

The Hongkong and Shanghai Banking Corporation Limited

**Banking Disclosure Statement at 31 December 2020
(Unaudited)**

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Prefixes contained in the table names, where applicable, represent the reference codes of the standard disclosure templates and tables for the Revised Pillar 3 Framework issued by the Hong Kong Monetary Authority ('HKMA').

Introduction

Purpose

The information contained in this document is for The Hongkong and Shanghai Banking Corporation Limited ('the Bank') and its subsidiaries (together 'the group'). It should be read in conjunction with the group's *Annual Report and Accounts 2020*. The group's *Annual Report and Accounts 2020*, the Banking Disclosure Statement and the Main Features of Regulatory Capital Instruments and Non-capital LAC Debt Instruments document, taken together, comply with both the Banking (Disclosure) Rules ('BDR') made under section 60A of the Banking Ordinance and the Financial Institutions (Resolution) (Loss-absorbing Capacity Requirements – Banking Sector) Rules ('LAC Rules') made under section 19(1) of the Financial Institutions (Resolution) Ordinance ('FIRO').

References to 'HSBC', 'the Group' or 'the HSBC Group' within this document mean HSBC Holdings plc 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'. The abbreviations 'HK\$m' and 'HK\$bn' represent millions and billions (thousands of millions) of Hong Kong dollars respectively.

These banking disclosures are governed by the group's disclosure policy, which has been approved by the Board of Directors. The disclosure policy sets out the governance, control and assurance requirements for publication of the document. While the disclosure statement is not required to be externally audited, the document has been subject to independent review in accordance with the group's policies on disclosure and its financial reporting and governance processes.

Basis of preparation

Except where indicated otherwise, the financial information contained in this Banking Disclosure Statement has been prepared on a consolidated basis. The basis of consolidation for regulatory purposes is different from that for accounting purposes. Information regarding subsidiaries that are not included in the consolidation for regulatory purposes is set out in the 'Basis of consolidation' section in this document.

The information in this document is not audited and does not constitute statutory accounts.

Certain financial information in this document is extracted from the statutory accounts for the year ended 31 December 2020 which has been delivered to the Registrar of Companies and the HKMA. The Auditors expressed an unqualified opinion on those statutory accounts in their report dated 23 February 2021. The Auditor's Report did not include a reference to any matters to which the auditor drew any attention by way of emphasis without qualifying their report; and did not contain a statement under sections 406(2), 407(2) or (3) of the Hong Kong Companies Ordinance (Cap.622). The group's *Annual Report and Accounts 2020*, which include the statutory accounts, can be obtained on request from Communications (Asia), The Hongkong and Shanghai Banking Corporation Limited, 1 Queen's Road Central, Hong Kong, and can be viewed on our website: www.hsbc.com.hk.

The Banking Disclosure Statement

The group's Banking Disclosure Statement at 31 December 2020 comprises Pillar 3 information required under the framework of the Basel Committee on Banking Supervision ('BCBS'). The disclosures are made in accordance with the latest BDR and the LAC Rules issued by the HKMA. According to the BDR and the LAC Rules, disclosure of comparative information is not required unless otherwise specified in the standard disclosure templates. Prior period disclosures can be found in the Regulatory Disclosure section of our website, www.hsbc.com.hk.

The Banking Disclosure Statement includes the majority of the information required under the BDR and the LAC Rules. The Main Features of Regulatory Capital Instruments and Non-capital LAC Debt Instruments are published as a standalone document. The remainder of the disclosure requirements are covered in the group's *Annual Report and Accounts 2020*. All the group's banking disclosures can be found in the Regulatory Disclosure section of our website, www.hsbc.com.hk.

Disclosure requirements covered in the group's <i>Annual Report and Accounts 2020</i> :	References:
• BDR Section 16FJ – LIQA: Liquidity risk management	Pages 52-53
• BDR Section 16J – The group's definition of impaired and renegotiated and the methods adopted for determining impairments	Note 1.2(i)
• BDR Section 29(5) – Net structural foreign currency	Page 52
• BDR Section 44 – Assets used as security	Note 12
• BDR Section 46 – The general disclosure of the major business activities and product lines	Page 10, Note 2 & Note 31
• BDR Section 52 – Corporate governance	Page 3-9

Loss-absorbing Capacity Disclosures

The group's loss-absorbing capacity ('LAC') disclosures are included as part of this Banking Disclosure Statement while the LAC disclosures of HSBC Asia Holdings Limited ('HAHO') will be included as part of the HSBC Group's disclosures which can be found in the Investors section of the Group's website, www.hsbc.com. The location of HAHO's LAC disclosure can be found in the following table:

Location of HAHO's LAC disclosures in 4Q20:
KM2 – Key metrics of the Asian resolution group
• Page 22 of the Group's Pillar 3 Disclosures
TLAC1 – TLAC composition
• Page 23 of the Group's Pillar 3 Disclosures
TLAC3 – HSBC Asia Holdings Limited Creditor Ranking
• Page 25 of the Group's Pillar 3 Disclosures
CCA(A) – Main Features of Regulatory Capital Instruments and Non-Capital LAC Debt Instruments
• A standalone document which can be found in: www.hsbc.com/investors/fixed-income-investors/regulatory-capital-securities

Key Metrics

Table 1: KM1 – Key prudential ratios

		a	b	c	d	e
		At				
	Footnotes	31 Dec 2020	30 Sep 2020	30 Jun 2020	31 Mar 2020	31 Dec 2019
Regulatory capital (HK\$m)						
1	Common Equity Tier 1 ('CET1')	509,452	505,315	491,594	468,406	491,641
2	Tier 1	555,553	551,305	537,507	514,224	537,460
3	Total capital	614,545	610,902	596,815	574,864	598,934
Risk-weighted assets ('RWAs') (HK\$m)						
4	Total RWAs	2,956,993	3,029,053	2,942,719	2,905,598	2,851,380
Risk-based regulatory capital ratios (as a percentage of RWA)						
5	CET1 ratio (%)	17.2	16.7	16.7	16.1	17.2
6	Tier 1 ratio (%)	18.8	18.2	18.3	17.7	18.8
7	Total capital ratio (%)	20.8	20.2	20.3	19.8	21.0
Additional CET1 buffer requirements (as a percentage of RWA)						
8	Capital conservation buffer requirement (%)	2.50	2.50	2.50	2.50	2.50
9	Countercyclical capital buffer ('CCyB') requirement (%)	0.51	0.53	0.52	0.52	1.02
10	Higher loss absorbency requirements (%) (applicable only to G-SIBs or D-SIBs)	2.50	2.50	2.50	2.50	2.50
11	Total authorised institution ('AI')-specific CET1 buffer requirements	5.51	5.53	5.52	5.52	6.02
12	CET1 available after meeting the AI's minimum capital requirements (%)	12.7	12.2	12.2	11.6	12.7
Basel III leverage ratio						
13	Total leverage ratio ('LR') exposure measure (HK\$m)	8,705,672	8,659,463	8,474,009	8,185,571	8,078,204
14	LR (%)	6.4	6.4	6.3	6.3	6.7
Liquidity Coverage Ratio ('LCR')						
15	Total high quality liquid assets ('HQLA') (HK\$m)	1,982,999	1,940,757	1,730,870	1,724,361	1,619,870
16	Total net cash outflows (HK\$m)	1,154,822	1,141,000	1,067,926	1,073,924	990,793
17	LCR (%)	172.1	170.4	162.0	160.8	163.5
Net Stable Funding Ratio ('NSFR')						
18	Total available stable funding (HK\$m)	5,388,197	5,211,670	5,145,116	5,015,769	4,996,772
19	Total required stable funding (HK\$m)	3,382,462	3,417,697	3,421,671	3,502,785	3,427,503
20	NSFR (%)	159.3	152.5	150.4	143.2	145.8

- 1 The regulatory capital, RWAs, risk-based regulatory capital ratios and additional CET1 buffer requirements above are based on or derived from the information as contained in the 'Capital Adequacy Ratio' return submitted to the HKMA on a consolidated basis under the requirements of section 3C(1) of the Banking (Capital) Rules ('BCR').
- 2 At 31 December 2020, the JCCyB of Hong Kong used in the calculation of the CCyB buffer requirement was 1.0%, which was reduced from 2.0% at 31 December 2019 in accordance with the announcement made by the HKMA on 16 March 2020. The JCCyB of other countries used in the calculation of the CCyB requirement ranged from 0% to 1%.
- 3 The Basel III leverage ratios are disclosed in accordance with the information contained in the 'Leverage Ratio' return submitted to the HKMA under the requirements specified in Part 1C of the BCR.
- 4 The Liquidity Coverage Ratios shown are the simple average values of all working days in the reporting periods and are made in accordance with the requirements specified in the 'Liquidity Position' return submitted to the HKMA under rule 11(1) of the Banking (Liquidity) Rules ('BLR').
- 5 The Net Stable Funding Ratio disclosures are made in accordance with the information contained in the 'Stable Funding Position' return submitted to the HKMA under the requirements specified in rule 11(1) of the BLR.

Risk management

Our risk management framework

We use an enterprise risk management framework across the organisation and across all risk types. It is underpinned by our risk culture.

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 14 of the group's Annual Report and Accounts 2020. The management and mitigation of principal risks facing the group is described in our top and emerging risks on page 17 of the group's Annual Report and Accounts 2020.

Culture

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

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

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's Risk Committee.

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's Chief Risk Officer ('CRO'), supported by the Risk Management Meeting ('RMM').

Day-to-day responsibility for risk management is delegated to senior managers with individual accountability for decision making. 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 our business and functional structures.

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

Risk appetite

Risk appetite is a key component of our management of risk. It describes the type and quantum of risk that the group is willing to accept in achieving our medium and long-term strategic goals. At 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 group's Risk Committee.

Our risk appetite informs our strategic and financial planning process, defining the desired forward-looking risk profile of the group. It is also integrated within other risk management tools, such as 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 15 of the group's *Annual Report and Accounts 2020*. Details on the group's overarching risk appetite are set out on page 14 of the group's *Annual Report and Accounts 2020*.

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 decisions about capital levels. As well as taking part in regulatory driven stress tests, we conduct our own internal stress tests.

The group's stress testing programme is overseen by the group's Risk Committee, and results are reported, where appropriate, to the RMM and the group's Risk Committee.

Global Risk and the group's Risk functions

We have a dedicated Global Risk function, headed by the Group CRO, 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 in order to provide challenge, appropriate oversight and balance in risk/return decisions. The Global Risk function operates in line with the three lines of defence model. Similarly, the group's Risk function, headed by the group's CRO, is independent from the global businesses and responsible for the group's risk management framework.

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 group's Audit Committee has responsibility for oversight of risk management and internal controls over financial reporting, and the group's Risk Committee has responsibility for oversight of risk management and internal controls other than for financial reporting.

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

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. 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

Global Risk and the group's Risk function manage a number of analytics disciplines supporting the development and management of models, including those for risk rating, scoring, economic capital and stress testing, covering different risk types and business segments. The analytics functions formulate technical responses to industry developments and regulatory policy in the field of risk analytics, develop HSBC's global risk models, and oversee local model development and use around the Group toward our implementation targets for Internal ratings-based ('IRB') approaches.

The Global Model Risk Committee ('GMRC') along with the Regional Model Risk Committee ('MRC') are the primary committees responsible for the oversight of Model Risk within HSBC and the group respectively. They serve an important role in providing strategic direction on the management of models and their associated risks to HSBC's and the group's businesses and are an essential element of the governance structure for model risk management. The MRC is supported by model oversight forums ('MOFs') operating within the group which are responsible for model risk management within their functional areas, including wholesale credit risk, market risk, retail risk, and finance. Similarly, the GMRC is supported by MOFs at the global and regional levels which are responsible for model risk management within their functional areas.

Models are also subject to an independent validation process and governance oversight by the Model Risk Management team within Global Risk and the group's Risk function. 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 local entities under the governance of their own management, subject to overall Group policy and oversight.

Linkage to the Annual Report and Accounts 2020

Basis of consolidation

The basis of consolidation for financial accounting purposes is in accordance with Hong Kong Financial Reporting Standards ('HKFRS'), as described in Note 1 on the financial statements in the group's *Annual Report and Accounts 2020*.

The basis of consolidation for regulatory purposes is different from that for accounting purposes. Subsidiaries included in the consolidation for regulatory purposes are specified in a notice from the HKMA in accordance with section 3C(1) of the BCR. Subsidiaries not included in consolidation for regulatory purposes are securities and insurance companies that are authorised and supervised by regulators, and are subject to supervisory arrangements regarding the maintenance of adequate capital to support business activities comparable to those prescribed for authorised institutions under the BCR and the Banking Ordinance. The capital invested by the group in these subsidiaries is deducted from the capital base, subject to threshold, as determined in accordance with Part 3 of the BCR.

For insurance entities, the present value of in-force long-term insurance business asset of HK\$65,052m 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 the below table.

There are no subsidiaries that are included within the regulatory scope of consolidation but not included within the accounting scope of consolidation at 31 December 2020.

For all subsidiaries included in both the accounting and regulatory scope of consolidation, the same consolidation methodology is applied at 31 December 2020.

The group operates subsidiaries in a number of countries and territories where capital is governed by local rules, and there may be restrictions on the transfer of regulatory capital and funds between members of the banking group.

The Bank and its banking subsidiaries maintain regulatory reserves to satisfy the provisions of the Banking Ordinance and local regulatory requirements for prudential supervision purposes. At 31 December 2020, the effect of this requirement is to reduce the amount of reserves which can be distributed to shareholders by HK\$18,063m.

Table 2: List of subsidiaries outside the regulatory scope of consolidation

	Principal activities	At 31 Dec 2020	
		Total assets	Total equity
		HK\$m	HK\$m
HSBC Broking Futures (Hong Kong) Ltd	Futures broking	4,080	615
HSBC Broking Services (Asia) Ltd and its subsidiaries	Broking services	14,244	2,910
HSBC Corporate Advisory (Malaysia) Sdn Bhd	Financial services	15	8
HSBC Corporate Finance (Hong Kong) Ltd	Financial services	13	12
HSBC Global Asset Management Holdings (Bahamas) Ltd	Asset management	129	127
HSBC Global Asset Management (Hong Kong) Ltd	Asset management	995	572
HSBC Global Asset Management (Japan) K.K.	Asset management	264	133
HSBC Global Asset Management (Singapore) Ltd	Asset management	91	46
HSBC Insurance (Asia-Pacific) Holdings Ltd and its subsidiaries	Insurance	540,963	35,367
HSBC InvestDirect (India) Ltd and its subsidiaries	Financial services	748	696
HSBC Investment Funds (Hong Kong) Ltd	Asset management	535	263
HSBC Qianhai Securities Ltd	Securities services	1,724	1,407
HSBC Securities (Asia) Ltd and its subsidiary	Broking services	26	26
HSBC Securities (Japan) Ltd	Broking services	181,751	1,116
HSBC Securities (Singapore) Pte Ltd	Broking services	268	84
HSBC Securities Brokers (Asia) Ltd	Broking services	10,197	3,845
Hang Seng Insurance Co. Ltd and its subsidiaries	Insurance	165,872	12,966
Hang Seng Investment Management Ltd	Asset management	503	477
Hang Seng Investment Services Ltd	Investment services	9	9
Hang Seng Qianhai Fund Management Co. Ltd	Asset management	335	318
Hang Seng Securities Ltd	Broking services	4,907	607

The approaches used in calculating the group's regulatory capital and RWAs are in accordance with the BCR. The group uses the advanced internal ratings-based ('IRB') approach to calculate its credit risk for the majority of its non-securitisation exposures. For securitisation exposures, the group uses the securitisation internal ratings-based approach ('SEC-IRBA'), securitisation external ratings-based approach ('SEC-ERBA'), securitisation standardised approach ('SEC-SA') or securitisation fall-back approach ('SEC-FBA') to determine credit risk for its banking book securitisation exposures. For counterparty credit risk, the group uses both the current exposure method ('CEM') and an internal models ('IMM')

approach to calculate its default risk exposures. For market risk, the group uses an IMM approach to calculate its general market risk for the risk categories of interest rate and foreign exchange (including gold) exposures, and equity exposures. The group also uses an IMM approach to calculate its market risk in respect of specific risk for interest rate exposures and equity exposures. The group uses the standardised (market risk) ('STM') approach for calculating other market risk positions, as well as trading book securitisation exposures, and the standardised (operational risk) ('STO') approach to calculate its operational risk.

Balance sheet reconciliation

The following table expands the balance sheet under the regulatory scope of consolidation to show separately the capital components that are reported in the 'Composition of regulatory capital disclosures' template in Table 6. The capital components in this table contain a reference that shows how these amounts are included in Table 6.

Table 3: CC2 – Reconciliation of regulatory capital to balance sheet

	a	b	c
	At 31 Dec 2020		
	Balance sheet as in published financial statements	Under regulatory scope of consolidation	Cross-referenced to definition of Capital Components
	HK\$m	HK\$m	
Assets			
Cash and sight balances at central banks	347,999	347,448	
Items in the course of collection from other banks	21,943	21,943	
Hong Kong Government certificates of indebtedness	313,404	313,404	
Trading assets	600,414	599,830	
<i>of which: significant Loss-absorbing capacity ("LAC") investments eligible as Tier 2 capital issued by financial sector entities</i>		45	1
Derivatives	422,945	422,932	
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	178,960	6,245	
Reverse repurchase agreements – non-trading	520,344	347,964	
Loans and advances to banks	403,884	394,751	
Loans and advances to customers	3,668,681	3,655,784	
<i>of which: impairment allowances eligible for inclusion in Tier 2 capital</i>		(6,484)	2
Financial investments	2,175,432	1,733,545	
Amounts due from Group companies	83,203	282,202	
<i>of which: significant LAC investments eligible as Tier 2 capital issued by financial sector entities</i>		7,680	3
Investments in subsidiaries	–	17,849	
Interests in associates and joint ventures	168,754	165,497	
<i>of which: goodwill</i>		3,912	4
<i>of which: significant LAC investments in financial sector entities exceeding 10% threshold</i>		119,868	5
Goodwill and intangible assets	89,968	22,148	
<i>of which: goodwill</i>		4,974	6
<i>of which: intangible assets</i>		17,174	7
Property, plant and equipment	128,537	121,650	
Deferred tax assets	3,325	3,167	
<i>of which: deferred tax assets net of related tax liabilities</i>		3,273	8
<i>of which: deferred tax liabilities related to goodwill</i>		(92)	9
<i>of which: deferred tax liabilities related to intangible assets</i>		(14)	10
Prepayments, accrued income and other assets	288,610	192,118	
<i>of which: defined benefit pension fund net assets</i>		14	11
Total assets	9,416,403	8,648,477	

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Table 3: CC2 – Reconciliation of regulatory capital to balance sheet (continued)

	a	b	c
	At 31 Dec 2020		
	Balance sheet in published financial statements HK\$m	Under regulatory scope of consolidation HK\$m	Cross-referenced to definition of Capital Components
Liabilities			
Hong Kong currency notes in circulation	313,404	313,404	
Items in the course of transmission to other banks	25,699	25,699	
Repurchase agreements – non-trading	136,157	136,157	
Deposits by banks	248,628	248,628	
Customer accounts	5,911,396	5,908,053	
Trading liabilities	60,812	60,812	
Derivatives	428,211	428,724	
<i>of which: gains and losses due to changes in own credit risk on fair valued liabilities</i>		(292)	12
Financial liabilities designated at fair value	167,013	127,495	
<i>of which: gains and losses due to changes in own credit risk on fair valued liabilities</i>		27	13
Debt securities in issue	79,419	79,376	
Retirement benefit liabilities	2,701	2,701	
Amounts due to Group companies	296,308	323,983	
<i>of which: qualifying Tier 2 capital instruments</i>		15,698	14
<i>of which: gains and losses due to changes in own credit risk on fair valued liabilities</i>		2,079	15
Accruals and deferred income, other liabilities and provisions	215,987	154,424	
Liabilities under insurance contracts	581,406	–	
Current tax liabilities	2,669	1,181	
Deferred tax liabilities	30,997	20,210	
<i>of which: deferred tax liabilities related to goodwill</i>		4	16
<i>of which: deferred tax liabilities related to intangible assets</i>		2,674	17
<i>of which: deferred tax liabilities related to defined benefit pension fund net assets</i>		2	18
Subordinated liabilities	4,065	4,065	
<i>of which: portion eligible for Tier 2 capital instruments, subject to phase-out arrangements</i>		3,101	19
Total liabilities	8,504,872	7,834,912	
Equity			
Share capital	172,335	172,335	
<i>of which: portion eligible for inclusion in CET1 capital</i>		170,881	20
<i>of which: revaluation reserve capitalisation issue</i>		1,454	21
Other equity instruments	44,615	44,615	
<i>of which: qualifying AT1 capital instruments</i>		44,615	22
Other reserves	149,500	145,584	23
<i>of which: fair value gains arising from revaluation of land and buildings</i>		62,127	24
<i>of which: cash flow hedging reserves</i>		33	25
<i>of which: valuation adjustment</i>		9	26
Retained earnings	478,903	395,654	27
<i>of which: regulatory reserve for general banking risks</i>		18,063	28
<i>of which: regulatory reserve eligible for inclusion in Tier 2 capital</i>		9,967	29
<i>of which: fair value gains arising from revaluation of land and buildings</i>		4,088	30
<i>of which: valuation adjustment</i>		1,639	31
Total shareholders' equity	845,353	758,188	
Non-controlling interests	66,178	55,377	
<i>of which: portion allowable in CET1 capital</i>		27,907	32
<i>of which: portion allowable in AT1 capital</i>		1,486	33
<i>of which: portion allowable in Tier 2 capital</i>		1,016	34
Total equity	911,531	813,565	
Total liabilities and equity	9,416,403	8,648,477	

