The Hongkong and Shanghai Banking Corporation Limited

Annual Report and Accounts 2019

HSBC

Contents

Certain defined terms

This document comprises the *Annual Report and Accounts 2019* for The Hongkong and Shanghai Banking Corporation Limited ('the Bank') and its subsidiaries (together 'the group'). 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.

Cautionary statement regarding forward-looking statements

This *Annual Report and Accounts* contains certain forward-looking statements with respect to the financial condition, results of operations and business of the group.

Statements that are not historical facts, including statements about the Bank's beliefs and expectations, are forward-looking statements. Words such as 'expects', 'anticipates', 'intends', 'plans', 'believes', 'seeks', 'estimates', 'potential' and 'reasonably possible', variations of these words and similar expressions are intended to identify forward-looking statements. These statements are based on current plans, estimates and projections, and therefore undue reliance should not be placed on them. Forward-looking statements speak only as of the date they are made, and it should not be assumed that they have been revised or updated in the light of new information or future events.

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

Chinese translation

A Chinese translation of the *Annual Report and Accounts* is available upon request from: Communications (Asia), Level 32, HSBC Main Building, 1 Queen's Road Central, Hong Kong. The report is also available, in English and Chinese, on the Bank's website at www.hsbc.com.hk.

本《年報及賬目》備有中譯本，如有需要可向下列部門索取：香港皇后大道中1號滙豐總行大廈32樓企業傳訊部（亞太區）。本年報之中英文本亦載於本行之網站 www.hsbc.com.hk。

Financial Highlights

	2019	2018
	HK$m	HK$m
For the year		
Net operating income before change in expected credit losses and other credit impairment charges	**219,381**	210,469
Profit before tax	**136,433**	134,583
Profit attributable to shareholders	**105,722**	103,013
At the year-end		
Total shareholders' equity	**814,678**	752,758
Total equity	**879,281**	812,920
Total capital[1]	**598,934**	557,180
Customer accounts	**5,432,424**	5,207,666
Total assets	**8,661,714**	8,263,454
Ratios	**%**	%
Return on average ordinary shareholders' equity	**13.9**	14.8
Post-tax return on average total assets	**1.3**	1.4
Cost efficiency ratio	**42.6**	41.5
Net interest margin	**2.02**	2.06
Advances-to-deposits ratio	**68.5**	67.8
Capital ratios		
Common equity tier 1 capital	**17.2**	16.5
Tier 1 capital	**18.8**	17.8
Total capital	**21.0**	19.8

1 *Capital is calculated in accordance with the Banking (Capital) Rules issued by the Hong Kong Monetary Authority ("HKMA") under section 97C(1) of the Banking Ordinance.*

Established in Hong Kong and Shanghai in 1865, The Hongkong and Shanghai Banking Corporation Limited is the founding member of the HSBC Group – one of the world's largest banking and financial services organisations. It is the largest bank incorporated in Hong Kong and one of Hong Kong's three note-issuing banks. It is a wholly-owned subsidiary of HSBC Holdings plc, the holding company of the HSBC Group, which has an international network organised into five geographical regions: Europe, Asia, Middle East and North Africa, North America and Latin America.

The Hongkong and Shanghai Banking Corporation Limited
Incorporated in the Hong Kong SAR with limited liability
Registered Office and Head Office: HSBC Main Building, 1 Queen's Road Central, Hong Kong
Telephone: (852) 2822 1111 Facsimile: (852) 2810 1112 Web: www.hsbc.com.hk.

Report of the Directors

Principal Activities

The group provides a comprehensive range of domestic and international banking and related financial services, principally in the Asia-Pacific region.

Asia Strategy

HSBC's Asian franchise remains integral to the Group's focus on growth and value creation for our stakeholders. Leveraging the HSBC Group's signature balance sheet strength, privileged access to high growth Asian markets, and unique history and positioning as the world's Leading International Bank, we have made good progress in executing our key strategic priorities in Asia. We continue to fortify our leading position in the Greater Bay Area (including in Hong Kong SAR and the Pearl River Delta), to invest in growing our business in Southeast Asia, and to enhance our ability to serve more of the region's growing wealth, insurance, and asset management needs. We continue to support clients and economies participating in the China-led Belt and Road Initiative, and we re-affirm our commitment as an industry leader in sustainable finance to support the world's ongoing transition to a low-carbon economy.

Consolidated Financial Statements

The state of affairs of the Bank and the group, and the consolidated profit of the group, are shown on pages 60 to 117.

Subordinated liabilities, Preference Shares and Share Capital

Details on subordinated liabilities issued by the group are set out in notes 23 and 33. Details on preference shares and share capital of the Bank are set out in notes 24, 25 and 26 on the Consolidated Financial Statements.

Dividends

The interim dividends paid in respect of 2019 are set out in note 6 on the Consolidated Financial Statements.

Directors

The Directors at the date of this report are set out below:

Laura May Lung Cha*, GBM

Chairman

She is an independent non-executive Director of HSBC Holdings plc. She is also Chairman and an independent non-executive Director of Hong Kong Exchanges and Clearing Limited; an independent non-executive Director of Unilever PLC and Unilever N.V.; and a non-executive Director of The London Metal Exchange. She holds a Bachelor of Arts from University of Wisconsin-Madison and a Juris Doctor from University of Santa Clara Law School. She is also admitted to practice in the State of California and in Federal Courts.

Peter Tung Shun Wong

Deputy Chairman & Chief Executive

He is a Group Managing Director and a member of the Group Management Board of HSBC Holdings plc and a non-executive Director of Hang Seng Bank Limited. He is also Chairman and a non-executive Director of HSBC Bank (China) Company Limited. He holds a Bachelor of Arts, a Master of Business Administration and a Master of Science from Indiana University.

Zia Mody*

Deputy Chairman

She is a partner of AZB & Partners; an independent non-executive Director of CLP Holdings Limited; and an independent Director of Ascendas Property Fund Trustee Pte. Ltd. She holds a Bachelor of Arts (Law) from Cambridge University and a Master of Laws from Harvard University.

Graham John Bradley*

He is non-executive Chairman and a Director of HSBC Bank Australia Limited. He is also Chairman and a non-executive Director of Graincorp Limited; Chairman and a Director of EnergyAustralia Holdings Limited, Infrastructure New South Wales and Virgin Australia International Holdings Limited. He holds a Bachelor of Arts and a Bachelor of Laws (Hons I) from Sydney University and a Master of Laws from Harvard University.

Louisa Wai Wan Cheang

She is Vice-Chairman and Chief Executive of Hang Seng Bank Limited. She is also a Group General Manager of HSBC Holdings plc; an independent non-executive Director of Treasury Wine Estates Limited; and an International Advisor of China Union Pay. She holds a Bachelor of Social Sciences from The University of Hong Kong. She is also an Honorary Certified Financial Management Planner of The Hong Kong Institute of Bankers.

Dr Christopher Wai Chee Cheng*, GBS, OBE

He is Chairman of Wing Tai Properties Limited; an independent non-executive Director of NWS Holdings Ltd.; and an independent non-executive Director of Eagle Asset Management (CP) Limited. He holds a Bachelor of Business Administration from University of Notre Dame; a Master of Business Administration from Columbia University; a Doctorate in Social Sciences *honoris causa* from The University of Hong Kong and an Honorary Degree of Doctor of Business Administration from The Hong Kong Polytechnic University.

Dr Raymond Kuo Fung Ch'ien*, GBS, CBE

He is independent non-executive Chairman of Hang Seng Bank Limited. He is also an independent non-executive Director of China Resources Power Holdings Company Limited, Swiss Re Limited and Swiss Re Asia Pte. Ltd. He holds a Bachelor of Arts from Rockford College and a Master of Arts and Doctor of Philosophy (Economics) from University of Pennsylvania.

Yiu Kwan Choi*

He is an independent non-executive Director of HSBC Bank (China) Company Limited. He holds a higher certificate in Accountancy from The Hong Kong Polytechnic University and is a fellow member of The Hong Kong Institute of Bankers.

He was Deputy Chief Executive of the Hong Kong Monetary Authority ('HKMA') in charge of Banking Supervision when he retired in January 2010. Before this, he was Deputy Chief Executive of the HKMA in charge of Monetary Policy and Reserves Management from June 2005 to August 2007 and held various senior positions in the HKMA including Executive Director (Banking Supervision), Head of Administration, and Head of Banking Policy from 1993 to 2005.

Irene Yun-lien Lee*

She is an independent non-executive Director of HSBC Holdings plc and Hang Seng Bank Limited. She is also executive Chairman of Hysan Development Company Limited. She holds a Bachelor of Arts (Distinction) in History of Art from Smith College, Northampton, Massachusetts, USA. She is also a member of the Honourable Society of Gray's Inn, UK and a Barrister-at-Law in England and Wales.

Jennifer Xinzhe Li*

She is General Managing Partner of Changcheng Investment Partners, having previously been Chief Executive Officer and General Partner of Baidu Capital and Chief Financial Officer of Baidu, Inc. She is also an independent non-executive Director of Philip Morris International Inc, and a non-executive Director of Flex Ltd. and ABB Ltd. She holds a Bachelor of Arts from Tsinghua University and a Master of Business Administration from University of British Columbia.

Victor Tzar Kuoi Li#

He is Chairman and Managing Director of CK Asset Holdings Limited; Chairman and a Group Co-Managing Director of CK Hutchison Holdings Limited; Chairman of CK Infrastructure Holdings Limited and CK Life Sciences Int'l., (Holdings) Inc.; a non-executive Director of Power Assets Holdings Limited and HK Electric Investments Manager Limited; a non-executive Director and Deputy Chairman of HK Electric Investments Limited; and Co-Chairman of Husky Energy Inc. He is also Deputy Chairman of Li Ka Shing Foundation Limited, Li Ka Shing (Overseas) Foundation and Li Ka Shing (Canada) Foundation. He holds a Bachelor of Science degree in Civil Engineering, a Master of Science degree in Civil Engineering, both received from Stanford University; and an honorary degree, Doctor of Laws, *honoris causa* (LL.D.) from The University of Western Ontario.

Bin Hwee Quek (née Chua)*, PBM, BBM, JP

She is an independent non-executive Director of CapitaLand Commercial Trust Management Limited and Mapletree Oakwood Holdings Pte. Ltd.; a Director of Certis Cisco Security Pte. Ltd.; and Senior Adviser to the Envision group of companies. She is also a Director of several government or government-funded organisations in Singapore, including Duke-NUS Graduate Medical School, Health Promotion Board, Maritime and Port Authority of Singapore, and National Heritage Board.

She was an audit partner of PricewaterhouseCoopers (PwC) Singapore until June 2017 and held leadership positions including Vice Chairman of PwC Singapore and Deputy Markets Leader of PwC Asia-Pacific and Americas. She holds a Bachelor of Accountancy (Hons) from The University of Singapore and is a Chartered Accountant with the Institute of Singapore Chartered Accountants.

Kevin Anthony Westley*, BBS

He is an independent non-executive Director of Fu Tak Iam Foundation Limited and a member of the investment committee of the West Kowloon Cultural Development Authority. He holds a Bachelor of Arts (Hons) from the University of London (LSE) and is a Fellow of the Institute of Chartered Accountants in England and Wales.

He was Chairman (from 1996) and Chief Executive (from 1992) of HSBC Investment Bank Asia Limited (formerly named as Wardley Limited) until his retirement in 2000 and subsequently acted as an advisor to the Bank and the Group in Hong Kong.

Tan Sri (Sir) Francis Sock Ping Yeoh*, KBE, CBE

He is executive Chairman of YTL Corporation Berhad, YTL Land & Development Berhad, YTL Power International Berhad, YTL Cement Berhad, Malayan Cement Berhad and executive Chairman and a Managing Director of YTL E-Solutions Berhad. He holds a Bachelor of Science (Hons) in Civil Engineering and an Honorary Doctorate of Engineering from the University of Kingston.

* Independent non-executive Director
\# Non-executive Director

During the year, Marjorie Yang retired as a Director on 4 April 2019 and John Flint stepped down as Chairman and a Director with effect from 5 August 2019. Laura Cha, an independent non-executive Director and a former Deputy Chairman, was appointed as Chairman with effect from 6 December 2019. Save for the above, all the Directors served throughout the year.

A list of the directors of the Bank's subsidiary undertakings (consolidated in the financial statements) during the period from 1 January 2019 to the date of this report will be available on the Bank's website https://www.hsbc.com.hk/legal/regulatory-disclosures/.

Secretary

Paul Stafford was appointed as the Corporation Secretary with effect from 13 January 2020. Neil Olofsson was Corporation Secretary until 13 December 2019, when Philip Miller assumed the responsibilities on an interim basis until Paul Stafford's appointment.

Permitted Indemnity Provision

The Bank's Articles of Association provide that the Directors and other officers for the time being of the Bank shall be indemnified out of the Bank's assets against any liability incurred by them or any of them as the holder of any such office or appointment to a person other than the Bank or an associated company of the Bank in connection with any negligence, default, breach of duty or breach of trust in relation to the Bank or associated company (as the case may be). In addition, the Bank's ultimate holding company, HSBC Holdings plc, has maintained directors' and officers' liability insurance providing appropriate cover for the directors and officers within the Group, including the Directors of the Bank and its subsidiaries.

Directors' Interests in Transactions, Arrangements or Contracts

Save as disclosed in note 33 on the Consolidated Financial Statements, no transactions, arrangements or contracts that were significant in relation to the Bank's business and in which a Director or his or her connected entities had, directly or indirectly, a material interest were entered into by or subsisted with the Bank, its holding companies, its subsidiaries or subsidiaries of its holding companies during the year.

Directors' Rights to Acquire Shares or Debentures

To help align the interests of employees with shareholders, executive Directors of the Bank and those executive Directors of HSBC Holdings plc are eligible to be granted conditional awards over ordinary shares in HSBC Holdings plc by that company (being the ultimate holding company) under the HSBC Share Plan 2011 and the HSBC International Employee Share Purchase Plan.

Executive Directors of the Bank and those executive Directors of HSBC Holdings plc are eligible to receive an annual incentive award based on the outcome of the performance measures (financial and non financial) set out in their annual performance scorecard. Annual incentive awards are normally delivered in cash and/or shares, and these generally have a deferral rate of 60% or 40% if the annual incentive award is GBP500,000 or below. The period over which annual incentive awards would be deferred is determined in accordance with the requirements of the Prudential Regulation Authority ('PRA') Remuneration Rules, i.e. seven years for Senior Managers (individuals in PRA and Financial Conduct Authority ('FCA') designation Senior Management Functions), five years for Risk Managers, and three years for other Material Risk Takers ('MRTs'). From January 2017 onwards, all share awards granted to MRTs are subject to a minimum retention period of one year as opposed to six months previously. However, for certain individuals whose variable pay awards will be deferred for at least five years and who are not considered to be members of senior management, their retention period may be kept at six months.

All unvested deferred awards made under the HSBC Share Plan 2011 are subject to the application of malus, i.e. the cancellation and reduction of unvested deferred awards. All paid or vested variable pay awards made to Identified Staff and MRTs will be subject to clawback for a period of seven years from the date of award. For Senior Managers, this may be extended to 10 years in the event of an ongoing internal or regulatory investigation at the end of the seven-year period.

Executive Directors and other senior executives of HSBC Holdings plc are subject to Group minimum shareholding requirements. Individuals are given five years from 2014 or (if later) their appointment to build up the recommended levels of shareholding. HSBC operates an anti-hedging policy for Group, sectorial and local MRTs including executive Directors in accordance with the PRA Rules, who are required to certify each year via the Bank's Global Personal Account Dealing system that they have not entered into any personal hedging strategies in relation to their holdings of HSBC shares.

The HSBC International Employee Share Purchase Plan is an employee share purchase plan offered to employees in Hong Kong since 2013 and has been extended to further countries in the HSBC Group from 2014. For every three shares in HSBC Holdings plc purchased by an employee ('Investment Shares'), a conditional award to acquire one share is granted ('Matching Shares'). The employee becomes entitled to the Matching Shares subject to continued employment with HSBC and retention of the Investment Shares until the third anniversary of the start of the relevant plan year. HSBC Holdings Savings-Related Share Option Plan (UK) is an all employee share plan under which eligible employees may be granted options to acquire HSBC Holdings ordinary shares. Employees may make monthly contributions, up to a maximum defined limit, over a period of three or five years and shares are exercisable within six months following either the third or fifth anniversary of the commencement. The exercise price is set at a 20% discount to the market value immediately preceding the date of invitation.

During the year, John Flint, Peter Wong and Louisa Cheang acquired or were awarded shares of HSBC Holdings plc under the terms of the HSBC Share Plan 2011. John Flint also exercised options over ordinary shares in HSBC Holdings plc under the HSBC Holdings Savings-Related Share Option Plan (UK).

Apart from these arrangements, at no time during the year was the Bank, its holding companies, its subsidiaries or any fellow subsidiaries a party to any arrangements to enable the Directors to acquire benefits by means of the acquisition of shares in or debentures of the Bank or any other body corporate.

Donations

Donations made by the Bank and its subsidiaries during the year amounted to HK$339m (2018: HK$302m).

Compliance with the Banking (Disclosure) Rules

The Directors are of the view that the *Annual Report and Accounts 2019* and Banking Disclosure Statements 2019, fully comply with the Banking (Disclosure) Rules made under section 60A of the Banking Ordinance.

Auditor

The *Annual Report and Accounts* have been audited by PricewaterhouseCoopers ('PwC'). A resolution to reappoint PwC as auditor of the Bank will be proposed at the forthcoming AGM.

Corporate Governance

The Bank is committed to high standards of corporate governance. As an Authorised Institution, the Bank is subject to and complies with the Hong Kong Monetary Authority ('HKMA') Supervisory Policy Manual CG-1 'Corporate Governance of Locally Incorporated Authorised Institutions'.

Board of Directors

The Board, led by the Chairman, provides entrepreneurial leadership of the Bank within a framework of prudent and effective controls which enables risks to be assessed and managed. The Board is collectively responsible for the long-term success of the Bank and delivery of sustainable value to shareholders. The Board sets the strategy and risk appetite for the group and approves capital and operating plans presented by management for the achievement of the strategic objectives it has set.

Directors

The Bank has a unitary Board. The authority of each Director is exercised in Board meetings where the Board acts collectively. As at the date of this report, the Board comprised: the independent non-executive Chairman; the Deputy Chairman and Chief Executive; one Deputy Chairman who is an independent non-executive Director; one Director with executive responsibilities for a subsidiary's operations; one non-executive Director; and another nine independent non-executive Directors.

Independent non-executive Directors

Independent non-executive Directors do not participate in the daily business management of the Bank. They bring an external perspective, constructively challenge and help develop proposals on strategy, scrutinise the performance of management in meeting agreed goals and objectives, and monitor the risk profile and reporting of performance of the Bank. The independent non-executive Directors bring experience from a number of industries and business sectors, including the leadership of large complex multinational enterprises. The Board has determined that there are 11 independent non-executive Directors. In making this determination, it was agreed that there are no relationships or circumstances likely to affect the judgement of the independent non-executive Directors, with any relationships or circumstances that could appear to do so not considered to be material.

Chairman and Chief Executive

The roles of Chairman and Chief Executive are separate and held respectively by an experienced independent non-executive Director and a full-time employee of the HSBC Group. There is a clear division of responsibilities between leading the Board and the executive responsibility for running the Bank's business.

The Chairman provides leadership to the Board and is responsible for the overall effective functioning of the Board. The Chairman shall lead the Board in the development of strategy in Asia-Pacific and the oversight of implementation of Board approved strategies and direction. The Chief Executive is responsible for ensuring implementation of the strategy and policy as established by the Board and the day-to-day running of operations. The Chief Executive is Chairman of the Executive Committee. Each Asia-Pacific Global Business and Global Function head reports to the Chief Executive.

Board Committees

The Board has established various committees consisting of Directors and senior management. The committees include the Executive Committee, Audit Committee, Risk Committee, Nomination Committee, Remuneration Committee and Chairman's Committee. The Chairmen of the Executive Committee and of each Board committee that includes independent non-executive Directors report to each subsequent Board meeting on the relevant committee's proceedings.

The Board has also established an Asset, Liability and Capital Management Committee (formerly known as Asset and Liability Management Committee), a Risk Management Meeting and a Financial Crime Risk Management Committee. The Executive Committee has the delegated authority to approve any changes in the membership and terms of reference of the Asset, Liability and Capital Management Committee, the Risk Management Meeting and the Financial Crime Risk Management Committee.

The Board and each Board committee have terms of reference to document their responsibilities and governance procedures. The key roles of the committees are described in the paragraphs below.

Executive Committee

The Executive Committee is responsible for the exercise of all of the powers, authorities and discretions of the Board in so far as they concern the management, operations and day-to-day running of the group, in accordance with such policies and directions as the Board may from time to time determine, with power to sub-delegate. A schedule of items that require the approval of the Board is maintained.

The Bank's Deputy Chairman and Chief Executive, Peter Wong, is Chairman of the Committee. The current members of the Committee are: Diana Cesar (Chief Executive Officer Hong Kong), Pui Mun Chan (Head of Regulatory Compliance Asia-Pacific), David Grimme (Chief Operating Officer Asia-Pacific), Gordon French (Head of Global Banking and Markets Asia-Pacific), Ming Lau (Chief Financial Officer Asia-Pacific), Tony Cripps (Chief Executive Officer Singapore), Mukhtar Hussain (Head of Belt and Road Initiative Asia-Pacific), Darren Furnarello (Head of Financial Crime Compliance Asia-Pacific), David Liao (Chief Executive Officer China), Kevin Martin (Head of Retail Banking and Wealth Management Asia-Pacific), Edward Jenkins (Chief Risk Officer Asia-Pacific), Stuart Milne (Chief Executive Officer Malaysia), Surendranath Rosha (Chief Executive Officer India), Siew Meng Tan (Head of Global Private Banking Asia-Pacific), Matthew Lobner (Head of Strategy and Planning Asia-Pacific and Head of International Asia-Pacific), Susan Sayers (General Counsel Asia-Pacific), Stuart Tait (Head of Commercial Banking Asia-Pacific) and David Thomas (Head of Human Resources, Asia-Pacific). Paul Stafford (Corporation Secretary) is the Committee Secretary. In attendance are: Kaber Mclean (Head of Remediation Management Office Asia-Pacific), Patrick Humphris (Head of Communications Asia-Pacific), Astor Law (Head of Global Internal Audit Asia-Pacific) Noel McNamara (Acting Chief Executive Officer Australia) and Philip Miller (Deputy Corporation Secretary). The Committee met 12 times in 2019.

Asset, Liability and Capital Management Committee

The Asset, Liability and Capital Management Committee ('ALCO') is chaired by the Chief Financial Officer and is an advisory committee to provide recommendations and advice to support the Chief Financial Officer's individual accountability for the efficient management of the Bank's balance sheet within the constraints of liquidity, funding and capital, and other key balance sheet risks such as interest rate risk, market risk and equity risk.

The Committee consists of Ming Lau (Chief Financial Officer Asia-Pacific), Peter Wong (the Bank's Deputy Chairman and Chief Executive), the Head of Asset, Liability and Capital Management Asia-Pacific, the Head of Balance Sheet Management Asia-Pacific and other senior executives of the Bank most of whom are members of the Executive Committee. The Committee met 12 times in 2019.

Risk Management Meeting

The Risk Management Meeting is chaired by the Chief Risk Officer and is a formal governance committee established to provide recommendations and advice to the Chief Risk Officer on enterprise-wide management of all risks, including key policies and frameworks for the management of risk within the Bank. The Risk Management Meeting consists of Edward Jenkins (Chief Risk Officer Asia-Pacific), Peter Wong (the Bank's Deputy Chairman and Chief Executive), the Head of Global Internal Audit Asia-Pacific and other senior executives of the Bank most of whom are members of the Executive Committee. The Risk Management Meeting met 10 times in 2019.

Financial Crime Risk Management Committee

The Financial Crime Risk Management Committee is chaired by the Bank's Deputy Chairman and Chief Executive and is a formal governance committee established to ensure effective enterprise-wide management of financial crime risk within the Asia-Pacific Region and to support the Chief Executive in discharging his financial crime risk responsibilities. The Committee consists of Peter Wong (the Bank's Deputy Chairman and Chief Executive), the Head of Financial Crime Compliance Asia-Pacific, the Head of Operational Risk Asia-Pacific, the Head of Remediation Office Asia-Pacific, and other senior executives of the Bank most of whom are members of the Executive Committee. The Committee met 10 times in 2019.

Audit Committee

The Audit Committee has non-executive responsibility for oversight of and advice to the Board on matters relating to financial reporting and internal financial controls. The current members of the Committee, all being independent non-executive Directors, are Kevin Westley (Chairman of the Committee), Graham Bradley, Yiu Kwan Choi, Irene Lee and Jennifer Li. The Committee met four times in 2019.

The Audit Committee monitors the integrity of the Consolidated Financial Statements and disclosures relating to financial performance, the effectiveness of the internal audit function and the external audit process, and the effectiveness of internal financial control systems. The Committee reviews the adequacy of resources and expertise as well as succession planning for the finance function. It reviews, and considers changes to, the Bank's accounting policies. The Committee advises the Board on the appointment, re-appointment, or removal of the external auditor and reviews and monitors the external auditor's independence and objectivity. The Committee reviews matters escalated for its attention by subsidiaries' audit committees and reviews minutes of meetings of the Asset, Liability and Capital Management Committee.

Risk Committee

The Risk Committee has non-executive responsibility for oversight of and advice to the Board on risk-related matters impacting the Bank and its subsidiaries, including risk governance and internal control systems (other than internal controls over financial reporting). The current members of the Committee, all being independent non-executive Directors, are Graham Bradley (Chairman of the Committee), Christopher Cheng, Yiu Kwan Choi, Irene Lee, Zia Mody and Kevin Westley. The Committee met five times in 2019.

All of the Bank's activities involve, to varying degrees, the identification, assessment, monitoring and management of risk or combinations of risks. The Board, advised by the Risk Committee, requires and encourages a strong risk culture which shapes the Bank's attitude to risk. The Bank's risk governance is supported by the Group's enterprise risk management framework which provides a clear policy of risk ownership and accountability of all staff for identifying, assessing and managing risks within the scope of their assigned responsibilities. This personal accountability, reinforced by clear and consistent employee communication on risk that sets the tone from senior leadership, the governance structure, mandatory learning and remuneration policy, helps to foster a disciplined and constructive culture of risk management and control throughout the group.

The Board and the Risk Committee oversee the maintenance and development of a strong risk management framework by continually monitoring the risk environment, top and emerging risks facing the group and mitigating actions planned and taken. The Risk Committee reviews any revisions to the group's risk appetite statement at least annually and recommends any proposed changes to the Board for approval. The Committee reviews management's assessment of risk against the risk appetite statement and provides scrutiny of management's proposed mitigating actions. The Committee monitors the risk profiles for all of the risk categories within the group's business. The Committee also monitors the effectiveness of the Bank's risk management and internal controls other than those over financial reporting. Regular reports from the Risk Management Meeting, which is the executive body supporting the executive accountability of the group Chief Risk Officer for the ongoing monitoring, assessment and management of the risk environment and the effectiveness of the risk management framework, are also presented at each Risk Committee meeting to report on these items. The Committee reviews matters escalated for its attention by subsidiaries' risk committees and reviews minutes of meetings of the Risk Management Meeting.

Nomination Committee

The Nomination Committee is responsible for leading the process for Board and senior management appointments and for identifying and nominating, for the approval of the Board, candidates for appointment to the Board and certain senior management roles. Appointments to the Board and certain senior management roles are subject to the approval of the HKMA. The Committee considers plans for orderly succession to the Board and the appropriate balance of skills, knowledge and experience on the Board.

The current members of the Committee, all being independent non-executive Directors, are Christopher Cheng (Chairman of the Committee), Laura Cha (Chairman of the Board) and Zia Mody. The Deputy Chairman and Chief Executive attends each meeting of the Committee. The Committee met once in 2019. The Committee also approved a number of matters during the year by written resolutions of all members.

A rigorous selection process, overseen by the Nomination Committee and based upon agreed requirements using an external search consultancy, is followed in relation to the appointment of non-executive Directors. Before recommending an appointment of a Director to the Board, the Committee evaluates the Board composition including balance of skills, knowledge and experience, as well as diversity and the role and capabilities required. In identifying suitable Board candidates, the Committee considers candidates' backgrounds, knowledge and experience (including international experience) to promote diversity of views, and takes into account the required time commitment and any potential conflicts of interest.

Chairman's Committee

The Chairman's Committee acts on behalf of the Board either in accordance with authority delegated by the Board from time to time, or as specifically set out within its terms of reference. The Committee meets with such frequency and at such times as it may determine and can implement previously agreed strategic decisions by the full Board, approve specified matters subject to their prior review by the full Board, and act exceptionally on urgent matters within its terms of reference.

The current members of the Committee comprise the Chairman of the Board, the Deputy Chairman and Chief Executive, the non-executive Deputy Chairman and the Chairmen of the Audit and Risk Committees. The Committee met twice in 2019.

Remuneration Committee

The Group Remuneration Committee is responsible for setting the overarching principles, parameters and governance for the Group's remuneration framework applicable to all Group employees. Following revisions to the HKMA's Supervisory Policy Manual CG-1 'Corporate Governance of Locally Incorporated Authorised Institutions', the Board established a Remuneration Committee with effect from 1 January 2018 which annually reviews the effectiveness and compliance of the Group's reward strategy as adopted by the Bank. The current members of the Committee, all being independent non-executive Directors, are Irene Lee (Chairman of the Committee), Christopher Cheng, Jennifer Li and Bin Hwee Quek. The Committee met four times in 2019. The following is a summary of the Committee's key activities during 2019:

Details of the Committee's key activities

Senior Management*	All employees
• Reviewed and approved senior management population's remuneration matters and pay proposals • Reviewed and approved the scorecards for the Chief Executive and Executive Committee members of the group • Approved Remuneration Committee section in the Report of the Directors	• Approved 2018/2019 performance year pay review matters • Reviewed remuneration framework effectiveness • Received updates on notable events and regulatory and corporate governance matters • Reviewed and approved 2019 Material Risk Taker ('MRT') identification approaches and outcomes of MRT review under the Group definition and as defined by some of its principal subsidiaries, as applicable • Reviewed attrition data and plans to address area of concerns • Approved 2019 regulatory submissions

** Senior Management includes the Chief Executive of the group, Chief Executive of Hang Seng Bank Limited, Executive Committee members, Alternate Chief Executives, Managers as registered with the Hong Kong Monetary Authority (HKMA).*

Remuneration Strategy

Our remuneration strategy is designed to reward competitively the achievement of long-term sustainable performance, and attract and motivate the very best people, regardless of gender, ethnicity, age, disability or any other factor unrelated to performance or experience with the Group. 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. Our remuneration strategy, as approved by the Group Remuneration Committee and adopted subject to annual review by the Bank's Remuneration Committee, is based on the following principles:

- 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.
- 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.

More details of the Bank's remuneration strategy are contained within the *Annual Report and Accounts 2019* of HSBC Holdings plc.

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 2019 was commissioned externally to Deloitte LLP, and the results confirm that the Bank's remuneration framework as adopted from the Group is consistent with the principles set out in the Guideline.

Banking structural reform and recovery and resolution planning

The Financial Institutions (Resolution) (Loss-absorbing Capacity Requirements–Banking Sector) Rules ('LAC Rules') came into operation in Hong Kong in December 2018, under the powers set out in the Financial Institutions (Resolution) Ordinance ('FIRO') which came into effect in 2017. Within the LAC Rules, the group needs to have sufficient loss-absorbing capacity ('LAC') which can be written down or converted into equity at an intermediate holding company in Hong Kong to recapitalise the group as a whole in the event of failure.

HSBC Asia Holdings Limited, a wholly-owned subsidiary of HSBC Holdings plc and the intermediate holding company of the group since November 2018, is designated as the resolution entity for the group, where adequate LAC has to be available in a form that will be bailed-in at the point of resolution. The group completed the restructuring of its internal regulatory capital and LAC-eligible debt and equity instruments such that they are all held by HSBC Asia Holdings Limited, in compliance with LAC requirements as at 1 July 2019.

During 2019, the group also made progress in mitigating operational dependencies, where one group entity provides critical services to another, to facilitate operational continuity in resolution. In particular, a substantial number of employees performing critical shared services in Hong Kong have been transferred from the group into a separate service company in Hong Kong, HSBC Global Services (Hong Kong) Limited (the 'ServCo'), which is outside the group but is wholly-owned by HSBC Holdings plc. There were no changes to employment terms and conditions or pension benefits as a result of these transfers.

Business review

The Bank is exempt from the requirement to prepare a business review under section 388(3) of the Companies Ordinance Cap. 622 since it is a wholly-owned subsidiary of HSBC Holdings plc.

On behalf of the Board

Laura Cha, Chairman

18 February 2020

Financial Review

Results for 2019

Profit before tax for 2019 reported by The Hongkong and Shanghai Banking Corporation Limited ('the Bank') and its subsidiaries (together 'the group') increased by HK$1,850m, or 1%, to HK$136,433m.

Consolidated income statement and balance sheet data by global business

(Audited)

	Retail Banking and Wealth Management	Commercial Banking	Global Banking and Markets	Global Private Banking	Corporate Centre[1]	Total
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
Year ended 31 Dec 2019						
Net interest income	**68,374**	**42,807**	**25,140**	**2,956**	**(8,374)**	**130,903**
Net fee income	**18,647**	**9,960**	**9,977**	**2,839**	**82**	**41,505**
Net income from financial instruments measured at fair value	**16,038**	**2,699**	**17,409**	**1,095**	**13,217**	**50,458**
Gains less losses from financial investments	**20**	**—**	**—**	**—**	**618**	**638**
Net insurance premium income/(expense)	**56,222**	**4,380**	**—**	**—**	**(327)**	**60,275**
Other operating income	**13,793**	**434**	**828**	**119**	**584**	**15,758**
Total operating income	**173,094**	**60,280**	**53,354**	**7,009**	**5,800**	**299,537**
Net insurance claims and benefits paid and movement in liabilities to policyholders	**(75,628)**	**(4,528)**	**—**	**—**	**—**	**(80,156)**
Net operating income before change in expected credit losses and other credit impairment charges	**97,466**	**55,752**	**53,354**	**7,009**	**5,800**	**219,381**
of which: – external	***62,226***	***53,208***	***71,511***	***5,442***	***26,994***	***219,381***
– inter-segment	***35,240***	***2,544***	***(18,157)***	***1,567***	***(21,194)***	**—**
Change in expected credit losses and other credit impairment charges	**(2,078)**	**(3,029)**	**(549)**	**1**	**(17)**	**(5,672)**
Net operating income	**95,388**	**52,723**	**52,805**	**7,010**	**5,783**	**213,709**
Operating expenses	**(41,756)**	**(19,212)**	**(23,319)**	**(4,013)**	**(5,194)**	**(93,494)**
Operating profit	**53,632**	**33,511**	**29,486**	**2,997**	**589**	**120,215**
Share of profit in associates and joint ventures	**346**	**—**	**—**	**—**	**15,872**	**16,218**
Profit before tax	**53,978**	**33,511**	**29,486**	**2,997**	**16,461**	**136,433**
Balance sheet data at 31 Dec 2019						
Loans and advances to customers (net)	**1,244,236**	**1,244,007**	**1,066,235**	**164,895**	**1,502**	**3,720,875**
Customer accounts	**2,903,203**	**1,344,590**	**983,682**	**197,654**	**3,295**	**5,432,424**
Year ended 31 Dec 2018						
Net interest income	62,829	39,004	22,590	2,683	(643)	126,463
Net fee income	21,087	10,598	9,794	2,650	102	44,231
Net income/(expense) from financial instruments measured at fair value	(3,731)	2,694	18,283	800	7,919	25,965
Gains less losses from financial investments	109	(34)	104	—	322	501
Net insurance premium income/(expense)	57,301	3,441	—	—	(64)	60,678
Other operating income	5,851	508	737	110	3,264	10,470
Total operating income	143,446	56,211	51,508	6,243	10,900	268,308
Net insurance claims and benefits paid and movement in liabilities to policyholders	(54,539)	(3,300)	—	—	—	(57,839)
Net operating income before change in expected credit losses and other credit impairment charges	88,907	52,911	51,508	6,243	10,900	210,469
of which: – external	*62,277*	*50,059*	*64,626*	*4,422*	*29,085*	*210,469*
– inter-segment	*26,630*	*2,852*	*(13,118)*	*1,821*	*(18,185)*	—
Change in expected credit losses and other credit impairment charges	(2,019)	(2,315)	(394)	(13)	21	(4,720)
Net operating income	86,888	50,596	51,114	6,230	10,921	205,749
Operating expenses	(38,946)	(17,878)	(21,807)	(3,479)	(5,314)	(87,424)
Operating profit	47,942	32,718	29,307	2,751	5,607	118,325
Share of profit in associates and joint ventures	247	—	—	—	16,011	16,258
Profit before tax	48,189	32,718	29,307	2,751	21,618	134,583
Balance sheet data at 31 Dec 2018						
Loans and advances to customers (net)	1,146,689	1,223,999	1,035,629	120,985	1,400	3,528,702
Customer accounts	2,750,104	1,306,775	949,812	196,413	4,562	5,207,666

1 *Includes inter-segment elimination.*

Financial Review

(Unaudited)

The commentary that follows compares the group's financial performance for the years ended 2019 with 2018.

Results Commentary

The group reported profit before tax of HK$136,433m, an increase of HK$1,850m, or 1%, driven by higher net insurance income, higher net interest income and higher income from financial instruments held for trading or managed on a fair value basis, partly offset by higher operating expenses.

Net interest income increased by HK$4,440m, or 4%, with increases across all global businesses and mainly in Hong Kong, primarily from growth in loans and advances to customers, coupled with improved customer deposit spreads. Net interest income in India and Singapore also increased, driven by growth in loans and advances to customers. These were partly offset by decreases in mainland China, Australia and Taiwan due to higher funding costs to support business activities.

Net fee income decreased by HK$2,726m, or 6%, primarily in Retail Banking and Wealth Management ('RBWM'). The decrease was driven by Hong Kong from lower securities brokerage due to lower equity market turnover in 2019, lower income from funds under management and unit trusts, coupled with lower net fee income from credit cards due to higher rewards and bonus points expenses. To a lesser extent, net fee income also decreased in Commercial Banking ('CMB'), mainly in trade-related and remittance fees.

Net income from financial instruments measured at fair value through profit or loss increased by HK$24,493m, or 94%.

Net income from financial instruments held for trading or managed on a fair value basis increased by HK$4,318m, or 13%, driven by Hong Kong, mainly from Rates and Credit trading, and mainland China from lower cost on structured deposits, coupled with higher Rates trading income.

Net income from assets and liabilities of insurance business, including related derivatives, measured at fair value through profit or loss increased by HK$19,818m, mainly in Hong Kong driven by revaluation gains on the equity portfolio held to back insurance and investment contracts from the favourable equity market movements in 2019, as compared to revaluation losses in 2018. To the extent that these gains are attributable to policyholders, the gains are offset by a corresponding movement in 'Net insurance claims and benefits paid and movement in liabilities to policyholders'.

Net insurance premium income decreased slightly by HK$403m, or 1%, driven by higher reinsurance ceded in 2019 in Hong Kong. Gross insurance premium income (excluding the impact from reinsurance arrangements) increased by 10%, mainly in Hong Kong from higher renewal premiums and new business sales. These were largely offset by a corresponding movement in 'Net insurance claims and benefits paid and movement in liabilities to policyholders'.

Other operating income increased by HK$5,288m, or 51%, driven by the favourable movement in the present value of in-force long-term insurance business ('PVIF'), primarily in Hong Kong. To the extent that these gains are attributable to policyholders, the gains are offset by a corresponding movement in 'Net insurance claims and benefits paid and movement in liabilities to policyholders'. The impact from the favourable change in PVIF was partly offset by lower recoveries from fellow group companies due to a change in the cost recharge mechanism following the transfer of shared services and operations to the HSBC Global Service (Hong Kong) Limited ('ServCo') in 2019, with a corresponding decrease in 'operating expenses'.

Net insurance claims and benefits paid and movement in liabilities to policyholders increased by HK$22,317m, or 39%, reflecting higher investment returns to policyholders due to the favourable equity market performance in 2019, coupled with higher premium income and the favourable movement in PVIF, partly offset by the major reinsurance arrangement in 2019.

Change in expected credit losses and other credit impairment charges increased by HK$952m, or 20%, driven by CMB mainly in Hong Kong due to increased provisions to reflect the deterioration in the Hong Kong and global economic outlook, partly offset by lower specific charges.

Total operating expenses increased by HK$6,070m, or 7%, with increases across all global businesses. The increase was driven by higher IT and staff costs to support growth initiatives, wage inflation and higher management charges from ServCo following the transfer of over 8,500 employees to ServCo during the year. Depreciation charges also increased due to a change in valuation base of certain properties from cost to fair value following the implementation of HKFRS 16. These increases were partly offset by the release of a customer remediation provision in Hong Kong, release of a provision in relation to a tax matter in Indonesia, and from a change in cost recharge mechanism from fellow group companies as mentioned above.

Share of profit in associates and joint ventures decreased by HK$40m, driven by an unfavourable effect of foreign exchange translation. Excluding this impact, share of profit in associates and joint ventures increased by HK$667m, mainly from Bank of Communications Co., Limited.

Net interest income

(Unaudited)

	2019 HK$m	2018 HK$m
Net interest income	**130,903**	126,463
Average interest-earning assets	**6,464,424**	6,151,920
	%	%
Net interest spread	**1.87**	1.93
Contribution from net free funds	**0.15**	0.13
Net interest margin	**2.02**	2.06

Net interest income ('NII') increased by HK$4,440m, or 4%, with increases across all global businesses and mainly in Hong Kong, primarily from growth in loans and advances to customers, coupled with improved customer deposit spreads. NII in India and Singapore also increased, driven by growth in loans and advances to customers. These were partly offset by decreases in mainland China, Australia and Taiwan due to higher funding costs to support business activities.

Average interest-earning assets increased by HK$313bn, or 5%, driven by Hong Kong primarily due to an increase in loans and advances to customers, notably in corporate term lending and mortgages. To a lesser extent, increases were also noted in Singapore, Australia and India, mainly from growth in loans and advances to customers.

Net interest margin decreased by four basis points, driven by mainland China, Australia and Taiwan, partly offset by an increase in Hong Kong.

At the Bank's operations in Hong Kong, the net interest margin increased by one basis point, mainly from improved customer deposit spreads and higher reinvestment yields on financial investments which benefited from higher market interest rates compared to the prior year, coupled with the change in asset portfolio mix due to growth in customer lending. These increases were partly offset by compressed lending spreads in mortgages and corporate lending.

At Hang Seng Bank, the net interest margin decreased by three basis points, mainly from compressed lending spreads and from financial liabilities raised to meet the 'Total Loss Absorbing Capacity' regulatory requirement. These were partly offset by improved customer deposit spreads, higher reinvestment yields on financial investments, coupled with higher contribution from net free funds as market interest rates increased.

In mainland China, the decrease in net interest margin was driven by higher cost of funds from increased funding to support business growth, coupled with lower reinvestment yields from financial investments due to ample liquidity in the market.

In Australia and Taiwan, net interest margin decreased mainly due to higher cost of funds following increases in market interest rates in the prior year.

Insurance business

(Unaudited)

The following table shows the results of our insurance manufacturing operations by income statement line item, and separately the insurance distribution income earned by the group's bank channels.

Results of insurance manufacturing operations and insurance distribution income earned by the group's bank channels

	2019 HK$m	2018 HK$m
Insurance manufacturing operations[1]		
Net interest income	**14,634**	13,650
Net fee expense	**(4,424)**	(3,162)
Net income/(expense) from financial instruments measured at fair value	**13,633**	(6,279)
Net insurance premium income	**60,577**	60,713
Change in present value of in-force long-term insurance business	**12,546**	4,629
Other operating income	**267**	529
Total operating income	**97,233**	70,080
Net insurance claims and benefits paid and movement in liabilities to policyholders	**(80,156)**	(57,839)
Net operating income before change in expected credit losses and other credit impairment charges	**17,077**	12,241
Change in expected credit losses and other credit impairment charges	**(113)**	1
Net operating income	**16,964**	12,242
Total operating expenses	**(2,095)**	(2,217)
Operating profit	**14,869**	10,025
Share of profit in associates and joint ventures	**346**	246
Profit before tax	**15,215**	10,271
Annualised new business premiums of insurance manufacturing operations	**22,395**	21,804
Distribution income earned by the group's bank channels	**5,800**	5,726

1 *The results presented for insurance manufacturing operations are shown before elimination of intercompany transactions with the group's non-insurance operations.*

Insurance manufacturing

Profit before tax from the insurance manufacturing operations increased by HK$4,944m, or 48%, driven by the favourable equity market performance in 2019 (compared with adverse equity markets in 2018), together with growth in the value of new business.

Net interest income increased by 7% from growth in invested funds, reflecting net new business and renewal premium inflows on life insurance contracts.

Net income from financial instruments measured at fair value increased significantly, driven by revaluation gains on the equity portfolio held to support insurance and investment contracts, as compared to revaluation losses in 2018.

Net insurance premium income decreased slightly, driven by higher reinsurance ceded in 2019 in Hong Kong. Gross insurance premium income (excluding the impact from reinsurance arrangements) increased by 10%, mainly in Hong Kong from higher renewal premiums and new business sales.

The higher movement in the present value of in-force long-term insurance business was driven by Hong Kong, mainly from the offsetting of the effect of interest rate changes on the valuation of the liabilities under insurance contracts, actuarial assumption and methodology updates, and from higher value of new business written in 2019. For further details, please see note 15 on the Consolidated Financial Statements.

To the extent that the above gains or losses are attributable to policyholders, there is an offsetting movement reported under 'Net insurance claims and benefits paid and movement in liabilities to policyholders'.

Annualised new business premiums ('ANP') is a measure of new insurance premium generation by the business. It is calculated as the sum of 100% of annualised first year regular premiums and 10% of single premiums, before reinsurance ceded. Growth in ANP during the year reflected new business growth in all insurance manufacturing markets, principally in Hong Kong.

Balance sheet commentary compared with 1 January 2019

(Unaudited)

The consolidated balance sheet at 31 December 2019 is set out in the Consolidated Financial Statements.

The effect of transitioning to HKFRS 16 'Leases' on 1 January 2019 was an increase in total assets by HK$25bn, increase in total liabilities by HK$12bn, and an increase in shareholders' equity by by HK$13bn. The commentary that follows compares our balance sheet at 31 December 2019 with that at 1 January 2019.

Gross loans and advances to customers increased by HK$193bn, or 5%, including unfavourable foreign currency translation effects of HK$5bn. Excluding this impact, the underlying increase of HK$198bn was driven by an increase in residential mortgages of HK$91bn, mainly in Hong Kong and Australia, coupled with an increase in other personal lending of HK$44bn, mainly in Hong Kong and Singapore. Non-bank financial institution lending also increased by HK$38bn, mainly in Hong Kong.

Overall credit quality remained strong, with total gross impaired loans and advances as a percentage of gross loans and advances standing at 0.56% at the end of 2019. Change in expected credit losses in 2019 in relation to average gross customer advances remained low at 0.15% (2018: 0.13%).

Interest in associates and joint ventures

At 31 December 2019, an impairment review on the group's investment in Bank of Communications Co., Ltd ('BoCom') was carried out and it was concluded that the investment was not impaired based on our value in use calculation (see note 14 on the Consolidated Financial Statements for further details). As discussed in that note, in future periods the value in use may increase or decrease depending on the effect of changes to model inputs. It is expected that the carrying amount will increase due to retained profits earned by BoCom. At the point where the carrying amount exceeds the value in use, impairment would be recognised. The group would continue to recognise its share of BoCom's profit or loss, but the carrying amount would be reduced to equal the value in use, with a corresponding reduction in income. An impairment review would continue to be performed at each subsequent reporting period, with the carrying amount and income adjusted accordingly.

Customer deposits rose by HK$225bn, or 4%, to HK$5,432bn. The advances-to-deposits ratio was 68.5% at the end of the year (2018: 67.8%).

Shareholders' equity grew by HK$48bn to HK$815bn at 31 December 2019, mainly reflecting current year's profit, net of dividend payment, coupled with additional tier 1 capital instruments issued.

Risk

Our approach to risk

(Unaudited)

Our conservative risk appetite

We have maintained a conservative risk profile throughout our history. This is central to our business and strategy. We recognise the importance of a strong risk culture, which refers to our shared attitudes, values and norms that shape behaviours related to risk awareness, risk taking and risk management. All employees are responsible for the management of risk, with the ultimate accountability residing with the Board.

We seek to build our business for the long term by balancing social, environmental and economic considerations in the decisions we make. Our strategic priorities are underpinned by our endeavour to operate in a sustainable way. This helps us to carry out our social responsibility and manage the risk profile of the business. We are committed to managing and mitigating climate-related risks, both physical and transition, and will continue to incorporate this into how we manage and oversee risks internally and with our customers.

The following principles guide the group's overarching appetite for risk and determine how our businesses and risks are managed.

Financial position

- We aim to maintain a strong capital position, defined by regulatory and internal capital ratios.
- We carry out liquidity and funding management for each operating entity, on a stand-alone basis.

Operating model

- We seek to generate returns in line with a conservative risk appetite and strong risk management capability.
- We aim to deliver sustainable earnings and consistent returns for shareholders.

Business practice

- We have zero tolerance for any of our people to knowingly engage in any business, activity or association where foreseeable reputational risk or damage has not been considered and/or mitigated.
- We have no appetite for deliberately or knowingly causing detriment to consumers, or incurring a breach of the letter or spirit of regulatory requirements.
- We have no appetite for inappropriate market conduct by a member of staff or by any group business.

Enterprise-wide application

Our risk appetite encapsulates consideration of financial and non-financial risks. We define financial risk as the risk of a financial loss as a result of business activities. We actively take and prudently manage these types of risks to maximise shareholder value and profits. Non-financial risk is defined as the risk to achieving our strategy or objectives as a result of inadequate or failed internal processes, people and systems or from external events.

Our risk appetite is expressed in both quantitative and qualitative terms and applied at the global business level, at the regional level and to material operating entities.

The Board reviews and approves the group's risk appetite to make sure it remains fit for purpose. The group's risk appetite is considered, developed and enhanced through:

- an alignment with our strategy, purpose, values and customer needs;
- trends highlighted in other group risk reports, such as the 'Risk map' and 'Top and emerging risks';
- communication with risk stewards on the developing risk landscape;
- strength of our capital, liquidity and balance sheet;
- compliance with applicable laws and regulations;
- effectiveness of the applicable control environment to mitigate risk, informed by risk ratings from risk control assessments;
- functionality, capacity and resilience of available systems to manage risk; and
- the level of available staff with the required competencies to manage risks.

We formally articulate our risk appetite through our risk appetite statement ('RAS'), which is approved by the Board. Setting out our risk appetite ensures that planned business activities provide an appropriate balance of return for the risk we are taking, and that we agree a suitable level of risk for our strategy. In this way, risk appetite informs our financial planning process and helps senior management to allocate capital to business activities, services and products.

The RAS consists of qualitative statements and quantitative metrics, covering financial and non-financial risks. It is fundamental to the development of business line strategies, strategic and business planning, and senior management balanced scorecards.

At a group level, performance against the RAS is reported to the group Risk Management Meeting ('RMM') on a monthly basis so that any actual performance that falls outside the approved risk appetite is discussed and appropriate mitigating actions are determined. This reporting allows risks to be promptly identified and mitigated, and informs risk-adjusted remuneration to drive a strong risk culture.

Global businesses, regions and strategically important countries are required to have their own RASs, which are monitored to ensure they remain aligned with the group's. All RASs and business activities are guided and underpinned by qualitative principles and or quantitative metrics.

Risk Management

We recognise that the primary role of risk management is to protect our business, customers, colleagues, shareholders and the communities that we serve, while ensuring we are able to support our strategy and provide sustainable growth. As we move into revised business focus, active risk management will be critical in ensuring we manage the associated change and execution risks arising from a major change programme. In addition we will perform periodic risk assessments, including strategies to ensure retention of key personnel to ensure our continued safe operation.

We use a comprehensive risk management framework across the organisation and across all risk types, underpinned by the group's culture and values. This outlines the key principles that we employ in managing material risks, both financial and non-financial.

The framework fosters continual monitoring, promotes risk awareness and encourages sound operational and strategic decision making. It also ensures a consistent approach to identifying, assessing, managing and reporting the risks we accept and incur in our activities.

Our risk management framework

The following diagram and descriptions summarise key aspects of the risk management framework, including governance and structure, our risk management tools and our risk culture, which together help align employee behaviour with our risk appetite.

Key components of our risk management framework

HSBC Values and risk culture		
Risk governance	Non-executive risk governance	The Board approves the group's risk appetite, plans and performance targets. It sets the 'tone from the top' and is advised by the group's Risk Committee.
	Executive risk governance	Our executive risk governance structure is responsible for the enterprise-wide management of all risks, including key policies and frameworks for the management of risk within the group.
Roles and responsibilities	Three lines of defence model	Our 'three lines of defence' model defines roles and responsibilities for risk management. An independent Risk function helps ensure the necessary balance in risk/return decisions.
Processes and tools	Risk appetite	The group has several processes to identify/assess, monitor, manage and report risks to ensure we remain within our risk appetite.
	Enterprise-wide risk management tools	
	Active risk management: identification/assessment, monitoring, management and reporting	
Internal controls	Policies and procedures	Policies and procedures define the minimum requirements for the controls required to manage our risks.
	Control activities	The operational risk management framework defines minimum standards and processes for managing operational risks and internal controls.
	Systems and infrastructure	The group has systems and/or processes that support the identification, capture and exchange of information to support risk management activities.

Risk governance

The Board has ultimate responsibility for the effective management of risk. It is advised on risk-related matters by the Risk Committee ('RC').

The group's Chief Risk Officer, supported by the RMM, holds executive accountability for the ongoing monitoring, assessment and management of the risk environment and the effectiveness of the risk management framework.

The management of financial crime risk resides with the group's Chief Executive Officer. He is supported by the Financial Crime Risk Management Committee.

