The Hongkong and Shanghai Banking Corporation Limited

Annual Report and Accounts 2021

HSBC

Contents

Certain defined terms

This document comprises the *Annual Report and Accounts 2021* 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 2021* 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

	2021	2020
	HK$m	HK$m
For the year		
Net operating income before change in expected credit losses and other credit impairment charges	**178,658**	189,338
Profit before tax	**86,563**	90,196
Profit attributable to shareholders	**67,348**	69,447
At the year-end		
Total shareholders' equity	**856,809**	845,353
Total equity	**923,511**	911,531
Total capital[1]	**590,478**	614,545
Customer accounts	**6,177,182**	5,911,396
Total assets	**9,903,393**	9,416,403
Ratios	**%**	%
Return on average ordinary shareholders' equity	**8.0**	8.6
Post-tax return on average total assets	**0.7**	0.8
Cost efficiency ratio	**58.7**	50.6
Net interest margin	**1.37**	1.62
Advances-to-deposits ratio	**62.2**	62.1
Capital ratios		
Common equity tier 1 capital	**15.4**	17.2
Tier 1 capital	**16.8**	18.8
Total capital	**18.7**	20.8

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 covering Europe, Asia, the 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 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

Asia's growth story remains at the heart of HSBC's future. Based on the region's strong and sustained underlying fundamentals of economic growth, trade, and wealth creation, HSBC's strategy in the region remains aligned to the biggest opportunities to create further shareholder value. We are well positioned to further extend the strengths of our leading Hong Kong franchise across the Greater Bay Area, and in other key growth markets, including India and Southeast Asia. By increasing investment in our people and technology, we will further grow our leading Asian Wealth Management business, while maintaining our distinct position as the leading international bank for our corporate and commercial clients. We remain focused on connecting Asia to the world through HSBC's global network, supporting the ongoing transition to a low-carbon economy as a Sustainable Finance leader, continually streamlining our organisation to realise greater operating efficiencies, and improving service for our domestic, regional, and global clients through our technology, talent, and 156 years of experience in the region.

Consolidated Financial Statements

The consolidated financial statements of the group are set out on pages 73 to 131.

Subordinated Liabilities, Share Capital and Other Equity Instruments

Details on subordinated liabilities issued by the group are set out in Notes 23 and 32. Details on share capital and other equity instruments of the Bank are set out in Notes 24 and 25 on the Consolidated Financial Statements.

Dividends

The interim dividends paid in respect of 2021 are set out in Note 6 on the Consolidated Financial Statements.

Directors

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

Peter Tung Shun Wong, GBS, JP

Non-executive Chairman (since 7 June 2021)

He is also an advisor to the Group Chairman and the Group Chief Executive of HSBC Holdings plc, and 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.

Before his retirement as an HSBC employee in June 2021, he was an executive Director, Chief Executive and Deputy Chairman of the Bank. He was also a non-executive Director of Hang Seng Bank Limited.

David Gordon Eldon, GBS, CBE, JP

Non-executive Deputy Chairman (Director since 4 June 2021; Deputy Chairman since 7 June 2021)

He is also non-executive Chairman and a Director of Octopus Holdings Limited, Octopus Cards Limited and Octopus Cards Client Funds Limited. He holds an Honorary Doctor of Business Administration from City University of Hong Kong and is a Fellow of the UK Chartered Institute of Bankers and the Hong Kong Institute of Bankers.

Before his retirement as an HSBC employee in 2005 after 37 years of service, he was an executive Director, Chief Executive Officer and Chairman of the Bank. He was also non-executive Chairman of Hang Seng Bank Limited and a Director of HSBC Holdings plc.

David Yi Chien Liao

Co-Chief Executive Officer (since 7 June 2021)

He is also a member of the Group Executive Committee of HSBC Holdings plc. He is also a non-executive Director of Hang Seng Bank Limited and Bank of Communications Co., Ltd. He holds a Bachelor of Arts (major in Japanese and Economics) from the University of London.

He has previously held a number of senior positions within the Group, including the Head of Global Banking Coverage for Asia-Pacific and a Director and Chief Executive Officer of HSBC Bank (China) Company Limited.

Surendranath Ravi Rosha

Co-Chief Executive Officer (since 7 June 2021)

He is also a member of the Group Executive Committee of HSBC Holdings plc and a non-executive Director of HSBC Bank Australia Limited. He holds a Bachelor of Commerce from Sydenham College of Commerce & Economics, Bombay University and a Master of Business Administration from the Indian Institute of Management, Ahmedabad.

He has previously held a number of senior positions within the Group, including the Chief Executive Officer of HSBC India and Regional Head of Financial Institutions Group, Asia-Pacific.

Graham John Bradley

Independent non-executive Director

He is also non-executive Chairman and a Director of Volt Bank Limited, Volt Corporation Limited, United Malt Group Limited and Shine Justice Ltd.; and 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.

He was non-executive Chairman and a Director of HSBC Bank Australia Limited from 2004 to 2020. Before this, he was Managing Director and Chief Executive Officer of Perpetual Limited from 1995 until his retirement in 2003.

Dr Christopher Wai Chee Cheng, GBS, OBE

Independent non-executive Director

He is also Chairman of Wing Tai Properties Limited; and an independent non-executive Director of NWS Holdings Ltd. and 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.

Sonia Chi Man Cheng

Independent non-executive Director

She is also the Chief Executive Officer of Rosewood Hotel Group. She is also an executive Director of New World Development Company Limited and Chow Tai Fook Jewellery Group Limited; and a Director of New World China Land Limited. She holds a Bachelor of Arts degree with a field of concentration in Applied Mathematics from Harvard University.

Yiu Kwan Choi

Independent non-executive Director

He is also 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.

Rajnish Kumar

Independent non-executive Director (since 26 August 2021)

He is also non-executive Chairman of Resilient Innovations Pvt. Ltd.; an independent Director of Larsen & Toubro Infotech Limited; an adviser to Kotak Investment Advisors Ltd.; a Director of Lighthouse Communities Foundation; and a member of the Board of Governors of the Management Development Institute in India. He is also a senior adviser to Baring Private Equity Asia Pte Ltd. in Singapore. He holds a Master of Science in Physics from Meerut University and a Post Graduate Certificate in Business Management from XLRI Jamshedpur in India, and is a Certified Associate of the Indian Institute of Bankers.

He was formerly Chairman of the State Bank of India until he retired in October 2020.

Beau Khoon Chen Kuok

Independent non-executive Director

He is also Chairman and Managing Director of Kerry Group Limited. He holds a Bachelor of Economics from Monash University. He was previously Chairman and Chief Executive Officer of Shangri-La Asia Limited; Chairman of Kerry Properties Limited; and Non-Executive Director of Wilmar International Limited.

Irene Yun-lien Lee

Independent non-executive Director

She is also an independent non-executive Director of HSBC Holdings plc and independent non-executive Chairman of the Board of 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.

Victor Tzar Kuoi Li

Non-executive Director

He is also 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; and a non-executive Director and Deputy Chairman of HK Electric Investments Limited. He is also Deputy Chairman of Li Ka Shing Foundation Limited, Li Ka Shing (Global) Foundation and Member Deputy Chairman of 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 a degree of Doctor of Laws, honoris causa (LL.D.) from The University of Western Ontario.

Ewen James Stevenson

Non-executive Director (since 5 October 2021)

He is also the Group Chief Financial Officer and an executive Director of HSBC Holdings plc. He holds a Bachelor of Commerce and Administration and a Bachelor of Law from Victoria University of Wellington, New Zealand.

He was Chief Financial Officer of Royal Bank of Scotland Group plc from 2014 to 2018. He held a number of roles at Credit Suisse, including co-Head of the Europe, the Middle East and Africa Investment Banking Division and co-Head of the Global Financial Institutions Group.

Kevin Anthony Westley, BBS

Independent non-executive Director

He is also an independent non-executive Director of Fu Tak Iam Foundation Limited and a member of the investment committee of the West Kowloon Cultural District 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

Independent non-executive Director

He is also executive Chairman of YTL Corporation Berhad, YTL Land & Development Berhad, YTL Power International Berhad, YTL Cement Berhad, Malayan Cement Berhad and 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.

During the year, David Gordon Eldon was appointed as a non-executive Director with effect from 4 June 2021. At the conclusion of the 2021 Annual General Meeting ('AGM') held on 7 June 2021: Laura May Lung Cha, Jennifer Xinzhe Li, Zia Mody and Bin Hwee Quek (née Chua) stepped down as Directors; Peter Tung Shun Wong, the former Deputy Chairman and Chief Executive, was re-designated as a non-executive Director and was appointed Chairman; David Gordon Eldon was appointed as Deputy Chairman; and David Yi Chien Liao and Surendranath Ravi Rosha were appointed as executive Directors and co-Chief Executive Officers. Rajnish Kumar was appointed as an independent non-executive Director with effect from 26 August 2021. Ewen James Stevenson was appointed as a non-executive Director with effect from 5 October 2021. 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 2021 to the date of this report will be available on the Bank's website www.hsbc.com.hk/legal/regulatory-disclosures/.

Secretary

Paul Stafford is the Corporation Secretary.

Permitted Indemnity Provision

The Bank's Articles of Association provide that the Directors and other officers 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. 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 32 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 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 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 below GBP500,000. 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') designated Senior Management Functions), five years for Risk Managers, and four 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 as part of the Global Personal Account Dealing Certification.

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, Peter Wong, Ewen Stevenson, Surendra Rosha and David Liao acquired or were awarded shares of HSBC Holdings plc under the terms of the HSBC Share Plan 2011.

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$380m (2020: HK$345m).

Compliance with the Banking (Disclosure) Rules

The Directors are of the view that the *Annual Report and Accounts 2021* and Banking Disclosure Statements 2021 fully comply with the Banking (Disclosure) Rules made under section 60A of the Banking Ordinance and the Financial Institutions (Resolution) (Loss-absorbing Capacity Requirements – Banking Sector) Rules ('LAC Rules') made under section 19(1) of the Financial Institutions (Resolution) Ordinance ('FIRO').

Auditor

The Consolidated Financial Statements 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 HKMA Supervisory Policy Manual CG-1 'Corporate Governance of Locally Incorporated Authorised Institutions' ('SPM CG-1') except that following Board and Committee changes on. 7 June 2021 the membership of the Bank's Nomination Committee has not comprised a majority of independent non-executive Directors. The Bank's Nomination Committee currently comprises an equal number of independent non-executive Directors and non-executive Directors.

As a principal subsidiary of the HSBC Group, the Bank complies with the Group's subsidiary accountability framework including its responsibility for overseeing the implementation of the framework for all Group companies in Asia-Pacific. The principles of the subsidiary accountability framework, which were refreshed in 2021, set out high-level principles to promote effective governance and improve communications and connectivity between HSBC Holding plc and its subsidiaries.

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 comprises: the non-executive Chairman; the non-executive Deputy Chairman; two executive Directors who are the co-Chief Executive Officers; two other non-executive Directors; and 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 nine 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 co-Chief Executive Officers

The roles of the Chairman and co-Chief Executive Officers are separate and held respectively by an experienced non-executive Director and two full-time employees 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 in promoting the overall effectiveness of the Bank, in particular the development of strategy and monitoring of the execution and delivery of Board approved strategies and plans by the co-Chief Executive Officers and management. The Chairman's role includes promoting an open and inclusive culture on the Board to facilitate open and critical discussion and challenge and leading the Board in setting an appropriate 'tone from the top' and in the oversight of the Bank's corporate culture. The Chairman also leads an annual evaluation of the performance of the Board, its Committees and individual Directors, including contributing to consideration of succession planning of the Board, its Committees and senior executive management. The role also involves maintaining external relationships with key stakeholders and communicating their views to the Board.

The co-Chief Executive Officers are responsible for ensuring implementation of the strategy and policy as established by the Board and the day-to-day running of operations. The co-Chief Executive Officers are co-Chairmen of the Executive Committee.

The Asia-Pacific heads of Global Businesses and Global Functions report to the co-Chief Executive Officers.

Deputy Chairman

The role of the non-executive Deputy Chairman is to deputise formally for the Chairman of the Board in his absence and support the Chairman in the exercise of his responsibilities. The Deputy Chairman also acts as an intermediary for other non-executive Directors when necessary and leads the non-executive directors in the annual performance evaluation of the Chairman and in ensuring a clear division of responsibility between the Chairman and co-Chief Executive Officers. The role involves maintaining external relationships with key stakeholders and communicating their views to the Board.

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 and a Risk Management Meeting. 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 and the Risk Management Meeting.

To align with the revised Group Financial Crime Risk Governance Framework, the former Financial Crime Risk Management Committee was demised and its responsibility to oversee financial crime risks was integrated into the Risk Management Meeting in the first quarter of 2021.

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 co-Chief Executive Officers, David Liao and Surendranath Rosha, are co-Chairmen of the Committee. The current members of the Committee are: Justin Chan (Head of Markets & Securities Services, Greater China); Hitendra Dave (Chief Executive Officer, India); Frank Fang (Head of Commercial Banking, Hong Kong); Philip Fellowes (Chief of Staff, Asia-Pacific); Darren Furnarello (Chief Compliance Officer, Asia-Pacific); David Grimme (Chief Operating Officer, Asia-Pacific); Martin Haythorne (Chief Risk Officer, Asia-Pacific); Gregory Hingston (Chief Executive Officer, HSBC Global Insurance and Partnerships and Interim Head of Wealth and Personal Banking, South Asia); Ming Lau (Chief Financial Officer, Asia-Pacific and Global Commercial Banking); Stuart Lea (Head of Global Banking, South-Asia); Kaber Mclean (Chief Executive Officer Australia); Stuart Milne (Chief Executive Officer Malaysia); Amanda Murphy (Head of Commercial Banking, Southeast Asia and South Asia); Susan Sayers (Regional General Counsel, Asia-Pacific); Monish Tahilramani (Global Head of Markets & Securities Services Emerging Markets, Japan, Australia); David Thomas (Regional Head of Human Resources, Asia-Pacific); Mark Wang (President and Chief Executive Officer China) and Kee Joo Wong (Chief Executive Officer, Singapore). Paul Stafford (Corporation Secretary) is the Committee Secretary. In attendance are: Daisuke Kitamura (Interim Head of Global Banking, North-Asia); Astor Law (Head of Global Internal Audit, Asia-Pacific); Jessica Lee (Regional Head of Communications Asia-Pacific); Luanne Lim (Interim Chief Executive Officer, Hong Kong) and Philip Miller (Deputy Corporation Secretary). The Committee met eleven times in 2021. In between Committee meetings, there were periodic 'check-in' sessions held by the Committee Co-Chairmen with members to discuss urgent or important matters and to support effective communication.

