusion of credit risk adjustments in T2 under internal ratings-based approach	3,221
	Capital instruments subject to phase-out arrangements (only applicable between 1 Jan 2013 and 1 Jan 2022)	
82	Current cap on AT1 instruments subject to phase out arrangements	6,921
84	Current cap on T2 instruments subject to phase out arrangements	5,131

* 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.

† The references (a) – (r) identify balance sheet components in Table 3: Reconciliation of balance sheets – financial accounting to regulatory scope of consolidation on page 8 which are used in the calculation of regulatory capital.

1 Additional value adjustments are deducted from CET1. These are calculated on all assets measured at fair value.

2 The deduction for holdings of own CET1, T1 and T2 instruments is set by the PRA.

3 Threshold deduction for significant investments relates to balances recorded on numerous lines on the balance sheet and includes: investments in insurance subsidiaries and non-consolidated associates, other CET1 equity held in financial institutions, and connected funding of a capital nature.

At 31 December 2018, our CET1 ratio decreased to 14.0% from 14.5% at 31 December 2017.

CET1 capital decreased during the year by $5.1bn, mainly as a result of:

- unfavourable foreign currency translation differences of $5.5bn;
- the $2.0bn share buy-back;
- a $1.2bn increase in threshold deductions as a result of an increase in the value of our material holdings; and
- an increase in the deduction for intangible assets of $1.1bn.

These decreases were partly offset by:

- capital generation through profits, net of dividends and scrip of $3.1bn; and
- a $1.2bn day one impact from transition to IFRS 9, mainly due to classification and measurement changes.

RWAs reduced by $6.0bn during the year, primarily due to foreign currency translation differences of $23.4bn. Excluding foreign currency translation differences, the remaining increase of $17.4bn was primarily driven by lending growth.

Leverage ratio

Our leverage ratio calculated in accordance with CRD IV was 5.5% at 31 December 2018, down from 5.6% at 31 December 2017. The increase in exposure was primarily due to growth in customer lending and financial investments.

The Group's UK leverage ratio at 31 December 2018 was 6.0%. This measure excludes qualifying central bank balances from the
calculation of exposure.

At 31 December 2018, our UK minimum leverage ratio requirement of 3.25% was supplemented by an additional leverage ratio buffer of 0.5% and a countercyclical leverage ratio buffer of 0.2%. These additional buffers translated into capital values of $12.7bn and $4.7bn respectively. We exceeded these leverage requirements.

For further details of the UK leverage ratio, please see page 151 of the Annual Report and Accounts 2018.

The risk of excessive leverage is managed as part of HSBC's global risk appetite framework and monitored using a leverage ratio metric within our risk appetite statement ('RAS'). The RAS articulates the aggregate level and types of risk that HSBC 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 and the GRC.

Our approach to risk appetite is described on page 69 of the Annual Report and Accounts 2018.

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

		At 31 Dec	
		2018	2017
Ref*		$bn	$bn
1	Total assets as per published financial statements	2,558.1	2,521.8
	Adjustments for:		
2	– entities which are consolidated for accounting purposes but are outside the scope of regulatory consolidation	(89.5)	(88.4)
4	– derivative financial instruments	(55.6)	(91.0)
5	– securities financing transactions ('SFT')	(5.1)	12.2
6	– off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	227.4	227.4
7	– other	(20.4)	(24.9)
8	Total leverage ratio exposure	2,614.9	2,557.1

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

Table 9: Leverage ratio common disclosure (LRCom)

		At 31 Dec	
		2018^	2017
Ref*		$bn	$bn
	On-balance sheet exposures (excluding derivatives and SFT)		
1	On-balance sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral)	2,012.5	1,998.7
2	(Asset amounts deducted in determining tier 1 capital)	(33.8)	(35.3)
3	Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets)	1,978.7	1,963.4
	Derivative exposures		
4	Replacement cost associated with all derivatives transactions (i.e. net of eligible cash variation margin)	44.2	29.0
5	Add-on amounts for potential future exposure ('PFE') associated with all derivatives transactions (mark-to-market method)	154.1	125.5