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

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

Governance structure for the management of risk

Authority	Membership	Responsibilities include:
Risk Management Meeting of the group	group Chief Risk Officer group General Counsel group Chief Executive group Chief Financial Officer group heads of global business and global functions	• Supporting the group Chief Risk Officer in exercising Board-delegated risk management authority • Overseeing the implementation of risk appetite and the enterprise risk management framework • Forward-looking assessment of the risk environment, analysing possible risk impacts and taking appropriate action • Monitoring all categories of risk and determining appropriate mitigating action • Promoting a supportive group culture in relation to risk management and conduct
Global business/Site risk management meetings	Global business/Site Chief Risk Officer Global business/Site Chief Executive Global business/Site Chief Financial Officer Global business/Site heads of global functions	• Supporting the Chief Risk Officer in exercising Board-delegated risk management authority • Forward-looking assessment of the risk environment, analysing the possible risk impact and taking appropriate action • Implementation of risk appetite and the enterprise risk management framework • Monitoring all categories of risk and determining appropriate mitigating actions • Embedding a supportive culture in relation to risk management and controls

The Board committees with responsibility for oversight of risk-related matters are set out on page 6.

Our responsibilities

All our people are responsible for identifying and managing risk within the scope of their role as part of the three lines of defence model.

Three lines of defence

To create a robust control environment to manage risks, we use an activity-based three lines of defence model. This model delineates management accountabilities and responsibilities for risk management and the control environment.

The model underpins our approach to risk management by clarifying responsibility and encouraging collaboration, as well as enabling efficient coordination of risk and control activities.

The three lines of defence are summarised below:

- The first line of defence owns the risks and is responsible for identifying, recording, reporting and managing them in line with risk appetite, and ensuring that the right controls and assessments are in place to mitigate them.
- The second line of defence sets the policy and control standards for managing specific risk areas, provides advice and guidance in relation to the risk, and challenges the first line of defence on effective risk management.
- The third line of defence is our Internal Audit function, which provides independent assurance that our risk management approach and processes are designed and operating effectively.

Risk function

The group's Risk function, headed by the group's Chief Risk Officer, is responsible for the group's risk management framework. This responsibility includes establishing and monitoring of risk profiles, and forward-looking risk identification and management. The group's Risk function is made up of sub-functions covering all risks to our business and forms part of the second line of defence. It is independent from the global businesses, including sales and trading functions, to provide challenge, appropriate oversight and balance in risk/return decisions.

Responsibility for minimising both financial and non-financial risk lies with our people. They are required to manage the risks of the business and operational activities for which they are responsible. We maintain adequate oversight of our risks through our various specialist risk stewards as well as the collective accountability held by our Chief Risk Officers.

Non-financial risk includes some of the most material risks the group faces, such as cyber-attacks, the loss of data and poor conduct outcomes. Actively managing non-financial risk is crucial to serving our customers effectively and having a positive impact on society. During 2019 we continued to strengthen the control environment and our approach to the management of non-financial risk, as set out in our Operational Risk Management Framework. The approach outlines non-financial risk governance and risk appetite, and provides a single view of the non-financial risks that matter the most, and associated controls. It incorporates a risk management system designed to enable the active management of non-financial risk. Our ongoing focus is on simplifying our approach to non-financial risk management, while driving more effective oversight and better end-to-end identification and management of non-financial risks. This is overseen by the Operational Risk function, headed by the group Head of Operational Risk.

Stress testing

The group operates a wide-ranging stress testing programme that is a key part of our risk management and capital planning. Stress testing provides management with key insights into the impact of severely adverse events on the group, and provides confidence to regulators on the group's financial stability.

Our stress testing programme assesses our capital strength through a rigorous examination of our resilience to external shocks. As well as undertaking regulatory-driven stress tests, we conduct our own internal stress tests, in order to understand the nature and level of all material risks, quantify the impact of such risks and develop plausible business as usual mitigating actions.

Many of our regulators – including the Hong Kong Monetary Authority ('HKMA') – use stress testing as a prudential regulatory tool, and the group has focused significant governance and resources to meet their requirements.

Internal stress tests

Our internal capital assessment uses a range of stress scenarios that explore risks identified by management. They include potential adverse macroeconomic, geopolitical and operational risk events, as well as other potential events that are specific to the group.

The selection of scenarios is based upon the output of our top and emerging risks identified and our risk appetite. Stress testing analysis helps management understand the nature and extent of vulnerabilities to which the group is exposed. Using this information, management decides whether risks can or should be mitigated through management actions or, if they were to crystallise, should be absorbed through capital. This in turn informs decisions about preferred capital levels.

In addition to the group-wide stress testing scenarios, each major HBAP entity performs regular macroeconomic and event-driven scenario analyses specific to the region. They also participate, as required, in the regulatory stress testing programmes of the jurisdictions in which they operate, and the stress tests of the HKMA. Global functions and businesses also perform bespoke stress testing to inform their assessment of risks in potential scenarios.

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

We also conduct reverse stress tests each year at a group level and, where required, at subsidiary entity level to understand potential extreme conditions that would make our business model non-viable. Reverse stress testing identifies potential stresses and vulnerabilities we might face, and helps inform early warning triggers, management actions and contingency plans designed to mitigate risks.

Recovery and resolution plans

Recovery and resolution plans form an integral framework in the safeguarding of the group's financial stability. Together with stress testing, it helps us understand the outcomes of adverse business or economic conditions and the identification of mitigating actions.

Key developments in 2019

In 2019, it was announced that Mark McKeown was stepping down from his role of the group's Chief Risk Officer. Edward Jenkins, who was previously the Global Head of Wholesale Credit and Market Risk, has been appointed as the group's Chief Risk Officer with effect from 1 September 2019.

During the year, we also undertook a number of initiatives to enhance our approach to the management of risk. We continued efforts to simplify and enhance how we manage risk. We simplified the Group risk taxonomy through consolidating certain existing risks into broader categories. These changes streamlined risk reporting and promoted common language in our risk management approach. Further simplification will continue during 2020, including the combining of our two key risk management frameworks. These changes include:

- We formed a Resilience Risk sub-function to reflect the growing regulatory importance of being able to ensure our operations continue to function when an operational disturbance occurs. Resilience Risk was formed to simplify the way we interact with our stakeholders and to deliver clear, consistent and credible responses globally. The leadership of the Resilience Risk function is the responsibility of the group Head of Resilience Risk. For further details on resilience risk, see page 44.
- We have placed greater focus on our model risk activities during 2019. To reflect this, Group has created the role of Chief Model Risk Officer, which for the group is undertaken by the Head of Model Risk Management.

Top and emerging risks

(Unaudited)

We use a top and emerging risks process to provide a forward-looking view of issues with the potential to threaten the execution of our strategy or operations over the medium to long term.

We proactively assess the internal and external risk environment, as well as review the themes identified across our regions and global businesses, for any risks that may require global escalation, updating our top and emerging risks as necessary.

We define a 'top risk' as a thematic issue that may form and crystallise within one year, and which has the potential to materially affect the group's financial results, reputation or business model. It may arise across any combination of risk types, countries or global businesses. The impact may be well understood by senior management and some mitigating actions may already be in place. Stress tests of varying granularity may also have been carried out to assess the impact.

An 'emerging risk' is a thematic issue with large unknown components that may form and crystallise beyond a one year time horizon. If it were to materialise, it could have a material effect on the group's long-term strategy, profitability and/or reputation. Existing mitigation action plans are likely to be minimal, reflecting the uncertain nature of these risks at this stage. Some high-level analysis and/or stress testing may have been carried out to assess the potential impact.

Our current top and emerging risks are as follows:

Externally driven

Economic outlook and capital flows

Global manufacturing was in recession in 2019 as the Chinese economy slowed, trade and geopolitical tensions continued, and key sectors like automotive and information technology suffered from idiosyncratic issues. This had an impact on trade-reliant regions including the European Union, while the US benefited from a resilient consumer. Early in 2019, global central banks abandoned their previous intentions to tighten monetary policy gradually in order to underpin economic activity. These and other factors contributed to an increase in market optimism towards the end of 2019 that global economic activity may be bottoming out.

However, a significant degree of caution is warranted. US–China relations are likely to remain tense as negotiations move to a second phase, covering aspects like intellectual property. Changing global consumption patterns and the introduction of stricter environmental standards may continue to hamper the automotive and other traditional industries. The net impact on trade flows could be negative, and may damage the group's traditional lines of business.

The coronavirus outbreak is a new emerging risk. In a baseline scenario, the outbreak should be contained and may lead to a slowdown in China's economic activity during the first quarter of 2020, followed by a rebound in the remainder of the year, helped by an increased policy stimulus in response to the outbreak. However, there is a risk that containment proves more challenging, and the resulting socio-economic disruption more extensive and prolonged, spilling beyond China. Since the beginning of January 2020, the coronavirus outbreak has caused disruption to our staff, suppliers and customers particularly in mainland China and Hong Kong. It remains unclear how this will evolve through 2020 and we continue to monitor the situation closely. The group has invoked its business continuity plans to ensure the safety and well-being of our staff, whilst ensuring our capability to support our customers and maintain our business operations is upheld.

Subject to the extent of the effects and duration of the outbreak referred to above, it is anticipated that oil prices are likely to remain range-bound in 2020, with occasional spikes in volatility.

The run-up to the US presidential election in November may be a key factor in causing market volatility. Persistent social tensions in Hong Kong may disrupt the local economy and business sentiment further. We believe our businesses are well placed to weather risks, but would nevertheless be affected by severe shocks.

Mitigating actions

- We actively assess the impact of economic developments in key markets on specific customer segments and portfolios and take appropriate mitigating actions. These actions include revising risk appetite and/or limits as circumstances evolve.
- We use internal stress testing and scenario analysis, as well as regulatory stress test programmes, to evaluate the potential impact of macroeconomic shocks on our businesses and portfolios. Our approach to stress testing is described on page 14.

Geopolitical risk

The group's operations and portfolios are exposed to risks associated with political instability, civil unrest and conflict, which could lead to disruption to our operations, physical risk to our staff and/or physical damage to our assets.

Multinational businesses are increasingly caught between governments, heightening the risk of business decisions being perceived as political statements. Global tensions over trade, technology and ideology can manifest in divergent regulatory, standards and compliance regimes, presenting long-term strategic challenges.

In 2019, societies in nearly all our markets were affected by a series of common issues with global reach in 2020. Migration, income inequality, corruption, climate change, and terrorism have appeared as common threads of discontent across markets. This dissatisfaction is manifesting through increased protest activity and at the ballot box, challenging traditional political structures. This level of geopolitical risk is expected to remain heightened throughout 2020.

In 2019, Hong Kong experienced heightened levels of domestic social unrest and if prolonged, there could be broader economic ramifications, affecting several of the group's portfolios.

Intensified US–China competition is expected to feature prominently in 2020 – despite the Phase 1 trade deal, as negotiations move to phase 2, which covers aspects such as intellectual property. New regulations from both the US and China will increase scrutiny of companies involved in cross-border data transfers and limit the use of foreign technology in private, as well as national infrastructure. Combined, these regulations could drive the bifurcation of US and Chinese technology sectors, standards and supply chain ecosystems, which may limit innovation and drive up production and compliance costs for firms operating in both markets.

Mitigating actions

- We continually monitor the geopolitical outlook, in particular in countries where we have material exposures and/or a physical presence. We have also established dedicated forums to monitor geopolitical developments.
- We use internal stress tests and scenario analysis as well as regulatory stress test programmes, to adjust limits and exposures to reflect our risk appetite and mitigate risks as appropriate. Our internal credit risk ratings of sovereign counterparties take into account geopolitical developments that could potentially disrupt our portfolios and businesses.
- We have taken steps to enhance physical security in those geographical areas deemed to be at high risk from terrorism and military conflicts.

The credit cycle

Dovish global monetary policies remained accommodative through much of 2019, and share indices hit record highs. The US Federal Reserve System ('FRB'), European Central Bank ('ECB') and the Bank of Japan ('BoJ') are expected to keep global liquidity abundant in 2020. However, there are signs of stress in parts of the credit market, as shown by the FRB's interventions in the repo market. There has been a surge in borrowing by entities in the lowest investment grade segment ('BBB'), which now makes up 55% of the total universe of rated corporate bonds. Profit margins at US non-financial corporations are falling, as are job openings, both of which could foreshadow a turn in the credit cycle. Corporate credit quality in Europe is also deteriorating. Chinese authorities are warier than in the past about leverage, but will still enact limited stimulus measures, which could act to limit downside risks to a degree.

Mitigating actions

- We closely monitor economic developments in key markets and sectors and undertake scenario analysis. This helps enable us to take portfolio actions where necessary, including enhanced monitoring, amending our risk appetite and/or reducing limits and exposures.
- We stress test portfolios of particular concern to identify sensitivity to loss under a range of scenarios, with management actions being taken to rebalance exposures and manage risk appetite where necessary.
- We undertake regular reviews of key portfolios to help ensure that individual customer or portfolio risks are understood and our ability to manage the level of facilities offered through any downturn is appropriate.

Cyber threat and unauthorised access to systems

The group and other organisations continue to operate in an increasingly hostile cyber threat environment, which requires ongoing investment in business and technical controls to defend against these threats.

Key threats include unauthorised access to online customer accounts, advanced malware attacks and distributed denial of service ('DDOS') attacks.

Mitigating actions

- We continually evaluate threat levels for the most prevalent attack types and their potential outcomes. To further protect the group and our customers, we strengthen our controls to reduce the likelihood and impact of advanced malware, data leakage, infiltration of payment systems and denial of service attacks. We continued to enhance our cybersecurity capabilities, including threat detection, access control as well as back-up and recovery. An important part of our defence strategy is ensuring our people remain aware of cybersecurity issues and know how to report incidents.
- Cyber risk is a priority area for the Board, we report and review cyber risk and control effectiveness quarterly at executive and non-executive Board level. We also report it across the global businesses, functions and regions to help ensure appropriate visibility and governance of the risk and mitigating actions.

Regulatory developments including conduct, with adverse impact on business model and profitability

Financial service providers continue to face stringent regulatory and supervisory requirements, particularly in the areas of capital and liquidity management, conduct of business, financial crime, internal control frameworks, the use of models and the integrity of financial services delivery. The competitive landscape in which the group operates may be significantly altered by future regulatory changes and government intervention. Regulatory changes may affect the activities of the group as a whole, or of some or all of its principal subsidiaries.

As described in note 38 on the Consolidated Financial Statements, we continue to be subject to a number of material legal proceedings, regulatory actions and investigations, including our January 2018 deferred prosecution agreement with the US Department of Justice arising from its investigation into HSBC's historical foreign exchange activities (the 'FX DPA').

Mitigating actions

- We are fully engaged, wherever possible with governments and regulators in the countries in which we operate, to help ensure that new requirements are considered properly by regulatory authorities and the financial sector and can be implemented effectively.
- We have invested significant resources and have taken, and will continue to take, a number of steps to improve our compliance systems and controls relating to our activities in global markets. These included enhancements to pricing and disclosure, order management and trade execution; trade, voice and audio surveillance; front office supervision; and improvements to our enforcement and discipline framework for employee misconduct.

Financial crime risk environment

Throughout 2019, we continued to implement the final elements of our Global Standards programme to integrate our anti-money laundering and sanctions capabilities into our day-to-day operations. We continue to enhance our financial crime risk management capabilities and the effectiveness of our financial crime controls, and we are maintaining our investment in the next generation of tools to fight financial crime through the application of advanced analytics and artificial intelligence.

Financial institutions remain under considerable regulatory scrutiny regarding their ability to prevent and detect financial crime. There is an increased regulatory focus on fraud and anti-bribery and corruption controls, with expectations that banks should do more to protect customers from fraud and identify and manage bribery and corruption risks within our businesses. Financial crime threats continue to evolve, often in tandem with geopolitical developments. The highly speculative, volatile and opaque nature of virtual currencies, including the pace of development in this area, create challenges in effectively managing financial crime risks. The evolving regulatory environment continues to present execution challenge. We continue to see increasing challenges presented by national data privacy requirements in a global organisation, which may affect our ability to effectively manage financial crime risks.

In December 2012, among other agreements, HSBC Holdings plc ('HSBC Holdings') agreed to an undertaking with the UK Financial Services Authority, which was replaced by a Direction issued by the UK Financial Conduct Authority ('FCA') in 2013, and consented to a cease-and-desist order with the US Federal Reserve Board ('FRB'), both of which contained certain forward-looking anti-money laundering ('AML') and sanctions-related obligations. HSBC also agreed to retain an independent compliance monitor (who is, for FCA purposes, a 'Skilled Person' under section 166 of the Financial Services and Markets Act and, for FRB purposes, an 'Independent Consultant') to produce periodic assessments of the Group's AML and sanctions compliance programme (the 'Skilled Person/Independent Consultant'). In December 2012, HSBC Holdings also entered into an agreement with the Office of Foreign Assets Control ('OFAC') regarding historical transactions involving parties subject to OFAC sanctions. Reflective of HSBC's significant progress in strengthening its financial crime risk management capabilities, HSBC's engagement with the current Skilled Person will be terminated and a new Skilled Person with a narrower mandate will be appointed to assess the remaining areas that require further work in order for HSBC to transition fully to business-as-usual financial crime risk management. The Independent Consultant will continue to carry out an annual OFAC compliance review at the FRB's discretion. The role of the Skilled Person/Independent Consultant is discussed on page 45.

Mitigating actions

- We continue to enhance our financial crime risk management capabilities. We are investing in next generation capabilities to fight financial crime through the application of advanced analytics and artificial intelligence.
- We are strengthening and investing in our Fraud controls, to introduce next generation anti-fraud capabilities to protect both customers and the bank.
- We continue to embed our improved Anti-Bribery and Corruption policies and controls, focusing on conduct.
- We continue to educate our staff on emerging digital landscapes and associated risks.
- We have developed procedures and controls to manage the risks associated with direct and indirect exposure to virtual currencies, and we continue to monitor external developments.
- We continue to work with jurisdictions and relevant international bodies to address data privacy challenges through international standards, guidance, and legislation to enable effective management of financial crime risk.
- We continue to take steps designed to ensure that the reforms we have put in place are both effective and sustainable over the long term.

IBOR transition

Interbank offered rates ('IBORs') are used to set interest rates on hundreds of trillions of US dollars' worth of different types of financial transactions and are used extensively for valuation purposes, risk measurement and performance benchmarking.

Following the announcement by the UK's Financial Conduct Authority in July 2017 that it will no longer oblige or require banks to submit rates for Libor after 2021, the national working groups ('NWG') for the affected currencies were tasked with facilitating an orderly transition of the relevant Libors to their chosen replacement rates. The euro national working group is also responsible for facilitating an orderly transition of the Euro Overnight Index Average ('Eonia') to the euro short-term rate ('€STER'). In addition, there are four benchmark interest rates (Singapore Dollar Swap Offer Rate ('SOR'), Thai Baht Interest Rate Fixing ('THBFIX'), Mumbai Interbank Forward Offer Rate ('MIFOR') and Philippine Interbank Reference Rate ('PHPREF')) in the Asia-Pacific region which are impacted through their calculation currently including US Dollar Libor ('Dependent Rates'). Working groups for these Dependent Rates have been established to address relevant requirements.

The process of developing products that reference the replacement rates and transitioning legacy IBOR contracts exposes the group to material execution, conduct and financial risks.

Mitigating actions

- We have a global programme to facilitate an orderly transition from Libor, Eonia and Dependent Rates for our business and our clients. This programme, led by the Group Chief Risk Officer, oversees the transitions made by each of the global businesses.
- Our programme is focused on developing alternative rate products that reference the working group-selected replacement rates and making them available to customers. It is also focusing on the supporting processes and systems to developing these products. At the same time, we are developing the capability to transition, through repapering, outstanding Libor, Eonia and Dependent Rates contracts.
- We have identified a number of execution, conduct and financial risks and are in the process of addressing these.
- We will continue to engage with industry participants and the official sector to support an orderly transition.

Climate-related risks

Climate change can impact across HSBC's risk taxonomy through both transition and physical channels:

- Transition Risk, arising from the move to a low-carbon economy, such as through policy, regulatory and technological changes.
- Physical Risk, through increasing severity and/or frequency of severe weather events or other climatic events (e.g. sea level rise, flooding).

These have potential to cause both idiosyncratic and systemic risks, resulting in potential financial impacts for the group. Impacts could materialise through higher risk-weighted assets ('RWAs') over the longer term, greater transactional losses and/or increased capital requirements.

The awareness of climate risk, regulatory expectations and reputational risk have all heightened through 2019. The exposure we have to the risk and materialisation of the risk have not materially heightened.

Mitigating actions

We continue to enhance our approach to managing climate-related risks, and develop and embed the measurement, monitoring and management.

An internal Climate Risk Working Group provides oversight by seeking to develop policy and limit frameworks in order to achieve desired portfolios over time, and protect the group from climate-related risks that are outside of risk appetite.

We have commenced sector specific scenario analysis and continue our current work to source data and develop scenarios. For wholesale credit risk work is focused on questionnaires to assess transition risk across six sectors and 11 countries. Longer term, a modelled framework is envisaged.

For retail credit risk, mortgage exposures are being reviewed on a geographical basis in respect of natural hazard risk and mitigants. For operational risk, we are working with our property insurers to understand geographical exposure of the property portfolio and assess effectiveness of controls for design resilience, operations and business continuity.

We have public and internal policies for certain sectors that pose sustainability risk to the group. These include policies on energy, agricultural commodities, chemicals, forestry, mining and metals, and UNESCO World Heritage Sites and Ramsar-designated wetlands.

We are working through the Climate Financial Risk Forum to ensure we remain aware of and drive emerging best practice.

Internally driven

Risks arising from the receipt of services from third parties

We use third parties for the provision of a range of services, in common with other financial service providers. Risks arising from the use of third-party service providers may be less transparent and therefore more challenging to manage or influence. It is critical that we ensure that we have appropriate risk management policies, processes and practices. These should include adequate control over the selection, governance and oversight of third parties, particularly for key processes and controls that could affect operational resilience. Any deficiency in our management of risks arising from the use of third parties could affect our ability to meet strategic, regulatory or client expectations.

Mitigating actions

- We continued to embed our delivery model in the first line of defence through a dedicated team. We have deployed processes, controls and technology to assess third party service providers against key criteria and associated control monitoring, testing and assurance.
- A dedicated oversight forum in the second line of defence monitors the embedding of policy requirements and performance against risk appetite.

Data management

The group uses a large number of systems and applications to support key business processes and operations. As a result, we often need to reconcile multiple data sources, including customer data sources, to reduce the risk of error. Along with other organisations, the group also needs to meet external/regulatory obligations such as the General Data Protection Regulation ('GDPR'), the Basel Committee for Banking Supervision (BCBS 239) principles and Basel III.

Mitigating actions

- We are improving data quality across a large number of systems globally. Our data management, aggregation and oversight continue to strengthen and enhance the effectiveness of internal systems and processes. We are implementing data controls for critical processes in the front-office systems to improve our data capture at the point of entry. We achieved a ‘largely compliant’ rating in support of the Basel Committee for Banking Supervision (BCBS 239) principles and have embedded them across the key markets.
- We are expanding and enhancing our global data governance processes to monitor proactively the quality of critical customer, product, reference and transaction data and resolving associated data issues in a timely manner. We have implemented data controls to improve the reliability of data used by our customers and staff.
- We are also modernising our data and analytics infrastructure through investments in advanced capabilities in cloud, visualisation, machine learning and artificial intelligence platforms.
- We have implemented a global data privacy framework that establishes data privacy practices, design principles and guidelines that demonstrate compliance with data privacy laws and regulations in the jurisdictions in which we operate.
- We continue to hold annual data symposiums and data privacy awareness training to help our employees keep abreast of data management and data privacy laws and regulations. These highlight our commitment to protect personal data for our customers, employees and stakeholders.

Areas of special interest

During 2019, a number of areas were identified and considered as part of our top and emerging risks because of the effect they may have on the group. In this section, we have placed particular focus on IBOR transition and the risks to our operations and portfolios in Asia-Pacific.

IBOR transition

The Financial Stability Board has observed that the decline in interbank short-term unsecured funding poses structural risks for interest rate benchmarks that reference these markets. In response, regulators and central banks in various jurisdictions have convened national working groups to identify replacement rates for these interbank offer rates (‘IBORs’) and, where appropriate, to facilitate an orderly transition to these rates.

Following the announcement by the UK’s Financial Conduct Authority in July 2017 that it will no longer oblige or require banks to submit rates for Libor after 2021, the national working groups for the affected currencies were tasked with facilitating an orderly transition of the relevant Libors to their chosen replacement rates. The euro working group is also responsible for facilitating an orderly transition of the Euro Overnight Index Average (‘Eonia’) to the euro short-term rate (‘€STER’). In addition, there are four benchmark interest rates (Singapore Dollar Swap Offer Rate (‘SOR’), Thai Baht Interest Rate Fixing (‘THBFIX’), Mumbai Interbank Forward Offer Rate (‘MIFOR’) and Philippine Interbank Reference Rate (‘PHPREF’)) in the Asia–Pacific region which are impacted through their calculation currently including US Dollar Libor ('Dependent Rates’). Working groups for these Dependent Rates have been established to address relevant requirements. Although national working groups in other jurisdictions have identified replacements for their respective IBORs, there is no intention for these benchmark rates to be discontinued.

Given the current lack of alternatives, the group has an increasing portfolio of contracts referencing Libor, Eonia and Dependent Rates with maturities beyond 2021. The Group established the IBOR transition programme with the objective of facilitating an orderly transition from Libor, Eonia and Dependent Rates for HSBC and its clients. This global programme oversees the transition effected by each of the global businesses and is led by the Group Chief Risk Officer.

The programme is currently focused on developing alternative rate products, and the supporting processes and systems, that reference the national working group-selected replacement rates and making them available to customers. Depending on the take up of these products by customers, this should reduce the current growth in Libor, Eonia and Dependent Rates contracts being transacted with maturities beyond end 2021, while the new product capabilities will also enable the transition of outstanding Libor, Eonia and Dependent Rates products onto the replacement rates. A structured development plan is required given the widespread use of Libor, Eonia and Dependent Rates in a wide range of products, systems and processes across each of the four global businesses and all of the jurisdictions in which the group operates. The resulting execution risk is closely monitored by the programme.

The programme is concurrently developing the capability to transition, through repapering, outstanding Libor, Eonia and Dependent Rates contracts. We expect that the International Swaps and Derivatives Association's ('ISDA') efforts in guiding the transition of derivatives contracts should reduce the risk of a non-orderly transition of derivatives with an estimated notional market size in excess of US$200tn. The process of implementing ISDA's proposed protocol and transitioning outstanding contracts is nonetheless a material undertaking for the industry as a whole and may expose the group to the risk of financial losses.

We intend to actively engage in the process to achieve an orderly transition of the group's Libor, Eonia and Dependent Rates bond issuance, the group's holdings of Libor/Eonia/Dependent Rates bonds and of those bonds where the group is the payment agent. At this stage we are confident that we will be able to transition the bulk of these exposures and we are actively engaged in industry working groups.

Although we have plans to transition multi-billion dollar contractually IBOR-referenced commercial loans onto replacement rates, our ability to transition this portfolio by the end of 2021 is materially dependent on the availability of products that reference the replacement rates and on our customers being ready and able to adapt their own processes and systems to accommodate the replacement products. This may give rise to an elevated level of conduct-related risk. The group is engaging with impacted clients to ensure that customers are aware of the risks associated with the ongoing purchase of Libor-, Eonia- and Dependent Rates-referencing contracts as well as the need to transition legacy contracts prior to the end of 2021.

In addition to the execution and conduct risk previously highlighted, the process of adopting new reference rates may expose the group to an increased level of operational and financial risks, such as potential earnings volatility resulting from contract modifications, changes in hedge accounting and a large volume of product and associated process changes. Furthermore, the transition to alternative reference rates could have a range of adverse impacts on our business, including legal proceedings or other actions regarding the interpretation and enforceability of provisions in IBOR-based contracts, and regulatory investigations or reviews in respect of our preparation and readiness for the replacement of IBOR with alternative reference rates. We continue to engage with industry participants, the official sector and our clients to support an orderly transition and the mitigation of the risks resulting from the transition.

Risks to our operations and portfolios in Asia-Pacific

In 2019, the mainland Chinese economy grew at the slowest pace in nearly three decades in the context of rising domestic leverage. The authorities are expected to enact only modest stimulus measures to boost growth. Along with the 'phase one' US-China trade deal and plentiful global liquidity, these measures should help emerging-market growth to make a partial recovery. Nevertheless, downside idiosyncratic risks will abound.

Intensified US-China competition continued to feature prominently in 2019. The two countries now compete across multiple dimensions: economic power, diplomatic influence, innovation and advanced technology leadership.

In 2019, we saw heightened levels of risk in Hong Kong. The downside risk is further increased given the coronavirus outbreak, which could further impact the local economy and dampen investor and business sentiment in many sectors where the Group has a material presence. The increasing headwinds will be challenging and we will continue to monitor our portfolios to manage risk exposures. We have carefully reviewed our exposures to help ensure that we continue to support our customers and the Hong Kong economy. We have reviewed and enhanced our business continuity plans to ensure we minimise disruption to our clients and continued safe operations of our branches and employees. The new coronavirus outbreak is being actively monitored. It will have an immediate impact on the economic scenarios used for expected credit losses ('ECL'), as key inputs for calculating ECL such as GDP for Hong Kong and mainland China are deteriorating, and the probability of particularly adverse economic scenarios for the short term is higher. The economic scenarios for Hong Kong used for ECL at 31 December 2019 are set out on pages 27-30. In addition, should the virus continue to cause disruption to economic activity in Hong Kong and mainland China through 2020, there could be adverse impacts on income due to lower lending and transaction volumes, and insurance manufacturing revenue. Further ECL could arise from other parts of our business impacted by the disruption to supply chains.

We have invoked our business continuity plans to help ensure the safety and well-being of our staff while maintaining our ability to support our customers and maintain our business operations.

We regularly conduct stress tests to assess the resilience of our balance sheet and our capital adequacy. We conduct this across the group and in key sites such as Hong Kong. The stress tests are used to consider our risk appetite and provide insights into our financial stability. In the case of Hong Kong, our balance sheet and capital adequacy remain resilient based on regulatory and internal stress test outcomes.

Our central scenario for Hong Kong, used as a key input for calculating ECL in Hong Kong, has kept pace with expectations of economic growth. The economy entered a technical recession in the second-half of 2019 and is expected to record negative annual GDP growth for the first time since 2009. This is a result of both tensions over trade and tariffs between the US and China and domestic social unrest. The economy is expected to gradually recover in 2020. We have also developed a number of additional scenarios to capture more extreme downside risks, and have used these in impairment testing and measuring, and to assess our capital resilience. While our economic scenarios used to calculate credit loss capture a range of outcomes, the potential economic impact of the coronavirus was not explicitly considered at the year end due to the limited information and the emergent nature of the outbreak in 2019.

For further details of all scenarios used in impairment measurements see 'Measurement uncertainty and sensitivity analysis of ECL estimates' on pages 27-30.

Our material banking and insurance risks

The material risk types associated with our banking and insurance manufacturing operations are described in the following tables:

Banking operations

Description of risks – banking operations

(Audited)

Risks	Arising from	Measurement, monitoring and management of risk
Credit risk Credit risk is the risk of financial loss if a customer or counterparty fails to meet an obligation under a contract.	Credit risk arises principally from direct lending, trade finance and leasing business, but also from certain other products such as guarantees and derivatives.	Credit risk is: • measured as the amount that could be lost if a customer or counterparty fails to make repayments; • monitored using various internal risk management measures and within limits approved by individuals within a framework of delegated authorities; and • managed through a robust risk control framework which outlines clear and consistent policies, principles and guidance for risk managers.
Liquidity and funding risk Liquidity risk is the risk that we do not have sufficient financial resources to meet our obligations as they fall due or that we can only do so at an excessive cost. Funding risk is the risk that funding considered to be sustainable, and therefore used to fund assets, is not sustainable over time.	• Liquidity risk arises from mismatches in the timing of cash flows. • Funding risk arises when illiquid asset positions cannot be funded at the expected terms and when required.	Liquidity and funding risk is: • measured using a range of metrics including liquidity coverage ratio and net stable funding ratio; • assessed through the internal liquidity adequacy assessment process; • monitored against the group's liquidity and funding risk framework; and • managed on a stand-alone basis with no reliance on any Group entity (unless pre-committed) or central bank unless this represents routine established business-as-usual market practice.
Pension risk Pension risk is the risk of increased costs to the group from offering post-employment benefit plans to its employees.	Pension risk arises from investments delivering an inadequate return, adverse changes in interest rates or inflation, or members living longer than expected. Pension risk includes operational and reputational risks of sponsoring pension plans.	Pension risk is: • measured in terms of the schemes' ability to generate sufficient funds to meet the cost of their accrued benefits; • monitored through a specific risk appetite; and • managed through the appropriate pension risk governance structure and ultimately the RMM.
Market risk 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.	Exposure to market risk is separated into two portfolios: trading and non-trading. Market risk exposures arising from our insurance operations are discussed on the following page.	Market risk is: • measured using sensitivities, value at risk ('VaR') and stress testing, giving a detailed picture of potential gains and losses for a range of market movements and scenarios, as well as tail risks over specified time horizons; • monitored using VaR, stress testing and other measures including the sensitivity of net interest income and the sensitivity of structural foreign exchange; and • managed using risk limits approved by the RMM for the group and the various global businesses.
Resilience risk Resilience risk is the risk that we are unable to provide critical services to our customers, affiliates, and counterparties as a result of sustained and significant operational disruption.	Resilience risk arises from failures or inadequacies in processes, people, systems or external events. These may be driven by rapid technological innovation, changing behaviours of our consumers, cyber-threats and attacks, cross-border dependencies, and third-party relationships.	Resilience risk is: • measured through a range of metrics with defined maximum acceptable impact tolerances, and against our agreed risk appetite; • monitored through oversight of enterprise processes, risks, controls and strategic change programmes; and • managed by continual monitoring and thematic reviews.
Regulatory compliance risk Regulatory compliance risk is the risk that we fail to observe the letter and spirit of all relevant laws, codes, rules, regulations and standards of good market practice, which as a consequence incur fines and penalties and suffer damage to our business.	Regulatory compliance risk arises from the risks associated with breaching our duty to our customers and other counterparties, inappropriate market conduct and breaching other regulatory requirements.	Regulatory compliance risk is: • measured by reference to identified metrics, incident assessments, regulatory feedback and the judgement and assessment of our regulatory compliance teams; • monitored against the first line of defence risk and control assessments, the results of the monitoring and control assurance activities of the second line of defence functions, and the results of internal and external audits and regulatory inspections; and • managed by establishing and communicating appropriate policies and procedures, training employees in them, and monitoring activity to help ensure their observance. Proactive risk control and/or remediation work is undertaken where required.

Description of risks – banking operations (continued)

(Audited)

Risks	Arising from	Measurement, monitoring and management of risk
Financial crime and fraud risk		
Financial crime and fraud risk is the risk that we knowingly or unknowingly help parties to commit or to further potentially illegal activity through HSBC.	Financial crime and fraud risk arises from day-to-day banking operations.	Financial crime and fraud risk is: • measured by reference to identified metrics, incident assessments, regulatory feedback and the judgement and assessment of our financial crime risk teams; • monitored against our financial crime risk appetite statements and metrics, the results of the monitoring and control activities of the second line of defence functions, and the results of internal and external audits and regulatory inspections; and • managed by establishing and communicating appropriate policies and procedures, training employees in them, and monitoring activity to help ensure their observance. Proactive risk control and/or remediation work is undertaken where required.
Model risk		
Model risk is the potential for adverse consequences from business decisions informed by models, which can be exacerbated by errors in methodology, design or the way they are used.	Model risk arises in both financial and non-financial contexts whenever business decision making includes reliance on models.	Model risk is: • measured by reference to model performance tracking and the output of detailed technical reviews, with key metrics including model review statuses and findings; • monitored against model risk appetite statements, insight from the independent review function, feedback from internal and external audits, and regulatory reviews; and • managed by creating and communicating appropriate policies, procedures and guidance, training colleagues in their application, and supervising their adoption to ensure operational effectiveness.

Insurance manufacturing operations

Our insurance manufacturing subsidiaries are separately regulated from our banking operations. Risks in the insurance entities are managed using methodologies and processes that are subject to oversight at group level. Our insurance operations are also subject to some of the same risks as our banking operations, which are covered by the group's respective risk management processes.

Description of risks – insurance manufacturing operations

(Audited)

Risks	Arising from	Measurement, monitoring and management of risk
Financial risk		
Our ability to effectively match the liabilities arising under insurance contracts with the asset portfolios that back them is contingent on the management of financial risks and the extent to which these risks are borne by the policyholders.	Exposure to financial risks arises from: • market risk affecting the fair values of financial assets or their future cash flows; • credit risk; and • liquidity risk of entities being unable to make payments to policyholders as they fall due.	Financial risk is: • measured separately for each type of risk: – market risk is measured in terms of economic capital, internal metrics and fluctuations in key financial variables; – credit risk is measured in terms of economic capital and the amount that could be lost if a counterparty fails to make repayments; and – liquidity risk is measured in terms of internal metrics including stressed operational cash flow projections; • monitored through a framework of approved limits and delegated authorities; and • managed through a robust risk control framework, which outlines clear and consistent policies, principles and guidance. This includes using product design, asset liability matching and bonus rates.
Insurance risk		
Insurance risk is the risk that, over time, the cost of insurance policies written, including claims and benefits, may exceed the total amount of premiums and investment income received.	• The cost of claims and benefits can be influenced by many factors, including mortality and morbidity experience, as well as lapse and surrender rates.	Insurance risk is: • measured in terms of life insurance liabilities and economic capital allocated to insurance underwriting risk; • monitored through a framework of approved limits and delegated authorities; and • managed through a robust risk control framework which outlines clear and consistent policies, principles and guidance. This includes using product design, underwriting, reinsurance and claims-handling procedures.

Credit risk

Overview

Credit risk is the risk of financial loss if a customer or counterparty fails to meet an obligation under a contract. Credit risk arises principally from direct lending, trade finance and leasing business, but also from other products, such as guarantees and credit derivatives.

Credit risk management

(Audited)

Key developments 2019

There were no material changes to the policies and practices for the management of credit risk in 2019. We continued to apply the requirements of HKFRS 9 'Financial Instruments' within Credit Risk.

Governance and structure

We have established credit risk management and related HKFRS 9 processes throughout the group. We continue to actively assess the impact of economic developments in key markets on specific customers, customer segments or portfolios. As credit conditions change, we take mitigating action, including the revision of risk appetites or limits and tenors, as appropriate. In addition, we continue to evaluate the terms under which we provide credit facilities within the context of individual customer requirements, the quality of the relationship, local regulatory requirements, market practices and our local market position.

Credit risk sub-function

(Audited)

Credit approval authorities are delegated by the Board to the group Chief Executive together with the authority to sub-delegate them. The Credit Risk sub-function in Global Risk is responsible for the key policies and processes for managing credit risk, which include formulating group credit policies and risk rating frameworks, guiding the group's appetite for credit risk exposures, undertaking independent reviews and objective assessment of credit risk, and monitoring performance and management of portfolios.

The principal objectives of our credit risk management are:

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

Key risk management processes

(Unaudited)

HKFRS 9 'Financial Instruments' process

The HKFRS 9 process comprises three main areas: modelling and data; implementation; and governance.

Modelling and data

We have established HKFRS 9 modelling and data processes in various geographies, which are subject to internal model risk governance including independent review of significant model developments.

Implementation

A centralised impairment engine performs the expected credit loss ('ECL') calculation using data, which is subject to a number of validation checks and enhancements, from a variety of client, finance and risk systems. Where possible, these checks and processes are performed in a globally consistent and centralised manner.

Governance

Regional management review forums are established in key sites and regions in order to review and approve the impairment results. Regional management review forums have representatives from Credit Risk and Finance. The key site and regional approvals are reported up to the global business impairment committee for final approval of the Group's ECL for the period. Required members of the committee are the global heads of Wholesale Credit, Market Risk, and Retail Banking and Wealth Management ('RBWM') Risk, as well as the global business Chief Financial Officers and the Group Chief Accounting Officer.

Concentration of exposure

(Audited)

Concentrations of credit risk arise when a number of counterparties or exposures have comparable economic characteristics, or such counterparties are engaged in similar activities or operate in the same geographical areas or industry sectors so that their collective ability to meet contractual obligations is uniformly affected by changes in economic, political or other conditions. We use a number of controls and measures to minimise undue concentration of exposure in our portfolios across industries, countries and global businesses. These include portfolio and counterparty limits, approval and review controls, and stress testing.

Credit quality of financial instruments

(Audited)

Our risk rating system facilitates the internal ratings-based approach under the Basel framework adopted by the Group to support the calculation of our minimum credit regulatory capital requirement.

The five credit quality classifications each encompass a range of granular internal credit rating grades assigned to wholesale and retail lending businesses, and the external ratings attributed by external agencies to debt securities.

For debt securities and certain other financial instruments, external ratings have been aligned to the five quality classifications based upon the mapping of related customer risk rating ('CRR') to external credit rating.

Wholesale lending

(Unaudited)

The CRR 10-grade scale summarises a more granular underlying 23-grade scale of obligor probability of default ('PD'). All corporate customers are rated using the 10- or 23-grade scale, depending on the degree of sophistication of the Basel approach adopted for the exposure.

Each CRR band is associated with an external rating grade by reference to long-run default rates for that grade, represented by the average of issuer-weighted historical default rates. This mapping between internal and external ratings is indicative and may vary over time.

Retail lending

(Unaudited)

Retail lending credit quality is based on a 12-month point-in-time ('PIT') probability-weighted probability of default ('PD').

Credit quality classification

(Unaudited)

	Sovereign debt securities and bills	Other debt securities and bills	Wholesale lending and derivatives		Retail lending	
	External credit rating	External credit rating	Internal credit rating	12-month Basel probability of default %	Internal credit rating	12 month probability-weighted PD %
Quality classification[1, 2]						
Strong	**BBB and above**	**A- and above**	**CRR 1 to CRR 2**	**0 – 0.169**	**Band 1 and 2**	**0.000 – 0.500**
Good	**BBB- to BB**	**BBB+ to BBB-**	**CRR 3**	**0.170 – 0.740**	**Band 3**	**0.501 – 1.500**
Satisfactory	**BB- to B and unrated**	**BB+ to B and unrated**	**CRR 4 to CRR 5**	**0.741 – 4.914**	**Band 4 and 5**	**1.501 – 20.000**
Sub-standard	**B- to C**	**B- to C**	**CRR 6 to CRR 8**	**4.915 – 99.999**	**Band 6**	**20.001 – 99.999**
Credit impaired	**Default**	**Default**	**CRR 9 to CRR 10**	**100**	**Band 7**	**100**

1 *Customer risk rating ('CRR').*
2 *12-month point-in-time ('PIT') probability-weighted probability of default ('PD').*

Quality classification definitions
'Strong' exposures demonstrate a strong capacity to meet financial commitments, with negligible or low probability of default and/or low levels of expected loss.
'Good' exposures require closer monitoring and demonstrate a good capacity to meet financial commitments, with low default risk.
'Satisfactory' exposures require closer monitoring and demonstrate an average-to-fair capacity to meet financial commitments, with moderate default risk.
'Sub-standard' exposures require varying degrees of special attention and default risk is of greater concern.
'Credit-impaired' exposures have been assessed as described on Note 1.2(i) on the Consolidated Financial Statements.

Renegotiated loans and forbearance

(Audited)

'Forbearance' describes concessions made on the contractual terms of a loan in response to an obligor's financial difficulties.

A loan is classed as 'renegotiated' when we modify the contractual payment terms on concessionary terms because we have significant concerns about the borrowers' ability to meet contractual payments when due.

Non-payment-related concessions (e.g. covenant waivers), while potential indicators of impairment, do not trigger identification as renegotiated loans.

Loans that have been identified as renegotiated retain this designation until maturity or derecognition.

For details of our policy on derecognised renegotiated loans, see note 1.2(i) on the Consolidated Financial Statements.

Credit quality of renegotiated loans

(Unaudited)

On execution of a renegotiation, the loan will also be classified as credit impaired if it is not already so classified. In wholesale lending, all facilities with a customer, including loans that have not been modified, are considered credit impaired following the identification of a renegotiated loan.

Wholesale renegotiated loans are classified as credit-impaired until there is sufficient evidence to demonstrate a significant reduction in the risk of non-payment of future cash flows, observed over a minimum one-year period, and there are no other indicators of impairment. Personal renegotiated loans are deemed to remain credit impaired until repayment, write-off or derecognition.

Renegotiated loans and recognition of expected credit losses

(Audited)

For retail lending, unsecured renegotiated loans are generally segmented from other parts of the loan portfolio. Renegotiated expected credit loss assessments reflect the higher rates of losses typically encountered with renegotiated loans. For wholesale lending, renegotiated loans are typically assessed individually. Credit risk ratings are intrinsic to the impairment assessments. The individual impairment assessment takes into account the higher risk of the future non-payment inherent in renegotiated loans.

Impairment assessment

(Audited)

For details of our impairment policies on loans and advances and financial investments, see note 1.2(i) on the Consolidated Financial Statements.

Write-off of loans and advances

(Audited)

For details of our policy on the write-off of loans and advances, see note 1.2(i) on the Consolidated Financial Statements.

Unsecured personal facilities, including credit cards, are generally written off at between 150 and 210 days past due. The standard period runs until the end of the month in which the account becomes 180 days contractually delinquent. Write-off periods may be extended, generally to no more than 360 days past due. However, in exceptional circumstances, they may be extended further.

For secured facilities, write-off should occur upon repossession of collateral, receipt of proceeds via settlement, or determination that recovery of the collateral will not be pursued.

Any secured assets maintained on the balance sheet beyond 60 months of consecutive delinquency-driven default require additional monitoring and review to assess the prospect of recovery.

There are exceptions in a few countries where local regulation or legislation constrain earlier write-off, or where the realisation of collateral for secured real estate lending takes more time. In the event of bankruptcy or analogous proceedings, write-off may occur earlier than the maximum periods stated above. Collection procedures may continue after write-off.

Summary of credit risk

The following disclosure presents the gross carrying/nominal amount of financial instruments to which the impairment requirements in HKFRS 9 are applied and the associated allowance for expected credit losses ('ECL').

Summary of financial instruments to which the impairment requirements in HKFRS 9 are applied

(Audited)

	2019		2018	
	Gross carrying/ nominal amount	Allowance for ECL[1]	Gross carrying/ nominal amount	Allowance for ECL[1]
At 31 Dec	HK$m	HK$m	HK$m	HK$m
Loans and advances to customers at amortised cost	3,738,269	(17,394)	3,545,258	(16,556)
Loans and advances to banks	328,934	(29)	338,177	(26)
Other financial assets measured at amortised cost	1,540,963	(341)	1,436,433	(167)
– cash and balances at central banks	202,747	(1)	205,660	—
– items in the course of collection from other banks	21,140	—	25,380	—
– Hong Kong Government certificates of indebtedness	298,944	—	280,854	—
– reverse repurchase agreements – non-trading	422,333	—	406,327	—
– financial investments	434,523	(223)	367,521	(120)
– prepayments, accrued income and other assets	161,276	(117)	150,691	(47)
Amounts due from Group companies	85,385	—	58,631	—
Total gross carrying amount on-balance sheet	5,693,551	(17,764)	5,378,499	(16,749)
Loans and other credit related commitments	1,630,005	(560)	1,490,711	(376)
Financial guarantee	41,163	(62)	50,307	(280)
Total nominal amount off-balance sheet	1,671,168	(622)	1,541,018	(656)
	7,364,719	(18,386)	6,919,517	(17,405)

	Fair value	Allowance for ECL	Fair value	Allowance for ECL
	HK$m	HK$m	HK$m	HK$m
At 31 Dec				
Debt instruments measured at Fair Value through Other Comprehensive Income ('FVOCI')[2]	1,457,362	(64)	1,497,767	(44)

1 *For retail overdrafts and credit cards, the total ECL is recognised against the financial asset unless the total ECL exceeds the gross carrying amount of the financial asset, in which case the ECL is recognised against the loan commitment.*
2 *Debt instruments measured at FVOCI continue to be measured at fair value with the allowance for ECL as a memorandum item. Change in ECL is recognised in 'Change in expected credit losses and other credit impairment charges' in the income instatement.*

The following table provides an overview of the group's credit risk by stage and industry, and the associated ECL coverage. The financial assets recorded in each stage have the following characteristics:

- Stage 1: These financial assets are unimpaired and without significant increase in credit risk on which a 12-month allowance for ECL is recognised.
- Stage 2: A significant increase in credit risk has been experienced on these financial assets since initial recognition for which a lifetime ECL is recognised.
- Stage 3: There is objective evidence of impairment and the financial assets are therefore considered to be in default or otherwise credit impaired on which a lifetime ECL is recognised.
- POCI: Financial assets that are purchased or originated at a deep discount are seen to reflect the incurred credit losses on which a lifetime ECL is recognised.

Summary of credit risk (excluding debt instruments measured at FVOCI) by stage distribution and ECL coverage by industry sector

(Audited)

	Gross carrying/nominal amount					Allowance for ECL					ECL coverage %				
	Stage 1	Stage 2	Stage 3	POCI	Total	Stage 1	Stage 2	Stage 3	POCI	Total	Stage 1	Stage 2	Stage 3	POCI	Total
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	%	%	%	%	%
Loans and advances to customers	3,423,956	296,522	16,639	1,152	3,738,269	(3,480)	(4,615)	(8,999)	(300)	(17,394)	0.1	1.6	54.1	26.0	0.5
– personal	1,351,575	45,606	5,575	–	1,402,756	(1,732)	(2,646)	(1,325)	–	(5,703)	0.1	5.8	23.8	–	0.4
– corporate[1]	1,850,316	222,819	10,914	1,149	2,085,198	(1,622)	(1,844)	(7,525)	(297)	(11,288)	0.1	0.8	68.9	25.8	0.5
– financial institutions[2]	222,065	28,097	150	3	250,315	(126)	(125)	(149)	(3)	(403)	0.1	0.4	99.3	100.0	0.2
Loans and advances to banks	328,355	579	–	–	328,934	(26)	(3)	–	–	(29)	0.0	0.5	–	–	0.0
Other financial assets	1,530,910	9,884	167	2	1,540,963	(214)	(77)	(50)	–	(341)	0.0	0.8	29.9	–	0.0
Loan and other credit-related commitments	1,601,934	27,967	104	–	1,630,005	(303)	(236)	(21)	–	(560)	0.0	0.8	20.2	–	0.0
– personal	1,158,805	5,311	69	–	1,164,185	–	(1)	–	–	(1)	–	0.0	–	–	0.0
– corporate[1]	378,362	18,495	35	–	396,892	(293)	(230)	(21)	–	(544)	0.1	1.2	60.0	–	0.1
– financial institutions[2]	64,767	4,161	–	–	68,928	(10)	(5)	–	–	(15)	0.0	0.1	–	–	0.0
Financial guarantee	34,496	6,634	33	–	41,163	(29)	(20)	(13)	–	(62)	0.1	0.3	39.4	–	0.2
– personal	4,377	–	3	–	4,380	–	–	(3)	–	(3)	–	–	100.0	–	0.1
– corporate[1]	28,530	6,410	30	–	34,970	(29)	(20)	(10)	–	(59)	0.1	0.3	33.3	–	0.2
– financial institutions[2]	1,589	224	–	–	1,813	–	–	–	–	–	–	–	–	–	–
At 31 Dec 2019	6,919,651	341,586	16,943	1,154	7,279,334	(4,052)	(4,951)	(9,083)	(300)	(18,386)	0.1	1.4	53.6	26.0	0.3

The above table does not include balances due from Group companies.
1 Includes corporate and commercial.
2 Includes non-bank financial institutions.