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 assets, liabilities and capital within the constraints of liquidity and funding ratios, capital ratios, and key balance sheet risks such as interest rate risk, market risk and equity risk. The Committee also has responsibilities for the Bank's resolution planning activities.

The Committee consists of Ming Lau (Chief Financial Officer, Asia-Pacific and Global Commercial Banking), David Liao and Surendranath Rosha (co-Chief Executive Officers), the Regional Treasurer, Asia Pacific, the Regional Head of Asset and Liability Management, Asia-Pacific, the Regional Head of Capital Management, Asia-Pacific, the Head of Markets Treasury, Asia-Pacific, and other senior executives of the Bank most of whom are members of the Executive Committee. The Committee met ten times in 2021.

Risk Management Meeting

The Risk Management Meeting is chaired by the Chief Risk Officer and is a formal governance committee established to support the Chief Risk Officer's individual accountability for the oversight of enterprise risk and 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 Martin Haythorne (Chief Risk Officer, Asia-Pacific), David Liao and Surendranath Rosha (co-Chief Executive Officers), 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 ten times in 2021.

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 are Kevin Westley (Chairman of the Committee), Graham Bradley, Yiu Kwan Choi, David Eldon, Rajnish Kumar and Irene Lee. Except David Eldon who is a non-executive Director, all members are independent non-executive Directors. The Committee met four times in 2021.

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 receives minutes of meetings of the ALCO.

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 are Graham Bradley (Chairman of the Committee), Christopher Cheng, Sonia Cheng, Yiu Kwan Choi, David Eldon, Rajnish Kumar, Irene Lee and Kevin Westley. Except David Eldon who is a non-executive Director, all members are independent non-executive Directors. The Committee met five times in 2021.

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 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 the Group risk management policies and procedures at least annually and advises the Board if these are appropriate for the circumstances of the Bank. It also reviews local risk management policies at least annually, and approves or recommends any changes to the Board for approval.

The Committee reviews any revisions to the group's risk appetite statement twice a year 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 are also presented at each Risk Committee meeting to report on the ongoing monitoring, assessment and management of the risk environment and the effectiveness of the risk management framework. The Committee reviews matters escalated for its attention by subsidiaries' risk committees and receives minutes of meetings of the Risk Management Meeting.

Nomination Committee

The Nomination Committee is responsible for leading the process for Board appointments and for identifying and approving, or 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 Committee also reviews the board succession plans of certain subsidiaries of the Bank and considers and endorses appointments to boards of directors of those subsidiaries.

The current members of the Committee are Christopher Cheng (Chairman of the Committee), Peter Wong (Chairman of the Board), David Eldon (Deputy Chairman of the Board) and Beau Kuok. Christopher Cheng and Beau Kuok are independent non-executive Directors and Peter Wong and David Eldon are non-executive Directors. The Committee met eight times in 2021.

A rigorous selection process, overseen by the Nomination Committee and based upon agreed requirements using an external search consultancy when appropriate, 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 the 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 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 of the Board, the co-Chief Executive Officers and the Chairmen of the Audit and Risk Committees. The Committee met three times in 2021.

Remuneration Committee

The Group Remuneration Committee is responsible for setting the principles, parameters and governance framework for the Group's remuneration strategy applicable to all Group employees, which is adopted by the Bank. The Remuneration Committee of the Bank is responsible for the oversight of matters related to remuneration impacting the Bank and its subsidiaries, in particular, overseeing the implementation and operation of the Group's remuneration strategy and satisfying itself that the remuneration framework complies with local laws, rules or regulations; is in line with the risk appetite, business strategy, culture and values, and long-term interests of the Bank; and is appropriate to attract, retain and motivate employees to support the success of the Bank. The Committee annually reviews the effectiveness and compliance of the Group's remuneration strategy as adopted by the Bank alongside the submission of the Bank's HKMA Supervisory Policy Manual CG-5 'Guideline on a Sound Remuneration System' Self-Assessment as conducted by Deloitte LLP. The current members of the Committee, all being independent non-executive Directors, are Irene Lee (Chairman of the Committee), Christopher Cheng, Beau Kuok, Sonia Cheng and Francis Yeoh. The Committee met eight times in 2021.The following is a summary of the Committee's key activities during 2021:

Details of the Committee's key activities

Senior Management*

- Reviewed and approved senior management's remuneration and pay proposals
- Reviewed and approved the performance scorecards for the Co-Chief Executive and Executive Committee members of the Bank

All employees

- Approved 2020/2021 performance year pay review matters
- Reviewed remuneration framework effectiveness
- Received updates on notable events and regulatory and corporate governance matters
- Reviewed and approved 2021 Material Risk Taker ('MRT') identification approaches and outcomes
- Reviewed attrition data and plans to address area of concerns
- Approved 2021 remuneration related regulatory submissions

* *Senior Management includes the Chief Executive of the Bank, Chief Executive of Hang Seng Bank Limited, Executive Committee members, Alternate Chief Executives and Managers as registered with HKMA.*

Remuneration Strategy

Our performance and pay strategy underpinned by our Group's Remuneration Strategy and principles aims to competitively reward long-term sustainable performance. We aim to do this by attracting, motivating and retaining the very best people, regardless of gender, ethnicity, age, disability or any other factor unrelated to performance or experience.

The strategy supports the long-term interests of our stakeholders, which includes the customers and the communities we serve, our shareholders and our regulators. The strategy is underpinned by the below principles designed to support a fair and appropriate pay and performance approach, whilst recognizing the need for flexibility in a hybrid workplace. These include:

- Ensuring that the decisions made are fair, appropriate and free from bias. Managers are encouraged to challenge their assessment by questioning whether they were objective and based on facts;
- Rewarding and recognizing our people for sustainable performance and values aligned behavior upholding our refreshed purpose and values. As such, subject to local law, employee receive a behavior rating as well as a performance rating to ensure performance is assessed not only on what is achieved, but also on how it is achieved;
- Supporting a culture of continuous feedback through manager and employee empowerment and creating a culture where employees can fulfil their potential, gain new skills and develop their careers for the future;
- To deliver a balanced, simple and transparent total reward package that supports employee well-being; and
- 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 2021* 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 2020 was commissioned externally to Deloitte LLP and the results were approved by the Remuneration Committee in April 2021. The review confirmed that the Bank's remuneration strategy as adopted from the Group is consistent with the principles set out in the Guideline.

Recovery and Resolution Planning

The group is subject to recovery and resolution requirements in many of the jurisdictions in which it operates.

Recovery

The group maintains creditable and executable recovery plans that are designed to present clear and tested strategies and recovery actions to restore capital to a stable and viable position, thus lowering the probability of failure. The Bank typically submits recovery plans on an annual basis to the HKMA and to other regulators that have implemented recovery planning requirements. The Bank's recovery plans are continually re-appraised, and this involves stress testing and 'fire drill' tests.

Resolution

Resolution refers to the exercise of statutory powers where a financial institution and/or its parent or other group company is deemed by its regulators to be failing, or likely to fail and it is not reasonably likely that action could be taken that would result in the institution recovering.

The group continues to engage with the HKMA and the other principal Asian regulators in addressing any identified impediments to resolvability of the group, ensuring resolvability capabilities being developed are in line with the local requirements and regulatory expectations.

The Financial Institutions (Resolution) (Loss-absorbing Capacity Requirements–Banking Sector) Rules ('LAC Rules') require the group 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, 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.

As part of the Resolvability Assessment Framework ('RAF') issued by the Bank of England and Prudential Regulation Authority ('PRA') which places the onus on firms to demonstrate their own resolvability, HSBC Group is required to have capabilities as of. 1st January 2022 to achieve the resolvability outcomes: (i) have adequate resources in resolution; (ii) be able to continue business through resolution and restructuring; and (iii) be able to co-ordinate its resolution and communicate effectively with stakeholders. The group is part of the HSBC Group-wide RAF implementation. The RAF requires HSBC to prepare a report on the HSBC Group's assessment of its preparedness for resolution, which must be submitted to the PRA on a biennial basis. HSBC submitted its first such report to the PRA in October 2021 and will publish a public summary of the report in June 2022. The BoE will similarly publish a statement concerning the resolvability of HSBC at the same time.

Environmental, Social and Governance

We are committed to building a business for the long term, developing relationships that last. We maintain high standards of governance and meet our responsibilities to society.

Environmental matters

Continuing our Sustainable Finance leadership in Asia

As part of the Group's Climate Strategy, the Group has committed to align its business to net-zero by 2050. In the fourth quarter of 2020, the Group announced an ambitious plan to prioritise financing and investment that supports the transition to a net zero global economy – this reinforces our global sustainable finance commitments made in 2017. In early 2021, the Group proposed a Climate Resolution on actions to take in connection with our ambition to align our provision of finance with a net zero outcome by 2050, and has published our thermal-coal phase-out policy as well as an update on our approach to financed emissions in December 2021.

Our net zero ambition represents a material step up in our support for customers as we collectively work towards building a thriving low carbon economy. We have made strong progress in undertaking greater sustainable finance business in Asia. In 2021, the group was awarded 'Asia's Best Bank of Sustainable Finance' by *Euromoney* for the fourth consecutive year since award inception. Throughout the year, we continued to expand our sustainable finance market leadership, product and service offerings across our Commercial Banking ('CMB'), Wealth and Personal Banking ('WPB'), Global Banking ('GB') and Markets and Securities Services ('MSS') businesses.

GB and MSS's ESG Solutions Unit continues to lead the business's effort in providing advice, expertise and financing ideas to clients in Asia and around the world. We have fronted the building of the Asian market on Sustainability Linked Loans ('SLLs') and Green Loans. We have continued our leadership in the Green/ Social/ Sustainable and Sustainability-Linked issuances space, and have arranged the world's first government Global Medium Term Note Programme dedicated to green bond issuances and the first 30-year green bond being issued by an Asian government for the HKSAR Government, the first ever transition bonds issuance aligned to the ICMA Climate Transition Finance Handbook, as well as ASEAN's first green SRI Sukuk through HSBC Amanah.

In CMB, we have expanded SLL and Sustainable/Green Trade Facilities to clients in Asia. We have launched a SLL Programme to support corporates in the services sector in Hong Kong by encouraging and linking environmental and social performance targets through the financing product, and have arranged numerous SLLs across Asian markets. We have also developed green liability product solutions in Asia, namely green deposits for our corporate clients in Hong Kong, Thailand and India.

In WPB, we continue to support clients' sustainable aspirations by embedding ESG across client engagement and investment solutions. We focus on product development, thought leadership, developing an ESG culture and embedding ESG throughout the business. We offer a comprehensive suite of sustainable investment products to help clients to fulfil their sustainability preferences while delivering financial goals. These include ESG funds, green, social and sustainability bonds, structured products and green certificate of deposits.

More information about our assessment of climate risk can be found in 'Areas of special interest' on pages 23 to 26.

Employee matters

We are opening up a world of opportunity for our colleagues through building an inclusive organisation that values difference, takes responsibility, and seeks different perspectives for the overall benefit of our customers.

We want to encourage a dynamic culture where our colleagues can expect to be treated with dignity and respect. We are an organisation that takes action where we find behaviours that fall short of this aspiration. We monitor our progress through metrics that we value and have benchmarked against peers.

Listening to our colleagues is critical to the business we conduct, and is reflected in our purpose and values, which were established through an enterprise-wide engagement activity.

We continue to seek innovative ways that encourage and provide opportunities for our people to speak up. We recognise that at times people may not feel comfortable speaking up through the usual channels. HSBC Confidential is our global whistleblowing channel, open to colleagues past and present as an anonymous channel through which they can raise concerns confidentially at their discretion.

Social matters

We have a responsibility to invest in the long-term prosperity of the communities where we operate. We recognise that technology is developing at a rapid pace and that a range of new and different skills are now needed to succeed in the workplace. For this reason, much of our focus is on programmes that develop employability and financial capability. We also back initiatives that support responsible business, and contribute to disaster relief efforts based on need. More details on customer relief programmes can be found on pages 46 to 47.

Human rights

Our commitment to respecting human rights, principally as they apply to our employees, our suppliers and through our financial services lending, is aligned to that of the Group, the details of which are set out in the HSBC's Statement on Human Rights, which is available on www.hsbc.com/our-approach/measuring-our-impact.

Anti-corruption and anti-bribery

We require compliance with all applicable anti-bribery and corruption laws in all markets and jurisdictions in which we operate. We have a global anti-bribery and corruption policy, which gives practical effect to these laws and regulations, but also requires compliance with the spirit of laws and regulations to demonstrate our commitment to ethical behaviours and conduct as part of our environmental, social and corporate governance.

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 an indirect wholly-owned subsidiary of HSBC Holdings plc.

On behalf of the Board

Peter Wong, Chairman

22 February 2022

Financial Review

Results for 2021

(Unaudited)

Profit before tax for 2021 reported by The Hongkong and Shanghai Banking Corporation Limited ('the Bank') and its subsidiaries (together 'the group') decreased by HK$3,633m, or 4%, to HK$86,563m.