Table 4: LI1 – Differences between accounting and regulatory scopes of consolidation and mapping of financial statement categories with regulatory risk categories

	a	b	c	d	e	f	g
	Carrying values of items:						
	Carrying values as reported in published financial statements	Carrying values under scope of regulatory consolidation	Subject to credit risk framework	Subject to counterparty credit risk framework	Subject to securitisation framework ¹	Subject to market risk framework	Not subject to capital requirements or subject to deduction from capital
Footnotes	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m
Assets							
Cash and sight balances at central banks	347,999	347,448	347,448	–	–	–	–
Items in the course of collection from other banks	21,943	21,943	21,943	–	–	–	–
Hong Kong Government certificates of indebtedness	313,404	313,404	313,404	–	–	–	–
Trading assets	2 600,414	599,830	–	51,482	–	599,830	–
Derivatives	2 422,945	422,932	–	422,932	–	422,932	–
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	178,960	6,245	1,537	4,706	–	–	2
Reverse repurchase agreements – non-trading	520,344	347,964	–	347,964	–	–	–
Loans and advances to banks	403,884	394,751	393,681	512	–	–	558
Loans and advances to customers	3,668,681	3,655,784	3,618,449	351	34,869	–	2,115
Financial investments	2,175,432	1,733,545	1,732,328	–	–	–	1,217
Amounts due from Group companies	2 83,203	282,202	89,093	178,674	–	173	14,406
Investments in subsidiaries	–	17,849	–	–	–	–	17,849
Interests in associates and joint ventures	168,754	165,497	62,931	–	–	–	102,566
Goodwill and intangible assets	3 89,968	22,148	–	–	–	–	19,470
Property, plant and equipment	128,537	121,650	121,650	–	–	–	–
Deferred tax assets	3,325	3,167	–	–	–	–	3,167
Prepayments, accrued income and other assets	3, 4 288,610	192,118	119,529	51,346	26	–	21,215
Total assets at 31 Dec 2020	9,416,403	8,648,477	6,821,993	1,057,967	34,895	1,022,935	182,565
Liabilities							
Hong Kong currency notes in circulation	313,404	313,404	–	–	–	–	313,404
Items in the course of transmission to other banks	25,699	25,699	–	–	–	–	25,699
Repurchase agreements – non-trading	136,157	136,157	–	136,157	–	–	–
Deposits by banks	248,628	248,628	–	–	–	–	248,628
Customer accounts	5,911,396	5,908,053	–	–	–	–	5,908,053
Trading liabilities	2 60,812	60,812	–	1,033	–	60,812	–
Derivatives	2 428,211	428,724	–	428,724	–	428,724	–
Financial liabilities designated at fair value	167,013	127,495	–	–	–	101,933	25,562
Debt securities in issue	79,419	79,376	–	–	–	–	79,376
Retirement benefit liabilities	2,701	2,701	–	–	–	–	2,701
Amounts due to Group companies	2 296,308	323,983	–	7,102	–	583	316,870
Accruals and deferred income, other liabilities and provisions	215,987	154,424	–	–	–	–	154,424
Liabilities under insurance contracts	581,406	–	–	–	–	–	–
Current tax liabilities	2,669	1,181	–	–	–	–	1,181
Deferred tax liabilities	30,997	20,210	–	–	–	–	20,210
Subordinated liabilities	4,065	4,065	–	–	–	–	4,065
Total liabilities at 31 Dec 2020	8,504,872	7,834,912	–	573,016	–	592,052	7,100,173

- 1 The amounts shown in the column 'subject to securitisation framework' only include non-trading book positions. Trading book securitisation positions are included in the market risk column.
- 2 Assets/liabilities arising from derivative contracts held in the regulatory trading book are subject to both market risk and counterparty credit risk because derivative contracts are mark-to-market and there is a risk that the counterparty may not be able to fulfil the contractual obligations. As a result, the amounts shown in column (b) do not equal the sum of columns (c) to (g).
- 3 The assets disclosed in column (g) are net of any associated deferred tax liability.
- 4 The difference in the carrying values reported in the financial statements in column (a) and the scope of regulatory consolidation in column (b) mainly represents (i) differences between the financial and regulatory scope of consolidation, and (ii) the amounts of acceptance and endorsements being included as contingencies in accordance with the BCR, whilst for accounting purposes, acceptances and endorsements are recognised on the balance sheet.

Table 5: LI2 – Main sources of differences between regulatory exposure amounts and carrying values in financial statements

		a	b	c	d	e	
		Items subject to:					
	Footnotes	Total HK\$m	credit risk framework HK\$m	securitisation framework HK\$m	counterparty credit risk framework HK\$m	market risk framework HK\$m	
1	Asset carrying value amount under scope of regulatory consolidation (as per template LI1)	1	8,465,912	6,821,993	34,895	1,057,967	1,022,935
2	Liabilities carrying value amount under regulatory scope of consolidation (as per template LI1)	2	734,739	–	–	573,016	592,052
3	Total net amount under regulatory scope of consolidation		7,731,173	6,821,993	34,895	484,951	430,883
4	Off-balance sheet amounts and potential future exposure for counterparty risk		3,160,852	800,791	–	148,412	–
5	Differences in netting rules		(932)	(15,110)	–	14,178	–
6	Differences due to financial collateral on standardised approach		(36,307)	(36,307)	–	–	–
7	Differences due to impairments on IRB approach		27,445	27,445	–	–	–
8	Differences due to credit risk mitigation		(325,725)	–	–	(325,725)	–
9	Exposure amounts considered for regulatory purposes at 31 Dec 2020		10,556,506	7,598,812	34,895	321,816	430,883

1 The amount shown in column (a) is equal to column (b) less column (g) in the Total assets row in Table 4.

2 The amount shown in column (a) is equal to column (b) less column (g) in the Total liabilities row in Table 4.

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 the securitisation regulatory frameworks include the undrawn portions of committed facilities, various trade finance commitments and guarantees. We apply credit conversion factors ('CCF') to these items and add potential future exposures ('PFE') for counterparty credit risk ('CCR').

Differences in netting rules

Under HKFRS, netting is only permitted if a legal right of set-off exists and the cash flows are intended to be settled on a net basis. Under the BCR, however, netting is applied when there is a valid bilateral netting agreement. As a consequence, we recognise greater netting under the BCR, reflecting the close-out provisions that would take effect in the event of counterparty default rather than just those transactions that are settled net in the normal course of business.

Differences due to financial collateral

Exposure value under the standardised approach is calculated after deducting credit risk mitigation ('CRM'), whereas the accounting value is before such deductions.

Differences due to expected credit loss

The carrying value of assets is net of credit risk adjustments. The regulatory exposure value under the IRB approach is before deducting credit risk adjustments.

Differences due to credit risk mitigation

In CCR, differences arise between accounting carrying values and regulatory exposure as a result of the application of CRM 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 and model uncertainty.

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, administration costs, 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. Table 55 presents further information on the prudent valuation adjustment.

Capital and RWAs

Regulatory capital disclosures

The following table sets out the detailed composition of the group's regulatory capital using the 'Composition of regulatory capital disclosures' template, as specified by the HKMA.

Table 6: CC1 – Composition of regulatory capital

	a	b
	At 31 Dec 2020	
	Component of regulatory capital	Cross-referenced to Table 3
	HK\$m	Source based on reference numbers/ letters of the balance sheet under the regulatory scope of consolidation
CET1 capital: instruments and reserves		
1	170,881	20
2	395,654	27
3	145,584	23
5	27,907	32
6	740,026	
CET1 capital: regulatory deductions		
7	1,648	26+31
8	8,790	4+6+9-16
9	14,486	7+10-17
10	3,273	8
11	33	25
14	(1,814)	-(12+13+15)
15	12	11-18
19	119,868	5
26	84,278	
26a	66,215	24+30
26b	18,063	28
28	230,574	
29	509,452	
AT1 capital: instruments		
30	44,615	22
31	44,615	22
34	1,486	33
36	46,101	
44	46,101	
45	555,553	
Tier 2 capital: instruments and provisions		
46	15,698	14
47	3,101	19
48	1,016	34
50	16,451	29-2
51	36,266	
Tier 2 capital: regulatory deductions		
55	7,725	1+3
56	(30,451)	
56a	(30,451)	(21+24+30)x45%
57	(22,726)	
58	58,992	
59	614,545	
60	2,956,993	

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

		a	b
		At 31 Dec 2020	
		Component of regulatory capital	Cross-referenced to Table 3
		HK\$m	Source based on reference numbers/ letters of the balance sheet under the regulatory scope of consolidation
Capital ratios (as a percentage of RWA)			
61	CET1 capital ratio	17.2%	
62	Tier 1 capital ratio	18.8%	
63	Total capital ratio	20.8%	
64	Institution-specific buffer requirement (capital conservation buffer plus countercyclical capital buffer plus higher loss absorbency requirements)	5.51%	
65	<i>of which: capital conservation buffer requirement</i>	2.50%	
66	<i>of which: bank specific countercyclical capital buffer requirement</i>	0.51%	
67	<i>of which: higher loss absorbency requirement</i>	2.50%	
68	CET1 (as a percentage of RWA) available after meeting minimum capital requirements	12.7%	
Amounts below the thresholds for deduction (before risk weighting)			
72	Insignificant LAC investments in CET1, AT1 and Tier 2 capital instruments issued by, and non-capital LAC liabilities of, financial sector entities that are outside the scope of regulatory consolidation	21,141	
73	Significant LAC investments in CET1 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation	62,932	
Applicable caps on the inclusion of provisions in Tier 2 capital			
76	Provisions eligible for inclusion in Tier 2 in respect of exposures subject to the basic indicator ('BSC') approach, or the STC approach and SEC-ERBA, SEC-SA and SEC-FBA (prior to application of cap)	2,837	
77	Cap on inclusion of provisions in Tier 2 under the BSC approach, or the STC approach, and SEC-ERBA, SEC-SA and SEC-FBA	2,893	
78	Provisions eligible for inclusion in Tier 2 in respect of exposures subject to the IRB approach and SEC-IRBA (prior to application of cap)	15,476	
79	Cap for inclusion of provisions in Tier 2 under the IRB approach and SEC-IRBA	13,614	
Capital instruments subject to phase-out arrangements (only applicable between 1 Jan 2018 and 1 Jan 2022)			
84	Current cap on Tier 2 capital instruments subject to phase-out arrangements	9,115	

CET1 capital increased in the second half of 2020 by HK\$17.9bn, mainly due to:

- a HK\$27.2bn increase from favourable foreign currency translation differences;
- a HK\$3.4bn increase from capital generated through profits, net of dividends;
- a HK\$1.1bn increase in financial assets at fair value through other comprehensive income reserve; offset by
- a HK\$10.1bn increase in the threshold deduction for significant investments in financial sector entities;
- a HK\$2.3bn increase in the intangible assets net of deferred tax liabilities deduction; and
- a HK\$1.9bn increase in the regulatory reserve deduction.

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

Notes to the template:

		At 31 Dec 2020	
		Hong Kong basis	Basel III basis
		HK\$m	HK\$m
10	Deferred tax assets (net of associated deferred tax liabilities)	3,273	506

Explanation:

As set out in paragraphs 69 and 87 of the Basel III text issued by the Basel Committee (December 2010), Deferred Tax Assets ('DTAs') of the bank to be realised are to be deducted, whereas DTAs which relate to temporary differences may be given limited recognition in CET1 capital (and hence be excluded from deduction from CET1 capital up to the specified threshold). In Hong Kong, an AI is required to deduct all DTAs in full, irrespective of their origin, from CET1 capital. Therefore, the amount to be deducted as reported in row 10 may be greater than that required under Basel III.

The amount reported under the column 'Basel III basis' in this box represents the amount reported in row 10 (i.e. the amount reported under the 'Hong Kong basis') adjusted by reducing the amount of DTAs to be deducted which relate to temporary differences to the extent not in excess of the 10% threshold set for DTAs arising from temporary differences and the aggregate 15% threshold set for Mortgage Servicing Rights ('MSRs'), DTAs arising from temporary differences and significant investments in CET1 capital instruments issued by financial sector entities (excluding those that are loans, facilities or other credit exposures to connected companies) under Basel III.

		At 31 Dec 2020	
		Hong Kong basis	Basel III basis
		HK\$m	HK\$m
19	Significant LAC investments in CET1 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation (amount above 10% threshold)	119,868	117,965

Explanation:

For the purpose of determining the total amount of significant LAC investments in CET1 capital instruments issued by financial sector entities, an AI is required to aggregate any amount of loans, facilities or other credit exposures provided by it to any of its connected companies, where the connected company is a financial sector entity, as if such loans, facilities or other credit exposures were direct holdings, indirect holdings or synthetic holdings of the AI in the capital instruments of the financial sector entity, except where the AI demonstrates to the satisfaction of the Monetary Authority that any such loan was made, any such facility was granted, or any such other credit exposure was incurred, in the ordinary course of the AI's business.

Therefore, the amount to be deducted as reported in row 19 may be greater than that required under Basel III. The amount reported under the column 'Basel III basis' in this box represents the amount reported in row 19 (i.e. the amount reported under the 'Hong Kong basis') adjusted by excluding the aggregate amount of loans, facilities or other credit exposures to the AI's connected companies which were subject to deduction under the Hong Kong approach.

Remarks:

The amount of the 10% threshold is calculated based on the amount of CET1 capital determined in accordance with the deduction methods set out in BCR Schedule 4F. The 15% threshold is referring to paragraph 88 of the Basel III text issued by the Basel Committee (December 2010) and has no effect to the Hong Kong regime.

Table 7: CCA – Capital instruments

		At 31 Dec 2020	
		Total amount	Amount recognised in regulatory capital
			HK\$m
CET1 capital instruments			
	Ordinary shares	HK\$172,335m	170,881
AT1 capital instruments			
	Fixed rate perpetual subordinated loans, callable from 2024	US\$1,100m	8,617
	Fixed rate perpetual subordinated loans, callable from 2024	US\$900m	7,044
	Fixed rate perpetual subordinated loans, callable from 2025	US\$1,000m	7,834
	Fixed rate perpetual subordinated loans, callable from 2025	US\$700m	5,467
	Fixed rate perpetual subordinated loans, callable from 2025	US\$500m	3,905
	Fixed rate perpetual subordinated loans, callable from 2026	US\$900m	7,063
	Fixed rate perpetual subordinated loans, callable from 2027	US\$600m	4,685
Tier 2 capital instruments			
	Primary capital undated floating rate notes	US\$400m	3,101
	Subordinated loan due 2030, callable from 2025	US\$1,000m	8,753
	Subordinated loan due 2030, callable from 2025	US\$180m	1,590
	Subordinated loan due 2031, callable from 2026	US\$600m	5,355

A description of the main features and the full terms and conditions of the group's capital instruments can be found in the Regulatory Disclosures section of our website, www.hsbc.com.hk.

Countercyclical capital buffer ratio

The countercyclical capital buffer ('CCyB') is calculated as the weighted average of the applicable CCyB ratios in effect in the jurisdictions in which banks have private sector credit exposures. The group uses country of business as the basis of geographical allocation for the majority of its credit risk and risk country for market risk, which is defined by considering the country of incorporation, location of guarantor, headquarter domicile, distribution of revenue and booking country.

Table 8: CCyB1 – Geographical distribution of credit exposures used in countercyclical capital buffer

		a	c	d	e
		At 31 Dec 2020			
Geographical breakdown by Jurisdiction (J)	Footnotes	Applicable JCCyB ratio in effect	RWAs used in computation of CCyB ratio	AI-specific CCyB ratio	CCyB amount
		%	HK\$m	%	HK\$m
1	Hong Kong SAR	1	1.00	1,076,084	
2	Bulgaria		0.50	2	
3	Czech Republic		0.50	1	
4	Luxembourg		0.25	4,907	
5	Norway		1.00	193	
6	Slovakia		1.00	1	
	Sum	2		1,081,188	
	Total	3		2,125,024	0.51
					14,995

1 At 31 December 2020, the JCCyB of Hong Kong used in the calculation of the CCyB buffer requirement was 1.0%, which was reduced from 2.0% at 31 December 2019 in accordance with the announcement made by the HKMA on 16 March 2020. The JCCyB of other countries used in the calculation of the CCyB requirement ranged from 0% to 1%.

2 This represents the sum of RWAs for the private sector credit exposures in jurisdictions with a non-zero countercyclical buffer rate.

3 The total RWAs used in the computation of the CCyB ratio in column (c) represents the total RWAs for the private sector credit exposures in all jurisdictions to which the group is exposed, including jurisdictions with no countercyclical buffer rate or with a countercyclical buffer rate set at zero. The CCyB amount in column (e) represents the group's total RWAs in row 4 of Table 1 of this document multiplied by the group specific CCyB ratio in column (d).

RWAs booked in Hong Kong SAR dropped in the second half of 2020 due to reduction of the corporate exposures during the quarter.

Leverage ratio

The following table shows the leverage ratio, Tier 1 capital and total exposure measure as contained in the 'Leverage Ratio' return submitted to the HKMA under the requirements specified in Part 1C of the BCR.

Table 9: LR2 – Leverage ratio

		a	b
		31 Dec 2020 HK\$m	30 Sep 2020 HK\$m
On-balance sheet exposures			
1	On-balance sheet exposures (excluding those arising from derivative contracts and securities financing transactions ('SFTs'), but including collateral)	7,281,124	7,157,181
2	Less: Asset amounts deducted in determining Tier 1 capital	(233,841)	(224,562)
3	Total on-balance sheet exposures (excluding derivative contracts and SFTs)	7,047,283	6,932,619
Exposures arising from derivative contracts			
4	Replacement cost associated with all derivative contracts (where applicable net of eligible cash variation margin and/or with bilateral netting)	84,808	59,160
5	Add-on amounts for PFE associated with all derivative contracts	282,488	310,753
8	Less: Exempted central counterparty ('CCP') leg of client-cleared trade exposures	(5,371)	(5,156)
9	Adjusted effective notional amount of written credit derivative contracts	254,480	376,259
10	Less: Adjusted effective notional offsets and add-on deductions for written credit derivative contracts	(238,281)	(356,478)
11	Total exposures arising from derivative contracts	378,124	384,538
Exposures arising from SFTs			
12	Gross SFT assets (with no recognition of netting), after adjusting for sale accounting transactions	674,052	731,552
13	Less: Netted amounts of cash payables and cash receivables of gross SFT assets	(19,276)	—
14	CCR exposure for SFT assets	47,215	43,179
16	Total exposures arising from SFTs	701,991	774,731
Other off-balance sheet exposures			
17	Off-balance sheet exposure at gross notional amount	3,160,852	3,155,552
18	Less: Adjustments for conversion to credit equivalent amounts	(2,552,114)	(2,558,947)
19	Off-balance sheet items	608,738	596,605
Capital and total exposures			
20	Tier 1 capital	555,553	551,305
20a	Total exposures before adjustments for specific and collective provisions	8,736,136	8,688,493
20b	Adjustments for specific and collective provisions	(30,464)	(29,030)
21	Total exposures after adjustments for specific and collective provisions	8,705,672	8,659,463
Leverage ratio			
22	Leverage ratio	6.4%	6.4%

Total exposures increased by HK\$46,209m in the fourth quarter of 2020 primarily due to an increase of HK\$122,297m in treasury bills and debt securities from deployment of the commercial surplus, partially offset by a decrease of HK\$72,740m in SFTs mainly as a result of lower demand for reverse repo trades.

Table 10: LR1 – Summary comparison of accounting assets against leverage ratio exposure measure

		a
		Value under the LR framework
		31 Dec 2020 HK\$m
1	Total consolidated assets as per published financial statements	9,416,403
2	Adjustment for investments in banking, financial, insurance or commercial entities that are consolidated for accounting purposes but outside the scope of regulatory consolidation	(720,104)
4	Adjustments for derivative contracts	(44,808)
5	Adjustment for SFTs (i.e. repos and similar secured lending)	47,215
6	Adjustment for off-balance sheet ('OBS') items (i.e. conversion to credit equivalent amounts of OBS exposures)	608,738
6a	Adjustments for collective provisions and specific provisions that are allowed to be excluded from exposure measure	(1,487)
7	Other adjustments	(600,285)
8	Leverage ratio exposure measure	8,705,672

Other adjustments mainly represent the Hong Kong Government certificates of indebtedness and assets deducted in determining Tier 1 capital. These are excluded for deriving the leverage ratio exposure measure in accordance with the HKMA requirements specified in Part 1C of the BCR.

Overview of RWAs and the minimum capital requirements

Table 11: OV1 – Overview of RWAs

	a	b	c
	RWAs ¹	RWAs ¹	Minimum ² capital requirements
	31 Dec 2020 HK\$m	30 Sep 2020 HK\$m	31 Dec 2020 HK\$m
1 Credit risk for non-securitisation exposures	2,085,818	2,152,660	175,864
2 <i>of which: standardised (credit risk) ('STC') approach</i>	210,830	265,786	16,866
4 <i>of which: supervisory slotting criteria approach</i>	70,626	73,984	5,989
5 <i>of which: advanced internal ratings-based ('IRB') approach</i>	1,804,362	1,812,890	153,009
6 Counterparty default risk and default fund contributions	82,452	73,367	6,936
7a <i>of which: current exposure method ('CEM')</i>	19,864	16,482	1,661
8 <i>of which: internal models (counterparty credit risk) ('IMM(CCR)') approach</i>	43,310	39,861	3,652
9 <i>of which: Others</i>	19,278	17,024	1,623
10 Credit valuation adjustment ('CVA') Risk	26,954	28,733	2,156
11 Equity positions in banking book under the simple risk weight method and the internal models method	38,302	30,174	3,248
15 Settlement risk	117	40	10
16 Securitisation exposures in banking book	10,229	11,187	819
18 <i>of which: securitisation external ratings-based approach ('SEC-ERBA') including internal assessment approach ('IAA')</i>	8,020	9,102	642
19 <i>of which: securitisation standardised approach ('SEC-SA')</i>	2,209	2,085	177
20 Market risk	107,621	123,049	8,613
21 <i>of which: standardised (market risk) ('STM') approach</i>	3,476	2,774	281
22 <i>of which: internal models ('IMM') approach</i>	104,145	120,275	8,332
24 Operational risk	356,861	365,679	28,549
25 Amounts below the thresholds for deduction (subject to 250% risk weight ('RW'))	157,328	154,191	13,341
26a Deduction to RWAs	37,218	38,237	2,977
26c <i>of which: portion of cumulative fair value gains arising from the revaluation of land and buildings which is not included in Tier 2 Capital</i>	37,218	38,237	2,977
27 Total	2,828,464	2,900,843	236,559

1 RWAs in this table are presented before the application of the 1.06 scaling factor, where applicable.

2 Minimum capital requirements represent the Pillar 1 capital charge at 8% of the RWAs after application of the 1.06 scaling factor, where applicable.