Unless identified at an earlier stage, all financial assets are deemed to have suffered a significant increase in credit risk when they are 30 days past due ('DPD') and are transferred from stage 1 to stage 2. The following disclosure presents the ageing of stage 2 financial assets by those less than 30 and greater than 30 days past due and therefore presents those amounts classified as stage 2 due to ageing (30 DPD) and those identified at an earlier stage (less than 30 DPD).`

Stage 2 days past due analysis for loans and advances to customers

(Audited)

	Gross carrying amount			Allowance for ECL			ECL coverage %		
		Of which:	*Of which:*		*Of which:*	*Of which:*		*Of which:*	*Of which:*
	Stage 2	*1 to 29 DPD[1]*	*30 and > DPD[1]*	Stage 2	*1 to 29 DPD[1]*	*30 and > DPD[1]*	Stage 2	*1 to 29 DPD[1]*	*30 and > DPD[1]*
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	%	%	%
At 31 Dec 2019									
Loans and advances to customers at amortised cost	296,522	8,254	3,911	(4,615)	(255)	(434)	1.6	3.1	11.1
– personal	45,606	6,505	3,494	(2,646)	(217)	(396)	5.8	3.3	11.3
– corporate and commercial	222,819	1,687	417	(1,844)	(38)	(38)	0.8	2.3	9.1
– non-bank financial institutions	28,097	62	–	(125)	–	–	0.4	–	–

1 Days past due ('DPD'). Up to date accounts in Stage 2 are not shown in amounts.

Summary of credit risk (excluding debt instruments measured at FVOCI) by stage distribution and ECL coverage by industry sector (continued)

(Audited)

	Gross carrying/nominal amount					Allowance for ECL					ECL coverage %				
	Stage 1	Stage 2	Stage 3	POCI	Total	Stage 1	Stage 2	Stage 3	POCI	Total	Stage 1	Stage 2	Stage 3	POCI	Total
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	%	%	%	%	%
Loans and advances to customers	3,345,371	180,142	19,024	721	3,545,258	(3,014)	(3,713)	(9,549)	(280)	(16,556)	0.1	2.1	50.2	38.8	0.5
– personal	1,219,173	42,395	5,431	—	1,266,999	(1,625)	(2,763)	(1,412)	—	(5,800)	0.1	6.5	26.0	—	0.5
– corporate[1]	1,919,264	131,234	13,407	721	2,064,626	(1,297)	(920)	(8,017)	(280)	(10,514)	0.1	0.7	59.8	38.8	0.5
– financial institutions[2]	206,934	6,513	186	—	213,633	(92)	(30)	(120)	—	(242)	0.0	0.5	64.5	—	0.1
Loans and advances to banks	337,079	1,098	—	—	338,177	(24)	(2)	—	—	(26)	0.0	0.2	—	—	0.0
Other financial assets	1,427,193	9,170	70	—	1,436,433	(140)	(27)	—	—	(167)	0.0	0.3	—	—	0.0
Loan and other credit-related commitments	1,464,749	25,847	115	—	1,490,711	(275)	(101)	—	—	(376)	0.0	0.4	—	—	0.0
– personal	1,024,061	8,102	4	—	1,032,167	(1)	(3)	—	—	(4)	0.0	0.0	—	—	0.0
– corporate[1]	384,855	15,559	111	—	400,525	(262)	(97)	—	—	(359)	0.1	0.6	—	—	0.1
– financial institutions[2]	55,833	2,186	—	—	58,019	(12)	(1)	—	—	(13)	0.0	0.0	—	—	0.0
Financial guarantee	43,261	6,349	697	—	50,307	(26)	(33)	(221)	—	(280)	0.1	0.5	31.7	—	0.6
– personal	4,562	1	5	—	4,568	—	—	(1)	—	(1)	—	—	20.0	—	0.0
– corporate[1]	34,978	6,254	692	—	41,924	(25)	(33)	(220)	—	(278)	0.1	0.5	31.8	—	0.7
– financial institutions[2]	3,721	94	—	—	3,815	(1)	—	—	—	(1)	0.0	—	—	—	0.0
At 31 Dec 2018	6,617,653	222,606	19,906	721	6,860,886	(3,479)	(3,876)	(9,770)	(280)	(17,405)	0.1	1.7	49.1	38.8	0.3

The above table does not include balances due from Group companies.
1 *Includes corporate and commercial.*
2 *Includes non-bank financial institutions.*

Stage 2 days past due analysis for loans and advances to customers (continued)

(Audited)

	Gross carrying amount			Allowance for ECL			ECL coverage %		
		Of which:	*Of which:*		*Of which:*	*Of which:*		*Of which:*	*Of which:*
	Stage 2	*1 to 29 DPD[1]*	*30 and > DPD[1]*	Stage 2	*1 to 29 DPD[1]*	*30 and > DPD[1]*	Stage 2	*1 to 29 DPD[1]*	*30 and > DPD[1]*
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	%	%	%
At 31 Dec 2018									
Loans and advances to customers	180,142	*7,632*	*3,733*	(3,713)	*(270)*	*(332)*	2.1	*3.5*	*8.9*
– personal	42,395	*6,366*	*3,443*	(2,763)	*(229)*	*(310)*	6.5	*3.6*	*9.0*
– corporate and commercial	131,234	*1,264*	*80*	(920)	*(41)*	*(22)*	0.7	*3.2*	*27.5*
– non-bank financial institutions	6,513	*2*	*210*	(30)	—	—	0.5	—	—

1 *Days past due ('DPD'). Up to date accounts in Stage 2 are not shown in amounts.*

Credit exposure

Maximum exposure to credit risk

(Audited)

This section provides information on balance sheet items as well as loan and other credit-related commitments.

'Maximum exposure to credit risk' table
The following table presents our maximum exposure before taking account of any collateral held or other credit enhancements (unless such enhancements meet accounting offsetting requirements). The table excludes financial instruments whose carrying amount best represents the net exposure to credit risk, and it excludes equity securities as they are not subject to credit risk. For the financial assets recognised on the balance sheet, the maximum exposure to credit risk equals their carrying amount; for financial guarantees and other guarantees granted, it is the maximum amount that we would have to pay if the guarantees were called upon. For loan commitments and other credit-related commitments, it is generally the full amount of the committed facilities.

Other credit risk mitigants

There are arrangements in place that reduce our maximum exposure to credit risk. These include a charge over collateral on borrowers' specific assets, such as residential properties, collateral held in the form of financial instruments that are not held on the balance sheet and short positions in securities. In addition, for financial assets held as part of linked insurance/investment contracts the risk is predominantly borne by the policyholder.

Collateral available to mitigate credit risk is disclosed in the Collateral section on pages 36-39.

Maximum exposure to credit risk before collateral held or other credit enhancements

(Audited)

	2019 HK$m	2018 HK$m
Cash and balances at central banks	**202,746**	205,660
Items in the course of collection from other banks	**21,140**	25,380
Hong Kong Government certificates of indebtedness	**298,944**	280,854
Trading assets	**445,298**	439,363
Derivatives	**280,642**	292,869
Financial assets designated at fair value	**33,464**	33,023
Reverse repurchase agreements – non-trading	**422,333**	406,327
Loans and advances to banks	**328,905**	338,151
Loans and advances to customers	**3,720,875**	3,528,702
Financial investments	**1,891,661**	1,865,168
Amounts due from Group companies	**87,632**	70,455
Other assets	**165,497**	159,483
Total on-balance sheet exposure to credit risk	**7,899,137**	7,645,435
Total off-balance sheet	**3,346,414**	3,171,280
Financial guarantees and other similar contracts	**315,257**	291,915
Loan and other credit-related commitments	**3,031,157**	2,879,365
At 31 Dec	**11,245,551**	10,816,715

Total exposure to credit risk remained broadly unchanged in 2019 with loans and advances continuing to be the largest element.

Credit deterioration of financial instruments

(Audited)

A summary of our current policies and practices regarding the identification, treatment and measurement of stage 1, stage 2, stage 3 (credit impaired) and POCI financial instruments can be found in note 1.2(i) on the Consolidated Financial Statements.

Measurement uncertainty and sensitivity analysis of ECL estimates

(Audited)

The recognition and measurement of expected credit losses ('ECL') involves the use of significant judgement and estimation. We form multiple economic scenarios based on economic forecasts, apply these assumptions to credit risk models to estimate future credit losses, and probability-weight the results to determine an unbiased ECL estimate.

Methodology

We use multiple economic scenarios to reflect assumptions about future economic conditions, starting with three economic scenarios based on consensus forecast distributions, supplemented by alternative or additional economic scenarios and/or management adjustments where, in management's judgement, the consensus forecast distribution does not adequately capture the relevant risks.

The three economic scenarios represent the 'most likely outcome' and two less likely outcomes, referred to as the Upside and Downside scenarios. Each outer scenario is consistent with a probability of 10%, while the Central scenario is assigned the remaining 80%, according to the decision of the group's senior management. This weighting scheme is deemed appropriate for the unbiased estimation of ECL in most circumstances.

Economic assumptions in the Central consensus economic scenario are set using consensus forecasts which represent the average of forecasts of external economists. Reliance on external forecasts helps ensure that the Central scenario is unbiased and maximises the use of independent information. The Upside and Downside scenarios are selected with reference to externally available forecast distributions and are designed to be cyclical, in that GDP growth, inflation and unemployment usually revert back to the Central scenario after the first three years for major economies. We determine the maximum divergence of GDP growth from the Central scenario using the 10th and the 90th percentile of the entire distribution of forecast outcomes for major economies. While key economic variables are set with reference to external distributional forecasts, we also align the overall narrative of the scenarios to the macroeconomic risks described in the group's 'Top and emerging risks'. This ensures that scenarios remain consistent with the more qualitative assessment of these risks. We project additional variable paths using an external provider's global macro model.

The Upside and Downside scenarios are generated once a year, reviewed at each reporting date to ensure that they are an appropriate reflection of managements view and updated if economic conditions change significantly. The Central scenario is generated every quarter. For quarters without updates to outer scenarios, wholesale and retail credit risk use the updated central scenario to approximate the impact of the most recent outer scenarios.

Additional scenarios are created as required, to address those forward-looking risks that management considers are not adequately captured by the consensus. At the reporting date, we deployed additional scenarios to address the impact of deteriorating trade relations between China and the US on key Asian economies and to address the possibility of a further deterioration in economic growth in Hong Kong.

Description of Consensus Economic Scenarios

The economic assumptions presented in this section have been formed internally by the group specifically for the purpose of calculating expected credit loss.

The consensus Central scenario

The Central scenario is one of moderate growth over the forecast period 2020-2024. Global GDP growth is expected to be 2.8% on average over the period, which is marginally lower than the average growth rate over the period 2014-2018. Across the key markets, we note that:

- Expected average rates of GDP growth over the 2020-2024 period are lower than average growth rates achieved over the 2014-2018 period in all of our key markets. For China, it is consistent with the theme of ongoing rebalancing from an export-oriented economy to deeper domestic consumption. Short–term expectations of economic growth in Hong Kong deteriorated sharply in the second half of 2019.
- The unemployment rate is expected to rise over the forecast horizon in most of our major markets.
- Inflation is expected to be stable and will remain close to central bank targets in our core markets over the forecast period.
- Major central banks lowered their main policy interest rates in 2019 and are expected to continue to maintain a low interest rate environment over the projection horizon. The US Federal Reserve Board has resumed asset purchases to provide liquidity and the European Central bank is expected to restart its asset purchase programmes.
- The West Texas Intermediate oil price is forecast to average US$59 per barrel over the projection period.

The following table describes key macroeconomic variables and the probabilities assigned in the consensus Central scenario.

Central scenario (average 2020–2024)

	Hong Kong	Mainland China
GDP growth rate (%)	1.9	5.6
Inflation (%)	2.2	2.4
Unemployment (%)	3.1	4.0
Short–term interest rate (%)	1.1	3.8
10-year treasury bond yields (%)	2.4	N/A
Property price growth (%)	3.8	4.6
Equity price growth (%)	5.1	7.9
Probability (%)	50.0	80.0

Note: N/A – not required in credit models.

The consensus Upside scenario

The economic forecast distribution of risks (as captured by consensus probability distributions of GDP growth) has shown a decrease in upside risks across our main markets over the course of 2019. In the first two years of the Upside scenario, global real GDP growth rises before converging to the Central scenario.

Increased confidence, de-escalation of trade tensions and removal of trade barriers, expansionary fiscal policy, stronger oil prices as well as calming of geopolitical tensions are the risk themes that support the Upside scenario.

The following table describes key macroeconomic variables and the probabilities assigned in the consensus Upside scenario.

Upside scenario (average 2020-2024)

	Hong Kong	Mainland China
GDP growth rate (%)	2.2	5.9
Inflation (%)	2.5	2.7
Unemployment (%)	2.9	3.9
Short–term interest rate (%)	1.2	3.9
10-year treasury bond yields (%)	2.5	N/A
Property price growth (%)	5.0	5.8
Equity price growth (%)	6.9	10.7
Probability (%)	10.0	10.0

Note: N/A – not required in credit models.

The Downside scenarios

The consensus Downside scenario

The distribution of risks (as captured by consensus probability distributions of GDP growth) has shown a marginal increase in downside risks over the course of 2019 for Hong Kong. In the Downside scenario, global real GDP growth declines for two years before recovering towards its long-run trend. House price growth either stalls or contracts and equity markets correct abruptly in our major markets in this scenario. The potential slowdown in global demand would drive commodity prices lower and result in an accompanying fall in inflation. Central banks would be expected to enact loose monetary policy, which in some markets would result in a reduction in the key policy interest rate. The scenario is consistent with key in our 'Top and emerging risks', which include an intensification of global protectionism and trade barriers, a slowdown in China, further risks to economic growth in Hong Kong and weaker commodity prices.

The following table describes key macroeconomic variables and the probabilities assigned in the consensus Downside scenario.

Downside scenario (average 2020-2024)

	Hong Kong	Mainland China
GDP growth rate (%)	1.4	5.6
Inflation (%)	1.9	2.1
Unemployment (%)	3.3	4.0
Short–term interest rate (%)	(0.1)	3.6
10-year treasury bond yields (%)	1.2	N/A
Property price growth (%)	2.3	3.9
Equity price growth (%)	(0.7)	1.1
Probability (%)	10.0	0.0

Note: N/A – not required in credit models.

The alternative Downside scenarios

Alternative Downside scenarios have been created to reflect management's view of risk in some of our key markets.

Asia-Pacific alternative Downside scenario

Two alternative Downside scenarios have been implemented for key Asia-Pacific markets to represent management's view of economic uncertainty arising from trade and tariff tensions between China and the US and the current economic situation in Hong Kong. These scenarios and their associated probabilities are described below.

Asia-Pacific alternative Downside scenario 1

A continuation of trade- and tariff-related tensions throughout 2019 resulted in management modelling an alternative Downside scenario for eight of our key Asia-Pacific markets. This scenario models the effects of a significant escalation in global tensions, stemming from trade disputes but going beyond increases in tariffs to affect non-tariff barriers, cross-border investment flows and threats to the international trade architecture. This scenario assumes actions that lie beyond currently enacted and proposed tariffs and has been modelled as an addition to the three consensus-driven scenarios for these economies.

Key macroeconomic variables are shown in the table below:

Average 2020-2024

	Hong Kong	Mainland China
GDP growth rate (%)	**0.8**	**5.2**
Inflation (%)	**1.6**	**2**
Unemployment (%)	**5.1**	**4.3**
Short–term interest rate (%)	**0.7**	**2.9**
10-year treasury bond yields (%)	**1.6**	**N/A**
Property price growth (%)	**(3.7)**	**2.6**
Equity price growth (%)	**(3.3)**	**(1.6)**
Probability (%)	**20.0**	**10.0**

Note: N/A – not required in credit models.

Asia-Pacific alternative Downside scenario 2

A deep cyclical recessionary scenario has been modelled to reflect Hong Kong-specific risks and the possibility of a further deterioration in the economic environment. This scenario has been applied to Hong Kong only and has been assigned a 10% probability.

Average 2020–2024

	Hong Kong
GDP growth rate (%)	**(0.1)**
Inflation (%)	**1.3**
Unemployment (%)	**5.1**
Short–term interest rate (%)	**0.4**
10-year treasury bond yields (%)	**1.4**
Property price growth (%)	**(3.7)**
Equity price growth (%)	**(8.4)**
Probability (%)	**10.0**

The conditions that resulted in departure from the consensus economic forecasts will be reviewed regularly as economic conditions change in future to determine whether these adjustments continue to be necessary.

How economic scenarios are reflected in the wholesale calculation of ECL

The Group has developed a globally consistent methodology for the application of forward economic guidance into the calculation of ECL by incorporating forward economic guidance into the estimation of the term structure of probability of default ('PD') and loss given default ('LGD'). For PDs, we consider the correlation of forward economic guidance to default rates for a particular industry in a country. For LGD calculations we consider the correlation of forward economic guidance to collateral values and realisation rates for a particular country and industry. PDs and LGDs are estimated for the entire term structure of each instrument.

For impaired loans, LGD estimates take into account independent recovery valuations provided by external consultants where available, or internal forecasts corresponding to anticipated economic conditions and individual company conditions. In estimating the ECL on impaired loans that are individually considered not to be significant, the group incorporates forward economic guidance proportionate to the probability-weighted outcome and the Central scenario outcome for non-stage 3 populations.

How economic scenarios are reflected in the retail calculation of ECL

The Group has developed and implemented a globally consistent methodology for incorporating forecasts of economic conditions into ECL estimates. The impact of economic scenarios on PD is modelled at a portfolio level. Historic relationships between observed default rates and macro-economic variables are integrated into HKFRS 9 ECL estimates by leveraging economic response models. The impact of these scenarios on PD is modelled over a period equal to the remaining maturity of underlying asset or assets. The impact on LGD is modelled for mortgage portfolios by forecasting future loan-to-value ('LTV') profiles for the remaining maturity of the asset by leveraging national level forecasts of the house price index and applying the corresponding LGD expectation.

Economic scenarios sensitivity analysis of ECL estimates

Management considered the sensitivity of the ECL outcome against the economic forecasts as part of the ECL governance process by recalculating the ECL under each scenario described above for selected portfolios, applying a 100% weighting to each scenario in turn. The weighting is reflected in both the determination of significant increase in credit risk as well as the measurement of the resulting ECL.

The ECL calculated for the Upside and Downside scenarios should not be taken to represent the upper and lower limits of possible actual ECL outcomes. The impact of defaults that might occur in future under different economic scenarios is captured by recalculating ECL for loans in stages 1 and 2 at the balance sheet date. The population of stage 3 loans (in default) at the balance sheet date is unchanged in these sensitivity calculations. Stage 3 ECL would only be sensitive to changes in forecasts of future economic conditions if the LGD of a particular portfolio was sensitive to these changes.

There is a particularly high degree of estimation uncertainty in numbers representing tail risk scenarios when assigned a 100% weighting.

For wholesale credit risk exposures, the sensitivity analysis excludes ECL and financial instruments related to defaulted obligors because the measurement of ECL is relatively more sensitive to credit factors specific to the obligor than future economic scenarios, and it is impracticable to separate the effect of macroeconomic factors in individual assessments.

For retail credit risk exposures, the sensitivity analysis includes ECL for loans and advances to customers related to defaulted obligors. This is because the retail ECL for secured mortgage portfolios including loans in all stages is sensitive to macroeconomic variables.

We also considered developments after the balance sheet date and concluded that they did not necessitate any adjustment to the approach or judgements taken on 31 December 2019.

Wholesale analysis

HKFRS 9 ECL sensitivity to future economic conditions[1]

	Hong Kong	Mainland China
ECL coverage of financial instruments subject to significant measurement uncertainty at 31 December 2019[2]		
Reported ECL (HK$m)	2,555	966
Consensus scenarios		
Central scenario (HK$m)	1,895	919
Upside scenario (HK$m)	1,877	740
Downside scenario (HK$m)	1,901	826
Alternative scenarios		
Asia-Pacific alternative Downside scenario 1 (HK$m)	4,284	1,168
Asia-Pacific alternative Downside scenario 2 (HK$m)	5,452	N/A
Gross carrying amount/nominal amount[3] (HK$m)	3,256,617	810,092

1 *Excludes ECL and financial instruments relating to defaulted obligors because the measurement of ECL is relatively more sensitive to credit factors specific to the obligor than future economic scenarios.*
2 *Includes off-balance sheet financial instruments that are subject to significant measurement uncertainty.*
3 *Includes low credit-risk financial instruments such as Debt instruments at FVOCI, which have low ECL coverage ratios under all the above scenarios. Coverage ratios on loans and advances to customers including loan commitments and financial guarantees are typically higher.*

ECL coverage rates reflect the underlying observed credit defaults, the sensitivity to economic environment, extent of security and the effective maturity of the book. Hong Kong is typically a short-dated book with low defaults, which is reflected in the low ECL coverage ratio.

Retail analysis

HKFRS 9 ECL sensitivity to future economic conditions[1]

	Hong Kong	Malaysia	Singapore	Australia
ECL coverage of loans and advances to customers at 31 December 2019[2]				
Reported ECL (HK$m)	2,718	732	467	296
Consensus scenarios				
Central scenario (HK$m)	2,306	732	452	288
Upside scenario (HK$m)	2,197	662	444	249
Downside scenario (HK$m)	2,383	826	452	351
Alternative scenarios				
Asia-Pacific alternative Downside scenario 1 (HK$m)	4,128	857	623	389
Asia-Pacific alternative Downside scenario 2 (HK$m)	4,206	N/A	N/A	N/A
Gross carrying amount/ nominal amount (HK$m)	792,061	45,480	63,590	134,423

1 *ECL sensitivities exclude portfolios using less complex modelling approaches.*
2 *ECL sensitivity includes only on-balance sheet financial instruments to which HKFRS 9 impairment requirements are applied.*

The changes in sensitivity from 31 December 2018 is reflective of changes in lending volumes, credit quality and movements in foreign exchange. In Hong Kong, an additional downside scenario was introduced during 2019 where an increase in severity of alternative downside scenario partially offset by changes in credit quality is observed.

Overall, as the level of uncertainty, economic forecasts, historical economic variable correlations or credit quality changes, corresponding changes in the ECL sensitivity would occur.

Post-model adjustments

In the context of HKFRS 9, post-model adjustments are short-term increases or decreases to the ECL at either a customer or portfolio level to account for late breaking events, model deficiencies and expert credit judgement applied following management review and challenge. We have internal governance in place to regularly monitor post-model adjustments and where possible to reduce the reliance on these through model recalibration or redevelopment as appropriate.

Reconciliation of changes in gross carrying/nominal amount and allowances for placings with and advances to banks and loans and advances to customers, including loan commitments and financial guarantees

The following disclosure provides a reconciliation by stage of the group's gross carrying/nominal amount and allowances for loans and advances to banks and customers, including loan commitments and financial guarantees. Movements are calculated on a quarterly basis and therefore fully capture stage movements between quarters. If movements were calculated on a year-to-date basis they would only reflect the opening and closing position of the financial instrument.

The transfers of financial instruments represents the impact of stage transfers upon the gross carrying/nominal amount and associated allowance for ECL.

The net remeasurement of ECL arising from stage transfers represents the increase or decrease due to these transfers, for example, moving from a 12-month (stage 1) to a lifetime (stage 2) ECL measurement basis. Net remeasurement excludes the underlying CRR/PD movements of the financial instruments transferring stage. This is captured, along with other credit quality movements in the 'changes in risk parameters – credit quality' line item.

Changes in 'New financial assets originated or purchased', 'assets derecognised (including final repayments)' and 'changes to risk parameters – further lending/repayments' represent the impact from volume movements within the group's lending portfolio.

Reconciliation of changes in gross carrying/nominal amount and allowances for loans and advances to banks and customers, including loan commitments and financial guarantees

(Audited)

	Stage 1		Stage 2		Stage 3		POCI		Total	
	Gross carrying/ nominal amount	Allowance for ECL	Gross carrying/ nominal amount	Allowance for ECL	Gross carrying/ nominal amount	Allowance for ECL	Gross carrying/ nominal amount	Allowance for ECL	Gross carrying/ nominal amount	Allowance for ECL
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
At 1 Jan 2019	5,190,396	(3,339)	213,434	(3,849)	19,836	(9,772)	721	(279)	5,424,387	(17,239)
Transfers of financial instruments:	(199,043)	(1,999)	192,106	2,829	6,937	(830)	–	–	–	–
– transfers from stage 1 to stage 2	(424,655)	904	424,655	(904)	–	–	–	–	–	–
– transfers from stage 2 to stage 1	227,072	(2,849)	(227,072)	2,849	–	–	–	–	–	–
– transfers to stage 3	(1,987)	48	(6,513)	1,056	8,500	(1,104)	–	–	–	–
– transfers from stage 3	527	(102)	1,036	(172)	(1,563)	274	–	–	–	–
Net remeasurement of ECL arising from transfer of stage	–	1,657	–	(1,887)	–	(215)	–	–	–	(445)
New financial assets originated and purchased	1,655,668	(1,347)	–	–	–	–	555	–	1,656,223	(1,347)
Assets derecognised (including final repayments)	(1,132,107)	274	(77,234)	590	(4,991)	1,078	(18)	–	(1,214,350)	1,942
Changes to risk parameters – further lending/repayment	(104,136)	757	3,871	289	850	363	(152)	7	(99,567)	1,416
Changes in risk parameters – credit quality	–	207	–	(2,880)	–	(4,989)	–	(64)	–	(7,726)
Changes to model used for ECL calculation	–	(50)	–	39	–	113	–	–	–	102
Assets written off	–	–	–	–	(4,842)	4,842	(41)	41	(4,883)	4,883
Credit-related modifications that resulted in derecognition	–	–	–	–	(980)	394	–	–	(980)	394
Foreign exchange	(7,733)	16	(479)	(2)	63	(37)	(2)	(1)	(8,151)	(24)
Others	(19,395)	(15)	3	(3)	(98)	21	89	(4)	(19,401)	(1)
At 31 Dec 2019	5,383,650	(3,839)	331,701	(4,874)	16,775	(9,032)	1,152	(300)	5,733,278	(18,045)
ECL income statement charge for the year										(6,058)
Recoveries										863
Others										(197)
Total ECL income statement charge for the year										(5,392)

	At 31 Dec 2019		Year ended 31 Dec 2019
	Gross carrying/ nominal amount	Allowance for ECL	ECL charge
	HK$m	HK$m	HK$m
As above	5,733,278	(18,045)	(5,392)
Other financial assets measured at amortised cost	1,540,963	(341)	(134)
Non-trading reverse repurchase agreement commitments	5,093	–	–
Performance and other guarantees not considered for HKFRS 9	N/A	N/A	(123)
Amounts due from Group companies	85,385	–	–
Summary of financial instruments to which the impairment requirements in HKFRS 9 are applied/Summary consolidated income statement	7,364,719	(18,386)	(5,649)
Debt instruments measured at FVOCI	1,457,362	(64)	(23)
Total allowance for ECL/total income statement ECL charge for the year	N/A	(18,450)	(5,672)

Reconciliation of changes in gross carrying/nominal amount and allowances for loans and advances to banks and customers, including loan commitments and financial guarantees (continued)

(Audited)

	Stage 1		Stage 2		Stage 3		POCI		Total	
	Gross carrying/ nominal amount	Allowance for ECL	Gross carrying/ nominal amount	Allowance for ECL	Gross carrying/ nominal amount	Allowance for ECL	Gross carrying/ nominal amount	Allowance for ECL	Gross carrying/ nominal amount	Allowance for ECL
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
At 1 Jan 2018	4,852,623	(3,365)	280,319	(4,277)	17,713	(9,239)	1,231	(185)	5,151,886	(17,066)
Transfers of financial instruments:	(33,980)	(2,276)	21,399	3,214	12,581	(938)	—	—	—	—
– transfers from stage 1 to stage 2	(324,248)	789	324,248	(789)	—	—	—	—	—	—
– transfers from stage 2 to stage 1	295,728	(3,109)	(295,728)	3,109	—	—	—	—	—	—
– transfers to stage 3	(5,481)	50	(8,862)	1,064	14,343	(1,114)	—	—	—	—
– transfers from stage 3	21	(6)	1,741	(170)	(1,762)	176	—	—	—	—
Net remeasurement of ECL arising from transfer of stage	—	1,819	—	(1,800)	—	(262)	—	—	—	(243)
Net new and further lending/ repayments[1]	466,876	(872)	(83,068)	173	(5,105)	2,434	(500)	11	378,203	1,746
Changes in risk parameters - credit quality	—	1,170	—	(1,177)	—	(7,040)	—	(114)	—	(7,161)
Changes to model used for ECL calculation	—	—	—	—	—	—	—	—	—	—
Assets written off	—	—	—	—	(4,974)	4,973	(6)	6	(4,980)	4,979
Foreign exchange and other	(95,123)	185	(5,216)	18	(379)	300	(4)	3	(100,722)	506
At 31 Dec 2018	5,190,396	(3,339)	213,434	(3,849)	19,836	(9,772)	721	(279)	5,424,387	(17,239)
ECL income statement charge for the year										(5,658)
Recoveries										940
Others										(21)
Total ECL income statement charge for the year										(4,739)

	At 31 Dec 2018		Year ended 31 Dec 2018
	Gross carrying/nominal amount	Allowance for ECL	ECL charge
	HK$m	HK$m	HK$m
As above	5,424,387	(17,239)	(4,739)
Other financial assets measured at amortised cost	1,436,433	(167)	4
Non-trading reverse repurchase agreement commitments	66	—	—
Performance and other guarantees not considered for HKFRS 9	N/A	N/A	5
Amounts due from Group companies	58,631	—	—
Summary of financial instruments to which the impairment requirements in HKFRS 9 are applied/Summary consolidated income statement	6,919,517	(17,406)	(4,730)
Debt instruments measured at FVOCI	1,497,767	(44)	10
Total allowance for ECL/total income statement ECL charge for the year	N/A	(17,450)	(4,720)

1 *The 31 December 2018 comparative 'Reconciliation of changes in gross carrying/nominal amount and allowances for loans and advances to banks and customers' disclosure presents 'New financial assets originated or purchased', 'Assets derecognised (including final repayments)' and 'Changes to risk parameters – further lending/repayments' under 'Net new lending and further lending/repayments'. To provide greater granularity, these amounts have been separately presented in the 31 December 2019 disclosure.*

Credit quality

Credit quality of financial instruments

(Audited)

We assess the credit quality of all financial instruments that are subject to credit risk. The credit quality of financial instruments is a point-in-time assessment of the probability of default of financial instruments, whereas stages 1 and 2 are determined based on relative deterioration of credit quality since initial recognition. Accordingly, for non-credit-impaired financial instruments, there is no direct relationship between the credit quality assessment and stages 1 and 2, though typically the lower credit quality bands exhibit a higher proportion in stage 2.

The five credit quality classifications each encompass a range of granular internal credit rating grades assigned to wholesale and retail lending businesses and the external ratings attributed by external agencies to debt securities, as shown in the table below.

Distribution of financial instruments by credit quality at 31 December 2019

(Audited)

	Gross carrying/notional amount							
	Strong	Good	Satisfactory	Sub-standard	Credit impaired	Total	Allowance for ECL	Net
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
In-scope for HKFRS 9 impairment								
Loans and advances to customers held at amortised cost	1,997,523	946,831	755,183	21,067	17,665	3,738,269	(17,394)	3,720,875
– personal	1,173,323	138,094	81,345	4,419	5,575	1,402,756	(5,703)	1,397,053
– corporate and commercial	707,662	731,917	617,079	16,602	11,938	2,085,198	(11,288)	2,073,910
– non-bank financial institutions	116,538	76,820	56,759	46	152	250,315	(403)	249,912
Loans and advances to banks	308,236	19,338	1,357	3	–	328,934	(29)	328,905
Cash and balances at central banks	197,770	3,946	1,031	–	–	202,747	(1)	202,746
Items in the course of collection from other banks	21,140	–	–	–	–	21,140	–	21,140
Hong Kong Government certificates of indebtedness	298,944	–	–	–	–	298,944	–	298,944
Reverse repurchase agreements – non-trading	286,338	99,555	36,440	–	–	422,333	–	422,333
Financial investments held at amortised cost	382,384	46,887	5,252	–	–	434,523	(223)	434,300
Prepayments, accrued income and other assets	82,725	38,627	38,922	833	169	161,276	(117)	161,159
Debt instruments measured at fair value through other comprehensive income[1]	1,382,729	60,202	9,301	–	–	1,452,232	(64)	1,452,168
Out-of-scope for HKFRS 9 impairment								
Trading assets	378,656	39,057	26,683	905	–	445,301	–	445,301
Other financial assets designated and otherwise mandatorily measured at fair value through profit or loss	22,850	3,702	3,174	–	–	29,726	–	29,726
Derivatives	168,448	44,520	3,336	41	–	216,345	–	216,345
Total gross carrying amount on-balance sheet	5,527,743	1,302,665	880,679	22,849	17,834	7,751,770	(17,828)	7,733,942
Percentage of total credit quality	71%	17%	11%	0%	0%	100%	–	–
Loan and other credit related commitments[2]	1,639,786	678,914	415,286	13,650	303	2,747,939	(561)	2,747,378
Financial guarantee and similar contracts	113,138	108,045	71,562	3,222	324	296,291	(213)	296,078
Total nominal off-balance sheet amount	1,752,924	786,959	486,848	16,872	627	3,044,230	(774)	3,043,456

Distribution of financial instruments by credit quality at 31 December 2018 (continued)

(Audited)

	Gross carrying/notional amount							
	Strong	Good	Satisfactory	Sub-standard	Credit impaired	Total	Allowance for ECL	Net
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
In-scope for HKFRS 9 impairment								
Loans and advances to customers held at amortised cost	1,867,142	881,026	758,398	19,123	19,569	3,545,258	(16,556)	3,528,702
– personal	1,052,365	116,821	88,755	3,627	5,431	1,266,999	(5,800)	1,261,199
– corporate and commercial	713,295	702,871	619,057	15,451	13,952	2,064,626	(10,514)	2,054,112
– non-bank financial institutions	101,482	61,334	50,586	45	186	213,633	(242)	213,391
Loans and advances to banks	311,304	22,434	4,439	—	—	338,177	(26)	338,151
Cash and balances at central banks	200,977	3,890	793	—	—	205,660	—	205,660
Items in the course of collection from other banks	25,380	—	—	—	—	25,380	—	25,380
Hong Kong Government certificates of indebtedness	280,854	—	—	—	—	280,854	—	280,854
Reverse repurchase agreements – non-trading	294,944	68,872	42,511	—	—	406,327	—	406,327
Financial investments held at amortised cost	321,495	41,044	4,982	—	—	367,521	(120)	367,401
Prepayments, accrued income and other assets	83,748	32,197	34,283	393	70	150,691	(47)	150,644
Debt instruments measured at fair value through other comprehensive income[1]	1,422,307	67,108	9,111	—	—	1,498,526	(44)	1,498,482
Out-of-scope for HKFRS 9 impairment								
Trading assets	381,629	37,719	19,717	298	—	439,363	—	439,363
Other financial assets designated and otherwise mandatorily measured at fair value through profit or loss	22,286	3,183	3,159	—	—	28,628	—	28,628
Derivatives	165,327	43,362	5,011	159	—	213,859	—	213,859
Total gross carrying amount on-balance sheet	5,377,393	1,200,835	882,404	19,973	19,639	7,500,244	(16,793)	7,483,451
Percentage of total credit quality	72%	16%	12%	0%	0%	100%	—	—
Loan and other credit related commitments[2]	2,139,267	261,579	145,681	2,248	115	2,548,890	(376)	2,548,514
Financial guarantee and similar contracts	97,697	104,379	69,593	1,628	1,169	274,466	(314)	274,152
Total nominal off-balance sheet amount	2,236,964	365,958	215,274	3,876	1,284	2,823,356	(690)	2,822,666

The above table does not include balances due from Group companies.

1 *For the purposes of this disclosure, gross carrying value is defined as the amortised cost of a financial asset, before adjusting for any loss allowance. As such the gross carrying value of debt instruments at FVOCI as presented above will not reconcile to the balance sheet as it excludes fair value gains and losses.*

2 *In 2018, revocable loan and other commitments, which are out-of-scope of HKFRS 9 are presented within the 'Strong' classification.*

Distribution of financial instruments to which the impairment requirements in HKFRS 9 are applied, by credit quality and stage allocation

(Audited)

	Gross carrying/notional amount							
	Strong	Good	Satisfactory	Sub-standard	Credit impaired	Total	Allowance for ECL	Net
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
Loans and advances to banks	308,236	19,338	1,357	3	–	328,934	(29)	328,905
– stage 1	307,968	19,313	1,071	3	–	328,355	(26)	328,329
– stage 2	268	25	286	–	–	579	(3)	576
– stage 3	–	–	–	–	–	–	–	–
– POCI	–	–	–	–	–	–	–	–
Loans and advances to customers at amortised cost	1,997,523	946,831	755,183	21,067	17,665	3,738,269	(17,394)	3,720,875
– stage 1	1,990,700	859,196	569,372	4,688	–	3,423,956	(3,480)	3,420,476
– stage 2	6,823	87,635	185,811	16,253	–	296,522	(4,615)	291,907
– stage 3	–	–	–	–	16,639	16,639	(8,999)	7,640
– POCI	–	–	–	126	1,026	1,152	(300)	852
Other financial assets measured at amortised cost	1,269,301	189,015	81,645	833	169	1,540,963	(341)	1,540,622
– stage 1	1,266,894	185,925	77,914	177	–	1,530,910	(214)	1,530,696
– stage 2	2,407	3,090	3,731	656	–	9,884	(77)	9,807
– stage 3	–	–	–	–	167	167	(50)	117
– POCI	–	–	–	–	2	2	–	2
Loan and other credit-related commitments	1,246,440	285,938	94,436	3,087	104	1,630,005	(560)	1,629,445
– stage 1	1,244,851	273,593	81,601	1,889	–	1,601,934	(303)	1,601,631
– stage 2	1,589	12,345	12,835	1,198	–	27,967	(236)	27,731
– stage 3	–	–	–	–	104	104	(21)	83
– POCI	–	–	–	–	–	–	–	–
Financial guarantees	10,520	16,774	12,860	976	33	41,163	(62)	41,101
– stage 1	10,224	15,108	9,069	95	–	34,496	(29)	34,467
– stage 2	296	1,666	3,791	881	–	6,634	(20)	6,614
– stage 3	–	–	–	–	33	33	(13)	20
– POCI	–	–	–	–	–	–	–	–
At 31 Dec 2019	**4,832,020**	**1,457,896**	**945,481**	**25,966**	**17,971**	**7,279,334**	**(18,386)**	**7,260,948**
Debt instruments at FVOCI[1]								
– stage 1	1,382,708	60,180	9,301	–	–	1,452,189	(64)	1,452,125
– stage 2	21	22	–	–	–	43	–	43
– stage 3	–	–	–	–	–	–	–	–
– POCI	–	–	–	–	–	–	–	–
At 31 Dec 2019	**1,382,729**	**60,202**	**9,301**	**–**	**–**	**1,452,232**	**(64)**	**1,452,168**

`

Distribution of financial instruments to which the impairment requirements in HKFRS 9 are applied, by credit quality and stage allocation (continued)

(Audited)

	Gross carrying/notional amount							
	Strong	Good	Satisfactory	Sub-standard	Credit impaired	Total	Allowance for ECL	Net
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
Loans and advances to banks	311,304	22,434	4,439	—	—	338,177	(26)	338,151
– stage 1	311,012	22,022	4,045	—	—	337,079	(24)	337,055
– stage 2	292	412	394	—	—	1,098	(2)	1,096
– stage 3	—	—	—	—	—	—	—	—
– POCI	—	—	—	—	—	—	—	—
Loans and advances to customers at amortised cost	1,867,142	881,026	758,398	19,123	19,569	3,545,258	(16,556)	3,528,702
– stage 1	1,861,473	840,372	639,812	3,714	—	3,345,371	(3,014)	3,342,357
– stage 2	5,669	40,654	118,586	15,233	—	180,142	(3,713)	176,429
– stage 3	—	—	—	—	19,024	19,024	(9,549)	9,475
– POCI	—	—	—	176	545	721	(280)	441
Other financial assets measured at amortised cost	1,207,398	146,003	82,569	393	70	1,436,433	(167)	1,436,266
– stage 1	1,204,886	143,493	78,720	94	—	1,427,193	(140)	1,427,053
– stage 2	2,512	2,510	3,849	299	—	9,170	(27)	9,143
– stage 3	—	—	—	—	70	70	—	70
– POCI	—	—	—	—	—	—	—	—
Loan and other credit-related commitments	1,081,090	261,578	145,681	2,247	115	1,490,711	(376)	1,490,335
– stage 1	1,078,356	250,973	134,399	1,021	—	1,464,749	(275)	1,464,474
– stage 2	2,734	10,605	11,282	1,226	—	25,847	(101)	25,746
– stage 3	—	—	—	—	115	115	—	115
– POCI	—	—	—	—	—	—	—	—
Financial guarantees	14,791	19,700	14,675	444	697	50,307	(280)	50,027
– stage 1	14,370	18,051	10,779	61	—	43,261	(26)	43,235
– stage 2	421	1,649	3,896	383	—	6,349	(33)	6,316
– stage 3	—	—	—	—	697	697	(221)	476
– POCI	—	—	—	—	—	—	—	—
At 31 Dec 2018	4,481,725	1,330,741	1,005,762	22,207	20,451	6,860,886	(17,405)	6,843,481
Debt instruments at FVOCI[1]								
– stage 1	1,422,307	67,108	9,110	—	—	1,498,525	(44)	1,498,481
– stage 2	—	—	1	—	—	1	—	1
– stage 3	—	—	—	—	—	—	—	—
– POCI	—	—	—	—	—	—	—	—
At 31 Dec 2018	1,422,307	67,108	9,111	—	—	1,498,526	(44)	1,498,482

The above table does not include balances due from Group companies.

1 *For the purposes of this disclosure, gross carrying value is defined as the amortised cost of a financial asset, before adjusting for any loss allowance. As such the gross carrying value of debt instruments at FVOCI as presented above will not reconcile to the balance sheet as it excludes fair value gains and losses.*

Credit-impaired loans

(Audited)

We determine that a financial instrument is credit impaired and in stage 3 by considering relevant objective evidence, primarily whether:

- contractual payments of either principal or interest are past due for more than 90 days;
- there are other indications that the borrower is unlikely to pay, such as when a concession has been granted to the borrower for economic or legal reasons relating to the borrower's financial condition; and
- the loan is otherwise considered to be in default. If such unlikeliness to pay is not identified at an earlier stage, it is deemed to occur when an exposure is 90 days past due, even where regulatory rules permit default to be defined based on 180 days past due. Therefore, the definitions of credit impaired and default are aligned as far as possible so that stage 3 represents all loans that are considered defaulted or otherwise credit impaired.

Collateral and other credit enhancements

(Audited)

Although collateral can be an important mitigant of credit risk, it is the group's general practice to lend on the basis of the customer's ability to meet their obligations out of cash flow resources rather than placing primary reliance on collateral and other credit risk enhancements. Depending on the customer's standing and the type of product, facilities may be provided without any collateral or other credit enhancements. For other lending, a charge over collateral is obtained and considered in determining the credit decision and pricing. In the event of default, the bank may utilise the collateral as a source of repayment.

Depending on its form, collateral can have a significant financial effect in mitigating our exposure to credit risk. Where there is sufficient collateral, an expected credit loss is not recognised. This is the case for reverse repurchase agreements and for certain loans and advances to customers where the loan to value ('LTV') is very low.

Mitigants may include a charge on borrowers' specific assets, such as real estate or financial instruments. Other credit risk mitigants include short positions in securities and financial assets held as part of linked insurance/investment contracts where the risk is predominantly borne by the policyholder. Additionally, risk may be managed by employing other types of collateral and credit risk enhancements, such as second charges, other liens and unsupported guarantees. Guarantees are normally taken from corporates and export credit agencies. Corporates would normally provide guarantees as part of a parent/subsidiary relationship and span a number of credit grades. The export credit agencies will normally be investment grade.

Certain credit mitigants are used strategically in portfolio management activities. While single name concentrations arise in portfolios managed by Global Banking and Corporate Banking, it is only in Global Banking that their size requires the use of portfolio level credit mitigants. Across Global Banking, risk limits and utilisations, maturity profiles and risk quality are monitored and managed proactively. This process is key to the setting of risk appetite for these larger, more complex, geographically distributed customer groups. While the principal form of risk management continues to be at the point of exposure origination, through the lending decision-making process, Global Banking also utilises loan sales and credit default swap ('CDS') hedges to manage concentrations and reduce risk. These transactions are the responsibility of a dedicated Global Banking portfolio management team. Hedging activity is carried out within agreed credit parameters, and is subject to market risk limits and a robust governance structure. Where applicable, CDSs are 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.

CDS mitigants are held at portfolio level and are not reported in the presentation below.

Collateral on loans and advances

The collateral measured in the following tables consists of fixed first charges on real estate, and charges over cash and marketable financial instruments. The values in the tables represent the expected market value on an open market basis; no adjustment has been made to the collateral for any expected costs of recovery. Marketable securities are measured at their fair value.

Other types of collateral such as unsupported guarantees and floating charges over the assets of a customer's business are not measured in the following tables. While such mitigants have value, often providing rights in insolvency, their assignable value is not sufficiently certain and they are therefore assigned no value for disclosure purposes.

The LTV ratios presented are calculated by directly associating loans and advances with the collateral that individually and uniquely supports each facility. When collateral assets are shared by multiple loans and advances, whether specifically or, more generally, by way of an all monies charge, the collateral value is pro-rated across the loans and advances protected by the collateral.

For credit-impaired loans, the collateral values cannot be directly compared with impairment allowances recognised. The LTV figures use open market values with no adjustments.

Impairment allowances are calculated on a different basis, by considering other cash flows and adjusting collateral values for costs of realising collateral.

Personal lending

The following table provides a quantification of the value of fixed charges we hold over specific assets where we have a history of enforcing, and are able to enforce, collateral in satisfying a debt in the event of the borrower failing to meet its contractual obligations, and where the collateral is cash or can be realised by sale in an established market. The collateral valuation excludes any adjustments for obtaining and selling the collateral and, in particular, loans shown as not collateralised or partially collateralised may also benefit from other forms of credit mitigants.

Residential mortgages including loan commitments by level of collateral

(Audited)

	2019		2018	
	Gross carrying/ nominal amount	**ECL coverage**	Gross carrying/ nominal amount	ECL coverage
	HK$m	**%**	HK$m	%
Stage 1				
Fully collateralised	**1,044,885**	**0.0**	965,164	0.0
LTV ratio:				
– less than 70%	**914,665**	**0.0**	859,476	0.0
– 71% to 90%	**108,813**	**0.0**	89,821	0.0
– 91% to 100%	**21,407**	**0.0**	15,867	0.1
Partially collateralised (A):	**2,525**	**–**	3,121	0.0
– *collateral value on A*	***2,445***		*2,792*	
Total	**1,047,410**	**0.0**	968,285	0.0
Stage 2				
Fully collateralised	**26,748**	**0.3**	20,638	0.4
LTV ratio:				
– less than 70%	**19,430**	**0.1**	15,913	0.2
– 71% to 90%	**6,743**	**0.7**	4,277	0.7
– 91% to 100%	**575**	**2.3**	448	2.9
Partially collateralised (B):	**151**	**6.6**	93	4.3
– *collateral value on B*	***139***		*83*	
Total	**26,899**	**0.4**	20,731	0.4
Stage 3				
Fully collateralised	**1,997**	**6.9**	1,694	9.3
LTV ratio:				
– less than 70%	**1,433**	**3.4**	1,210	4.9
– 71% to 90%	**422**	**13.5**	371	16.4
– 91% to 100%	**142**	**22.5**	113	32.7
Partially collateralised (C):	**97**	**59.8**	88	43.2
– *collateral value on C*	***85***		*80*	
Total	**2,094**	**9.4**	1,782	10.9
At 31 Dec	**1,076,403**	**0.0**	990,798	0.0

Other personal lending

Other personal lending consists primarily of personal loans, overdrafts and credit cards, all of which are generally unsecured, except lending to private banking customers which are generally secured.

Commercial real estate loans and advances

The value of commercial real estate collateral is determined by using a combination of external and internal valuations and physical inspections. For CRR 1–7, local valuation policies determine the frequency of review on the basis of local market conditions because of the complexity of valuing collateral for commercial real estate. For CRR 8–10, almost all collateral would have been revalued within the last three years. In Hong Kong, market practice is typically for lending to major property companies to be either secured by guarantees or unsecured.

Commercial real estate loans and advances including loan commitments by level of collateral

(Audited)

	2019		2018	
	Gross carrying/ nominal amount	ECL coverage	Gross carrying/ nominal amount	ECL coverage
	HK$m	%	HK$m	%
Stage 1				
Not collateralised	**344,010**	**0.0**	352,258	0.0
Fully collateralised	**387,796**	**0.1**	363,729	0.1
Partially collateralised (A):	**27,155**	**0.1**	31,107	0.1
– *collateral value on A*	***15,724***		*17,246*	
Total	**758,961**	**0.1**	747,094	0.0
Stage 2				
Not collateralised	**5,326**	**0.9**	10,228	0.2
Fully collateralised	**17,781**	**1.0**	19,440	0.6
Partially collateralised (B):	**589**	**0.3**	1,235	0.8
– *collateral value on B*	***423***		*702*	
Total	**23,696**	**1.0**	30,903	0.5
Stage 3				
Not collateralised	**–**	**–**	–	–
Fully collateralised	**165**	**9.1**	129	0.8
Partially collateralised (C):	**–**	**–**	–	–
– *collateral value on C*	**–**		–	
Total	**165**	**9.1**	129	0.8
POCI				
Not collateralised	**–**	**–**	–	–
Fully collateralised	**–**	**–**	–	–
Partially collateralised (D):	**–**	**–**	–	–
– *collateral value on D*	**–**		–	
Total	**–**	**–**	–	–
At 31 Dec	**782,822**	**0.1**	778,126	0.1

Corporate, commercial and non-bank financial institutions lending

Other corporate, commercial and financial (non-bank) loans are analysed separately in the following table. For financing activities in other corporate and commercial lending, collateral value is not strongly correlated to principal repayment performance.

Collateral values are generally refreshed when an obligor's general credit performance deteriorates and we have to assess the likely performance of secondary sources of repayment should it prove necessary to rely on them.

Accordingly, the following table reports values only for customers with CRR 8–10, recognising that these loans and advances generally have valuations that are comparatively recent.

Other corporate, commercial and non-bank financial institutions loans and advances including loan commitments by level of collateral

(Audited)

	2019		2018	
	Gross carrying/ nominal amount	**ECL coverage**	Gross carrying/ nominal amount	ECL coverage
	HK$m	**%**	HK$m	%
Stage 1				
Not collateralised	**2,164,436**	**0.1**	2,156,281	0.0
Fully collateralised	**345,386**	**0.1**	352,225	0.1
Partially collateralised (A):	**242,433**	**0.1**	260,184	0.1
– collateral value on A	***103,251***		*108,264*	
Total	**2,752,255**	**0.1**	2,768,690	0.1
Stage 2				
Not collateralised	**191,455**	**0.6**	149,977	0.4
Fully collateralised	**108,229**	**0.6**	34,740	0.6
Partially collateralised (B):	**37,016**	**0.3**	27,608	0.4
– collateral value on B	***16,629***		*10,987*	
Total	**336,700**	**0.6**	212,325	0.4
Stage 3				
Not collateralised	**6,815**	**78.4**	8,339	69.1
Fully collateralised	**2,005**	**46.0**	2,536	34.8
Partially collateralised (C):	**2,353**	**60.5**	3,361	51.6
– collateral value on C	***1,046***		*1,237*	
Total	**11,173**	**68.8**	14,236	58.9
POCI				
Not collateralised	**706**	**11.5**	204	20.1
Fully collateralised	**200**	**0.5**	243	0.8
Partially collateralised (D):	**246**	**88.6**	274	86.5
– collateral value on D	***233***		*269*	
Total	**1,152**	**26.0**	721	38.8
At 31 Dec	**3,101,280**	**0.4**	2,995,972	0.4

1 31 December 2018 balances have been restated to include HK$79bn of undrawn commitments not previously identified for disclosure.

Other credit risk exposures

(Unaudited)

In addition to collateralised lending described above, other credit enhancements are employed and methods used to mitigate credit risk arising from financial assets. These are summarised below:

- Some securities issued by governments, banks and other financial institutions may benefit from additional credit enhancements provided by government guarantees that cover the assets.
- Debt securities issued by banks and financial institutions include asset-backed securities ('ABSs') and similar instruments, which are supported by underlying pools of financial assets. Credit risk associated with ABSs is reduced through the purchase of credit default swap ('CDS') protection
- The group's maximum exposure to credit risk includes financial guarantees and similar contracts granted, as well as loan and other credit-related commitments. Depending on the terms of the arrangement, we may use additional credit mitigation if a guarantee is called upon or a loan commitment is drawn and subsequently defaults.

Derivatives

(Unaudited)

We participate in transactions exposing us to counterparty credit risk. Counterparty credit risk is the risk of financial loss if the counterparty to a transaction defaults before satisfactorily settling it. It arises principally from over-the-counter ('OTC') derivatives and securities financing transactions and is calculated in both the trading and non-trading books. Transactions vary in value by reference to a market factor such as an interest rate, exchange rate or asset price.

The counterparty risk from derivative transactions is taken into account when reporting the fair value of derivative positions. The adjustment to the fair value is known as the credit value adjustment ('CVA').

Liquidity and funding risk

(Audited)

Overview

Liquidity risk is the risk that we do not have sufficient financial resources to meet our obligations as they fall due or that we can only do so at an excessive cost. Liquidity risk arises from mismatches in the timing of cash flows.

Funding risk is the risk that funding considered to be sustainable, and therefore used to fund assets, is not sustainable over time. Funding risk arises when illiquid asset positions cannot be funded at the expected terms and when required.

Liquidity and funding risk profile

We maintain a comprehensive liquidity and funding risk management framework ('LFRF'), which aims to allow us to withstand severe liquidity stresses. It is based on global policies that are designed to be adaptable to different business models, markets and regulations. The LFRF comprises policies, metrics and controls designed to ensure that group and entity management have oversight of our liquidity and funding risks in order to manage them appropriately.

We manage liquidity and funding risk at an operating entity level to ensure that obligations can be met in the jurisdiction where they fall due, generally without reliance on other parts of the group. Operating entities are required to meet internal minimum requirements and any applicable regulatory requirements at all times. These requirements are set against the group's implementation of the liquidity coverage ratio ('LCR') and the net stable funding ratio ('NSFR'). Each entity is required to undertake a qualitative and quantitative assessment of the contractual and behavioural profile of its assets and liabilities when setting internal limits in order to reflect their expected behaviour under idiosyncratic, market-wide and combined stress scenarios.

Structure and organisation

Asset, Liability and Capital Management ('ALCM') teams are responsible for the application of the LFRF at a local operating entity level. The elements of the LFRF are underpinned by a robust governance framework, the two major elements of which are:

- Asset and Liability Management Committees ('ALCOs') at the group and entity level; and
- annual internal liquidity adequacy assessment process ('ILAAP') used to validate risk tolerance and set risk appetite.

All operating entities are required to prepare an internal liquidity adequacy assessment ('ILAA') document at appropriate frequency. The final objective of the ILAA, approved by the relevant ALCOs, is to verify that the entity and subsidiaries maintain liquidity resources which are adequate in both amount and quality at all times, there is no significant risk that its liabilities cannot be met as they fall due, and a prudent funding profile is maintained.

The Board is ultimately responsible for determining the types and magnitude of liquidity risk that the group is able to take and ensuring that there is an appropriate organisation structure for managing this risk. Under authorities delegated by the Board, the group ALCO is responsible for managing all ALCM issues including liquidity and funding risk management. The group ALCO delegates to the group Tactical Asset and Liability Management Committee ('TALCO') the task of reviewing various analyses of the group pertaining to sites' liquidity and funding.