Consolidated income statement and balance sheet data by reportable segments

(Audited)

	Wealth and Personal Banking[1] HK$m	Commercial Banking[1] HK$m	Global Banking[1,2] HK$m	Markets and Securities Services[2] HK$m	Corporate Centre[3] HK$m	Other (GBM-other)[2] HK$m	Total HK$m
Year ended 31 Dec 2021							
Net interest income	**50,632**	**29,106**	**15,070**	**3,497**	**(2,640)**	**2,448**	**98,113**
Net fee income/(expense)	**23,827**	**9,828**	**5,746**	**5,730**	**243**	**(78)**	**45,296**
Net income from financial instruments measured at fair value through profit or loss	**22,195**	**3,551**	**39**	**19,363**	**214**	**513**	**45,875**
Gains less losses from financial investments	**956**	**368**	**—**	**—**	**—**	**343**	**1,667**
Net insurance premium income/(expense)	**58,645**	**3,499**	**—**	**—**	**(422)**	**—**	**61,722**
Other operating income	**202**	**39**	**237**	**1,113**	**599**	**(157)**	**2,033**
Total operating income	**156,457**	**46,391**	**21,092**	**29,703**	**(2,006)**	**3,069**	**254,706**
Net insurance claims and benefits paid and movement in liabilities to policyholders	**(72,658)**	**(3,743)**	**—**	**—**	**353**	**—**	**(76,048)**
Net operating income before change in expected credit losses and other credit impairment charges	**83,799**	**42,648**	**21,092**	**29,703**	**(1,653)**	**3,069**	**178,658**
– *of which: external*	***80,570***	***43,398***	***20,539***	***29,644***	***(2,284)***	***6,791***	***178,658***
inter-segment	***3,229***	***(750)***	***553***	***59***	***631***	***(3,722)***	***—***
Change in expected credit losses and other credit impairment charges	**(1,224)**	**(3,295)**	**(2,013)**	**(10)**	**(6)**	**9**	**(6,539)**
Net operating income	**82,575**	**39,353**	**19,079**	**29,693**	**(1,659)**	**3,078**	**172,119**
Operating expenses	**(49,429)**	**(20,839)**	**(10,152)**	**(14,629)**	**(7,332)**	**(2,495)**	**(104,876)**
Operating profit	**33,146**	**18,514**	**8,927**	**15,064**	**(8,991)**	**583**	**67,243**
Share of profit in associates and joint ventures	**137**	**—**	**—**	**—**	**19,183**	**—**	**19,320**
Profit before tax	**33,283**	**18,514**	**8,927**	**15,064**	**10,192**	**583**	**86,563**
Balance sheet data at 31 Dec 2021							
Loans and advances to customers (net)	**1,544,449**	**1,315,961**	**927,542**	**49,887**	**1,540**	**1,560**	**3,840,939**
Customer accounts	**3,407,789**	**1,659,464**	**891,994**	**211,621**	**28**	**6,286**	**6,177,182**
Year ended 31 Dec 2020							
Net interest income	59,783	34,192	16,993	3,389	(5,357)	2,513	111,513
Net fee income/(expense)	22,174	9,002	5,382	4,973	162	(23)	41,670
Net income from financial instruments measured at fair value through profit or loss	18,927	2,985	(140)	20,544	2,067	884	45,267
Gains less losses from financial investments	772	450	—	—	(15)	417	1,624
Net insurance premium income/(expense)	58,261	3,627	—	—	(325)	—	61,563
Other operating income	5,056	66	303	1,250	(372)	(691)	5,612
Total operating income	164,973	50,322	22,538	30,156	(3,840)	3,100	267,249
Net insurance claims and benefits paid and movement in liabilities to policyholders	(74,394)	(3,700)	—	—	183	—	(77,911)
Net operating income before change in expected credit losses and other credit impairment charges	90,579	46,622	22,538	30,156	(3,657)	3,100	189,338
– of which: external	*77,669*	*49,975*	*25,868*	*33,633*	*(4,711)*	*6,904*	*189,338*
inter-segment	*12,910*	*(3,353)*	*(3,330)*	*(3,477)*	*1,054*	*(3,804)*	*—*
Change in expected credit losses and other credit impairment charges	(4,441)	(12,145)	(1,089)	(16)	(5)	(23)	(17,719)
Net operating income	86,138	34,477	21,449	30,140	(3,662)	3,077	171,619
Operating expenses	(47,292)	(19,391)	(9,261)	(12,317)	(5,132)	(2,435)	(95,828)
Operating profit	38,846	15,086	12,188	17,823	(8,794)	642	75,791
Share of profit in associates and joint ventures	6	—	—	—	14,399	—	14,405
Profit before tax	38,852	15,086	12,188	17,823	5,605	642	90,196
Balance sheet data at 31 Dec 2020							
Loans and advances to customers (net)	1,463,558	1,206,857	966,765	24,998	3,402	3,101	3,668,681
Customer accounts	3,333,360	1,472,646	899,564	204,431	449	946	5,911,396

1 *In 2021, the cards acquiring business has been transferred from Commercial Banking ('CMB') and Global Banking ('GB') to Wealth and Personal Banking ('WPB') to align with the business model. Comparatives have been re-presented to conform to the current year's presentation.*
2 *In the second half of 2021, the reportable segments have been changed to reflect the change in the management of the Global Banking and Markets ('GBM') business, with the splitting out of GB and Markets and Securities Services ('MSS') as separate reportable segments, whilst GBM-Other (previously reported within GBM) is now reported under 'Other (GBM-other)'. Comparatives have been re-presented to conform to the current year's presentation. Further details on the change in reportable segments are set out in Note 31 'Segmental analysis' in the* Annual Report and Accounts 2021.
3 *Includes inter-segment elimination.*

Financial Review

Effective from the second half of 2021, the operating segment of GBM has been expanded into Global Banking ('GB'), Markets and Securities Services ('MSS') and Global Banking and Markets – Other ('GBM–other') to reflect changes to both the management structure and internal reporting to the Chief Operating Decision Maker to execute the Group's GBM strategy in Asia. GB and MSS are separate reportable segments. GBM–other, which mainly comprises of business activities which are jointly managed by GB and MSS, is reported under 'Other (GBM–other)'. MSS includes revenues for products and services sold to GB clients that are not necessarily reflected on a shared basis in the GB segment. MSS and GB comprise certain costs and cost allocations that are split for internal reporting purposes but are shared in nature and not wholly directly attributable to any one segment. GBM-other mainly comprises of distinct business activities that are jointly managed by GB and MSS. The new reporting structure does not change the Group's management of its global GBM strategy.

The commentary that follows compares the group's financial performance for the year ended 2021 with 2020.

Results Commentary

(Unaudited)

The group reported profit before tax of HK$86,563m, a decrease of HK$3,633m, or 4%. Net operating income before change in expected credit losses and other credit risk provisions decreased by HK$10,680m, or 6%, driven by lower net interest income, while operating expenses increased by HK$9,048m, or 9%, from investments in technology and our wealth businesses. As a result, the cost efficiency ratio increased from 50.6% in 2020 to 58.7% in 2021.

Net interest income decreased by HK$13,400m, or 12%. Excluding the favourable foreign exchange impact, net interest income decreased by HK$15,010m, or 13%, driven by Hong Kong primarily due to narrower customer deposit spreads and lower reinvestment yields as market interest rates decreased, partly offset by balance sheet growth. Net interest income in India and Malaysia also decreased, reflecting the same impact from the lower interest rate environment.

Net fee income increased by HK$3,626m, or 9%. Excluding the favourable foreign exchange impact, net fee income increased by HK$3,114m, or 7%, driven by WPB in Hong Kong from an increase in unit trust income due to an increase in sales volumes, coupled with higher funds under management fees due to increased fund size, reflecting improved market sentiment compared to 2020. Net fee income in MSS also increased, mainly from higher global custody and securities brokerage fees due to increased equities turnover, coupled with higher funds under management fees. To a lesser extent, an increase was also noted in CMB, mainly from higher trade-related fees as global trade volumes recovered during 2021, coupled with higher remittance fees as customer activity increased.

Net income from financial instruments measured at fair value through profit or loss increased by HK$608m, or 1%.

Net income from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss increased by HK$5,052m, or 38%, mainly in WPB in Hong Kong, driven by higher revaluation gains on the equity portfolio held to support insurance and investment contracts due to improved market conditions. To the extent that these gains are attributable to policyholders, there is an offsetting movement reported under 'Net insurance claims and benefits paid and movement in liabilities to policyholders'.

Net income from financial instruments held for trading or managed on a fair value basis decreased by HK$3,813m, or 12%, driven by Hong Kong from lower trading income in Global Debt Markets, Global Foreign Exchange and Securities Financing businesses, partly offset by higher Equities trading income. The decrease was partly offset by an increase in mainland China from the favourable movement in foreign exchange translation of balance sheet exposures and from the favourable revaluation on structured deposits.

Net insurance premium income increased by HK$159m, remained flat. Gross insurance premium income increased by 3%, mainly in Singapore and mainland China, reflecting higher sales volumes, largely offset by increased reinsurance arrangements in Hong Kong.

Other operating income decreased by HK$3,579m, or 64%, driven by the unfavourable movement in the present value of in-force long-term insurance business ('PVIF'), partly offset by the non-recurrence of revaluation losses on investment properties in Hong Kong in 2020.

The unfavourable movement in PVIF reflected adverse assumption changes and experience variances in Hong Kong and Singapore, primarily due to interest rates movements, partly offset by an increase in the value of new business written, mainly in Hong Kong.

The movement in PVIF was partly offset by a corresponding movement in 'Net insurance claims and benefits paid and movement in liabilities to policyholders'.

Net insurance claims and benefits paid and movement in liabilities to policyholders decreased by HK$1,863m, or 2%, driven by the unfavourable movement in PVIF, partly offset by higher investment returns to policyholders due to the more favourable equity market performance compared with the prior year.

Change in expected credit losses and other credit risk provisions decreased by HK$11,180m, or 63%, notably in CMB, mainly reflecting the non-recurrence of charges in relation to the unfavourable forward economic outlook as impacted by Coronavirus Disease 2019 ('Covid-19') in 2020, and also from lower specific charges due to the non-recurrence of a significant charge in the prior year. A decrease was also noted in WPB, reflecting the same impact from the forward economic outlook update in the prior year. The decreases in CMB and WPB were partly offset by an increase in GB, mainly due to an increase in allowance relating to mainland China's commercial real estate sector.

Total operating expenses increased by HK$9,048m, or 9%. Excluding the unfavourable foreign exchange impact, operating expenses increased by HK$7,719m, or 8%, reflecting an increase in investments in technology, including investments in our digital capabilities, and in our Asia wealth business. Employee compensation and benefits also increased, mainly from higher performance-related pay and wage inflation, partly offset by lower average headcount across the region.

Share of profit in associates and joint ventures increased by HK$4,915m, or 34%. Excluding the favourable foreign exchange impact, the share of profit in associates and joint ventures increased by HK$3,857m, or 25%, mainly from Bank of Communications Co., Limited.

Net interest income

(Unaudited)

	2021	2020
	HK$m	HK$m
Net interest income	**98,113**	111,513
Average interest-earning assets	**7,173,973**	6,882,970
	%	%
Net interest spread	**1.32**	1.53
Contribution from net free funds	**0.05**	0.09
Net interest margin	**1.37**	1.62

Net interest income ('NII') decreased by HK$13,400m, or 12%. Excluding the favourable foreign exchange impact, net interest income decreased by HK$15,010m, or 13%, driven by Hong Kong primarily due to narrower customer deposit spreads and lower reinvestment yields as market interest rates decreased, partly offset by balance sheet growth. To a lesser extent, net interest income in India and Malaysia also decreased.

Average interest-earning assets increased by HK$291bn, or 4%, driven by Hong Kong, mainland China and India, mainly reflecting growth in the commercial surplus as customer deposits increased.

Net interest margin ('NIM') dropped by 25 basis points ('bps'), with decreases noted across the region, primarily in Hong Kong and mainland China, as market interest rates decreased significantly compared to the prior year. This resulted in narrower customer deposit spreads and lower reinvestment yields. The increase in commercial surplus, which was primarily deployed into reverse repurchase agreements and other short-term funds, also contributed to lower yields.

Insurance manufacturing

(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

	2021	2020
	HK$m	HK$m
Insurance manufacturing operations[1]		
Net interest income	**16,527**	15,654
Net fee expense	**(3,617)**	(2,923)
Net income from financial instruments measured at fair value	**18,036**	13,812
Net insurance premium income	**62,135**	61,874
Change in present value of in-force long-term insurance business	**(1,294)**	3,840
Other operating income/(expense)	**719**	(364)
Total operating income	**92,506**	91,893
Net insurance claims and benefits paid and movement in liabilities to policyholders	**(76,361)**	(78,093)
Net operating income before change in expected credit losses and other credit impairment charges	**16,145**	13,800
Change in expected credit losses and other credit impairment charges	**(216)**	(440)
Net operating income	**15,929**	13,360
Total operating expenses	**(3,464)**	(2,595)
Operating profit	**12,465**	10,765
Share of profit in associates and joint ventures	**137**	6
Profit before tax	**12,602**	10,771
Annualised new business premiums of insurance manufacturing operations	**19,136**	15,749
Distribution income earned by the group's bank channels	**4,135**	4,092

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$1,831m, or 17%, driven by more favourable equity markets compared to 2020, together with higher new business volumes.

Net interest income increased by 6% 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, mainly from gains on the equity portfolio held to support insurance and investment contracts in Hong Kong, due to more favourable equity market performance.

Net insurance premium income increased from higher sales volumes mainly in Singapore and mainland China, partly offset by increased reinsurance arrangements in Hong Kong.

The unfavourable movement in PVIF reflected adverse assumption changes and experience variances in Hong Kong and Singapore primarily due to interest rates movements, partly offset by an increase in the value of new business written, mainly in Hong Kong.

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 increased by HK$3,387m, or 22%, mainly in Hong Kong reflecting new business initiatives, product launches and marketing promotions to support domestic sales. New business levels in 2020 were impacted by the onset of Covid-19.

Balance sheet commentary compared with 31 December 2020

(Unaudited)

The consolidated balance sheet at 31 December 2021 is set out in the Consolidated Financial Statements.

Gross loans and advances to customers increased by HK$175bn, or 5%. Excluding the unfavourable foreign exchange translation effects of HK$13bn, gross loans and advances to customers increased by HK$188bn, driven by an increase in residential mortgages of HK$77bn, mainly in Hong Kong and Australia. In addition, corporate and commercial lending and non-bank financial institution lending increased by HK$62bn and HK$37bn respectively, mainly in Hong Kong, mainland China and India.

Overall credit quality remained strong, with total gross impaired loans and advances as a percentage of gross loans and advances standing at 1.11% at the end of 2021 (2020: 0.99%). The change in expected credit losses as a percentage of average gross customer advances was 0.18% for 2021 (2020: 0.44%).

Interests in associates and joint ventures

At 31 December 2021, 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 continue to 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 the income statement. 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$266bn, or 4%, to HK$6,177bn. The advances-to-deposits ratio was 62.2% at the end of the year (2020: 62.1%).

Shareholders' equity grew by HK$11bn to HK$857bn at 31 December 2021, mainly reflecting the current year's profit, net of dividend payments.