6	Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to IFRSs	5.9	5.2
7	(Deductions of receivables assets for cash variation margin provided in derivatives transactions)	(21.5)	(23.6)
8	(Exempted central counterparty (‘CCP’) leg of client-cleared trade exposures)	(38.0)	(14.0)
9	Adjusted effective notional amount of written credit derivatives	160.9	188.2
10	(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	(153.4)	(181.6)
11	Total derivative exposures	152.2	128.7
	Securities financing transaction exposures		
12	Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	248.9	331.2
13	(Netted amounts of cash payables and cash receivables of gross SFT assets)	(3.6)	(105.8)
14	Counterparty credit risk exposure for SFT assets	11.3	12.2
16	Total securities financing transaction exposures	256.6	237.6
	Other off-balance sheet exposures		
17	Off-balance sheet exposures at gross notional amount	829.8	801.7
18	(Adjustments for conversion to credit equivalent amounts)	(602.4)	(574.3)
19	Total off-balance sheet exposures	227.4	227.4
	Capital and total exposures		
20	Tier 1 capital	143.5	142.7
21	Total leverage ratio exposure	2,614.9	2,557.1
22	Leverage ratio (%)	5.5	5.6
EU-23	Choice of transitional arrangements for the definition of the capital measure	Fully phased-in	Fully phased-in

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

Pillar 3 Disclosures at 31 December 2018

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

		At 31 Dec	
		2018^	2017
Ref*		$bn	$bn
EU-1	Total on-balance sheet exposures (excluding derivatives, SFTs and exempted exposures)	1,991.0	1,998.7
EU-2	– trading book exposures	218.5	268.6
EU-3	– banking book exposures	1,772.5	1,730.1
	'banking book exposures' comprises:		
EU-4	covered bonds	1.6	1.3
EU-5	exposures treated as sovereigns	507.3	504.8
EU-6	exposures to regional governments, multilateral development banks ('MDB'), international organisations and public sector entities not treated as sovereigns	9.3	9.8
EU-7	institutions	66.8	77.0
EU-8	secured by mortgage of immovable property	300.0	283.4
EU-9	retail exposures	82.8	89.3
EU-10	corporate	614.3	586.0
EU-11	exposures in default	9.1	9.7
EU-12	other exposures (e.g. equity, securitisations and other non-credit obligation assets)	181.3	168.8

* 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.

Capital buffers

Our geographical breakdown and institution specific CCyB disclosure and our G-SIB Indicator disclosure are published annually on the HSBC website, www.hsbc.com.

Pillar 1 minimum capital requirements and RWA flow

Pillar 1 covers the minimum capital resource requirements for credit risk, counterparty credit risk, equity, securitisation, market risk and operational risk. These requirements are expressed in terms of RWAs.

Risk category	Scope of permissible approaches	Approach adopted by HSBC
Credit risk	The Basel Committee's 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 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 determining PD and in quantifying EAD and LGD.	For consolidated Group reporting, we have adopted the advanced IRB approach for the majority of our business. Some portfolios remain on the standardised or foundation IRB

		approaches: • pending the issuance of local regulations or model approval; • following supervisory prescription of a non-advanced approach; or • under exemptions from IRB treatment.
Counterparty credit risk	Four approaches to calculating CCR and determining exposure values are defined by the Basel Committee: mark-to-market, original exposure, standardised and Internal Model Method ('IMM'). These exposure values are used to determine capital requirements under one of the three approaches to credit risk: standardised, foundation IRB or advanced IRB.	We use the mark-to-market and IMM approaches for CCR. Details of the IMM permission we have received from the PRA can be found in the Financial Services Register on the PRA website. Our aim is to increase the proportion of positions on IMM over time.
Equity	For the non-trading book, equity exposures can be assessed under standardised or IRB approaches.	For Group reporting purposes, all non-trading