Compliance with liquidity and funding requirements is monitored by local ALCO who report to the RMM and Executive Committee on a regular basis. This process includes:

- maintaining compliance with relevant regulatory requirements of the operating entity;
- projecting cash flows under various stress scenarios and considering the level of liquid assets necessary in relation thereto;
- monitoring liquidity and funding ratios against internal and regulatory requirements;
- maintaining a diverse range of funding sources with adequate back-up facilities;
- managing the concentration and profile of term funding;
- managing contingent liquidity commitment exposures within pre-determined limits;
- maintaining debt financing plans;
- monitoring of depositor concentration in order to avoid undue reliance on large individual depositors and ensuring a satisfactory overall funding mix; and
- maintaining liquidity and funding contingency plans. These plans identify early indicators of stress conditions and describe actions to be taken in the event of difficulties arising from systemic or other crises, while minimising adverse long-term implications for the business.

Governance

ALCM teams apply the LFRF at both an individual entity and group level, and are responsible for the implementation of Group-wide and local regulatory policy at a legal entity level. Balance Sheet Management ('BSM') has responsibility for cash and liquidity management.

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

Internal Audit provide independent assurance that risk is managed effectively.

Management of liquidity and funding risk

Liquidity coverage ratio

(Unaudited)

The LCR aims to ensure that a bank has sufficient unencumbered high-quality liquid assets ('HQLA') to meet its liquidity needs in a 30 calendar day liquidity stress scenario.

At 31 December 2019, all the group's principal operating entities were well above regulatory minimums and above the internally expected levels.

Net stable funding ratio

(Unaudited)

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

At 31 December 2019, all the group's principal operating entities were above the internally expected levels.

Depositor concentration and term funding maturity concentration

(Unaudited)

The LCR and NSFR metrics assume a stressed outflow based on a portfolio of depositors within retail, corporate and financial deposit segments. The validity of these assumptions is challenged if the portfolio of depositors is not large enough to avoid depositor concentration.

Operating entities are exposed to term refinancing concentration risk if the current maturity profile results in future maturities being overly concentrated in any defined period.

At 31 December 2019, all the group's principal operating entities were above the internally expected levels.

Sources of funding

(Audited)

Our primary sources of funding are customer current accounts and customer savings deposits payable on demand or at short notice. We issue wholesale securities (secured and unsecured) to supplement our customer deposits and change the currency mix, maturity profile or location of our liabilities.

Currency mismatch in the LCR

(Unaudited)

The LFRF requires all operating entities to monitor material single currency LCR. Limits are set to ensure that outflows can be met, given assumptions on stressed capacity in the FX swap markets.

Liquidity and funding risk in 2019

(Unaudited)

The group is required to calculate its LCR and NSFR on a consolidated basis in accordance with rule 11(1) of The Banking (Liquidity) Rules ('BLR'). The group is required to maintain both LCR and NSFR of not less than 100%.

The average LCRs for the period are as follows:

	Quarter ended	
	31 Dec 2019	31 Dec 2018
	%	%
Average LCRs	**163.5**	161.0

The liquidity position of the group remained strong in 2019. The average LCR increased by 2.5% from 161.0% for the quarter ended 31 December 2018 to 163.5% for the quarter ended 31 December 2019, mainly as a result of the increase in customer deposits exceeding the growth in loans and advances to customers.

The majority of HQLA included in the LCR are Level 1 assets as defined in the BLR, which consist mainly of government debt securities.

The total weighted amount of HQLA for the period are as follows:

	Weighted amount (average value) at quarter ended	
	31 Dec 2019	31 Dec 2018
	HK$m	HK$m
Level 1 assets	**1,528,908**	1,489,744
Level 2A assets	**80,174**	67,333
Level 2B assets	**10,788**	9,638
Total	**1,619,870**	1,566,715

The NSFRs for the period are as follows:

	Quarter ended	
	31 Dec 2019	31 Dec 2018
	%	%
Net stable funding ratio	**145.8**	149.7

The funding position of the group remained robust in 2019, highlighting a surplus of stable funding relative to the required stable funding requirement. The NSFR decreased by 3.9% from 149.7% for the quarter ended 31 December 2018 to 145.8% for the quarter ended 31 December 2019.

Interdependent assets and liabilities included in the group's NSFR are certificates of indebtedness held and legal tender notes issued.

Additional contractual obligations

(Unaudited)

Under the terms of our current collateral obligations under derivative contracts (which are ISDA compliant CSA contracts), the additional collateral required to post in the event of one-notch and two-notch downgrade in credit ratings is immaterial.

Further details of the group's liquidity information disclosures can be viewed in the Banking Disclosure Statement 2019, which will be available in the Regulatory Disclosure Section of our website: www.hsbc.com.hk.

Market Risk

(Audited)

Overview

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. Exposure to market risk is separated into two portfolios: trading portfolios and non-trading portfolios.

Market risk management

Key developments in 2019

There were no material changes to our policies and practices for the management of market risk in 2019.

Governance and structure

The following diagram summarises the main business areas where trading and non-trading market risks reside, and the market risk measures used to monitor and limit exposures.

	Trading risk	Non-trading risk
Risk types	• Foreign exchange and commodities • Interest rates • Credit spreads • Equities	• Structural foreign exchange • Interest rates • Credit spreads
Global business	GB&M incl BSM[1]	GB&M, BSM[1], GPB, CMB and RBWM
Risk measure	VaR | Sensitivity | Stress Testing	VaR | Sensitivity | Stress Testing

1 *Balance Sheet Management ('BSM'), for external reporting purposes, forms part of the Corporate Centre while daily operations and risk are managed within GB&M.*

Where appropriate, we apply 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. Strategies range from the use of traditional market instruments, such as interest rate swaps, to more sophisticated hedging strategies to address a combination of risk factors arising at portfolio level.

Key risk management processes

(Audited)

Monitoring and limiting market risk exposures

Our objective is to manage and control market risk exposures while maintaining a market 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

(Unaudited)

Sensitivity analysis measures the impact of individual market factor movements on specific instruments or portfolios, including interest rates, foreign exchange rates and equity prices. We use sensitivity measures to monitor the market risk positions within each risk type. Granular sensitivity limits are set primarily for trading desks with consideration of market liquidity, customer demand and capital constraints, among other factors.

Value at risk

Value at risk ('VaR') is a technique for estimating potential losses on risk positions 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 integrated into market risk management and calculated for all trading positions regardless of how we capitalise them. In addition, we calculate VaR for non-trading portfolios to have a complete picture of risk. Where we do not calculate VaR explicitly, we use alternative tools as summarised in the 'Stress testing' section below.

Our models are predominantly based on historical simulation that incorporates the following features:

- historical market rates and prices, which are calculated with reference to foreign exchange rates, commodity prices, interest rates, equity prices and the associated volatilities;
- potential market movements which are calculated with reference to data from the past two years; and
- these are calculated to a 99% confidence level and using a one-day holding period.

The models also incorporate the effect of option features on the underlying exposures. The nature of the VaR models means that an increase in observed market volatility will lead to an increase in VaR without any changes in the underlying positions.

VaR model limitations

Although a valuable guide to risk, VaR should always be viewed in the context of its limitations. For example:

- the use of historical data as a proxy for estimating future market moves may not encompass all potential market events, particularly those that are extreme in nature.
- the use of a one-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.
- VaR is calculated on the basis of exposures outstanding at the close of business and therefore does not reflect intra-day exposures.

Risk not in VaR framework

(Unaudited)

The risks not in VaR ('RNIV') framework aims to capture and capitalise material market risks that are not adequately covered in the VaR model.

Risk factors are reviewed on a regular basis and are either incorporated directly in the VaR models, where possible, or quantified through either 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 approach is included in the overall VaR calculation but excluded from the VaR measure used for regulatory back-testing. In addition, stressed VaR also captures risk factors considered in the VaR-based RNIV approach. Stress-type RNIVs include a de-peg risk measure to capture risk to pegged and heavily-managed currencies.

Stress testing

(Audited)

Stress testing is an important procedure that is integrated into our market risk management framework 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 much greater than those predicted by VaR modelling.

Stress testing is implemented at legal entity, regional and overall Group levels. A set of scenarios is used consistently across all regions within the Group. The risk appetite around potential stress losses for the Group is set and monitored against a referral limit.

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 quite local or idiosyncratic in nature, and complement the systematic top-down stress testing.

Stress testing and reverse stress testing provide senior management with insights regarding the 'tail risk' beyond VaR, for which our appetite is limited.

Back-testing

We routinely validate the accuracy of our VaR models by back-testing them with both actual and hypothetical profit and loss against the corresponding VaR numbers. Hypothetical profit and loss excludes non-modelled items such as fees, commissions and revenue of intra-day transactions.

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

We back-test our VaR at various levels of our group entity hierarchy.

Market risk in 2019

(Unaudited)

The market environment in year 2019 was dominated by headline geopolitical events of US-China trade tensions, uncertainty of the UK's exit from the European Union, and the busy election calendar in Asia. Amid the prospect of economic slowdown, Asian central banks and governments responded by monetary and fiscal easing and are expected to ease further. In 2020, the market backdrop of continuing trade and geopolitical tensions as well as the upcoming US presidential election could add to the market uncertainty and volatilities.

Trading portfolios

(Audited)

Value at risk of the trading portfolios

Trading VaR predominantly resides within Global Markets. Total trading VaR (excluding Risk not in VaR) was lower as at 31 December 2019 compared to 31 December 2018 due to reduction in credit VaR and interest rate VaR, as trading positions were managed down.

The trading VaR for the year is shown in the table below.

Trading value at risk, 99% 1 day[1]

(Audited)

	Foreign exchange and commodity HK$m	Interest rate HK$m	Equity HK$m	Credit spread HK$m	Portfolio diversification[2] HK$m	Total[3,4] HK$m
At 31 Dec 2019						
Year end	**48**	**90**	**50**	**24**	**(110)**	**140**
Average	**38**	**102**	**38**	**34**		**157**
Maximum	**58**	**145**	**63**	**81**		**210**
At 31 Dec 2018						
Year end	43	123	51	42	(123)	136
Average	35	150	30	33		163
Maximum	59	199	58	75		222

1 *Trading portfolios comprise positions arising from the market-making and warehousing of customer-derived positions.*
2 *Portfolio diversification is the market risk dispersion effect of holding a portfolio containing different risk types. It represents the reduction in unsystematic market risk that occurs when combining a number of different risk types, for example, interest rate, equity and foreign exchange, together in one portfolio. It is measured as the difference between the sum of the VaR by individual risk type and the combined total VaR. A negative number represents the benefit of portfolio diversification. As the maximum and minimum occur on different days for different risk types, it is not meaningful to calculate a portfolio diversification benefit for these measures.*
3 *The total VaR includes HK$38m Risk not in VaR ('RNIV') for the year ended 31 December 2019.*
4 *The RNIV was excluded for year 2018. 2018 year end total VaR including RNIV was HK$187m.*

Non-trading portfolios

(Unaudited)

Banking book interest rate risk is the risk of an adverse impact to earnings or capital due to changes in market interest rates. The risk arises from timing mismatches in the repricing of non-traded assets and liabilities and is the potential adverse impact of changes in interest rates on earnings and capital. In its management of the risk, the group aims to mitigate the impact of future interest rate movements which could reduce future net interest income, while balancing the cost of hedging activities to the current revenue stream. Monitoring the sensitivity of projected net interest income under varying interest rate scenarios is a key part of this.

In order to manage structural interest rate risk, non-traded assets and liabilities are transferred to Balance Sheet Management ('BSM') based on their repricing and maturity characteristics. For assets and liabilities with no defined maturity or repricing characteristics, behaviouralisation is used to assess the interest rate risk profile. BSM manages the banking book interest rate positions transferred to it within the approved limits. Local ALCOs are responsible for monitoring and reviewing their overall structural interest rate risk position. Interest rate behaviouralisation policies have to be formulated in line with the Group's behaviouralisation policies and approved at least annually by local ALCOs.

Sensitivity of net interest income

A principal part of our management of non-traded interest rate risk is to monitor the sensitivity of expected net interest income at least quarterly under varying interest rate scenarios, where all other economic variables are held constant.

Sensitivity of net interest income reflects the group's sensitivity of earnings due to changes in market interest rates. Entities forecast net interest income sensitivities across a range of interest rate scenarios based on a static balance sheet assumption. Balance sheet projection is modelled based on no management actions i.e. the risk profile at the month end is assumed to remain constant throughout the forecast horizon.

Sensitivity of economic value of equity

Economic value of equity ('EVE') represents the present value of the future banking book cash flows that could be distributed to equity providers under a managed run-off scenario. This equates to the current book value of equity plus the present value of future net interest income in this scenario. EVE can be used to assess the economic capital required to support interest rate risk in the banking book ('IRRBB'). An EVE sensitivity is the extent to which the EVE value will change due to pre-specified movements in interest rates, where all other economic variables are held constant. Operating entities are required to monitor EVE sensitivity as a percentage of Tier 1 capital resources.

Structural foreign exchange exposures

(Unaudited)

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

Exchange differences on structural exposures are recognised in 'Other comprehensive income'.

Our structural foreign exchange exposures are managed with the primary objective of ensuring, where practical, that our consolidated capital ratios and the capital ratios of individual banking subsidiaries are largely protected from the effect of changes in exchange rates. We hedge structural foreign exchange exposures only in limited circumstances.

The group had the following structural foreign currency exposures that were not less than 10% of the total net structural foreign currency positions:

	LCYm	HK$m equivalent
At 31 Dec 2019		
Renminbi	**201,509**	**225,392**
At 31 Dec 2018		
Renminbi	189,054	215,266

Resilience risk

(Unaudited)

Overview

Resilience risk is the risk that we are unable to provide critical services to our customers, affiliates and counterparties, as a result of sustained and significant operational disruption.

Resilience risk arises from failures or inadequacies in processes, people, systems or external events. These may be driven by rapid technological innovation, changing behaviours of our consumers, cyber-threats, cross-border dependencies and third-party relationships.

Resilience risk management

Key developments in 2019

In May 2019, in line with our simplified risk taxonomy, we formed a new Resilience Risk sub-function to ensure our operations continue functioning when an operational disturbance occurs. Our resilience strategy is focused on the establishment of robust back-up plans, detailed response methods, alternative delivery channels and recovery options. Resilience risk was formed to simplify the way we interact with our stakeholders and to deliver clear, consistent and credible responses globally. Investment in information technology ('IT') Resilience is central to this commitment. Designing and implementing IT Systems that continue to be available to use, in the face of adverse conditions is a key objective. We seek to ensure that we understand the root cause of IT failures and learn lessons both from our own experiences and those of others.

We have undertaken a number of initiatives to develop and embed the new sub-function:

- We recruited and consolidated personnel from previously independent risk functions, in Information and Cyber Security; Protective Security; Business Continuity and Incident Management; Third-party; and Systems, Data Integrity and Transaction Processing.
- We adopted a new model that allows us to provide a globally consistent view across Resilience Risk in order to strengthening risk management oversight.
- We developed a target operating model to set out our desired state for the function. We identified areas where we need to develop the resilience risk vision.
- We used internal and external channels to recruit a leadership team that is aligned to our core values of being open, dependable and connected.

Governance and structure

Resilience Risk provides guidance and stewardship to our businesses and global functions about how we can prevent, adapt, and learn from resilience-related threats when something goes wrong. We view resilience through six lenses: strategic change and emerging threats; third-party risk; information and data resilience; payments and processing resilience; systems and cyber resilience; and protective security risk.

The Resilience Risk Management Committee oversees resilience risk and has accountability to the Global Risk Management Board. The Resilience Risk Management Committee is supported by its subcommittees that provide oversight over each of the respective Resilience Risk sub-teams.

Key risk management processes

Operational resilience is our ability to adapt operations to continue functioning when an operational disturbance occurs. We measure resilience in terms of the maximum disruption period or the impact tolerance that we are willing to accept for a business service. Resilience risk cannot be managed down to zero, so we concentrate on critical business and strategic change programmes that have the highest potential to threaten our ability to provide continued service to our customers. Our resilience strategy is focused on the establishment of robust back-up plans, detailed response methods, alternative delivery channels and recovery options.

The Resilience Risk team oversees the identification, management and control of resilience risks.

Regulatory compliance risk

(Unaudited)

Overview

Regulatory compliance risk is the risk that we fail to observe the letter and spirit of all relevant laws, codes, rules, regulations and standards of good market practice, which as a consequence incur fines and penalties and suffer damage to our business.

Regulatory compliance risk arises from the risks associated with breaching our duty to our customers and other counterparties, inappropriate market conduct and breaching other regulatory requirements.

Regulatory compliance risk management

Key developments in 2019

There were no material changes to the practices for the management of regulatory compliance risk in 2019, except for the initiatives that we undertook to raise our standards in relation to the conduct of our business, as described below under 'Conduct of business'.

Governance and structure

The Regulatory Compliance sub-function provides independent, objective oversight and challenge, and promotes a compliance-orientated culture that supports the business in delivering fair outcomes for customers, maintaining the integrity of financial markets and achieving the group's strategic objectives.

Regulatory Compliance is part of the Compliance function, which is headed by the Group Chief Compliance Officer. Regulatory Compliance is structured as a global sub-function with regional and country Regulatory Compliance teams, which support and advise each global business and global function.

Key risk management processes

We regularly review our policies and procedures. Global policies and procedures require the prompt identification and escalation of any actual or potential regulatory breach to Regulatory Compliance. Reportable events are escalated to the RMM and the Risk Committee, as appropriate.

Conduct of business

In 2019, we continued to promote and encourage good conduct through our people's behaviour and decision making in order to deliver fair outcomes for our customers, and to maintain financial market integrity. During 2019:

- We developed and implemented a set of principles to govern the ethical management and use of data and artificial intelligence ('AI'), which includes support of digital products and services. This was complemented with training of our people to use customer data appropriately.
- We continued to focus on the needs of vulnerable customers in our product and process design. In specific markets, we provided awareness and training initiatives, and we also deployed staff with specialist knowledge of conditions such as dementia. Financial inclusion initiatives progressed in specific markets, combating financial abuse and developing financial education schemes for older customers.
- We further defined roles and responsibilities for our people as part of the enterprise risk management framework across the group to consider the customer in decision making and action.
- We delivered our fifth annual global mandatory training course on conduct, and reinforced the importance of conduct by highlighting examples of good conduct.

- We continued the expansion of recognition programmes across business areas for our people when they deliver exceptional service, when working directly with customers or in supporting roles.

Financial crime and fraud risk

(Unaudited)

Overview

Financial crime and fraud risk is the risk that we knowingly or unknowingly help parties to commit or to further potentially illegal activity. Financial crime and fraud risk arises from day-to-day banking operations.

Financial crime and fraud risk management

Key developments in 2019

During 2019, we continued to increase our efforts to strengthen our ability to combat financial crime. We integrated into our day-to-day operations the majority of the financial crime risk core capabilities delivered through the Global Standards programme, which we set up in 2013 to enhance our risk management policies, processes and systems. We have begun several initiatives to define the next phase of financial crime risk management.

- We continued to strengthen our anti-fraud capabilities, focusing on threats posed by new and existing technologies, and have delivered a comprehensive fraud training programme to our people.
- We continued to invest in the use of artificial intelligence ('AI') and advanced analytics techniques to develop a financial crime risk management framework for the future.
- We launched advanced anti-money laundering (‘AML’) and sanctions automation systems to detect and disrupt financial crime in international trade. These systems are designed to strengthen our ability to fight financial crime through the detection of suspicious activity and possible criminal networks.

Governance and structure

Since establishing a global framework of Financial Crime Risk Management Committees in the first quarter of 2018, we have continued to strengthen and review the effectiveness of our governance framework to manage financial crime risk. Formal governance committees are held across all countries, territories, regions and lines of business, and are chaired by the respective chief executive officers. They help to enable compliance with the letter and the spirit of all applicable financial crime compliance laws and regulations, as well as our own standards, values and policies relating to financial crime risks.

Key risk management processes

We continued to deliver a programme to further enhance the policies and controls around identifying and managing the risks of bribery and corruption across our business. Our transformation programme continued to focus on our anti-fraud and anti-tax evasion capabilities. Further enhancements have been made to our governance and policy frameworks, and to the management information reporting process which demonstrates the effectiveness of our financial crime controls.

We are investing in the next generation of capabilities to fight financial crime by applying advanced analytics and AI. We remain committed to enhancing our risk assessment capabilities and to delivering more proactive risk management.

Working in partnership with the public sector and other financial institutions is vital to managing financial crime risk. We are a strong proponent of public-private partnerships and participate in information-sharing initiatives around the world to better understand these risks so that they can be mitigated more effectively.

Skilled Person/Independent Consultant

Following expiration in December 2017 of the anti-money laundering Deferred Prosecution Agreement entered into with the US Department of Justice (‘DoJ’), the then Monitor has continued to work in his capacity as a Skilled Person under Section 166 of the Financial Services and Markets Act under the Direction issued by the UK Financial Conduct Authority (‘FCA’) in 2012. He has also continued to work in his capacity as an Independent Consultant under a cease-and-desist order issued by the US Federal Reserve Board (‘FRB’).

The Skilled Person has assessed HSBC’s progress towards being able to effectively manage its financial crime risk on a business-as-usual basis. The Skilled Person issued several reports in 2019. The Skilled Person has noted that HSBC continues to make material progress towards its financial crime risk target end state in terms of key systems, processes and people. Nonetheless, the Skilled Person has identified some areas that require further work before HSBC reaches a business-as-usual state. Reflective of HSBC’s significant progress in strengthening its financial crime risk management capabilities, HSBC’s engagement with the current Skilled Person will be terminated and a new Skilled Person with a narrower mandate will be appointed to assess the remaining areas that require further work in order for HSBC to transition fully to business-as-usual financial crime risk management. The FCA also intends to take steps to maintain global oversight of HSBC’s management of financial crime risk.

The Independent Consultant completed his sixth annual assessment, which was primarily focused on HSBC’s Sanctions programme. The Independent Consultant concluded that HSBC continues to make significant strides toward establishing an effective Sanctions compliance programme, commending HSBC’s material progress since the fifth annual assessment in 2018. However, he has determined that certain areas within HSBC’s sanctions compliance programme require further work. A seventh annual assessment will take place in the first quarter of 2020. The Independent Consultant will continue to carry out an annual Office of Foreign Assets Control compliance review, at the FRB’s discretion.

Model risk

(Unaudited)

Overview

Model risk is the potential for adverse consequences from business decisions informed by models, which can be exacerbated by errors in methodology, design or the way they are used. Model risk arises in both financial and non-financial contexts whenever business decision making includes reliance on models.

Key developments in 2019

In September 2019, we carried out a number of initiatives to further develop and embed the new Model Risk Management sub-function, including:

- We appointed a Regional Head of Model Risk Management in Asia-Pacific.
- We refined the model risk policy to enable a more risk-based approach to model risk management.
- We conducted a full review of model governance arrangements overseeing model risk across the group, resulting in a range of enhancements to the underlying structure to improve effectiveness and increase business engagement.
- We designed a new target operating model for Model Risk Management, referring to internal and industry best practice.

Governance and structure

We have placed greater focus on our model risk activities during 2019. To reflect this, Group has created the role of Chief Model Risk Officer, which for group is undertaken by the Head of Model Risk Management. Model Risk Management is structured as a sub-function within Regional Risk Strategy. Regional Model Risk Management support and advise all areas of the group, headed by the Regional Model Risk Steward.

Key risk management processes

We regularly review our model risk management policies and procedures, and require the first line of defence to demonstrate comprehensive and effective controls based on a library of model risk controls provided by Model Risk Management.

Model Risk Management reports on model risk to senior management through use of the risk map and regular key updates. We also review the effectiveness of these processes, including the regional model oversight committee structure, to ensure appropriate understanding and ownership of model risk is embedded in the businesses and functions.

Insurance manufacturing operations risk management

(Audited)

Overview

Insurance risk is the risk that, over time, the cost of insurance policies written, including claims and benefits, may exceed the total amount of premiums and investment income received. The cost of claims and benefits can be influenced by many factors, including mortality and morbidity experience, as well as lapse and surrender rates.

Insurance manufacturing operations risk management

Key developments in 2019

(Unaudited)

There were no material changes to our policies and practices for the management of risks arising in our insurance manufacturing operations in 2019.

Governance

(Unaudited)

Insurance risks are managed to a defined risk appetite, which is aligned to the group's risk appetite and risk management framework, including the group’s ‘Three lines of defence’ model. The group's Insurance Risk Management Meeting oversees the control framework globally and is accountable to the RBWM Risk Management Meeting on risk matters relating to insurance business.

The monitoring of the risks within the insurance operations is carried out by the Insurance Risk teams. Specific risk functions, including wholesale credit & market risk, operational risk, information security risk and financial crime compliance, support insurance risk teams in their respective areas of expertise.

Stress and scenario testing

(Unaudited)

Stress testing forms a key part of the risk management framework for the insurance business. Where in scope we participate in local and Group-wide regulatory stress tests, including the Bank of England stress test of the banking system, the Hong Kong Monetary Authority stress test, and individual country insurance regulatory stress tests. These have highlighted that a key risk scenario for the insurance business is a prolonged low interest rate environment. In order to mitigate the impact of this scenario, the insurance operations have a range of strategies that could be employed, repricing current products to reflect lower interest rates, moving towards less capital intensive products, and developing investment strategies to optimise the expected returns against the cost of economic capital.

Key risk management processes

Market risk

(Audited)

All our insurance manufacturing subsidiaries have market risk mandates that specify the investment instruments in which they are permitted to invest and the maximum quantum of market risk that they may retain. They manage market risk by using, among others, some or all of the techniques listed below, depending on the nature of the contracts written:

- We are able to adjust bonus rates to manage the liabilities to policyholders for products with discretionary participating features (‘DPF’). The effect is that a significant portion of the market risk is borne by the policyholder.
- We use asset and liability matching where asset portfolios are structured to support projected liability cash flows. The group manages its assets using an approach that considers asset quality, diversification, cash flow matching, liquidity, volatility and target investment return. It is not always possible to match asset and liability durations, due to several factors such as uncertainty over the receipt of all future premiums, the timing of claims and because the forecast payment dates of liabilities may exceed the duration of the longest dated investments available. We use models to assess the effect of a range of future scenarios on the values of financial assets and associated liabilities, and ALCOs employ the outcomes in determining how best to structure asset holdings to support liabilities.
- We use derivatives to protect against adverse market movements to better support liability cash flows.
- For new products with investment guarantees, we consider the cost when determining the level of premiums or the price structure.
- We periodically review products identified as higher risk, such as those that contain investment guarantees and embedded optionality features linked to savings and investment products, for active management.
- We design new products to mitigate market risk, such as changing the investment return sharing portion between policyholders and the shareholder.
- We exit, to the extent possible, investment portfolios whose risk is considered unacceptable.
- We reprice premiums charged to policyholders.

Credit risk

(Audited)

Our insurance manufacturing subsidiaries are responsible for the credit risk, quality and performance of their investment portfolios. Our assessment of the creditworthiness of issuers and counterparties is based primarily upon internationally recognised credit ratings, internal credit ratings, and other publicly available information.

Investment credit exposures are monitored against limits by our insurance manufacturing subsidiaries and are aggregated and reported to the Group Insurance Credit Risk and Group Credit Risk functions. Stress testing is performed on investment credit exposures using credit spread sensitivities and default probabilities.

We use a number of tools to manage and monitor credit risk. These include a credit report containing a watch-list of investments with current credit concerns, primarily investments that may be at risk of future impairment or where high concentrations to counterparties are present in the investment portfolio. Sensitivities to credit spread risk are assessed and monitored regularly.

Liquidity risk

(Audited)

Risk is managed by cash flow matching and maintaining sufficient cash resources, investing in high credit-quality investments with deep and liquid markets, monitoring investment concentrations and restricting them where appropriate, and establishing committed contingency borrowing facilities.

Insurance manufacturing subsidiaries complete quarterly liquidity risk reports and an annual review of the liquidity risks to which they are exposed.

Insurance risk

(Unaudited)

The group primarily uses the following techniques to manage and mitigate insurance risk:

- a formalised product approval process covering product design, pricing and overall proposition management (for example, management of lapses by introducing surrender charges);
- underwriting policy;
- claims management processes; and
- reinsurance which cedes risks above our acceptable thresholds to an external reinsurer thereby limiting our exposure.

Insurance manufacturing operations risk in 2019

(Unaudited)

The majority of the risk in our insurance business derives from manufacturing activities and can be categorised as financial risk or insurance risk. Financial risks include market risk, credit risk and liquidity risk. Insurance risk is the risk, other than financial risk, of loss transferred from the holder of the insurance contract to HSBC, the issuer.

HSBC's bancassurance model

We operate an integrated bancassurance model which provides insurance products principally for customers with whom we have a banking relationship. The insurance contracts we sell relate to the underlying needs of our banking customers, which we can identify from our point-of-sale contacts and customer knowledge. For the products we manufacture, the majority of sales are of savings and investment products.

By focusing largely on personal and small and medium-sized enterprise businesses, we are able to optimise volumes and diversify individual insurance risks. We choose to manufacture these insurance products in HSBC subsidiaries based on an assessment of operational scale and risk appetite. Manufacturing insurance allows us to retain the risks and rewards associated with writing insurance contracts by keeping part of the underwriting profit and investment income within the group.

We have life insurance manufacturing operations in: Hong Kong, Singapore and mainland China. We also have a life insurance manufacturing associate in India.

Where we do not have the risk appetite or operational scale to be an effective insurance manufacturer, we engage with a handful of leading external insurance companies in order to provide insurance products to our customers through our banking network and direct channels. These arrangements are generally structured with our exclusive strategic partners and earn the group a combination of commissions, fees and a share of profits. We distribute insurance products in all of our geographical regions.

Insurance products are sold through all global businesses, but predominantly by RBWM and CMB through our branches and direct channels.

Measurement

(Unaudited)

The risk profile of our insurance manufacturing businesses is measured using an economic capital approach. Assets and liabilities are measured on a market value basis and a capital requirement is defined to ensure that there is a less than one-in-200 chance of insolvency over a one-year time horizon, given the risks that the businesses are exposed to. The methodology for the economic capital calculation is largely aligned to the pan-European Solvency II insurance capital regulation. The economic capital coverage ratio (economic net asset value divided by the economic capital requirement) is a key risk appetite measure.

Insurance entities in Asia manage their economic capital cover ratios against their appetite and tolerance as approved by their respective Boards. The tables below show the composition of assets and liabilities by contract type. 92% (2018: 92%) of both assets and liabilities are derived from Hong Kong.

Balance sheet of insurance manufacturing subsidiaries by type of contract

(Audited)

	Non-linked HK$m	Unit-linked HK$m	Shareholders' assets and liabilities HK$m	Total HK$m
At 31 Dec 2019				
Financial assets	**501,625**	**41,893**	**34,940**	**578,458**
– financial assets designated and otherwise mandatorily measured at fair value	**103,902**	**40,563**	**124**	**144,589**
– derivatives	**957**	**4**	**4**	**965**
– financial investments measured at amortised cost	**374,630**	**342**	**31,508**	**406,480**
– financial investments measured at fair value through other comprehensive income	**4,126**	**—**	**395**	**4,521**
– other financial assets[1]	**18,010**	**984**	**2,909**	**21,903**
Reinsurance assets	**28,031**	**44**	**—**	**28,075**
PVIF[2]	**—**	**—**	**61,075**	**61,075**
Other assets and investment properties	**13,015**	**2**	**3,898**	**16,915**
Total assets	**542,671**	**41,939**	**99,913**	**684,523**
Liabilities under investment contracts designated at fair value	**30,231**	**6,793**	**—**	**37,024**
Liabilities under insurance contracts	**494,181**	**34,579**	**—**	**528,760**
Deferred tax[3]	**20**	**118**	**9,780**	**9,918**
Other liabilities	**—**	**—**	**17,116**	**17,116**
Total liabilities	**524,432**	**41,490**	**26,896**	**592,818**
Total equity	**—**	**—**	**91,705**	**91,705**
Total equity and liabilities	**524,432**	**41,490**	**118,601**	**684,523**
At 31 Dec 2018				
Financial assets	447,459	41,325	34,503	523,287
– financial assets designated at fair value	82,266	40,106	1,206	123,578
– derivatives	912	—	1	913
– financial investments – held-to-maturity	347,894	547	32,023	380,464
– financial investments – available-for-sale	3,444	—	—	3,444
– other financial assets[1]	12,943	672	1,273	14,888
Reinsurance assets	19,045	39	—	19,084
PVIF[2]	—	—	48,522	48,522
Other assets and investment properties	14,879	—	3,230	18,109
Total assets	481,383	41,364	86,255	609,002
Liabilities under investment contracts designated at fair value	30,420	6,218	—	36,638
Liabilities under insurance contracts	433,668	34,921	—	468,589
Deferred tax[3]	224	109	7,890	8,223
Other liabilities	—	—	15,109	15,109
Total liabilities	464,312	41,248	22,999	528,559
Total equity	—	—	80,443	80,443
Total equity and liabilities	464,312	41,248	103,442	609,002

1 *Comprise mainly loans and advances to banks, cash and inter-company balances with other non-insurance legal entities.*
2 *Present value of in-force long-term insurance business.*
3 *'Deferred tax' includes the deferred tax liabilities arising on recognition of PVIF.*

Key risk types

The key risks for our insurance operations are market risks (in particular interest rate and equity) and credit risks, followed by insurance underwriting risks and operational risks. Liquidity risk, while significant for the bank, is minor for our insurance operations.

Market risk

(Audited)

Description and exposure

Market risk is the risk of changes in market factors affecting capital or profit. Market factors include interest rates, equity and growth assets and foreign exchange rates.

Our exposure varies depending on the type of contract issued. Our most significant life insurance products are contracts with discretionary participating features ('DPF') issued in Hong Kong. These products typically include some form of capital guarantee or guaranteed return on the sums invested by the policyholders, to which discretionary bonuses are added if allowed by the overall performance of the funds. These funds are primarily invested in bonds, with a proportion allocated to other asset classes to provide customers with the potential for enhanced returns.

DPF products expose the group to the risk of variation in asset returns, which will impact our participation in the investment performance. In addition, in some scenarios the asset returns can become insufficient to cover the policyholders' financial guarantees, in which case the shortfall has to be met by the group. Reserves are held against the cost of such guarantees, calculated by stochastic modelling.

Where local rules require, these reserves are held as part of liabilities under insurance contracts. Any remainder is accounted for as a deduction from the present value of in-force ('PVIF') long-term insurance business on the relevant product. The following table shows the total reserve held for the cost of guarantees, the range of investment returns on assets supporting these products and the implied investment return that would enable the business to meet the guarantees.

For unit-linked contracts, market risk is substantially borne by the policyholders, but some market risk exposure typically remains as fees earned are related to the market value of the linked assets.

Sensitivities

Where appropriate, the effects of the sensitivity tests on profit after tax and total equity incorporate the impact of the stress on the PVIF. The relationship between the profit and total equity and the risk factors is non-linear; therefore the results disclosed should not be extrapolated to measure sensitivities to different levels of stress. For the same reason, the impact of the stress is not symmetrical on the upside and downside. The sensitivities reflect the established risk sharing mechanism with policyholders for participating products, and are stated before allowance for management actions which may mitigate the effect of changes in the market environment. The sensitivities presented allow for adverse changes in policyholders' behaviour that may arise in response to changes in market rates.

The following table illustrates the effects of selected interest rate, equity price and foreign exchange rate scenarios on our profit for the year and the total equity of our insurance manufacturing subsidiaries.

Sensitivity of the group's insurance manufacturing subsidiaries to market risk factors

(Audited)

	31 Dec 2019		31 Dec 2018	
	Effect on profit after tax	**Effect on total equity**	Effect on profit after tax	Effect on total equity
	HK$m	**HK$m**	HK$m	HK$m
+100 basis points parallel shift in yield curves	**(538)**	**(929)**	(229)	(547)
-100 basis points parallel shift in yield curves	**38**	**429**	81	399
10% increase in equity prices	**1,814**	**1,814**	1,433	1,433
10% decrease in equity prices	**(1,840)**	**(1,840)**	(1,366)	(1,366)
10% increase in USD exchange rate compared to all currencies	**327**	**327**	267	267
10% decrease in USD exchange rate compared to all currencies	**(327)**	**(327)**	(267)	(267)

Credit risk

(Audited)

Description and exposure

Credit risk is the risk of financial loss if a customer or counterparty fails to meet their obligation under a contract. It arises in two main areas for our insurance manufacturers:

- risk associated with credit spread volatility and default by debt security counterparties after investing premiums to generate a return for policyholders and shareholders; and
- risk of default by reinsurance counterparties and non-reimbursement for claims made after ceding insurance risk.

The amounts outstanding at the balance sheet date in respect of these items are shown in the table on page 48.

The credit quality of the reinsurers' share of liabilities under insurance contracts is assessed as 'strong' or 'good' (as defined on page 23), with 100% of the exposure being neither past due nor impaired (2018: 100%).

Credit risk on assets supporting unit-linked liabilities is predominantly borne by the policyholders. Therefore our exposure is primarily related to liabilities under non-linked insurance and investment contracts and shareholders' funds. The credit quality of insurance financial assets is included in the table on page 33. The risk associated with credit spread volatility is to a large extent mitigated by holding debt securities to maturity, and sharing a degree of credit spread experience with policyholders.

Capital and Liquidity risk

(Audited)

Description and exposure

Liquidity risk is the risk that an insurance operation, though solvent, either does not have sufficient financial resources available to meet its obligations when they fall due, or can secure them only at excessive cost.

The following table shows the expected undiscounted cash flows for insurance liabilities at 31 December 2019. The liquidity risk exposure is wholly borne by the policyholders in the case of unit-linked business and is shared with the policyholders for non-linked insurance.

The profile of the expected maturity of insurance contracts at 31 December 2019 remained comparable with 2018.

The remaining contractual maturity of investment contract liabilities is included in the table on page 100.

Expected maturity of insurance contract liabilities

(Audited)

	Expected cash flows (undiscounted)				
	Within 1 year	1-5 years	5-15 years	Over 15 years	Total
	HK$m	HK$m	HK$m	HK$m	HK$m
At 31 Dec 2019					
Non-linked insurance contracts	**46,115**	**152,561**	**319,151**	**482,671**	**1,000,498**
Unit-linked	**8,110**	**19,913**	**14,154**	**8,940**	**51,117**
	54,225	**172,474**	**333,305**	**491,611**	**1,051,615**
At 31 Dec 2018					
Non-linked insurance contracts	42,868	144,817	291,726	383,026	862,437
Unit-linked	6,999	19,350	16,285	11,040	53,674
	49,867	164,167	308,011	394,066	916,111

Insurance risk

Description and exposure

(Unaudited)

Insurance risk is the risk of loss through adverse experience, in either timing or amount, of insurance underwriting parameters (non-economic assumptions). These parameters include mortality, morbidity, longevity, lapses and unit costs.

The principal risk we face is that, over time, the cost of the contract, including claims and benefits may exceed the total amount of premiums and investment income received. The table on page 49 analyses our life insurance risk exposures by type of contract.

Sensitivities

(Audited)

The table below shows the sensitivity of profit and total equity to reasonably possible changes in non-economic assumptions across all our insurance manufacturing subsidiaries.

Mortality and morbidity risk is typically associated with life insurance contracts. The effect on profit of an increase in mortality or morbidity depends on the type of business being written.

Sensitivity to lapse rates depends on the type of contracts being written. In general, for life insurance contracts a policy lapse has two offsetting effects on profits, which are the loss of future income on the lapsed policy and the existence of surrender charge recouped at policy lapse. The net impact depends on the relative size of these two effects which varies with the type of contracts.

Expense rates risk is the exposure to a change in the cost of administering insurance contracts. To the extent that increased expenses cannot be passed on to policyholders, an increase in expense rates will have a negative effect on our profits.

Sensitivity analysis

(Audited)

	2019	2018
	HK$m	HK$m
Effect on profit after tax and total equity at 31 Dec		
10% increase in mortality and/or morbidity rates	**(509)**	(448)
10% decrease in mortality and/or morbidity rates	**507**	454
10% increase in lapse rates	**(496)**	(408)
10% decrease in lapse rates	**564**	468
10% increase in expense rates	**(314)**	(304)
10% decrease in expense rates	**310**	297

Capital

Capital management

(Audited)

Our approach to capital management is driven by our strategic and organisational requirements, taking into account the regulatory, economic and commercial environment in which we operate.

It is our objective to maintain a strong capital base to support the development of our business and to meet regulatory capital requirements at all times. To achieve this, our policy is to hold capital in a range of different forms and all capital raising is agreed with major subsidiaries as part of their individual and the group's capital management processes.

The policy on capital management is underpinned by a capital management framework, which enables us to manage our capital in a consistent manner. The framework defines regulatory capital and economic capital as the two primary measures for the management and control of capital.

Capital measures:

- economic capital is the internally calculated capital requirement to support risks to which we are exposed and forms a core part of the internal capital adequacy assessment process; and
- regulatory capital is the capital which we are required to hold in accordance with the rules established by regulators.

Our capital management process is articulated in our annual capital plan which is approved by the Board. The plan is drawn up with the objective of maintaining both an appropriate amount of capital and an optimal mix between the different components of capital. Each subsidiary manages its own capital to support its planned business growth and meet its local regulatory requirements within the context of the approved annual group capital plan. In accordance with the Capital Management Framework, capital generated by subsidiaries in excess of planned requirements is returned to the Bank, normally by way of dividends.

The bank is the primary provider of capital to its subsidiaries and these investments are substantially funded by the Bank's own capital issuance and profit retention. As part of its capital management process, the Bank seeks to maintain a prudent balance between the composition of its capital and that of its investment in subsidiaries.

The principal forms of capital are included in the following balances on the consolidated balance sheet: share capital, other equity instruments, retained earnings, other reserves and subordinated liabilities.

Externally imposed capital requirements

(Unaudited)

The Hong Kong Monetary Authority ('HKMA') supervises the group on both a consolidated and solo-consolidated basis and therefore receives information on the capital adequacy of, and sets capital requirements for, the group as a whole and on a solo-consolidated basis. Individual banking subsidiaries and branches are directly regulated by their local banking supervisors, who set and monitor their capital adequacy requirements. In most jurisdictions, non-banking financial subsidiaries are also subject to the supervision and capital requirements of local regulatory authorities.

The group uses the advanced internal ratings-based 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, securitisation external ratings-based approach, securitisation standardised approach or securitisation fall-back approach to determine credit risk for its banking book securitisation exposures. For counterparty credit risk, the group uses both the current exposure method and an internal models approach to calculate its default risk exposures. For market risk, the group uses an internal models 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 internal models 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) approach for calculating other market risk positions, as well as trading book securitisation exposures, and the standardised (operational risk) approach to calculate its operational risk.

During the year, the individual entities within the group and the group itself complied with all of the externally imposed capital requirements of the HKMA.

Basel III

(Unaudited)

The Basel III capital rules set out the minimum CET1 capital requirement of 4.5% and total capital requirement of 8%. The Banking (Capital) (Amendment) Rules 2014 came into effect on 1 January 2015 to implement the Basel III capital buffer requirements in Hong Kong. The requirements were phased-in from 2016 to 2019, in line with the Basel phase-in arrangements, and reached full implementation in 2019. At 31 December 2019, the capital buffers applicable to the group include the Capital Conservation Buffer ('CCB'), the Countercyclical Capital Buffer ('CCyB') and the Higher Loss Absorbency ('HLA') requirement for Domestic Systemically Important Banks ('D-SIB'). The CCB is designed to ensure banks build up capital outside periods of stress at 2.5%. The CCyB is set on an individual country basis and is built up during periods of excess credit growth to protect against future losses. On 14 October 2019, the HKMA reduced the CCyB for Hong Kong to 2.0% from 2.5% with immediate effect. On 24 December 2019, the HKMA maintained the D-SIB designation as well as HLA requirements at 2.5% for the group.

In December 2018, the Financial Institutions (Resolution) (Loss-absorbing Capacity Requirements – Banking Sector) Rules ('LAC') in Hong Kong were passed into legislation, with transition periods provided for their implementation. The group is classified as a material subsidiary under the LAC and therefore is subject to the LAC requirements to maintain its internal LAC risk-weighted ratio and the internal LAC leverage ratio at or above specified minimum.

Leverage ratio

(Unaudited)

Basel III introduces a simple non risk-based leverage ratio as a complementary measure to the risk-based capital requirements. It aims to constrain the build-up of excess leverage in the banking sector, introducing additional safeguards against model risk and measurement errors. The ratio is a volume-based measure calculated as Basel III tier 1 capital divided by total on- and off-balance sheet exposures.

	At	
	31 Dec 2019	31 Dec 2018
	%	%
Leverage ratio	**6.7**	6.5
Capital and leverage ratio exposure measure	**HK$m**	HK$m
Tier 1 capital	**537,460**	501,503
Total exposure measure	**8,078,204**	7,741,301

The increase in the leverage ratio from 31 December 2018 to 31 December 2019 was mainly due to an increase in Tier 1 capital, partly offset by a rise in the exposure measure.

Further details regarding the group's leverage position can be viewed in the Banking Disclosure Statement 2019, which will be available in the Regulatory Disclosures section of our website: www.hsbc.com.hk.

Capital adequacy at 31 December 2019

(Unaudited)

The following tables show the capital ratios, RWAs and capital base 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.

The basis of consolidation for financial accounting purposes is described in note 1 on the Consolidated Financial Statements and differs from that used for regulatory purposes. Further information on the regulatory consolidation basis and a full reconciliation between the group's accounting and regulatory balance sheets can be viewed in the Banking Disclosure Statement 2019, which will be available in the Regulatory Disclosures section of our website www.hsbc.com.hk. Subsidiaries not included in the group's consolidation for regulatory purposes are securities and insurance companies and the capital invested by the group in these subsidiaries is deducted from regulatory capital, subject to certain thresholds.

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 2019, the effect of this requirement is to reduce the amount of reserves which can be distributed to shareholders by HK$23,979m (31 December 2018: HK$26,883m).

We closely monitor and consider future regulatory change and continue to evaluate the impact upon our capital requirements of regulatory developments. This includes the Basel III reforms package, over which there remains a significant degree of uncertainty due to the number of national discretions within Basel's reforms. It remains premature to provide details of an impact although we currently anticipate the potential for an increase for RWAs.

Capital ratios

(Unaudited)

	At	
	31 Dec 2019	31 Dec 2018
	%	%
Common equity tier 1 ('CET1') capital ratio	**17.2**	16.5
Tier 1 capital ratio	**18.8**	17.8
Total capital ratio	**21.0**	19.8

Risk-weighted assets by risk type

(Unaudited)

	At	
	31 Dec 2019	31 Dec 2018
	HK$m	HK$m
Credit risk	**2,318,266**	2,290,786
Counterparty credit risk	**79,758**	79,956
Market risk	**97,908**	117,826
Operational risk	**355,448**	325,344
Total	**2,851,380**	2,813,912

Risk-weighted assets by global business

(Unaudited)

	At	
	31 Dec 2019	31 Dec 2018
	HK$m	HK$m
Retail Banking and Wealth Management	**494,029**	481,268
Commercial Banking	**1,009,183**	988,602
Global Banking and Markets	**859,744**	896,143
Global Private Banking	**29,080**	37,022
Corporate Centre	**459,344**	410,877
Total	**2,851,380**	2,813,912

Capital base

(Unaudited)

The following table sets out the composition of the group's capital base under Basel III at 31 December 2019.

Capital base

(Unaudited)

	At 31 Dec 2019 HK$m	31 Dec 2018 HK$m
Common equity tier 1 ('CET1') capital		
Shareholders' equity	**690,104**	645,810
– shareholders' equity per balance sheet	**814,678**	752,758
– revaluation reserve capitalisation issue	**(1,454)**	(1,454)
– other equity instruments	**(44,615)**	(35,879)
– unconsolidated subsidiaries	**(78,505)**	(69,615)
Non-controlling interests	**27,459**	26,034
– non-controlling interests per balance sheet	**64,603**	60,162
– non-controlling interests in unconsolidated subsidiaries	**(10,316)**	(9,316)
– surplus non-controlling interests disallowed in CET1	**(26,828)**	(24,812)
Regulatory deductions to CET1 capital	**(225,922)**	(208,070)
– valuation adjustments	**(1,554)**	(1,599)
– goodwill and intangible assets	**(20,132)**	(17,215)
– deferred tax assets net of deferred tax liabilities	**(2,214)**	(2,378)
– cash flow hedging reserve	**41**	63
– changes in own credit risk on fair valued liabilities	**2,013**	(198)
– defined benefit pension fund assets	**(45)**	(24)
– significant Loss-absorbing capacity ('LAC') investments in unconsolidated financial sector entities	**(105,426)**	(99,407)
– property revaluation reserves[1]	**(74,626)**	(60,429)
– regulatory reserve	**(23,979)**	(26,883)
Total CET1 capital	**491,641**	463,774
Additional tier 1 ('AT1') capital		
Total AT1 capital before regulatory deductions	**45,819**	37,729
– perpetual subordinated loans	**44,615**	35,879
– allowable non-controlling interests in AT1 capital	**1,204**	1,850
Total AT1 capital	**45,819**	37,729
Total tier 1 capital	**537,460**	501,503
Tier 2 capital		
Total tier 2 capital before regulatory deductions	**68,340**	61,178
– perpetual subordinated debt[2]	**3,114**	3,133
– term subordinated debt	**14,839**	13,944
– property revaluation reserves[1]	**34,236**	27,847
– impairment allowances and regulatory reserve eligible for inclusion in tier 2 capital	**16,151**	16,254
Regulatory deductions to tier 2 capital	**(6,866)**	(5,501)
– significant LAC investments in unconsolidated financial sector entities	**(6,866)**	(5,501)
Total tier 2 capital	**61,474**	55,677
Total capital	**598,934**	557,180

1 *Includes the revaluation surplus on investment properties which is reported as part of retained earnings and adjustments made in accordance with the Banking (Capital) Rules issued by the HKMA.*
2 *This Tier 2 capital instrument is grandfathered under Basel III and will be phased out in full after 31 December 2021.*

A detailed breakdown of the group's CET1 capital, AT1 capital, Tier 2 capital and regulatory deductions can be viewed in the Banking Disclosure Statement 2019, which will be available in the Regulatory Disclosures section of our website www.hsbc.com.hk.

Statement of Directors' Responsibilities

The following statement, which should be read in conjunction with the Auditor's statement of their responsibilities set out in their report on pages 55-59, is made with a view to distinguishing for shareholders the respective responsibilities of the Directors and of the Auditor in relation to the Consolidated Financial Statements.

The Directors of The Hongkong and Shanghai Banking Corporation Limited ('the Bank') are responsible for the preparation of the Bank's *Annual Report and Accounts*, which contains the Consolidated Financial Statements of the Bank and its subsidiaries (together 'the group'), in accordance with applicable law and regulations.

The Hong Kong Companies Ordinance requires the Directors to prepare for each financial year the consolidated financial statements for the group and the balance sheet for the Bank.

The Directors are responsible for ensuring adequate accounting records are kept that are sufficient to show and explain the group's transactions, such that the group's consolidated financial statements give a true and fair view.

The Directors are responsible for preparing the consolidated financial statements that give a true and fair view and are in accordance with Hong Kong Financial Reporting Standards ('HKFRSs') issued by the Hong Kong Institute of Certified Public Accountants. The Directors have elected to prepare the Bank's balance sheet on the same basis.

The Directors, whose names and functions are set out in the 'Report of the Directors' on pages 3-7 of this *Annual Report and Accounts*, confirm to the best of their knowledge that:

- the Consolidated Financial Statements, which have been prepared in accordance with HKFRSs and in accordance with the applicable set of accounting standards, give a true and fair view of the assets, liabilities, financial position and profit or loss of the group; and
- the management report represented by the Financial Review, the Risk and Capital Reports includes a fair review of the development and performance of the business and the position of the group, together with a description of the principal risks and uncertainties that the group faces.

On behalf of the Board

Laura Cha

Chairman

18 February 2020

Independent Auditor's Report

To the shareholder of The Hongkong and Shanghai Banking Corporation Limited (incorporated in Hong Kong with limited liability)

Opinion

What we have audited

The consolidated financial statements of The Hongkong and Shanghai Banking Corporation Limited ('the Bank') and its subsidiaries (together 'the group') set out on pages 60 to 117, which comprise:

- the consolidated balance sheet as at 31 December 2019;
- the consolidated income statement for the year then ended;
- the consolidated statement of comprehensive income for the year then ended;
- the consolidated statement of changes in equity for the year then ended;
- the consolidated statement of cash flows for the year then ended; and
- the notes[1] on the consolidated financial statements, which include a summary of significant accounting policies.

1 *Certain required disclosures as described in Note 1.1(d) have been presented elsewhere in the* Annual Report and Accounts 2019*, rather than in the notes to the consolidated financial statements. These are cross-referenced from the consolidated financial statements and are identified as audited.*

Our opinion

In our opinion, the consolidated financial statements give a true and fair view of the consolidated financial position of the group as at 31 December 2019, and of its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with Hong Kong Financial Reporting Standards ('HKFRSs') issued by the Hong Kong Institute of Certified Public Accountants ('HKICPA') and have been properly prepared in compliance with the Hong Kong Companies Ordinance.

Basis for Opinion

We conducted our audit in accordance with Hong Kong Standards on Auditing ('HKSAs') issued by the HKICPA. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the consolidated financial statements section of our report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Independence

We are independent of the group in accordance with the HKICPA's Code of Ethics for Professional Accountants ('the Code'), and we have fulfilled our other ethical responsibilities in accordance with the Code.

Key Audit Matters

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Key audit matters identified in our audit are summarised as follows:

- IT access management
- Investment in associate – Bank of Communications Co., Limited ('BoCom')
- The present value of in-force long-term insurance business ('PVIF') and liabilities under non-linked life insurance contracts
- Impairment of loans and advances to customers.

IT access management

Nature of the Key Audit Matter	Matters discussed with the Audit Committee
Our audit approach relies extensively on automated controls and therefore on the effectiveness of controls over IT systems. In previous years, we identified and reported that controls over access to applications, operating systems and data in the financial reporting process required improvements. Access management controls are critical to ensure that changes to applications and underlying data are made in an appropriate manner. Appropriate access and change controls contribute to mitigating the risk of potential fraud or errors as a result of changes to applications and data. Management implemented remediation activities that have contributed to progress being made in reducing the risk over access management in the financial reporting process. Controls continue to require some improvement going forward.	The significance of IT controls to our audit and the status of the remediation was discussed at the Audit Committee meetings during the year.