Credit risk for non-securitisation exposures

RWAs decreased by HK\$66,842m in the fourth quarter of 2020, including an increase of HK\$30,975m from foreign currency translation differences. Excluding the foreign currency translation differences, the decrease of HK\$97,817m was primarily driven by:

- a decrease of HK\$110,550m in asset size, largely consisting of HK\$55,503m in the STC approach from matured IPO loans and HK\$54,750m in the IRB approach due to lower corporate loan balances mainly in Hong Kong and Australia;
- a decrease of HK\$4,898m in methodology and policy arising from management initiatives; partly offset by
- an increase of HK\$17,566m due to deteriorating asset quality mainly in corporate portfolios;

Market risk

RWAs decreased by HK\$15,428m mainly due to decrease in value at risk ('VaR') and stressed VaR ('SVaR') driven by the reduction in overall trading exposures and the change of the SVaR window during the quarter.

RWA flow statements

RWA flow statement for credit risk

Table 12: CR8 – RWA flow statement of credit risk exposures under IRB approach¹

		a
		HK\$m
1	RWAs as at 30 Sep 2020	1,886,874
2	Asset size	(54,750)
3	Asset quality	17,158
4	Model updates	(90)
5	Methodology and policy	(1,267)
7	Foreign exchange movements	27,063
9	RWAs as at 31 Dec 2020	1,874,988

¹ Credit risk in this table represents the credit risk for non-securitisation exposures excluding counterparty credit risk.

RWAs under the IRB approach decreased by HK\$11,886m in the fourth quarter of 2020, excluding the increase arising from foreign currency translation of HK\$27,063m, the decrease of HK\$38,949m was mainly due to :

- a decrease in book size of HK\$54,750m, predominantly lower corporate loan balances in Hong Kong and Australia; partly offset by
- an increase of HK\$17,158m due to deteriorating asset quality in the corporate portfolios.

RWA flow statement for counterparty credit risk

Table 13: CCR7 – RWA flow statement of default risk exposures under IMM(CCR) approach

		a
		HK\$m
1	RWAs as at 30 Sep 2020	39,861
2	Asset size	4,245
3	Credit quality of counterparties	(295)
4	Model updates	(518)
7	Foreign exchange movements	17
9	RWAs as at 31 Dec 2020	43,310

RWA flow statement for market risk

Table 14: MR2 – RWA flow statement of market risk exposures under IMM approach

	a	b	c	e	f	
	Value at Risk (‘VaR’) HK\$m	Stressed VaR HK\$m	IRC HK\$m	Other HK\$m	Total RWAs HK\$m	
1	RWAs as at 30 Sep 2020	23,409	46,947	36,975	12,944	120,275
2	Movement in risk levels	(2,450)	(9,603)	(2,778)	(1,352)	(16,183)
6	Foreign exchange movements	10	21	16	6	53
8	RWAs as at 31 Dec 2020	20,969	37,365	34,213	11,598	104,145

Loss-absorbing Capacity

Table 15: KM2(A) – Key metrics – LAC requirements for material subsidiaries

	a	b	c	d	e
	At				
	31 Dec 2020	30 Sep 2020	30 Jun 2020	31 Mar 2020	31 Dec 2019
Of the group at LAC consolidation group level					
1 Internal loss-absorbing capacity available (HK\$m)	792,498	787,043	773,180	744,305	769,124
2 Risk-weighted amount under the LAC Rules (HK\$m)	2,956,993	3,029,053	2,942,719	2,905,598	2,851,380
3 Internal LAC risk-weighted ratio (%)	26.8	26.0	26.3	25.6	27.0
4 Exposure measure under the LAC Rules (HK\$m)	8,697,936	8,651,756	8,466,242	8,178,584	8,071,283
5 Internal LAC leverage ratio (%)	9.1	9.1	9.1	9.1	9.5
6a Does the subordination exemption in the antepenultimate paragraph of Section 11 of the Financial Stability Board ('FSB') Total Loss-absorbing Capacity ('TLAC') Term Sheet apply? ¹	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
6b Does the subordination exemption in the penultimate paragraph of Section 11 of the FSB TLAC Term Sheet apply? ¹	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
6c If the capped subordination exemption applies, the amount of funding issued that ranks <i>pari passu</i> with excluded liabilities and that is recognised as external loss-absorbing capacity, divided by funding issued that ranks <i>pari passu</i> with excluded liabilities and that would be recognised as external loss-absorbing capacity if no cap was applied (%) ¹	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

¹ The subordination exemption in the antepenultimate and penultimate paragraphs of Section 11 of the FSB TLAC Term Sheet do not apply in Hong Kong under the LAC Rules.

Table 16: TLAC1(A) – TLAC composition

	a
	At 31 Dec 2020
Regulatory capital elements of internal loss-absorbing capacity and adjustments (HK\$m)	
1 Common Equity Tier 1 ('CET1') capital	509,452
2 Additional tier 1 ('AT1') capital before LAC adjustments	46,101
5 AT1 capital eligible under the LAC Rules	46,101
6 Tier 2 ('T2') capital before LAC adjustments	58,992
8 T2 capital instruments ineligible as internal loss-absorbing capacity as not issued directly or indirectly to, and held directly or indirectly by, the resolution entity or non-HK resolution entity in the material subsidiary's resolution group	3,101
10 T2 capital eligible under the LAC Rules	55,891
11 Internal loss-absorbing capacity arising from regulatory capital	611,444
Non-regulatory capital elements of internal loss-absorbing capacity (HK\$m)	
12 Internal non-capital LAC debt instruments issued directly or indirectly to, and held indirectly or indirectly by, the resolution entity or non-HK resolution entity in the material subsidiary's resolution group	181,065
17 Internal loss-absorbing capacity arising from non-capital LAC debt instruments before adjustments	181,065
Non-regulatory capital elements of internal loss-absorbing capacity: adjustments (HK\$m)	
18 Internal loss-absorbing capacity before deductions	792,509
19 Deductions of exposures between the material subsidiary's LAC consolidation group and group companies outside that group that correspond to non-capital items eligible for internal loss-absorbing capacity	11
22 Internal loss-absorbing capacity after deductions	792,498
Risk-weighted amount and exposure measure under the LAC Rules for internal loss-absorbing capacity purposes (HK\$m)	
23 Risk-weighted amount under the LAC Rules	2,956,993
24 Exposure measure under the LAC Rules	8,697,936
Internal LAC ratios and buffers (%)	
25 Internal LAC risk-weighted ratio	26.8%
26 Internal LAC leverage ratio	9.1%
27 CET1 capital (as a percentage of RWA under the BCR) available after meeting the LAC consolidation group's minimum capital and LAC requirements	10.8%
28 Institution-specific buffer requirement (capital conservation buffer plus countercyclical capital buffer requirements plus higher loss absorbency requirement, expressed as a percentage of RWA under the BCR)	5.51%
29 of which: capital conservation buffer requirement	2.50%
30 of which: institution-specific countercyclical capital buffer requirement	0.51%
31 of which: higher loss absorbency requirement	2.50%

Table 17: TLAC2 – The Hongkong and Shanghai Banking Corporation Limited creditor ranking

	Creditor ranking (HK\$m)					Sum of 1 to 5
	1 (most junior)	2	3	4	5 (most senior)	
1	Is the resolution entity or a non-HK resolution entity the creditor/investor? (yes or no)					
	Yes	Yes	No ¹	Yes	Yes	
2	Ordinary shares ²	AT1 instruments	Primary capital notes	Tier 2 instruments	LAC loans	
3	172,335	44,196	3,101	13,801	165,352	398,785
5	172,335	44,196	3,101	13,801	165,352	398,785
6	– of row 5 that are eligible as internal loss-absorbing capacity					
	172,335	44,196	–	13,801	165,352	395,684
7	– of row 6 with 1 year ≤ residual maturity < 2 years					
	–	–	–	–	23,804	23,804
8	– of row 6 with 2 years ≤ residual maturity < 5 years					
	–	–	–	–	53,250	53,250
9	– of row 6 with 5 years ≤ residual maturity < 10 years					
	–	–	–	9,149	72,791	81,940
10	– of row 6 with residual maturity ≥ 10 years, but excluding perpetual securities					
	–	–	–	4,652	15,507	20,159
11	– of row 6 that are perpetual securities					
	172,335	44,196	–	–	–	216,531

¹ The company's primary capital notes are held by third parties.

² Excludes the value of share premium and reserves attributable to ordinary shareholders.

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 global 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 Retail Banking and Wealth Management Risk are the constituent parts of the group's Risk functions that support the group's CRO in overseeing credit risks. Their major duties comprise undertaking independent review 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 system programmes, oversee portfolio management and report on risk matters to senior executive management and to regulators.

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

The credit responsibilities of the group's Risk function are described on page 27 of the group's Annual Report and Accounts 2020.

Within the group, the credit risk functions comprise a network of credit risk management offices reporting within their respective local wholesale and retail credit risk functions, which in turn report to their relevant risk functions at Group level. They fulfil an essential role as independent risk control units distinct from global 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 CROs 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 group's and, as appropriate, the global credit risk function.

Credit risk management

Our exposures to credit risk arise from a wide range of customers 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 'Credit risk under internal ratings-based approach' on pages 26 to 28.

A fundamental principle of our policy and approach is that analytical risk rating systems and scorecards are 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. 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 global 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 'Model performance' on page 35 for more information.

Credit risk models governance

All new or materially changed IRB capital models require regulatory approval, as set out in more detail on page 26. Throughout HSBC, such models fall directly under the remit of the functional MOFs, operating in line with HSBC's model risk policy, and under the oversight of the GMRC and the group's Model Risk Committee.

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

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

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

Credit quality

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.

Credit quality of assets

Credit quality of exposures

Tables 18 and 22 present information on the credit quality of exposures by exposure category, geographical location, industry and residual maturity on a regulatory consolidation basis. For further detail on the credit quality of IRB and STC exposures, refer to Tables 34 to 35 and 37 respectively.

The loans covered in these tables are generally referred to as any on-balance sheet exposures included as credit risk for non-securitisation exposures, covering exposures to customers, banks, sovereigns and others. Cash items and non-financial assets are excluded.

Table 18: CR1 – Credit quality of exposures

	a	b	c	d	e	f	g
	Gross carrying amounts of			Of which ECL accounting provisions ¹ for credit losses on STC approach exposures		Of which ECL accounting provisions for credit losses on IRB approach exposures	
	Defaulted exposures	Non-defaulted exposures	Allowances/ impairments	Allocated in regulatory category of specific provisions	Allocated in regulatory category of collective provisions		Net values (a+b-c)
	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m
1 Loans	38,259	4,478,510	29,529	2,142	965	26,422	4,487,240
2 Debt securities	–	1,701,994	178	–	16	162	1,701,816
3 Off-balance sheet exposures	4,151	3,156,701	1,321	2	89	1,230	3,159,531
4 Total at 31 Dec 2020	42,410	9,337,205	31,028	2,144	1,070	27,814	9,348,587

1 The categorisation of Expected Credit Loss ('ECL') accounting provisions into the regulatory categories of specific and collective provisions follows the treatment specified in the completion instructions of the HKMA Capital Adequacy Ratio – MA(BS)3 return. According to the completion instructions, the ECL accounting provisions classified into Stage 1 and Stage 2 are treated as collective provisions, while those classified under Stage 3 are treated as specific provisions. Provisions made for purchased or originated credit-impaired financial assets, under which any changes in lifetime expected credit losses will be recognised in the profit or loss account as an impairment gain or loss, are treated as specific provisions.

Table 19: CR2 – Changes in defaulted loans and debt securities

	a
	HK\$m
1 Defaulted loans and debt securities at 30 Jun 2020	29,728
2 Loans and debt securities that have defaulted since 30 Jun 2020	13,454
3 Returned to non-defaulted status	(1,631)
4 Amounts written off	(3,456)
5 Other changes	164
6 Defaulted loans and debt securities at 31 Dec 2020	38,259

1 Other changes include repayment and foreign exchange movements.

Table 20: CRB1 – Exposures by geographical location

	Gross carrying amounts at 31 Dec 2020
	HK\$m
Hong Kong	5,419,842
Mainland China	1,052,338
Others	2,907,435
Total	9,379,615

1 The geographical locations shown in this table above represent the location of the principal operations of the subsidiary and by the location of the branch responsible for advancing the funds.

2 Any segment which constitutes less than 10% of total gross carrying amounts is disclosed on an aggregated basis under the category 'others'.

Table 21: CRB2 – Exposures by industry

	Gross carrying amounts at 31 Dec 2020
	HK\$m
Property development and investment	970,162
Financial concerns	1,948,005
Individuals	2,432,659
Others	4,028,789
Total	9,379,615

1 Any segment which constitutes less than 10% of total gross carrying amounts is disclosed on an aggregated basis under the category 'others'.

Table 22: CRB3 – Exposures by residual maturity

	Gross carrying amounts at 31 Dec 2020 HK\$m
Less than 1 year	4,658,507
Between 1 and 5 years	2,472,258
More than 5 years	2,207,560
Undated	41,290
Total	9,379,615

Credit-impaired exposures, past-due unimpaired exposures and renegotiated exposures

Tables 23 to 26 analyse credit-impaired exposures, impairment allowances, past-due unimpaired exposures and renegotiated exposures on a regulatory consolidation basis. Our approach for determining impairment allowances, definitions for accounting purposes of 'credit impaired', 'renegotiated' and the definition of

default for regulatory capital are explained in Note 1.2(i) of the group's *Annual Report and Accounts 2020*. The analysis of gross impaired loans and advances and impairment allowances by major industry sectors based on categories and definitions used by the HSBC Group is as follows:

Table 23: CRB4 – Credit-impaired exposures and impairment allowances and write-offs by industry

Footnotes	Total gross loans and advances to customers ¹ HK\$m	Gross credit-impaired loans and advances HK\$m	Specific provisions ² HK\$m	Collective provisions ² HK\$m	Net new impairment allowances HK\$m	Advances written-off in a year HK\$m
At 31 Dec 2020						
Residential mortgages	1,097,760	4,615	(351)	(274)	309	59
Real Estate	637,793	861	(107)	(1,123)	434	23
Wholesale and retail trade	394,393	14,042	(10,214)	(1,402)	8,167	683
Manufacturing	379,852	6,356	(3,196)	(1,375)	2,188	1,031
Others	1,174,810	10,732	(4,187)	(6,595)	5,352	4,262
Total	3,684,608	36,606	(18,055)	(10,769)	16,450	6,058

The geographical information shown below has been classified by the location of the principal operations of the subsidiary and by

the location of the branch responsible for advancing the funds.

Table 24: CRB5 – Credit-impaired exposures and impairment allowances and write-offs by geographical location

Footnotes	Total gross loans and advances to customers ¹ HK\$m	Gross credit-impaired loans and advances HK\$m	Overdue loans and advances HK\$m	Specific provisions ² HK\$m	Collective provisions ² HK\$m	Net new impairment allowances HK\$m	Advances written-off in a year HK\$m
At 31 Dec 2020							
Hong Kong	2,345,054	14,653	8,793	(6,367)	(5,840)	5,656	2,703
Mainland China	359,782	1,636	808	(1,034)	(1,228)	928	1,003
Others	979,772	20,317	13,361	(10,654)	(3,701)	9,866	2,352
Total	3,684,608	36,606	22,962	(18,055)	(10,769)	16,450	6,058

1 The amounts shown in column 'Total gross loans and advances to customers' represent loans and advances to customers gross of provisions in the financial statements under regulatory consolidation scope.

2 The classification of specific and collective provisions follows the treatment specified in the completion instructions of the HKMA Capital Adequacy Ratio – MA(BS)3 return. Details can be found in footnote 1 under Table 18 of this document.

3 Any segment which constitutes less than 10% of total gross loans and advances to customers is disclosed on an aggregated basis under the category 'others'.

Past-due unimpaired exposures are those loans where customers have failed to make payments in accordance with the contractual

terms of their facilities. Exposures past due for more than 90 days are considered credit impaired.

Table 25: CRB6 – Ageing analysis of accounting past-due unimpaired exposures

	Up to 29 days HK\$m	30-59 days HK\$m	60-89 days HK\$m	Total HK\$m
At 31 Dec 2020				
Loans and advances to customers held at amortised cost	19,082	1,839	2,041	22,962
– personal	12,899	1,630	1,783	16,312
– corporate and commercial	5,835	209	258	6,302
– non-bank financial institutions	348	–	–	348
Total	19,082	1,839	2,041	22,962

Table 26: CRB7 – Breakdown of renegotiated loans between credit impaired and not credit impaired

	31 Dec 2020 HK\$m
Not credit impaired	4
Credit impaired	5,769
Total	5,773

Loans and advances to customers

Tables 27 to 29 analyse loans and advances to customers by geographical locations, by industries and by which are overdue and rescheduled on an accounting consolidation basis. The accounting consolidation basis is different from the regulatory consolidation basis as explained in the 'Basis of consolidation' section of this document.

The following analysis of loans and advances to customers by geographical areas is in accordance with the location of counterparties, after recognised risk transfer.

Table 27: Loans and advances to customers by geographical location

	Hong Kong HK\$m	Rest of Asia-Pacific HK\$m	Other HK\$m	Total HK\$m
At 31 Dec 2020				
Gross loans and advances to customers	1,967,392	1,434,243	295,933	3,697,568

Tables 28 and 29 analyse the group's loans and advances to customers based on the categories used by the HKMA in the

'Quarterly Analysis of Loans and Advances and Provisions – (MA(BS)2A)' return.

Table 28: Loans and advances to customers by industry

	Gross Advances at 31 Dec 2020 HK\$m	Collateral and other security at 31 Dec 2020 HK\$m
Industrial, commercial and financial	1,036,546	481,151
– property development	169,492	50,983
– property investment	301,708	199,090
– financial concerns	123,289	73,028
– stockbrokers	10,845	1,756
– wholesale and retail trade	102,307	27,737
– manufacturing	60,473	12,742
– transport and transport equipment	62,435	30,079
– recreational activities	1,951	606
– information technology	36,677	2,611
– others	167,369	82,519
Individuals	860,175	766,410
– advances for the purchase of flats under the Hong Kong Government's Home Ownership Scheme, Private Sector Participation Scheme and Tenants Purchase Scheme	60,828	60,828
– advances for the purchase of other residential properties	632,488	632,488
– credit card advances	57,132	–
– others	109,727	73,094
Gross loans and advances to customers for use in Hong Kong	1,896,721	1,247,561
Trade Finance	133,975	28,708
Gross loans and advances to customers for use outside Hong Kong	1,666,872	668,906
Gross loans and advances to customers	3,697,568	1,945,175

The categories of advances, and the relevant definitions, used by the HKMA differ from those used for internal purposes by the HSBC Group as disclosed in Note 10 in the group's *Annual and Accounts 2020*.

Collateral includes any tangible security that has a determinable fair market value and is readily marketable. This includes (but is

not limited to) cash and deposits, stocks and bonds, mortgages over properties and charges over other fixed assets, such as plant and equipment. Where collateral values are greater than gross advances, only the amount of collateral up to the gross advance has been included.

Banking Disclosure Statement at 31 December 2020

Rescheduled loans and advances to customers are those loans and advances that have been restructured or renegotiated because of deterioration in the financial position of the borrower, or because of the inability of the borrower to meet the original

repayment schedule. Rescheduled loans and advances to customers are stated net of any loans and advances that have subsequently become overdue for more than three months and which are included in overdue loans and advances to customers.

Table 29: Overdue and rescheduled loans and advances to customers

	Footnotes	Hong Kong		Rest of Asia-Pacific		Total	
		HK\$m	% ¹	HK\$m	% ¹	HK\$m	% ¹
At 31 Dec 2020							
Gross amounts which have been overdue with respect to either principal or interest for:							
– more than three months but not more than six months		968	–	2,815	0.2	3,783	0.1
– more than six months but not more than one year		1,191	0.1	8,148	0.6	9,339	0.3
– more than one year		4,297	0.2	3,503	0.3	7,800	0.2
Total		6,456	0.3	14,466	1.1	20,922	0.6
Specific provisions made in respect of amounts overdue	2	(2,804)		(9,621)		(12,425)	
Fair value of collateral held in respect of amounts overdue		1,719		4,415		6,134	
Rescheduled loans and advances to customers		486	–	1,941	0.1	2,427	0.1

1 Percentages shown are of gross loans and advances to customers.

2 The classification of specific provisions follows the treatment specified in the completion instructions of the HKMA Capital Adequacy Ratio – MA(BS)3 return. Details can be found in footnote 1 under Table 18 of this document.

Off-balance sheet exposures other than derivative transactions

The following table gives the nominal contract amounts and risk-weighted amounts of contingent liabilities and commitments. The information is consistent with that in the 'Capital Adequacy Ratio' return submitted to the HKMA by the group. The return is prepared on a consolidated basis as specified by the HKMA under the requirements of section 3C(1) of the BCR.

For accounting purposes, acceptances and endorsements are recognised on the balance sheet in 'Other assets'. For the purpose of the BCR, acceptances and endorsements are included in the capital adequacy calculation as if they were contingencies.