Risk

Our approach to risk

(Unaudited)

Our risk appetite

We recognise the importance of a strong culture, which refers to our shared attitudes, values and standards that shape behaviours related to risk awareness, risk taking and risk management. All our people 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 continue to incorporate consideration of these 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 our risk appetite and strong risk management capability.
- We aim to deliver sustainable and diversified earnings and consistent returns for shareholders.

Business practice

- We have zero tolerance for any of our people knowingly engaging 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 any member of staff or by any group business.
- We are committed to managing the climate risks that have an impact on our financial position, and delivering on our net zero ambition.

Enterprise-wide application

Our risk appetite encapsulates the 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 these types of risks to maximise shareholder value and profits. Non-financial risk is the risk to achieving our strategy or objectives as the result of 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 and to material operating entities. It continues to evolve and expand its scope as part of our regular review process.

The Board reviews and approves the group's risk appetite twice a year 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;
- 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 on the recommendation of the group Risk Committee ('RC'). Setting out our risk appetite ensures 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 applied to the development of business line strategies, strategic and business planning, and remuneration. At a group level, performance against the RAS is reported to the group Risk Management Meeting ('RMM') alongside key risk indicators to support targeted insight and discussion on breaches of risk appetite and associated mitigating actions. This reporting allows risks to be promptly identified and mitigated, and informs risk-adjusted remuneration to drive a strong risk culture.

Most global businesses and strategically important entities are required to have their own RAS, which is monitored to help ensure it remains aligned with the group's RAS. Each RAS and business activity is 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 customers, business, colleagues, shareholders and the communities that we serve, while ensuring we are able to support our strategy and provide sustainable growth. This is supported through our three lines of defence model described on page 16.

The implementation of our business strategy, which include a major transformation programme, remains a key focus. As we implement change initiatives, we actively manage the execution risks. We also perform periodic risk assessments, including against strategies to help ensure retention of key personnel for our continued safe operation.

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

The framework fosters continual monitoring, promotes risk awareness and encourages a sound operational and strategic decision making and escalation process. It also supports a consistent approach to identifying, assessing, managing and reporting the risks we accept and incur in our activities, with clear accountabilities. We continue to actively review and develop our risk management framework and enhance our approach to managing risk, through our activities with regard to: people and capabilities; governance; reporting and management information; credit risk management models; and data.

Our risk management framework

The following diagram and descriptions summarise key aspects of the risk management framework, including governance, structure, risk management tools and our culture, which together help align employee behaviour with 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 processes in place to identify/assess, monitor, manage and report risks to help 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	Operational and resilience risk management 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 and approves our risk appetite. It is advised on risk-related matters by the 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 regulatory compliance risk and financial crime risk resides with the group's Chief Compliance Officer. Oversight is maintained by the group's Chief Risk Officer, in line with his enterprise risk oversight responsibilities, through the RMM.

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 as described in the following commentary, 'Our responsibilities'.

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. This structure is summarised in the following table.

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 Co-Chief Executives 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 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 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 roles. Roles are defined using the three lines of defence model, which takes into account our business and functional structures as described below.

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 challenges the first line of defence on effective risk management, and provides advice and guidance in relation to the risk.
- The third line of defence is our Global 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 identifying and managing forward-looking risk. The group's Risk function is made up of sub-functions covering all risks to our business. Forming part of the second line of defence, the group's Risk function 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 at sites and global businesses.

We have continued to strengthen the control environment and our approach to the management of non-financial risk, as broadly set out in our risk management framework. The management of non-financial risk focuses on governance and risk appetite, and provides a single view of the non-financial risks that matter the most and the 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 and Resilience Risk function, headed by the group Head of Operational and Resilience Risk.

Stress testing and recovery planning

The group operates a wide-ranging stress testing programme that is a key part of our risk management and capital and liquidity 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 and liquidity 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 stress scenarios is based upon the output of our identified top and emerging risks 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, be absorbed through capital and liquidity. This in turn informs decisions about preferred capital and liquidity levels and allocations.

In addition to the group-wide stress testing scenarios, each major subsidiary and branch conducts regular macroeconomic and event-driven scenario analyses specific to its 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 to potential scenarios.

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.

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

Recovery and resolution plans

Recovery and resolution plans form part of the integral framework safeguarding the group's financial stability. The group's recovery plan, together with stress testing, helps us understand the likely outcomes of adverse business or economic conditions and in the identification of mitigating actions.

Key developments in 2021

In 2021, it was announced that Mark McKeown was retiring from his role of the group's Chief Risk Officer in late October 2021. Martin Haythorne, who was the Global Head of Wholesale Credit and Lending, has been appointed as the group's Chief Risk Officer with effect from 2 August 2021.

We continued to actively manage the risks resulting from the Covid-19 pandemic and its impacts on our customers and operations during 2021, as well as other key risks described in this section.

In addition, we enhanced our risk management in the following areas:

- We streamlined the articulation of our risk appetite framework, providing further clarity on how risk appetite interacts with strategic planning and recovery planning processes.
- We continued to simplify our approach to non-financial risk management, with the implementation of more effective oversight tools and techniques to improve end-to-end identification and management of these risks.
- We accelerated the transformation of our approach to managing financial risks across the businesses and risk functions, including initiatives to enhance portfolio monitoring and analytics, credit risk management, traded risk management, treasury risk management and models used to manage financial risks.
- We are progressing with a comprehensive regulatory reporting programme to strengthen our global processes, improve consistency, and enhance controls.
- We launched an enhanced approach to Conduct for all colleagues, businesses and geographies, establishing the outcomes to be achieved for customers and markets in all risk disciplines, operations and technologies and integrating it into our approach to culture and our risk management arrangements.
- We continued to enhance our approach to portfolio risk management, through clearly defined roles and responsibilities, and improving our data and management information reporting capabilities.
- We established a dedicated Climate Risk Oversight Forum to oversee our approach to climate risk. Globally, the Group has appointed a Group Head of Climate Risk in support of our climate change strategy and to oversee the development of our climate risk management capabilities. We leveraged on the Group climate risk programme, which continues to drive the delivery of our enhanced climate risk management approach.
- We continued to improve the effectiveness of our financial crime controls with a targeted update of our fraud controls. We refreshed our financial crime policies, ensuring they remained up-to-date and addressed changing and emerging risks, and we continued to meet our regulatory obligations.

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 region and global businesses, for any risks that may require global escalation, updating our top and emerging risks as necessary.

Our current top and emerging risks are as follows:

Externally driven

Geopolitical and macroeconomic risks

(Unaudited)

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

Global tensions over trade, technology and ideology are manifesting themselves in divergent regulatory standards and compliance regimes, presenting long-term strategic challenges for multinational businesses.

The Covid-19 pandemic brought supply chain issues into focus, with shortages appearing across several regions and products throughout 2020 and 2021, and it is not expected that these issues will ease significantly before mid-2022.

The pandemic has also heightened geopolitical tensions, which could have implications for the group and its customers.

The group will increasingly need to consider potential regulatory, reputational and market risks arising from the evolving geopolitical landscape. In 2021, there was an escalation of tensions between China and the US, and increasingly extending to the UK, the EU, India and other countries.

The US-China relationship in particular remains complex, with divisions over a number of critical issues. The US, the UK, the EU, Canada and other countries have imposed various sanctions and trade restrictions on Chinese persons and companies, and the US continues to develop its approach to perceived strategic competition with China.

Certain US measures are particularly relevant. The US Hong Kong Autonomy Act authorises secondary sanctions against non-US financial institutions found to be knowingly conduct significant transactions with individuals and entities that are determined by the US to have undermined Hong Kong’s autonomy. In addition, the US has imposed restrictions on US persons’ ability to buy or sell certain publicly traded securities of certain Chinese companies linked to China’s defence and related material or surveillance sectors.

There are also increasing discussions between the US and other governments on multilateral efforts to address certain issues with China, which are likely to create a more complex operating environment for the group and its customers. Notably, with its traditional allies including the EU, UK, and Canada, the US has increasingly instituted sanctions in response to allegations of human rights abuses in Xinjiang.

China in turn has announced a number of its own sanctions and trade restrictions that target foreign individuals and companies. These have been imposed mainly against certain public officials associated with the implementation of foreign sanctions against China. China has promulgated new laws that provide a legal framework for imposing further sanctions and export restrictions, including a law prohibiting the implementation of, or compliance with, foreign sanctions against China and which also creates a private right of action in the Chinese courts for damages caused by third parties implementing foreign sanctions or other discriminatory measures. These and any future measures and countermeasures that may be taken by the US, China and other countries may affect the group, its customers, and the markets in which we operate.

As the geopolitical landscape evolves, compliance by multinational corporations with their legal or regulatory obligations in one jurisdiction may be seen as supporting the law or policy objectives of that jurisdiction over another, creating additional compliance, reputational and political risks for the group. We maintain an open dialogue with our regulators on the impact of legal and regulatory obligations on our business and customers.

Expanding data privacy and cybersecurity laws in a number of markets could pose potential challenges to intra-group data sharing. These developments could increase financial institutions' compliance burdens in respect of cross-border transfers of personal information.

Monetary and fiscal policies in developed markets will likely remain broadly accommodative for some time owing to uncertainty over the economic outlook. However, rising global inflation – partly on the back of higher energy prices – is putting pressure on central banks to tighten monetary policy. The US Federal Reserve Board began tapering its asset purchases from November 2021 and financial markets currently expect it to raise the Federal Funds rate over the next year. The European Central Bank is on course to end its extraordinary asset purchase programme in March 2022.

Persistent supply issues or further increases in energy prices – for instance as a result of escalation in the Russia-Ukraine crisis – could keep inflation high and force central banks to tighten monetary policies faster than currently envisaged. Conversely, monetary policy tightening may be constrained by the emergence and spread of new Covid-19 variants that dampen economic recovery. We continue to monitor our risk profile closely in the context of uncertainty over monetary policies.

Market concerns remain about repercussions for the Chinese domestic economy from the recent instability in the commercial real estate sector. Such repercussions may occur directly through financial exposures to the Chinese commercial real estate sector, or indirectly through the effect of a slowdown in economic activity in China and in the supply chain to the real estate sector. While at 31 December 2021 we had no direct credit exposure to developers classified as falling within the 'red' category of the 'three red lines' framework used by the Chinese government in its governance of the real estate sector, deteriorating operating performance and challenging liquidity conditions were more broadly seen across the sector. We continue to monitor the situation closely, including potential indirect impacts, and seek to take mitigating actions as required.

The global economic recovery in 2021 eased financial difficulties for some of our customers, which contributed to a reduction in ECL charges.

For further details on customer relief programmes, see pages 46 to 47.

Mitigating actions

- We closely monitor geopolitical and economic developments in key markets and sectors and undertake scenario analysis where appropriate. This helps 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 to rebalance exposures and manage risk appetite where necessary.
- We regularly review 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.
- We have taken steps to enhance physical security in those geographical areas deemed to be at high risk from terrorism and military conflicts.

Environmental, social and governance risk

(Unaudited)

We are subject to financial and non-financial risks associated with environmental, social and governance ('ESG') risk. Our main ESG risks are climate risk, nature-related risks and human rights risks. These can impact us both directly and indirectly through our customers.

Climate-related risk increased over 2021, owing to the pace and volume of policy and regulatory changes globally particularly on climate risk management, stress testing and scenario analysis and disclosures. If we fail to meet evolving regulatory expectations or requirements on climate risk management, this could have regulatory compliance and reputational impacts for the group.

We face increased reputational, legal and regulatory risks as we make progress towards our net zero ambition, with stakeholders likely to place a greater focus on our actions such as the development of climate-related policies, our disclosures and investment decisions relating to our ambition. To track and report on progress towards achieving our ambition, we rely on internal and external data, guided by certain industry standards. While emissions reporting has improved over time, data remain of limited quality and consistency. Methodologies we have used may develop over time in line with market practice and regulation as well as owing to developments in climate science. Any developments in data and methodologies could result in revisions, meaning that reported figures may not be reconcilable or comparable year-on-year. We may also have to re-evaluate our progress towards our climate-related targets in future and this could result in reputational, legal and regulatory risks.

Climate risk will also have an impact on model risk, as models play an important role in risk management and the financial reporting of climate-related risks. The uncertain impacts of climate change and data limitations, present challenges to creating reliable and accurate model outputs.

We could also face increased resilience, retail credit and wholesale credit risks owing to the increase in frequency and severity of weather events and chronic shifts in weather patterns. These risks could impact our own critical operations resulting in customer detriment and operational losses for HSBC. Our customers' operations and assets could also be affected, reducing their ability to afford mortgage or loan repayments, leading to credit risk impacts for the group.

There is increasing evidence that a number of nature-related risks beyond climate change - which include risks that can be represented more broadly by the economic dependency on nature – can and will have significant economic impact. These risks arise when the provision of natural services – such as water availability, air quality, and soil quality – is compromised by overpopulation, urban development, natural habitat and ecosystem loss, and other environmental stresses beyond climate change. They can show themselves in various ways, including through macroeconomic, market, credit, reputational, legal and regulatory risks, for both HSBC and its customers. In 2021, we added nature-related risks as a new emerging risk driver, under the umbrella theme of ESG Risks and continue to engage with investors, regulators and customers on nature-related risks to evolve our approach and understand best practice risk mitigation.

Regulation and disclosure requirements in relation to human rights, and to Modern Slavery in particular, are increasing. Businesses are expected to explain more about their efforts to identify and respond to the risk of negative human rights impacts arising from the actions of their employees, suppliers, customers and those in whom they invest.