How our audit addressed the Key Audit Matter

Access rights were tested over applications, operating systems and databases relied upon for financial reporting. Specifically, the audit tested that:

- new access requests for joiners were properly reviewed and authorised;
- user access rights were removed on a timely basis when an individual left or moved role;
- access rights to applications, operating systems and databases were periodically monitored for appropriateness; and
- highly privileged access was restricted to appropriate personnel.

Other areas that were independently assessed included password policies, security configurations, controls over changes to code, data and configurations, and that the ability to make such change via privileged operating system or database access in the production environment was appropriately restricted.

Where control deficiencies were identified, a range of other procedures were performed:

- where access outside of policy was identified, we understood the nature of the access, and, where required, obtained additional evidence on whether that access had been exploited;
- testing of controls to manage the monitoring of business access, including access that would allow a user to potentially override segregations of duty; and
- substantive testing of whether users inappropriately hold access to key functionality underpinning financial reporting processes, specific year-end reconciliations (i.e. custodian, bank account and suspense account reconciliations) and confirmations with external counterparties.

Relevant references in the *Annual Report and Accounts 2019*

Risk: Top and Emerging Risks, page 16;

Investment in associate – Bank of Communications Company, Limited ('BoCom')

Nature of the Key Audit Matter	Matters discussed with the Audit Committee
At 31 December, the market value of the Bank's investment in BoCom, based on the share price, was HK$70.1bn lower than the carrying value. This is considered an indicator of potential impairment. An impairment test was performed by the Bank using a value in use ('VIU') model to estimate the investment's value assuming it continues to be held in perpetuity rather than sold. The VIU was HK$19.4bn in excess of the carrying value. On this basis no impairment was recorded and the share of BoCom's profits has been recognised in the consolidated income statement. The VIU model is based on the requirements of the relevant accounting standard and is dependent on many assumptions, both short-term and long-term in nature. These assumptions, which are judgemental, are derived from a combination of management estimates, analysts' forecasts and market data.	We discussed the appropriateness of these assumptions with the Audit Committee, particularly those for which variations had the most significant impact on the carrying value of the VIU. We focused on the assumptions relating to forecasted cash flows and the impact of meeting regulatory capital requirements. We also discussed with the Audit Committee the effective tax rate and loan impairment rate assumptions and considered reasonably possible alternatives. Our discussions and focus on assumptions was driven by consideration of the current levels of uncertainty and the overall outlook for the Chinese banking market, the broader Chinese economy and the impact of China-US trade tensions.

How our audit addressed the Key Audit Matter

- We assessed the appropriateness of the methodology used to estimate the VIU.
- A reasonable range for the discount rate used within the model was independently calculated with the assistance of our valuation experts and compared to the discount rate used by management.
- We challenged the basis for determining assumptions and the inputs used. We obtained corroborating information for inputs into assumptions from external market information, third-party sources, including analyst reports, and historical publicly available BoCom information.
- We performed sensitivity analysis on key assumptions used, both individually and in aggregate.
- The controls in place over the model, and its mathematical accuracy, were tested.
- We observed meetings in September and November 2019 between management and senior BoCom executive management, held specifically to identify facts and circumstances impacting assumptions relevant to the determination of the VIU.
- We read and assessed the disclosures made in the *Annual Report and Accounts 2019* in relation to BoCom, specifically giving consideration to the sensitivity disclosures and the variations in assumptions that would result in an impairment.
- Representations were obtained from HSBC that assumptions used were consistent with information currently available to them, both as a shareholder and to which HSBC are entitled through their participation on BoCom's Board of Directors.

Relevant references in the *Annual Report and Accounts 2019*

Financial Review, page 9

Note 1: Basis of preparation and significant accounting policies, page 66-75

Note 14: Interests in associates and joint ventures, page 90-93

The present value of in-force long-term insurance business ('PVIF') and liabilities under non-linked life insurance contracts

Nature of the Key Audit Matter	Matters discussed with the Audit Committee
The group has recorded an asset for PVIF of HK$61.1bn and liabilities under non-linked life insurance contracts of HK$467.9bn as at 31 December 2019. The determination of these balances requires the use of appropriate actuarial methodologies and also highly judgemental assumptions, including assumptions over long-term economic returns, longevity, mortality, persistency and expenses. Small movements in these assumptions can have a material impact on the PVIF asset and the liabilities under non-linked life insurance contracts.	We discussed with the Audit Committee the results of our testing procedures over key assumptions used in the valuation of the PVIF asset and the liabilities under non-linked life insurance contracts including testing of changes made during the reporting period to the models and to the basis of the determination of key assumptions.

How our audit addressed the Key Audit Matter

The controls in place for the determination of the valuation of the PVIF asset and the liabilities under non-linked life insurance contracts were tested. Specifically, these included controls over:

- policy data reconciliations from the policyholder administration system to the actuarial valuation system,
- assumptions setting,
- review and determination of valuation methodologies,
- restriction of user access to the actuarial models, and
- production and approval of the actuarial results.

With the assistance of our actuarial experts, the appropriateness of the models, methodologies and assumptions used were assessed for reasonableness. Specifically, these included assumptions in respect of:

- economic assumptions, including discount rate and long term investment return assumptions;
- operating assumptions and policyholder behaviour, such as longevity, mortality, morbidity and persistency; and
- future costs of obtaining and maintaining the insurance business.

Our challenge and evaluation of the key judgements and assumptions made by management included whether these were supported by relevant experience and market information.

Relevant references in the *Annual Report and Accounts 2019*

Risk: Risks of insurance manufacturing operations, page 46-50

Note 1: Basis of preparation and significant accounting policies, page 66-75

Note 3: Insurance business, page 78-79

Note 15: Goodwill and intangible assets, page 93-94

Impairment of loans and advances to customers

Nature of the Key Audit Matter	Matters discussed with the Audit Committee
This is the second year that expected credit losses ('ECL') have been reported under HKFRS 9. The underlying processes and controls have continued to mature during the year, with an increased focus on back-testing. The Bank has also updated certain ECL models during the year. The credit environment appears to have remained relatively benign during the year, in part due to low interest rates globally. However, there are a growing number of specific risks. We continued to critically assess the more judgemental decisions made by management, in particular the severity and likelihood of various economic scenarios (including the base, upside and various downside scenarios) that form part of the forward economic guidance and their impact on ECL. We also considered: the controls over the determination of customer credit ratings and probabilities of default, and the impact they had on the determination of significant increases in credit risk; the appropriateness of post model adjustments made to reflect model and data limitations; and the estimation of specific impairment for wholesale exposures that had defaulted.	At each Audit Committee meeting, there were discussions on changes made to models and the inputs into them; the impact of evolving geopolitical risks, such as the social unrest in Hong Kong and the US-China trade tensions and impairment of significant wholesale exposures.

How our audit addressed the Key Audit Matter

- We performed risk based substantive testing of models that were updated during the year, including independently rebuilding the modelling for certain assumptions.
- We independently reviewed the updates to the scripts used in the underlying tool to calculate ECL to ensure that they reflected approved updates to models, parameters and inputs.
- We tested controls over the inputs of critical data into source systems and the flow and transformation of data between source systems to the impairment calculation engine. Substantive testing was performed over the critical data used in the year end ECL calculation.
- We tested the review and challenge of multiple economic scenarios by an expert panel and internal governance committee, and assessed the reasonableness and likelihood of these scenarios using our economics experts. Relevant economic, political and other events were considered in assessing the reasonableness of alternative downside scenarios. The severity and magnitude of the scenarios were compared to external forecasts and data from historical economic downturns, and the sensitivities of the scenarios on the ECL were considered.
- We observed challenge forums to assess the ECL output and approval of post model adjustments.
- We tested the approval of the key inputs, assumptions and discounted cash-flows that support the impairment allowances for a sample of significant individually assessed loans.

Relevant references in the *Annual Report and Accounts 2019*

Risk: Credit Risk, page 22-39

Note 1: Basis of preparation and significant accounting policies, page 66-75

Note 2(e): Operating profit – Change in expected credit losses and other credit impairment charges, page 77

Note 10: Loans and advances to customers, page 87

Other Information

The directors of the Bank are responsible for the other information. The other information comprises the information included in the Financial Highlights, Report of the Directors, Financial Review, Risk, Capital and Statement of Directors' Responsibilities sections of the *Annual Report and Accounts 2019* (but does not include the consolidated financial statements and our auditor's report thereon), which we obtained prior to the date of this auditor's report, and the Banking Disclosure Statement 2019 and the list of the directors of the Bank's subsidiary undertakings (consolidated in the financial statements) during the period from 1 January 2019 to 18 February 2020, which are expected to be made available to us after the date of this auditor's report.

Our opinion on the consolidated financial statements does not cover the other information and we do not and will not express any form of assurance conclusion thereon, apart from the specific information presented therein that is identified as being an integral part of the consolidated financial statements and, therefore, covered by our audit opinion on the consolidated financial statements.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated.

If, based on the work we have performed on the other information that we obtained prior to the date of this auditor's report, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

When we read the Banking Disclosure Statement 2019 and the list of the directors of the Bank's subsidiary undertakings (consolidated in the financial statements) during the period from 1 January 2019 to 18 February 2020, if we conclude that there is a material misstatement therein, we are required to communicate the matter to the Audit Committee and take appropriate action considering our legal rights and obligations.

Responsibilities of Directors and the Audit Committee for the Consolidated Financial Statements

The directors of the Bank are responsible for the preparation of the consolidated financial statements that give a true and fair view in accordance with HKFRSs issued by the HKICPA and the Hong Kong Companies Ordinance, and for such internal control as the directors determine is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the directors are responsible for assessing the group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the group or to cease operations, or have no realistic alternative but to do so.

The Audit Committee is responsible for overseeing the group's financial reporting process.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. We report our opinion solely to you, as a body, in accordance with Section 405 of the Hong Kong Companies Ordinance and for no other purpose. We do not assume responsibility towards or accept liability to any other person for the contents of this report. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with HKSAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with HKSAs, we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the directors.
- Conclude on the appropriateness of the directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with the Audit Committee regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide the Audit Committee with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with the Audit Committee, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partner on the audit resulting in this independent auditor's report is Mr. Mervyn Robert John Jacob.

PricewaterhouseCoopers

Certified Public Accountants

Hong Kong, 18 February 2020

Consolidated Financial Statements

Consolidated income statement

for the year ended 31 December

	Notes	2019 HK$m	2018 HK$m
Net interest income	2a	**130,903**	126,463
– interest income		**191,322**	170,065
– interest expense		**(60,419)**	(43,602)
Net fee income	2b	**41,505**	44,231
– fee income		**53,099**	54,585
– fee expense		**(11,594)**	(10,354)
Net income from financial instruments held for trading or managed on a fair value basis	2c	**36,388**	32,070
Net income/(expense) from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss	2c	**14,257**	(5,561)
Changes in fair value of designated debts issued and related derivatives[1]	2c	**(305)**	(327)
Changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	2c	**118**	(217)
Gains less losses from financial investments		**638**	501
Net insurance premium income	3	**60,275**	60,678
Other operating income	2d	**15,758**	10,470
Total operating income		**299,537**	268,308
Net insurance claims and benefits paid and movement in liabilities to policyholders	3	**(80,156)**	(57,839)
Net operating income before change in expected credit losses and other credit impairment charges		**219,381**	210,469
Change in expected credit losses and other credit impairment charges	2e	**(5,672)**	(4,720)
Net operating income		**213,709**	205,749
Employee compensation and benefits	4	**(38,048)**	(40,793)
General and administrative expenses	2f	**(44,769)**	(39,989)
Depreciation and impairment of property, plant and equipment	2g	**(8,230)**	(4,686)
Amortisation and impairment of intangible assets		**(2,447)**	(1,956)
Total operating expenses		**(93,494)**	(87,424)
Operating profit		**120,215**	118,325
Share of profit in associates and joint ventures		**16,218**	16,258
Profit before tax		**136,433**	134,583
Tax expense	5	**(21,393)**	(22,467)
Profit for the year		**115,040**	112,116
Attributable to:			
– ordinary shareholders of the parent company		**104,200**	102,132
– other equity holders		**1,522**	881
– non-controlling interests		**9,318**	9,103
Profit for the year		**115,040**	112,116

1 *The definition has been updated to include debt instruments which are issued for funding purposes and are designated under the fair value option to reduce an accounting mismatch, previously reported under 'Net income from financial instruments held for trading and managed on a fair value basis'. Comparatives have been re-presented to conform to current year's presentation.*

Consolidated statement of comprehensive income

for the year ended 31 December

	2019 HK$m	2018 HK$m
Profit for the year	**115,040**	112,116
Other comprehensive income/(expense)		
Items that will be reclassified subsequently to profit or loss when specific conditions are met:		
Debt instruments at fair value through other comprehensive income	**1,674**	826
– fair value gains	**2,782**	908
– fair value (gains)/losses transferred to the income statement	**(606)**	142
– expected credit recoveries/(losses) recognised in the income statement	**23**	(9)
– income taxes	**(525)**	(215)
Cash flow hedges	**5**	131
– fair value gains	**681**	1,264
– fair value gains reclassified to the income statement	**(673)**	(1,125)
– income taxes	**(3)**	(8)
Share of other comprehensive income/(expense) of associates and joint ventures	**167**	(146)
Exchange differences	**(3,606)**	(18,098)
Items that will not be reclassified subsequently to profit or loss:		
Property revaluation	**3,673**	8,826
– fair value gains	**4,426**	10,626
– income taxes	**(753)**	(1,800)
Equity instruments designated at fair value through other comprehensive income	**2,854**	(581)
– fair value gains/(losses)	**2,859**	(576)
– income taxes	**(5)**	(5)
Changes in fair value of financial liabilities designated at fair value upon initial recognition arising from changes in own credit risk	**(2,060)**	(199)
– before income taxes	**(2,467)**	(241)
– income taxes	**407**	42
Remeasurement of defined benefit asset/liability	**192**	(910)
– before income taxes	**245**	(1,091)
– income taxes	**(53)**	181
Other comprehensive income/(expense) for the year, net of tax	**2,899**	(10,151)
Total comprehensive income for the year	**117,939**	101,965
Attributable to:		
– ordinary shareholders of the parent company	**106,187**	91,915
– other equity holders	**1,522**	881
– non-controlling interests	**10,230**	9,169
Total comprehensive income for the year	**117,939**	101,965

Consolidated balance sheet

at 31 December

	Notes	2019 HK$m	2018 HK$m
Assets			
Cash and balances at central banks		**202,746**	205,660
Items in the course of collection from other banks		**21,140**	25,380
Hong Kong Government certificates of indebtedness		**298,944**	280,854
Trading assets	7	**622,761**	558,838
Derivatives	8	**280,642**	292,869
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	9	**153,511**	132,859
Reverse repurchase agreements – non-trading		**422,333**	406,327
Loans and advances to banks		**328,905**	338,151
Loans and advances to customers	10	**3,720,875**	3,528,702
Financial investments	11	**1,900,298**	1,871,026
Amounts due from Group companies	33	**87,632**	70,455
Interests in associates and joint ventures	14	**151,917**	142,885
Goodwill and intangible assets	15	**81,643**	65,104
Property, plant and equipment	16	**137,930**	112,080
Deferred tax assets	5	**2,179**	2,315
Prepayments, accrued income and other assets	17	**248,258**	229,949
Total assets		**8,661,714**	8,263,454
Liabilities			
Hong Kong currency notes in circulation		**298,944**	280,854
Items in the course of transmission to other banks		**25,576**	33,806
Repurchase agreements – non-trading		**106,396**	70,279
Deposits by banks		**179,819**	164,664
Customer accounts	18	**5,432,424**	5,207,666
Trading liabilities	19	**87,532**	81,194
Derivatives	8	**292,231**	295,553
Financial liabilities designated at fair value	20	**160,291**	161,143
Debt securities in issue	21	**106,933**	58,236
Retirement benefit liabilities	4	**2,595**	3,369
Amounts due to Group companies	33	**311,111**	396,487
Accruals and deferred income, other liabilities and provisions	22	**203,252**	196,665
Liabilities under insurance contracts	3	**528,760**	468,589
Current tax liabilities		**12,614**	3,337
Deferred tax liabilities	5	**29,889**	24,513
Subordinated liabilities	23	**4,066**	4,081
Preference shares	24	**–**	98
Total liabilities		**7,782,433**	7,450,534
Equity			
Share capital	25	**172,335**	172,335
Other equity instruments	26	**44,615**	35,879
Other reserves		**133,099**	114,949
Retained earnings		**464,629**	429,595
Total shareholders' equity		**814,678**	752,758
Non-controlling interests		**64,603**	60,162
Total equity		**879,281**	812,920
Total liabilities and equity		**8,661,714**	8,263,454

Consolidated statement of cash flows

for the year ended 31 December

	2019 HK$m	2018 HK$m
Profit before tax	**136,433**	134,583
Adjustments for non-cash items:		
Depreciation and amortisation[1]	**10,677**	6,657
Net gain from investing activities	**(790)**	(1,071)
Share of profits in associates and joint ventures	**(16,218)**	(16,258)
(Gain)/loss on disposal of subsidiaries, businesses, associates and joint ventures	**14**	(38)
Change in expected credit losses gross of recoveries and other credit impairment charges	**6,535**	4,720
Provisions	**568**	51
Share-based payment expense	**878**	881
Other non-cash items included in profit before tax	**(16,869)**	(3,861)
Elimination of exchange differences	**4,819**	15,723
Changes in operating assets and liabilities		
Change in net trading securities and derivatives	**(78,600)**	(65,937)
Change in loans and advances to banks and customers	**(189,346)**	(299,137)
Change in reverse repurchase agreements – non-trading	**(33,521)**	(61,887)
Change in financial assets designated and otherwise mandatorily measured at fair value through profit or loss	**(20,652)**	1,176
Change in other assets	**6,146**	113,636
Change in deposits by banks and customer accounts	**239,913**	71,688
Change in repurchase agreements – non-trading	**36,117**	23,109
Change in debt securities in issue	**48,697**	19,842
Change in financial liabilities designated at fair value	**(852)**	(8,605)
Change in other liabilities	**(28,243)**	166,634
Dividends received from associates	**4,962**	4,948
Contributions paid to defined benefit plans	**(391)**	(576)
Tax paid	**(9,420)**	(18,216)
Net cash from operating activities	**100,857**	88,062
Purchase of financial investments	**(836,492)**	(822,067)
Proceeds from the sale and maturity of financial investments	**762,125**	756,630
Purchase of property, plant and equipment	**(3,334)**	(1,646)
Proceeds from sale of property, plant and equipment and assets held for sale	**1,828**	11,820
Proceeds from disposal of customer loan portfolios	**2,057**	2,542
Net investment in intangible assets	**(6,019)**	(4,691)
Net cash inflow on sale of subsidiaries	**299**	–
Net cash from investing activities	**(79,536)**	(57,412)
Issue of ordinary share capital and other equity instruments	**8,617**	21,142
Redemption of preference shares and other equity instruments	**–**	(20,975)
Subordinated loan capital issued[2]	**–**	79,834
Subordinated loan capital repaid[2]	**–**	(42,986)
Dividends paid to shareholders of the parent company and non-controlling interests	**(74,015)**	(52,508)
Net cash from financing activities	**(65,398)**	(15,493)
Net increase/(decrease) in cash and cash equivalents	**(44,077)**	15,157
Cash and cash equivalents at 1 Jan[3]	**721,609**	718,038
Exchange differences in respect of cash and cash equivalents	**132**	(11,586)
Cash and cash equivalents at 31 Dec[3,4]	**677,664**	721,609
Cash and cash equivalents comprise		
– cash and balances at central banks	**202,746**	205,660
– items in the course of collection from other banks	**21,140**	25,380
– loans and advances to banks of one month or less	**217,879**	179,952
– net settlement accounts and cash collateral	**18,706**	–
– reverse repurchase agreements with banks of one month or less	**155,587**	165,654
– treasury bills, other bills and certificates of deposit less than three months	**87,182**	178,769
– less: items in the course of transmission to other banks	**(25,576)**	(33,806)
Cash and cash equivalents at 31 Dec[3,4]	**677,664**	721,609

Interest received was HK$195,528m (2018: HK$166,441m), interest paid was HK$62,557m (2018: HK$41,583m) and dividends received were HK$5,410m (2018: HK$178m).

1 *The impact on right-of-use assets has been recognised from 1 January 2019 following the adoption of HKFRS 16. Comparatives have not been restated.*

2 *Changes in subordinated liabilities (including those issued to Group companies) during the year included amounts from repayment and re-issuance with no cash movement, and non-cash changes from foreign exchange losses (HK$1,012m) and fair value gain after hedging (HK$9,736m).*

3 *In 2019, the group included settlement accounts with bank counterparties of one month or less on a net basis. Comparatives have not been re-presented.*

4 *At 31 December 2019 HK$110,076m (2018: HK$122,899m) was not available for use by the group, of which HK$66,943m (2018: HK$71,783m) related to mandatory deposits at Central banks.*

Consolidated statement of changes in equity

for the year ended 31 December

				Other reserves							
	Share capital	Other equity instrum ents	Retained earnings	Property revaluation reserve	Financial assets at FVOCI reserve	Cash flow hedge reserve	Foreign exchange reserve	Other[1]	Total share-holders' equity	Non-controlling interests	Total equity
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
At 31 Dec 2018	**172,335**	**35,879**	**429,595**	**57,914**	**2,953**	**(99)**	**(24,649)**	**78,830**	**752,758**	**60,162**	**812,920**
Impact on transition to HKFRS 16	–	–	–	13,483	–	–	–	–	13,483	–	13,483
At 1 Jan 2019	**172,335**	**35,879**	**429,595**	**71,397**	**2,953**	**(99)**	**(24,649)**	**78,830**	**766,241**	**60,162**	**826,403**
Profit for the year	–	–	105,722	–	–	–	–	–	105,722	9,318	115,040
Other comprehensive income/(expense) (net of tax)	–	–	(1,949)	3,395	4,006	(5)	(3,469)	9	1,987	912	2,899
– debt instruments at fair value through other comprehensive income	–	–	–	–	1,676	–	–	–	1,676	(2)	1,674
– equity instruments designated at fair value through other comprehensive income	–	–	–	–	2,169	–	–	–	2,169	685	2,854
– cash flow hedges	–	–	–	–	–	(5)	–	–	(5)	10	5
– changes in fair value of financial liabilities designated at fair value upon initial recognition arising from changes in own credit risk	–	–	(2,058)	–	–	–	–	–	(2,058)	(2)	(2,060)
– property revaluation	–	–	–	3,395	–	–	–	–	3,395	278	3,673
– remeasurement of defined benefit asset/liability	–	–	112	–	–	–	–	–	112	80	192
– share of other comprehensive income/(expense) of associates and joint ventures	–	–	(3)	–	161	–	–	9	167	–	167
– exchange differences	–	–	–	–	–	–	(3,469)	–	(3,469)	(137)	(3,606)
Total comprehensive income/ (expense) for the year	–	–	103,773	3,395	4,006	(5)	(3,469)	9	107,709	10,230	117,939
Other equity instruments issued[2]	–	44,615	–	–	–	–	–	–	44,615	–	44,615
Other equity instruments repaid[2]	–	(35,879)	–	–	–	–	–	–	(35,879)	–	(35,879)
Dividends paid[3]	–	–	(68,369)	–	–	–	–	–	(68,369)	(5,646)	(74,015)
Movement in respect of share-based payment arrangements	–	–	(42)	–	–	–	–	249	207	2	209
Transfers and other movements[4]	–	–	(328)	(2,779)	–	–	–	3,261	154	(145)	9
At 31 Dec 2019	**172,335**	**44,615**	**464,629**	**72,013**	**6,959**	**(104)**	**(28,118)**	**82,349**	**814,678**	**64,603**	**879,281**

Consolidated statement of changes in equity (continued)

for the year ended 31 December

				Other reserves							
	Share capital	Other equity instruments	Retained earnings	Property revaluation reserve	Financial assets at FVOCI reserve[7]	Cash flow hedge reserve	Foreign exchange reserve	Other[1]	Total share-holders' equity	Non-controlling interests	Total equity
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
At 31 Dec 2017[7]	151,360	14,737	406,966	58,381	6,825	(197)	(6,948)	65,356	696,480	56,506	752,986
Impact on transition to HKFRS 9	—	—	(7,478)	—	(4,512)	—	—	—	(11,990)	(323)	(12,313)
At 1 Jan 2018	151,360	14,737	399,488	58,381	2,313	(197)	(6,948)	65,356	684,490	56,183	740,673
Profit for the year	—	—	103,013	—	—	—	—	—	103,013	9,103	112,116
Other comprehensive income/ (expense) (net of tax)	—	—	(890)	8,050	228	98	(17,701)	(2)	(10,217)	66	(10,151)
– debt instruments at fair value through other comprehensive income	—	—	—	—	734	—	—	—	734	92	826
– equity instruments designated at fair value through other comprehensive income	—	—	—	—	(367)	—	—	—	(367)	(214)	(581)
– cash flow hedges	—	—	—	—	—	98	—	—	98	33	131
– changes in fair value of financial liabilities designated at fair value upon initial recognition arising from changes in own credit risk	—	—	(197)	—	—	—	—	—	(197)	(2)	(199)
– property revaluation	—	—	—	8,050	—	—	—	—	8,050	776	8,826
– remeasurement of defined benefit asset/liability	—	—	(688)	—	—	—	—	—	(688)	(222)	(910)
– share of other comprehensive expense of associates and joint ventures	—	—	(5)	—	(139)	—	—	(2)	(146)	—	(146)
– exchange differences	—	—	—	—	—	—	(17,701)	—	(17,701)	(397)	(18,098)
Total comprehensive income/ (expense) for the year	—	—	102,123	8,050	228	98	(17,701)	(2)	92,796	9,169	101,965
Other equity instruments issued[2]	—	21,142	—	—	—	—	—	—	21,142	—	21,142
Dividends paid[3]	—	—	(47,440)	—	—	—	—	—	(47,440)	(5,068)	(52,508)
Movement in respect of share-based payment arrangements	—	—	(234)	—	—	—	—	246	12	10	22
Transfers and other movements[4,5,6]	20,975	—	(24,342)	(8,517)	412	—	—	13,230	1,758	(132)	1,626
At 31 Dec 2018	172,335	35,879	429,595	57,914	2,953	(99)	(24,649)	78,830	752,758	60,162	812,920

1 The other reserves mainly comprise share of associates' other reserves, purchase premium arising from transfer of business from fellow subsidiaries, property revaluation reserve relating to transfer of properties to a fellow subsidiary and the share-based payment reserve. The share-based payment reserve is used to record the amount relating to share awards and options granted to employees of the group directly by HSBC Holdings plc.
2 In 2019, there were US$1,100m additional tier 1 capital instruments issued (2018: US$2,700m). In addition, US$4,600m of additional tier 1 capital instruments were repaid and reissued in 2019 with no actual cash movement (2018: nil).
3 Including distributions paid on perpetual subordinated loans classified as equity under HKFRS.
4 The movements include transfers from retained earnings to other reserves in associates according to local regulatory requirements, and from the property revaluation reserve to retained earnings in relation to depreciation of revalued properties.
5 Ordinary share capital includes preference shares which have been redeemed or bought back via payment out of distributable profits in previous years. In 2018, the Bank redeemed HK$20,975m of preference shares and made a transfer from retained earnings to share capital.
6 The movement from property revaluation reserve to other reserves in 2018 included HK$7,169m relating to transfer of properties to a fellow subsidiary as part of the Recovery and Resolution Plan as set out in the Report of the Directors.
7 The balance at 31 December 2017 represents the HKAS 39 Available-for-sale fair value reserve as at 31 December 2017.

Notes on the Consolidated Financial Statements

1 Basis of preparation and significant accounting policies

1.1 Basis of preparation

(a) Compliance with Hong Kong Financial Reporting Standards

The consolidated financial statements of The Hongkong and Shanghai Banking Corporation Limited ('the Bank') and its subsidiaries (together 'the group') have been prepared in accordance with Hong Kong Financial Reporting Standards ('HKFRSs') as issued by the Hong Kong Institute of Certified Public Accountants ('HKICPA') and accounting principles generally accepted in Hong Kong. These consolidated financial statements also comply with the requirements of the Hong Kong Companies Ordinance (Cap. 622) which are applicable to the preparation of the financial statements.

Standards adopted during the year ended 31 December 2019

HKFRS 16 'Leases'

On 1 January 2019, the group adopted the requirements of HKFRS 16 and recognised lease liabilities in relation to leases which had previously been classified as 'operating leases' in accordance with HKAS 17 'Leases'. These liabilities were measured at the present value of the remaining lease payments, discounted at the lessee's incremental borrowing rate as at 1 January 2019. The associated right-of-use ('ROU') assets were measured at the amount equal to the lease liability, adjusted by the amount of any prepaid or accrued lease payments or provisions for onerous leases recognised on balance sheet at 31 December 2018. In addition, the following practical expedients permitted by the standard were applied:

- Reliance was placed on previous assessments on whether leases were onerous;
- Operating leases with a remaining lease term of less than 12 months as at 1 January 2019 were treated as short-term leases; and
- Initial direct costs were not included in the measurement of ROU assets for leases previously accounted for as operating leases.

The differences between HKAS 17 and HKFRS 16 are summarised in the table below:

HKAS 17	HKFRS 16
Leases were classified as either finance or operating leases. Payments made under operating leases were charged to profit or loss on a straight-line basis over the period of the lease.	Leases are recognised as an ROU asset and a corresponding liability at the date at which the leased asset is made available for use. Lease payments are allocated between the liability and finance cost. The finance cost is charged to profit or loss over the lease term so as to produce a constant period rate of interest on the remaining balance of the liability. The ROU asset is depreciated over the shorter of the ROU asset's useful economic life and the lease term on a straight-line basis. In determining lease term, the group considers all facts and circumstances that create an economic incentive to exercise an extension option or not exercise a termination option over the planning horizon of five years. In general, it is not expected that the discount rate implicit in the lease is available so the lessee's incremental borrowing rate is used. This is the rate that the lessee would have to pay to borrow the funds necessary to obtain an asset of a similar value in a similar economic environment with similar terms and conditions. The rates are determined for each economic environment in which the group operates by adjusting swap rates with funding spreads (own credit spread) and cross-currency basis where appropriate.

The group adopted the requirements of HKFRS 16 retrospectively, with the cumulative effect of initially applying the standard recognised as an adjustment to the opening balance of retained earnings at that date. Comparatives were not restated. In relation to the operating leases that were under HKAS 17 'Leases', the adoption of the standard increased assets by HK$9.2bn reported under 'Property, plant and equipment' and increased lease liabilities by the same amount reported under 'Accruals and deferred income, other liabilities and provisions' with no effect on net assets or retained earnings.

In addition, as a consequence of HKFRS 16, properties previously reported under 'Prepayments, accrued income and other assets' as operating leases and held at cost were reclassified to 'Property, plant and equipment' and measured at fair value. The implementation increased 'Property, plant and equipment' by HK$16.3bn and increased deferred tax liabilities by HK$2.7bn, with the net impact taken to the 'Property Revaluation Reserve'.

The overall impact of the above is to increase 'Property, plant and equipment' by HK$25.5bn, increase 'Accruals and deferred income, other liabilities and provisions' by HK$9.2bn, increase 'Deferred tax liabilities' by HK$2.7bn, increase 'Property Revaluation Reserve' by HK$13.5bn and decrease 'Prepayments, accrued income and other assets' by HK$136m.

Interest Rate Benchmark Reform: Amendments to HKFRS 9 and HKAS 39 'Financial Instruments'

Amendments to HKFRS 9 and HKAS 39 issued in November 2019 modify specific hedge accounting requirements so that entities apply those hedge accounting requirements assuming that the interest rate benchmark on which the hedged cash flows and cash flows of the hedging instrument are based is not altered as a result of interest rate benchmark reform. These amendments replace the need for specific judgements to determine whether certain hedge accounting relationships that hedge the variability of cash flows or interest rate risk exposures for periods after the interest rate benchmarks are expected to be reformed or replaced continue to qualify for hedge accounting as at 31 December 2019. For example, in the context of cash flow hedging, the amendments require the interest rate benchmark on which the hedged cash flows are based, or on which the cash flows of the hedging instrument are based, to be assumed to be unaltered over the period of the documented hedge relationship, while uncertainty over the interest rate benchmark reform exists. The HKICPA is expected to provide further guidance on the implication for hedge accounting during the reform process and after the reform uncertainty is resolved.

These amendments apply from 1 January 2020 with early adoption permitted. The group has adopted the amendments that apply to HKAS 39 from 1 January 2019 and has made the additional disclosures as required by the amendments. Further information is included in note 8.

(b) Future accounting developments

Minor amendments to HKFRSs

The HKICPA has published a number of minor amendments to HKFRSs which are effective from 1 January 2020. The group expects they will have an insignificant effect, when adopted, on the Consolidated Financial Statements.

Major new HKFRSs

HKFRS 17 'Insurance Contracts'

HKFRS 17 'Insurance Contracts' was issued in January 2018 and sets out the requirements that an entity should apply in accounting for insurance contracts it issues and reinsurance contracts it holds. HKFRS 17 is currently effective from 1 January 2021. However, the HKICPA is considering delaying the mandatory implementation date by one year and may make additional changes to the standard. The group is in the process of implementing HKFRS 17. Industry practice and interpretation of the standard is still developing and there may be changes to it, therefore the likely impact of its implementation remains uncertain.

(c) Foreign currencies

Items included in each of the group's entities are measured using the currency of the primary economic environment in which the entity operates (the 'functional currency'). The group's consolidated financial statements are presented in Hong Kong dollars.

Transactions in foreign currencies are recorded at the rate of exchange on the date of the transaction. Assets and liabilities denominated in foreign currencies are translated at the rate of exchange at the balance sheet date except non-monetary assets and liabilities measured at historical cost which are translated using the rate of exchange at the initial transaction date. Exchange differences are included in other comprehensive income or in the income statement depending on where the gain or loss on the underlying item is recognised.

In the Consolidated Financial Statements, the assets, liabilities and results of foreign operations whose functional currency is not Hong Kong dollars are translated into the group's presentation currency at the reporting date. Exchange differences arising are recognised in other comprehensive income. On disposal of a foreign operation, exchange differences previously recognised in other comprehensive income are reclassified to the income statement.

(d) Presentation of information

Certain disclosures required by HKFRSs have been included in the sections marked as ('Audited') in this *Annual Report and Accounts* as follows:

- Consolidated income statement and balance sheet data by global business are included in the 'Financial Review' on page 8.
- Disclosures concerning the nature and extent of risks relating to banking and insurance activities are included in the 'Risk' section on pages 20 to 43 and pages 46 to 50 as specified as 'Audited'.
- Capital disclosures are included in the 'Capital' section on page 51 as specified as 'Audited'.

In accordance with the group's policy to provide disclosures that help investors and other stakeholders understand the group's performance, financial position and changes to them, the information provided in the Risk section and the Capital section goes beyond the minimum levels required by accounting standards, statutory and regulatory requirements. In addition, the group assesses good practice recommendations issued from time to time by relevant regulators and standard setters and will assess the applicability and relevance of such guidance, enhancing disclosures where appropriate.

(e) Critical accounting estimates and judgements

The preparation of financial information requires the use of estimates and judgements about future conditions. In view of the inherent uncertainties and the high level of subjectivity involved in the recognition or measurement of items highlighted as the critical accounting estimates and judgements in note 1.2 below, it is possible that the outcomes in the next financial year could differ from those on which management's estimates are based. This could result in materially different estimates and judgements from those reached by management for the purposes of the Consolidated Financial Statements. Management's selection of the group's accounting policies that contain critical estimates and judgements reflects the materiality of the items to which the policies are applied and the high degree of judgement and estimation uncertainty involved.

(f) Segmental analysis

The group's chief operating decision-maker is the Executive Committee which operates as a general management committee under the direct authority of the Board and operating segments are reported in a manner consistent with the internal reporting provided to the Executive Committee.

Measurement of segmental assets, liabilities, income and expenses is in accordance with the group's accounting policies. Segmental income and expenses include transfers between segments and these transfers are conducted at arm's length. Shared costs are included in segments on the basis of the actual recharges made.

(g) Going concern

The Consolidated Financial Satements are prepared on a going concern basis, as the Directors are satisfied that the group and parent company have the resources to continue in business for the foreseeable future. In making this assessment, the Directors have considered a wide range of information relating to present and future conditions, including future projections of profitability, cash flows and capital resources.

1.2 Summary of significant accounting policies

(a) Consolidation and related policies

Investments in subsidiaries

Where an entity is governed by voting rights, the group consolidates when it holds, directly or indirectly, the necessary voting rights to pass resolutions by the governing body. In all other cases, the assessment of control is more complex and requires judgement of other factors, including having exposure to variability of returns, power to direct relevant activities and whether power is held as agent or principal.

Business combinations are accounted for using the acquisition method. The amount of non-controlling interest is measured either at fair value or at the non-controlling interest's proportionate share of the acquiree's identifiable net assets. This election is made for each business combination.

The Bank's investments in subsidiaries are stated at cost less impairment losses.

Goodwill

Goodwill is allocated to cash-generating units ('CGU') for the purpose of impairment testing, which is undertaken at the lowest level at which goodwill is monitored for internal management purposes. Impairment testing is performed at least annually, or whenever there is an indication of impairment, by comparing the recoverable amount of a CGU with its carrying amount.

Interests in associates

The group classifies investments in entities over which it has significant influence, and that are neither subsidiaries nor joint arrangements, as associates.

Investments in associates are recognised using the equity method. The attributable share of the results and reserves of associates are included in the consolidated financial statements of the group based on either financial statements made up to 31 December or pro-rated amounts adjusted for any material transactions or events occurring between the date the financial statements are available and 31 December.

Investments in associates are assessed at each reporting date and tested for impairment when there is an indication that the investment may be impaired. Goodwill on acquisitions of interests in associates is not tested separately for impairment but is assessed as part of the carrying amount of the investment.

Critical accounting estimates and judgements

The most significant critical accounting judgements and estimates relate to the assessment of impairment of our investment in Bank of Communications Co. Limited ('BoCom'), which involves estimations of value in use:

Judgements	Estimates
	• Management's best estimate of BoCom's earnings are based on management's explicit forecasts over the short to medium term and the capital maintenance charge which is management's forecast of the earnings that need to be withheld in order for BoCom to meet regulatory requirements over the forecast period, both of which are subject to uncertain factors • Key assumptions used in estimating BoCom's value in use, the sensitivity of the value in use calculations to different assumptions and a sensitivity analysis that shows the changes in key assumptions that would reduce the excess of value in use over the carrying amount (the 'headroom') to nil are described in note 14

(b) Income and expenses

Operating income

Interest income and expense

Interest income and expense for all financial instruments, excluding those classified as held for trading or designated at fair value are recognised in 'Interest income' and 'Interest expense' in the income statement using the effective interest method. However, as an exception to this, interest on debt instruments issued by the group for funding purposes that are designated under the fair value option to reduce accounting mismatch and on derivatives managed in conjunction with those debt instruments is included in interest expense.

Interest on credit impaired financial assets is recognised using the rate of interest used to discount the future cash flows for the purpose of measuring the impairment loss.

Non-interest income and expense

The group generates fee income from services provided at a fixed price over time, such as account service and card fees, or when the group delivers a specific transaction at a point in time such as broking services and import/export services. With the exception of certain fund management and performance fees, all other fees are generated at a fixed price. Fund management and performance fees can be variable depending on the size of the customer portfolio and the group's performance as fund manager. Variable fees are recognised when all uncertainties are resolved. Fee income is generally earned from short term contracts with payment terms that do not include a significant financing component.

The group acts as principal in the majority of contracts with customers, with the exception of broking services. For most brokerage trades the group acts as agent in the transaction and recognises broking income net of fees payable to other parties in the arrangement.

The group recognises fees earned on transaction-based arrangements at a point in time when we have fully provided the service to the customer. Where the contract requires services to be provided over time, income is recognised on a systematic basis over the life of the agreement.

Where the group offers a package of services that contains multiple non-distinct performance obligations, such as those included in account service packages, the promised services are treated as a single performance obligation. If a package of services contains distinct performance obligations, such as those including both account and insurance services, the corresponding transaction price is allocated to each performance obligation based on the estimated stand-alone selling prices.

Dividend income is recognised when the right to receive payment is established. This is the ex-dividend date for listed equity securities, and usually the date when shareholders approve the dividend for unlisted equity securities.

Net income/(expense) from financial instruments measured at fair value through profit or loss includes the following:

- 'Net income from financial instruments held for trading or managed on a fair value basis'. This comprises net trading income, which includes all gains and losses from changes in the fair value of financial assets and financial liabilities held for trading and other financial instruments managed on a fair value basis, together with the related interest income, expense and dividends, excluding the effect of changes in the credit risk of liabilities managed on a fair value basis. It also includes all gains and losses from changes in the fair value of derivatives that are managed in conjunction with financial assets and liabilities measured at fair value through profit or loss.

- 'Net income/(expense) from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss'. This includes interest income, interest expense and dividend income in respect of financial assets and liabilities measured at fair value through profit or loss; and those derivatives managed in conjunction with the above that can be separately identifiable from other trading derivatives.
- 'Changes in fair value of designated debt instruments and related derivatives'. Interest paid on debt instruments and interest cash flows on related derivatives is presented in interest expense where doing so reduces an accounting mismatch.
- 'Changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss'. This includes interest on instruments that fail the solely payments of principal and interest ('SPPI') test. See (d) below.

The accounting policies for insurance premium income are disclosed in note 1.2(j).

(c) Valuation of financial instruments

All financial instruments are initially recognised at fair value. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value of a financial instrument on initial recognition is generally its transaction price (that is, the fair value of the consideration given or received). However, if there is a difference between the transaction price and the fair value of financial instruments whose fair value is based on a quoted price in an active market or a valuation technique that uses only data from observable markets, the group recognises the difference as a trading gain or loss at inception ('a day 1 gain or loss'). In all other cases, the entire day 1 gain or loss is deferred and recognised in the income statement over the life of the transaction until the transaction matures, is closed out, the valuation inputs become observable or the group enters into an offsetting transaction.

The fair value of financial instruments is generally measured on an individual basis. However, in cases where the group manages a group of financial assets and liabilities according to its net market or credit risk exposure, the fair value of the group of financial instruments is measured on a net basis but the underlying financial assets and liabilities are presented separately in the Consolidated Financial Statements, unless they satisfy the HKFRSs offsetting criteria.

Critical accounting estimates and judgements

The majority of valuation techniques employ only observable market data. However, certain financial instruments are classified on the basis of valuation techniques that feature one or more significant market inputs that are unobservable, and for them, the measurement of fair value is more judgemental:

Judgements	Estimates
• An instrument in its entirety is classified as valued using significant unobservable inputs if, in the opinion of management, a significant proportion of the instrument's inception profit or greater than 5% of the instrument's valuation is driven by unobservable inputs • 'Unobservable' in this context means that there is little or no current market data available from which to determine the price at which an arm's length transaction would be likely to occur. It generally does not mean that there is no data available at all upon which to base a determination of fair value (consensus pricing data may, for example, be used)	• Details on the group's level 3 financial instruments are set out in note 34

(d) Financial instruments measured at amortised cost

Financial assets that are held to collect the contractual cash flows and which contain contractual terms that give rise on specified dates to cash flows that are solely payments of principal and interest are measured at amortised cost. Such financial assets include, most loans and advances to banks and customers and some debt securities. In addition, most financial liabilities are measured at amortised cost. The group accounts for regular way amortised cost financial instruments using trade date accounting. The carrying value of these financial assets at initial recognition includes any directly attributable transactions costs. If the initial fair value is lower than the cash amount advanced, such as in the case of some leveraged finance and syndicated lending activities, the difference is deferred and recognised over the life of the loan through the recognition of interest income.

The group may commit to underwriting loans on fixed contractual terms for specified periods of time. When the loan arising from the lending commitment is expected to be held for trading, the commitment to lend is recorded as a derivative. When the group intends to hold the loan, the loan commitment is included in the impairment calculations set out below.

Non-trading reverse repurchase, repurchase and similar agreements

When debt securities are sold subject to a commitment to repurchase them at a predetermined price ('repos'), they remain on the balance sheet and a liability is recorded in respect of the consideration received. Securities purchased under commitments to resell ('reverse repos') are not recognised on the balance sheet and an asset is recorded in respect of the initial consideration paid. Non-trading repos and reverse repos are measured at amortised cost. The difference between the sale and repurchase price or between the purchase and resale price is treated as interest and recognised in net interest income over the life of the agreement.

Contracts that are economically equivalent to reverse repo or repo agreements (such as sales or purchases of debt securities entered into together with total return swaps with the same counterparty) are accounted for similarly to, and presented together with, reverse repo or repo agreements.

(e) Financial assets measured at fair value through other comprehensive income ('FVOCI')

Financial assets held for a business model that is achieved by both collecting contractual cash flows and selling and which contain contractual terms that give rise on specified dates to cash flows that are solely payments of principal and interest are measured at FVOCI. These comprise primarily debt securities. They are recognised on the trade date when the group enters into contractual arrangements to purchase and are normally derecognised when they are either sold or redeemed. They are subsequently remeasured at fair value and changes therein (except for those relating to impairment, interest income and foreign currency exchange gains and losses) are recognised in other comprehensive income until the assets are sold. Upon disposal, the cumulative gains or losses in other comprehensive income are recognised in the income statement as 'Gains less losses from financial instruments'. Financial assets measured at FVOCI are included in the impairment calculations set out below and impairment is recognised in profit or loss.

(f) Equity securities measured at fair value with fair value movements presented in OCI

The equity securities for which fair value movements are shown in OCI are business facilitation and other similar investments where the group holds the investments other than to generate a capital return. Gains or losses on the derecognition of these equity securities are not transferred to profit or loss. Dividend income is recognised in profit or loss.

(g) Financial instruments designated at fair value through profit or loss

Financial instruments, other than those held for trading, are classified in this category if they meet one or more of the criteria set out below and are so designated irrevocably at inception:

- the use of the designation removes or significantly reduces an accounting mismatch;
- when a group of financial assets and liabilities or a group of financial liabilities is managed and its performance is evaluated on a fair value basis, in accordance with a documented risk management or investment strategy; and
- where the financial liability contains one or more non-closely related embedded derivatives.

Designated financial assets are recognised when the group enters into contracts with counterparties, which is generally on trade date, and are normally derecognised when the rights to the cash flows expire or are transferred.

Designated financial liabilities are recognised when the group enters into contracts with counterparties, which is generally on settlement date, and are normally derecognised when extinguished. Subsequent changes in fair values are recognised in the income statement in 'Net income from financial instruments held for trading or managed on a fair value basis' or 'Net income/(expense) from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss' except for the effect of changes in the liabilities' credit risk which is presented in OCI, unless that treatment would create or enlarge an accounting mismatch in profit or loss.

Under the above criterion, the main classes of financial instruments designated by the group are:

- Debt instruments for funding purposes that are designated to reduce an accounting mismatch.

The interest and/or foreign exchange exposure on certain fixed rate debt securities issued has been matched with the interest and/or foreign exchange exposure on certain swaps as part of a documented risk management strategy.

- Financial assets and financial liabilities under unit-linked and non-linked investment contracts.

A contract under which the group does not accept significant insurance risk from another party is not classified as an insurance contract, other than investment contracts with discretionary participation features ('DPF'), but is accounted for as a financial liability. Customer liabilities under linked and certain non-linked investment contracts issued by insurance subsidiaries are determined based on the fair value of the assets held in the linked funds. If no fair value designation was made for the related assets, at least some of the assets would otherwise be measured at either fair value through other comprehensive income or amortised cost. The related financial assets and liabilities are managed and reported to management on a fair value basis. Designation at fair value of the financial assets and related liabilities allows changes in fair values to be recorded in the income statement and presented in the same line.

- Financial liabilities which contain both deposit and derivative components: These financial liabilities are managed and their performance evaluated on a fair value basis.

(h) Derivatives

Derivatives are financial instruments that derive their value from the price of underlying items such as equities, interest rates or other indices. Derivatives are recognised initially and are subsequently measured at fair value, with changes in fair value generally recorded in the income statement. Derivatives are classified as assets when their fair value is positive or as liabilities when their fair value is negative. This includes embedded derivatives in financial liabilities which are bifurcated from the host contract when they meet the definition of a derivative on a stand-alone basis.

Where the derivatives are managed with debt securities issued by the group that are designated at fair value, the contractual interest is shown in 'Interest expense' together with the interest payable on the issued debt.

Hedge accounting

When derivatives are held for risk management purposes, they are designated in hedge accounting relationships where the required criteria for documentation and hedge effectiveness are met. The group enters into fair value hedges, cash flow hedges or hedges of net investments in foreign operations as appropriate to the risk being hedged.

Fair value hedge

Fair value hedge accounting does not change the recording of gains and losses on derivatives and other hedging instruments, but results in recognising changes in the fair value of the hedged assets or liabilities attributable to the hedged risk that would not otherwise be recognised in the income statement. If a hedge relationship no longer meets the criteria for hedge accounting, hedge accounting is discontinued; the cumulative adjustment to the carrying amount of the hedged item is amortised to the income statement on a recalculated effective interest rate, unless the hedged item has been derecognised, in which case it is recognised in the income statement immediately.

Cash flow hedge

The effective portion of gains and losses on hedging instruments is recognised in other comprehensive income; the ineffective portion of the change in fair value of derivative hedging instruments that are part of a cash flow hedge relationship is recognised immediately in the income statement within 'Net income from financial instruments held for trading or managed on a fair value basis'. The accumulated gains and losses recognised in other comprehensive income are reclassified to the income statement in the same periods in which the hedged item affects profit or loss. In hedges of forecast transactions that result in recognition of a non-financial asset or liability, previous gains and losses recognised in other comprehensive income are included in the initial measurement of the asset or liability. When a hedge relationship is discontinued, or partially discontinued, any cumulative gain or loss recognised in other comprehensive income remains in equity until the forecast transaction is recognised in the income statement. When a forecast transaction is no longer expected to occur, the cumulative gain or loss previously recognised in other comprehensive income is immediately reclassified to the income statement.

Derivatives that do not qualify for hedge accounting

Non-qualifying hedges are derivatives entered into as economic hedges of assets and liabilities for which hedge accounting was not applied.

(i) Impairment of amortised cost and FVOCI financial assets

Expected credit losses ('ECL') are recognised for loans and advances to banks and customers, non-trading reverse repurchase agreements, other financial assets held at amortised cost, debt instruments measured at FVOCI, and certain loan commitments and financial guarantee contracts. At initial recognition, allowance (or provision in the case of some loan commitments and financial guarantees) is required for ECL resulting from default events that are possible within the next 12 months (or less, where the remaining life is less than 12 months) ('12-month ECL'). In the event of a significant increase in credit risk, allowance (or provision) is required for ECL resulting from all possible default events over the expected life of the financial instrument ('lifetime ECL'). Financial assets where 12-month ECL is recognised are considered to be 'stage 1'; financial assets that are considered to have experienced a significant increase in credit risk are in 'stage 2'; and financial assets for which there is objective evidence of impairment so are considered to be in default or otherwise credit-impaired are in 'stage 3'. Purchased or originated credit-impaired financial assets ('POCI') are treated differently as set out below.

Credit-impaired (stage 3)

The group determines that a financial instrument is credit-impaired and in stage 3 by considering relevant objective evidence, primarily whether:

- contractual payments of either principal or interest are past due for more than 90 days;
- there are other indications that the borrower is unlikely to pay such as when a concession has been granted to the borrower for economic or legal reasons relating to the borrower's financial condition; and
- the loan is otherwise considered to be in default.

If such unlikeliness to pay is not identified at an earlier stage, it is deemed to occur when an exposure is 90 days past due, even where regulatory rules permit default to be defined based on 180 days past due. Therefore, the definitions of credit-impaired and default are aligned as far as possible so that stage 3 represents all loans that are considered defaulted or otherwise credit-impaired.

Interest income is recognised by applying the effective interest rate to the amortised cost amount, i.e. gross carrying amount less ECL allowance.

Write-off

Financial assets (and the related impairment allowances) are normally written off, either partially or in full, when there is no realistic prospect of recovery. Where loans are secured, this is generally after receipt of any proceeds from the realisation of security. In circumstances where the net realisable value of any collateral has been determined and there is no reasonable expectation of further recovery, write-off may be earlier.

Renegotiation

Loans are identified as renegotiated and classified as credit-impaired when we modify the contractual payment terms due to significant credit distress of the borrower. Renegotiated loans remain classified as credit-impaired until there is sufficient evidence to demonstrate a significant reduction in the risk of non-payment of future cash flows and retain the designation of renegotiated until maturity or derecognition.

A loan that is renegotiated is derecognised if the existing agreement is cancelled and a new agreement is made on substantially different terms or if the terms of an existing agreement are modified such that the renegotiated loan is a substantially different financial instrument. Any new loans that arise following derecognition events in these circumstances are considered to be POCI and will continue to be disclosed as renegotiated loans.

Other than originated credit-impaired loans, all other modified loans could be transferred out of stage 3 if they no longer exhibit any evidence of being credit-impaired and, in the case of renegotiated loans, there is sufficient evidence to demonstrate a significant reduction in the risk of non-payment of future cash flows, over the minimum observation period, and there are no other indicators of impairment. These loans could be transferred to stage 1 or 2 based on the mechanism as described below by comparing the risk of a default occurring at the reporting date (based on the modified contractual terms) and the risk of a default occurring at initial recognition (based on the original, unmodified contractual terms). Any amount written off as a result of the modification of contractual terms would not be reversed.

Loan modifications that are not credit-impaired

Loan modifications that are not identified as renegotiated are considered to be commercial restructuring. Where a commercial restructuring results in a modification (whether legalised through an amendment to the existing terms or the issuance of a new loan contract) such that the group's rights to the cash flows under the original contract have expired, the old loan is derecognised and the new loan is recognised at fair value. The rights to cash flows are generally considered to have expired if the commercial restructure is at market rates and no payment-related concession has been provided.