		book equity exposures are treated under the standardised approach.
Securitisation	Basel specifies two approaches for calculating credit risk requirements for securitisation positions in non-trading books: the standardised approach and the IRB approach, which incorporates the Ratings Based Method ('RBM'), the Internal Assessment Approach ('IAA') and the Supervisory Formula Method ('SFM'). Securitisation positions in the trading book are treated within the market risk framework per the Capital Requirements Regulation.	For the majority of the non-trading book securitisation positions we use the IRB approach and, within this, RBM and IAA with an immaterial amount using the SFM. We also use the standardised approach on the non-trading book positions securitisations. Securitisation positions in the trading book are overseen within Market Risk under the Standardised Approach.
Market risk	Market risk capital requirements can be determined under either the standard rules or the Internal Models Approach ('IMA'). The latter involves the use of internal value at risk ('VaR') models to measure market risks and determine the appropriate capital requirement. In addition to the VaR models, other internal models include stressed VaR ('SVaR'), Incremental Risk Charge ('IRC') and Comprehensive Risk Measure.	The market risk capital requirement is measured using internal market risk models, where approved by the PRA, or under the

		standard rules. Our internal market risk models comprise VaR, stressed VaR and IRC. Non-proprietary details of the scope of our IMA permission are available in the Financial Services Register on the PRA website. We are in compliance with the requirements set out in Articles 104 and 105 of the Capital Requirements Regulation.
Operational risk	The Basel Committee allows firms to calculate their operational risk capital requirement under the basic indicator approach, the standardised approach or the advanced measurement approach.	We currently use the standardised approach in determining our operational risk capital requirement. We have in place an operational risk model that is used for economic capital calculation purposes.

Table 11: Overview of RWAs (OV1)

		At		
		31 Dec 2018	30 Sep 2018	31 Dec 2018
		RWAs	RWAs	Capital[1] required
		$bn	$bn	$bn
1	Credit risk (excluding counterparty credit risk)	638.1	632.6	51.0
2	– standardised approach	128.6	127.4	10.3
3	– foundation IRB approach	30.5	29.9	2.4
4	– advanced IRB approach	479.0	475.3	38.3
6	Counterparty credit risk	47.2	47.6	3.8
7	– mark-to-market	24.7	25.0	2.0
10	– internal model method	16.2	16.2	1.3
11	– risk exposure amount for contributions to the default fund of a central counterparty	0.4	0.6	—
12	– credit valuation adjustment	5.9	5.8	0.5
13	Settlement risk	0.1	0.2	—
14	Securitisation exposures in the non-trading book	8.4	9.0	0.7
15	– IRB ratings based method	4.6	5.1	0.4
16	– IRB supervisory formula method	—	—	—
17	– IRB internal assessment approach	1.7	1.6	0.1
18	– standardised approach	2.1	2.3	0.2
19	Market risk	35.8	34.9	2.8
20	– standardised approach	5.7	5.1	0.4
21	– internal models approach	30.1	29.8	2.4
23	Operational risk	91.1	92.7	7.3
25	– standardised approach	91.1	92.7	7.3
27	Amounts below the thresholds for deduction (subject to 250% risk weight)	44.6	45.7	3.6
29	Total	865.3	862.7	69.2

1 'Capital requirement' represents the minimum total capital charge set at 8% of RWAs by article 92 of the Capital Requirements Regulation.

Credit risk (including amounts below the thresholds for deduction)

RWAs increased by $4.4bn in the fourth quarter of the year including a decrease of $4.6bn due to foreign currency translation differences. Excluding foreign currency translation differences, the remaining increase of $9.0bn was primarily driven by lending growth in CMB across Europe and Asia. A further $2.0bn of RWAs arose in RBWM in Asia, largely due to mortgage growth.

Counterparty credit risk (including settlement risk)

Counterparty credit risk RWAs decreased by $0.4bn primarily due to improvements in collateral recognition and customer risk ratings.

Securitisation

The $0.6bn RWA decrease arose predominantly from the sale of legacy positions.

Market risk

RWAs increased by $0.9bn mainly due to an increase in Hong Kong dollar denominated exposure.

Operational risk

RWAs decreased by $1.6bn primarily due to reduced contributions from the retail banking and payment and settlement business lines, partly offset by growth in commercial banking.