Mitigating actions

- We continue to deepen our understanding of the drivers of climate risk as well as manage our exposure. We have established a dedicated Climate Risk Oversight Forum for overseeing our approach and providing support in managing climate risk.
- Our climate risk programme continues to accelerate the development of our climate risk management capabilities across four key pillars – governance and risk appetite, risk management, stress testing and scenario analysis, and disclosures. We are also enhancing our approach to greenwashing risk.
- In December 2021, the Group published our Thermal Coal Phase-Out Policy committing to phase out the financing of coal-fired power and thermal coal mining in EU/OECD markets by end 2030, and globally by end 2040. The policy helps us chart the path to net zero and is a component of our approach towards managing the climate risk of our lending portfolio.
- We have started to incorporate the outcomes and insights from the Bank of England's Climate Biennial Exploratory Scenario and HKMA Climate Risk Stress Test into climate risk management.
- We are undertaking training and adding additional roles with specialist skills to manage climate-related risks.
- We have delivered climate risk training to our legal entity boards and wider target audiences.
- With the help of external stakeholders, we continued to review and improve our approach to human rights issues, following the UN Guiding Principles on Business and Human Rights.
- In 2021, the Group joined several industry working groups dedicated to helping us assess and manage nature-related risks, such as the Taskforce on Nature-Related Financial Disclosure ('TNFD'). The Group's asset management business also published its biodiversity policy to publicly explain how our analysts address nature-related issues.
- We continue to engage with our customers, investors and regulators proactively on the management of ESG risks. The Group also engages with initiatives, including the Climate Financial Risk Forum, Equator Principles, Taskforce on Climate-related Financial Disclosures and CDP (formerly the Carbon Disclosure Project) to drive best practice for climate risk management.

Ibor transition

(Unaudited)

Interbank offered rates ('Ibors') have historically been used extensively to set interest rates on different types of financial transactions and for valuation purposes, risk measurement and performance benchmarking.

Following the UK's Financial Conduct Authority ('FCA') announcement in July 2017 that it would no longer continue to persuade or require panel banks to submit rates for the London interbank offered rate ('Libor') after 2021, we have been actively working to transition legacy contracts from Ibors and meet client needs for products linked to new near risk-free replacement rates ('RFRs') or alternative reference rates. In March 2021, in accordance with the 2017 FCA announcement, ICE Benchmark Administration Limited ('IBA') announced that it would cease publication of 26 of the 35 main Libor currency interest rate benchmark settings from the end of 2021, but that the most widely used US dollar Libor settings would cease from 30 June 2023. As a result, our focus during 2021 was on the transition of legacy contracts referencing the Euro Overnight Index average ('Eonia') and the Libor settings that demised from the end of 2021.

During 2021, we continued the development of IT and RFR product capabilities, implemented supporting operational processes, and engaged with our clients to discuss options for the transition of their legacy contracts. The successful implementation of new processes and controls, as well as the transition of contracts away from Ibors, reduced the heightened financial and non-financial risks to which we were exposed. However, while all but exceptional new Libor contract issuance ceased during 2021, and from the end of 2021 for US dollar, we remain exposed to risks, including from a small population of so-called 'tough legacy' contracts, which reference Ibors that demised from the end of 2021, and have not been able to be transitioned to a new rate or do not have clear fallback language in place, and from legacy contracts that reference US dollar Libor and other regional rates demising at later dates ('demising regional rates'), which are expected to demise from June 2023.

Financial risks have been largely mitigated as a result of the implementation of model and pricing changes. However, differences in US dollar Libor and its replacement RFR, Secured Overnight Funding Rate ('SOFR'), create a basis risk in the trading book and banking book due to the asymmetric adoption of SOFR across assets, liabilities and products that we need to actively manage through appropriate financial hedging. Such basis risk is also created for other demising regional rates. Additionally, the comparatively limited use of SOFR in financial markets to date could result in insufficient liquidity to transition legacy US dollar contracts during 2022. This could potentially delay transition of some US dollar contracts into 2023, compressing the amount of time for transition, which could lead to heightened operational and conduct related risks as a result.

Additional non-financial risks, including financial reporting risks relating to potential mis-statements due to the complexity in applying accounting reliefs relating to amendments of legacy contracts and legal risk continue to exist.

These risks are present in different degrees across our product offering.

Transition legacy contracts

During 2021, we either successfully transitioned or confirmed appropriate fallback for over 99% of legacy Ibor contracts in sterling, Swiss franc, euro and Japanese yen Libor interest rates, as well as Eonia, with only a very small proportion of 'tough legacy' contracts remaining. Our approach to transition 'tough legacy' and US dollar Libor and other demising regional rates legacy contracts will differ by product and business area, but will be based on the lessons learned from the successful transition of contracts during 2021. We will continue to communicate with our clients and investors in a structured manner and be client led in the timing and nature of the transition.

For derivatives, all of our sterling, Swiss franc, euro and Japanese yen Libor interest rate exposure at year-end has rates determined by fallback mechanisms, or had no further such rate fixings post year end. We anticipate our US dollar Libor and demising regional rates exposures will continue to reduce through 2022 as a result of contract maturities, active transition and the cessation of new US dollar Libor issuance and that of demising regional rates. We will continue to look to actively reduce our US dollar and demising regional rates exposures by transitioning trades ahead of the demise date of 30 June 2023, by working with our clients to determine their needs and alternative approaches. Additionally, we are working with market participants, including clearing houses, to ensure we are able to transition contracts as the US dollar Libor and demising regional rates cessation dates approach.

For our loan book, over 90% of our reported exposure at the end of 2021 relates to sterling, Swiss franc, euro and Japanese yen Libor interest rate contracts that required no further client negotiation. The remaining exposure relates to a small number of 'tough legacy' contracts where discussions with our clients and other market participants, for syndicated transactions, have continued in early 2022, and this has led to further transitions being completed. Contracts that are unable to transition prior to their first interest payment date in 2022 are expected to use an alternative rate determined by the contractual language and governing law. For the remaining demising Ibors, notably US dollar Libor and demising regional rates, we have implemented new products and processes and updated our systems in readiness for transition. Global Banking, Commercial Banking and Global Private Banking have begun to engage with clients who have upcoming contract maturities with a view to refinancing using an appropriate replacement rate. Further communications and outreach to customers with US dollar Libor and demising regional rates contracts with later maturities will occur in due course.

For the group's non-derivative financial liabilities at 31 December 2021, there were three Japanese Yen Total Loss Absorbing Capacity ('TLAC') instruments at fixed to floating rate where the JPY Libor benchmark will be used to reset the coupon rate if the bank chooses not to redeem these instruments on the respective call date, or dates, for each series. The interest rate for these instruments is currently at fixed rate and the earliest call date before the coupon rate reset among these instruments is in September 2023.

We remain mindful of the various factors that impact on Ibor remediation strategy for our regulatory capital and TLAC instruments, including – but not limited to – timescales for cessation of relevant Ibor rates, constraints relating to the governing law of outstanding instruments, and the potential relevance of legislative solutions. We remain committed in seeking to remediate or mitigate relevant risks relating to Ibor-demise, as appropriate, on our outstanding regulatory capital and TLAC instruments before the relevant calculation, which may occur post-cessation of the relevant Ibor rate or rates.

Where we hold bonds issued by other institutions, we have remained dependent on the issuer's agents to engage in the transition process, although analysis will be undertaken of the issuers in US dollar Libor and other demising regional rate bonds to reduce our exposure, as occurred through 2021.

The completion of an orderly transition from the remaining Ibors, notably US dollar Libor and other demising regional rates, continues to be our programme's key objective through 2022 and 2023, with the aim of putting systems and processes in place to help achieve this.

Mitigating actions

- Our global Ibor transition programme, which is overseen by the Group Chief Risk and Compliance Officer, will continue to deliver IT and operational processes to meet its objectives.
- We carry out extensive training, communication and client engagement to facilitate appropriate selection of new rates and products and we have dedicated teams in place to support the transition.
- We actively transition legacy contracts and ceased new issuance of Libor and demising regional rate based contracts, in line with regulatory expectations and with associated monitoring and controls.
- We assess, monitor and dynamically manage risks arising from Ibor transition, and implement specific mitigating controls when required.
- We continue to actively engage with regulatory and industry bodies to mitigate risks relating to 'tough legacy' contracts.

Financial instruments impacted by Ibor reform

(Audited)

Amendments to HKFRSs issued in October 2020 (Interest Rate Benchmark Reform Phase 2) represents the second phase of the project on the effects of interest rate benchmark reform, addressing issues affecting financial statements when changes are made to contractual cash flows and hedging relationships as a result of reform.

Under these amendments, changes made to a financial instrument measured at other than fair value through profit or loss that are economically equivalent and required by interest rate benchmark reform, do not result in the derecognition or a change in the carrying amount of the financial instrument. Instead, they require the effective interest rate to be updated to reflect the change in the interest rate benchmark. In addition, hedge accounting will not be discontinued solely because of the replacement of the interest rate benchmark if the hedge meets other hedge accounting criteria.

(Audited)	Financial instruments yet to transition to alternative benchmarks, by main benchmark				
	USD Libor	Japanese Yen Libor	Sibor	GBP Libor	Others[1]
At 31 Dec 2021	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**
Non-derivative financial assets[2]	**206,508**	**2,846**	**56,291**	**22,197**	**4,779**
Non-derivative financial liabilities	**147,198**	**10,930**	**—**	**—**	**—**
Derivative notional contract amount	**8,547,665**	**798,921**	**—**	**88,218**	**715,439**
At 31 Dec 2020					
Non-derivative financial assets[2]	253,239	2,688	63,100	33,797	15,724
Non-derivative financial liabilities	119,269	12,192	—	—	4,125
Derivative notional contract amount	6,252,168	3,281,539	299	82,902	1,383,582

1 *Comprises financial instruments referencing other significant benchmark rates yet to transition to alternative benchmarks (Euro Libor, Swiss Franc Libor, Eonia, SGD Swap Offer Rate ('SOR') and Thai Baht Interest Rate Fixing ('THBFIX')).*
2 *Gross carrying amount excluding allowances for expected credit losses.*

The amounts in the above table relate to the group's main operating entities[1] and provide an indication of the extent of the group's exposure to the Ibor benchmarks which are due to be replaced. Amounts are in respect of financial instruments that:

- contractually reference an interest rate benchmark that is planned to transition to an alternative benchmark;
- have a contractual maturity date beyond the date by which the reference interest rate benchmark is expected to cease; and
- are recognised on the group's consolidated balance sheet.

1 *Entities where we have material exposures impacted by Ibor reform in countries/territories comprising of Hong Kong, Singapore, Thailand, Australia and Japan.*

In March 2021, the administrator of Libor, IBA, announced that the publication date of most US dollar Libor tenors is extended from 31 December 2021 to 30 June 2023. Publication of one-week and two-month tenors will cease after 31 December 2021. This change, together with the extended publication dates of Sibor, SOR and THBFIX, reduce the amounts presented at 31 December 2021 in the above table as some financial instruments included at 31 December 2020 will reach their contractual maturity date prior to the extended publication dates. Comparative data have not been re-presented.

For further details on our approach to Ibor transition, see 'Top and emerging risks – Ibor transition' (unaudited) above.

Financial crime risk environment

(Unaudited)

Financial institutions remain under considerable regulatory scrutiny regarding their ability to prevent and detect financial crime. The financial crime threats we face have continued to evolve, often in tandem with broader geopolitical, socioeconomic and technological shifts in our markets, leading to challenges such as managing conflicting laws and approaches to legal and regulatory regimes.

Financial crime risk evolved during the Covid-19 pandemic, notably with the manifestation of fraud risks linked to the economic slowdown and the resulting deployment of government relief measures. The accelerated digitisation of financial services has fostered significant changes to the payments ecosystem, including a multiplicity of providers and new payment mechanisms, not all of which are subject to the same level of regulatory scrutiny or regulations as financial institutions. This is presenting increasing challenges to the industry in terms of maintaining required levels of transparency, notably where institutions serve as intermediaries. Developments around digital assets and currencies, notably the role of stablecoins and central bank digital currencies, have continued at pace, with an increasing regulatory and enforcement focus on financial crimes linked to these types of assets.

Expectations with respect to intersection of ESG issues and financial crime as our organisation, customers and suppliers transition to net zero, are increasing, not least with respect to potential 'greenwashing'. Companies also face as a heightened regulatory focus on both human rights issues and environmental crimes, from a financial crime perspective. We also continue to face increasing challenges presented by national data privacy requirements, which may affect our ability to manage financial crime risks holistically and effectively.

Mitigating actions

- We are strengthening our fraud and surveillance controls, and investing in next generation capabilities to fight financial crime through the application of advanced analytics and artificial intelligence.
- We are looking at the impact of a rapidly changing payments ecosystem to ensure our financial crime controls remain appropriate for changes in customer behaviour and gaps in regulatory coverage, including the development of procedures and controls to manage the risks associated with direct and indirect exposure to digital assets and currencies.
- We are assessing our existing policies and control framework to ensure that developments in the ESG space are considered and the risks mitigated.
- We work with jurisdictions and relevant international bodies to address data privacy challenges through international standards, guidance, and legislation to help enable effective management of financial crime risk.
- We work closely with our regulators and engage in public-private partnerships, playing an active role in shaping the industry's financial crime controls for the future, notably with respect to the enhanced, and transparent, use of technology.

Regulatory compliance risk environment including conduct

(Unaudited)

We keep abreast of the emerging regulatory compliance and conduct agenda, which currently include, but are not limited to: ESG matters; operational resilience; how digital and technology changes, including payments, are impacting financial institutions; how we are ensuring good customer outcomes, including addressing customer vulnerabilities; regulatory reporting; and employee compliance. We monitor regulatory developments closely and engage with regulators, as appropriate, to help ensure new regulatory requirements are implemented effectively and in a timely way.

Mitigating actions

- We monitor for regulatory developments to understand the evolving regulatory landscape and respond with changes in a timely way.
- We engage, wherever possible, with governments and regulators to make a positive contribution to regulations and ensure that new requirements are considered properly and can be implemented effectively.
- We hold regular meetings with relevant authorities to discuss strategic contingency plans, including those arising from geopolitical issues.
- We launched our simplified conduct approach to align to our new purpose and values, in particular the value 'we take responsibility'.

Cyber threat and unauthorised access to systems

(Unaudited)

Together with other organisations, we 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, attacks on our third-party suppliers, and security vulnerabilities being exploited.

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 and help ensure the safe expansion of our global business lines, we strengthen our controls to reduce the likelihood and impact of advanced malware, data leakage, exposure through third parties and security vulnerabilities.
- We continue to enhance our cybersecurity capabilities, including Cloud security, identity and access management, metrics and data analytics, and third-party security reviews. An important part of our defence strategy is ensuring our colleagues remain aware of cybersecurity issues and know how to report incidents.
- We report and review cyber risk and control effectiveness at executive and non-executive Board level. We also report across our global businesses, functions and regions to help ensure appropriate visibility and governance of the risk and mitigating actions.
- The Group participates globally in several industry bodies and working groups to share information about tactics employed by cyber-crime groups and to collaborate in fighting, detecting and preventing cyber-attacks on financial organisations.