Significant increase in credit risk (stage 2)

An assessment of whether credit risk has increased significantly since initial recognition is performed at each reporting period by considering the change in the risk of default occurring over the remaining life of the financial instrument. The assessment explicitly or implicitly compares the risk of default occurring at the reporting date compared with that at initial recognition, taking into account reasonable and supportable information, including information about past events, current conditions and future economic conditions. The assessment is unbiased, probability-weighted, and to the extent relevant, uses forward-looking information consistent with that used in the measurement of ECL. The analysis of credit risk is multifactor. The determination of whether a specific factor is relevant and its weight compared with other factors depends on the type of product, the characteristics of the financial instrument and the borrower, and the geographical region. Therefore, it is not possible to provide a single set of criteria that will determine what is considered to be a significant increase in credit risk and these criteria will differ for different types of lending, particularly between retail and wholesale.

However, unless identified at an earlier stage, all financial assets are deemed to have suffered a significant increase in credit risk when 30 days past due. In addition, wholesale loans that are individually assessed, typically corporate and commercial customers, and included on a watch or worry list are included in stage 2.

For wholesale portfolios, the quantitative comparison assesses default risk using a lifetime probability of default ('PD') which encompasses a wide range of information including the obligor's customer risk rating ('CRR'), macroeconomic condition forecasts and credit transition probabilities. For origination CRRs up to 3.3, significant increase in credit risk is measured by comparing the average PD for the remaining term estimated at origination with the equivalent estimation at the reporting date. The quantitative measure of significance varies depending on the credit quality at origination as follows:

Origination CRR	Significance trigger – PD to increase by
0.1–1.2	15bps
2.1–3.3	30bps

For CRRs greater than 3.3 that are not impaired, a significant increase in credit risk is considered to have occurred when the origination PD has doubled. The significance of changes in PD was informed by expert credit risk judgement, referenced to historical credit migrations and to relative changes in external market rates.

For loans originated prior to the implementation of HKFRS 9, the origination PD does not include adjustments to reflect expectations of future macroeconomic conditions since these are not available without the use of hindsight. In the absence of this data, origination PD must be approximated assuming through-the-cycle ('TTC') PDs and TTC migration probabilities, consistent with the instrument's underlying modelling approach and the CRR at origination. For these loans, the quantitative comparison is supplemented with additional CRR deterioration based thresholds as set out in the table below:

Origination CRR	Additional significance criteria – Number of CRR grade notches deterioration required to identify as significant credit deterioration (stage 2) (> or equal to)
0.1	5 notches
1.1–4.2	4 notches
4.3–5.1	3 notches
5.2–7.1	2 notches
7.2–8.2	1 notch
8.3	0 notch

Further information about the 23-grade scale used for CRR can be found on page 23.

For certain portfolios of debt securities where external market ratings are available and credit ratings are not used in credit risk management, the debt securities will be in stage 2 if their credit risk increases to the extent they are no longer considered investment grade. Investment grade is where the financial instrument has a low risk of incurring losses, the structure has a strong capacity to meet its contractual cash flow obligations in the near term and adverse changes in economic and business conditions in the longer term may, but will not necessarily, reduce the ability of the borrower to fulfil their contractual cash flow obligations.

For retail portfolios, default risk is assessed using a reporting date 12-month PD derived from credit scores which incorporates all available information about the customer. This PD is adjusted for the effect of macroeconomic forecasts for periods longer than 12 months and is considered to be a reasonable approximation of a lifetime PD measure. Retail exposures are first segmented into homogeneous portfolios, generally by country, product and brand. Within each portfolio, the stage 2 accounts are defined as accounts with an adjusted 12-month PD greater than the average 12-month PD of loans in that portfolio 12 months before they become 30 days past due. The expert credit risk judgement is that no prior increase in credit risk is significant. This portfolio-specific threshold identifies loans with a PD higher than would be expected from loans that are performing as originally expected and higher than what would have been acceptable at origination. It therefore approximates a comparison of origination to reporting date PDs.

Unimpaired and without significant increase in credit risk – (stage 1)

ECL resulting from default events that are possible within the next 12 months ('12-month ECL') are recognised for financial instruments that remain in stage 1.

Purchased or originated credit-impaired ('POCI')

Financial assets that are purchased or originated at a deep discount that reflects the incurred credit losses are considered to be POCI. This population includes the recognition of a new financial instrument following a renegotiation where concessions have been granted for economic or contractual reasons relating to the borrower's financial difficulty that otherwise would not have been considered. The amount of change-in-lifetime ECL is recognised in profit or loss until the POCI is derecognised, even if the lifetime ECL are less than the amount of ECL included in the estimated cash flows on initial recognition.

Movement between stages

Financial assets can be transferred between the different categories (other than POCI) depending on their relative increase in credit risk since initial recognition. Financial instruments are transferred out of stage 2 if their credit risk is no longer considered to be significantly increased since initial recognition based on the assessments described above. Except for renegotiated loans, financial instruments are transferred out of stage 3 when they no longer exhibit any evidence of credit impairment as described above. Renegotiated loans that are not POCI will continue to be in stage 3 until there is sufficient evidence to demonstrate a significant reduction in the risk of non-payment of future cash flows, observed over a minimum one-year period and there are no other indicators of impairment. For loans that are assessed for impairment on a portfolio basis, the evidence typically comprises a history of payment performance against the original or revised terms, as appropriate to the circumstances. For loans that are assessed for impairment on an individual basis, all available evidence is assessed on a case-by-case basis.

Measurement of ECL

The assessment of credit risk, and the estimation of ECL, are unbiased and probability-weighted, and incorporate all available information that is relevant to the assessment including information about past events, current conditions and reasonable and supportable forecasts of future events and economic conditions at the reporting date. In addition, the estimation of ECL should take into account the time value of money.

In general, the group calculates ECL using three main components, a probability of default, a loss given default ('LGD') and the exposure at default (‘EAD’).

The 12-month ECL is calculated by multiplying the 12-month PD, LGD and EAD. Lifetime ECL is calculated using the lifetime PD instead. The 12-month and lifetime PDs represent the probability of default occurring over the next 12 months and the remaining maturity of the instrument respectively.

The EAD represents the expected balance at default, taking into account the repayment of principal and interest from the balance sheet date to the default event together with any expected drawdowns of committed facilities. The LGD represents expected losses on the EAD given the event of default, taking into account, among other attributes, the mitigating effect of collateral value at the time it is expected to be realised and the time value of money.

The group leverages the Basel II IRB framework where possible, with recalibration to meet the differing HKFRS 9 requirements as set out in the following table:

Model	Regulatory capital	HKFRS 9
PD	• Through the cycle (represents long-run average PD throughout a full economic cycle) • The definition of default includes a backstop of 90+ days past due	• Point in time (based on current conditions, adjusted to take into account estimates of future conditions that will impact PD) • Default backstop of 90+ days past due for all portfolios
EAD	• Cannot be lower than current balance	• Amortisation captured for term products
LGD	• Downturn LGD (consistent losses expected to be suffered during a severe but plausible economic downturn) • Regulatory floors may apply to mitigate risk of underestimating downturn LGD due to lack of historical data • Discounted using cost of capital • All collection costs included	• Expected LGD (based on estimate of loss given default including the expected impact of future economic conditions such as changes in value of collateral) • No floors • Discounted using the original effective interest rate of the loan • Only costs associated with obtaining/selling collateral included
Other		• Discounted back from point of default to balance sheet date

While 12-month PDs are re-calibrated from Basel models where possible, the lifetime PDs are determined by projecting the 12-month PD using a term structure. For the wholesale methodology, the lifetime PD also takes into account credit migration, i.e. a customer migrating through the CRR bands over its life.

The ECL for wholesale stage 3 is determined on an individual basis using a discounted cash flow (‘DCF’) methodology. The expected future cash flows are based on the credit risk officer’s estimates as at the reporting date, reflecting reasonable and supportable assumptions and projections of future recoveries and expected future receipts of interest. Collateral is taken into account if it is likely that the recovery of the outstanding amount will include realisation of collateral based on the estimated fair value of collateral at the time of expected realisation, less costs for obtaining and selling the collateral. The cash flows are discounted at a reasonable approximation of the original effective interest rate. For significant cases, cash flows under four different scenarios are probability-weighted by reference to the economic scenarios applied more generally by the group and the judgement of the credit risk officer in relation to the likelihood of the workout strategy succeeding or receivership being required. For less significant cases, the effect of different economic scenarios and work-out strategies is approximated and applied as an adjustment to the most likely outcome.

Period over which ECL is measured

Expected credit loss is measured from the initial recognition of the financial asset. The maximum period considered when measuring ECL (be it 12-month or lifetime ECL) is the maximum contractual period over which the group is exposed to credit risk. For wholesale overdrafts, credit risk management actions are taken no less frequently than on an annual basis and therefore this period is to the expected date of the next substantive credit review. The date of the substantive credit review also represents the initial recognition of the new facility. However, where the financial instrument includes both a drawn and undrawn commitment and the contractual ability to demand repayment and cancel the undrawn commitment does not serve to limit the group’s exposure to credit risk to the contractual notice period, the contractual period does not determine the maximum period considered. Instead, ECL is measured over the period the group remains exposed to credit risk that is not mitigated by credit risk management actions. This applies to retail overdrafts and credit cards, where the period is the average time taken for stage 2 exposures to default or close as performing accounts, determined on a portfolio basis and ranging from between two and six years. In addition, for these facilities it is not possible to identify the ECL on the loan commitment component separately from the financial asset component. As a result, the total ECL is recognised in the loss allowance for the financial asset unless the total ECL exceeds the gross carrying amount of the financial asset, in which case the ECL is recognised as a provision.

Forward-looking economic inputs

The group applies multiple forward-looking global economic scenarios determined with reference to external forecast distributions representative of our view of forecast economic conditions. This approach is considered sufficient to calculate unbiased expected loss in most economic environments. In certain economic environments, additional analysis may be necessary and may result in additional scenarios or adjustments, to reflect a range of possible economic outcomes sufficient for an unbiased estimate. The detailed methodology is disclosed in ‘Measurement uncertainty and sensitivity analysis of ECL estimates’ on page 27.

Critical accounting estimates and judgements

The calculation of the group’s ECL under HKFRS 9 requires the group to make a number of judgements, assumptions and estimates. The most significant are set out below:

Judgements	Estimates
• Defining what is considered to be a significant increase in credit risk • Determining the lifetime and point of initial recognition of overdrafts and credit cards • Selecting and calibrating the PD, LGD and EAD models, which support the calculations, including making reasonable and supportable judgements about how models react to current and future economic conditions • Selecting model inputs and economic forecasts, including determining whether sufficient and appropriately weighted economic forecasts are incorporated to calculate unbiased expected loss	• The sections marked as audited on pages 27 to 30, ‘Measurement uncertainty and sensitivity analysis of ECL estimates’ set out the assumptions used in determining ECL and provide an indication of the sensitivity of the result to the application of different weightings being applied to different economic assumptions

(j) Insurance contracts

A contract is classified as an insurance contract where the group accepts significant insurance risk from another party by agreeing to compensate that party on the occurrence of a specified uncertain future event. An insurance contract may also transfer financial risk, but is accounted for as an insurance contract if the insurance risk is significant. In addition, the group issues investment contracts with discretionary participation features ('DPF') which are also accounted for as insurance contracts as required by HKFRS 4 'Insurance Contracts'.

Net insurance premium income

Premiums for life insurance contracts are accounted for when receivable, except in unit-linked insurance contracts where premiums are accounted for when liabilities are established.

Reinsurance premiums are accounted for in the same accounting period as the premiums for the direct insurance contracts to which they relate.

Net insurance claims and benefits paid and movements in liabilities to policyholders

Gross insurance claims for life insurance contracts reflect the total cost of claims arising during the year, including claim handling costs and any policyholder bonuses allocated in anticipation of a bonus declaration.

Maturity claims are recognised when due for payment. Surrenders are recognised when paid or at an earlier date on which, following notification, the policy ceases to be included within the calculation of the related insurance liabilities. Death claims are recognised when notified.

Reinsurance recoveries are accounted for in the same period as the related claim.

Liabilities under insurance contracts

Liabilities under non-linked life insurance contracts are calculated by each life insurance operation based on local actuarial principles. Liabilities under unit-linked life insurance contracts are at least equivalent to the surrender or transfer value, which is calculated by reference to the value of the relevant underlying funds or indices.

Future profit participation on insurance contracts with DPF

Where contracts provide discretionary profit participation benefits to policyholders, liabilities for these contracts include provisions for the future discretionary benefits to policyholders. These provisions reflect the actual performance of the investment portfolio to date and management's expectation of the future performance of the assets backing the contracts, as well as other experience factors such as mortality, lapses and operational efficiency, where appropriate. The benefits to policyholders may be determined by the contractual terms, regulation, or past distribution policy.

Investment contracts with DPF

While investment contracts with DPF are financial instruments, they continue to be treated as insurance contracts as required by HKFRS 4. The group therefore recognises the premiums for these contracts as revenue and recognises as an expense the resulting increase in the carrying amount of the liability.

In the case of net unrealised investment gains on these contracts, whose discretionary benefits principally reflect the actual performance of the investment portfolio, the corresponding increase in the liabilities is recognised in either the income statement or other comprehensive income, following the treatment of the unrealised gains on the relevant assets. In the case of net unrealised losses, a deferred participating asset is recognised only to the extent that its recoverability is highly probable. Movements in the liabilities arising from realised gains and losses on relevant assets are recognised in the income statement.

Present value of in-force long-term insurance business

The group recognises the value placed on insurance contracts and investment contracts with DPF, which are classified as long-term and in-force at the balance sheet date, as an asset. The PVIF asset is presented gross of attributable tax in the balance sheet and movements in the PVIF asset are included in 'Other operating income' on a gross of tax basis.

Critical accounting estimates and judgements

The valuation of the PVIF is dependent on economic assumptions (e.g. future investment returns) and non-economic assumptions (e.g. related to policyholder behaviour or demographics

Judgements	Estimates
• The PVIF asset represents the value of the equity holders' interest in the issuing insurance companies' profits expected to emerge from these contracts written at the balance sheet date. It is determined by discounting those expected future profits using appropriate assumptions in assessing factors such as future mortality, lapse rates and levels of expenses, and a risk discount rate that reflects the risk premium attributable to the respective contracts. The PVIF incorporates allowances for both non-market risk and the value of financial options and guarantees.	• The assumptions are reassessed at each reporting date and changes in the estimates which affect the value of PVIF are reflected in the income statement. More information is included in note 15.

(k) Property

Land and buildings

Land and buildings held for own use are carried at their revalued amount, being the fair value at the date of the revaluation less any subsequent accumulated depreciation and impairment losses.

Revaluations are performed by professional qualified valuers, on a market basis, with sufficient regularity to ensure that the net carrying amount does not differ materially from the fair value. Surpluses arising on revaluation are credited firstly to the income statement, to the extent of any deficits arising on revaluation previously charged to the income statement in respect of the same land and buildings, and are thereafter taken to the 'Property revaluation reserve'. Deficits arising on revaluation are first set off against any previous revaluation surpluses included in the 'Property revaluation reserve' in respect of the same land and buildings, and are thereafter recognised in the income statement.

Leasehold land and buildings are depreciated over the shorter of the unexpired terms of the leases or the remaining useful lives.

The Government of Hong Kong owns all the land in Hong Kong and permits its use under leasehold arrangements. Similar arrangements exist in mainland China. The group accounts for its interests in own use leasehold land and land use rights in accordance with HKFRS 16 but discloses these as owned assets when the right of use are considered sufficient to constitute control.

Investment properties

The group holds certain properties as investments to earn rentals or for capital appreciation, or both, and those investment properties are included on balance sheet at fair value with changes in fair value being recognised in the income statement.

(l) Employee compensation and benefits

Post-employment benefit plans

The group operates a number of pension schemes including defined benefit and defined contribution, and post-employment benefit schemes.

Payments to defined contribution schemes are charged as an expense as the employees render service.

Defined benefit pension obligations are calculated using the projected unit credit method. The net charge to the income statement mainly comprises the service cost and the net interest on the net defined benefit asset or liability, and is presented in operating expenses.

Remeasurements of the net defined benefit asset or liability, which comprise actuarial gains and losses, return on plan assets excluding interest and the effect of the asset ceiling (if any, excluding interest), are recognised immediately in other comprehensive income. The net defined benefit asset or liability represents the present value of defined benefit obligations reduced by the fair value of plan assets, after applying the asset ceiling test, where the net defined benefit surplus is limited to the present value of available refunds and reductions in future contributions to the plan.

(m) Tax

Income tax comprises current tax and deferred tax. Income tax is recognised in the income statement except to the extent that it relates to items recognised in other comprehensive income or directly in equity, in which case the tax is recognised in the same statement as the related item appears.

Current tax is the tax expected to be payable on the taxable profit for the year and on any adjustment to tax payable in respect of previous years. The group provides for potential current tax liabilities that may arise on the basis of the amounts expected to be paid to the tax authorities.

Deferred tax is recognised on temporary differences between the carrying amounts of assets and liabilities in the balance sheet, and the amounts attributed to such assets and liabilities for tax purposes. Deferred tax is calculated using the tax rates expected to apply in the periods in which the assets will be realised or the liabilities settled.

Current and deferred tax are calculated based on tax rates and laws enacted, or substantively enacted, by the balance sheet date.

(n) Provisions, contingent liabilities and guarantees

Provisions

Provisions are recognised when it is probable that an outflow of economic benefits will be required to settle a present legal or constructive obligation that has arisen as a result of past events and for which a reliable estimate can be made.

Critical accounting estimates and judgements

The recognition and measurement of provisions requires the group to make a number of judgements, assumptions and estimates. The most significant are set out below:

Judgements	Estimates
• Determining whether a present obligation exists. Professional advice is taken on the assessment of litigation, property (including onerous contracts) and similar obligations. • Provisions for legal proceedings and regulatory matters typically require a higher degree of judgement than other types of provisions. When matters are at an early stage, accounting judgements can be difficult because of the high degree of uncertainty associated with determining whether a present obligation exists, and estimating the probability and amount of any outflows that may arise. As matters progress, management and legal advisers evaluate on an ongoing basis whether provisions should be recognised, revising previous estimates as appropriate. At more advanced stages, it is typically easier to make estimates around a better defined set of possible outcomes.	• Provisions for legal proceedings and regulatory matters remain very sensitive to the assumptions used in the estimate. There could be a wider range of possible outcomes for any pending legal proceedings, investigations or inquiries. As a result, it is often not practicable to quantify a range of possible outcomes for individual matters. It is also not practicable to meaningfully quantify ranges of potential outcomes in aggregate for these types of provisions because of the diverse nature and circumstances of such matters and the wide range of uncertainties involved. • Provisions for customer remediation also require significant levels of estimation. The amounts of provisions recognised depend on a number of different assumptions, such as the volume of inbound complaints, the projected period of inbound complaint volumes, the decay rate of complaint volumes, the populations identified as systemically mis-sold and the number of policies per customer complaint.

Contingent liabilities, contractual commitments and guarantees

Contingent liabilities

Contingent liabilities, which include certain guarantees and letters of credit pledged as collateral security, and contingent liabilities related to legal proceedings or regulatory matters, are not recognised in the Consolidated Financial Statements but are disclosed unless the probability of settlement is remote.

Financial guarantee contracts

Liabilities under financial guarantee contracts that are not classified as insurance contracts are recorded initially at their fair value, which is generally the fee received or present value of the fee receivable.

The Bank has issued financial guarantees and similar contracts to other group entities. The group elects to account for certain guarantees as insurance contracts in the Bank's financial statements, in which case they are measured and recognised as insurance liabilities. This election is made on a contract-by-contract basis, and is irrevocable.

2 Operating profit

(a) Net interest income

Net interest income includes:

	2019	2018
	HK$m	HK$m
Interest income recognised on impaired financial assets	309	276
Interest income recognised on financial assets measured at amortised cost	160,387	143,709
Interest income recognised on financial assets measured at FVOCI	30,974	26,412
Interest expense on financial instruments, excluding interest on financial liabilities held for trading or designated or otherwise mandatorily measured at fair value	(56,493)	(41,259)

(b) Net fee income

Net fee income by global business

	Retail Banking and Wealth Management	Commercial Banking	Global Banking and Markets	Global Private Banking	Corporate Centre[1]	Total
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
Account services	1,281	893	340	23	1	2,538
Funds under management	3,779	646	1,694	1,095	1	7,215
Cards	6,755	1,726	85	–	1	8,567
Credit facilities	223	1,693	1,367	9	1	3,293
Broking income	2,441	43	696	380	–	3,560
Imports/exports	–	2,590	690	–	–	3,280
Unit trusts	6,318	158	–	674	–	7,150
Underwriting	2	2	1,557	–	(6)	1,555
Remittances	284	1,945	665	3	(14)	2,883
Global custody	657	51	2,936	98	–	3,742
Insurance agency commission	1,463	131	2	139	–	1,735
Other	1,758	2,145	5,294	761	(2,377)	7,581
Fee income	24,961	12,023	15,326	3,182	(2,393)	53,099
Fee expense	(6,314)	(2,063)	(5,349)	(343)	2,475	(11,594)
Year ended 31 Dec 2019	18,647	9,960	9,977	2,839	82	41,505
Account services	1,434	979	337	55	3	2,808
Funds under management	4,122	724	1,749	910	1	7,506
Cards	6,552	1,788	74	–	–	8,414
Credit facilities	242	1,568	1,360	9	1	3,180
Broking income	3,397	73	702	507	–	4,679
Imports/exports	–	2,909	723	–	–	3,632
Unit trusts	6,381	172	–	558	(4)	7,107
Underwriting	5	3	1,111	–	(7)	1,112
Remittances	333	2,183	625	3	(6)	3,138
Global custody	713	51	3,025	95	(18)	3,866
Insurance agency commission	1,510	142	4	94	(9)	1,741
Other	1,816	2,020	5,087	719	(2,240)	7,402
Fee income	26,505	12,612	14,797	2,950	(2,279)	54,585
Fee expense	(5,418)	(2,014)	(5,003)	(300)	2,381	(10,354)
Year ended 31 Dec 2018	21,087	10,598	9,794	2,650	102	44,231

1 *Includes inter-segment elimination.*

Net fee income includes:

	2019	2018
	HK$m	HK$m
Fees earned on financial assets that are not at fair value through profit and loss (other than amounts included in determining the effective interest rate)	11,400	11,583
– fee income	16,324	16,368
– fee expense	(4,924)	(4,785)
Fee earned on trust and other fiduciary activities	9,234	9,653
– fee income	10,421	10,787
– fee expense	(1,187)	(1,134)

(c) Net income from financial instruments measured at fair value through profit or loss

	2019 HK$m	2018 HK$m
Net income/(expense) arising on:		
Net trading activities	**42,813**	32,583
Other instruments managed on a fair value basis	**(6,425)**	(513)
Net income from financial instruments held for trading or managed on a fair value basis	**36,388**	32,070
Financial assets held to meet liabilities under insurance and investment contracts	**16,245**	(6,104)
Liabilities to customers under investment contracts	**(1,988)**	543
Net income/(expense) from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss	**14,257**	(5,561)
Changes in fair value of designated debts issued and related derivatives[1]	**(305)**	(327)
Changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	**118**	(217)
Year ended 31 Dec	**50,458**	25,965

1 *The definition has been updated to include debt instruments which are issued for funding purposes and are designated under the fair value option to reduce an accounting mismatch, previously reported as 'Net trading activities' under 'Net income from financial instruments held for trading and managed on a fair value basis'. Comparatives have been re-presented to conform to the current year's presentation.*

(d) Other operating income

	2019 HK$m	2018 HK$m
Movement in present value of in-force insurance business	**12,546**	4,629
Gains on investment properties	**154**	639
Losses on disposal of property, plant and equipment and assets held for sale	**(2)**	(69)
Gains/(losses) on disposal of subsidiaries, associates and business portfolios	**(14)**	38
Rental income from investment properties	**423**	416
Dividend income	**161**	164
Other[1]	**2,490**	4,653
Year ended 31 Dec	**15,758**	10,470

1 *In 2019, the group transferred shared services and operations to a separate service company, HSBC Global Services (Hong Kong) Limited ('ServCo'), a fellow subsidiary which provides functional support services to the group. As a result of the transfer, costs incurred relating to services provided to fellow group companies are reflected in the financial statements of ServCo instead of the group, and so are recoveries on these costs.*

There was a loss on disposal of loans and receivables of HK$3m in the year (2018: loss of HK$5m). There were no gains or losses on disposal of financial liabilities measured at amortised cost in the year (2018: nil).

(e) Change in expected credit losses and other credit impairment charges

	2019 HK$m	2018 HK$m
Loans and advances to banks and customers	**5,420**	4,611
– new allowances net of allowance releases	**6,283**	5,551
– recoveries of amounts previously written off	**(863)**	(940)
Loan commitments and guarantees	**95**	123
Other financial assets	**157**	(14)
Year ended 31 Dec	**5,672**	4,720

Change in expected credit losses as a percentage of average gross customer advances was 0.15% for 2019 (2018: 0.13%).

(f) General and administrative expenses

	2019 HK$m	2018 HK$m
Premises and equipment	**3,246**	8,208
– rental expenses	**794**	4,134
– other premises and equipment expenses	**2,452**	4,074
Marketing and advertising expenses	**2,815**	2,940
Other administrative expenses[1]	**38,708**	28,841
Year ended 31 Dec	**44,769**	39,989

1 *In 2019, over 8,500 employees performing shared services and operations in Hong Kong were transferred from the group to ServCo as part of recovery and resolution planning to provide services to the group. The group recognises management charges for the services provided by ServCo, which is reported under 'general administrative expenses'. For further details, please refer to note 33 'Related party transactions'.*

Included in operating expenses were direct operating expenses of HK$34m (2018: HK$35m) arising from investment properties that generated rental income in the year. Direct operating expenses arising from investment properties that did not generate rental income amounted to HK$2m (2018: HK$3m).

(g) Depreciation and impairment of property, plant and equipment

	2019	2018
	HK$m	HK$m
Owned property, plant and equipment	5,620	4,686
Other right-of-use assets[1]	2,610	N/A
Year ended 31 Dec	**8,230**	4,686

1 *The impact on right-of-use assets has been recognised from 1 January 2019 following the adoption of HKFRS 16. Comparatives have not been restated.*

(h) Auditors' remuneration

Auditors' remuneration amounted to HK$125m (2018: HK$125m).

3 Insurance business

Net insurance premium Income

	Non-linked insurance	Unit-linked	Total
	HK$m	HK$m	HK$m
Gross insurance premium income	69,719	1,381	71,100
Reinsurers' share of gross insurance premium income	(10,798)	(27)	(10,825)
Year ended 31 Dec 2019	**58,921**	**1,354**	**60,275**
Gross insurance premium income	63,462	1,586	65,048
Reinsurers' share of gross insurance premium income	(4,349)	(21)	(4,370)
Year ended 31 Dec 2018	59,113	1,565	60,678

Net insurance claims and benefits paid and movement in liabilities to policyholders

	Non-linked insurance	Unit-linked	Total
	HK$m	HK$m	HK$m
Gross claims and benefits paid and movement in liabilities to policyholders	84,921	5,910	90,831
– claims, benefits and surrenders paid	26,960	6,095	33,055
– movement in liabilities	57,961	(185)	57,776
Reinsurers' share of claims and benefits paid and movement in liabilities	(10,677)	2	(10,675)
– claims, benefits and surrenders paid	(2,658)	(107)	(2,765)
– movement in liabilities	(8,019)	109	(7,910)
Year ended 31 Dec 2019	**74,244**	**5,912**	**80,156**
Gross claims and benefits paid and movement in liabilities to policyholders	65,002	(3,080)	61,922
– claims, benefits and surrenders paid	27,086	7,598	34,684
– movement in liabilities	37,916	(10,678)	27,238
Reinsurers' share of claims and benefits paid and movement in liabilities	(4,155)	72	(4,083)
– claims, benefits and surrenders paid	(1,930)	(1,394)	(3,324)
– movement in liabilities	(2,225)	1,466	(759)
Year ended 31 Dec 2018	60,847	(3,008)	57,839

Liabilities under insurance contracts

	2019			2018		
	Gross	**Reinsurers' share[2]**	**Net**	Gross	Reinsurers' share[2]	Net
	HK$m	**HK$m**	**HK$m**	HK$m	HK$m	HK$m
Non-linked insurance						
At 31 Dec	**433,668**	**(17,758)**	**415,910**	391,348	(15,624)	375,724
Impact on transition to HKFRS 9	**N/A**	**N/A**	**N/A**	(535)	—	(535)
At 1 Jan	**433,668**	**(17,758)**	**415,910**	390,813	(15,624)	375,189
Claims and benefits paid	**(26,960)**	**2,658**	**(24,302)**	(27,086)	1,930	(25,156)
Increase/(decrease) in liabilities to policyholders	**84,921**	**(10,677)**	**74,244**	65,002	(4,155)	60,847
Exchange differences and other movements[1]	**2,552**	**(470)**	**2,082**	4,939	91	5,030
At 31 Dec	**494,181**	**(26,247)**	**467,934**	433,668	(17,758)	415,910
Unit-linked						
At 1 Jan	**34,921**	**(34)**	**34,887**	46,669	(110)	46,559
Claims and benefits paid	**(6,095)**	**107**	**(5,988)**	(7,598)	1,394	(6,204)
Increase/(decrease) in liabilities to policyholders	**5,910**	**2**	**5,912**	(3,080)	72	(3,008)
Exchange differences and other movements[1]	**(157)**	**(110)**	**(267)**	(1,070)	(1,390)	(2,460)
At 31 Dec	**34,579**	**(35)**	**34,544**	34,921	(34)	34,887
Total liabilities to policyholders	**528,760**	**(26,282)**	**502,478**	468,589	(17,792)	450,797

1 *'Exchange differences and other movements' includes movements in liabilities arising from net unrealised investment gains recognised in other comprehensive income.*
2 *Amounts recoverable from reinsurance of liabilities under insurance contracts are included in the consolidated balance sheet in 'Prepayment, accrued income and other assets'.*

The key factors contributing to the movement in liabilities to policyholders included movements in the market value of assets supporting policyholder liabilities, death claims, surrenders, lapses, liabilities to policyholders created at the initial inception of the policies, the declaration of bonuses and other amounts attributable to policyholders.

4 Employee compensation and benefits

	2019	2018
	HK$m	HK$m
Wages and salaries[1]	**34,674**	36,972
Social security costs	**1,264**	1,249
Post-employment benefits	**2,110**	2,572
– defined contribution pension plans	**1,516**	1,804
– defined benefit pension plans	**594**	768
Year ended 31 Dec[2]	**38,048**	40,793

1 *'Wages and salaries' includes the effect of share-based payments arrangements of HK$882m (2018: HK$968m).*
2 *In 2019, over 8,500 employees performing shared services and operations in Hong Kong were transferred from the group to ServCo as part of recovery and resolution planning to provide services to the group. The group recognises management charges for the services provided by ServCo, which is reported under 'general administrative expenses'. For further details, please refer to note 33 'Related party transactions'.*

Post-employment benefit plans

The group operates a number of post-employment benefit plans for its employees. 'Pension risk management' in the Risk section contains details of the policies and practices associated with these benefit plans. Some of these plans are defined benefit plans, of which the largest plan is The HSBC Group Hong Kong Local Staff Retirement Benefit Scheme (the 'Principal Plan').

The group's balance sheet includes the net surplus or deficit, being the difference between the fair value of plan assets and the discounted value of scheme liabilities at the balance sheet date for each plan. Surpluses are only recognised to the extent that they are recoverable through reduced contributions in the future or through potential future refunds from the schemes. In assessing whether a surplus is recoverable, the group has considered its current right to obtain a future refund or a reduction in future contributions.

Defined benefit pension plans

Net asset/(liability) under defined benefit pension plans

	Fair value of plan assets	Present value of defined benefit obligations	Net defined benefit liability
	HK$m	HK$m	HK$m
At 1 Jan 2019	**13,856**	**(17,197)**	**(3,341)**
Service cost	**–**	**(511)**	**(511)**
– current service cost	**–**	**(511)**	**(511)**
Net interest income/(expense) on the net defined benefit asset/(liability)	**206**	**(274)**	**(68)**
Re-measurement effects recognised in other comprehensive income	**927**	**(682)**	**245**
– return on plan assets (excluding interest income)	**927**	**–**	**927**
– actuarial losses	**–**	**(682)**	**(682)**
Contributions by the group	**391**	**–**	**391**
Benefits paid	**(1,290)**	**1,376**	**86**
Exchange differences and other movements[1]	**(3,788)**	**4,440**	**652**
At 31 Dec 2019	**10,302**	**(12,848)**	**(2,546)**
Retirement benefit liabilities recognised on the balance sheet			**(2,595)**
Retirement benefit assets recognised on the balance sheet (within 'Prepayment, accrued income and other assets')			**49**
At 1 Jan 2018	15,167	(17,308)	(2,141)
Service cost	–	(697)	(697)
– current service cost	–	(684)	(684)
– past service cost and gains/(losses) from settlements	–	(13)	(13)
Net interest income/(expense) on the net defined benefit asset/(liability)	289	(338)	(49)
Re-measurement effects recognised in other comprehensive income	(692)	(399)	(1,091)
– return on plan assets (excluding interest income)	(692)	–	(692)
– actuarial losses	–	(399)	(399)
Contributions by the group	576	–	576
Benefits paid	(1,404)	1,471	67
Exchange differences and other movements[1]	(80)	74	(6)
At 31 Dec 2018	13,856	(17,197)	(3,341)
Retirement benefit liabilities recognised on the balance sheet			(3,369)
Retirement benefit assets recognised on the balance sheet (within 'Prepayment, accrued income and other assets')			28

1 *Other movements in 2019 included the impact from transfer of employees from the group to HSBC Global Services (Hong Kong) Limited (the 'ServCo'), which is a fellow subsidiary of the Group.*

Fair value of plan assets by asset classes

	At 31 Dec 2019			At 31 Dec 2018		
	Value	**Quoted market price in active market**	**Thereof HSBC**	Value	Quoted market price in active market	Thereof HSBC
	HK$m	**HK$m**	**HK$m**	HK$m	HK$m	HK$m
Fair value of plan assets	**10,302**	**10,302**	**177**	13,856	13,856	454
– equities	**3,076**	**3,076**	**–**	3,519	3,519	–
– bonds	**6,034**	**6,034**	**–**	7,380	7,380	–
– other[1]	**1,192**	**1,192**	**177**	2,957	2,957	454

1 *Other mainly consists of alternative investments (previously included within equities and bonds) and cash and cash deposits. Comparatives have been re-presented to conform to current year's presentation.*

The Principal Plan

In Hong Kong, the HSBC Group Hong Kong Local Staff Retirement Benefit Scheme ('LSRBS'), the Principal Plan, covers employees of the Bank and HSBC Global Services (Hong Kong) Limited (the 'ServCo'), which is a fellow subsidiary of the Group set up in Hong Kong as part of the recovery and resolution planning to provide functional support services to the group, as well as certain other local employees of the Group. The Principal Plan comprises a funded defined benefit scheme (which provides a lump sum benefit on retirement and is now closed to new members) and a defined contribution scheme. The latter was established on 1 January 1999 for new employees, and the group has been providing defined contribution plans to all new employees. Since the defined benefit scheme of the Principal Plan is a final salary lump sum scheme, its exposure to longevity risk and interest rate risk is limited compared to a scheme that provides annuity payments.

The Principal Plan is a funded plan with assets which are held in trust funds separate from the group. The investment strategy of the defined benefit scheme of the Principal Plan is to hold the majority of assets in fixed income investments, with a smaller portion in equities. The target asset allocation for the portfolio has been updated in December 2019 to: Fixed income investments 75% and Equity 25% following an update to the investment strategy to de-risk the investment portfolio. Each investment manager has been assigned a benchmark applicable to their respective asset class. The actuarial funding valuation of the Principal Plan is conducted at least on a triennial basis in accordance with the local practice and regulations. The actuarial assumptions used to conduct the actuarial funding valuation of the Principal Plan vary according to the economic conditions.

The trustee, which is a subsidiary of the Bank, assumes the overall responsibility for the Principal Plan and the group has established a management committee and a number of sub-committees to broaden the governance and manage the concomitant issues.

During 2019, over 1,400 employees covered under the defined benefit scheme of the Principal Plan were transferred from the group to ServCo as part of the recovery and resolution planning. There were no changes to employment terms and conditions or retirement benefits as a result of these transfers. Both the group and ServCo participate in the Principal Plan that shares risks between the entities which are under common control of the Group. As agreed between the group and ServCo, the net defined benefit cost of the defined benefit scheme of the Principal Plan shall be charged separately. Details on the defined benefit scheme of the Principal Plan are disclosed below.

Net asset/(liability) under the defined benefit scheme of the Principal Plan

	Included within HBAP			Included within ServCo		
	Fair value of plan assets	Present value of defined benefit obligations	Net defined benefit liability	Fair value of plan assets	Present value of defined benefit obligations	Net defined benefit liability
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
At 1 Jan 2019	**8,402**	**(9,749)**	**(1,347)**	**478**	**(618)**	**(140)**
Service cost	**—**	**(194)**	**(194)**	**—**	**(182)**	**(182)**
– current service cost	**—**	**(194)**	**(194)**	**—**	**(182)**	**(182)**
Net interest income/(expense) on the net defined benefit asset/(liability)	**68**	**(80)**	**(12)**	**63**	**(73)**	**(10)**
Re-measurement effects recognised in other comprehensive income	**390**	**(255)**	**135**	**416**	**(168)**	**248**
– return on plan assets (excluding interest income)	**390**	**—**	**390**	**416**	**—**	**416**
– actuarial losses	**—**	**(255)**	**(255)**	**—**	**(168)**	**(168)**
Contributions by the group	**198**	**—**	**198**	**184**	**—**	**184**
Benefits paid	**(637)**	**637**	**—**	**(460)**	**460**	**—**
Exchange differences and other movements[1]	**(3,767)**	**4,389**	**622**	**3,764**	**(4,379)**	**(615)**
At 31 Dec 2019	**4,654**	**(5,252)**	**(598)**	**4,445**	**(4,960)**	**(515)**
Retirement benefit liabilities recognised on the balance sheet			**(598)**			**(515)**
At 1 Jan 2018	9,094	(10,096)	(1,002)	510	(640)	(130)
Service cost	—	(372)	(372)	—	(25)	(25)
– current service cost	—	(372)	(372)	—	(25)	(25)
Net interest income/ (expense) on the net defined benefit asset/(liability)	153	(167)	(14)	9	(11)	(2)
Re-measurement effects recognised in other comprehensive income	(386)	70	(316)	(22)	17	(5)
– return on plan assets (excluding interest income)	(386)	—	(386)	(22)	—	(22)
– actuarial gains	—	70	70	—	17	17
Contributions by the group	373	—	373	23	—	23
Benefits paid	(832)	832	—	(42)	42	—
Exchange differences and other movements	—	(16)	(16)	—	(1)	(1)
At 31 Dec 2018	8,402	(9,749)	(1,347)	478	(618)	(140)
Retirement benefit liabilities recognised on the balance sheet			(1,347)			(140)

1 *Other movements in 2019 included the impact from transfer of employees from the group to ServCo.*

The group expects to make HK$402m of contributions to the defined benefit scheme of the Principal Plan during 2020, which is determined separately for the group and ServCo by reference to the actuarial funding valuation carried out by the Principal Plan's local actuary.

Benefits expected to be paid from the defined benefit scheme of the Principal Plan over each of the next five years, and in aggregate for the five years thereafter, are as follows:

Benefits expected to be paid from the defined benefit scheme of the Principal Plan[1]

	2020	2021	2022	2023	2024	2025-2029
As reported by:	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
– HBAP	377	650	545	507	438	1,926
– ServCo	332	475	546	366	411	1,987

1 *The duration of the defined benefit obligation is seven years for the Principal Plan under the disclosure assumptions adopted (2018: seven years).*

Fair value of plan assets of the defined benefit scheme of the Principal Plan by asset classes

	At 31 Dec 2019			At 31 Dec 2018		
	Value	Quoted market price in active market	Thereof HSBC	Value	Quoted market price in active market	Thereof HSBC
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
Fair value of plan assets	9,099	9,099	66	8,880	8,880	348
– equities	2,228	2,228	–	2,234	2,234	–
– bonds	5,433	5,433	–	4,228	4,228	–
– other[1]	1,438	1,438	66	2,418	2,418	348

1 *Other mainly consists of alternative investments and cash and cash deposits.*

The Principal Plan's key actuarial financial assumptions

The group determines the discount rate to be applied to the defined benefit scheme's obligations in consultation with the Principal Plan's local actuary, on the basis of the current average yields of Hong Kong Government bonds and Hong Kong Exchange Fund Notes, with maturities consistent with that of the defined benefit obligations.

The key actuarial assumptions used to calculate the group's obligations for the defined benefit scheme of the Principal Plan for the year, and used as the basis for measuring the expenses were as follows:

Key actuarial assumptions for the defined benefit scheme of the Principal Plan

	Discount rate	Rate of pay increase	Mortality table
	% p.a.	% p.a.	
At 31 Dec 2019	1.75	3.00	HKLT 2018[1]
At 31 Dec 2018	1.95	3.00	HKLT 2017[2]

1 *HKLT 2018 – Hong Kong Life Tables 2018.*
2 *HKLT 2017 – Hong Kong Life Tables 2017.*

Actuarial assumption sensitivities

The discount rate and rate of pay increase are sensitive to changes in market conditions arising during the reporting period. The following table shows the financial impact of assumption changes on the defined benefit scheme of the Principal Plan at year end:

The effect of changes in key assumptions on the defined benefit scheme of the Principal Plan

	Impact on HSBC Group Hong Kong Local Staff Retirement Benefit Scheme obligation			
	Financial impact of increase		Financial impact of decrease	
	2019	2018	2019	2018
	HK$m	HK$m	HK$m	HK$m
Discount rate – increase/decrease of 0.25%	(173)	(179)	178	185
Pay – increase/decrease of 0.25%	183	189	(178)	(184)

Directors' emoluments

The aggregate emoluments of the Directors of the Bank disclosed pursuant to section 4 of the Companies (Disclosure of Information about Benefits of Directors) Regulation were HK$110m (2018: HK$115m). This comprises fees of HK$11m (2018: HK$10m) and other emoluments of HK$99m (2018: HK$105m) which includes contributions to pension schemes of HK$1m (2018: HK$1m). Non-cash benefits which are included in other emoluments mainly relate to share-based payment awards, and the provision of housing and furnishing. Details on loans to directors are set out in note 33.

5 Tax

The Bank and its subsidiaries in Hong Kong have provided for Hong Kong profits tax at the rate of 16.5% (2018: 16.5%) on the profits for the year assessable in Hong Kong. Overseas branches and subsidiaries have similarly provided for tax in the countries in which they operate at the appropriate rates of tax in force in 2019. Deferred taxation is provided for in accordance with the group's accounting policy in note 1.2(m).

Tax expense

	2019	2018
	HK$m	HK$m
Current tax	**19,461**	20,413
– Hong Kong taxation – on current year profit	**11,058**	12,155
– Hong Kong taxation – adjustments in respect of prior years	**(7)**	(11)
– overseas taxation – on current year profit	**8,813**	8,471
– overseas taxation – adjustments in respect of prior years	**(403)**	(202)
Deferred tax	**1,932**	2,054
– origination and reversal of temporary differences	**1,975**	1,938
– effect of changes in tax rates	**—**	62
– adjustments in respect of prior years	**(43)**	54
Year ended 31 Dec	**21,393**	22,467

Tax reconciliation

The tax charged to the income statement differs from the tax charge that would apply if all profits had been taxed at the applicable tax rates in the countries concerned as follows:

Reconciliation between taxation charge and accounting profit at applicable tax rates

	2019	2018
	HK$m	HK$m
Profit before tax	**136,433**	134,583
Notional tax on profit before tax, calculated at the rates applicable to profits in the countries concerned	**25,855**	25,232
Effects of profits in associates and joint ventures	**(2,676)**	(2,683)
Non-taxable income and gains	**(3,969)**	(3,412)
Local taxes and overseas withholding taxes	**2,503**	1,470
Permanent disallowables	**606**	1,132
Others	**(926)**	728
Year ended 31 Dec	**21,393**	22,467

Movements of deferred tax assets and liabilities

	Accelerated capital allowances	Insurance business	Expense provisions	Impairment allowance on financial instruments	Revaluation of properties	Other	Total
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
At 31 Dec 2018	**(472)**	**(8,057)**	**1,419**	**1,314**	**(13,673)**	**(2,729)**	**(22,198)**
Impact on transition to HKFRS 16	**–**	**–**	**–**	**–**	**(2,664)**	**–**	**(2,664)**
At 1 Jan 2019	**(472)**	**(8,057)**	**1,419**	**1,314**	**(16,337)**	**(2,729)**	**(24,862)**
Exchange and other adjustments	**(1)**	**–**	**7**	**(107)**	**25**	**118**	**42**
Charge/(credit) to income statement	**324**	**(2,083)**	**(138)**	**271**	**603**	**(909)**	**(1,932)**
Charge/(credit) to other comprehensive income	**–**	**–**	**2**	**–**	**(753)**	**(207)**	**(958)**
At 31 Dec 2019	**(149)**	**(10,140)**	**1,290**	**1,478**	**(16,462)**	**(3,727)**	**(27,710)**
Assets[1]	**183**	**–**	**1,290**	**1,478**	**–**	**2,280**	**5,231**
Liabilities[1]	**(332)**	**(10,140)**	**–**	**–**	**(16,462)**	**(6,007)**	**(32,941)**
At 31 Dec 2017	(658)	(7,417)	1,296	491	(13,667)	(2,281)	(22,236)
Impact on transition to HKFRS 9	(2)	103	(2)	873	–	1,321	2,293
At 1 Jan 2018	(660)	(7,314)	1,294	1,364	(13,667)	(960)	(19,943)
Exchange and other adjustments	3	27	(60)	117	1,484	51	1,622
Charge/(credit) to income statement	185	(770)	185	(167)	310	(1,797)	(2,054)
Charge/(credit) to other comprehensive income	–	–	–	–	(1,800)	(23)	(1,823)
At 31 Dec 2018	(472)	(8,057)	1,419	1,314	(13,673)	(2,729)	(22,198)
Assets[1]	111	–	1,419	1,314	–	1,870	4,714
Liabilities[1]	(583)	(8,057)	–	–	(13,673)	(4,599)	(26,912)

1 *After netting off balances within countries, the balances as disclosed in the Consolidated Financial Statements are as follows: deferred tax assets HK$2,179m (2018: HK$2,315m); and deferred tax liabilities HK$29,889m (2018: HK$24,513m).*

The amount of unused tax losses for which no deferred tax asset is recognised in the balance sheet is HK$3,497m (2018: HK$3,626m). Of this amount, HK$1,939m (2018: HK$1,950m) has no expiry date and the remaining will expire within 10 years.

Deferred tax of HK$3,197m (2018: HK$2,261m) has been provided in respect of distributable reserves or post-acquisition reserves of associates that, on distribution or sale, would attract withholding tax.

Deferred tax is not recognised in respect of the group's investments in subsidiaries and branches where remittance or other realisation is not probable, and for those associates and interests in joint ventures where it has been determined that no additional tax will arise.

6 Dividends

Dividends to shareholders of the parent company

	2019		2018	
	HK$ per share	**HK$m**	HK$ per share	HK$m
Dividends paid on ordinary shares				
In respect of previous year:				
– fourth interim dividend	**0.47**	**21,958**	0.36	16,559
In respect of current year:				
– first interim dividend paid	**0.32**	**14,963**	0.22	10,000
– second interim dividend paid	**0.32**	**14,963**	0.22	10,000
– third interim dividend paid	**0.32**	**14,963**	0.22	10,000
Total	**1.43**	**66,847**	1.02	46,559
Distributions on other equity instruments		**1,522**		881
Dividends to shareholders		**68,369**		47,440

The Directors have declared a fourth interim dividend in respect of the financial year ended 31 December 2019 of HK$0.58 per ordinary share (HK$27,026m) (2018: HK$0.47 per ordinary share (HK$21,958m)).

Total coupons on capital securities classified as equity

	2019	2018
	HK$m	HK$m
US$1,900m Floating rate perpetual subordinated loans (interest rate at one year US dollar LIBOR plus 3.84%)[1]	**497**	881
US$1,400m Floating rate perpetual subordinated loans (interest rate at three months US dollar LIBOR plus 3.51%)[1]	**373**	–
US$600m Floating rate perpetual subordinated loan (interest rate at three months US dollar LIBOR plus 3.62%)[1]	**178**	–
US$700m Floating rate perpetual subordinated loan (interest rate at three months US dollar LIBOR plus 4.98%)[1]	**214**	–
US$900m Fixed rate perpetual subordinated loan (interest rate fixed at 6.51%)[2]	**150**	–
US$900m Fixed rate perpetual subordinated loan (interest rate fixed at 6.03%)[2]	**110**	–
Total	**1,522**	881

1 *These subordinated loans were early repaid in the first half of 2019 and distributions were made on repayment.*
2 *These subordinated loans were issued in May and June 2019.*

7 Trading assets

	2019	2018
	HK$m	HK$m
Treasury and other eligible bills	**131,967**	140,050
Debt securities	**281,555**	283,506
Equity securities	**177,463**	119,475
Other[1]	**31,776**	15,807
At 31 Dec	**622,761**	558,838

1 *'Other' includes reverse repos, stock borrowing and other accounts with banks and customers.*

8 Derivatives

Notional contract amounts and fair values of derivatives by product contract type

	Notional contract amount		**Fair value – Assets**			**Fair value – Liabilities**		
	Trading	**Hedging**	**Trading**	**Hedging**	**Total**	**Trading**	**Hedging**	**Total**
	HK$m	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**
Foreign Exchange	**20,494,866**	**75,324**	**150,019**	**800**	**150,819**	**164,831**	**279**	**165,110**
Interest rate	**30,656,367**	**342,609**	**236,110**	**3,436**	**239,546**	**226,951**	**3,495**	**230,446**
Equity	**657,760**	**—**	**13,666**	**—**	**13,666**	**17,751**	**—**	**17,751**
Credit	**664,590**	**—**	**6,500**	**—**	**6,500**	**7,170**	**—**	**7,170**
Commodity and other	**140,553**	**—**	**2,983**	**—**	**2,983**	**4,626**	**—**	**4,626**
Gross total	**52,614,136**	**417,933**	**409,278**	**4,236**	**413,514**	**421,329**	**3,774**	**425,103**
Offset					**(132,872)**			**(132,872)**
At 31 Dec 2019					**280,642**			**292,231**
Foreign Exchange	21,492,856	91,274	187,746	909	188,655	186,776	1,529	188,305
Interest rate	32,926,700	365,130	196,720	2,924	199,644	197,904	2,790	200,694
Equity	574,411	—	17,302	—	17,302	18,619	—	18,619
Credit	926,082	—	5,967	—	5,967	5,904	—	5,904
Commodity and other	112,386	—	1,710	—	1,710	2,440	—	2,440
Gross total	56,032,435	456,404	409,445	3,833	413,278	411,643	4,319	415,962
Offset					(120,409)			(120,409)
At 31 Dec 2018					292,869			295,553

Use of derivatives

The group transacts derivatives for three primary purposes: to create risk management solutions for clients, to manage the portfolio risk arising from client business, and to manage and hedge the group's own risks. Derivatives (except for derivatives which are designated as effective hedging instruments) are held for trading. Within the held for trading classification are two types of derivative instruments: those used in sales and trading activities, and those used for risk management purposes but which for various reasons do not meet the qualifying criteria for hedge accounting. The second category includes derivatives managed in conjunction with financial instruments designated at fair value. These activities are described more fully below.

The group's derivative activities give rise to significant open positions in portfolios of derivatives. These positions are managed constantly to ensure that they remain within acceptable risk levels. When entering into derivative transactions, the group employs the same credit risk management framework to assess and approve potential credit exposures that it uses for traditional lending.

Trading derivatives

Most of the group's derivative transactions relate to sales and trading activities. Sales activities include the structuring and marketing of derivative products to customers to enable them to take, transfer, modify or reduce current or expected risks. Trading activities include market-making and risk management. Market-making entails quoting bid and offer prices to other market participants for the purpose of generating revenues based on spread and volume. Risk management activity is undertaken to manage the risk arising from client transactions, with the principal purpose of retaining client margin. Other derivatives classified as held for trading include non-qualifying hedging derivatives.

Derivatives valued using models with unobservable inputs

Any initial gain or loss on financial instruments where the valuation is dependent on unobservable parameters is deferred over the life of the contract or until the instrument is redeemed, transferred or sold or the fair value becomes observable. All derivatives that are part of qualifying hedging relationships have valuations based on observable market parameters.

The aggregate unobservable inception profit yet to be recognised in the income statement is immaterial.

Hedge accounting derivatives

The group applies hedge accounting to manage the following risks: interest rate, foreign exchange and net investment in foreign operations. The group uses derivatives (principally interest rate and currency swaps) for hedging purposes in the management of its own asset and liability portfolios and structural positions. This enables the group to optimise the overall costs to the group of accessing debt capital markets, and to mitigate the market risk which would otherwise arise from structural imbalances in the maturity and other profiles of its assets and liabilities. The accounting treatment of hedging transactions varies according to the nature of the instrument hedged and the type of hedging transaction. Derivatives may qualify as hedges for accounting purposes if they are fair value hedges, cash flow hedges, or hedges of net investments in foreign operations.

Fair value hedges

The group enters into to fixed-for-floating-interest-rate swaps to manage the exposure to changes in fair value due to movements in market interest rates on certain fixed rate financial instruments which are not measured at fair value through profit or loss, including debt securities held and issued.

Sources of hedge ineffectiveness may arise from basis risk including but not limited to the discount rates used for calculating the fair value of derivatives, hedges using instruments with a non-zero fair value and notional and timing differences between the hedged items and hedging instruments.

For some debt securities held, the group manages interest rate risk in a dynamic risk management strategy. The assets in scope of this strategy are high quality fixed-rate debt securities, which may be sold to meet liquidity and funding requirements.

The interest rate risk of the group's fixed rate debt securities issued is managed in a non-dynamic risk management strategy.