Table 12: RWA flow statements of credit risk exposures under the IRB approach[1] (CR8)

	RWAs	Capital

			required
		$bn	$bn
1	At 1 Oct 2018	505.2	40.4
2	Asset size	8.8	0.6
3	Asset quality	0.7	0.1
4	Model updates	1.5	0.1
5	Methodology and policy	(2.7)	(0.2)
7	Foreign exchange movements	(4.0)	(0.3)
9	At 31 Dec 2018	509.5	40.7

1 Securitisation positions are not included in this table.

RWAs under the IRB approach increased by $4.3bn in the fourth quarter of the year, including a decrease of $4.0bn due to foreign currency translation differences. The remaining increase of $8.3bn (excluding foreign currency translation differences) was principally due to:

- an $8.8bn asset size growth, predominantly in corporate and mortgage portfolios in Europe and Asia;
- $0.7bn movement in asset quality due to changes in portfolio mix, mainly in GB&M; and
- $1.5bn increase under model updates mainly due to a new receivables finance model in Germany.

This was partly offset by $2.7bn changes in methodology and policy, mainly taking the form of CMB management initiatives across Europe and Asia.

Pillar 3 Disclosures at 31 December 2018

Table 13: RWA flow statements of CCR exposures under IMM (CCR7)

		RWAs	Capital required
		$bn	$bn
1	At 1 Oct 2018	20.5	1.7
2	Asset size	0.8	0.1
3	Asset quality	0.1	—
5	Methodology and policy	(0.3)	—
9	At 31 Dec 2018	21.1	1.8

RWAs under the IMM increased by $0.6bn mainly due to a $0.8bn growth in asset size driven by mark-to-market movements. This was partly offset by a $0.3bn decrease as a result of improvements in collateral recognition in Europe.

Table 14: RWA flow statements of market risk exposures under IMA (MR2-B)

		VaR	Stressed VaR	IRC	Other	Total RWAs	Total capital required
		$bn	$bn	$bn	$bn	$bn	$bn
1	At 1 Oct 2018	6.9	10.7	8.6	3.6	29.8	2.4
2	Movement in risk levels	0.2	1.4	(2.2)	0.9	0.3	—
8	At 31 Dec 2018	7.1	12.1	6.4	4.5	30.1	2.4

RWAs under the IMA increased by $0.3bn mainly due to higher exposures in Europe and Asia that increased VaR, SVaR and other by $2.5bn. This was partly offset by lower sovereign and corporate exposure that reduced IRC by $2.2bn.

Pillar 2 and ICAAP

Pillar 2

We conduct an Internal Capital Adequacy Assessment Process ('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 Board, which has the ultimate responsibility for the effective management of risk and approval of HSBC's risk appetite.

The ICAAP is reviewed by the PRA and by a college of European Economic Area ('EEA') supervisors, as part of the joint risk assessment and decision process, during the Supervisory Review and Evaluation Process ('SREP'). This process occurs periodically to enable the regulator to define the individual capital requirement ('ICR') (previously known as the individual capital guidance ('ICG')) or minimum capital requirements for HSBC and to define the PRA buffer, where required. Under the revised Pillar 2 PRA regime, which came into effect from 1 January 2017, the capital planning buffer has been replaced with a 'PRA buffer'. This is not intended to duplicate the CRD IV buffers and, where necessary, will be set according to vulnerability in a stress scenario, as identified and 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 the ICR and any PRA buffer that may be required.

Within Pillar 2, there are two components namely 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 other risk categories not captured by Pillar 1. The risk categories to be covered under Pillar 2A depend on the specific circumstances of a firm and the nature and scale of its business.

Pillar 2B consists of guidance from the PRA on the capital buffer a firm would require in order to remain above its ICR in adverse circumstances that may be largely outside the firm's normal and direct control; for example, during a period of severe but plausible downturn stress, when asset values and the firm's capital surplus may become strained. This is quantified via any PRA buffer requirement the PRA may consider necessary. The assessment of

this is informed by stress tests and a rounded judgement of a firm's business model, also taking into account the PRA's view of a firm's options and capacity to protect its capital position under stress; for instance, through capital generation. Where the PRA assesses that a firm's risk management and governance are significantly weak, it may also increase the PRA buffer to cover the risks posed by those weaknesses until they are addressed. The PRA buffer is intended to be drawn upon in times of stress, and its use is not of itself a breach of capital requirements that would trigger automatic restrictions on distributions. In specific circumstances, the PRA should agree a plan with a firm for its restoration over an agreed timescale.