Digitalisation and technological advances

(Unaudited)

Developments in technology and changes in regulation are enabling new entrants to the industry. This challenges the group to continue to innovate and optimise in order to take advantage of new digital capabilities to best serve our customers.

Mitigating actions

- We continue to monitor this emerging risk, as well as the advances in technology to understand how changes may impact our customers and business.
- We closely monitor and assess impacts to financial crime and the impact on payment transparency and architecture.

Internally driven

Data management

(Unaudited)

We use a large number of systems and growing quantities of data to support our customers. Risk arises if data is incorrect, unavailable, or misused, or if the privacy of our customers and colleagues are unprotected. Along with other banks and financial institutions, we need to meet external regulatory obligations and laws that cover data, such as the Basel Committee on Banking Supervision's guidelines 239 'Principles for effective risk data aggregation and risk reporting' and the General Data Protection Regulation ('GDPR').

Mitigating actions

- Through our global data management framework, we monitor proactively the quality, availability and security of data that supports our customers and internal processes. We resolve any identified data issues in a timely manner.
- We have made improvements to our data policies and are implementing an updated control framework to enhance the end-to-end management of data risk by our global businesses, global functions and markets.
- We protect customer data via our data privacy framework, which establishes practices, design principles and guidelines that enable us to demonstrate compliance with data privacy laws and regulations.
- We continue to modernise our data and analytics infrastructure through investments in Cloud technology, data visualisation, machine learning and artificial intelligence.
- We delivered global mandatory training on the importance of protecting data and managing data appropriately.

IT systems infrastructure and resilience

(Unaudited)

We operate an extensive technology landscape, which must remain resilient in order to support customers, the organisation and markets globally. Technology risks arise where technology is not understood, maintained and development of technology is not controlled.

Mitigating actions

- We continue to invest in transforming how software solutions are developed, delivered and maintained. We concentrate on improving system resilience and service continuity testing. We continue to ensure security is built into our software development life cycle and improved our testing processes and tools.
- We continue to upgrade many of our IT systems, simplify our service provision and replace older IT infrastructure and applications. These enhancements supported global improvements in service availability during 2021 for both our customers and colleagues.

Risks arising from the receipt of services from third parties

(Unaudited)

We use third parties to provide a range of services, in common with other financial service providers. Risks arising from the use of third party service providers and their supply chain are less transparent. It is critical that we ensure we have appropriate risk management policies, processes and practices over the selection, governance and oversight of third parties and their supply chain, particularly for key activities that could affect our operational resilience. Any deficiency in the management of risks associated with our third parties could affect our ability to meet customer, strategic or regulatory expectations.

Mitigating actions

- We have enhanced our control framework for external supplier arrangements to ensure the risks associated with third-party arrangements are understood and managed effectively by our global businesses, global functions and markets.
- We have applied the same control standards to intra-group arrangements as we have for external third party arrangements to ensure we are managing them effectively.
- We are implementing the changes required by the new global third-party risk policy to comply with new regulations as defined by our regulators.

Risks associated with workforce capability, capacity and environmental factors with potential impact on growth

(Unaudited)

Our success in delivering our strategic priorities and managing the regulatory environment proactively depends on the development and retention of our leadership and high-performing employees. A very competitive employment market will continue to test our ability to attract and retain talent. Changed working arrangements, local Covid-19 restrictions and health concerns during the pandemic have also impacted employee mental health and well-being.

Mitigating actions

- We have put in place measures to help support our people so they are able to work safely during the Covid-19 pandemic. While our approach to workplace recovery around the world is consistent, the measures we take in different locations are specific to their environment.
- We promote a diverse and inclusive workforce and provide active support across a wide range of health and well-being activities. We continue to build our speak-up culture through active campaigns.
- We monitor people risks that could arise due to organisational restructuring, helping to ensure we manage redundancies sensitively and support impacted employees. We encourage our people leaders to focus on talent retention at all levels, with an empathetic mindset and approach, while ensuring the whole proposition of working at HSBC is well understood.
- Our Future Skills curriculum helps provide critical skills that will enable employees and HSBC to be successful in the future.
- We continue to develop succession plans for key management roles, with actions agreed and reviewed on a regular basis by the group Executive Committee.

Change execution risk

(Unaudited)

We have continued our increased investment in strategic change to support the delivery of our strategic priorities and regulatory commitments. This requires change to be executed safely and efficiently.

Mitigating actions

- A Global Transformation Programme is progressing with the delivery of strategic change commitments made in February 2020 to restructure our business, reallocate capital into higher growth and higher return businesses and markets, and to simplify our organisation to improve operational resilience and reduce costs.
- The remit of the Transformation Oversight Executive Committee established in 2020 to oversee the Global Transformation Programme was expanded in 2021 to oversee the prioritisation, strategic alignment and management of execution risk for all change portfolios and initiatives.
- We continue to work to strengthen our change management practices to deliver sustainable change, increased adoption of Agile ways of working and a more consistent standard of delivery. The Transformation Oversight Executive Committee oversees the continued embedding of our improved Group-wide change framework released in May 2021, which sets out the mandatory principles and standards relating to leading and delivering change.

Areas of special interest

(Unaudited)

During 2021, 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. While considered under the themes captured under top and emerging risks, in this section we have placed a particular focus on the Covid-19 pandemic and climate-related risks.

Risks related to Covid-19

Despite the successful roll-out of vaccines around the world, the Covid-19 pandemic and its effect on the global economy have continued to impact our customers and organisation. The global vaccination roll-out in 2021 helped reduce the social and economic impact of the Covid-19 pandemic, although there has been significant divergence in the speed at which vaccines have been deployed around the world. Most developed countries have now vaccinated a large proportion of their populations, but many less developed countries have struggled to secure supplies and are at an earlier stage of their roll-out. By the end of 2021, high vaccination rates had ensured that many Covid-19-related restrictions on activity in developed markets had been lifted and travel constraints were easing. However, the emergence of the Omicron variant in late 2021 demonstrated the continued risk new variants pose.

The pandemic necessitated governments to respond at unprecedented levels to protect public health, and to support local economies and livelihoods. The resulting government support measures and restrictions created additional challenges, given the rapid pace of change and significant operational demands. Renewed outbreaks, particularly those resulting from the emergence of variants of the virus, emphasise the ongoing threat of Covid-19 and could result in further tightening of government restrictions. There remains a divergence in approach taken by countries to the level of restrictions on activity and travel. Such diverging approaches to future pandemic waves could prolong or worsen supply chain and international travel disruptions.

We continue to support our personal and business customers through market-specific measures initiated during the Covid-19 pandemic, and by supporting national government schemes that focus on the parts of the economy most impacted by the pandemic. For further details of our customer relief programmes, see pages 46 to 47.

The rapid introduction and varying nature of the government support schemes introduced throughout the Covid-19 pandemic has led to increased operational risks, including complex conduct considerations, increased reputational risk and increased risk of fraud. These risks are likely to be heightened further as and when those remaining government support schemes are unwound. These events have also led to increased litigation risk.

The impact of the pandemic on the long-term prospects of businesses in the most vulnerable sectors of the economy – such as retail, hospitality, travel and commercial real estate – remains uncertain and may lead to significant credit losses on specific exposures, which may not be fully captured in ECL estimates. In addition, in times of stress, fraudulent activity is often more prevalent, leading to potentially significant credit or operational losses.

As economic conditions improve, and government support measures come to an end, there is a risk that the outputs of HKFRS 9 models may have a tendency to underestimate loan losses. To help mitigate this risk, model outputs and management adjustments are closely monitored and independently reviewed at the group and country level for reliability and appropriateness.

Despite the ongoing economic recovery, significant uncertainties remain in assessing the duration and impact of the Covid-19 pandemic, including whether any subsequent outbreaks result in a reimposition of government restrictions. There is a risk that economic activity remains below pre-pandemic levels for a prolonged period increasing inequality across markets, and it will likely be some time before societies return to pre-pandemic levels of social interactions. As a result, there may still be a requirement for additional mitigating actions including further use of adjustments, overlays and model redevelopment.

Governments and central banks in major economies have deployed extensive measures to support their local populations. This is expected to reverse partially in 2022. Central banks in certain markets are expected to raise interest rates, but such increases are expected to be gradual and monetary policy is expected to remain accommodative overall. Policy tightening in emerging markets has already begun in order to counteract rising inflation and the risk of capital outflows. Some governments are also expected to reduce the level of fiscal support they offer households and business as the appetite for broad lockdowns and public health restrictions decreases. Government debt has risen in many economies, and is expected to remain high into the medium term. High government debt burdens have raised fiscal vulnerabilities, increasing the sensitivity of debt service costs to interest rate increases and potentially reducing the fiscal space available to address future economic downturns.

Our Central scenario used to calculate impairment assumes that economic activity will continue to recover through 2022, surpassing peak pre-pandemic levels of GDP in all our key markets. It is assumed that the private sector growth accelerates, ensuring strong recovery is sustained even as pandemic-related fiscal support is withdrawn. However, there is a high degree of uncertainty associated with economic forecasts in the current environment and there are significant risks to our Central scenario. The degree of uncertainty varies by market, driven by territory-specific trends in the evolution of the pandemic and associated policy responses. As a result, our Central scenario for impairment has not been assigned an equal likelihood of occurrence across our key markets. For further details of our Central and other scenarios, see 'Measurement uncertainty and sensitivity analysis of ECL estimates' on pages 35 to 39.

We continue to monitor the situation closely, and given the novel and prolonged nature of the pandemic, additional mitigating actions may be required.

Climate-related risks

Climate change can have an impact across HSBC's risk taxonomy through both transition and physical channels. Transition risk can arise from the move to a low-carbon economy, such as through policy, regulatory and technological changes. Physical risk can arise through increasing severity and/or frequency of severe weather or other climatic events, such as rising sea levels and flooding. These have the potential to cause both idiosyncratic and systemic risks, resulting in potential financial and non-financial impacts for HSBC. Financial impacts could materialise if transition and physical risks impact the ability of our customers to repay their loans. Non-financial impacts could materialise if our own assets or operations are impacted by extreme weather or chronic changes in weather patterns, or as a result of business decisions to achieve our climate ambition.

How climate change is impacting our customers

Climate change could impact our customers in two main ways. Firstly, customer business models may fail to align to a low-carbon economy, which could mean that new climate-related regulation would have a material impact on their business. Secondly, extreme weather events or chronic changes in weather patterns may damage our customers' assets leaving them unable to operate their business or live in their home.

One of the most valuable ways we can help our customers navigate the transition challenges and to become more resilient to the physical impacts of climate change is through financing and investment. To do this effectively, we must understand the risks they are facing.

The table below summarises the key categories of transition, physical risk, with examples of how our customers might be affected financially by climate change and the shift to a low-carbon economy.

Climate risk	Main causes of financial impact on customers	
Transition	Policy and legal	Mandates on, and regulation of, existing products and services Litigation from parties who have suffered from the effects of climate change.
	Technology	Replacement of existing products with lower emission options.
	End-demand (market)	Changing consumer behaviour.
	Reputational	Increased scrutiny following a change in stakeholder perceptions of climate-related action or inaction.
Physical	Acute	Increased frequency and severity of weather events.
	Chronic	Changes in precipitation patterns Rising temperatures.

Integrating climate risk into enterprise-wide risk management

Our approach to climate risk management is aligned to our Group-wide risk management framework and three lines of defence model, which sets out how we identify, assess and manage our risks. This approach ensures the Board and senior management have visibility and oversight of our key climate risks.

Climate risk appetite

Our climate risk appetite metrics aim to support the oversight and management of the financial and non-financial risks from climate change, meet regulatory expectations and support the business to deliver our climate ambition in a safe and sustainable way. Our measures are focused on the oversight and management of our key climate risks – wholesale credit risk, retail credit risk, reputational risk, resilience risk and regulatory compliance risk. Our future ambition for our climate risk appetite is to:

- adapt the risk appetite metrics to incorporate forward looking transition plans and net zero commitments;
- expand metrics to consider other financial and non-financial risks; and
- use enhanced scenario analysis capabilities.

Climate risk policies, processes and controls

We have also integrated climate risk into the supporting policies, processes and controls for our key climate risks. We have updated our policy on product management, and developed the first version of a climate risk scoring tool for our corporate portfolios. In addition, we published and started to implement our new Thermal Coal Phase-out Policy.

Climate risk governance and reporting

Our key climate risks are reported and governed through our climate risk governance structure. Our Climate Risk Oversight Forum is responsible for the oversight, management and escalation of climate risks across the group. Our Climate Risk management information dashboard includes metrics relating to our key climate risks, and is reported to the Climate Risk Oversight Forum. In addition, our key wholesale credit exposures are included as part of our broader ESG management information dashboard, which is presented to the group Executive Committee each quarter. The group RMM and the RC receive scheduled updates on climate risk, and receive regular updates on our climate risk appetite and top and emerging climate risks.

To ensure climate risk is appropriately managed and governed, climate related measures covering risk responsibilities relating to the four pillars of governance, risk management, stress testing and scenario analysis and disclosures were included in the group Chief Risk Officer's scorecard in 2021.

Climate risk programme

Our dedicated programme continues to accelerate the development of our climate risk management capabilities. The key achievements in 2021 include:

- We delivered tailored training sessions to our legal entity boards.
- We delivered training to colleagues across the three lines of defence so they can understand climate risk as part of their role. and we also included an introduction to our climate ambition in our global mandatory training.
- We developed our climate risk scoring tool for corporate customers for use in priority regions, which builds on our corporate transition questionnaire.
- We have continued to develop our stress test and scenario analysis capabilities, including model development and delivered regulatory climate stress tests. These are being used to further improve our understanding of our risk exposures for use in risk management and business decision making.

We will continue to enhance our climate risk management capabilities throughout 2022. This will include the further roll-out of training, refinement of our risk appetite, enhancement of our climate risk scoring tool and increasing the availability and quality of data so that new metrics can be developed.

How climate risk can impact HSBC

Below, we provide detail on how climate risk impacts to our customers might manifest across our key climate risks, and the potential time frames involved using the Task Force on Climate-related Financial Disclosures four main drivers of transition climate risk – policy and legal, technology, end-demand (market) and reputational – and two physical risk drivers – acute and chronic.