Cash flow hedges

The group's cash flow hedging instruments consist principally of interest rate swaps and cross-currency swaps that are used to manage the variability in future interest cash flows of non-trading financial assets and liabilities, arising due to changes in market interest rates and foreign-currency basis.

The group applies macro cash flow hedging for interest-rate risk exposures on portfolios of replenishing current and forecasted issuances of non-trading assets and liabilities that bear interest at variable rates, including rolling such instruments. The amounts and timing of future cash flows, representing both principal and interest flows, are projected for each portfolio of financial assets and liabilities on the basis of their contractual terms and other relevant factors, including estimates of prepayments and defaults. The aggregate cash flows representing both principal balances and interest cash flows across all portfolios are used to determine the effectiveness and ineffectiveness. Macro cash flow hedges are considered to be dynamic hedges.

The group also hedges the variability in future cash-flows on foreign-denominated financial assets and liabilities arising due to changes in foreign exchange market rates with cross-currency swaps; these are considered non-dynamic hedges.

Interest rate benchmark reform: Amendments to HKFRS 9 and HKAS 39 'Financial Instruments'

Following the request received by the Financial Stability Board from the G20, a fundamental review and reform of the major interest rate benchmarks is under way across the world's largest financial markets. This reform was not contemplated when HKAS 39 was published, and consequently, the International Accounting Standards Board has published a set of temporary exceptions from applying specific hedge accounting requirements to provide clarification on how the standard should be applied in these circumstances.

Amendments to HKFRS 9 and HKAS 39 were issued in November 2019 and modify specific hedge accounting requirements. Under these temporary exceptions, Inter-Bank Offered Rates ('IBORs') are assumed to continue unaltered for the purposes of hedge accounting until such time as the uncertainty is resolved.

The application of this set of temporary exceptions is mandatory for accounting periods starting on or after 1 January 2020, but early adoption is permitted and the group has elected to apply these exceptions for the year ended 31 December 2019. Significant judgement will be required in determining when uncertainty is expected to be resolved and therefore when the temporary exceptions will cease to apply. However, at 31 December 2019, the uncertainty continued to exist and so the temporary exceptions apply to all of the group's hedge accounting relationships that reference benchmarks subject to reform or replacement.

The group has cash flow and fair value hedge accounting relationships that are exposed to different IBORs, predominantly US dollar Libor. Derivatives, loans, bonds, and other financial instruments designated in relationships referencing these benchmarks will transition to new risk-free rates ('RFRs') in different ways and at different times. External progress on the transition to RFRs is being monitored, with the objective of ensuring a smooth transition for the group's hedge accounting relationships. The specific issues arising will vary with the details of each hedging relationship, but may arise due to the transition of existing products included in the designation, a change in expected volumes of products to be issued, a change in contractual terms of new products issued, or a combination of these factors. Some hedges may need to be de-designated and new relationships entered into, while others may survive the market-wide benchmarks reform.

The hedge accounting relationships that are affected by the adoption of the temporary exceptions hedge items presented in the balance sheet as 'Financial investments', 'Loans and advances to customers', 'Debt securities in issue', and 'Deposits by banks'.

At 31 December 2019, HK$252,443 million of the notional amounts of interest rate derivatives designated in hedge accounting relationships represent the extent of the risk exposure managed by the group that is directly affected by market-wide benchmarks reform and impacted by the temporary exceptions. The group has also designated hedge accounting relationships which involve cross currency swaps, although the amount is not significant.

The notional contract amounts of interest rate derivatives designated in qualifying hedge accounting relationships indicate the nominal value of transactions outstanding at the balance sheet date; they do not represent amounts at risk.

Risks and governance regarding the impact of the market-wide benchmarks reform is set out in the Risk section of the *Annual Report and Accounts 2019*.

9 Financial assets designated and otherwise mandatorily measured at fair value through profit or loss

	2019			2018		
	Designated at fair value	**Mandatorily measured at fair value**	**Total**	Designated at fair value	Mandatorily measured at fair value	Total
	HK$m	**HK$m**	**HK$m**	HK$m	HK$m	HK$m
Treasury and other eligible bills	**—**	**234**	**234**	107	220	327
Debt securities	**13,350**	**6,733**	**20,083**	13,380	6,134	19,514
Equity securities	**—**	**120,047**	**120,047**	—	99,836	99,836
Other[1]	**—**	**13,147**	**13,147**	—	13,182	13,182
At 31 Dec	**13,350**	**140,161**	**153,511**	13,487	119,372	132,859

1 *'Other' primarily includes loans and advance to banks and customers.*

10 Loans and advances to customers

	2019	2018
	HK$m	HK$m
Gross loans and advances to customers	**3,738,269**	3,545,258
Expected credit loss allowances	**(17,394)**	(16,556)
At 31 Dec	**3,720,875**	3,528,702

The following table provides an analysis of gross loans and advances to customers by industry sector based on the Statistical Classification of economic activities in the European Community ('NACE').

Analysis of gross loans and advances to customers

	2019	2018
	HK$m	HK$m
Residential mortgages	**1,027,087**	937,666
Credit card advances	**94,582**	93,200
Other personal	**281,087**	236,133
Total personal	**1,402,756**	1,266,999
Real estate	**666,380**	626,120
Wholesale and retail trade	**418,669**	433,734
Manufacturing	**418,822**	424,813
Transportation and storage	**86,912**	95,773
Other	**494,416**	484,186
Total corporate and commercial	**2,085,199**	2,064,626
Non-bank financial institutions	**250,314**	213,633
At 31 Dec	**3,738,269**	3,545,258
By geography[1]		
Hong Kong	**2,399,867**	2,282,909
Rest of Asia Pacific	**1,338,402**	1,262,349

1 *The geographical information shown above is classified by the location of the principal operations of the subsidiary or the branch responsible for advancing the funds.*

Finance lease receivables and hire purchase contracts

The group leases a variety of assets to third parties under finance leases. At the end of lease terms, assets may be sold to third parties or leased for further terms. Rentals are calculated to recover the cost of assets less their residual value, and earn finance income. Loans and advances to customers include receivables under finance leases and hire purchase contracts having the characteristics of finance leases.

Net investment in finance leases and hire purchase contracts

	2019			2018		
	Total future minimum payments	**Unearned finance income**	**Present value**	Total future minimum payments	Unearned finance income	Present value
	HK$m	**HK$m**	**HK$m**	HK$m	HK$m	HK$m
Amounts receivable						
– within one year	**3,214**	**(639)**	**2,575**	2,990	(640)	2,350
– after one year but within five years	**N/A**	**N/A**	**N/A**	8,622	(2,097)	6,525
– one to two years	**2,955**	**(572)**	**2,383**	N/A	N/A	N/A
– two to three years	**2,593**	**(529)**	**2,064**	N/A	N/A	N/A
– three to four years	**2,204**	**(496)**	**1,708**	N/A	N/A	N/A
– four to five years	**1,936**	**(464)**	**1,472**	N/A	N/A	N/A
– after five years	**23,195**	**(3,567)**	**19,628**	23,346	(3,819)	19,527
	36,097	**(6,267)**	**29,830**	34,958	(6,556)	28,402
Expected credit loss allowances			**(175)**			(117)
At 31 Dec			**29,655**			28,285

11 Financial investments

	2019	2018
	HK$m	HK$m
Financial investments measured at fair value through other comprehensive income	**1,465,998**	1,503,625
– treasury and other eligible bills	**606,738**	660,871
– debt securities	**850,623**	836,896
– equity securities	**8,637**	5,858
Debt instruments measured at amortised cost	**434,300**	367,401
– treasury and other eligible bills	**5,049**	3,624
– debt securities	**429,251**	363,777
At 31 Dec	**1,900,298**	1,871,026

Equity instruments measured at fair value through other comprehensive income

	2019		2018	
	Fair value	**Dividends recognised**	Fair value	Dividends recognised
Type of equity instruments	**HK$m**	**HK$m**	HK$m	HK$m
Business facilitation	**7,906**	**141**	5,137	155
Investments required by central institutions	**376**	**7**	356	3
Others	**355**	**5**	365	5
At 31 Dec	**8,637**	**153**	5,858	163

12 Assets pledged, assets transferred and collateral received

Assets pledged

Financial assets pledged to secure liabilities

	2019	2018
	HK$m	HK$m
Treasury bills and other eligible securities	88,365	66,706
Loans and advances to banks	228	893
Loans and advances to customers	12,806	15,813
Debt securities	76,019	65,784
Equity securities	11,648	3,894
Other	52,473	42,598
Assets pledged at 31 Dec	**241,539**	**195,688**
Amount of liabilities secured	208,436	162,036

The table above shows assets where a charge has been granted to secure liabilities on a legal and contractual basis. These transactions are conducted under terms that are usual and customary to collateralised transactions including sale and repurchase agreements, securities lending, derivative margining, and include assets pledged to cover short positions and to facilitate settlement processes with clearing houses.

Hong Kong currency notes in circulation are secured by the deposit of funds in respect of which the Hong Kong Government certificates of indebtedness are held.

Financial assets pledged as collateral which the counterparty has the right to sell or repledge was HK$63,194m (2018: HK$54,953m).

Assets transferred

Transferred financial assets not qualifying for full derecognition and associated financial liabilities

	2019		2018	
	Carrying amount of:		Carrying amount of:	
	Transferred assets	Associated liabilities	Transferred assets	Associated liabilities
	HK$m	HK$m	HK$m	HK$m
Repurchase agreements	98,929	94,296	70,492	59,118
Securities lending agreements	15,270	114	6,702	870
	114,199	94,410	77,194	59,988

The financial assets shown above include amounts transferred to third parties that do not qualify for derecognition, notably debt securities held by counterparties as collateral under repurchase agreements and equity securities lent under securities lending agreements. As the substance of these transactions is secured borrowings, the collateral assets continue to be recognised in full and the related liabilities, reflecting the group's obligation to repurchase the transferred assets for a fixed price at a future date, are also recognised on the balance sheet. As a result of these transactions, the group is unable to use, sell or pledge the transferred assets for the duration of the transactions. The group remains exposed to interest rate risk, credit risk and market risk on these pledged instruments. The counterparty's recourse is not limited to the transferred assets.

Collateral received

Assets accepted as collateral relate primarily to standard securities lending, reverse repurchase agreements and derivative margining. These transactions are conducted under terms that are usual and customary to standard securities lending, reverse repurchase agreements and derivative margining.

Fair value of collateral accepted as security for assets

	2019	2018
	HK$m	HK$m
Fair value of collateral permitted to sell or repledge in the absence of default	556,634	512,242
Fair value of collateral actually sold or repledged	95,154	112,832

13 Investments in subsidiaries

Main subsidiaries of the Bank

	Place of incorporation	Principal activity	The group's interest in issued share capital/ registered or charter capital
Hang Seng Bank Limited	Hong Kong	Banking	62.14%
HSBC Bank (China) Company Limited	People's Republic of China	Banking	100%
HSBC Bank Malaysia Berhad	Malaysia	Banking	100%
HSBC Bank Australia Limited[1]	Australia	Banking	100%
HSBC Bank (Taiwan) Limited[1]	Taiwan	Banking	100%
HSBC Bank (Singapore) Limited	Singapore	Banking	100%
HSBC Life (International) Limited[1]	Bermuda	Retirement benefits and life insurance	100%

1 *Held indirectly.*

All the above subsidiaries are included in the group's consolidated financial statements. All these subsidiaries make their financial statements up to 31 December.

The principal places of business are the same as the places of incorporation except for HSBC Life (International) Limited which operates mainly in Hong Kong.

The proportion of voting rights held is the same as the proportion of ownership interest held.

The main subsidiaries are regulated banking and insurance entities in the Asia-Pacific region and, as such, are required to maintain certain minimum levels of capital and liquid assets to support their operations. The effect of these regulatory requirements is to limit the extent to which the subsidiaries may transfer funds to the Bank in the form of repayment of shareholder loans or cash dividends.

Subsidiary with significant non-controlling interest

	2019	2018
Hang Seng Bank Limited		
Proportion of ownership interests and voting rights held by non-controlling interests	**37.86%**	37.86%
	HK$m	HK$m
Profit attributable to non-controlling interests	**9,386**	9,144
Accumulated non-controlling interests of the subsidiary	**63,363**	58,750
Dividends paid to non-controlling interests	**5,646**	5,066
Summarised financial information (before intra-group eliminations):		
– total assets	**1,676,721**	1,571,297
– total liabilities	**1,497,804**	1,409,190
– net operating income before change in expected credit losses and other credit impairment charges	**43,549**	41,493
– profit for the year	**24,822**	24,188
– other comprehensive income for the year	**2,376**	400
– total comprehensive income for the year	**27,198**	24,588

14 Interests in associates and joint ventures

Associates

	2019	2018
	HK$m	HK$m
Share of net assets	**148,154**	139,052
Goodwill	**3,787**	3,857
Impairment	**(24)**	(24)
At 31 Dec	**151,917**	142,885

The above balance represented the group's interests in associates.

Principal associate

	Place of incorporation	The group's interest in issued share capital
Bank of Communications Co., Limited	People's Republic of China	19.03%

Bank of Communications Co., Ltd. is listed on recognised stock exchanges. The fair value represents valuation based on the quoted market price of the shares held (Level 1 in the fair value hierarchy) and amounted to HK$78,311m at 31 December 2019 (2018: HK$86,086m).

Bank of Communications Co., Limited ('BoCom')

The group's investment in BoCom is classified as an associate. Significant influence in BoCom was established via representation on BoCom's Board of Directors and participation in a Technical Cooperation and Exchange Programme ('TCEP'). Under the TCEP, a number of HSBC staff have been seconded to assist in the maintenance of BoCom's financial and operating policies. Investments in associates are recognised using the equity method of accounting in accordance with HKAS 28 whereby the investment is initially recognised at cost and adjusted thereafter for the post-acquisition change in the group's share of BoCom's net assets. An impairment test is required if there is any indication of impairment.

Impairment testing

At 31 December 2019, the fair value of the group's investment in BoCom had been below the carrying amount for approximately eight years. As a result, the group performed an impairment test on the carrying amount, which confirmed that there was no impairment at 31 December 2019 as the recoverable amount as determined by a value-in-use ('VIU') calculation was higher than the carrying value.

	At					
	31 Dec 2019			31 Dec 2018		
	VIU	**Carrying value**	**Fair value**	VIU	Carrying value	Fair value
	HK$bn	**HK$bn**	**HK$bn**	HK$bn	HK$bn	HK$bn
BoCom	**167.8**	**148.4**	**78.3**	141.3	139.6	86.1

In future periods, the VIU may increase or decrease depending on the effect of changes to model inputs. The main model inputs are described below and are based on factors observed at period-end. The factors that could result in a change in the VIU and an impairment include a short-term under-performance by BoCom, a change in regulatory capital requirements, or an increase in uncertainty regarding the future performance of BoCom resulting in a downgrade of the future asset growth or profitability. An increase in the discount rate as a result of an increase in the risk premium or risk-free rates could also result in a reduction of VIU and an impairment. At the point where the carrying value exceeds the VIU, impairment would be recognised.

If the group did not have significant influence in BoCom, the investment would be carried at fair value rather than the current carrying value.

Basis of recoverable amount

The impairment test was performed by comparing the recoverable amount of BoCom, determined by a VIU calculation, with its carrying amount. The VIU calculation uses discounted cash flow projections based on management's best estimates of future earnings available to ordinary shareholders prepared in accordance with HKAS 36. Significant management judgement is required in arriving at the best estimate. There are two main components to the VIU calculation. The first component is management's best estimate of BoCom's earnings which is based on explicit forecasts over the short to medium term. This results in forecast earnings growth that is lower than recent historical actual growth and also reflects the uncertainty arising from the current economic outlook. Earnings beyond the short to medium term are then extrapolated in perpetuity using a long-term growth rate to derive a terminal value, which comprises the majority of the VIU. The second component is the capital maintenance charge ('CMC') which is management's forecast of the earnings that need to be withheld in order for BoCom to meet regulatory capital requirements over the forecast period (i.e. CMC is deducted when arriving at management's estimate of future earnings available to ordinary shareholders). The principal inputs to the CMC calculation include estimates of asset growth, the ratio of risk-weighted assets to total assets, and the expected minimum regulatory capital requirements. An increase in the CMC as a result of a change to these principal inputs would reduce VIU. Additionally, management considers other factors (including qualitative factors) to ensure that the inputs to the VIU calculation remain appropriate.

Key assumptions in value-in-use calculation

We used a number of assumptions in our VIU calculation, in accordance with the requirements of HKAS 36:

- Long-term profit growth rate: 3% (2018: 3%) for periods after 2023, which does not exceed forecast GDP growth in mainland China and is consistent with forecasts by external analysts.
- Long-term asset growth rate: 3% (2018: 3%) for periods after 2023, which is the rate that assets are expected to grow to achieve long-term profit growth of 3%.
- Discount rate: 11.24% (2018: 11.82%) which is based on a Capital Asset Pricing Model ('CAPM') calculation for BoCom, using market data. Management also compares the rate derived from the CAPM with discount rates from external sources. The discount rate used is within the range of 10.0% to 15.0% (2018: 10.4% to 15.0%) indicated by external sources.
- Expected credit losses as a percentage of customer advances: 0.95% (2018: ranges from 0.73% to 0.79%) in the short to medium term and reflect increases due to the US-China trade tensions and BoCom's actual results. For periods after 2023, the ratio is 0.76% (2018: 0.70%). This ratio was increased to provide greater weighting to the most recent data points and analyst forecasts.
- Risk-weighted assets as a percentage of total assets: 61% (2018: 62%) for all forecast periods. This is consistent with BoCom's actual results and slightly higher than the forecasts disclosed by external analysts.
- Cost-income ratio: ranges from 37.1% to 38.8% (2018: 38.7% to 39.0%) in the short to medium term. This is slightly above BoCom's actual results in recent years and within the range of forecasts disclosed by external analysts.
- Effective tax rate: ranges from 12.0% to 17.0% (2018: 13.8% to 22.3%) in the short to medium term reflecting BoCom's actual results and an expected increase towards the long-term assumption. For periods after 2023, the rate is 22.5% (2018: 22.5%) which is slightly higher than the historical average.
- Capital requirements: Capital adequacy ratio: 11.5% (2018: 11.5%) and Tier 1 capital adequacy ratio: 9.5% (2018: 9.5%), based on the minimum regulatory requirements.

The following table shows the change to each key assumption in the VIU calculation that on its own would reduce the headroom to nil:

Key assumption	Changes to key assumption to reduce headroom to nil
• Long-term profit growth rate	• Decrease by 96 basis points
• Long-term asset growth rate	• Increase by 78 basis points
• Discount rate	• Increase by 118 basis points
• Expected credit losses as a percentage of customer advances	• Increase by 15 basis points
• Risk-weighted assets as a percentage of total assets	• Increase by 607 basis points
• Cost-income ratio	• Increase by 363 basis points
• Long-term effective tax rate	• Increase by 875 basis points
• Capital requirements – capital adequacy ratio	• Increase by 114 basis points
• Capital requirements – tier 1 capital adequacy ratio	• Increase by 187 basis points

The following table further illustrates the impact on VIU of reasonably possible changes to key assumptions. This reflects the sensitivity of the VIU to each key assumption on its own and it is possible that more than one favourable and/or unfavourable change may occur at the same time. The selected rates of reasonably possible changes to key assumptions are largely based on external analysts' forecasts which can change period to period.

	Favourable change			Unfavourable change		
		Increase in VIU	VIU		Decrease in VIU	VIU
	bps	HK$bn	HK$bn	bps	HK$bn	HK$bn
At 31 December 2019						
Long-term profit growth rate	**–**	**–**	**167.8**	**-50**	**(10.6)**	**157.2**
Long-term asset growth rate	**-50**	**10.6**	**178.4**	**–**	**–**	**167.8**
Discount rate	**-54**	**10.9**	**178.7**	**+56**	**(9.9)**	**157.9**
Expected credit losses as a percentage of customer advances	**2019 to 2023: 90 2024 onwards: 70**	**7.5**	**175.3**	**2019 to 2023: 108 2024 onwards: 81**	**(9.4)**	**158.4**
Risk-weighted assets as a percentage of total assets	**-96**	**2.9**	**170.7**	**+12**	**(0.4)**	**167.4**
Cost-income ratio	**-175**	**7.7**	**175.5**	**+95**	**(9.4)**	**158.4**
Long-term effective tax rate	**-352**	**7.8**	**175.6**	**+250**	**(5.6)**	**162.2**
Earnings in short to medium term - compound annual growth rate[1]	**+107**	**3.8**	**171.6**	**-346**	**(18.9)**	**148.9**
Capital requirements – capital adequacy ratio	**–**	**–**	**167.8**	**+337**	**(64.1)**	**103.7**
Capital requirements – tier 1 capital adequacy ratio	**–**	**–**	**167.8**	**+322**	**(47.2)**	**120.6**
At 31 December 2018						
Long-term profit growth rate	+100	20.2	161.5	-10	(1.7)	139.6
Long-term asset growth rate	-10	2.0	143.3	+100	(21.7)	119.6
Discount rate	-142	25.4	166.7	+28	(4.0)	137.3
Expected credit losses as a percentage of customer advances	2018 to 2022: 70 2023 onwards: 65	7.0	148.3	2018 to 2022: 83 2023 onwards: 77	(7.9)	133.4
Risk-weighted assets as a percentage of total assets	-140	4.1	145.4	+80	(2.3)	139.0
Cost-income ratio	-160	8.8	150.1	+200	(10.9)	130.4
Long-term effective tax rate	-280	5.3	146.6	+250	(4.6)	136.7
Earnings in short to medium term - compound annual growth rate[1,2]	+204	8.1	149.4	-366	(14.2)	127.1
Capital requirements – capital adequacy ratio	–	–	141.3	+258	(39.4)	101.9
Capital requirements – tier 1 capital adequacy ratio	–	–	141.3	+243	(25.2)	116.1

1 Based on management's explicit forecasts over the short to medium term.
2 Comparatives on 31 December 2018 have been updated to align with the 2019 approach to describe the impact of the change in isolation.

Considering the interrelationship of the changes set out in the table above, management estimates that the reasonably possible range of VIU is HK$144.3bn to HK$177.2bn (2018: HK$121.4bn to HK$153.5bn). The range is based on the favourable/unfavourable change in the earnings in the short to medium term and long-term expected credit losses as a percentage of customer advances as set out in the table above. All other long-term assumptions, the discount rate and the basis of the CMC have been kept unchanged when determining the reasonably possible range of the VIU.

Selected financial information of BoCom

The statutory accounting reference date of BoCom is 31 December. For the year ended 31 December 2019, the group included the associate's results on the basis of financial statements made up for the 12 months to 30 September 2019, but taking into account the financial effect of significant transactions or events in the period from 1 October 2019 to 31 December 2019.

Selected balance sheet information of BoCom

	At 30 Sep	
	2019	2018
	HK$m	HK$m
Cash and balances at central banks	**874,238**	982,268
Loans and advances to banks and other financial institutions	**841,420**	806,561
Loans and advances to customers	**5,689,981**	5,380,339
Other financial assets	**3,394,004**	3,196,602
Other assets	**315,310**	332,795
Total assets	**11,114,953**	10,698,565
Deposits by banks and other financial institutions	**2,262,654**	2,384,086
Customer accounts	**6,765,782**	6,497,116
Other financial liabilities	**1,026,377**	743,278
Other liabilities	**179,723**	284,560
Total liabilities	**10,234,536**	9,909,040
Total equity[1]	**880,417**	789,525

1 *Due to the adoption of HKFRS 16, the equity balance of BoCom as at 1 January 2019 was reduced by HK$709m.*

Reconciliation of BoCom's net assets to carrying amount in the group's consolidated financial statements

	At 30 Sep	
	2019	2018
	HK$m	HK$m
The group's share of ordinary shareholders' equity	**144,727**	135,871
Goodwill	**3,687**	3,753
Carrying amount	**148,414**	139,624

Selected income statement information of BoCom

	For the 12 months ended 30 Sep	
	2019	2018
	HK$m	HK$m
Net interest income	**161,079**	151,223
Net fee and commission income	**50,233**	48,949
Change in expected credit losses	**(58,603)**	(43,907)
Depreciation and amortisation	**(15,152)**	(6,012)
Tax expense	**(12,822)**	(12,178)
– profit for the year	**87,556**	87,122
– other comprehensive income	**2,470**	1,490
Total comprehensive income	**90,026**	88,612
Dividends received from BoCom	**4,810**	4,792

At 31 December 2019, the group's share of associates' contingent liabilities was HK$305,291m (2018: HK$319,469m).

15 Goodwill and intangible assets

Goodwill and intangible assets include goodwill arising on business combinations, the present value of in-force long-term insurance business, and other intangible assets.

	2019	2018
	HK$m	HK$m
Goodwill	**6,315**	5,932
Present value of in-force long-term insurance business	**61,075**	48,522
Other intangible assets[1]	**14,253**	10,650
At 31 Dec	**81,643**	65,104

1 *Included within other intangible assets is internally generated software with a net carrying value of HK$11,851m (2018: HK$8,010m). During the year, capitalisation of internally generated software was HK$6,219m (2018: HK$4,499m) and amortisation was HK$2,264m (2018: HK$1,566m).*

The present value of in-force long-term insurance business

When calculating the present value of in-force long term ('PVIF') insurance business, expected cash flows are projected after adjusting for a variety of assumptions made by each insurance operation to reflect local market conditions and management's judgement of future trends, and uncertainty in the underlying assumptions is reflected by applying margins (as opposed to a cost of capital methodology). Variations in actual experience and changes to assumptions can contribute to volatility in the results of the insurance business.

Actuarial Control Committees of each key insurance entity meet on a quarterly basis to review and approve PVIF assumptions. All changes to non-economic assumptions, economic assumptions that are not observable and model methodology must be approved by the Actuarial Control Committee.

Movements in PVIF

	2019	2018
	HK$m	HK$m
As at 31 Dec	**48,522**	44,621
Impact on transition to HKFRS 9	**N/A**	(616)
At 1 Jan	**48,522**	44,005
Changes in PVIF of long-term insurance business	**12,546**	4,629
– value of new business written during the year	**8,779**	8,138
– expected return[1]	**(5,531)**	(4,650)
– assumption changes and experience variances (see below)	**9,386**	1,153
– other adjustments	**(88)**	(12)
Exchange differences and other	**7**	(112)
At 31 Dec	**61,075**	48,522

1 *'Expected return' represents the unwinding of the discount rate and reversal of expected cash flows for the period.*

Assumption changes and experience variances

Included within this line item are:

- HK$8,829m (2018: HK$(439)m), directly offsetting regulatory-driven changes to the valuation of liabilities under insurance contracts.
- HK$282m (2018: HK$3,566m), reflecting the future expected sharing of returns with policyholders on contracts with discretionary participation features ('DPF'), to the extent this sharing is not already included in liabilities under insurance contracts.
- HK$275m (2018: HK$(1,974)m), driven by other assumptions changes and experience variances.

Key assumptions used in the computation of PVIF for the main life insurance operations

Economic assumptions are set in a way that is consistent with observable market values. The valuation of PVIF is sensitive to observed market movements. The following are the key long-term assumptions used in the computation of PVIF for Hong Kong insurance entities, being the main life insurance operations:

	2019	2018
	%	%
Weighted average risk free rate	**1.84**	2.29
Weighted average risk discount rate	**5.44**	5.90
Expense inflation	**3.00**	3.00

Sensitivity to changes in economic assumptions

The group sets the risk discount rate applied to the PVIF calculation by starting from a risk-free rate curve and adding explicit allowances for risks not reflected in the best-estimate cash flow modelling. Where the insurance operations provide options and guarantees to policyholders, the cost of these options and guarantees is an explicit reduction to PVIF, unless it is already allowed for as an explicit addition to the technical provisions required by regulators. See page 49 for further details of these guarantees and the impact of changes in economic assumptions on our insurance manufacturing subsidiaries.

Sensitivity to changes in non-economic assumptions

Policyholder liabilities and PVIF are determined by reference to non-economic assumptions, including mortality and/or morbidity, lapse rates and expense rates. See page 50 for further details on the impact of changes in non-economic assumptions on our insurance manufacturing operations.

16 Property, plant and equipment

	2019	2018
	HK$m	HK$m
Owned property, plant and equipment[1]	**128,603**	112,080
Other right-of-use assets[2]	**9,327**	N/A
At 31 Dec	**137,930**	112,080

1 Included leasehold land and buildings of HK$119,264m for which the rights of use are considered sufficient to constitute control. They are therefore presented as owned assets.

2 The group adopted the requirements of HKFRS 16 on 1 January 2019 and recognised lease liabilities and the associated right-of-use assets in relation to leases which had previously been classified as 'operating leases' in accordance with HKAS 17 'Leases'.

Movement in owned property, plant and equipment

	2019				2018			
	Land and buildings	Investment properties	Equipment	Total	Land and buildings	Investment properties	Equipment	Total
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
Cost or valuation								
At 31 Dec of prior year	**94,037**	**12,875**	**22,728**	**129,640**	97,619	12,617	22,617	132,853
Impact on transition to HKFRS 16	**16,284**	**–**	**–**	**16,284**	N/A	N/A	N/A	N/A
At 1 Jan	**110,321**	**12,875**	**22,728**	**145,924**	97,619	12,617	22,617	132,853
Exchange and other adjustments	**(119)**	**(12)**	**(152)**	**(283)**	(497)	1	(342)	(838)
Additions	**1,034**	**447**	**1,853**	**3,334**	271	278	1,097	1,646
Disposals	**(2)**	**–**	**(903)**	**(905)**	(361)	–	(644)	(1,005)
Transfers[1]	**–**	**–**	**(6,604)**	**(6,604)**	(11,126)	(464)	–	(11,590)
Elimination of accumulated depreciation on revalued land and buildings	**(4,306)**	**–**	**–**	**(4,306)**	(2,613)	–	–	(2,613)
Surplus on revaluation	**4,426**	**154**	**–**	**4,580**	10,626	639	–	11,265
Reclassifications	**119**	**(129)**	**–**	**(10)**	118	(196)	–	(78)
At 31 Dec	**111,473**	**13,335**	**16,922**	**141,730**	94,037	12,875	22,728	129,640
Accumulated depreciation								
At 1 Jan	**73**	**–**	**17,487**	**17,560**	210	–	16,307	16,517
Exchange and other adjustments	**6**	**–**	**(56)**	**(50)**	(2)	–	(251)	(253)
Charge for the year	**4,312**	**–**	**1,308**	**5,620**	2,643	–	2,043	4,686
Disposals	**(1)**	**–**	**(874)**	**(875)**	(165)	–	(612)	(777)
Transfers[1]	**–**	**–**	**(4,822)**	**(4,822)**	N/A	N/A	N/A	N/A
Elimination of accumulated depreciation on revalued land and buildings	**(4,306)**	**–**	**–**	**(4,306)**	(2,613)	–	–	(2,613)
At 31 Dec	**84**	**–**	**13,043**	**13,127**	73	–	17,487	17,560
Net book value at 31 Dec	**111,389**	**13,335**	**3,879**	**128,603**	93,964	12,875	5,241	112,080

1 In both 2018 and 2019, certain properties and equipment have been transferred to a fellow subsidiary as part of the Recovery and Resolution Plan as set out in the Report of the Directors. The balance represented the carrying value of these properties on the date of transfer.

The carrying amount of land and buildings, had they been stated at cost less accumulated depreciation, would have been as follows:

	2019	2018
	HK$m	HK$m
Cost less accumulated depreciation	**16,895**	16,281

Valuation of land and buildings and investment properties

The group's land and buildings and investment properties were revalued as at 31 December 2019. The basis of valuation for land and buildings and investment properties was open market value. The resultant values are Level 3 in the fair value hierarchy. The fair values for land and buildings are determined by using a direct comparison approach which values the properties in their respective existing states and uses, assuming sale with immediate vacant possession and by making reference to comparable sales evidence. The valuations take into account the characteristics of the properties (unobservable inputs) which include the location, size, shape, view, floor level, year of completion and other factors collectively. The premium or discount applied to the characteristics of the properties is within minus 20% and plus 20%. In determining the open market value of investment properties, expected future cash flows have been discounted to their present values. The net book value of 'Land and buildings' includes HK$7,859m (2018: HK$8,374m) in respect of properties which were valued using the depreciated replacement cost method.

Valuation of land and buildings and investment properties in Hong Kong, Macau and mainland China were largely carried out by Cushman & Wakefield Limited, who have recent experience in the location and type of properties and who are members of the Hong Kong Institute of Surveyors. This represents 93% by value of the group's properties subject to valuation. Other properties were valued by different independent professionally qualified valuers.

17 Prepayments, accrued income and other assets

	2019	2018
	HK$m	HK$m
Prepayments and accrued income	**28,326**	27,897
Bullion	**53,163**	50,058
Acceptances and endorsements	**47,302**	44,401
Reinsurers' share of liabilities under insurance contracts (note 3)	**26,282**	17,792
Current tax assets	**1,521**	1,517
Settlement accounts	**27,289**	23,683
Cash collateral and margin receivables	**35,824**	30,378
Other assets	**28,551**	34,223
At 31 Dec	**248,258**	229,949

Prepayments, accrued income and other assets included HK$165,497m (2018: HK$159,483m) of financial assets, the majority of which were measured at amortised cost.

18 Customer accounts

Customer accounts by country/territory

	2019	2018
	HK$m	HK$m
Hong Kong	**3,894,175**	3,797,807
Mainland China	**376,390**	358,026
Singapore	**378,303**	331,479
Australia	**180,637**	161,726
India	**116,330**	111,297
Malaysia	**113,907**	108,899
Taiwan	**114,250**	106,537
Indonesia	**36,861**	29,843
Other	**221,571**	202,052
At 31 Dec	**5,432,424**	5,207,666

19 Trading liabilities

	2019	2018
	HK$m	HK$m
Deposits by banks[1]	**159**	1,162
Customer accounts[1]	**1,150**	773
Net short positions in securities	**86,223**	79,259
At 31 Dec	**87,532**	81,194

1 *'Deposits by banks' and 'Customer accounts' include repos, stock lending and other amounts.*

20 Financial liabilities designated at fair value

	2019	2018
	HK$m	HK$m
Deposits by banks and customer accounts	**74,761**	82,136
Debt securities in issue	**48,506**	42,369
Liabilities to customers under investment contracts	**37,024**	36,638
At 31 Dec	**160,291**	161,143

The carrying amount of financial liabilities designated at fair value was HK$1,216m higher than the contractual amount at maturity (2018: HK$2,232m lower). The cumulative loss in fair value attributable to changes in credit risk was HK$6m loss (2018: HK$177m gain).

21 Debt securities in issue

	2019	2018
	HK$m	HK$m
Bonds and medium-term note	**90,365**	75,980
Other debt securities in issue	**65,074**	24,625
Total debt securities in issue	**155,439**	100,605
Included within:		
– financial liabilities designated at fair value (note 20)	**(48,506)**	(42,369)
At 31 Dec	**106,933**	58,236

22 Accruals and deferred income, other liabilities and provisions

	2019	2018
	HK$m	HK$m
Accruals and deferred income	**25,600**	26,932
Acceptances and endorsements	**47,355**	44,438
Settlement accounts	**35,807**	37,833
Cash collateral and margin payables	**40,299**	36,613
Share-based payment liability to HSBC Holdings plc	**1,417**	1,923
Lease liabilities	**9,291**	N/A
Other liabilities	**41,687**	47,521
Provisions for liabilities and charges	**1,796**	1,405
At 31 Dec	**203,252**	196,665

Accruals and deferred income, other liabilities and provisions included HK$195,122m (2018: HK$184,221m) of financial liabilities which were measured at amortised cost.

Movement in provisions

Provisions (excluding contractual commitments)	**Restructuring costs HK$m**	**Other HK$m**	**Total HK$m**
At 31 Dec 2018	**74**	**640**	**714**
Additions	**563**	**383**	**946**
Amounts utilised	**(402)**	**(85)**	**(487)**
Unused amounts reversed	**(29)**	**(254)**	**(283)**
Exchange and other movements	**2**	**128**	**130**
At 31 Dec 2019	**208**	**812**	**1,020**
Contractual commitments			
At 31 Dec 2018			**691**
Net change in expected credit loss provision and other movements			**85**
At 31 Dec 2019			**776**
Total Provisions at 31 Dec 2019			**1,796**
At 31 Dec 2017	192	380	572
Additions	11	469	480
Amounts utilised	(97)	(91)	(188)
Unused amounts reversed	(37)	(83)	(120)
Exchange and other movements	5	(35)	(30)
At 31 Dec 2018	74	640	714
Contractual commitments[1]			
At 31 Dec 2017			54
Impact on transition to HKFRS 9			487
Net change in expected credit loss provision and other movements			150
At 31 Dec 2018			691
Total Provisions at 31 Dec 2018			1,405

1 *The contractual commitments provision at 31 December 2017 represented HKAS 37 provisions on off-balance sheet loan commitments and guarantees, for which expected credit losses are provided following transition to HKFRS 9 on 1 January 2018.*

23 Subordinated liabilities

Subordinated liabilities issued to third parties measured at amortised cost consist of undated primary capital notes and other loan capital having an original term to maturity of five years or more. Subordinated liabilities issued to Group entities are not included in the below.

		2019	2018
		HK$m	HK$m
US$400m	Undated floating rate primary capital notes	**3,114**	3,133
MYR500m	Fixed rate (5.05%) subordinated bonds due 2027, callable from 2022[1]	**952**	948
At 31 Dec		**4,066**	4,081

1 *The interest rate on the MYR500m 5.05% callable subordinated bonds due 2027 will increase by 1% from November 2022.*

24 Preference shares

Irredeemable preference shares, issued and fully paid

	2019	2018
	HK$m	HK$m
At 1 Jan	**98**	21,037
Converted / bought back during the year	**(96)**	(20,975)
Exchange and other movements	**(2)**	36
At 31 Dec	**—**	98

At the beginning of the year, there was INR870m (2018: INR870m) of authorised preference share capital, comprising 8.7m compulsorily convertible preference shares ('CCPS') of INR100 each in the share capital of a subsidiary, HSBC InvestDirect Securities (India) Private Limited ('HSBC InvestDirect'). The CCPS were issued and fully paid in 2009 at a nominal value of INR100 each. During the year, all CCPS were converted into fully paid equity shares of HSBC InvestDirect at par.

25 Share capital

	2019	2018
	HK$m	HK$m
Paid up share capital in HK$	**116,103**	116,103
Paid up share capital in US$[1]	**56,232**	56,232
At 31 Dec	**172,335**	172,335

Ordinary shares issued and fully paid

	2019		2018	
	HK$m	**Number**	HK$m	Number
At 1 Jan	**172,335**	**46,440,991,798**	151,360	46,440,991,798
Redemption / bought back of preference shares	**—**	**—**	20,975	—
At 31 Dec	**172,335**	**46,440,991,798**	172,335	46,440,991,798

1 *Paid up share capital in US$ represents preference shares which were redeemed or bought back via payment out of distributable profits and for which the amount was transferred from retained earnings to share capital in accordance with the requirements of the Companies Ordinance.*

There were no new ordinary shares issued in 2019 (2018: nil). The holder of the ordinary shares is entitled to receive dividends as declared from time to time, rank equally with regard to the Bank's residual assets and are entitled to one vote per share at shareholder meetings of the Bank.

26 Other equity instruments

Other equity instruments comprise additional tier 1 capital instruments in issue which are accounted for as equity.

		2019	2018
		HK$m	HK$m
US$1,000m	Floating rate perpetual subordinated loan, callable from Dec 2019[1]	**—**	7,756
US$900m	Floating rate perpetual subordinated loan, callable from Dec 2019[1]	**—**	6,981
US$900m	Floating rate perpetual subordinated loan, callable from Nov 2023[1]	**—**	7,048
US$500m	Floating rate perpetual subordinated loan, callable from Nov 2023[1]	**—**	3,915
US$700m	Floating rate perpetual subordinated loan, callable from Dec 2023[1]	**—**	5,481
US$600m	Floating rate perpetual subordinated loan, callable from Nov 2024[1]	**—**	4,698
US$1,000m	Fixed rate perpetual subordinated loan, callable from Mar 2025[2]	**7,834**	—
US$900m	Fixed rate perpetual subordinated loan, callable from Sep 2026[3]	**7,063**	—
US$700m	Fixed rate perpetual subordinated loan, callable from Mar 2025[4]	**5,467**	—
US$500m	Fixed rate perpetual subordinated loan, callable from Mar 2025[4]	**3,905**	—
US$600m	Fixed rate perpetual subordinated loan, callable from May 2027[5]	**4,685**	—
US$900m	Fixed rate perpetual subordinated loan, callable from Sep 2024[6]	**7,044**	—
US$1,100m	Fixed rate perpetual subordinated loan, callable from Jun 2024[7]	**8,617**	—
At 31 Dec		**44,615**	35,879

1 *These subordinated loans were early repaid in the first half of 2019*
2 *Interest rate fixed at 6.09%*
3 *Interest rate fixed at 6.51%*
4 *Interest rate fixed at 6.172%*
5 *Interest rate fixed at 5.91%*
6 *Interest rate fixed at 6.03%*
7 *Interest rate fixed at 6%*

The additional tier 1 capital instruments are perpetual subordinated loans on which coupon payments may be cancelled at the sole discretion of the Bank. The subordinated loans will be written down at the point of non-viability on the occurrence of a trigger event as defined in the Banking (Capital) Rules. They rank higher than ordinary shares in the event of a wind-up.

27 Maturity analysis of assets and liabilities

The following table provides an analysis of consolidated total assets and liabilities by residual contractual maturity at the balance sheet date. These balances are included in the maturity analysis as follows:

- Trading assets and liabilities (including trading derivatives but excluding reverse repos, repos and debt securities in issue) are included in the 'Due not more than 1 month' time bucket, because trading balances are typically held for short periods of time.
- Financial assets and liabilities with no contractual maturity (such as equity securities) are included in the 'Due over 5 years' time bucket. Undated or perpetual instruments are classified based on the contractual notice period which the counterparty of the instrument is entitled to give. Where there is no contractual notice period, undated or perpetual contracts are included in the 'Due over 5 years' time bucket.
- Non-financial assets and liabilities with no contractual maturity are included in the 'Due over 5 years' time bucket.
- Liabilities under insurance contracts are included in the 'Due over 5 years' time bucket. Liabilities under investment contracts are classified in accordance with their contractual maturity. Undated investment contracts are included in the 'Due over 5 years' time bucket, however, such contracts are subject to surrender and transfer options by the policyholders.

Maturity analysis of assets and liabilities

	Due not more than1 month	Due over 1 month but not more than 3 months	Due over 3 months but not more than 6 months	Due over 6 months but not more than 9 months	Due over 9 months but not more than 1 year	Due over 1 year but not more than 2 years	Due over 2 years but not more than 5 years	Due over 5 years	Total
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
Financial assets									
Cash and balances at central banks	202,746	–	–	–	–	–	–	–	202,746
Items in the course of collection from other banks	21,140	–	–	–	–	–	–	–	21,140
Hong Kong Government certificates of indebtedness	298,944	–	–	–	–	–	–	–	298,944
Trading assets	618,856	2,253	1,219	–	–	433	–	–	622,761
Derivatives	279,698	115	96	28	81	324	300	–	280,642
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	8,883	393	1,330	938	706	4,605	10,273	126,383	153,511
Reverse repurchase agreements – non-trading	260,716	97,168	32,322	6,856	11,772	9,624	3,875	–	422,333
Loans and advances to banks	180,357	46,565	23,409	19,174	15,502	30,018	10,097	3,783	328,905
Loans and advances to customers	643,208	356,953	285,049	144,180	141,465	404,131	795,421	950,468	3,720,875
Financial investments	201,596	406,723	186,055	70,922	89,852	197,506	310,398	437,246	1,900,298
Amounts due from Group companies	79,091	3,043	1,318	79	–	–	3,911	190	87,632
Accrued income and other financial assets	108,167	30,046	15,491	3,935	1,947	1,265	572	4,074	165,497
Financial assets at 31 Dec 2019	2,903,402	943,259	546,289	246,112	261,325	647,906	1,134,847	1,522,144	8,205,284
Non-financial assets	–	–	–	–	–	–	–	456,430	456,430
Total assets at 31 Dec 2019	2,903,402	943,259	546,289	246,112	261,325	647,906	1,134,847	1,978,574	8,661,714
Financial liabilities									
Hong Kong currency notes in circulation	298,944	–	–	–	–	–	–	–	298,944
Items in the course of transmission to other banks	25,576	–	–	–	–	–	–	–	25,576
Repurchase agreements – non-trading	90,565	3,131	2,713	1,566	447	–	–	7,974	106,396
Deposits by banks	169,344	8,474	1,888	30	5	52	26	–	179,819
Customer accounts	4,657,422	467,294	190,460	45,681	42,479	18,388	10,700	–	5,432,424
Trading liabilities	87,532	–	–	–	–	–	–	–	87,532
Derivatives	290,808	113	15	41	73	339	662	180	292,231
Financial liabilities designated at fair value	38,524	24,493	12,173	4,833	4,694	18,962	12,703	43,909	160,291
Debt securities in issue	5,113	31,769	18,816	5,614	7,757	17,038	17,640	3,186	106,933
Amounts due to Group companies	88,108	32,414	246	37	118	35	79,308	110,808	311,074
Accruals and other financial liabilities	114,974	38,591	18,130	5,573	4,846	3,704	4,626	4,678	195,122
Subordinated liabilities[1]	–	–	–	–	–	–	–	4,066	4,066
Preference shares	–	–	–	–	–	–	–	–	–
Total financial liabilities at 31 Dec 2019	5,866,910	606,279	244,441	63,375	60,419	58,518	125,665	174,801	7,200,408
Non-financial liabilities	–	–	–	–	–	–	–	582,025	582,025
Total liabilities at 31 Dec 2019	5,866,910	606,279	244,441	63,375	60,419	58,518	125,665	756,826	7,782,433

Maturity analysis of assets and liabilities (continued)

	Due not more than1 month	Due over 1 month but not more than 3 months	Due over 3 months but not more than 6 months	Due over 6 months but not more than 9 months	Due over 9 months but not more than 1 year	Due over 1 year but not more than 2 years	Due over 2 years but not more than 5 years	Due over 5 years	Total
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
Financial assets									
Cash and balances at central banks	205,660	—	—	—	—	—	—	—	205,660
Items in the course of collection from other banks	25,380	—	—	—	—	—	—	—	25,380
Hong Kong Government certificates of indebtedness	280,854	—	—	—	—	—	—	—	280,854
Trading assets	554,886	1,359	1,723	—	—	870	—	—	558,838
Derivatives	291,515	83	117	247	17	324	318	248	292,869
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	9,308	24	1,108	615	1,121	3,839	11,210	105,634	132,859
Reverse repurchase agreements – non-trading	250,550	87,939	15,059	4,326	7,771	37,682	3,000	—	406,327
Loans and advances to banks	177,476	56,118	17,869	11,374	19,247	22,912	26,835	6,320	338,151
Loans and advances to customers	638,718	323,164	268,711	159,123	145,495	350,859	767,323	875,309	3,528,702
Financial investments	235,488	409,356	185,205	84,225	75,210	218,508	297,627	365,407	1,871,026
Amounts due from Group companies	63,150	6,477	649	28	—	2	149	—	70,455
Accrued income and other financial assets	102,461	33,492	14,830	2,189	1,178	1,071	584	3,678	159,483
Financial assets at 31 Dec 2018	2,835,446	918,012	505,271	262,127	250,039	636,067	1,107,046	1,356,596	7,870,604
Non-financial assets	—	—	—	—	—	—	—	392,850	392,850
Total assets at 31 Dec 2018	2,835,446	918,012	505,271	262,127	250,039	636,067	1,107,046	1,749,446	8,263,454
Financial liabilities									
Hong Kong currency notes in circulation	280,854	—	—	—	—	—	—	—	280,854
Items in the course of transmission to other banks	33,806	—	—	—	—	—	—	—	33,806
Repurchase agreements – non-trading	63,273	723	1,159	4,555	569	—	—	—	70,279
Deposits by banks	154,915	2,415	3,923	2,018	1,260	53	80	—	164,664
Customer accounts	4,547,352	342,264	150,739	72,992	61,663	16,011	16,570	75	5,207,666
Trading liabilities	81,194	—	—	—	—	—	—	—	81,194
Derivatives	294,112	304	157	250	207	209	314	—	295,553
Financial liabilities designated at fair value	22,524	23,447	21,021	7,873	10,014	18,541	18,314	39,409	161,143
Debt securities in issue	2,631	6,287	9,810	859	519	15,913	19,053	3,164	58,236
Amounts due to Group companies	120,904	93,361	1,299	50	27	15	77,508	103,323	396,487
Accruals and other financial liabilities	115,539	40,894	16,241	3,542	4,423	1,718	1,154	710	184,221
Subordinated liabilities[1]	—	—	—	—	—	—	948	3,133	4,081
Preference shares	—	—	—	—	—	—	—	98	98
Financial liabilities at 31 Dec 2018	5,717,104	509,695	204,349	92,139	78,682	52,460	133,941	149,912	6,938,282
Non-financial liabilities	—	—	—	—	—	—	—	512,252	512,252
Total liabilities at 31 Dec 2018	5,717,104	509,695	204,349	92,139	78,682	52,460	133,941	662,164	7,450,534

1 *The maturity for subordinated liabilities is based on the earliest date on which the group is required to pay, i.e. the callable date.*

28 Analysis of cash flows payable under financial liabilities by remaining contractual maturities

	Due not more than 1 month	Due over 1 month but not more than 3 months	Due between 3 and 12 months	Due between 1 and 5 years	Due after 5 years	Total
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
At 31 Dec 2019						
Hong Kong currency notes in circulation	**298,944**	**—**	**—**	**—**	**—**	**298,944**
Items in the course of transmission to other banks	**25,576**	**—**	**—**	**—**	**—**	**25,576**
Repurchase agreements – non-trading	**90,675**	**3,131**	**4,857**	**—**	**8,068**	**106,731**
Deposits by banks	**169,744**	**8,474**	**1,960**	**84**	**—**	**180,262**
Customer accounts	**4,664,306**	**467,294**	**283,081**	**31,564**	**—**	**5,446,245**
Trading liabilities	**87,532**	**—**	**—**	**—**	**—**	**87,532**
Derivatives	**290,016**	**113**	**2**	**846**	**180**	**291,157**
Financial liabilities designated at fair value	**39,636**	**24,493**	**22,589**	**32,873**	**44,188**	**163,779**
Debt securities in issue	**5,418**	**31,769**	**33,538**	**36,214**	**3,892**	**110,831**
Amounts due to Group companies	**98,361**	**32,414**	**5,344**	**100,805**	**126,697**	**363,621**
Other financial liabilities	**109,482**	**38,591**	**25,715**	**8,313**	**4,756**	**186,857**
Subordinated liabilities	**29**	**—**	**86**	**457**	**5,789**	**6,361**
	5,879,719	**606,279**	**377,172**	**211,156**	**193,570**	**7,267,896**
Loan and other credit-related commitments	**2,750,332**	**—**	**—**	**—**	**—**	**2,750,332**
Financial guarantees	**49,199**	**—**	**—**	**—**	**—**	**49,199**
	8,679,250	**606,279**	**377,172**	**211,156**	**193,570**	**10,067,427**
Proportion of cash flows payable in period	**86%**	**6%**	**4%**	**2%**	**2%**	
At 31 Dec 2018						
Hong Kong currency notes in circulation	280,854	—	—	—	—	280,854
Items in the course of transmission to other banks	33,806	—	—	—	—	33,806
Repurchase agreements – non-trading	63,360	723	6,464	—	—	70,547
Deposits by banks	155,763	2,415	7,221	137	—	165,536
Customer accounts	4,552,138	342,264	289,185	34,197	80	5,217,864
Trading liabilities	81,194	—	—	—	—	81,194
Derivatives	294,448	304	403	1,754	—	296,909
Financial liabilities designated at fair value	23,410	23,447	40,498	39,723	39,474	166,552
Debt securities in issue	3,042	6,287	12,028	37,140	3,521	62,018
Amounts due to Group companies	121,089	93,361	885	88,418	137,417	441,170
Other financial liabilities	109,254	40,894	22,377	2,850	1,194	176,569
Subordinated liabilities	22	—	65	1,294	3,995	5,376
Preference shares	—	—	98	—	—	98
	5,718,380	509,695	379,224	205,513	185,681	6,998,493
Loan and other credit-related commitments	2,562,972	—	237	—	—	2,563,209
Financial guarantees	57,964	—	—	—	—	57,964
	8,339,316	509,695	379,461	205,513	185,681	9,619,666
Proportion of cash flows payable in period	87%	5%	4%	2%	2%	

The balances in the above tables incorporate all cash flows relating to principal and future coupon payments on an undiscounted basis (except for trading liabilities and trading derivatives). Trading liabilities and trading derivatives have been included in the 'On demand' time bucket as they are typically held for short periods of time. The undiscounted cash flows payable under hedging derivative liabilities are classified according to their contractual maturity. Investment contract liabilities have been included in financial liabilities designated at fair value, whereby the policyholders have the options to surrender or transfer at any time, and are reported in the 'Due after 5 years' time bucket. A maturity analysis prepared on the basis of the earliest possible contractual repayment date (assuming that all surrender and transfer options are exercised) would result in all investment contracts being presented as falling due within one year or less. The undiscounted cash flows potentially payable under loan commitments and financial guarantee contracts are classified on the basis of the earliest date they can be called. Cash flows payable in respect of customer accounts are primarily contractually repayable on demand or at short notice.