Internal capital adequacy assessment

The Board manages the Group ICAAP, and together with RMM and GRC, it examines the Group's risk profile from both a regulatory and economic capital viewpoint. They aim to ensure that capital resources:

- remain sufficient to support our risk profile and outstanding commitments;
- meet current regulatory requirements, and that HSBC is well placed to meet those expected in the future;
- allow the bank 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 for the consolidated Group and by local regulators for individual Group companies. These capital requirements are a primary factor in influencing and shaping the business planning process, in which RWA targets are established for our 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 insurance activities and pension risks, and to a 99.9% level of confidence for our operational risks.

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

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

Credit risk

Overview and responsibilities

Credit risk represents our largest regulatory capital requirement.

The principal objectives of our credit risk management function are:

- to maintain across HSBC a strong culture of responsible lending and a robust credit risk policy and control framework;
- to both partner and challenge our businesses in defining, implementing and continually re-evaluating our credit risk appetite under actual and stress scenario conditions; and
- to ensure there is independent, expert scrutiny of credit risks, their costs and their mitigation.

The credit risk functions within Wholesale Credit and Market Risk and RBWM are the constituent parts of Global Risk that support the Group Chief Risk Officer in overseeing credit risks. Their major duties comprise undertaking independent reviews of large and high-risk credit proposals, overseeing large exposure policy and reporting on our wholesale and retail credit risk management disciplines. They also own our credit policy and credit systems programmes, oversee portfolio management and report on risk matters to senior executive management and regulators.

These credit risk functions work closely with other parts of Global Risk; for example, with Operational Risk on the internal control framework and with Risk Strategy on the risk appetite process. In addition, they work jointly with Risk Strategy and Global Finance on stress testing.

The credit responsibilities of Global Risk are described on page 75 of the Annual Report and Accounts 2018.

Group-wide, the credit risk functions comprise a network of credit risk management offices reporting within regional risk functions. They fulfil an essential role as independent risk control units distinct from business line management in providing objective scrutiny of risk rating assessments, credit proposals for approval and other risk matters.

Our credit risk procedures operate through a hierarchy of personal credit limit approval authorities. Operating company chief executives, acting under authorities delegated by their boards and Group standards, are accountable for credit risk and other risks in their business. In turn, chief executives delegate authority to operating company chief risk officers and management teams on an individual basis. Each operating company is responsible for the quality and performance of its credit portfolios in accordance with Group standards. Above these thresholds of delegated personal credit limited approval authorities, approval must be sought from the regional and, as appropriate, global credit risk function.

Credit risk management

Our exposure to credit risk arises from a wide range of customer and products, and the risk rating systems in place to measure and monitor these risks are correspondingly diverse. Senior management receives a variety of reports on our credit risk exposures, including expected credit losses, total exposures and RWAs, as well as updates on specific portfolios that are considered to have heightened credit risk.

Credit risk exposures are generally measured and managed in portfolios of either customer types or product categories. Risk rating systems are designed to assess the default propensity of,

and loss severity associated with, distinct customers who are typically managed as individual relationships or, in the case of retail business exposures, on a product portfolio basis.

Risk rating systems for retail exposures are generally quantitative in nature, applying techniques such as behavioural analysis across product portfolios comprising large numbers of homogeneous transactions. Rating systems for individually managed relationships typically use customer financial statements and market data analysis, but also qualitative elements and a final subjective overlay to better reflect any idiosyncratic elements of the customer's risk profile.

See ‘Application of the IRB Approach’ on page 38.

A fundamental principle of our policy and approach is that analytical risk rating systems and scorecards are all valuable tools at the disposal of management.

The credit process provides for at least an annual review of facility limits granted. Review may be more frequent, as required by circumstances such as the emergence of adverse risk factors.

We constantly seek to improve the quality of our risk management. Group IT systems that process credit risk data continue to be enhanced in order to deliver both comprehensive management information in support of business strategy and solutions to evolving regulatory reporting requirements.

Group standards govern the process through which risk rating systems are initially developed, judged fit for purpose, approved and implemented. They also govern the conditions under which analytical risk model outcomes can be overridden by decision takers and the process of model performance monitoring and reporting. The emphasis is on an effective dialogue between business line and risk management, suitable independence of decision takers, and a good understanding and robust challenge on the part of senior management.