Risk management framework

	Financial risks		Non-financial risks		
Risk type	**Wholesale credit**	**Retail credit**	**Strategic risk (reputational)**	**Resilience risk**	**Regulatory compliance risk**
Timescale[1]	**All term periods**	**Medium–long term**	**All term periods**	**All term periods**	**Short–medium term**
Transition risk drivers					
– Policy and legal	●	●			●
– Technology	●				
– End-demand (market)	●				
– Reputational	●	●	●		
Physical risk drivers					
– Acute – increased frequency and severity of weather events	●	●		●	
– Chronic – changes in weather patterns	●			●	

1 *Short term: less than one year; medium term: period to 2030; long term: period to 2050.*

Wholesale credit risk

Identification and assessment

We have identified six key sectors where our wholesale credit customers have the highest climate risk, based on their carbon emissions. These are oil and gas, building and construction, chemicals, automotive, power and utilities, and metals and mining.

We continue to roll out our transition and physical risk questionnaire to our largest customers in high-risk sectors, with the addition of four more sectors: agriculture, manufacturing, real estate and transportation. The questionnaires will help us to assess and improve our understanding of the impact of climate change on our customers' business models and any related transition strategies. It also helps us to identify potential business opportunities to support the transition. In 2022, we intend to increase the scope of the questionnaire by adding more countries and territories to the scope.

Management

In 2021 we developed a scoring tool, which provides a climate risk score for each customer based on questionnaire responses. The climate risk score will then be used in portfolio level management information to assess and compare clients. The scoring tool will be enhanced and refined over time as more data becomes available. The results of the tool have been provided to business and risk management teams. During 2021, we also performed a climate-related stress test. In 2022 we aim to further embed climate risk considerations in our credit risk management processes.

Aggregation and reporting

We currently report our transition risk exposure and RWAs consumed by the six high risk sectors in the wholesale portfolio. We also report the proportion of questionnaire responses that reported either having a board policy or management plan for transition risk.

We will continue to report these metrics in 2022 and will aim to cascade these measures to global businesses and to provide insight on the climate risk profile of our portfolio and customers.

Retail credit risk

Identification and assessment

We manage retail credit risk under a framework of controls that enable the identification and assessment of credit risk, across the retail portfolio.

In 2021, we completed a Group-wide climate scenario analysis stress testing exercise. This enabled us to enhance our understanding and assess the impact of physical risk to our mortgage portfolio under three potential future climate scenarios, with a focus on Hong Kong.

Understanding the impact of future climate risk relies heavily upon the availability of quality data, as well as on the evolution of climate risk modelling expertise. As this matures, we plan to expand our approach to additional markets.

Management

We are focusing on embedding climate risk into retail risk management, prioritising exposure in the largest residential mortgage portfolios.

We continue to update our risk management framework and policy to reflect lessons learnt.

Aggregation and reporting

We manage and monitor the integration of climate risk across Wealth and Personal Banking ('WPB') through the RMM.

We have also developed and are implementing metrics to support active risk management, which will be tracked and monitored through relevant Credit Risk meetings.

Reputational risk

Identification and assessment

We implement sustainability risk policies, including the Equator Principles as part of our broader reputational risk framework. We focus on sensitive sectors that may have a high adverse impact on people or the environment, and in which we have a significant number of customers. A key area of focus is high-carbon sectors, which include power generation, mining, agricultural commodities and forestry. During 2021, the Group published its thermal coal phase-out policy.

Management

As the primary point of contact for our customers, our relationship managers are responsible for checking that our customers meet policies aimed at reducing carbon impacts. The Group's global network of more than 75 sustainability risk managers provides local policy support and expertise to relationship managers. A central Sustainability Risk team provides a higher level of guidance and is responsible for the oversight of policy compliance and implementation over wholesale banking activity. During 2021, we introduced a refreshed assurance framework, which took a risk-based approach focusing on higher risks.

Aggregation and reporting

The Group's Sustainability Risk Oversight Forum provides a Group-wide forum for senior members of our Global Risk and Compliance team and global businesses affected by sustainability risk. It also oversees the development and implementation of sustainability risk policies. Cases involving complex sustainability risk issues related to customers, transactions or third parties are managed through the reputational risk and client selection governance process. The Group reports annually on its implementation of the Equator Principles and the corporate loans, project-related bridge loans and advisory mandates completed under the principles. With the introduction of Equator Principles IV, a training programme was delivered to raise the awareness of the changes and obligations therein.

Regulatory compliance risk

Identification and assessment

Compliance continues to prioritise the identification and assessment of compliance risks that may arise from increased focus more generally on climate risk. Although not an exhaustive list, key Regulatory Compliance risks under consideration include those related to product management, mis-selling, marketing, conflicts of interest and regulatory change.

An area of particular focus is the risk of greenwashing. We regard greenwashing as the act of knowingly or unknowingly misleading stakeholders regarding our climate strategy, the climate impact/benefits of a product or service or regarding the climate commitments of our customers. For the Compliance function, product-based greenwashing is a key area of focus. When considering product-based greenwashing, we seek to:

- effectively and consistently consider climate risk factors in the development and ongoing governance of new, changed or withdrawn products and services through the enhancement of existing risk management frameworks utilised within the Group's operating entities and lines of business, enabling climate risks to be identified and assessed in a timely manner;
- ensure that climate-related products and services offered to customers are appropriately designed and that related sales practices and marketing materials are clear, fair and not misleading; and
- develop climate-related products and services consistent with the evolving expectations of the Group's regulators and other relevant authorities.

Management

We continue to develop our compliance policies and underlying measurement capability to enhance the management of climate risks in line with our climate ambitions and risk appetite.

As such, we have integrated and are continuing to enhance climate risk considerations within our product and customer life-cycle policies. This includes specific climate risk requirements relating to new product approvals and ongoing product management. Our policies set the minimum standards that are required to manage the risk of breaches of our regulatory duty to customers, including those related to climate risk, ensuring fair customer outcomes are achieved.

In addition, we have placed significant focus this year on supporting and improving the capability of our Compliance colleagues through specific climate risk training, communications and guidance materials to ensure the robust identification, assessment and management of climate risks.

Aggregation and reporting

We continue to operate an ESG and Climate Risk Working Group at Group level. This working group tracks and monitors the integration and embedding of climate risk within the management of Regulatory Compliance risks and controls more generally, and monitors ongoing regulatory and legislative changes across the sustainability and climate risk agenda.

We have also developed and implemented climate risk metrics and indicators aligned to wider Regulatory Compliance risks. .

The Compliance function is also represented at the group’s Climate Risk Oversight Forum.

Resilience risk

Identification and assessment

Our assessment of climate risk identified building unavailability, workplace safety, information technology and cybersecurity risk, transaction processing risk, and third-party risk, as the key risks facing our operational resilience.

We are currently working with industry partners to repeat and extend the 2020 stress testing, given developments in industry understanding of climate risk. We will continue to work with our partners to identify and assess emerging climate risks.

Management

In 2021, we reviewed existing policies, processes and controls, which were then revised as required. This work will continue in subsequent years.

Identification of new tooling, both internally and through collaboration with business partners, for the management of climate risk is ongoing with new tooling being introduced as appropriate.

Our stress test results will continue to inform our approach to climate risk management.

Aggregation and reporting

Our exposure to climate risk will continue to be aggregated and reported to the Non-Financial Risk Management Board and other relevant formal governance forums.

Our material banking risks

(Unaudited)

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

Description of risks – banking operations

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.
Treasury risk		
Treasury risk is the risk of having insufficient capital, liquidity or funding resources to meet financial obligations and satisfy regulatory requirements, including the risk of adverse impact on earnings or capital due to structural foreign exchange exposures and changes in market interest rates, together with pension and insurance risk.	Treasury risk arises from changes to the respective resources and risk profiles driven by customer behaviour, management decisions, or pension plan fiduciary decisions. It also arises from the external environment, including changes to market parameters such as interest rates or foreign exchange rates, together with updates to the regulatory requirements.	Treasury risk is: • measured through risk appetite and more granular limits, set to provide an early warning of increasing risk, minimum ratios of relevant regulatory metrics, and metrics to monitor the key risk drivers impacting treasury resources; • monitored and projected against appetites and by using operating plans based on strategic objectives together with stress and scenario testing; and • managed through control of resources in conjunction with risk profiles, strategic objectives and cash flows.
Market risk		
Market risk is the risk of adverse financial impact on trading activities arising from changes in market parameters such as interest rates, foreign exchange rates, asset prices, volatilities, correlations and credit spreads.	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 value at risk, stress testing and other measures; and • managed using risk limits approved by the Board 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.	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 associated with breaching our duty to clients and other counterparties, inappropriate market conduct and breaching related financial services regulatory standards.	Regulatory compliance risk arises from the risks associated with breaching our duty to our customers, inappropriate market conduct and breaching other regulatory requirements.	Regulatory compliance risk is: • measured by reference to risk appetite, 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)

Risks	Arising from	Measurement, monitoring and management of risk
Financial crime risk		
Financial crime risk is the risk of knowingly or unknowingly helping parties to commit or to further illegal activity through HSBC, including money laundering, fraud, bribery and corruption, tax evasion, sanctions breaches, and terrorist and proliferation financing.	Financial crime risk arises from day-to-day banking operations involving customers, third parties and employees. Exceptional circumstances which impact day to day operations may additionally increase financial crime risk.	Financial crime risk is: • measured by reference to risk appetite, identified metrics, incident assessments, regulatory feedback and the judgement and assessment of our financial crime risk 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.
Model risk		
Model risk is the potential for adverse consequences from business decisions arising from the use of models that have been inadequately designed, implemented or used or that model does not perform in line with expectations and predictions.	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.

Our insurance manufacturing subsidiaries are regulated separately 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, and these are covered by the group's risk management processes. There are specific risks inherent to the insurance operations as noted below.

Description of risks – insurance manufacturing operations

Risks	Arising from	Measurement, monitoring and management of risk
Financial risk		
For insurance entities, financial risk includes the risk of not being able to match liabilities arising under insurance contracts with appropriate investments and that the expected sharing of financial performance with policyholders under certain contracts is not possible.	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 (i) for credit risk, in terms of economic capital and the amount that could be lost if a counterparty fails to make repayments; (ii) for market risk, in terms of economic capital, internal metrics and fluctuations in key financial variables; and (iii) for liquidity risk, 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

(Audited)

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

Key developments in 2021

(Unaudited)

There were no material changes to the policies and practices for the management of credit risk in 2021. We continued to apply the requirements of HKFRS 9 'Financial Instruments' within the Credit Risk sub-function.

Due to the Covid-19 pandemic and its continued effects on the global economy, we provided short-term support to customers through market-specific measures under the current credit policy framework. We have also implemented the guidance provided by regulators on managing the credit portfolio as required throughout the course of the customer relief life cycle.

The extent of our support depends on the degree of country-specific government support measures, restrictions, associated policy responses, and the effects of new Covid-19 variants.

The majority of the customer relief programmes that we provided during the Covid-19 pandemic ended by 31 December 2021 and will not be reassessed under the revised definition of default. For further details of market-specific measures to support our personal and business customers, see pages 46 to 47.

In 2022, we will adopt the EBA 'Guidelines on the application of definition of default . There is expected to be no material impact on our retail and wholesale portfolios.

Governance and structure

(Unaudited)

We have established credit risk management and related HKFRS 9 processes throughout the group. We continue to 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 Co-Chief Executives 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 HSBC 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 causes and their mitigation.

Key risk management processes

HKFRS 9 'Financial Instruments' process

(Unaudited)

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

Modelling and data

(Unaudited)

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

(Unaudited)

A centralised impairment engine performs the expected credit losses 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

(Unaudited)

Management review forums are established in key sites and at group level in order to review and approve the impairment results. Management review forums have representatives from Credit Risk and Finance, and the group's ECL is approved by the group's Chief Risk Officer and Chief Financial Officer in the forum. Other key members of the management review forums are the group heads of Wholesale Credit and Wealth and Personal Banking Risk, as well as the group head of Loan Management Unit and the group financial controller. The key site and group level approvals are subsequently 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 Wealth and Personal Banking Risk, as well as the relevant Global business Chief Financial Officer and the Global Financial controller.

Concentration of exposure

(Audited)

Concentrations of credit risk arise when a number of counterparties or exposures that 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 encompass a range of granular internal credit rating grades assigned to wholesale and retail customers, 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 probability-weighted 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 PIT 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 in 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 under our existing disclosures.

Loans that have been identified as renegotiated retain this designation until maturity or derecognition under our existing disclosures.

For details of our policy on derecognised renegotiated loans, see Note 1.2(i) on the financial statements.

Credit quality of renegotiated loans

(Unaudited)

On execution of a renegotiation, a 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 under our existing disclosures.

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 generally 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.

Customer Relief Programmes and renegotiated loans

(Unaudited)

In response to the Covid-19 pandemic, governments and regulators around the world encouraged a range of customer relief programmes including payment deferrals. In determining whether a customer is experiencing financial difficulty for the purposes of identifying renegotiated loans a payment deferral requested under such schemes, or an extension thereof, is not automatically determined to be evidence of financial difficulty and would therefore not automatically trigger identification as renegotiated loans. Rather, information provided by payment deferrals is considered in the context of other reasonable and supportable information. The HKFRS 9 treatment of customer relief programmes is explained on pages 46 to 47.