Table 30: Off-balance sheet exposures other than derivative transactions

	31 Dec 2020 HK\$m
Contract amounts	
Direct credit substitutes	41,502
Transaction-related contingencies	250,407
Trade-related contingencies	111,625
Forward asset purchases	6,563
Commitments that are unconditionally cancellable without prior notice	2,366,032
Commitments which have an original maturity of not more than one year	55,891
Commitments which have an original maturity of more than one year	328,832
Total	3,160,852
Risk-weighted amounts	312,236

Credit risk under internal ratings-based approach

The internal ratings system and its risk components

Model governance

Throughout HSBC, models are governed under the remit of the global functional MOFs, operating in line with HSBC's model risk policy, and under the oversight of the Global MOF. Model governance for IRB capital models is under the general oversight of group Wholesale Model Oversight Forum ('WMOF') and Retail Model Oversight Forum ('RMOF').

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

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

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

Nature of exposures within each IRB class

The group uses the advanced IRB approach for the majority of its business under the approval granted by the HKMA. This includes the following major classes of non-securitisation exposures:

- Corporate exposures, including exposures to global and local large corporates, middle-market corporates and non-bank financial institutions.
- Sovereign exposures, including exposures to central governments, central monetary institutions, multilateral development banks and relevant international organisations.
- Bank exposures, including exposures to banks and regulated securities firms.
- Retail exposures, including residential mortgages, qualifying revolving retail exposures and other retail exposures.
- Equity exposures.
- Other exposures, including cash items and other assets.

At 31 December 2020, the portions of exposure at default ('EAD') and RWAs within the group covered by the IRB approach are summarised in the following table. The remaining portions not covered by the IRB approach are under the STC approach.

Table 31: CRE1 – Percentage of total EAD and RWAs covered by IRB approach

Portfolio	Percentage of total EAD under IRB approach	Percentage of total RWAs under IRB approach
Corporate exposures (includes small- and medium sized corporates and other corporates and specialised lending ¹)	96%	93%
Sovereign exposures	98%	100%
Bank exposures (including securities firms)	100%	99%
Residential mortgage loans	90%	79%
Other retail exposures	85%	59%
Equity exposures	100%	100%
Other exposures	100%	100%

¹ Specialised lending exposures adopt regulatory slotting approach under the IRB framework.

The above table covers credit risk for non-securitisation exposures excluding counterparty credit risk. For counterparty credit risk, the percentage of total RWAs covered by IRB models is 99% for sovereign exposures, 99% for bank exposures and 79% for corporate exposures.

Measurement and monitoring – risk rating systems

Exposure to credit risk arises from a very wide range of customers and product types, and the risk rating systems in place to measure and monitor these risks are correspondingly diverse.

Credit risk exposures are generally measured and managed in portfolios of either distinct customer types or product categories. Risk rating systems for the former are designed to assess the default propensity of, and loss severity associated with, customers who are typically managed as individual relationships; these rating systems tend to have a higher subjective content. Risk rating systems for the latter are generally more analytical, applying techniques such as behavioural analysis across product portfolios comprising large numbers of homogeneous transactions.

A fundamental principle of the group's policy and approach is that analytical risk rating systems and scorecards are decision tools facilitating management, serving ultimately judgmental decisions for which individual approvers are accountable. In the case of automated decision-making processes, accountability rests with those responsible for the parameters built into those processes / systems and the controls surrounding their use. For distinct customers, the credit process requires at least annual review of facility limits granted. Review may be more frequent, as required by circumstances.

Group standards govern the process through which risk rating systems are initially developed, judged fit for purpose, approved and implemented; the conditions under which individual approvers can override analytical risk model outcomes; and the process of model performance monitoring and reporting. There is emphasis on an effective dialogue between global business lines and risk management, appropriate 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 and are subject to review and modification in the light of the changing environment and the greater availability and quality of data. Structured processes and metrics are in place to capture relevant data and feed it into continuous model improvement.

Application of IRB parameters

The group's credit risk rating framework incorporates the probability of default ('PD') of a borrower and the loss severity, expressed in terms of EAD and loss given default ('LGD'). These measures are used to calculate both expected loss ('EL') and capital requirements, subject to any floors required by the HKMA. They are also used in conjunction with other inputs to inform rating assessments for the purpose of credit approval and many other risk management decisions. The narrative explanations that follow relate to the IRB advanced approaches, that is, IRB advanced for distinct customers and retail IRB for the portfolio-managed retail business.

Wholesale business

PD for wholesale customer segments (central governments and central banks (sovereigns), institutions, corporates) are derived from a customer risk rating ('CRR') scale of 23 grades. Of these, 21 are non-default grades representing varying degrees of strength of financial condition and two are default grades. Each CRR has a PD range associated with it as well as a mid-point PD.

The score generated by a model for the individual borrower type is mapped to the corresponding CRR. The process through which this, or a judgmentally amended CRR, is then recommended to and reviewed by a credit approver takes into account all additional information relevant to the risk rating determination, including external ratings where available. The approved CRR is mapped to a PD value range of which the 'mid-point' is used in the regulatory capital calculation. PD models are developed where the risk profile of corporate borrowers is specific to a country and sector. For illustration purposes, the CRR is also mapped to external ratings of Standard and Poor's ('S&P'), though we also benchmark against other agencies' ratings in an equivalent manner.

Banking Disclosure Statement at 31 December 2020

LGD and EAD estimation for the wholesale business is subject to a Group framework of basic principles. EAD is estimated to a 12-month horizon and broadly represents the current exposure, plus an estimate for future increases in exposure, taking into account such factors as available but undrawn facilities and the crystallisation of contingent exposures, post-default. LGD focuses on the facility and collateral structure, involving factors like facility priority/seniority, the type and value of collateral, type of client and variances in experience, and is expressed as a percentage of EAD.

The group uses the Supervisory Slotting Criteria approach in rating its specialised lending exposures. Under this approach, ratings are determined by considering both the borrower and the transaction risk characteristics.

Retail business

The wide range of application and behavioural information used in the management of retail portfolios has been supplemented with models to derive the measures of PD, EAD and LGD required for the Basel framework. For management information and reporting purposes, retail portfolios are segmented according to location

and analytically derived PD bands, in nine composite PD grades, facilitating comparability across the group's retail customer segments, business lines and product types.

PD models are developed using statistical estimation generally based on a minimum of five years of historical data. The modelling approach is typically hybrid.

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

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

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

Table 32: CRE2 – Wholesale IRB credit risk models

Regulatory asset classes measured	Component	Number of significant models	Model description and methodology	Number of years loss data	Regulatory Floors
Sovereign/Multilateral development banks	PD	1	A shadow rating approach that includes macroeconomic and political factors, constrained with expert judgement.	>10	No
	LGD	1	An unsecured model built on assessment of structural factors that influence the country's long-term economic performance. For unsecured LGD, a floor of 45% is applied.	8	45% ¹
	EAD	1	A cross-classification model that uses both internal data and expert judgement, as well as information on similar exposure types from other asset classes.	8	EAD must be at least equal to the current utilisation of the balance at account level
Bank/Securities firms	PD	2	Statistical models that combine quantitative analysis on financial information with expert inputs and macroeconomic factors.	10	0.03%
	LGD	1	A quantitative model that produces both downturn and expected LGD. Several securities types are included in the model to recognise collateral in the LGD calculation. For unsecured LGD, a floor of 45% is applied.	10	45% ²
	EAD	1	A quantitative model that assigns CCF taking into account product types and committed/uncommitted indicator to calculate EAD using current utilisation and available headroom.	10	EAD must be at least equal to the current utilisation of the balance at account level
Other Corporate/Small-and-medium sized corporates ³	PD	13	The corporate models use financial information, macroeconomic information and market-driven data, and is complemented by a qualitative assessment. The non-bank financial institution ('NBF') models which are the predominantly statistical models that combine quantitative analysis on financial information with expert inputs. The Lombard model for the Global Private Banking portfolio which is a market-oriented model developed based on the historical price movements of the underlying financial collaterals.	>= 10	0.03%
	LGD	2	Regional statistical model covering all corporates, developed using historical loss/recovery data and various data inputs, including collateral information, facility seniority and customer geography. The Lombard model for the Global Private Banking portfolio which is a market-oriented model developed based on the historical price movements of the underlying financial collaterals.	>10	No
	EAD	1	Regional statistical model covering all corporates, developed using historical utilisation information and various data inputs, including product type and nature of commitment.	>10	EAD must be at least equal to the current utilisation of the balance at account level

¹ LGD floor exemption to the People's Republic of China and Hong Kong Special Administrative Region.

² LGD floor exemption to intra-group entities.

³ Excludes specialised lending exposures subject to supervisory slotting approach.

Table 33: CRE3 – Material retail IRB credit risk models

Retail Portfolio	Component	Number of significant models	Model description and methodology	Number of years loss data	Regulatory Floors
Hong Kong – HSBC Residential Mortgages (Residential mortgage exposures)	PD	1	Statistical model built on internal behavioural data and calibrated to a long-run default rate by segment.	>10	0.03%
	LGD	3	2 statistical models and 1 historical average model based on estimate of loss incurred over a recovery period derived from historical data with downturn adjustment.	>10	10% at portfolio level
	EAD	1	Rule-based calculation based on current balance which continues to be a conservative estimate for EAD.	>10	EAD must at least be equal to current balance
Hong Kong – HSBC Credit Cards (Qualifying revolving retail exposures and Other retail exposures to individuals)	PD	4	Statistical model built on internal behavioural data and calibrated to a long-run default rate by segment.	>10	0.03%
	LGD	2	Statistical model based on forecasting the amount of expected future losses with downturn adjustment.	>10	
	EAD	2	EAD derived by different segments. Statistical models which derive credit conversion factors to determine the undrawn portion of the facility to be added to the outstanding balance of accounts at the time of observation.	>10	EAD must at least be equal to current balance
Hong Kong – HSBC Personal Loans (Qualifying revolving retail exposures and Other retail exposures to individuals)	PD	1	Statistical model built on internal behavioural data and calibrated to a long-run default rate.	> 10	0.03%
	LGD	1	Statistical model based on forecasting the amount of expected future recoveries. Downturn LGD derived using data from the period with highest observed default rate.	> 10	
	EAD	1	Statistical model which derives a credit conversion factor to determine the proportion of undrawn limit to be added to the balance at observation.	> 10	EAD must at least be equal to current balance
Hong Kong – HSBC Overdraft (Qualifying revolving retail exposures and Other retail exposures to individuals)	PD	1	Statistical model built on internal behavioural data and calibrated to a long-run default rate by segment.	> 10	0.03%
	LGD	1	Statistical model based on forecasting the amount of expected losses. Downturn LGD derived using data from the period with highest observed default rate.	> 10	
	EAD	1	Statistical model which derives a credit limit utilisation which is used to determine the EAD.	> 10	EAD must at least be equal to current balance
Hong Kong – Hang Seng Personal Residential Mortgages (Residential mortgage exposures)	PD	1	Statistical model built on internal behavioural data and calibrated to a long-run default rate.	>10	0.03%
	LGD	3	One component based model and two historical average models based on estimate of loss incurred over a recovery period derived from historical data with downturn LGD based on the worst observed default rate.	>10	10% at portfolio level
	EAD	1	Rule-based calculation based on current balance which continues to be a conservative estimate for EAD.	>10	EAD must at least be equal to current balance
Hong Kong – Hang Seng Credit Cards (Qualifying revolving retail exposures and Other retail exposures to individuals)	PD	1	Statistical model built on internal behavioural data and calibrated to a long-run default rate by segment.	>10	0.03%
	LGD	1	Statistical model based on forecasting the amount of expected future losses with downturn adjustment.	>10	
	EAD	1	Statistical model which derives a credit limit utilisation by segment which is used to determine the EAD.	>10	EAD must at least be equal to current balance
Hong Kong – Hang Seng Personal Loans (Qualifying revolving retail exposures and Other retail exposures to individuals)	PD	1	Statistical model built on internal behavioural data and calibrated to a long-run default rate by segment.	> 10	0.03%
	LGD	1	Statistical model based on forecasting the amount of expected future losses with downturn adjustment.	> 10	
	EAD	1	EAD derived by different product types. Statistical model which derives a credit conversion factor to determine the proportion of undrawn limit to be added to the balance at observation for revolving nature while rule based calculation based on current balance for non-revolving nature.	> 10	EAD must at least be equal to current balance
Other Asia-Pacific countries – Residential Mortgage (Residential mortgage exposures)	PD	9	Statistical model built on internal behavioural data and calibrated to a long-run default rate by segment.	> 10	0.03%
	LGD	7	Statistical model based on forecasting the amount of expected future losses, or statistical model or historical average model based on estimate of loss incurred over a recovery period derived from historical data, with downturn adjustment.	> 10	10% at portfolio level
	EAD	10	Rule-based calculation based on current balance, total approved loan amount and limit, or derives a credit conversion factor to determine the proportion of the undrawn limit to be added to the balance at observation, which continue to be a conservative estimate for EAD.	> 10	EAD must at least be equal to current balance

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Table 34.1: CR6 – Credit risk exposures by portfolio and PD range – for IRB approach (Wholesale)

	a	b	c	d	e	f	g	h	i	j	k	l
PD scale	Original on-balance sheet gross exposure HK\$m	Off-balance sheet exposures pre-CCF HK\$m	Average CCF %	EAD post-CRM and post-CCF HK\$m	Average PD %	Number of obligors	Average LGD %	Average maturity years	RWAs HK\$m	RWA density %	EL HK\$m	Provisions HK\$m
Portfolio (i) – Sovereign												
0.00 to < 0.15	2,016,651	1,838	30.6	2,017,215	0.02	608	34.6	1.34	108,026	5	148	
0.15 to < 0.25	12,657	–	–	12,657	0.22	12	45.0	1.83	5,037	40	13	
0.25 to < 0.50	6,152	34	50.0	6,169	0.37	21	45.0	1.01	2,722	44	10	
0.50 to < 0.75	17,410	1,302	69.3	18,312	0.63	20	45.0	1.25	11,348	62	52	
0.75 to < 2.50	–	–	–	–	1.20	2	45.0	1.00	–	79	–	
2.50 to < 10.00	9,653	447	30.0	9,787	4.15	15	41.2	1.73	11,040	113	153	
10.00 to < 100.00	–	–	–	–	–	–	–	–	–	–	–	
100.00 (Default)	–	–	–	–	–	–	–	–	–	–	–	
Sub-total at 31 Dec 2020	2,062,523	3,621	44.7	2,064,140	0.05	678	34.8	1.35	138,173	7	376	1,705
Portfolio (ii) – Bank												
0.00 to < 0.15	396,855	45,541	39.4	414,781	0.05	13,668	38.4	1.15	52,546	13	76	
0.15 to < 0.25	21,197	9,616	43.3	25,360	0.22	707	44.7	0.89	9,953	39	25	
0.25 to < 0.50	10,764	2,025	37.6	11,525	0.37	975	41.6	0.86	5,125	44	18	
0.50 to < 0.75	5,185	1,685	35.4	5,781	0.63	369	45.1	0.79	3,756	65	16	
0.75 to < 2.50	2,168	1,935	40.3	2,948	1.17	235	37.2	0.77	1,907	65	12	
2.50 to < 10.00	1,372	1,501	24.2	1,736	3.25	174	63.4	0.40	2,583	149	36	
10.00 to < 100.00	18	3	20.0	18	48.23	13	35.8	0.44	24	133	2	
100.00 (Default)	211	–	–	211	100.00	2	60.9	0.53	485	230	111	
Sub-total at 31 Dec 2020	437,770	62,306	39.5	462,360	0.14	16,143	39.0	1.12	76,379	17	296	1,163
Portfolio (iii) – Corporate – small-and-medium sized corporates												
0.00 to < 0.15	10,312	14,942	31.1	14,801	0.11	620	34.6	1.94	2,427	16	6	
0.15 to < 0.25	8,202	11,909	28.3	11,571	0.22	950	33.7	2.11	3,056	26	9	
0.25 to < 0.50	32,814	21,495	30.1	39,285	0.37	1,308	28.1	1.98	11,662	30	41	
0.50 to < 0.75	52,088	20,603	30.4	58,357	0.63	1,428	26.0	2.18	21,104	36	96	
0.75 to < 2.50	133,824	62,908	26.0	149,957	1.43	5,227	29.3	1.94	77,197	51	634	
2.50 to < 10.00	25,639	15,032	26.9	29,894	4.10	1,345	31.6	1.67	22,564	75	400	
10.00 to < 100.00	2,671	768	21.9	2,840	28.78	82	26.2	1.16	2,363	83	198	
100.00 (Default)	1,782	128	20.1	1,808	100.00	72	41.1	1.24	2,989	165	674	
Sub-total at 31 Dec 2020	267,332	147,785	28.0	308,513	2.12	11,032	29.2	1.96	143,362	46	2,058	3,217
Portfolio (iv) – Corporate – other												
0.00 to < 0.15	569,973	639,777	28.7	750,911	0.08	16,626	44.0	1.73	156,944	21	282	
0.15 to < 0.25	175,524	236,389	30.5	247,732	0.22	4,610	43.9	1.55	93,326	38	239	
0.25 to < 0.50	173,579	185,048	27.5	224,217	0.37	4,110	39.6	1.59	100,407	45	328	
0.50 to < 0.75	210,512	169,480	25.0	251,509	0.63	4,175	37.5	1.52	137,653	55	594	
0.75 to < 2.50	457,822	346,800	24.1	529,833	1.35	10,285	37.0	1.43	386,985	73	2,633	
2.50 to < 10.00	83,157	86,668	23.1	103,341	4.22	3,256	40.0	1.28	116,502	113	1,775	
10.00 to < 100.00	5,923	4,274	23.1	7,948	16.11	286	41.9	1.27	14,137	178	508	
100.00 (Default)	25,722	2,807	13.6	26,104	100.00	549	45.6	1.06	28,166	108	15,060	
Sub-total at 31 Dec 2020	1,702,212	1,671,243	27.2	2,141,595	1.98	43,897	40.8	1.56	1,034,120	48	21,419	31,631

Table 34.2: CR6 – Credit risk exposures by portfolio and PD range – for IRB approach (Retail)

	a	b	c	d	e	f	g	h	i	j	k	l
PD scale	Original on-balance sheet gross exposure HK\$m	Off-balance sheet exposures pre-CCF HK\$m	Average CCF %	EAD post-CRM and post-CCF HK\$m	Average PD %	Number of obligors	Average LGD %	Average maturity ¹ years	RWAs HK\$m	RWA density %	EL HK\$m	Provisions HK\$m
Portfolio (v) – Retail – qualifying revolving retail exposures												
0.00 to < 0.15	28,495	452,481	34.0	182,456	0.06	4,319,973	101.0	–	6,893	4	107	
0.15 to < 0.25	2,870	16,905	47.6	10,912	0.22	237,417	101.0	–	1,292	12	25	
0.25 to < 0.50	7,530	31,152	37.9	19,349	0.40	356,249	97.4	–	3,598	19	75	
0.50 to < 0.75	6,079	7,518	52.8	10,048	0.58	96,019	97.8	–	2,567	26	57	
0.75 to < 2.50	15,230	34,669	38.9	28,703	1.34	335,259	97.1	–	13,442	47	373	
2.50 to < 10.00	9,293	5,712	58.4	12,630	4.58	122,067	91.0	–	13,163	104	531	
10.00 to < 100.00	3,886	1,447	62.8	4,795	22.62	48,492	87.8	–	9,131	190	970	
100.00 (Default)	193	52	1.4	194	100.00	2,356	97.9	–	333	172	164	
Sub-total at 31 Dec 2020	73,576	549,936	35.6	269,087	0.93	5,517,832	99.5	–	50,419	19	2,302	3,656
Portfolio (vi) – Retail – Residential mortgage exposures												
0.00 to < 0.15	424,504	29,517	54.7	440,637	0.09	154,769	14.4	–	75,322	17	55	
0.15 to < 0.25	194,408	14,374	88.7	207,154	0.19	111,232	12.2	–	28,027	14	40	
0.25 to < 0.50	138,550	2,039	56.2	139,696	0.35	51,488	10.1	–	22,172	16	44	
0.50 to < 0.75	95,993	1,364	115.9	97,574	0.57	45,004	16.1	–	19,160	20	86	
0.75 to < 2.50	101,399	964	95.3	102,318	1.17	52,248	11.3	–	21,133	21	130	
2.50 to < 10.00	32,829	161	116.0	33,015	4.77	16,111	11.7	–	12,385	38	187	
10.00 to < 100.00	15,098	244	93.5	15,326	22.71	7,860	12.0	–	8,915	58	284	
100.00 (Default)	5,768	49	–	5,768	100.00	4,762	13.5	–	6,204	108	289	
Sub-total at 31 Dec 2020	1,008,549	48,712	67.6	1,041,488	1.33	443,474	13.1	–	193,318	19	1,115	1,599
Portfolio (vii) – Retail – small business retail exposures												
0.00 to < 0.15	2,548	7	100.0	2,556	0.08	1,014	9.5	–	55	2	–	
0.15 to < 0.25	369	2	100.0	371	0.19	119	15.7	–	24	6	–	
0.25 to < 0.50	601	1	100.0	602	0.42	118	28.8	–	109	18	1	
0.50 to < 0.75	334	–	–	334	0.55	144	0.8	–	2	1	–	
0.75 to < 2.50	396	2	100.0	397	1.23	79	24.8	–	109	27	1	
2.50 to < 10.00	454	1	100.0	454	6.10	165	7.4	–	53	12	3	
10.00 to < 100.00	–	–	–	–	–	–	–	–	–	–	–	
100.00 (Default)	4	–	–	4	100.00	2	10.2	–	4	114	–	
Sub-total at 31 Dec 2020	4,706	13	100.0	4,718	0.92	1,641	12.9	–	356	8	5	5
Portfolio (viii) – Other retail exposures to individuals												
0.00 to < 0.15	5,362	27,475	31.4	13,982	0.09	75,731	9.4	–	277	2	1	
0.15 to < 0.25	2,391	18,685	33.2	8,586	0.20	58,796	5.3	–	188	2	1	
0.25 to < 0.50	9,085	14,071	38.8	14,538	0.34	91,104	52.2	–	4,224	29	24	
0.50 to < 0.75	5,136	4,669	48.1	7,380	0.66	23,043	23.6	–	1,391	19	10	
0.75 to < 2.50	7,263	1,771	33.9	7,864	1.44	38,585	66.8	–	6,054	77	79	
2.50 to < 10.00	5,526	2,771	45.1	6,775	3.47	29,546	38.8	–	3,831	57	115	
10.00 to < 100.00	681	49	49.5	705	19.53	5,510	89.8	–	1,323	188	127	
100.00 (Default)	110	20	14.7	113	100.00	1,225	69.2	–	221	195	63	
Sub-total at 31 Dec 2020	35,554	69,511	35.1	59,943	1.21	323,540	32.8	–	17,509	29	420	434

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Table 34.3: CR6 – Credit risk exposures by portfolio and PD range – for IRB approach (Total)

	a	b	c	d	e	f	g	h	i	j	k	l
	Original on-balance sheet gross exposure	Off-balance sheet exposures pre-CCF	Average CCF	EAD post-CRM and post-CCF	Average PD	Number of obligors	Average LGD	Average ¹ maturity	RWAs	RWA density	EL	Provisions ²
	HK\$m	HK\$m	%	HK\$m	%		%	years	HK\$m	%	HK\$m	HK\$m
Total (sum of all portfolios) at 31 Dec 2020	5,592,222	2,553,127	30.3	6,351,844	1.07	6,358,237	36.0	1.46	1,653,636	26	27,991	43,410

¹ The average maturity is relevant to wholesale portfolios only.