Like other facets of risk management, analytical risk rating systems are not static. They are subject to review and modification in light of the changing environment, the greater availability and quality of data, and any deficiencies identified through internal and external regulatory review. Structured processes and metrics are in place to capture relevant data and feed this into continuous model improvement.

See also the comments on ‘Model performance’ on page 51.

Credit risk models governance

All new or materially changed IRB capital models require the PRA’s approval, as set out in more detail on page 38. Throughout HSBC, such models fall directly under the remit of the global functional MOCs, operating in line with HSBC’s model risk policy, and under the oversight of the Global MOC.

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

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

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

Credit quality of assets

We are a universal bank with a conservative approach to credit risk. This is reflected in our credit risk profile being diversified across a number of asset classes and geographies with a credit quality profile mainly concentrated in the higher quality bands.

Pillar 3 Disclosures at 31 December 2018

Table 15: Credit quality of exposures by exposure classes and instruments[1] (CR1-A)

			Gross carrying values of		Specific credit risk adjustments	Write-offs in the year[2]	Credit risk adjustment charges of the period[2]	Net carrying values
			Defaulted exposures	Non-defaulted exposures				
		Footnotes	$bn	$bn	$bn	$bn	$bn	$bn
1	Central governments and central banks		—	331.8	0.1	—	—	331.7
2	Institutions		—	81.1	—	—	—	81.1
3	Corporates		6.9	1,024.0	4.1	0.8	0.5	1,026.8
4	– of which: specialised lending		0.8	49.3	0.4	—	0.1	49.7
6	Retail		3.3	481.8	1.8	0.7	0.9	483.3
7	– Secured by real estate property		2.5	287.3	0.4	—	0.1	289.4
8	SMEs		0.1	3.5	0.1	—	0.1	3.5
9	Non-SMEs		2.4	283.8	0.3	—	—	285.9
10	– Qualifying revolving retail		0.1	132.7	0.7	0.3	0.4	132.1
11	– Other retail		0.7	61.8	0.7	0.4	0.4	61.8
12	SMEs		0.3	7.5	0.3	0.2	0.2	7.5
13	Non-SMEs		0.4	54.3	0.4	0.2	0.2	54.3
15	Total IRB approach		10.2	1,918.7	6.0	1.5	1.4	1,922.9
16	Central governments and central banks	3	—	163.9	—	—	—	163.9
17	Regional governments or local authorities	3	—	7.3	—	—	—	7.3
18	Public sector entities	3	—	12.2	—	—	—	12.2
19	Multilateral development banks		—	0.2	—	—	—	0.2
20	International organisations		—	1.6	—	—	—	1.6
21	Institutions		—	3.4	—	—	—	3.4
22	Corporates		3.3	180.0	2.1	0.3	0.4	181.2
24	Retail		1.1	64.9	1.5	0.7	0.5	64.5
25	– of which: SMEs		—	1.2	—	—	—	1.2
26	Secured by mortgages on immovable property		0.6	32.1	0.2	—	—	32.5
27	– of which: SMEs		—	0.1	—	—	—	0.1
28	Exposures in default	4	5.1	—	2.1	1.0	0.8	3.0

29	Items associated with particularly high risk	0.1	4.7	—	—	—	4.8
32	Collective investment undertakings ('CIU')	—	0.6	—	—	—	0.6
33	Equity exposures	—	15.6	—	—	—	15.6
34	Other exposures	—	11.3	—	—	—	11.3
35	Total standardised approach	5.1	497.8	3.8	1.0	0.9	499.1
36	Total at 31 Dec 2018	15.3	2,416.5	9.8	2.5	2.3	2,422.0
	– of which: loans	13.7	1,233.4	9.1	2.5	2.3	1,238.0
	– of which: debt securities	—	348.5	—	—	—	348.5
	– of which: off-balance sheet exposures	1.6	798.7	0.6	—	—	799.7