29 Contingent liabilities, contractual commitments and guarantees

	2019 HK$m	2018 HK$m
Guarantees and contingent liabilities		
– financial guarantees[1]	**49,199**	57,964
– performance & other guarantees[2]	**266,272**	234,265
– other contingent liabilities	**3,299**	3,416
At 31 Dec	**318,770**	295,645
Commitments[3]:		
– documentary credits and short-term trade-related transactions	**22,455**	23,258
– forward asset purchases and forward forward deposits placed	**30,268**	14,087
– undrawn formal standby facilities, credit lines and other commitments to lend	**2,697,609**	2,525,863
At 31 Dec	**2,750,332**	2,563,208

1 *Financial guarantees are contracts that require the issuer to make specified payments to reimburse the holder for a loss incurred because a specified debtor fails to make payment when due in accordance with the original or modified terms of a debt instrument. The amounts in the above table are nominal principal amounts.*
2 *Performance and other guarantees include re-insurance letters of credit related to particular transactions, trade-related letters of credit issued without provision for the issuing entity to retain title to the underlying shipment, performance bonds, bid bonds, standby letters of credit and other transaction-related guarantees.*
3 *Includes HK$1,630,005m of commitments at 31 December 2019 (2018: HK$1,490,711m) to which the impairment requirements in HKFRS 9 are applied where the group has become party to an irrevocable commitment.*

The above table discloses the nominal principal amounts of commitments (excluding capital commitments), guarantees and other contingent liabilities, which represent the amounts at risk should contracts be fully drawn upon and clients default. The amount of the commitments shown above reflects, where relevant, the expected level of take-up of pre-approved facilities. As a significant portion of guarantees and commitments is expected to expire without being drawn upon, the total of the nominal principal amounts is not representative of future liquidity requirements.

It also reflects the group's maximum exposure under a large number of individual guarantee undertakings. The risks and exposures from guarantees are captured and managed in accordance with HSBC's overall credit risk management policies and procedures. Guarantees are subject to an annual credit review process.

Other contingent liabilities at 31 December 2019 included provisions made in relation to legal and regulatory matters as set out in note 38.

30 Other commitments

Capital commitments

At 31 December 2019, capital commitments, mainly related to the commitment for purchase of premises, were HK$7,413m (2018: HK$7,912m).

31 Offsetting of financial assets and financial liabilities

Financial assets and financial liabilities are offset and the net amount is reported in the balance sheet when there is a legally enforceable right to offset the recognised amounts and there is an intention to settle on a net basis, or realise the asset and settle the liability simultaneously ('the offset criteria').

The 'Amounts not set off in the balance sheet' include transactions where:

- the counterparty has an offsetting exposure with the group and a master netting or similar arrangement is in place with a right to set off only in the event of default, insolvency or bankruptcy, or the offset criteria are otherwise not satisfied; and
- in the case of derivatives and reverse repurchase/repurchase, stock borrowing/lending and similar agreements, cash and non-cash collateral has been received/pledged.

For risk management purposes, the net amounts of loans and advances to customers are subject to limits, which are monitored and the relevant customer agreements are subject to review and updated, as necessary, to ensure that the legal right to set off remains appropriate.

Offsetting of financial assets and financial liabilities

	Amounts subject to enforceable netting arrangements								
				Amounts not offset in the balance sheet					
	Gross amounts	Amounts offset	Net amounts reported in the balance sheet	Financial instruments	Non-cash collateral	Cash collateral	Net amount	Amounts not subject to enforceable netting arrangements[1]	Balance sheet total
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
At 31 Dec 2019									
Financial assets[2]									
Derivatives	**384,173**	**(132,872)**	**251,301**	**(213,466)**	**(8,155)**	**(15,070)**	**14,610**	**29,341**	**280,642**
Reverse repos, stock borrowing and similar agreements classified as:	**470,307**	**(17,667)**	**452,640**	**—**	**(451,866)**	**(125)**	**649**	**20,387**	**473,027**
– trading assets	**28,779**	**(90)**	**28,689**	**—**	**(28,680)**	**—**	**9**	**—**	**28,689**
– non-trading assets	**441,528**	**(17,577)**	**423,951**	**—**	**(423,186)**	**(125)**	**640**	**20,387**	**444,338**
	854,480	**(150,539)**	**703,941**	**(213,466)**	**(460,021)**	**(15,195)**	**15,259**	**49,728**	**753,669**
Financial liabilities[3]									
Derivatives	**396,052**	**(132,872)**	**263,180**	**(213,466)**	**(13,444)**	**(14,238)**	**22,032**	**29,051**	**292,231**
Repos, stock lending and similar agreements classified as:	**148,626**	**(17,667)**	**130,959**	**—**	**(130,399)**	**(37)**	**523**	**43,022**	**173,981**
– trading liabilities	**1,978**	**(90)**	**1,888**	**—**	**(1,823)**	**—**	**65**	**—**	**1,888**
– non-trading liabilities	**146,648**	**(17,577)**	**129,071**	**—**	**(128,576)**	**(37)**	**458**	**43,022**	**172,093**
	544,678	**(150,539)**	**394,139**	**(213,466)**	**(143,843)**	**(14,275)**	**22,555**	**72,073**	**466,212**
At 31 Dec 2018									
Financial assets[2]									
Derivatives	380,939	(120,409)	260,530	(208,893)	(5,637)	(31,801)	14,199	32,339	292,869
Reverse repos, stock borrowing and similar agreements classified as:	444,711	(31,283)	413,428	—	(413,374)	(42)	12	29,862	443,290
– trading assets	23,112	—	23,112	—	(23,100)	—	12	—	23,112
– non-trading assets	421,599	(31,283)	390,316	—	(390,274)	(42)	—	29,862	420,178
	825,650	(151,692)	673,958	(208,893)	(419,011)	(31,843)	14,211	62,201	736,159
Financial liabilities[3]									
Derivatives	391,064	(120,409)	270,655	(208,893)	(9,558)	(18,754)	33,450	24,898	295,553
Repos, stock lending and similar agreements classified as:	146,026	(31,283)	114,743	—	(114,548)	(4)	191	26,560	141,303
– trading liabilities	2,023	—	2,023	—	(2,007)	—	16	—	2,023
– non-trading liabilities	144,003	(31,283)	112,720	—	(112,541)	(4)	175	26,560	139,280
	537,090	(151,692)	385,398	(208,893)	(124,106)	(18,758)	33,641	51,458	436,856

1 *These exposures continue to be secured by financial collateral, but the group may not have sought or been able to obtain a legal opinion evidencing enforceability of the offsetting right.*
2 *Amounts presented in the balance sheet included balances due from Group companies of HK$85,124m (2018: HK$103,358m).*
3 *Amounts presented in the balance sheet included balances due to Group companies of HK$133,693m (2018: HK$139,410m).*

32 Segmental analysis

The group's Executive Committee ('EXCO') reviews operating activities on a number of bases, including by global business and by countries. Global businesses are our reportable segments under HKFRS 8 'Operating Segments'.

Basis of preparation

The Executive Committee ('EXCO') is considered the Chief Operating Decision Maker ('CODM') for the purpose of identifying the group's reportable segments. Global business results are assessed by the CODM on the basis of performance measured in accordance with HKFRSs. Although the CODM reviews information on a number of bases, business performance is assessed and capital resources are allocated by global business, and the segmental analysis is presented on that basis. The global businesses are therefore considered our reportable segments under HKFRS 8 'Operating Segments'.

Our operations are closely integrated and, accordingly, the presentation of data includes internal allocations of certain items of income and expenses. These allocations include the costs of certain support services and global functions to the extent that they can be meaningfully attributed to operational business lines and geographical regions. While such allocations have been made on a systematic and consistent basis, they necessarily involve a degree of subjectivity. Costs which are not allocated to global businesses are included in the 'Corporate Centre'.

Where relevant, income and expense amounts presented include the results of inter-segment funding along with inter-company and inter-business line transactions. All such transactions are undertaken on arm's length terms. The intra-group elimination items for the global businesses are presented in the Corporate Centre.

Our global businesses

The group provides a comprehensive range of banking and related financial services to its customers in its four global businesses. The products and services offered to customers are organised by these global businesses.

- Retail Banking and Wealth Management ('RBWM') offers a broad range of products and services to meet the personal banking and wealth management needs of individual customers. Typically, customer offerings include personal banking products (current and savings accounts, mortgages and personal loans, credit cards, debit cards and local and international payment services) and wealth management services (insurance and investment products, global asset management services and financial planning services).
- Commercial Banking ('CMB') offers a broad range of products and services to serve the needs of our commercial customers, including small- and medium-sized enterprises, mid-market enterprises and corporates. These include credit and lending, international trade and receivables finance, treasury management and liquidity solutions (payments and cash management and commercial cards), commercial insurance and investments. CMB also offers its customers access to products and services offered by other global businesses, for example Global Banking and Markets ('GB&M'), which include foreign exchange products, raising capital on debt and equity markets and advisory services.
- GB&M provides tailored financial solutions to major government, corporate and institutional clients and private investors worldwide. The client-focused business lines deliver a full range of banking capabilities including financing, advisory and transaction services, a markets business that provides services in credit, rates, foreign exchange, equities, money markets and securities services, and principal investment activities.
- Global Private Banking ('GPB') provides a range of services to high net worth individuals and families with complex and international needs within the Group's priority markets.
- The Corporate Centre was established to align certain functions of the group. The Corporate Centre includes Balance Sheet Management, certain interests in associates and joint ventures, as well as the results of our financing operations and central support costs with associated recoveries.

Performance by global business is presented in the 'Financial Review' section.

Information by geographical region

	Hong Kong HK$m	Rest of Asia-Pacific HK$m	Intra-segment elimination HK$m	Total HK$m
For the year ended 31 Dec 2019				
Total operating income	**218,525**	**81,030**	**(18)**	**299,537**
Profit before tax	**88,957**	**47,476**	**–**	**136,433**
At 31 Dec 2019				
Total assets	**6,221,486**	**3,155,935**	**(715,707)**	**8,661,714**
Total liabilities	**5,724,204**	**2,773,936**	**(715,707)**	**7,782,433**
Credit commitments and contingent liabilities (contract amounts)	**1,705,308**	**1,363,794**	**–**	**3,069,102**
For the year ended 31 Dec 2018				
Total operating income	195,249	75,297	(2,238)	268,308
Profit before tax	88,017	46,566	–	134,583
At 31 Dec 2018				
Total assets	6,036,854	2,939,955	(713,355)	8,263,454
Total liabilities	5,590,770	2,573,119	(713,355)	7,450,534
Credit commitments and contingent liabilities (contract amounts)	1,584,981	1,273,872	–	2,858,853

Information by country/territory

	Revenue[1]		Non-current assets[2]	
	For the year ended 31 Dec		At 31 Dec	
	2019 HK$m	2018 HK$m	**2019 HK$m**	2018 HK$m
Hong Kong	**147,456**	142,665	**132,935**	110,125
Mainland China	**18,153**	17,653	**158,215**	147,444
Australia	**7,337**	7,658	**2,130**	825
India	**9,339**	7,880	**2,339**	1,934
Indonesia	**3,701**	3,702	**3,932**	3,566
Malaysia	**6,107**	6,330	**1,820**	962
Singapore	**10,776**	10,053	**2,820**	1,415
Taiwan	**3,064**	3,509	**2,802**	2,201
Other	**13,448**	11,019	**3,421**	3,075
Total	**219,381**	210,469	**310,414**	271,547

1 *Revenue (defined as 'Net operating income before change in expected credit losses and other impairment charges') is attributable to countries based on the location of the principal operations of the branch, subsidiary, associate or joint venture.*

2 *Non-current assets consist of property, plant and equipment, goodwill, other intangible assets, interests in associates and joint ventures and certain other assets.*

33 Related party transactions

The group's related parties include the parent, fellow subsidiaries, associates, joint ventures, post-employment benefit plans for the group's employees, Key Management Personnel ('KMP') as defined by HKAS 24, close family members of KMP and entities that are controlled or jointly controlled by KMP or their close family members.

Particulars of transactions with related parties are set out below.

(a) Inter-company

The group is wholly owned by HSBC Asia Holdings Limited, which in turn is a wholly-owned subsidiary of HSBC Holdings plc (incorporated in England).

During 2019, over 8,500 employees performing shared services in Hong Kong have been transferred from the group to a separate service company, HSBC Global Services (Hong Kong) Limited (the 'ServCo'), which is a fellow subsidiary of the Group set up in Hong Kong as part of recovery and resolution planning to provide functional support services to the group. There were no changes to employment terms and conditions or pension benefits as a result of these transfers. For the year ended 31 December 2019, the group recognised a management charge of HK$15,718m for the services provided by ServCo, which is reported under 'General and administrative expenses' (2018: HK$1,098m), mainly in relation to the remuneration and other costs associated with employees and assets transferred to ServCo.

During the year, the Bank has completed the restructuring of its internal regulatory capital and loss-absorbing capacity ('LAC')-eligible debt and equity instruments such that they are all held by its immediate parent, HSBC Asia Holdings Limited, in order to comply with the Financial Institutions (Resolution) (Loss-absorbing Capacity Requirements – Banking Sector) Rules which came into operation on 14 December 2018.

The group entered into transactions with its fellow subsidiaries in the normal course of business, including the acceptance and placement of interbank deposits, correspondent banking transactions and off-balance sheet transactions. The activities were on substantially the same terms, including interest rates and security, as for comparable transactions with third-party counterparties.

The group shared the costs of certain IT projects with its fellow subsidiaries and also used certain processing services of fellow subsidiaries. The Bank also acted as agent for the distribution of retail investment funds for fellow subsidiaries and paid professional fees for services provided by fellow subsidiaries. These transactions and services are priced on an arm's length basis.

The aggregate amount of income and expenses arising from these transactions during the year and the balances of amounts due to and from the relevant parties at the year end were as follows:

	2019			2018		
	Immediate holding company	**Ultimate holding company**	**Fellow subsidiaries**	Immediate holding company	Ultimate holding company	Fellow subsidiaries
	HK$m	**HK$m**	**HK$m**	HK$m	HK$m	HK$m
Income and expenses for the year						
Interest income	**1**	**6**	**1,450**	–	–	1,220
Interest expense[1]	**3,678**	**3,967**	**2,022**	1,563	5,545	1,681
Fee income	**–**	**–**	**2,383**	–	43	2,547
Fee expense	**–**	**–**	**1,296**	–	–	1,153
Net income from financial instruments held for trading or managed on a fair value basis	**–**	**2**	**152**	–	5	1,289
Other operating income	**–**	**976**	**773**	–	1,348	2,531
Other operating expenses[2]	**–**	**3,846**	**31,657**	–	3,405	13,682
At 31 Dec						
Assets	**–**	**823**	**151,094**	–	327	149,122
– trading assets[3]	**–**	**67**	**1,989**	–	123	11,586
– derivative assets	**–**	**633**	**63,652**	–	–	78,994
– other assets[3,6]	**–**	**123**	**85,453**	–	204	58,542
Liabilities	**189,690**	**1,290**	**187,550**	–	254,547	212,358
– trading liabilities[3]	**–**	**–**	**622**	–	15	97
– financial liabilities designated at fair value[3,4]	**126,237**	**–**	**9**	–	87,065	298
– derivative liabilities	**–**	**–**	**67,419**	–	–	70,320
– other liabilities[3,6]	**1,492**	**1,221**	**119,500**	–	96,000	120,551
– subordinated liabilities[3,5,6]	**61,961**	**69**	**–**	–	71,467	20,994
– preference shares	**–**	**–**	**–**	–	–	98
Guarantees	**–**	**–**	**19,179**	–	–	17,763
Commitments	**–**	**–**	**2,388**	–	–	14,319

1 *Interest expense included distribution on preference shares and interest on subordinated liabilities.*
2 *In 2019, payments of HK$428m (2018: HK$459m) were made for software costs which were capitalised as intangible assets in the balance sheet of the group.*
3 *These balances are presented under 'Amounts due from/to Group companies' in the consolidated balance sheet.*
4 *The balance at 31 December 2019 included subordinated liabilities of HK$126,237m to meet Total Loss Absorbing Capacity ('TLAC') requirements (2018: HK$87,065m). The carrying amount of financial liabilities designated at fair value was HK$7,482m higher than the contractual amount at maturity (2018: HK$1,289m). The cumulative loss in fair value attributable to changes in credit risk was HK$2,313m (2018: HK$310m). The balances are largely under Level 2.*
5 *The balance at 31 December 2019 included subordinated liabilities of HK$61,961m to meet TLAC requirements (2018: HK$78,450m).*
6 *The fair value hierarchy of assets and liabilities at amortised cost are under level 2 and the fair value has no material difference with carrying value.*

(b) Share option and share award schemes

The group participates in various share option and share plans operated by HSBC whereby share options or shares of HSBC are granted to employees of the group. The group recognises an expense in respect of these share options and share awards. The cost borne by the ultimate holding company in respect of share options is treated as a capital contribution and is recorded within 'Other reserves'. In respect of share awards, the group recognises a liability to the ultimate holding company over the vesting period. This liability is measured at the fair value of the shares at each reporting date, with changes since the award dates adjusted through the capital contribution account within 'Other reserves'. The balances of the capital contribution and the liability at 31 December 2019 amounted to HK$3,396m and HK$1,417m respectively (2018: HK$3,147m and HK$1,923m respectively).

(c) Post-employment benefit plans

At 31 December 2019, HK$9.1bn (2018: HK$12.3bn) of the group's post-employment plan assets were under management by group companies, earning management fees of HK$22m in 2019 (2018: HK$29m). At 31 December 2019, the group's post-employment benefit plans had placed deposits of HK$581m (2018: HK$486m) with its banking subsidiaries, earning interest payable to the schemes of HK $3m (2018: HK$2m). The above outstanding balances arose from the ordinary course of business and on substantially the same terms, including interest rates and security, as comparable transactions with third-party counterparties.

(d) Associates and joint ventures

The group provides certain banking and financial services to associates and joint ventures, including loans, overdrafts, interest and non-interest bearing deposits and current accounts. Details of interests in associates and joint ventures are set out in note 14.

The disclosure of the year-end balance and the highest amounts outstanding during the year is considered to be the most meaningful information to represent the amount of transactions and outstanding balances during the year.

Transactions and balances during the year with associates and joint ventures

	2019		2018	
	Highest balance during the year	Balance at 31 December	Highest balance during the year	Balance at 31 December
	HK$m	HK$m	HK$m	HK$m
Amounts due from associates – unsubordinated	34,813	16,001	30,411	23,487
Amounts due to associates	19,602	4,016	15,821	2,141
Commitments	1	1	1	1

The above outstanding balances arose in the ordinary course of business and on substantially the same terms, including interest rates and security, as comparable transactions with third-party counterparties.

(e) Key Management Personnel

Key Management Personnel are defined as those persons having authority and responsibility for planning, directing and controlling the activities of the Bank and the group. It includes members of the Board of Directors and Executive Committee of the Bank and the Board of Directors and Group Managing Directors of HSBC Holdings plc.

Compensation of Key Management Personnel

	2019	2018
	HK$m	HK$m
Salaries and other short-term benefits	336	337
Post employment benefits	9	10
Termination benefits	1	–
Share-based payments	104	92
Total	450	439

Transactions, arrangements and agreements involving Key Management Personnel

	2019	2018
	HK$m	HK$m
During the year		
Highest average assets[1]	48,944	47,132
Highest average liabilities[1]	47,211	48,251
Contribution to group's profit before tax	1,144	936
At the year end		
Guarantees	7,177	7,060
Commitments	5,275	3,841

1 *The disclosure of the highest average balance during the year is considered the most meaningful information to represent transactions during the year.*

Transactions, arrangements and agreements are entered into by the group with companies that may be controlled by Key Management Personnel of the group and their immediate relatives. These transactions are primarily loans and deposits, and were entered into in the ordinary course of business and on substantially the same terms, including interest rates and security, as comparable transactions with persons or companies of a similar standing or, where applicable, with other employees. The transactions did not involve more than the normal risk of repayment or present other unfavourable features.

Change in expected credit losses recognised for the year, and expected credit loss allowances against balances outstanding at the end of the year, in respect of Key Management Personnel were insignificant (2018: insignificant).

On 8 October 2019, HBAP acted as Joint Global Co-ordinator and Underwriter on aggregated EUR4.25bn and GBP800m Senior Note issuances for CK Hutchison Group Telecom Finance S.A. in 6 tranches, with tenors of 4 to 15 years and coupon rates of 0.375% to 2.625%. CK Hutchison Group Telecom Finance S.A. is a wholly-owned subsidiary of an associated body corporate (CK Hutchison Holdings Limited) of Mr Victor Li, a non-executive Director of the Bank.

(f) Loans to directors

Directors are defined as the Directors of the Bank, its ultimate holding company, HSBC Holdings plc and intermediate holding companies. Loans to directors also include loans to companies that are controlled by, and entities that are connected with these directors. Particulars of loans to directors disclosed pursuant to section 17 of the Companies (Disclosure of Information about Benefits of Directors) Regulation are as follows:

	Aggregate amount outstanding at 31 Dec		Maximum aggregate amount outstanding during the year	
	2019	2018	**2019**	2018
	HK$m	HK$m	**HK$m**	HK$m
By the Bank[1]	**4,530**	1,231	**4,730**	8,360
By subsidiaries	**6**	8	**8**	10
	4,536	1,239	**4,738**	8,370

1 *Comparatives have been re-presented to include certain balances previously not included.*

These amounts include principal and interest, and the maximum liability that may be incurred under guarantees.

34 Fair values of financial instruments carried at fair value

Control framework

Fair values are subject to a control framework designed to ensure that they are either determined, or validated, by a function independent of the risk taker.

Where fair values are determined by reference to externally quoted prices or observable pricing inputs to models, independent price determination or validation is utilised. For inactive markets, the group sources alternative market information, with greater weight given to information that is considered to be more relevant and reliable. Examples of the factors considered are price observability, instrument comparability, consistency of data sources, underlying data accuracy and timing of prices.

Fair value of investment funds are sourced from the underlying fund managers which are based upon an assessment of the underlying investees' financial positions, results, risk profile and prospects.

For fair values determined using valuation models, the control framework includes development or validation by independent support functions of the model logic, inputs, model outputs and adjustments. Valuation models are subject to a process of due diligence before becoming operational and are calibrated against external market data on an ongoing basis.

Changes in fair value are generally subject to a profit and loss analysis process and are disaggregated into high-level categories including portfolio changes, market movements and other fair value adjustments.

The majority of financial instruments measured at fair value are in GB&M. GB&M's fair value governance structure comprises its Finance function and Valuation Committees. Finance is responsible for establishing procedures governing valuation and ensuring fair values are in compliance with accounting standards. The fair values are reviewed by the group's Valuation Committees, which consist of independent support functions. Within GB&M, these Committees are overseen by the Group's Valuation Committee Review Group, which considers all material subjective valuations. The insurance business also holds portfolios of financial instruments for which the valuations are subjective and an Investment Valuation Committee oversees those fair values.

Financial liabilities measured at fair value

In certain circumstances, the group records its own debt in issue at fair value, based on quoted prices in an active market for the specific instrument. When quoted market prices are unavailable, the own debt in issue is valued using valuation techniques, the inputs for which are either based on quoted prices in an inactive market for the instrument or are estimated by comparison with quoted prices in an active market for similar instruments. In both cases, the fair value includes the effect of applying the credit spread which is appropriate to the group's liabilities. The change in fair value of issued debt securities attributable to the group's own credit spread is computed as follows: for each security at each reporting date, an externally verifiable price is obtained or a price is derived using credit spreads for similar securities for the same issuer. Then, using discounted cash flow, each security is valued using a Libor-based discount curve. The difference in the valuations is attributable to the group's own credit spread. This methodology is applied consistently across all securities.

Structured notes issued and certain other hybrid instruments are included within 'Financial liabilities designated at fair value' and are measured at fair value. The credit spread applied to these instruments is derived from the spreads at which the group issues structured notes.

Gains and losses arising from changes in the credit spread of liabilities issued by the group reverse over the contractual life of the debt, provided that the debt is not repaid at a premium or a discount.

Fair value hierarchy

Fair values of financial assets and liabilities are determined according to the following hierarchy:

- Level 1 – valuation technique using quoted market price: financial instruments with quoted prices for identical instruments in active markets that the group can access at the measurement date.
- Level 2 – valuation technique using observable inputs: financial instruments with quoted prices for similar instruments in active markets or quoted prices for identical or similar instruments in inactive markets and financial instruments valued using models where all significant inputs are observable.
- Level 3 – valuation technique with significant unobservable inputs: financial instruments valued using valuation techniques where one or more significant inputs are unobservable.

Financial instruments carried at fair value and bases of valuation

	Fair Value Hierarchy					
	Level 1	Level 2	Level 3	Third-party total	Inter-company[2]	Total
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
At 31 Dec 2019						
Assets						
Trading assets[1]	**426,072**	**196,132**	**557**	**622,761**	**–**	**622,761**
Derivatives	**2,282**	**213,242**	**833**	**216,357**	**64,285**	**280,642**
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	**89,152**	**32,068**	**32,291**	**153,511**	**–**	**153,511**
Financial investments	**1,096,572**	**363,804**	**5,622**	**1,465,998**	**–**	**1,465,998**
Liabilities						
Trading liabilities[1]	**78,111**	**9,421**	**–**	**87,532**	**–**	**87,532**
Derivatives	**2,892**	**219,498**	**2,422**	**224,812**	**67,419**	**292,231**
Financial liabilities designated at fair value[1]	**–**	**139,720**	**20,571**	**160,291**	**–**	**160,291**
At 31 Dec 2018						
Assets						
Trading assets[1]	395,769	162,841	228	558,838	–	558,838
Derivatives	3,219	209,450	1,206	213,875	78,994	292,869
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	75,105	36,599	21,155	132,859	–	132,859
Financial investments	1,146,426	352,490	4,709	1,503,625	–	1,503,625
Liabilities						
Trading liabilities[1]	74,376	6,818	–	81,194	–	81,194
Derivatives	3,348	220,043	1,842	225,233	70,320	295,553
Financial liabilities designated at fair value[1]	–	139,782	21,361	161,143	–	161,143

1 *Amounts with HSBC Group entities are not reflected here.*
2 *Derivatives balances with HSBC Group entities are largely under 'Level 2'.*

Transfers between Level 1 and Level 2 fair values

	Assets				Liabilities		
	Financial investments	Trading assets	Designated and otherwise mandatorily measured at fair value	Derivatives	Trading liabilities	Designated at fair value	Derivatives
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
At 31 Dec 2019							
Transfers from Level 1 to Level 2	**32,281**	**9,198**	**–**	**–**	**131**	**–**	**–**
Transfers from Level 2 to Level 1	**16,872**	**15,069**	**2,359**	**–**	**599**	**–**	**–**
At 31 Dec 2018							
Transfers from Level 1 to Level 2	9,955	1,389	–	–	349	–	–
Transfers from Level 2 to Level 1	121,667	18,109	–	–	376	–	–

Transfers between levels of the fair value hierarchy are deemed to occur at the end of each quarterly reporting period. Transfers into and out of levels of the fair value hierarchy are primarily attributable to changes in observability of valuation inputs and price transparency.

Movements in Level 3 financial instruments

There were no material transfers between Level 3 and Level 1 or Level 2 as a result of change in observability of valuation inputs, settlement, nor material gains/loss recognised in the income statement/other comprehensive income during the year in relation to financial instruments carried at fair value in Level 3 (2018: immaterial). The increase in Level 3 assets was mainly due to the purchase of private equity fund and other alternative investments of HK$11,463m (2018: HK$12,200m) to back policyholder liabilities to support growth in the insurance business.

Fair value adjustments

Fair value adjustments are adopted when the group determines there are additional factors considered by market participants that are not incorporated within the valuation model. Movements in the level of fair value adjustments do not necessarily result in the recognition of profits or losses within the income statement, such as when models are enhanced and therefore fair value adjustments may no longer be required.

Bid-offer

HKFRS 13 requires use of the price within the bid-offer spread that is most representative of fair value. Valuation models will typically generate mid-market values. The bid-offer adjustment reflects the extent to which bid-offer costs would be incurred if substantially all residual net portfolio market risks were closed using available hedging instruments or by disposing of, or unwinding the position.

Uncertainty

Certain model inputs may be less readily determinable from market data, and/or the choice of model itself may be more subjective. In these circumstances, an adjustment may be necessary to reflect the likelihood that market participants would adopt more conservative values for uncertain parameters and/or model assumptions, than those used in the group's valuation model.

Credit valuation adjustment ('CVA') and debit valuation adjustment ('DVA')

The CVA is an adjustment to the valuation of over-the-counter ('OTC') derivative contracts to reflect the possibility that the counterparty may default and the group may not receive the full market value of the transactions.

The DVA is an adjustment to the valuation of OTC derivative contracts to reflect the possibility that the group may default, and that the group may not pay the full market value of the transactions.

The group calculates a separate CVA and DVA for each legal entity, and for each counterparty to which the entity has exposure. With the exception of central clearing parties, all third-party counterparties are included in the CVA and DVA calculations, and these adjustments are not netted across group entities.

The group calculates the CVA by applying the probability of default ('PD') of the counterparty, conditional on the non-default of the group, to the group's expected positive exposure to the counterparty and multiplying the result by the loss expected in the event of default. Conversely, the group calculates the DVA by applying the PD of the group, conditional on the non-default of the counterparty, to the expected positive exposure of the counterparty to the group and multiplying the result by the loss expected in the event of default. Both calculations are performed over the life of the potential exposure.

For most products the group uses a simulation methodology, which incorporates a range of potential exposures over the life of the portfolio, to calculate the expected positive exposure to a counterparty. The simulation methodology includes credit mitigants, such as counterparty netting agreements and collateral agreements with the counterparty.

The methodologies do not, in general, account for 'wrong-way risk' which arises when the underlying value of the derivative prior to any CVA is positively correlated to the PD of the counterparty. When there is significant wrong-way risk, a trade-specific approach is applied to reflect this risk in the valuation.

Funding fair value adjustment ('FFVA')

The FFVA is calculated by applying future market funding spreads to the expected future funding exposure of any uncollateralised component of the OTC derivative portfolio. The expected future funding exposure is calculated by a simulation methodology, where available and is adjusted for events that may terminate the exposure, such as the default of the group or the counterparty. The FFVA and DVA are calculated independently.

Model limitation

Models used for portfolio valuation purposes may be based upon a simplifying set of assumptions that do not capture all material market characteristics. In these circumstances, model limitation adjustments are adopted.

Inception profit (Day 1 profit or loss reserves)

Inception profit adjustments are adopted when the fair value estimated by a valuation model is based on one or more significant unobservable inputs.

Effects of changes in significant unobservable assumptions to reasonably possible alternatives

The key unobservable inputs to Level 3 financial instruments include volatility and correlation for structured notes and deposits valued using option models, bid quotes for corporate bonds valued using approaches that take into account market comparables, and multiple items for private equity and strategic investments. In the absence of an active market, the fair value of private equity and strategic investments is estimated on the basis of an analysis of the investee's financial position and results, risk profile, prospects and other factors, as well as by reference to market valuations for similar entities quoted in an active market, or the price at which similar companies have changed ownership. The change in fair values due to changes in reasonably possible alternative assumptions for these unobservable inputs is not significant.

Favourable and unfavourable changes are determined on the basis of sensitivity analysis. The sensitivity analysis aims to measure a range of fair values consistent with the application of a 95% confidence interval. Methodologies take account of the nature of the valuation technique employed, the availability and reliability of observable proxies and historical data. When the available data is not amenable to statistical analysis, the quantification of uncertainty is judgemental, but remains guided by the 95% confidence interval. The sensitivity of Level 3 fair values to reasonably possible alternative assumptions is not significant.

35 Fair values of financial instruments not carried at fair value

Fair values of financial instruments not carried at fair value and bases of valuation

		Fair Value Hierarchy			
	Carrying amount	Quoted market price Level 1	Observable inputs Level 2	Significant unobservable inputs Level 3	Total
	HK$m	HK$m	HK$m	HK$m	HK$m
At 31 Dec 2019					
Assets					
Reverse repurchase agreements – non-trading	**422,333**	**–**	**417,294**	**5,385**	**422,679**
Loans and advances to banks	**328,905**	**–**	**323,304**	**5,501**	**328,805**
Loans and advances to customers	**3,720,875**	**–**	**56,475**	**3,654,716**	**3,711,191**
Financial investments – at amortised cost	**434,300**	**77,108**	**382,368**	**356**	**459,832**
Liabilities					
Repurchase agreements – non-trading	**106,396**	**–**	**106,398**	**–**	**106,398**
Deposits by banks	**179,819**	**–**	**179,823**	**–**	**179,823**
Customer accounts	**5,432,424**	**–**	**5,432,803**	**–**	**5,432,803**
Debt securities in issue	**106,933**	**–**	**107,641**	**–**	**107,641**
Subordinated liabilities	**4,066**	**–**	**952**	**2,999**	**3,951**
At 31 Dec 2018					
Assets					
Reverse repurchase agreements – non-trading	406,327	–	396,061	10,723	406,784
Loans and advances to banks	338,151	–	322,443	15,531	337,974
Loans and advances to customers	3,528,702	–	52,262	3,473,497	3,525,759
Financial investments – at amortised cost	367,401	8,543	356,836	–	365,379
Liabilities					
Repurchase agreements – non-trading	70,279	–	70,282	–	70,282
Deposits by banks	164,664	–	164,662	–	164,662
Customer accounts	5,207,666	–	5,207,871	–	5,207,871
Debt securities in issue	58,236	–	58,808	–	58,808
Subordinated liabilities	4,081	–	960	2,919	3,879
Preference shares	98	–	–	98	98

The fair values above are stated at a specific date and may be significantly different from the amounts which will actually be paid on the maturity or settlement dates of the instruments. In many cases, it would not be possible to realise immediately the estimated fair values given the size of the portfolios measured. Accordingly, these fair values do not represent the value of these financial instruments to the group as a going concern.

Other financial instruments not carried at fair value are typically short term in nature or re-priced to current market rates frequently. Accordingly, their carrying amount is a reasonable approximation of fair value. They include cash and balances at central banks, items in the course of collection from and transmission to other banks, Hong Kong Government certificates of indebtedness and Hong Kong currency notes in circulation, all of which are measured at amortised cost.

Valuation

Fair value is an estimate of the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. It does not reflect the economic benefits and costs that the group expects to flow from an instrument's cash flow over its expected future life. Our valuation methodologies and assumptions in determining fair values for which no observable market prices are available may differ from those of other companies.

Repurchase and reverse repurchase agreements – non-trading

Fair values approximate carrying amounts as these balances are generally short dated.

Loans and advances to banks and customers

To determine the fair value of loans and advances to banks and customers, loans are segregated, as far as possible, into portfolios of similar characteristics. Fair values are based on observable market transactions, when available. When they are unavailable, fair values are estimated using valuation models incorporating a range of input assumptions. These assumptions may include: value estimates from third-party brokers reflecting over-the-counter trading activity; forward-looking discounted cash flow models, taking account of expected customer prepayment rates, using assumptions that the group believes are consistent with those that would be used by market participants in valuing such loans; new business rates estimates for similar loans; and trading inputs from other market participants including observed primary and secondary trades. From time to time, we may engage a third-party valuation specialist to measure the fair value of a pool of loans.

The fair value of loans reflects expected credit losses at the balance sheet date and estimates of market participants' expectations of credit losses over the life of the loans, and the fair value effect of repricing between origination and the balance sheet date. For credit impaired loans, fair value is estimated by discounting the future cash flows over the time period they are expected to be recovered.

Financial investments

The fair values of listed financial investments are determined using bid market prices. The fair values of unlisted financial investments are determined using valuation techniques that incorporate the prices and future earnings streams of equivalent quoted securities.

Deposits by banks and customer accounts

The fair values of on-demand deposits are approximated by their carrying value. For deposits with longer-term maturities, fair values are estimated using discounted cash flows, applying current rates offered for deposits of similar remaining maturities.

Debt securities in issue and subordinated liabilities

Fair values are determined using quoted market prices at the balance sheet date where available, or by reference to quoted market prices for similar instruments.

36 Structured entities

The group is involved with both consolidated and unconsolidated structured entities through the securitisation of financial assets, conduits and investment funds, established either by the group or a third party.

Consolidated structured entities

The group uses consolidated structured entities to securitise customer loans and advances it originates to diversify its sources of funding for asset origination and capital efficiency purposes. The loans and advances are transferred by the group to the structured entities for cash or synthetically through credit default swaps, and the structured entities issue debt securities to investors. The group's transactions with these entities are not significant.

Unconsolidated structured entities

The term 'unconsolidated structured entities' refers to all structured entities not controlled by the group. The group enters into transactions with unconsolidated structured entities in the normal course of business to facilitate customer transactions and for specific investment opportunities.

Nature and risks associated with the group's interests in unconsolidated structured entities

	Securitisations	HSBC managed funds	Non-HSBC managed funds	Other	Total
Total asset values of the entities (HK$bn)					
0–4	58	47	95	40	240
4–15	8	25	89	2	124
15–39	–	6	41	–	47
39–196	–	1	26	–	27
196+	–	1	4	–	5
Number of entities at 31 Dec 2019	**66**	**80**	**255**	**42**	**443**
	HK$m	HK$m	HK$m	HK$m	HK$m
Total assets in relation to the group's interests in the unconsolidated structured entities	27,636	24,258	50,241	13,140	115,275
– trading assets	–	774	–	–	774
– financial assets designated and otherwise mandatorily measured at fair value through profit or loss	–	23,484	50,241	–	73,725
– derivatives	–	–	–	–	–
– loans and advances to customers	27,636	–	–	12,742	40,378
– financial investments	–	–	–	–	–
– other assets	–	–	–	398	398
Total liabilities in relation to the group's interests in the unconsolidated structured entities	–	–	–	–	–
Other off balance sheet commitments	857	1,797	14,664	3,958	21,276
The group's maximum exposure at 31 Dec 2019	**28,493**	**26,055**	**64,905**	**17,098**	**136,551**

Nature and risks associated with the group's interests in unconsolidated structured entities (continued)

	Securitisations	HSBC managed funds	Non-HSBC managed funds	Other	Total
Total asset values of the entities (HK$bn)					
0–4	38	39	97	36	210
4–15	7	18	84	1	110
15–39	1	4	38	—	43
39–196	—	1	21	—	22
196+	—	1	5	—	6
Number of entities at 31 Dec 2018	46	63	245	37	391
	HK$m	HK$m	HK$m	HK$m	HK$m
Total assets in relation to the group's interests in the unconsolidated structured entities	17,907	20,540	40,101	15,598	94,146
– trading assets	—	76	—	—	76
– financial assets designated and otherwise mandatorily measured at fair value through profit or loss	—	19,292	40,101	—	59,393
– derivatives	—	—	—	—	—
– loans and advances to customers	17,907	—	—	15,253	33,160
– financial investments	—	1,172	—	—	1,172
– other assets	—	—	—	345	345
Total liabilities in relation to the group's interests in the unconsolidated structured entities	—	—	—	—	—
Other off balance sheet commitments	19	—	8,905	6,877	15,801
The group's maximum exposure at 31 Dec 2018	17,926	20,540	49,006	22,475	109,947

The maximum exposure to loss from the group's interests in unconsolidated structured entities represents the maximum loss it could incur as a result of its involvement with these entities regardless of the probability of the loss being incurred.

- For commitments, guarantees and written credit default swaps, the maximum exposure to loss is the notional amount of potential future losses.
- For retained and purchased investments in and loans to unconsolidated structured entities, the maximum exposure to loss is the carrying value of these interests at the balance sheet reporting date.

The maximum exposure to loss is stated gross of the effects of hedging and collateral arrangements entered into to mitigate the group's exposure to loss.

Securitisations

The group has interests in unconsolidated securitisation vehicles through holding notes issued by these entities.

HSBC managed funds

The group establishes and manages money market funds and non-money market investment funds to provide customers with investment opportunities. The group, as fund manager, may be entitled to receive management and performance fees based on the assets under management. The group may also retain units in these funds.

Non-HSBC managed funds

The group purchases and holds units of third-party managed funds in order to facilitate business and meet customer needs. In addition to entities, asset and liability classes disclosed above, the group enters into derivative contracts with non-HSBC managed funds.

Other

The group has established structured entities in the normal course of business, such as structured credit transactions for customers, to provide finance to public and private sector infrastructure projects, and for asset and structured finance transactions. In addition to the interest disclosed above, the group enters into derivative contracts, reverse repos and stock borrowing transactions with structured entities. These interests arise in the normal course of business for the facilitation of third-party transactions and risk management solutions.

Structured entities sponsored by the group

The amount of assets transferred to and income received from such sponsored entities during 2019 and 2018 were not significant.

37 Bank balance sheet and statement of changes in equity

Bank balance sheet at 31 December 2019

	2019 HK$m	2018 HK$m
Assets		
Cash and balances at central banks	**156,273**	147,447
Items in the course of collection from other banks	**15,437**	18,021
Hong Kong Government certificates of indebtedness	**298,944**	280,854
Trading assets	**496,660**	439,155
Derivatives	**267,018**	276,558
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	**7,087**	6,298
Reverse repurchase agreements – non-trading	**235,823**	243,203
Loans and advances to banks	**184,429**	159,636
Loans and advances to customers	**2,024,194**	1,947,307
Financial investments	**830,648**	866,566
Amounts due from Group companies	**332,865**	347,652
Investments in subsidiaries	**93,355**	88,169
Interests in associates and joint ventures	**39,830**	39,830
Goodwill and intangible assets	**11,242**	8,419
Property, plant and equipment	**79,208**	75,897
Deferred tax assets	**819**	682
Prepayments, accrued income and other assets	**131,368**	130,057
Total assets	**5,205,200**	5,075,751
Liabilities		
Hong Kong currency notes in circulation	**298,944**	280,854
Items in the course of transmission to other banks	**17,878**	22,786
Repurchase agreements – non-trading	**61,793**	55,142
Deposits by banks	**129,703**	121,618
Customer accounts	**3,287,463**	3,186,542
Trading liabilities	**49,399**	47,491
Derivatives	**277,421**	279,056
Financial liabilities designated at fair value	**44,748**	42,545
Debt securities in issue	**53,584**	41,398
Retirement benefit liabilities	**1,426**	2,085
Amounts due to Group companies	**384,490**	439,262
Accruals and deferred income, other liabilities and provisions	**110,893**	98,983
Current tax liabilities	**7,556**	1,600
Deferred tax liabilities	**9,199**	8,836
Subordinated liabilities	**3,114**	3,133
Total liabilities	**4,737,611**	4,631,331
Equity		
Share capital	**172,335**	172,335
Other equity instruments	**44,615**	35,879
Other reserves	**27,101**	23,346
Retained earnings	**223,538**	212,860
Total equity	**467,589**	444,420
Total equity and liabilities	**5,205,200**	5,075,751

Bank statement of changes in equity for the year ended 31 December 2019

	Share capital	Other equity instruments	Retained earnings	Other reserves: Property revaluation reserve	Other reserves: Financial assets at FVOCI reserve[7]	Other reserves: Cash flow hedge reserve	Other reserves: Foreign exchange reserve	Other reserves: Other[1]	Total equity
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
At 1 Jan 2019	**172,335**	**35,879**	**212,860**	**39,506**	**1,037**	**(84)**	**(12,846)**	**(4,267)**	**444,420**
Profit for the year	–	–	**79,694**	–	–	–	–	–	**79,694**
Other comprehensive income/(expense) (net of tax)	–	–	**(1,993)**	**2,836**	**2,467**	**(35)**	**(481)**	–	**2,794**
– debt instruments at fair value through other comprehensive income	–	–	–	–	**1,438**	–	–	–	**1,438**
– equity instruments designated at fair value through other comprehensive income	–	–	–	–	**1,029**	–	–	–	**1,029**
– cash flow hedges	–	–	–	–	–	**(35)**	–	–	**(35)**
– changes in fair value of financial liabilities designated at fair value upon initial recognition arising from changes in own credit risk	–	–	**(2,007)**	–	–	–	–	–	**(2,007)**
– property revaluation	–	–	–	**2,836**	–	–	–	–	**2,836**
– remeasurement of defined benefit asset/liability	–	–	**14**	–	–	–	–	–	**14**
– exchange differences	–	–	–	–	–	–	**(481)**	–	**(481)**
Total comprehensive income/(expense) for the year	–	–	**77,701**	**2,836**	**2,467**	**(35)**	**(481)**	–	**82,488**
Other equity instruments issued[2]	–	**44,615**	–	–	–	–	–	–	**44,615**
Other equity instruments repaid[2]	–	**(35,879)**	–	–	–	–	–	–	**(35,879)**
Dividends paid[3]	–	–	**(68,369)**	–	–	–	–	–	**(68,369)**
Movement in respect of share-based payment arrangements	–	–	**(30)**	–	–	–	–	**227**	**197**
Transfers and other movements	–	–	**1,376**	**(1,366)**	–	–	–	**107**	**117**
At 31 Dec 2019	**172,335**	**44,615**	**223,538**	**40,976**	**3,504**	**(119)**	**(13,327)**	**(3,933)**	**467,589**
At 31 Dec 2017[7]	151,360	14,737	205,582	39,799	1,688	(118)	(9,473)	(13,041)	390,534
Impact on transition to HKFRS 9	–	–	(896)	–	(356)	–	–	–	(1,252)
At 1 Jan 2018	151,360	14,737	204,686	39,799	1,332	(118)	(9,473)	(13,041)	389,282
Profit for the year	–	–	75,742	–	–	–	–	–	75,742
Other comprehensive income/(expense) (net of tax)	–	–	(535)	8,410	(295)	34	(3,373)	–	4,241
– debt instruments at fair value through other comprehensive income	–	–	–	–	(261)	–	–	–	(261)
– equity instruments designated at fair value through other comprehensive income	–	–	–	–	(34)	–	–	–	(34)
– cash flow hedges	–	–	–	–	–	34	–	–	34
– changes in fair value of financial liabilities designated at fair value upon initial recognition arising from changes in own credit risk	–	–	(208)	–	–	–	–	–	(208)
– property revaluation	–	–	–	8,410	–	–	–	–	8,410
– remeasurement of defined benefit asset/liability	–	–	(327)	–	–	–	–	–	(327)
– exchange differences	–	–	–	–	–	–	(3,373)	–	(3,373)
Total comprehensive income/(expense) for the year	–	–	75,207	8,410	(295)	34	(3,373)	–	79,983
Other equity instruments issued[2]	–	21,142	–	–	–	–	–	–	21,142
Dividends paid[3]	–	–	(47,440)	–	–	–	–	–	(47,440)
Movement in respect of share-based payment arrangements	–	–	(213)	–	–	–	–	215	2
Transfers and other movements[4,6]	20,975	–	(19,380)	(8,703)	–	–	–	8,559	1,451
At 31 Dec 2018	172,335	35,879	212,860	39,506	1,037	(84)	(12,846)	(4,267)	444,420

For footnotes, please refer to page 65.

38 Legal proceedings and regulatory matters

The group is party to legal proceedings and regulatory matters in a number of jurisdictions arising out of its normal business operations. Apart from the matters described below, the Bank considers that none of these matters are material. The recognition of provisions is determined in accordance with the accounting policies set out in note 1.2(n). While the outcome of legal proceedings and regulatory matters is inherently uncertain, management believes that, based on the information available to it, appropriate provisions have been made in respect of these matters as at 31 December 2019. Any provision recognised does not constitute an admission of wrongdoing or legal liability. It is not practicable to provide an aggregate estimate of potential liability for our legal proceedings and regulatory matters as a class of contingent liabilities.

Anti-money laundering and sanctions-related matters

In December 2012, among other agreements, HSBC Holdings plc agreed to an undertaking with the UK Financial Services Authority, which was replaced by a Direction issued by the UK Financial Conduct Authority ('FCA') in 2013, and consented to a cease-and-desist order with the US Federal Reserve Board ('FRB'), both of which contained certain forward-looking anti-money laundering ('AML') and sanctions-related obligations. HSBC also agreed to retain an independent compliance monitor (who is, for FCA purposes, a 'Skilled Person' under section 166 of the Financial Services and Markets Act and, for FRB purposes, an 'Independent Consultant') to produce periodic assessments of the Group's AML and sanctions compliance programme (the 'Skilled Person/Independent Consultant'). In December 2012, HSBC Holdings plc also entered into an agreement with the Office of Foreign Assets Control ('OFAC') regarding historical transactions involving parties subject to OFAC sanctions. Reflective of HSBC's significant progress in strengthening its financial crime risk management capabilities, HSBC's engagement with the current Skilled Person will be terminated and a new Skilled Person with a narrower mandate will be appointed to assess the remaining areas that require further work in order for HSBC to transition fully to business-as-usual financial crime risk management. The Independent Consultant will continue to carry out an annual OFAC compliance review at the FRB's discretion.

Through the Skilled Person/Independent Consultant's prior reviews, as well as internal reviews conducted by HSBC, certain potential AML and sanctions compliance issues have been identified that HSBC is reviewing further with the FRB, FCA and/or OFAC. The Financial Crimes Enforcement Network of the US Treasury Department as well as the Civil Division of the US Attorney's Office for the Southern District of New York are investigating the collection and transmittal of third-party originator information in certain payments instructed over HSBC's proprietary payment systems. HSBC is cooperating with all of these investigations.

Based on the facts currently known, it is not practicable at this time for HSBC to predict the resolution of these matters, including the timing or any possible impact on HSBC, which could be significant.

Tax-related investigations

Various tax administration, regulatory and law enforcement authorities around the world have been conducting investigations and reviews of HSBC companies in connection with allegations of tax evasion or tax fraud, money laundering and unlawful cross-border banking solicitation.

HSBC continues to cooperate with tax-related investigations by tax administration, regulatory or law enforcement authorities. Based on the facts currently known, it is not practicable at this time for HSBC to predict the resolution of these ongoing matters, including the timing or any possible impact on HSBC.

Singapore Interbank Offered Rate ('Sibor'), Singapore Swap Offer Rate ('SOR') and Australia Bank Bill Swap Rate ('BBSW')

In July and August 2016, HSBC and other panel banks were named as defendants in two putative class actions filed in the New York District Court on behalf of persons who transacted in products related to the Sibor, SOR and BBSW benchmark rates. The complaints allege, among other things, misconduct related to these benchmark rates in violation of US antitrust, commodities and racketeering laws, and state law.

In the Sibor/SOR litigation, following a decision on the defendants' motion to dismiss in October 2018, the claims against a number of HSBC entities were dismissed, and the Bank remained as the only HSBC defendant in this action. In October 2018, the Bank filed a motion for reconsideration of the decision based on the issue of personal jurisdiction; this motion was denied in April 2019. Also in October 2018, the plaintiffs filed a third amended complaint, naming only the Sibor panel members, including the Bank, as defendants; the court dismissed the third amended complaint in its entirety in July 2019 against all defendants. In August 2019, the plaintiffs filed an appeal to the Second Circuit Court of Appeals, which remains pending.

In the BBSW litigation, in November 2018, the court dismissed all foreign defendants, including all the HSBC entities, on personal jurisdiction grounds. In April 2019, the plaintiffs filed an amended complaint, which the defendants have moved to dismiss.

There are many factors that may affect the range of outcomes, and the resulting financial impact, of these matters, which could be significant.

United States Bankruptcy Court for the Southern District of New York litigation

In June 2018, a claim was issued against the Bank in the United States Bankruptcy Court for the Southern District of New York by the Chapter 11 Trustee of CFG Peru Investments Pte. Ltd. (Singapore) (the 'Trustee Complaint'). The Trustee Complaint makes allegations under the Peruvian Civil Code, Hong Kong and U.S. common law and the Bankruptcy Code concerning the Bank's alleged conduct in commencing the winding-up proceedings and pursuing the appointment of joint provisional liquidators for affiliates of CFG Peru Investments Pte. Ltd. The Trustee is seeking damages and equitable subordination or disallowance of the Bank's Chapter 11 claims in a related bankruptcy proceeding.

The Bank is seeking to dismiss the Trustee Complaint. Based on the facts currently known, it is not practicable at this time to predict the resolution of this matter, including the timing or any possible impact, which could be significant.

Foreign exchange rate investigations

In January 2018, HSBC Holdings plc entered into a three-year deferred prosecution agreement with the Criminal Division of the US Department of Justice ('DoJ') (the 'FX DPA'), regarding fraudulent conduct in connection with two particular transactions in 2010 and 2011. This concluded the DoJ's investigation into HSBC's historical foreign exchange activities. Under the terms of the FX DPA, HSBC has a number of ongoing obligations, including implementing enhancements to its internal controls and procedures in its Global Markets business, which will be the subject of annual reports to the DoJ. In addition, HSBC agreed to pay a financial penalty and restitution.

There are many factors that may affect the range of outcomes, and the resulting financial impact of this matter, which could be significant.

39 Ultimate holding company

The ultimate holding company of the Bank is HSBC Holdings plc, which is incorporated in England.

The largest group in which the accounts of the Bank are consolidated is that headed by HSBC Holdings plc. The consolidated accounts of HSBC Holdings plc are available to the public on the HSBC Group's website at www.hsbc.com or may be obtained from 8 Canada Square, London E14 5HQ, United Kingdom.

40 Events after the balance sheet date

The Directors of the Group approved a 2020 business update after 31 December 2019, setting out a plan that aims to reallocate capital to areas that can deliver stronger returns, to reduce costs across the Group, and to simplify the business. One change as part of this plan is a change to the global businesses that form the group's reportable segments as described in note 32. The existing Retail Banking & Wealth Management and Global Private Banking global businesses will be merged to create one new global business, Wealth and Personal Banking, which will become a reportable segment during 2020.

The ECL at 31 December 2019 was estimated based on a range of forecast economic conditions as at that date. Since early January 2020, the coronavirus outbreak has spread across mainland China and beyond, causing disruption to business and economic activity. The impact on GDP and other key indicators will be considered when determining the severity and likelihood of downside economic scenarios that will be used to estimate ECL under HKFRS 9 in 2020.

41 Approval of financial statements

The Consolidated Financial Statements were approved and authorised for issue by the Board of Directors on 18 February 2020.

Printed by Asia One Printing Limited, Hong Kong, on Nautilus SuperWhite board and paper using vegetable oil-based inks. Made in Austria, the paper comprises 100% de-inked post-consumer waste. Pulps used are totally chlorine-free.

The FSC™ recycled label means that the materials used for this product come from recycled material certified in accordance with the rules of the Forest Stewardship Council®.

100%
FSC
www.fsc.org
RECYCLED
Paper made from recycled material
FSC™ C006398

The Hongkong and Shanghai Banking Corporation Limited

HSBC Main Building
1 Queen's Road Central, Hong Kong
Telephone: (852) 2822 1111
Facsimile: (852) 2810 1112
www.hsbc.com.hk