² Provisions in this table represent the eligible provisions as defined under Division 1, Part 6 of the BCR which include the regulatory reserves for general banking risks and the impairment allowances reported under IRB approach.

The increase in weighted average PD from 0.93% in June 2020 to 1.07% in December 2020 was mainly driven by an increase in default exposures in corporate and residential mortgage portfolios.

Table 35: CR10 – Specialised Lending under supervisory slotting criteria approach – Other than HVCRE

Supervisory Rating Grade	Remaining Maturity	a	b	c	d		e		f
		On-balance sheet exposure amount	Off-balance sheet exposure amount	Supervisory risk weight ('SRW')	Project Finance ('PF')	Income Producing Real Estate ('IPRE')	Total	RWAs	Expected loss amount
		HK\$m	HK\$m	%	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m
Strong [^]	Less than 2.5 years	24,191	3,834	50	960	24,620	25,580	12,790	–
Strong	Less than 2.5 years	4,860	556	70	2,684	2,378	5,062	3,544	20
Strong [^]	Equal to or more than 2.5 years	2,213	2,184	50	3,108	–	3,108	1,554	–
Strong	Equal to or more than 2.5 years	30,226	2,048	70	6,933	24,097	31,030	21,721	124
Good [^]	Less than 2.5 years	9,335	1,395	70	939	8,983	9,922	6,945	40
Good	Less than 2.5 years	5,417	2,652	90	–	6,375	6,375	5,738	51
Good [^]	Equal to or more than 2.5 years	2,480	332	70	2,546	–	2,546	1,782	10
Good	Equal to or more than 2.5 years	7,057	1,268	90	–	7,514	7,514	6,763	60
Satisfactory		4,746	1,856	115	2,571	2,656	5,227	6,010	146
Weak		1,502	12	250	1,479	27	1,506	3,765	120
Default		716	16	–	680	44	724	–	362
Total at 31 Dec 2020		92,743	16,153		21,900	76,694	98,594	70,612	933

[^] Use of preferential risk weights.

Table 36: CR10 – Equity exposures under the simple risk weight method

	a	c	d	e
	On-balance sheet exposure amount	SRW	EAD amount	RWAs
	HK\$m	%	HK\$m	HK\$m
Categories				
All other equity exposures	9,575	400	9,575	38,302
Total at 31 Dec 2020	9,575		9,575	38,302

Credit risk under standardised approach

Use of external credit ratings under the standardised approach for credit risk

The standardised (credit risk) ('STC') approach is applied where exposures do not qualify for use of an IRB approach and/or where an exemption from IRB has been granted. The STC approach requires banks to use risk assessments prepared by External Credit Assessment Institutions ('ECAI') to determine the risk weightings applied to rated counterparties.

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

- public sector entity ('PSE') exposures;

- bank or corporate exposures (those without an internal CRR);
- collective investment scheme ('CIS') exposures.

The group uses external credit ratings from the following ECAIs:

- Fitch Ratings;
- Moody's Investors Service; and
- Standard & Poor's Ratings Services.

The group determines ECAI issuer ratings or ECAI issue-specific ratings in the banking book in a process consistent with Part 4 of the BCR.

All other exposure classes are assigned risk weightings as prescribed in the HKMA's BCR.

Table 37: CR5 – Credit risk exposures by asset classes and by risk weights – for STC approach

Risk Weight	a	c	d	e	f	g	h	j
	0% HK\$m	20% HK\$m	35% HK\$m	50% HK\$m	75% HK\$m	100% HK\$m	150% HK\$m	Total credit risk exposures amount (post CCF and post CRM) HK\$m
Exposure class								
1 Sovereign exposures	47,829	236	–	452	–	–	–	48,517
2 PSE exposures	131,475	19,658	–	2,930	–	5,766	1	159,830
2a of which: domestic PSEs	–	4,275	–	–	–	–	–	4,275
2b of which: foreign PSEs	131,475	15,383	–	2,930	–	5,766	1	155,555
4 Bank exposures	–	272	–	520	–	542	6	1,340
5 Securities firm exposures	–	–	–	1	–	–	–	1
6 Corporate exposures	–	9,487	–	764	–	96,200	194	106,645
10 Regulatory retail exposures	–	–	–	–	52,389	–	–	52,389
11 Residential mortgage loans	–	–	103,206	–	8,990	7,410	–	119,606
12 Other exposures which are not past due exposures	–	–	–	–	–	5,980	–	5,980
13 Past due exposures	59	1	–	–	–	302	2,605	2,967
15 Total at 31 Dec 2020	179,363	29,654	103,206	4,667	61,379	116,200	2,806	497,275

Credit risk mitigation

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

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

Collateral

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

enterprises ('SMEs') are commonly granted against guarantees given by their owners and/or directors.

For credit risk mitigants in the form of immovable property, the key determinant of concentration is geographic.

Financial collateral

In the institutional sector, trading facilities are supported by charges over financial instruments, such as cash, debt securities and equities. Financial collateral in the form of marketable securities is used in much of the group's derivatives activities and in securities financing transactions, such as repos, reverse repos, securities lending and borrowing. Netting is used extensively and is a prominent feature of market standard documentation.

In the non-trading book, we provide customers with working capital management products. In some cases, these products combine loans and advances to customers with customer accounts over which we have right of offset which comply with the regulatory requirements for on-balance sheet netting. Where this applies, the customer accounts are treated as cash collateral and are reflected in our LGD estimates.

Under on-balance sheet netting, the customer accounts are treated as cash collateral and the effects of this collateral are incorporated in our LGD estimates. For risk management purposes, the net amounts of such exposures are subject to limits and the relevant customer agreements are subject to review to ensure the legal right of offset remains appropriate.

Other forms of credit risk mitigation

Our Global Banking and Markets ('GBM') business utilises credit risk mitigation to manage the credit risk of its portfolios, with the goal of reducing concentrations in individual names, sectors or portfolios. The techniques in use include credit default swap ('CDS') purchases, structured credit notes and securitisation structures. Buying credit protection creates credit exposure against the protection provider, which is monitored as part of the overall credit exposure to them. Where applicable, the transaction is entered into directly with a central clearing house counterparty; otherwise our exposure to CDS protection providers is diversified among mainly banking counterparties with strong credit ratings. In our corporate lending, we also take guarantees from corporates and Export Credit Agencies ('ECA'). Corporates would normally provide guarantees as part of a parent/subsidiary or common parent relationship and would span a number of credit grades. The ECAs will normally be investment grade.

Policy and procedures

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

Valuing collateral

Valuation strategies are established to monitor collateral mitigants to ensure that they will continue to provide the anticipated secure secondary repayment source. The frequency of valuation increases with the volatility of the collateral. For residential mortgages, Group policy prescribes revaluation at intervals of up to three years, or more frequently as the need arises; for example, where the loan is in distress or where market conditions are subject to significant change. Residential property collateral values are determined through a combination of professional appraisals, house price indices or statistical analysis.

Local market conditions determine the frequency of valuation for CRE. Revaluations are sought where, for example, material concerns arise in relation to the performance of the collateral. CRE revaluation also occurs commonly in circumstances where an obligor's credit quality has declined sufficiently to cause concern that the principal payment source may not fully meet the obligation.

Recognition of risk mitigation under the IRB approach

Within an IRB approach, risk mitigants are considered in two broad categories:

- those which reduce the intrinsic PD of an obligor and therefore operate as determinants of PD; and
- those which affect the estimated recoverability of obligations and require adjustment of LGD or, in certain limited circumstances, EAD.

The first category typically includes full parental guarantees where one obligor within a group guarantees another. In these circumstances, the parent guarantor materially influences the PD of the guaranteed obligor. PD estimates are also subject to a 'sovereign ceiling', constraining the risk ratings assigned to obligors in countries of higher risk, and where only partial parental support exists. In certain jurisdictions, certain types of third-party guarantee are recognised by substituting the obligor's PD with that of the guarantor.

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

The main types of provider of guarantees are banks, other financial institutions and corporates. The creditworthiness of providers of unfunded credit risk mitigation is taken into consideration as part of the guarantor's risk profile. Internal limits for such contingent exposure are approved in the same way as direct exposures.

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

- Unfunded protection, which includes credit derivatives and guarantees, is reflected through adjustment or determination of PD or LGD. Under the advanced IRB approach, recognition may be through PD or LGD.
- Eligible financial collateral under the advanced IRB approach is recognised in LGD models.
- For all other types of collateral, including real estate, the LGD for exposures calculated under the advanced IRB approach are calculated by models.

Recognition of risk mitigation under the standardised approach

Where credit risk mitigation is available in the form of an eligible guarantee, non-financial collateral or credit derivatives, the exposure is divided into covered and uncovered portions. The covered portion, which is determined after applying an appropriate 'haircut' for currency and maturity mismatches (and for omission of restructuring clauses for credit derivatives, where appropriate) to the amount of the protection provided and attracts the risk weight of the protection provider. The uncovered portion attracts the risk weight of the obligor.

The value of exposure fully or partially covered by eligible financial collateral is adjusted under the financial collateral comprehensive method using supervisory volatility adjustments (including those arising from currency mismatch) which are determined by the specific type of collateral (and its credit quality, in the case of eligible debt securities) and its liquidation period. The adjusted exposure value is subject to the risk weight of the obligor.

Table 38: CR3 – Overview of recognised credit risk mitigation

	a	b1	b	d	f	
	Exposures unsecured: carrying amount HK\$m	Exposures to be secured HK\$m	Exposures secured by recognised collateral HK\$m	Exposures secured by recognised guarantees HK\$m	Exposures secured by recognised credit derivative contracts HK\$m	
1	Loans	2,019,140	2,468,100	2,051,515	416,288	297
2	Debt securities	1,656,851	44,965	–	44,965	–
3	Total at 31 Dec 2020	3,675,991	2,513,065	2,051,515	461,253	297
4	<i>of which: defaulted</i>	<i>5,853</i>	<i>14,665</i>	<i>13,991</i>	<i>674</i>	<i>–</i>

The increase in unsecured exposures of HK\$170,033m in the second half of 2020 was mainly due to an increase in sovereign exposures from deployment of the commercial surplus on treasury bills and notes.

Table 39: CR7 – Effects on RWAs of recognised credit derivative contracts used as recognised credit risk mitigation – for IRB approach

	a	b	
	Pre-credit derivatives RWAs HK\$m	Actual RWAs HK\$m	
1	Corporate – Specialised lending under supervisory slotting criteria approach (project finance)	17,859	17,859
4	Corporate – Specialised lending under supervisory slotting criteria approach (income-producing real estate)	52,753	52,753
5	Corporate – Specialised lending (high-volatility commercial real estate)	14	14
6	Corporate – Small-and-medium sized corporates	143,362	143,362
7	Corporate – Other corporates	1,034,126	1,034,120
8	Sovereigns	132,163	132,163
10	Multilateral development banks	6,010	6,010
11	Bank exposures – Banks	55,657	55,657
12	Bank exposures – Securities firms	20,722	20,722
14	Retail – Small business retail exposures	356	356
15	Retail – Residential mortgages to individuals	189,197	189,197
16	Retail – Residential mortgages to property-holding shell companies	4,120	4,120
17	Retail – Qualifying revolving retail exposures ('QRRE')	50,419	50,419
18	Retail – Other retail exposures to individuals	17,509	17,509
19	Equity – Equity exposures under market-based approach (simple risk weight method)	38,302	38,302
26	Other – Cash items	5,117	5,117
27	Other – Other items	145,728	145,728
28	Total (under the IRB calculation approaches) at 31 Dec 2020	1,913,414	1,913,408

Credit risk mitigation effects from credit derivative contracts are recognised through LGD adjustments. Covered exposures are subject to lower risk weights as a result of reduced LGDs.

Table 40: CR4 – Credit risk exposures and effects of recognised credit risk mitigation – for STC approach

	a	b	c	d	e	f
Exposure classes	Exposures pre-CCF and pre-CRM		Exposures post-CCF and post-CRM		RWAs and RWA density	
	On-balance sheet amount HK\$m	Off-balance sheet amount HK\$m	On-balance sheet amount HK\$m	Off-balance sheet amount HK\$m	RWAs HK\$m	RWA density %
1	Sovereign exposures	–	47,882	635	273	1
2	PSE exposures	211,211	9,826	157,590	2,240	7
2a	<i>of which: domestic PSEs</i>	<i>3,276</i>	<i>2,331</i>	<i>3,276</i>	<i>999</i>	<i>20</i>
2b	<i>of which: foreign PSEs</i>	<i>207,935</i>	<i>7,495</i>	<i>154,314</i>	<i>1,241</i>	<i>7</i>
4	Bank exposures	1,075	1,117	1,148	192	65
5	Securities firm exposures	1	15	1	–	50
6	Corporate exposures	117,653	155,225	100,144	6,501	93
10	Regulatory retail exposures	54,432	387,336	52,064	325	75
11	Residential mortgage loans	117,829	12,213	117,770	1,836	42
12	Other exposures which are not past due exposures	15,268	18,189	5,833	147	100
13	Past due exposures	2,472	1,078	2,472	495	142
15	Total at 31 Dec 2020	519,940	584,999	484,904	12,371	42

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Model performance

The disclosure covers wholesale and retail models which have been approved by regulators. It compares the PD estimated by our IRB models against actual default experience and shows our IRB models are generally conservative.

Table 41: CR9 – Back-testing of PD per portfolio

b	c(i)	c(ii)	c(iii)	d	e	f		g	h	i
PD range	External rating equivalent (S&P)	External rating equivalent (Moody's)	External rating equivalent (Fitch)	Weighted average PD % ¹	Arithmetic average PD by obligors % ¹	Number of obligors ^{2,3}		Defaulted obligors in the year	Of which: new defaulted obligors in the year	Average historical annual default rate %
						Beginning of the year	End of the year			
Sovereigns										
0.00 to <0.15	AAA to BBB	Aaa to Baa2	AAA to BBB	0.02	0.03	46	45	–	–	–
0.15 to <0.25	BBB-	Baa3	BBB-	0.22	0.22	2	2	–	–	–
0.25 to <0.50	BBB-	Baa3	BBB-	0.37	0.37	1	2	–	–	–
0.50 to <0.75	BB+ to BB	Ba1 to Ba2	BB+ to BB	0.63	0.63	2	2	–	–	–
0.75 to <2.50	BB- to B+	Ba3 to B2	BB- to B-	1.12	1.09	5	1	–	–	–
2.5 to <10.00	B to B-	B2 to Caa1	CCC+ to CCC	4.20	4.20	1	4	–	–	–
10.00 to <100.00	B- to C	Caa1 to C	CCC to C	–	–	–	–	–	–	–
Banks										
0.00 to <0.15	AAA to A-	Aaa to Baa1	AAA to BBB+	0.04	0.07	190	234	–	–	–
0.15 to <0.25	BBB+	Baa2	BBB	0.22	0.22	40	62	–	–	–
0.25 to <0.50	BBB	Baa3	BBB-	0.37	0.37	26	36	–	–	–
0.50 to <0.75	BBB-	Baa3	BBB-	0.63	0.63	22	36	–	–	–
0.75 to <2.50	BB+ to BB-	Ba1 to B1	BB+ to B+	1.09	1.25	50	34	–	–	–
2.5 to <10.00	B+ to B-	B2 to Caa1	B to CCC+	3.24	4.52	14	19	1	–	1.43
10.00 to <100.00	CCC+ to C	Caa1 to C	CCC to C	18.94	13.00	1	2	–	–	–
Corporate – small-and-medium sized corporates										
0.00 to <0.15	AAA to A-	Aaa to Baa1	AAA to BBB+	0.10	0.11	637	482	–	–	0.03
0.15 to <0.25	BBB+	Baa2	BBB	0.22	0.22	842	731	2	–	0.21
0.25 to <0.50	BBB	Baa3	BBB-	0.37	0.37	1,271	1,112	2	–	0.31
0.50 to <0.75	BBB-	Baa3	BBB-	0.63	0.63	1,311	1,252	2	–	0.18
0.75 to <2.50	BB+ to BB-	Ba1 to B1	BB+ to B+	1.42	1.49	4,670	4,664	34	–	0.59
2.5 to <10.00	B+ to B-	B2 to Caa1	B to CCC+	3.96	4.03	865	1,184	10	–	1.89
10.00 to <100.00	CCC+ to C	Caa1 to C	CCC to C	11.11	11.86	42	60	11	–	14.46
Corporate – other⁴										
0.00 to <0.15	AAA to A-	Aaa to Baa1	AAA to BBB+	0.08	0.09	4,129	3,635	–	–	0.02
0.15 to <0.25	BBB+	Baa2	BBB	0.22	0.22	2,183	2,006	4	–	0.08
0.25 to <0.50	BBB	Baa3	BBB-	0.37	0.37	2,311	2,032	15	1	0.16
0.50 to <0.75	BBB-	Baa3	BBB-	0.63	0.63	2,078	2,210	1	–	0.18
0.75 to <2.50	BB+ to BB-	Ba1 to B1	BB+ to B+	1.42	1.45	5,378	5,627	40	–	0.52
2.5 to <10.00	B+ to B-	B2 to Caa1	B to CCC+	4.06	4.13	1,344	1,710	50	–	2.09
10.00 to <100.00	CCC+ to C	Caa1 to C	CCC to C	13.46	13.74	124	145	29	–	12.75

1 The weighted average PD% and the arithmetic average PD% by obligors are based on the position at the beginning of the year.

2 The number of obligors represents the obligor rated by key wholesale IRB models directly.

3 The number of obligors for corporates is being reported at counterparty level, while the number of obligors for banks and multilateral development banks is being reported at entity level. Sovereigns are reported at country level based on local currency and foreign currency ratings.

4 Specialised lending exposures are excluded.

Compared to the previous year, the higher average historical annual default rate% for the PD range of 10% to <100% reflects the increased defaults in 2020 under the global pandemic stress, though still well within the estimated PD range.

Table 41: CR9 – Back-testing of PD per portfolio (continued)

b	d	e	f		g	h	i
PD range	Weighted average PD % ¹	Arithmetic average PD % by obligors ¹	Number of obligors ²		Defaulted obligors in the year	of which: new defaulted obligors in the year	Average historical annual default rate %
			Beginning of the year	End of the year			
Retail – QRRE							
0.00 to < 0.15	0.06	0.06	4,573,126	4,871,593	1,979	16	0.04
0.15 to < 0.25	0.22	0.22	253,369	243,129	341	6	0.13
0.25 to < 0.50	0.39	0.40	418,280	374,417	1,227	17	0.25
0.50 to < 0.75	0.58	0.59	110,751	98,220	563	25	0.44
0.75 to < 2.50	1.36	1.32	571,919	494,981	4,334	101	0.67
2.50 to < 10.00	4.60	4.50	178,395	147,719	5,679	36	2.86
10.00 to < 100.00	21.05	23.58	64,386	52,969	8,258	7	10.99
Retail – Residential mortgage exposures							
0.00 to < 0.15	0.09	0.09	153,952	164,652	38	4	0.02
0.15 to < 0.25	0.19	0.18	116,978	119,327	75	3	0.10
0.25 to < 0.50	0.34	0.35	52,173	55,798	42	–	0.11
0.50 to < 0.75	0.58	0.60	51,589	47,730	103	–	0.27
0.75 to < 2.50	1.17	1.20	56,821	55,250	98	–	0.29
2.50 to < 10.00	4.50	4.89	20,652	16,973	283	1	1.93
10.00 to < 100.00	17.62	18.65	6,359	8,445	507	–	10.94
Retail – small business retail exposures							
0.00 to < 0.15	0.08	0.08	1,237	1,200	–	–	–
0.15 to < 0.25	0.19	0.19	166	133	–	–	–
0.25 to < 0.50	0.36	0.37	147	165	–	–	–
0.50 to < 0.75	0.59	0.57	214	167	–	–	–
0.75 to < 2.50	1.32	1.32	62	101	–	–	–
2.50 to < 10.00	5.60	5.52	220	203	3	–	0.27
10.00 to < 100.00	–	–	–	–	–	–	–
Other retail exposures to individuals							
0.00 to < 0.15	0.09	0.09	90,936	40,418	39	–	0.06
0.15 to < 0.25	0.21	0.21	59,043	29,636	32	–	0.08
0.25 to < 0.50	0.37	0.38	43,879	72,868	46	3	0.16
0.50 to < 0.75	0.64	0.58	34,588	17,273	117	9	0.41
0.75 to < 2.50	1.60	1.64	31,950	36,017	302	46	0.97
2.50 to < 10.00	3.42	4.28	44,598	26,215	1,156	81	2.32
10.00 to < 100.00	16.10	16.70	7,466	5,928	856	3	10.34

1 The weighted average PD% and the arithmetic average PD% by obligors are based on the position at the beginning of the year.