Table 15: 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[2]	Credit risk adjustment charges of the period[2]	Net carrying values
		Footnotes	$bn	$bn	$bn	$bn	$bn	$bn
1	Central governments and central banks		—	308.1	—	—	—	308.1
2	Institutions		—	94.5	—	—	—	94.5
3	Corporates		8.1	987.5	4.2	1.0	0.7	991.4
4	– of which: specialised lending		1.2	47.5	0.3	—	—	48.4
6	Retail		3.6	465.0	1.0	0.7	0.3	467.6
7	– Secured by real estate property		2.5	274.3	0.3	—	—	276.5
8	SMEs		—	1.5	—	—	—	1.5
9	Non-SMEs		2.5	272.8	0.3	—	—	275.0
10	– Qualifying revolving retail		0.1	125.4	0.2	0.3	0.2	125.3
11	– Other retail		1.0	65.3	0.5	0.4	0.1	65.8
12	SMEs		0.6	10.6	0.3	—	—	10.9
13	Non-SMEs		0.4	54.7	0.2	0.4	0.1	54.9
15	Total IRB approach		11.7	1,855.1	5.2	1.7	1.0	1,861.6
16	Central governments and central banks	3	—	198.1	—	—	—	198.1
17	Regional governments or local authorities	3	—	3.8	—	—	—	3.8
18	Public sector entities	3	—	0.4	—	—	—	0.4
19	Multilateral development banks		—	0.3	—	—	—	0.3
20	International organisations		—	2.2	—	—	—	2.2
21	Institutions		—	3.5	—	—	—	3.5
22	Corporates		—	172.8	0.5	—	0.1	172.3
24	Retail		—	71.0	0.4	—	0.2	70.6
25	– of which: SMEs		—	1.7	—	—	—	1.7
26	Secured by mortgages on immovable property		—	29.0	—	—	—	29.0
27	– of which: SMEs		—	0.1	—	—	—	0.1
28	Exposures in default	4	5.4	—	2.0	1.5	0.7	3.4
29	Items associated with particularly		—	3.9	—	—	—	3.9

	high risk						
32	Collective investment undertakings ('CIU')	—	0.6	—	—	—	0.6
33	Equity exposures	—	16.0	—	—	—	16.0
34	Other exposures	—	11.9	—	—	—	11.9
35	Total standardised approach	5.4	513.5	2.9	1.5	1.0	516.0
36	Total at 31 Dec 2017	17.1	2,368.6	8.1	3.2	2.0	2,377.6
	– of which: loans	15.1	1,225.2	7.8	3.2	2.0	1,232.5
	– of which: debt securities	—	325.1	—	—	—	325.1
	– of which: off-balance sheet exposures	2.0	782.4	0.2	—	—	784.2

1 Securitisation positions and non-credit obligation assets are not included in this table.
2 Presented on a year-to-date basis.
3 Standardised exposures to EEA 'regional governments and local authorities' and 'public sector entities' are reported separately in 2018. In previous years, these exposures were grouped with 'central governments and central banks'.
4 From 1 January 2018, standardised exposures that are in default are reported within individual exposure classes and totalled in 'Exposures in default'. The reported amounts at 31 December 2017 have not been restated; 'Exposures in default' at that date principally comprised defaulted exposure to corporates of \$3.3bn, retail clients of \$1.1bn and exposure secured on immovable property of \$1.0bn.

Pillar 3 Disclosures at 31 December 2018

Table 16: 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[2]	Credit risk adjustment charges of the period[2]	Net carrying values
		Footnote	$bn	$bn	$bn	$bn	$bn	$bn
1	Agriculture		0.3	8.7	0.1	—	—	8.9
2	Mining & oil extraction		0.5	41.5	0.3	0.1	(0.1)	41.7
3	Manufacturing		2.0	259.5	1.4	0.4	0.3	260.1
4	Utilities		0.1	33.3	0.2	—	—	33.2
5	Water supply		—	2.4	—	—	—	2.4
6	Construction		1.4	41.1	0.6	—	0.2	41.9
7	Wholesale & retail trade		2.2	208.2	1.3	0.3	0.4	209.1
8	Transportation & storage		0.4	54.0	0.2	—	0.1	54.2
9	Accommodation & food services		0.4	28.3	0.2	—	—	28.5
10	Information & communication		—	11.2	0.1			