2 The number of obligors is based on account level information for all IRB portfolios except for the Hong Kong overdraft portfolio, which is presented at an aggregated level by consolidating savings and current account information.

Counterparty credit risk exposures

Counterparty credit risk management

Counterparty credit risk ('CCR') arises for derivatives and securities financing transactions ('SFTs'). It is calculated in both the trading and non-trading books, and is the risk that a counterparty may default before settlement of the transaction. CCR is generated primarily in our wholesale global businesses.

Two approaches may be used to calculate derivative exposure values for CCR: current exposure method ('CEM') or the internal models (counterparty credit risk) approach ('IMM'). Exposure values calculated under these approaches are used to determine RWAs. Across the group, we use the CEM and IMM approaches.

Under the CEM approach, the EAD is calculated as current exposure plus regulatory add-ons. We use this approach for all products not covered by our IMM permission. Under the IMM approach, EAD is calculated by multiplying the effective expected positive exposure with a multiplier called 'alpha'.

Alpha (set to a default value of 1.4) accounts for several portfolio features that increase EL above that indicated by effective expected positive exposure in the event of default, such as:

- co-variance of exposures;
- correlation between exposures and default;
- level of volatility/correlation that might coincide with a downturn;
- concentration risk; and
- model risk.

The effective expected positive exposure is derived from simulation, pricing and aggregation internal models approved by the HKMA. The IMM model is subject to ongoing model validation including monthly model performance monitoring.

From a risk management perspective, products not covered by IMM are subject to conservative asset class add-ons, in addition to daily monitoring of credit limit utilisation.

The potential future exposure ('PFE') measures used for CCR management are calibrated to the 95th percentile. The measures consider volatility, trade maturity and the counterparty legal documentation covering netting and collateral.

Limits for CCR exposures are assigned within the overall credit process. The credit risk function assigns a limit against each counterparty to cover derivatives exposure which may arise as a result of a counterparty default. The magnitude of this limit will depend on the overall risk appetite and type of derivatives and SFT trading undertaken with the counterparty.

The models and methodologies used in the calculation of CCR are overseen and monitored by the Regional Traded Risk Model Oversight Forum. Models are subject to ongoing monitoring and validation. Additionally, they are subject to independent review at inception and periodically, in line with the model review cycle.

Credit valuation adjustment

Credit valuation adjustments ('CVA') represent the risk of loss as a result of adverse changes to the credit quality of counterparties in derivative transactions. Where we have both specific risk VaR approval and IMM approval for a product, the CVA VaR approach has been used to calculate the CVA capital charge.

Where we do not hold both approvals, the standardised approach has been applied.

Collateral arrangements

Our policy is to revalue all traded transactions and associated collateral positions on a daily basis. An independent collateral

management function manages the collateral process, including pledging and receiving collateral and investigating disputes and non-receipts.

Eligible collateral types are controlled under a policy to ensure price transparency, price stability, liquidity, enforceability, independence, reusability and eligibility for regulatory purposes. A valuation 'haircut' policy reflects the fact that collateral may fall in value between the date the collateral was called and the date of liquidation or enforcement. Approximately 98.4% of collateral held as variation margin under CSAs is either cash or liquid government securities.

Further information on gross fair value exposure and the offset due to legally enforceable netting and collateral is set out on the group's Annual Report and Accounts 2020.

Central counterparties

While exchange traded derivatives have been cleared through central counterparties ('CCPs') for many years, recent regulatory initiatives designed to reduce systemic risk in the banking system are directing increasing volumes of over-the-counter ('OTC') derivatives to be cleared through CCPs.

To manage the significant concentration of risk in CCPs that results from this, we have developed a risk appetite framework to manage risk accordingly, at the level of individual CCPs and globally. A dedicated CCP risk team has been established to manage the interface with CCPs and undertake in-depth due diligence of the unique risks associated with these organisations.

Wrong-way risk

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

There are two types of wrong-way risk:

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

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

The regional Traded Risk functions are responsible for the control and monitoring process within an overarching Group framework and limit framework.

Credit rating downgrade

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

At 31 December 2020, the value of the additional collateral pertaining to International Swaps and Derivatives Association CSA downgrade thresholds that we would potentially need to post with counterparties in the event of a one-notch downgrade of our rating was HK\$45m and for a two-notch downgrade was HK\$84m.

Table 42: CCR1 – Analysis of counterparty default risk exposures (other than those to CCPs) by approaches

	a	b	c	d	e	f
	Replacement cost ('RC') HK\$m	PFE HK\$m	Effective expected positive exposures ('EPE') HK\$m	Alpha (α) used for computing default risk exposure HK\$m	Default risk exposure after CRM HK\$m	RWAs HK\$m
1a CEM	31,448	37,057		N/A	67,861	19,864
2 IMM (CCR) approach			83,255	1.4	116,557	43,310
4 Comprehensive Approach (for SFTs)					119,385	17,064
6 Total at 31 Dec 2020						80,238

The increase in CEM and IMM (CCR) approach counterparty default risk exposures and RWAs in the second half of 2020 was driven by an increase in the positive fair value of derivative contracts.

Table 43: CCR2 – CVA capital charge

	a	b
	EAD post CRM HK\$m	RWAs HK\$m
Netting sets for which CVA capital charge is calculated by the advanced CVA method	116,557	19,822
1 (i) VaR (after application of multiplication factor if applicable)		5,901
2 (ii) Stressed VaR (after application of multiplication factor if applicable)		13,921
3 Netting sets for which CVA capital charge is calculated by the standardised CVA method	63,808	7,132
4 Total at 31 Dec 2020	180,365	26,954

Table 44: CCR6 – Credit-related derivatives contracts

	a	b
	Protection bought HK\$m	Protection sold HK\$m
At 31 Dec 2020		
Notional amounts		
Single-name credit default swaps	213,733	186,678
Index credit default swaps	71,233	67,986
Total return swaps	15,612	–
Total notional amounts	300,578	254,664
Fair values		
Positive fair value (asset)	117	5,305
Negative fair value (liability)	(5,919)	(77)

The decrease in the notional amount of credit default swaps of HK\$251,731m in the second half of 2020 was due to a decrease in client demand for both bought and sold protection.

Table 45: CCR5 – Composition of collateral for counterparty default risk exposures (including those for contracts or transactions cleared through CCPs)

	Derivative contracts				SFTs	
	Fair value of recognised collateral received		Fair value of posted collateral		Fair value of recognised collateral received	Fair value of posted collateral
	Segregated HK\$m	Unsegregated HK\$m	Segregated HK\$m	Unsegregated HK\$m	HK\$m	HK\$m
Cash – domestic currency	–	2,959	–	2,693	65	22,251
Cash – other currencies	–	77,104	–	70,685	166,547	561,228
Domestic sovereign debt	–	4	–	–	9,037	3,622
Other sovereign debt	–	8,284	5,211	24,658	368,583	202,817
Government agency debt	–	147	–	2,039	–	–
Corporate bonds	5,591	5,832	5,300	–	211,431	48,468
Equity securities	–	1,564	–	–	48,921	42,899
Other collateral	–	5,317	–	–	–	–
Total at 31 Dec 2020	5,591	101,211	10,511	100,075	804,584	881,285

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Table 46: CCR8 – Exposures to CCPs

	a	b
	Exposure after CRM HK\$m	RWAs HK\$m
At 31 Dec 2020		
1 Exposures of the AI as clearing member or client to qualifying CCPs (total)		1,861
2 Default risk exposures to qualifying CCPs (excluding items disclosed in rows 7 to 10), of which:	8,963	179
3 (i) OTC derivative transactions	2,740	55
4 (ii) exchange-traded derivative contracts	6,223	124
7 Segregated initial margin	5,211	
8 Unsegregated initial margin	7,393	1,029
9 Funded default fund contributions	1,614	653
11 Exposures of the AI as clearing member or client to non-qualifying CCPs (total)		352
18 Unsegregated initial margin	16	16
19 Funded default fund contributions	27	336

Counterparty default risk under internal ratings-based approach

Table 47: CCR4 – Counterparty default risk exposures (other than those to CCPs) by portfolio and PD range – for IRB approach

	a	b	c	d	e	f	g
PD scale	EAD post-CRM HK\$m	Average PD %	Number of obligors	Average LGD %	Average maturity years	RWAs HK\$m	RWA density %
Portfolio (i) – Sovereign							
0.00 to < 0.15	51,579	0.03	50	44.9	0.40	2,005	4
0.15 to < 0.25	5,203	0.22	2	45.0	0.02	1,570	30
0.25 to < 0.50	112	0.37	2	45.0	1.32	54	48
0.50 to < 0.75	121	0.63	2	47.5	1.91	90	74
0.75 to < 2.50	–	–	–	–	–	–	–
2.50 to < 10.00	12	7.85	1	45.0	1.00	18	159
10.00 to < 100.00	–	–	–	–	–	–	–
100.00 (Default)	–	–	–	–	–	–	–
Sub-total at 31 Dec 2020	57,027	0.05	57	44.9	0.37	3,737	7
Portfolio (ii) – Bank							
0.00 to < 0.15	128,963	0.05	1,497	34.8	0.99	15,384	12
0.15 to < 0.25	14,747	0.22	158	46.8	0.71	5,962	40
0.25 to < 0.50	6,156	0.37	155	48.4	0.70	3,397	55
0.50 to < 0.75	1,691	0.63	42	46.1	0.81	1,247	74
0.75 to < 2.50	642	0.89	33	48.5	0.58	547	85
2.50 to < 10.00	24	3.52	10	51.5	1.06	36	151
10.00 to < 100.00	–	–	–	–	–	–	–
100.00 (Default)	–	100.00	1	45.0	1.00	–	–
Sub-total at 31 Dec 2020	152,223	0.09	1,896	36.7	0.95	26,573	17
Portfolio (iii) – Corporate							
0.00 to < 0.15	43,112	0.09	1,697	46.9	2.09	12,008	28
0.15 to < 0.25	11,086	0.22	519	49.5	0.91	4,483	40
0.25 to < 0.50	5,102	0.37	408	49.2	1.57	3,074	60
0.50 to < 0.75	5,300	0.63	428	49.1	1.42	4,005	76
0.75 to < 2.50	10,441	1.37	994	51.6	1.26	10,568	101
2.50 to < 10.00	1,872	4.22	259	49.3	1.47	2,795	149
10.00 to < 100.00	19	10.03	11	61.2	1.21	47	243
100.00 (Default)	38	100.00	5	48.5	1.15	–	–
Sub-total at 31 Dec 2020	76,970	0.49	4,321	48.3	1.71	36,980	48
Total (sum of all portfolios) at 31 Dec 2020	286,220	0.19	6,274	41.4	1.04	67,290	24

Details on the scope of models for each of the regulatory portfolios can be found in the 'Credit risk under internal ratings-based approach' section from pages 26 to 28 of this document.

Counterparty default risk under standardised approach

Table 48: CCR3 – Counterparty default risk exposures (other than those to CCPs) by asset classes and by risk weights – for STC approach

	a	c	d	e	f	g	j
	0%	20%	50%	75%	100%	150%	Total default risk exposure after CRM
Risk Weight	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m
Exposure class							
1 Sovereign exposures	–	168	–	–	–	–	168
2 PSE exposures	967	632	444	–	–	–	2,043
2a of which: domestic PSEs	–	269	–	–	–	–	269
2b of which: foreign PSEs	967	363	444	–	–	–	1,774
4 Bank exposures	–	45	690	–	14	–	749
5 Securities firm exposures	–	–	23	–	–	–	23
6 Corporate exposures	16	–	–	–	9,457	60	9,533
8 Regulatory retail exposures	–	–	–	149	–	–	149
12 Total at 31 Dec 2020	983	845	1,157	149	9,471	60	12,665

Securitisation

Securitisation strategy

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

Securitisation activity

Our roles in the securitisation process are as follows:

- Originator: where we originate the assets being securitised, either directly or indirectly;
- Sponsor: where we establish and manage a securitisation programme that purchases exposures from third parties; and
- Investor: where we invest in a securitisation transaction directly or provide derivatives or liquidity facilities to a securitisation.

The group as originator

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

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

The group as sponsor

There were no outstanding underlying exposures in securitisation transactions where the group acted as a sponsor.

The group as investor

We have exposure to third-party securitisations across a wide range of sectors in the form of investments, liquidity facilities and as a derivative counterparty.

Monitoring of securitisation positions

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

In the case of re-securitisation positions, similar processes are conducted in respect of the underlying securitisations.

Liquidity risk of securitised assets is consistently managed as part of the group's liquidity and funding risk management framework and further details are provided on page 52 to 53 of the group's *Annual Report and Accounts 2020*.

Valuation of securitisation positions

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

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

Securitisation accounting treatment

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

Full details of these assessments and our accounting policy on structured entities may be found in Note 35 on the group's Financial Statements of the Annual Report and Accounts 2020.

We reassess the need to consolidate whenever there is a change in the substance of the relationship between the group and a structured entity.

The group enters into transactions in the normal course of business by which it transfers financial assets to structured entities. Depending on the circumstances, these transfers may either result in these financial assets being fully or partly derecognised, or continuing to be recognised in their entirety.

Full derecognition occurs when we transfer our contractual right to receive cash flows from the financial assets, or assume an obligation to pass on the cash flows from the assets, and transfer substantially all the risks and rewards of ownership. Only in the event that derecognition is achieved are sales and any resultant gains recognised in the financial statements.

Partial derecognition occurs when we sell or otherwise transfer financial assets in such a way that some but not substantially all of the risks and rewards of ownership are transferred and control is retained. These financial assets are recognised on the balance sheet to the extent of our continuing involvement and an associated liability is also recognised. The net carrying amount of the financial asset and associated liability will be based on the measurement basis of the financial asset, either the amortised cost or the fair value of the rights and obligations retained by the entity.

Securitisation regulatory treatment

For regulatory purposes, any reduction in RWAs that would be achieved by our own originated securitisations must satisfy section 229 (1) of the BCR. If achieved, the associated SPEs and underlying assets are not consolidated but exposures to them, including derivatives or liquidity facilities, are risk-weighted as securitisation positions.

For our securitisation banking book positions, we use the securitisation internal ratings-based approach, securitisation external ratings-based approach, securitisation standardised approach or securitisation fall-back approach to calculate the credit risk for our securitisation exposures. Securitisation positions in the trading book are under the standardised (market risk) approach, which calculates the market risk capital charge for specific risk interest rate exposures.

The group uses Standard & Poor's Rating Services, Moody's Investors Service and Fitch Ratings as the ECALs for each and all classes of securitisation exposures.

Analysis of securitisation exposures

The group's involvement in securitisation activities reflects the following:

- as an investor, the group's securitisation activities mainly consisted of changes to the existing portfolio mix in the normal course of business;
- as an originator, the group securitised HK\$5,354m of additional residential mortgages in the banking book into an existing SPE.

Table 49: SEC1 – Securitisation exposures in banking book

	a	b	c	g	h	i
	Acting as originator (excluding sponsor)			Acting as investor		
	Traditional HK\$m	Synthetic HK\$m	Sub-total HK\$m	Traditional HK\$m	Synthetic HK\$m	Sub-total HK\$m
At 31 Dec 2020						
1 Retail (total) – of which:	79,918	–	79,918	34,895	–	34,895
2 <i>residential mortgage</i>	79,918	–	79,918	15,699	–	15,699
3 <i>credit card</i>	–	–	–	7,796	–	7,796
4 <i>other retail exposures</i>	–	–	–	11,400	–	11,400

Table 50: SEC2 – Securitisation exposures in trading book

	g	i
	Acting as investor	
	Traditional HK\$m	Sub-total HK\$m
At 31 Dec 2020		
1 Retail (total) – of which:	6,703	6,703
2 <i>residential mortgage</i>	4,659	4,659
4 <i>other retail exposures</i>	2,044	2,044

Table 51: SEC4 – Securitisation exposures in banking book and associated capital requirements – where AI acts as investor

	a	b	c	d	g	h	k	l	o	p
	Exposure values (by RW bands)				Exposure values (by regulatory approach)		RWAs (by regulatory approach)		Capital charges after cap	
	≤20% RW HK\$m	>20% to 50% RW HK\$m	>50% to 100% RW HK\$m	>100% to <1250% RW HK\$m	SEC-ERBA (including IAA) HK\$m	SEC-SA HK\$m	SEC-ERBA (including IAA) HK\$m	SEC-SA HK\$m	SEC-ERBA (including IAA) HK\$m	SEC-SA HK\$m
At 31 Dec 2020										
1 Total exposures	27,708	2,717	1,940	2,530	27,607	7,288	8,020	2,209	642	177
2 Traditional securitisation	27,708	2,717	1,940	2,530	27,607	7,288	8,020	2,209	642	177
3 <i>of which: securitisation</i>	27,708	2,717	1,940	2,530	27,607	7,288	8,020	2,209	642	177
4 <i>of which: retail</i>	27,708	2,717	1,940	2,530	27,607	7,288	8,020	2,209	642	177

Market risk

Overview and governance

Market risk is the risk that movements in market factors, such as foreign exchange rates, interest rates, credit spreads, equity prices and commodity prices, will reduce our income or the value of our portfolios.

Exposures to market risk

Exposure to market risk is separated into two portfolios:

- Trading portfolios: these comprise positions held for client servicing and market-making, with the intention of short-term resale and/or to hedge risks resulting from such positions.
- Non-trading portfolios: these comprise positions that primarily arise from the interest rate management of our retail and commercial banking assets and liabilities, financial investments measured at fair value through other comprehensive income, debt instruments measured at amortised cost, and exposures arising from our insurance operations.

Where appropriate, the group applies similar risk management policies and measurement techniques to both trading and non-trading portfolios. Our objective is to manage and control market risk exposures to optimise return on risk while maintaining a market profile consistent with our established risk appetite.

Market risk governance

The majority of the total VaR, trading VaR, stressed VaR ('SVaR') and incremental risk charge ('IRC') of HSBC resides in GBM. GBM manages market risk, within overall risk limits set by the group CRO and approved by the Board.

For a discussion on market risk governance and structure refer to the Annual Report and Accounts 2020.

Market risk measures

Monitoring and limiting market risk exposures

Our objective is to manage and control market risk exposures while maintaining a market risk profile consistent with our risk appetite.

We use a range of tools to monitor and limit market risk exposures, including sensitivity analysis, VaR and stress testing.

Sensitivity analysis

We use sensitivity measures to monitor the market risk positions within each asset class and risk type. Granular sensitivity limits are set for each trading desk taking into consideration market liquidity, customer demand and capital constraints, amongst other factors.

Value at risk

VaR is a technique that estimates the potential mark-to-market losses on derivative, security and money market positions in the trading and non-trading portfolios as a result of movements in market rates and prices over a specified time horizon and to a given level of confidence. The use of VaR is an integral part of our market risk management framework and is calculated for a scope of trading and non-trading positions which is wider than the set of trading positions which are capitalised under a VaR treatment.

Our models are predominantly based on historical simulation. VaR is calculated at a 99% confidence level for a one-day holding period, although a long period is additionally used for non-trading positions.

Our VaR models use historical series of market rates and prices, implicitly taking into account inter-relationships between different markets and rates such as interest rates and foreign exchange rates.

The primary categories of risk factors driving market risk are summarised below:

Risk factor	Description
Foreign exchange	Risk arising from change in foreign exchange rates and volatilities.
Interest rate and Credit	Risk arising from changes in the level of interest rates and credit spreads that may impact prices of interest rate and credit spread sensitive assets.
Equity	Risk arising from changes in equity prices, volatilities and dividend yields.
Commodity	Risk arising from changes in commodity prices.

Our models use a mixed approach when applying changes in market rates and prices:

- For equity, credit and foreign exchange risk factors, VaR scenarios are calculated on a relative return basis.
- For interest rates, a mixed approach is used. The scenarios applied to volatilities are on a relative return basis, whereas the scenarios applied to interest rate curves are calculated using a hybrid of absolute and relative returns. This approach enables the VaR to smoothly adapt to either low or high interest rate environments and to support negative rates.

We use the past two years as the historical data set in our VaR models and the scenarios are updated on a fortnightly basis. These scenarios are then applied to the market baselines and positions on a daily basis. The models incorporate the effect of option features on the underlying exposures.

The valuation approach used in our models varies:

- non-linear instruments use a full revaluation approach; and
- linear instruments, such as bonds and swaps, use a sensitivity based approach.

The nature of the VaR models means that an increase in observed market volatility will lead to an increase in VaR even without any changes in the underlying positions.

VaR model limitations

Although a valuable guide to risk, VaR is used with awareness of its limitations, for example:

- the use of historical data as a proxy for estimating future events may not encompass all potential events, particularly those which are extreme in nature;
- the use of a 1-day holding period for risk management purposes of trading and non-trading books assumes that this short period is sufficient to hedge or liquidate all positions;
- the use of a 99% confidence level, by definition does not take into account losses that might occur beyond this level of confidence; and
- VaR is calculated on the basis of exposures outstanding at the close of business and therefore does not necessarily reflect intra-day exposures.

Risk not in VaR framework

The risks not in VaR ('RNIV') framework captures risks from exposures in the trading book that are not captured well by the VaR model. Our VaR model is designed to capture significant basis risk, such as CDS versus bond, asset swap spreads and cross-currency basis. Other basis risks that are not completely covered in VaR, such as CCP swap basis risks, are complemented by our RNIV calculations and are integrated into our capital framework.

Risk factors are reviewed on a regular basis and either incorporated directly in the VaR models, where possible, or quantified through the VaR-based RNIV approach or a stress test approach within the RNIV framework. While VaR-based RNIVs are calculated by using historical scenarios, stress-type RNIVs are estimated on the basis of stress scenarios whose severity is calibrated to be in line with the capital adequacy requirements. The outcome of the VaR-based RNIV is included in the VaR calculation and back-testing; a stressed VaR RNIV is also computed for the risk factors considered in the VaR-based RNIV approach.

Stress-type RNIVs are also included where appropriate.

Back-testing

We validate on a daily basis the accuracy of our VaR models by back-testing them against both actual, and hypothetical profit and loss. Hypothetical profit and loss excludes non-modelled items, such as fees, commissions and revenues of intra-day transactions.

The actual number of profits or losses in excess of VaR over this period can therefore be used to gauge how well the models are performing. A VaR model is deemed satisfactory if it experiences fewer than five profit or loss exceptions in a 250-day period.

We back-test our VaR at various levels of our group entity hierarchy. Back-testing using the regulatory hierarchy includes entities which have approval to use VaR in the calculation of market risk regulatory capital requirements.

Stress testing

Stress testing is an integral part of our market risk management

framework which is used to evaluate the potential impact on portfolio values of more extreme, although plausible, events or movements in a set of financial variables. In such scenarios, losses can be greater than those predicted by VaR modelling.

Stress testing is implemented at legal entity, regional and overall Group levels. The risk appetite around potential stress losses for the group is set and monitored against referral limits.

Market risk reverse stress tests are designed to identify vulnerabilities in our portfolios by looking for scenarios that lead to loss levels considered severe for the relevant portfolio. These scenarios may be local or idiosyncratic in nature, and complement the systematic top-down stress testing.

Stressed VaR and stress testing, together with reverse stress testing, provide management with insights regarding the 'tail risk' beyond VaR for which HSBC's appetite is limited.

The market risk stress testing incorporates historical and hypothetical events.

Market risk under standardised approach

Table 52: MR1 – Market risk under STM approach

		a
		RWAs HK\$m
Outright product exposures		
2	Equity exposures (general and specific risk)	2,792
4	Commodity exposures	14
8	Securitisation exposures	670
9	Total at 31 Dec 2020	3,476

Market risk capital models

HSBC has permission to use a number of market risk capital models to calculate regulatory capital as listed in the table below. For regulatory purposes, the trading book comprises all positions in financial instruments and commodities held with trading intent and positions where it can be demonstrated that they hedge positions in the trading book. Trading book positions must either be free of any restrictive covenants on their tradability or be capable of being hedged.

A financial instrument is defined as any contract that gives rise to both a financial asset to one party and a financial liability or equity

instrument to another party.

HSBC maintains a trading book policy, which defines the minimum requirements for trading book positions and the process for classifying positions as trading or banking book. Positions in the trading book are subject to market risk-based rules, i.e. market risk capital, calculated using regulatory approved models. Where we do not have permission to use internal models, market risk capital is calculated using the standardised approach.

If any of the policy criteria are not met, then the position is categorised as a non-trading book exposure.

Model component	Confidence level	Liquidity horizon	Model description and methodology
VaR	99%	10 day	Uses most recent two years' history of daily returns to determine a loss distribution. The result is scaled, using the square root of 10, to provide an equivalent 10-day loss.
Stressed VaR	99%	10 day	Stressed VaR is calibrated to a one-year period of stress observed in history.
IRC	99.9%	1 year	Uses a multi-factor Gaussian Monte-Carlo simulation, which includes product basis, concentration, hedge mismatch, recovery rate and liquidity as part of the simulation process. A minimum liquidity horizon of three months is applied and is based on a combination of factors, including issuer type, currency and size of exposure.

VaR

VaR used for regulatory purposes differs from VaR used for management purpose with key differences listed below.

VaR	Regulatory	Management
Scope	Regulatory approval	Broader population of trading and banking book positions
Confidence interval	99%	99%
Liquidity horizon	10-day	1-day
Data set	Past 2 years	Past 2 years

The trading books that received approval from the regulator to be covered via an internal model are used to calculate VaR for regulatory purposes. Regulatory VaR levels contribute to the calculation of market risk RWAs.

Stressed VaR

Stressed VaR is primarily used for regulatory capital purposes and is integrated into the risk management process to ensure prudent capital management. Stressed VaR complements other risk measures by providing the potential losses under stressed market conditions.

Stressed VaR modelling follows the same approach as our VaR risk measure, except that:

- potential market movements employed for stressed VaR calculations are based on a continuous one-year period of stress for the trading portfolio;
- it is calculated to a 99% confidence using a 10-day holding period;
- it is based on an actual 10-day holding period, whereas Regulatory VaR is based on a one-day holding period scaled to 10 days.

Incremental risk charge

The incremental risk charge ('IRC') measures the default and migration risk of issuers of traded instruments.

IRC risk factors include credit migration, default, product basis, concentration, hedge mismatch, recovery rate and liquidity. The PDs are floored to reflect the lack of historical data on defaults and a period of stress is used to calibrate the spread changes for the relevant ratings. The IRC model is validated quarterly by stressing key model parameters and reviewing the response of the model.

The IRC is a stand-alone charge generating no diversification benefit with other charges. IRC relies on a range of liquidity horizons from three months, corresponding to the regulatory floor, to one year. A wide range of criteria can indicate the liquidity of a position. The liquidity horizon for the IRC measure depends on a set of factors, such as issuer features, including rating, sector, geography, and size of positions, including product, maturity and concentration.

The IRC transition matrices are calibrated using transition and default data published by three rating agencies (Standard & Poor's, Moody's and Fitch) as the starting point, in combination with internal rules for flooring. The average of the three matrices is computed for each sector. The PDs are then floored: sovereign PDs are consistent with IRB, while a 3 basis point floor is applied to corporates' and banks' PDs.

The IRC correlation matrix is derived from historical CDS spreads data, covering the latest two-year VaR period. The returns estimation window is set equal to either three or 12 months, depending on the liquidity horizon of each obligor. First, each obligor is mapped to six sector/rating categories; then the correlation matrix is obtained by computing the arithmetic mean of correlations for each category.

Analysis of VaR, stressed VaR and incremental risk charge measures

The following table is prepared in accordance with the basis of preparation used to calculate the group's market risk capital charge under the IMM approach.

Table 53: MR3 – IMM approach values for market risk exposures

		a
		Footnotes
		HK\$m
At 31 Dec 2020		
VaR (10 day – one-tailed 99% confidence interval)		
1	Maximum Value	891
2	Average Value	598
3	Minimum Value	430
4	Period End	485
Stressed VaR (10 day – one-tailed 99% confidence interval)		
5	Maximum Value	1,216
6	Average Value	636
7	Minimum Value	299
8	Period End	299
Incremental risk charge ('IRC') (99.9% confidence interval)		
9	Maximum Value	3,465
10	Average Value	2,882
11	Minimum Value	2,458
12	Period End	2,559

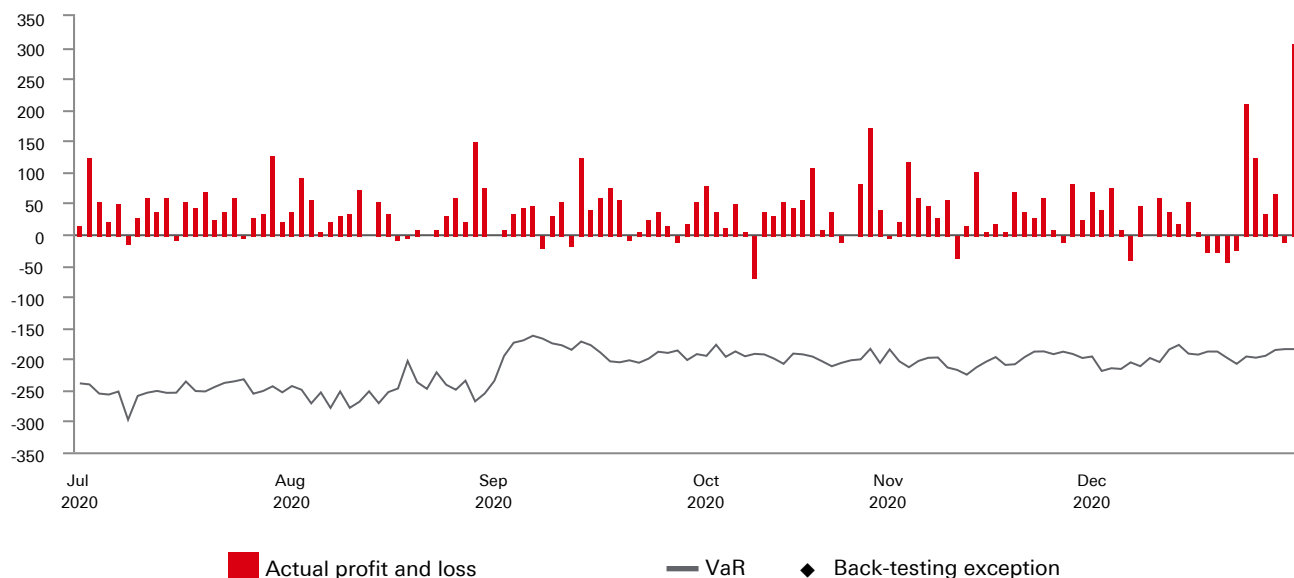
¹ The total VaR excludes Risks not in VaR ('RNIV').

The group's trading VaR at 31 December 2020 was lower than 30 June 2020 due to a reduction in interest rate trading VaR.

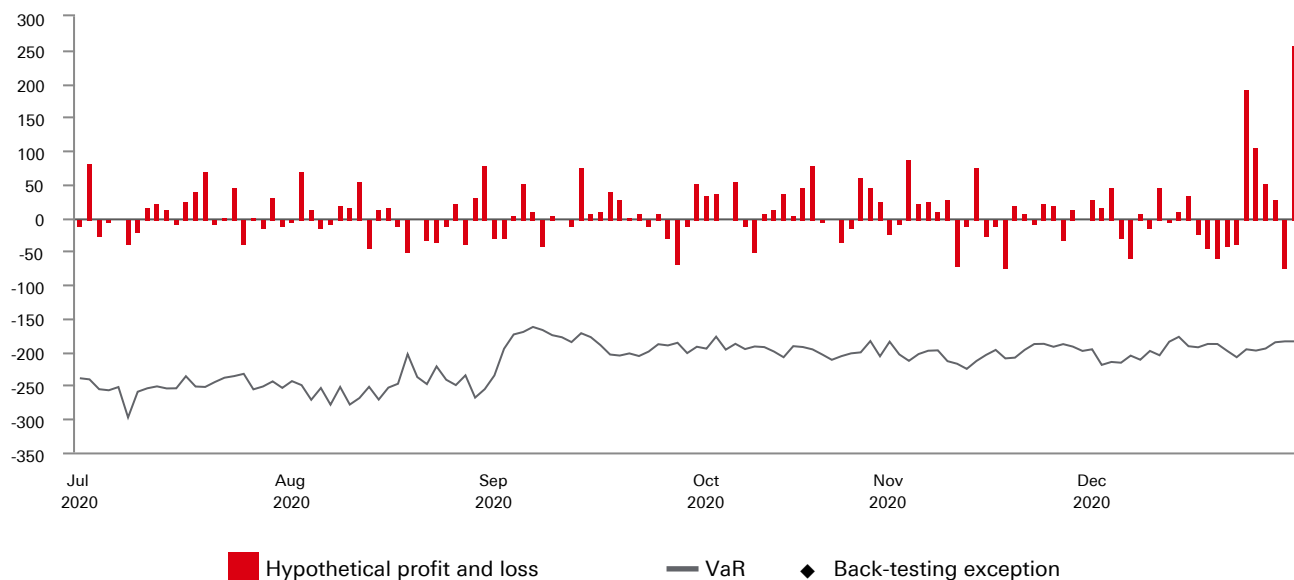
The decrease in trading Stressed VaR at 31 December 2020 compared to 30 June 2020 was mainly driven by the Stressed VaR period change.

Table 54: MR4 – Comparison of VaR estimates with gains or losses

VaR back-testing exceptions against actual profit and loss (HK\$m)



VaR back-testing exceptions against hypothetical profit and loss (HK\$m)



There were no VaR back-testing loss exceptions against hypothetical and actual profit and loss in the second half of 2020.

Prudent valuation adjustment

HSBC has documented policies and maintains systems and controls for the calculation of Prudent Valuation Adjustment ('PVA'). Prudent value is an estimated conservative pricing with a 90% degree of certainty that would be received to sell an asset or paid to transfer a liability in orderly transactions occurring

between market participants at the balance sheet date. HSBC's methodology addresses fair value uncertainties arising from a number of sources; market price uncertainty, bid offer uncertainty, model risk, concentration, administrative cost, unearned credit spreads and investing and funding costs.

Table 55: PV1 – Prudent valuation adjustments

	a	b	c	d	e	f	g	h
	Equity HK\$m	Interest rates HK\$m	Foreign exchange 'FX' HK\$m	Credit HK\$m	Commodities HK\$m	Total HK\$m	<i>Of which: In the trading book HK\$m</i>	<i>Of which: In the banking book HK\$m</i>
1 Close-out uncertainty	239	950	81	107	1	1,378	979	399
2 – of which:								
3 Mid-market value	153	223	17	25	1	419	213	206
4 Close-out costs	14	394	5	8	–	421	402	19
4 Concentration	72	333	59	74	–	538	364	174
6 Model risk	25	5	–	–	–	30	30	–
7 Operational risks	24	95	5	8	–	132	102	30
8 Investing and funding costs	–	17	–	–	–	17	17	–
9 Unearned credit spreads	–	84	7	–	–	91	90	1
12 Total adjustments at 31 Dec 2020	288	1,151	93	115	1	1,648	1,218	430

Liquidity information

The liquidity coverage ratio ('LCR') aims to ensure that a bank has sufficient unencumbered high quality liquid assets ('HQLA') to meet its liquidity needs in a 30 calendar day liquidity stress scenario. The group also uses the net stable funding ratio ('NSFR') as a basis for ensuring operating entities raise sufficient stable funding to support their business activities. The NSFR requires institutions to maintain minimum amount of stable funding based on assumptions of asset liquidity.

The following table displays the LCR and NSFR levels on three reporting bases in accordance with rules 10(1)(a), 10(1)(b) and 11(1) of the BLR:

Table 56: LIQA – LCRs and NSFRs on three liquidity reporting bases

	At 31 Dec 2020	
	LCR %	NSFR %
Hong Kong Office	219.0	148.2
Unconsolidated	198.3	151.2
Consolidated	167.5	159.3

Information relating to the group's approach to liquidity risk management, including customised measurement tools and metrics, and details of collateral pools and funding sources can be found in pages 52 to 53 of the Risk Report of the group's *Annual Report and Accounts 2020*. The on- and off-balance sheet items, broken down into maturity buckets, is disclosed in Notes 26 and 27 in the group's *Annual Report and Accounts 2020*.

Table 57: LIQ1 – Liquidity coverage ratio – for category 1 institution

	Number of data points used in calculating the average value of the LCR and related components set out in this table for the quarters ended on 31 December 2020 was 74. Basis of disclosure: consolidated	a	b
		Quarter ended 31 Dec 2020	
		Unweighted value (average) HK\$m	Weighted value (average) HK\$m
A HQLA			
1 Total HQLA			1,982,999
B Cash outflows			
2 Retail deposits and small business funding, of which:		3,404,376	321,118
3 <i>Stable retail deposits and stable small business funding</i>		275,399	8,220
4 <i>Less stable retail deposits and less stable small business funding</i>		3,128,977	312,898
5 Unsecured wholesale funding (other than small business funding) and debt securities and prescribed instruments issued by the AI, of which:		2,626,000	1,217,108
6 <i>Operational deposits</i>		766,652	187,720
7 <i>Unsecured wholesale funding (other than small business funding) not covered in row 6</i>		1,850,915	1,020,955
8 <i>Debt securities and prescribed instruments issued by the AI and redeemable within the LCR period</i>		8,433	8,433
9 Secured funding transactions (including securities swap transactions)			4,105
10 Additional requirements, of which:		637,438	266,498
11 <i>Cash outflows arising from derivative contracts and other transactions, and additional liquidity needs arising from related collateral requirements</i>		210,438	210,399
12 <i>Cash outflows arising from obligations under structured financing transactions and repayment of funding obtained from such transactions</i>		1,226	1,226
13 <i>Potential drawdown of undrawn committed facilities (including committed credit facilities and committed liquidity facilities)</i>		425,774	54,873
14 Contractual lending obligations (not otherwise covered in Section B) and other contractual cash outflows		201,285	201,285
15 Other contingent funding obligations (whether contractual or non-contractual)		2,755,005	20,656
16 Total cash outflows			2,030,770
C Cash inflows			
17 Secured lending transactions (including securities swap transactions)		464,964	81,668
18 Secured and unsecured loans (other than secured lending transactions covered in row 17) and operational deposits placed at other financial institutions		726,665	519,622
19 Other cash inflows		293,634	274,658
20 Total cash inflows		1,485,263	875,948
D Liquidity coverage ratio (adjusted value)			
21 Total HQLA			1,982,999
22 Total net cash outflows			1,154,822
23 LCR (%)			172.1%

Banking Disclosure Statement at 31 December 2020

Table 58: LIQ2 – Net stable funding ratio – for category 1 institution

		a	b	c	d	e
		Quarter ended 31 Dec 2020				
		Unweighted value by residual maturity				
Basis of disclosure: consolidated		No specified term to maturity	<6 months or repayable on demand	6 months to < 12 months	12 months or more	Weighted amount
		HK\$m	HK\$m	HK\$m	HK\$m	HK\$m
A	Available stable funding ('ASF') item					
1	Capital:	800,277	–	–	21,382	821,659
2	Regulatory capital	797,176	–	–	16,714	813,890
3	Other capital instruments	3,101	–	–	4,668	7,769
4	Retail deposits and small business funding:		3,477,386	–	–	3,143,812
5	Stable deposits		283,284	–	–	269,120
6	Less stable deposits		3,194,102	–	–	2,874,692
7	Wholesale funding:	–	2,981,039	37,844	20,148	1,169,853
8	Operational deposits		808,229	–	–	404,115
9	Other wholesale funding	–	2,172,810	37,844	20,148	765,738
10	Liabilities with matching interdependent assets	313,404	–	–	–	–
11	Other liabilities:	233,816	133,354	20,038	242,855	252,873
13	All other funding and liabilities not included in the above categories	233,816	133,354	20,038	242,855	252,873
14	Total ASF					5,388,197
B	Required stable funding ('RSF') item					
15	Total HQLA for NSFR purposes		2,265,655			86,754
17	Performing loans and securities:	330,958	1,951,806	366,104	2,386,761	2,862,577
18	Performing loans to financial institutions secured by Level 1 HQLA	–	535,064	1,755	11,869	66,253
19	Performing loans to financial institutions secured by non-Level 1 HQLA and unsecured performing loans to financial institutions	18,907	270,417	58,564	148,088	236,839
20	Performing loans, other than performing residential mortgage, to non-financial corporate clients, retail and small business customers, sovereigns, the Monetary Authority for the account of the Exchange Fund, central banks and PSEs, of which:	164,692	999,343	268,979	1,237,241	1,731,632
21	With a risk-weight of less than or equal to 35% under the STC approach	780	3,100	475	11,201	9,083
22	Performing residential mortgages, of which:	–	20,217	19,432	940,102	650,724
23	With a risk-weight of less than or equal to 35% under the STC approach	–	19,051	18,460	843,399	567,457
24	Securities that are not in default and do not qualify as HQLA, including exchange-traded equities	147,359	126,765	17,374	49,461	177,129
25	Assets with matching interdependent liabilities	313,404	–	–	–	–
26	Other assets:	761,755	85,896	126	2,255	408,849
27	Physical traded commodities, including gold	23,577				20,040
28	Assets posted as initial margin for derivative contracts and contributions to default funds of CCPs	24,843				21,116
29	Net derivative assets	19,244				19,244
30	Total derivative liabilities before deduction of variation margin posted	294,045				14,702
31	All other assets not included in the above categories	400,046	85,896	126	2,255	333,747
32	Off-balance sheet items			3,191,436		24,282
33	Total RSF					3,382,462
34	Net Stable Funding Ratio (%)					159.3

Table 58: LIQ2 – Net stable funding ratio – for category 1 institution (continued)

	a	b	c	d	e					
						Quarter ended				
						30 Sep 2020				
						Unweighted value by residual maturity				
Basis of disclosure: consolidated	No specified term to maturity	<6 months or repayable on demand	6 months to < 12 months	12 months or more	Weighted amount					
	Footnotes	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m				
A Available stable funding ('ASF') item										
1 Capital:		790,704	—	—	20,393	811,097				
2 <i>Regulatory capital</i>		787,604	—	—	15,876	803,480				
3 <i>Other capital instruments</i>		3,100	—	—	4,517	7,617				
4 Retail deposits and small business funding:			3,378,247	1	—	3,054,405				
5 <i>Stable deposits</i>			279,627	—	—	265,646				
6 <i>Less stable deposits</i>			3,098,620	1	—	2,788,759				
7 Wholesale funding:		—	2,980,105	31,922	13,771	1,095,730				
8 <i>Operational deposits</i>			726,106	—	—	363,053				
9 <i>Other wholesale funding</i>		—	2,253,999	31,922	13,771	732,677				
10 Liabilities with matching interdependent assets		310,674	—	—	—	—				
11 Other liabilities:		218,234	271,828	22,678	239,100	250,438				
13 <i>All other funding and liabilities not included in the above categories</i>		218,234	271,828	22,678	239,100	250,438				
14 Total ASF						5,211,670				
B Required stable funding ('RSF') item										
15 Total HQLA for NSFR purposes	1		1,998,712			82,757				
17 Performing loans and securities:		296,669	2,169,687	388,382	2,416,969	2,920,681				
18 <i>Performing loans to financial institutions secured by Level 1 HQLA</i>		—	557,941	3,272	12,625	70,055				
19 <i>Performing loans to financial institutions secured by non-Level 1 HQLA and unsecured performing loans to financial institutions</i>		17,432	337,970	73,103	170,513	275,192				
20 <i>Performing loans, other than performing residential mortgage, to non-financial corporate clients, retail and small business customers, sovereigns, the Monetary Authority for the account of the Exchange Fund, central banks and PSEs, of which:</i>		159,930	1,069,794	271,881	1,259,914	1,777,960				
21 <i>With a risk-weight of less than or equal to 35% under the STC approach</i>		1,374	3,266	463	11,807	9,564				
22 <i>Performing residential mortgages, of which:</i>		—	19,247	18,802	921,995	637,786				
23 <i>With a risk-weight of less than or equal to 35% under the STC approach</i>		—	18,048	17,823	829,016	557,664				
24 <i>Securities that are not in default and do not qualify as HQLA, including exchange-traded equities</i>		119,307	184,735	21,324	51,922	159,688				
25 Assets with matching interdependent liabilities		310,674	—	—	—	—				
26 Other assets:		713,574	144,243	136	2,214	393,826				
27 <i>Physical traded commodities, including gold</i>		17,114				14,547				
28 <i>Assets posted as initial margin for derivative contracts and contributions to default funds of CCPs</i>		28,031				23,827				
29 <i>Net derivative assets</i>		22,564				22,564				
30 <i>Total derivative liabilities before deduction of variation margin posted</i>		252,051				12,603				
31 <i>All other assets not included in the above categories</i>		393,814	144,243	136	2,214	320,285				
32 Off-balance sheet items	1			3,172,308		20,433				
33 Total RSF						3,417,697				
34 Net Stable Funding Ratio (%)						152.5				

1 The unweighted values disclosed in these rows are not required to be split by residual maturity.

The NSFR increased by 6.8% from 152.5% for the quarter ended 30 September 2020 to 159.3% for the quarter ended 31 December 2020, mainly as a result of the increase in customer deposits.

Other disclosures

Interest rate exposures in the banking book

Interest rate risk in the banking book ('IRRBB') is the potential adverse impact of changes in interest rates on earnings and capital. The component of IRRBB that can be economically neutralised in the market is transferred to Markets Treasury team to manage, in accordance with internal transfer pricing rules. In its management of IRRBB, the group aims to balance the potential adverse effect of future interest rate movements on the net interest income against the cost of hedging. The monitoring of the projected net interest income ('NII') and economic value of equity ('EVE') sensitivities (' Δ ') under varying interest rate scenarios is a key part of this.

Governance and structure

Asset, Liability and Capital Management ('ALCM') monitor and control interest rate risk in banking book. This includes reviewing and challenging the global businesses prior to the release of new products and proposed behavioural assumptions used for hedging activities. ALCM are also responsible for maintaining and updating the transfer pricing framework, informing the Asset and Liability Committee ('ALCO') of the group's overall banking book interest rate risk exposure and managing the balance sheet in conjunction with Markets Treasury.

The ALCO defines each operating entity's transfer pricing curve, reviews and approves the transfer pricing policy, including behavioural assumptions used for products where there is either no defined maturity or customer optionality exists.

The ALCO is also responsible for monitoring and reviewing each entity's overall structural interest rate risk position. Interest rate behavioural assumptions policies have to be formulated in line with the Group's behavioural assumptions policies and approved at least annually by local ALCOs. Banking book assets and liabilities are transferred to Markets Treasury based on their repricing and maturity characteristics.

Markets Treasury manages the banking book interest rate positions transferred to it within the Market Risk limits.

Sensitivity of economic value of equity

An Δ EVE is the extent to which the EVE will change due to a pre-specified movement in interest rates (six interest rate shock scenarios prescribed by the HKMA), where all other economic variables are held constant. Variations in market interest rates can affect the economic value of assets, liabilities and off-balance sheet positions. The economic value of an instrument represents an assessment of the present value of its expected net cash flows, discounted to reflect market rates. The economic value perspective reflects this sensitivity. It provides a more comprehensive view of the potential long-term effects of changes in interest rates.

Sensitivity of net interest income

Δ NII is the sensitivity of expected net interest income under varying interest rate scenarios, where all other economic variables are held constant. Sensitivity of net interest income reflects the bank's sensitivity of earnings due to changes in market interest

rates. Based on the reported interest rate repricing positions in the Interest Rate Risk Return, the impact on earnings is assessed over the next 12 months using the interest rate shock scenarios prescribed by the HKMA.

The Δ EVE and Δ NII shown in Table 59 are indicative and based on scenarios and assumptions prescribed by the HKMA under its completion instructions for the Return of Interest Rate Risk in the banking book, which is completed and reported quarterly on a consolidated basis.

Key modelling and parametric assumptions used in calculating Δ EVE and Δ NII in Table 59 includes:

- for Δ EVE, commercial margins and other spread components have been excluded from the cash flows used in the computation and discount rate used;
- all the positions captured are assumed to run to maturity and slotted into the appropriate time bands according to the earliest interest repricing date (as per MA(BS)12A) including for non-maturity deposits;
- no prepayment or early redemption risk assumed as the bank does not have material long term fixed rate positions, the majority of loans are on a floating basis and average term for fixed rate deposits is one to three months therefore the risk is immaterial.

HSBC uses an internal measurement system ('IMS') to generate Δ EVE for the purpose of internal assessment of capital adequacy which is different from the modelling assumptions prescribed for this disclosure, however they do not contribute to any material directional implications, this includes:

- behaviouralisation of non-maturity products, the extent to which can be driven by:
 - the amount of the current balance that can be assessed as stable under business-as-usual conditions; and
 - for managed rate balances the historic market interest rate re-pricing behaviour observed; or
 - for non-interest bearing balances the duration for which the balance is expected to remain under business-as-usual conditions. This assessment is often driven by the re-investment tenors available to Markets Treasury to neutralise the risk through the use of fixed rate government bonds or interest rate derivatives, and for derivatives the availability of cash flow hedging capacity.
- internal measurements consider aggregated results of all currencies and not only material currencies as prescribed by the HKMA under its completion instruction for the Return of Interest Rate Risk in the banking book (MA(BS)12A);
- negative rate flooring is set at -1% for the overnight tenor to 0% for 20-year tenor unlike the modelling assumptions prescribed under this disclosure which is set at -2% for all currencies;
- economic value gains weighted 50% and losses weighted 100% under internal measurement unlike the modelling assumptions for this disclosure where economic value gains weights 0%.

The average and the longest repricing maturity for non-maturity deposits ('NMDs') in 2020 was one day.

Quantitative information on interest rate risk in banking book

The worst scenario for change in the economic value of equity is 'Parallel up' scenario with specific size of interest rate shock for each currency. The major contributors to the change in economic value of equity is from the net gap positions for HKD, USD, AUD, CNY and INR currencies mainly due to deployment of the increased commercial surplus, partly offset by time decay of existing longer term positions and lower yields across all currencies.

The worst scenario for change in the net interest income over the next twelve months is 'Parallel up' scenario with specific size of interest rate shock for each currency, the change in the net interest income is due to the same reasons as mentioned above

Table 59: IRRBB1 – Quantitative information on interest rate risk in banking book

	a		b		c		d	
	ΔEVE				ΔNII			
	31 Dec 2020	31 Dec 2019	31 Dec 2020	31 Dec 2019	31 Dec 2020	31 Dec 2019	31 Dec 2020	31 Dec 2019
	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m
1 Parallel up	22,428	21,249	17,553	11,632				
2 Parallel down	–	–	(17,887)	(12,040)				
3 Steepener	–	17						
4 Flattener	12,375	8,550						
5 Short rate up	19,326	15,732						
6 Short rate down	–	–						
7 Maximum	22,428	21,249	17,553	11,632				
Period	31 Dec 2020				31 Dec 2019			
8 Tier 1 capital	555,553				537,460			

Mainland activities

The analysis of mainland activities is based on the categories of non-bank counterparties and the type of direct exposures defined by the HKMA under the BDR with reference to the HKMA's Return

of Mainland Activities – (MA(BS)20)', which includes the mainland exposures extended by the Bank's Hong Kong offices and wholly-owned banking subsidiaries in mainland China.

Table 60: Mainland activities

	On-balance sheet exposure	Off-balance sheet exposure	Total exposures
	HK\$m	HK\$m	HK\$m
At 31 Dec 2020			
Types of counterparties			
1 Central government, central government-owned entities and their subsidiaries and joint ventures ('JVs')	242,200	24,810	267,010
2 Local governments, local government-owned entities and their subsidiaries and JVs	81,585	5,548	87,133
3 People's Republic of China ('PRC') nationals residing in mainland China or other entities incorporated in mainland China and their subsidiaries and JVs	396,185	73,125	469,310
4 Other entities of central government not reported in item 1 above	13,850	5,739	19,589
5 Other entities of local governments not reported in item 2 above	6,580	1,818	8,398
6 PRC nationals residing outside mainland China or entities incorporated outside mainland China where the credit is granted for use in mainland China	31,772	3,394	35,166
7 Other counterparties where the exposures are considered by the reporting institution to be non-bank mainland China exposures	50,656	5,221	55,877
Total	822,828	119,655	942,483
Total assets after provision	5,687,319		
On-balance sheet exposures as percentage of total assets	14.47%		

International claims

The group's country risk exposures in the table below are prepared in accordance with the HKMA Return of International Banking Statistics – (MA(BS)21) guidelines. International claims are on-balance sheet exposures to counterparties based on the location of the counterparties, after taking into account the transfer of risk,

and represent the sum of cross-border claims in all currencies and local claims in foreign currencies.

The table shows claims on individual countries and territories or areas, after recognised risk transfer, amounting to not less than 10% of the group's total international claims.

Table 61: International claims

	Banks	Official sector	Non-bank financial institutions	Non-financial private sector	Total
	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m
At 31 Dec 2020					
Developed countries	446,311	511,969	313,879	438,288	1,710,447
– of which: United States	37,854	155,516	83,218	160,523	437,111
Offshore centres	62,479	77,440	138,872	510,807	789,598
– of which: Hong Kong	42,815	1,522	70,195	321,275	435,807
Developing Asia and Pacific	410,001	132,695	87,595	430,930	1,061,221
– of which: Mainland China	334,643	87,522	48,843	246,040	717,048

Foreign currency positions

The group had the following non-structural foreign currency positions that were not less than 10% of the net non-structural positions in all foreign currencies at 31 December 2020:

Table 62: Non-structural foreign currency positions

	<i>Footnotes</i>	United States Dollars HK\$m	Renminbi HK\$m
At 31 Dec 2020			
Spot assets		1,980,350	826,868
Spot liabilities		(2,668,533)	(807,104)
Forward purchases		10,522,706	1,904,109
Forward sales		(9,801,525)	(1,938,184)
Net options positions		(16,920)	17,913
Net long (net short) position	1	16,078	3,602

1 The net options positions reported above are calculated using the delta-weighted positions of the options contracts.

Remuneration

Remuneration policy

Our performance and pay strategy underpinned by our Group's Remuneration Framework is designed to reward competitively the achievement of long-term sustainable performance, and attract, motivate and retain the very best people, regardless of gender, ethnicity, age, disability or any other factor unrelated to performance or experience. We believe that remuneration is an important tool for instilling the right behaviours, and driving and encouraging actions that are aligned to organisational values and the long-term interests of our stakeholders. The strategy supports our people to perform their roles to support our strategic priorities and long-term interests of our stakeholders, which includes the customers and communities we serve, our shareholders and regulators. We maintain key principles that underpin the performance and pay decisions for our workforce, as outlined below. These principles were crucial to the approach we took in response to Covid-19 to adequately support and recognise them and ensure they were treated fairly.

- Ensuring that the assessments completed by the managers are fair, appropriate and free from bias. Managers are encouraged to challenge and communicate with peers, and analytical reviews are undertaken to identify any bias.
- An alignment to performance at all levels (individual, business and Group) taking into account both 'what' has been achieved and 'how' it has been achieved. The 'how' helps ensure that performance is sustainable in the longer term, consistent with HSBC's values and risk and compliance standards.
- Being informed, but not driven by, market position and practice. Market benchmarks are sourced through independent specialists and provide an indication of the range of pay levels and employee benefits provided by our competitors.
- Supporting a culture of continuous feedback through manager and employee empowerment and creating a culture where employees can fulfil their potential, gain new skills and develop their careers for the future.
- Considering the full-market range when making pay decisions for employees, taking into account the individual's and the Group's performance in any given year. An individual's pay will vary depending upon their performance.
- Compliance with relevant regulation across all of our countries and territories.

Based on these principles, our approach to determining remuneration is based on the following objectives:

- Offering our employees a competitive total reward package. This includes market competitive fixed pay levels, which ensure our employees are able to meet their basic day-to-day needs;
- Maintaining an appropriate balance between fixed pay, variable pay and employee benefits, taking into consideration an

employee's seniority, role, individual performance and the market;

- Ensuring variable pay is awarded on a discretionary basis and dependent upon Group, global business and individual performance in line with overall Group affordability;
- Offering employee benefits that support the mental, physical and financial health of a diverse workforce, are appropriate at the local market level and support HSBC's commitment to employee well-being;
- Promoting employee share ownership through variable pay deferral or voluntary enrolment in an all employee share plan; and
- Linking reward packages to performance and behaviour with no bias towards an individual's ethnicity, gender, age, or any other characteristic.
- Providing career planning tools to help employees thinking about future roles and capability they require, and empowering managers to make appropriate decisions at key stages during the pay review process.

Please refer to the HSBC remuneration practices and governance at www.hsbc.com/who-we-are/leadership-and-governance/remuneration and the Pillar 3 Remuneration Disclosures in the Director's Remuneration Report section of the Annual Report and Accounts of HSBC Holdings plc for details of the major design characteristics of the remuneration policy including alignment between risk and reward.

Governance and role of relevant stakeholders

The Group Remuneration Committee is responsible for setting the principles, parameters and governance framework for the Group's remuneration policy applicable to all Group employees. Following revisions to the HKMA's Supervisory Policy Manual CG-1 'Corporate Governance of Locally Incorporated Authorised Institutions', the Bank's Board established a Remuneration Committee with effect from 1 January 2018 which annually reviews the effectiveness and compliance of the Group's reward strategy. All members of the Committee are independent non-executive Directors of the Bank Board.

The Bank as an authorised institution under the Banking Ordinance is required by HKMA Supervisory Policy Manual CG-5 'Guideline on a Sound Remuneration System' (the Guideline) to assess whether their existing remuneration systems and policy are in line with the principles in the Guideline, independently of management and at least annually. The annual review for 2020 was commissioned externally to Deloitte LLP, and the results confirm that the Bank's remuneration policy as adopted from the Group policy is consistent with the principles set out in the Guideline.

Senior management and key personnel

Senior management is defined as those persons responsible for oversight of the group's strategy, activities or material business lines. This includes the Executive Directors, Executive Committee members, Chief Executive, Alternative Chief Executive, Head of Control Functions (Audit, Risk, Legal and Compliance) and Managers as registered with the HKMA. There were 32 members of senior management during 2020.

Key personnel is defined as individual employees whose duties or activities involve the assumption of material risk or the taking on

of material exposures on behalf of the group. Under the provisions of the UK Prudential Regulation Authority's ('PRA') Remuneration Rules, HSBC is required to identify individuals who will be considered as 'Identified Staff and Material Risk Takers' (collectively referred to as 'Material Risk Takers' or 'MRTs') based on the qualitative and quantitative criteria specified in the Regulatory Technical Standard ('RTS') issued by the European Banking Authority ('EBA'). Based on the criteria applicable to the Group, the identified number of MRTs, and in turn key personnel, in 2020 were 285 members.

Table 63: REM1 – Remuneration awarded during financial year

Remuneration amount and quantitative information	Footnotes	a	b
		2020	
		Senior Management	Key personnel
Fixed remuneration	1		
1 Number of employees		32	285
2 Total fixed remuneration (HK\$m)		311	1,206
3 <i>Of which: cash-based</i>		311	1,206
Variable remuneration	2		
9 Number of employees	3	32	285
10 Total variable remuneration (HK\$m)		246	886
11 <i>Of which: cash-based</i>		118	443
12 <i>Of which: deferred</i>		67	198
13 <i>Of which: shares or other share-linked instruments</i>		128	443
14 <i>Of which: deferred</i>		77	224
17 Total remuneration (HK\$m)		557	2,092

1 Fixed remuneration includes base salary, cash allowance, pension contribution and international assignment benefits where applicable.

2 The forms of variable remuneration and the proportion deferred are based on the seniority, role and responsibilities of employees and their level of total variable compensation.

3 Number of employees disclosed above includes leavers who may have zero variable pay.

Table 64: REM2 – Special payments

Special payments	a	b	e	f
	2020			
	Guaranteed bonuses		Severance payments	
	Number of employees	Total amount HK\$m	Number of employees	Total amount HK\$m
2 Key personnel	1	7	9	23

Table 65: REM3 – Deferred remuneration

Deferred and retained remuneration	Footnotes	a	b	d	e
		2020			
		Total amount of outstanding deferred remuneration HK\$m	<i>Of which: Total amount of outstanding deferred and retained remuneration exposed to ex post explicit and/or implicit adjustment</i> HK\$m	Total amount of amendment during the year due to ex post implicit adjustments HK\$m	Total amount of deferred remuneration paid out in the financial year HK\$m
1 Senior management		364	364	(86)	151
2 Cash		189	189	–	48
3 Shares		175	175	(86)	103
6 Key personnel		1,033	1,033	(276)	579
7 Cash		465	465	–	170
8 Shares		564	564	(276)	407
10 Other	1	4	4	–	2
11 Total		1,397	1,397	(362)	730

1 Other deferred and retained remuneration for key personnel refers to index cash awards.

Other information

Abbreviations

The following abbreviated terms are used throughout this document.

Currencies

HK\$m	Millions of Hong Kong dollars
HK\$b	Billions (thousands of millions) of Hong Kong dollars
US\$m	Millions of United States dollars

A

AI	Authorised institution
ALCM	Asset, Liability and Capital Management
ALCO	Asset and Liability Management Committee
ASF	Available stable funding
AT1	Additional tier 1
AVA	Additional value adjustment

B

BCBS	Basel Committee on Banking Supervision
BCR	Banking (Capital) Rules
BDR	Banking (Disclosure) Rules
BLR	Banking (Liquidity) Rules
BSC	Basic approach

C

CCF	Credit conversion factor
CCP ¹	Central counterparty
CCR ¹	Counterparty credit risk
CCyB ¹	Countercyclical capital buffer
CDS ¹	Credit default swap
CEM	Current exposure method
CET1 ¹	Common equity tier 1
CIS	Collective investment scheme
CMB	Commercial Banking, a global business
CRE ¹	Commercial real estate
CRM ¹	Credit risk mitigation/mitigant
CRO	Chief Risk Officer
CRR ¹	Customer risk rating
CSA	Credit Support Annex
CVA ¹	Credit valuation adjustment

D

D-SIB	Domestic systemically important authorised institution
DTAs	Deferred tax assets

E

EAD ¹	Exposure at default
EBA	European Banking Authority
ECA	Export Credit Agency
ECAI	External Credit Assessment Institution
ECL ¹	Expected credit loss
EL	Expected loss
EPE	Effective expected positive exposures
EVE	Economic value of equity

F

FIRO	Financial Institutions (Resolution) Ordinance
FSB	Financial Stability Board
FX	Foreign exchange

G

GBM	Global Banking and Markets, a global business
GMRC	Global model risk committee
Group	undertakings
group	The Hongkong and Shanghai Banking Corporation Limited together with its subsidiary undertakings
G-SIB ¹	Global systemically important authorised institution

H

HAHO	HSBC Asia Holdings Limited
HKFRS	Hong Kong Financial Reporting Standards

HKMA	Hong Kong Monetary Authority
Hong Kong	The Hong Kong Special Administrative Region of the People's Republic of China
HQLA	High-quality liquid assets
HSBC	undertakings
HVCRE	High volatility commercial real estate

I

IAA	Internal assessment approach
IMM ¹	Internal Models Method
IMM(CCR)	Internal models (counterparty credit risk)
IMS	Internal measurement system
IPRE	Income producing real estate
IRB ¹	Internal ratings-based approach
IRRBB	Interest rate risk in the banking book
IRC	Incremental risk charge

J

JCCyB	Jurisdictional countercyclical capital buffer
JVs	Joint ventures

L

LAC	Loss-absorbing capacity
LAC Rules	Financial Institutions (Resolution) (Loss-absorbing Capacity Requirements - Banking Sector) Rules
LCR ¹	Liquidity Coverage Ratio
LGD ¹	Loss given default
LR	Leverage ratio

M

MOF	Model Oversight Forum
MRTs	Identified Staff and Material Risk Takers
MSRs	Mortgage servicing rights

N

NII	Net interest income
NSFR ¹	Net stable funding ratio
NMDs	Non-maturity and deposits

O

OBS	Off-balance sheet
OTC ¹	Over-the-counter

P

PD ¹	Probability of default
PF	Project finance
PFE	Potential future exposure
PRA ¹	Prudential Regulation Authority
PRC	People's Republic of China
PSE	Public sector entities
PVA	Prudent valuation adjustments

Q

QRRE	Qualifying revolving retail exposures
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R

RAS	Risk appetite statement
RC	Replacement cost
RMM	Risk Management Meeting
RMOF	Retail Banking and Wealth Management Risk Model Oversight Forum
RNIV	Risks not in VaR
RSF	Required stable funding
RTS	Regulatory Technical Standard
RW	Risk weight
RWA ¹	Risk-weighted asset/risk-weighted amount

S	
SEC-ERBA	Securitisation external ratings-based approach
SEC-FBA	Securitisation fall-back approach
SEC-IRBA	Securitisation internal ratings-based approach
SEC-SA	Securitisation standardised approach
SFT	Securities Financing Transactions
Δ	Sensitivity
SMEs	Small-and-medium sized enterprises
SPE ¹	Special Purpose Entity
SRW	Supervisory risk weight
STC	Standardised (credit risk) approach
STM	Standardised (market risk) approach
STO	Standardised (operational risk) approach
SVaR	Stressed Value at risk
S&P	Standard and Poor's rating agency
T	
T1	Tier 1
T2	Tier 2
TC	Total regulatory capital
TLAC ¹	Total Loss-absorbing Capacity
V	
VaR ¹	Value at risk
W	
WPB	Wealth and Personal Banking
WMOF	Wholesale Model Oversight Forum

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

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