Impairment assessment

(Audited)

For details of our impairment policies on loans and advances and financial investments, see Note 1.2(i) on the 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 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. However, in exceptional circumstances to achieve a fair customer outcome and in line with regulatory expectations, 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 and territories where local regulation or legislation constrains earlier write-off, or where the realisation of collateral for secured real estate lending takes more time. Write-off, either partially or in full, may be earlier when there is no reasonable expectation of further recovery, for example, in the event of a bankruptcy or equivalent legal proceedings. 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)

	2021		2020	
	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	**3,872,956**	**(32,017)**	3,697,568	(28,887)
Loans and advances to banks	**432,286**	**(39)**	403,908	(24)
Other financial assets measured at amortised cost	**2,114,301**	**(639)**	1,869,268	(713)
– cash and balances at central banks	**276,857**	**–**	347,999	–
– items in the course of collection from other banks	**21,632**	**–**	21,943	–
– Hong Kong Government certificates of indebtedness	**332,044**	**–**	313,404	–
– reverse repurchase agreements – non-trading	**803,775**	**–**	520,344	–
– financial investments	**502,997**	**(433)**	475,553	(527)
– prepayments, accrued income and other assets[2]	**176,996**	**(206)**	190,025	(186)
Amounts due from Group companies	**99,604**	**–**	82,849	–
Total gross carrying amount on-balance sheet	**6,519,147**	**(32,695)**	6,053,593	(29,624)
Loans and other credit related commitments	**1,826,335**	**(580)**	1,725,963	(825)
Financial guarantee	**34,302**	**(44)**	32,358	(124)
Total nominal amount off-balance sheet[3]	**1,860,637**	**(624)**	1,758,321	(949)
	8,379,784	**(33,319)**	7,811,914	(30,573)

	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')[4]	**1,541,909**	**(121)**	1,689,820	(167)

1 *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.*
2 *Includes only those financial instruments that are subject to the impairment requirements of HKFRS 9. 'Prepayments, accrued income and other assets', as presented within the consolidated balance sheet on page 75, which includes both financial and non-financial assets.*
3 *Represents the maximum amount at risk should the contracts be fully drawn upon and client defaults.*
4 *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 consolidated income statement.*

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[1]					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	3,349,434	480,632	41,332	1,558	3,872,956	(2,603)	(9,426)	(19,654)	(334)	(32,017)	0.1	2.0	47.6	21.4	0.8
– personal	1,461,358	60,795	10,158	–	1,532,311	(1,236)	(2,965)	(1,765)	–	(5,966)	0.1	4.9	17.4	–	0.4
– corporate[2]	1,626,514	398,273	31,068	1,556	2,057,411	(1,131)	(6,384)	(17,859)	(332)	(25,706)	0.1	1.6	57.5	21.3	1.2
– financial institutions[3]	261,562	21,564	106	2	283,234	(236)	(77)	(30)	(2)	(345)	0.1	0.4	28.3	100.0	0.1
Loans and advances to banks	431,079	1,207	–	–	432,286	(36)	(3)	–	–	(39)	0.0	0.2	–	–	0.0
Other financial assets	2,092,847	21,164	289	1	2,114,301	(482)	(140)	(17)	–	(639)	0.0	0.7	5.9	–	0.0
Loan and other credit-related commitments	1,782,353	43,711	271	–	1,826,335	(260)	(295)	(25)	–	(580)	0.0	0.7	9.2	–	0.0
– personal	1,245,694	6,976	154	–	1,252,824	–	–	–	–	–	–	–	–	–	–
– corporate[2]	417,349	30,978	117	–	448,444	(247)	(288)	(25)	–	(560)	0.1	0.9	21.4	–	0.1
– financial institutions[3]	119,310	5,757	–	–	125,067	(13)	(7)	–	–	(20)	0.0	0.1	–	–	0.0
Financial guarantee	30,214	4,048	40	–	34,302	(14)	(14)	(16)	–	(44)	0.0	0.3	40.0	–	0.1
– personal	4,000	–	1	–	4,001	(1)	–	(1)	–	(2)	0.0	–	100.0	–	0.0
– corporate[2]	22,995	4,011	39	–	27,045	(13)	(14)	(15)	–	(42)	0.1	0.3	38.5	–	0.2
– financial institutions[3]	3,219	37	–	–	3,256	–	–	–	–	–	–	–	–	–	–
At 31 Dec 2021	7,685,927	550,762	41,932	1,559	8,280,180	(3,395)	(9,878)	(19,712)	(334)	(33,319)	0.0	1.8	47.0	21.4	0.4

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

1 *Represents the maximum amount at risk should the contracts be fully drawn upon and clients default.*

2 *Includes corporate and commercial.*

3 *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 %			
	Stage 2	*of which: Up-to-date*	*of which: 1 to 29 DPD[1,2]*	*of which: 30 and > DPD[1,2]*	Stage 2	*of which: Up-to-date*	*of which: 1 to 29 DPD[1,2]*	*of which: 30 and > DPD[1,2]*	Stage 2	*of which: Up-to-date*	*of which: 1 to 29 DPD*	*of which: 30 and > DPD*
	HK$m	*HK$m*	*HK$m*	*HK$m*	HK$m	*HK$m*	*HK$m*	*HK$m*	%	*%*	*%*	*%*
At 31 Dec 2021												
Loans and advances to customers at amortised cost	480,632	*471,298*	*6,788*	*2,546*	(9,426)	*(8,862)*	*(226)*	*(338)*	2.0	*1.9*	*3.3*	*13.3*
– personal	60,795	*53,316*	*5,048*	*2,431*	(2,965)	*(2,460)*	*(173)*	*(332)*	4.9	*4.6*	*3.4*	*13.7*
– corporate and commercial	398,273	*396,420*	*1,738*	*115*	(6,384)	*(6,325)*	*(53)*	*(6)*	1.6	*1.6*	*3.0*	*5.2*
– non-bank financial institutions	21,564	*21,562*	*2*	*–*	(77)	*(77)*	*–*	*–*	0.4	*0.4*	*–*	*–*

1 *Days past due ('DPD').*

2 *The days past due amounts presented above are on a contractual basis and include the benefit of any customer relief payment holidays granted.*

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[1]					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	3,150,921	510,040	35,752	855	3,697,568	(4,393)	(6,438)	(17,694)	(362)	(28,887)	0.1	1.3	49.5	42.3	0.8
– personal	1,381,495	61,790	9,062	—	1,452,347	(1,809)	(3,463)	(1,872)	—	(7,144)	0.1	5.6	20.7	—	0.5
– corporate[2]	1,580,976	391,635	26,514	853	1,999,978	(2,428)	(2,897)	(15,763)	(360)	(21,448)	0.2	0.7	59.5	42.2	1.1
– financial institutions[3]	188,450	56,615	176	2	245,243	(156)	(78)	(59)	(2)	(295)	0.1	0.1	33.5	100.0	0.1
Loans and advances to banks	401,256	2,652	—	—	403,908	(19)	(5)	—	—	(24)	0.0	0.2	—	—	0.0
Other financial assets	1,854,154	14,834	279	1	1,869,268	(452)	(221)	(40)	—	(713)	0.0	1.5	14.3	—	0.0
Loan and other credit-related commitments	1,677,242	48,538	183	—	1,725,963	(514)	(281)	(30)	—	(825)	0.0	0.6	16.4	—	0.0
– personal	1,205,969	6,129	79	—	1,212,177	(1)	—	—	—	(1)	0.0	—	—	—	0.0
– corporate[2]	388,833	34,095	104	—	423,032	(492)	(266)	(30)	—	(788)	0.1	0.8	28.8	—	0.2
– financial institutions[3]	82,440	8,314	—	—	90,754	(21)	(15)	—	—	(36)	0.0	0.2	—	—	0.0
Financial guarantee	25,786	6,522	50	—	32,358	(51)	(56)	(17)	—	(124)	0.2	0.9	34.0	—	0.4
– personal	4,043	2	6	—	4,051	—	—	(1)	—	(1)	—	—	16.7	—	0.0
– corporate[2]	20,737	6,241	44	—	27,022	(51)	(56)	(16)	—	(123)	0.2	0.9	36.4	—	0.5
– financial institutions[3]	1,006	279	—	—	1,285	—	—	—	—	—	—	—	—	—	—
At 31 Dec 2020	7,109,359	582,586	36,264	856	7,729,065	(5,429)	(7,001)	(17,781)	(362)	(30,573)	0.1	1.2	49.0	42.3	0.4

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

1 Represents the maximum amount at risk should the contracts be fully drawn upon and clients default.

2 Includes corporate and commercial.

3 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 (continued)

(Audited)

	Gross carrying amount				Allowance for ECL				ECL coverage %			
		of which:	*of which:*	*of which:*		*of which:*	*of which:*	*of which:*		*of which:*	*of which:*	*of which:*
	Stage 2	*Up-to-date*	*1 to 29 DPD*[1,2]	*30 and > DPD*[1,2]	Stage 2	*Up-to-date*	*1 to 29 DPD*[1,2]	*30 and > DPD*[1,2]	Stage 2	*Up-to-date*	*1 to 29 DPD*	*30 and > DPD*
	HK$m	*HK$m*	*HK$m*	*HK$m*	HK$m	*HK$m*	*HK$m*	*HK$m*	%	*%*	*%*	*%*
At 31 Dec 2020												
Loans and advances to customers at amortised cost	510,040	*499,567*	*6,590*	*3,883*	(6,438)	*(5,505)*	*(268)*	*(665)*	1.3	*1.1*	*4.1*	*17.1*
– personal	61,790	*53,063*	*5,311*	*3,416*	(3,463)	*(2,642)*	*(204)*	*(617)*	5.6	*5.0*	*3.8*	*18.1*
– corporate and commercial	391,635	*389,941*	*1,227*	*467*	(2,897)	*(2,785)*	*(64)*	*(48)*	0.7	*0.7*	*5.2*	*10.3*
– non-bank financial institutions	56,615	*56,563*	*52*	—	(78)	*(78)*	—	—	0.1	*0.1*	—	—

1 Days past due ('DPD').

2 The days past due amounts presented above are on a contractual basis and include the benefit of any customer relief payment holidays granted.

Credit exposure

Maximum exposure to credit risk

(Audited)

This section provides information on the maximum exposure to credit risk associated with 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 to credit risk 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 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 47-50.

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

(Audited)

	2021 HK$m	2020 HK$m
Cash and balances at central banks	276,857	347,999
Items in the course of collection from other banks	21,632	21,943
Hong Kong Government certificates of indebtedness	332,044	313,404
Trading assets	478,030	434,029
Derivatives	365,167	422,945
Financial assets designated at fair value	33,274	35,145
Reverse repurchase agreements – non-trading	803,775	520,344
Loans and advances to banks	432,247	403,884
Loans and advances to customers	3,840,939	3,668,681
Financial investments	2,044,473	2,164,846
Amounts due from Group companies	112,719	83,203
Other assets	180,757	197,362
Total on-balance sheet exposure to credit risk	**8,921,914**	8,613,785
Total off-balance sheet	**3,506,253**	3,326,935
Financial guarantees and other similar contracts	377,487	325,631
Loan and other credit-related exposure	3,128,766	3,001,304
At 31 Dec	**12,428,167**	11,940,720

Total exposure to credit risk remained broadly unchanged in 2021 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)

Despite a broad recovery in economic conditions during 2021, ECL estimates continue to be subject to a high degree of uncertainty, and management judgements and estimates continued to reflect a degree of caution, both in the selection of economic scenarios and their weightings, and through management judgemental adjustments.

The recognition and measurement of 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. Management judgemental adjustments are used to address late-breaking events, data and model limitations, model deficiencies and expert credit judgements.

Methodology

Four economic scenarios are used to capture the current economic environment and to articulate management's view of the range of potential outcomes. Scenarios produced to calculate ECL are aligned to the group's top and emerging risks.

In the second quarter of 2020, to ensure that the severe risks associated with the pandemic were appropriately captured, management added a fourth, more severe, scenario to use in the measurement of ECL. Starting in the fourth quarter of 2021, HSBC's methodology has been adjusted so that the use of four scenarios, of which two are downside scenarios, is the standard approach to ECL calculation.

Three of these scenarios are drawn from consensus forecasts and distributional estimates. The Central scenario is deemed the 'most likely' outcome, and usually attracts the largest probability weighting, while the outer scenarios represent the tails of the distribution which are less likely to occur. The Central scenario is created using the average of a panel of external forecasters. Consensus Upside and Downside scenarios are created with reference to distributions for select markets that capture forecasters' views of the entire range of outcomes. In the later years of the scenarios, projections revert to long-term consensus trend expectations. In the consensus outer scenarios, reversion to trend expectations is done mechanically with reference to historically observed quarterly changes in the values of macroeconomic variables.

The fourth scenario, Downside 2, is designed to represent management's view of severe downside risks. It is a globally consistent, narrative driven, scenario that explores more extreme economic outcomes than those captured by the consensus scenarios. In this scenario, variables do not, by design, revert to long-term trend expectations. They may instead explore alternative states of equilibrium, where economic activity moves permanently away from past trends.

The two consensus, 'Upside' and 'Downside' scenarios are constructed to be consistent with a 10% probability and the Downside 2 to a 5% probability. The Central Scenario is assigned the remaining 75%. This weighting scheme is deemed appropriate for the unbiased estimation of ECL in most circumstances. Management may, however, depart from this probability based scenario weighting approach when the economic outlook is determined to be more uncertain and risks are elevated.

Description of Consensus Economic Scenarios

The economic assumptions presented in this section have been formed internally with reference to external forecasts specifically for the purpose of calculating ECL.

The global economy experienced a recovery in 2021, following an unprecedented contraction in 2020. Restrictions to mobility and travel eased across certain markets, aided by the successful roll-out of vaccination programmes. The emergence of new variants that potentially reduce the efficacy of vaccines remains a risk.

Economic forecasts remain subject to a high degree of uncertainty. Risks to the economic outlook are dominated by the progression of the pandemic, vaccine roll-out and the public policy response. Geopolitical risks also remain significant and include continued differences between the US and other countries with China over a range of economic and strategic defence issues.

The key markets covered in the scenarios include Hong Kong and mainland China, and the scenarios used to calculate ECL in the *Annual Report and Accounts 2021* are described below.

The consensus Central scenario

HSBC's Central scenario features a continued recovery in economic growth in 2022 as activity and employment gradually return to the levels reached prior to the outbreak of Covid-19.

Our Central scenario assumes that the stringent restrictions on activity, imposed across several countries and territories in 2020 and 2021 are not repeated. The new viral strain that emerged late in 2021, Omicron, has only a limited impact on the recovery, according to this scenario. Consumer spending and business investment, supported by elevated levels of private sector savings, are expected to drive the economic recovery as fiscal and monetary policy support recedes.

Regional differences in the speed of economic recovery in the Central scenario reflect differences in the progression of the pandemic, roll-out of vaccination programmes, national level restrictions imposed and scale of support measures. Global GDP is expected to grow by 4.2% in 2022 in the Central scenario and the average rate of global GDP growth is 3.1% over the five-year forecast period. This exceeds the average growth rate over the five-year period prior to the onset of the pandemic.

The key features of our Central scenario are:

- Economic activity continues its recovery, growing at a moderate rate in 2022. GDP growth in our key markets has recovered to pre-pandemic levels.
- Unemployment in mainland China has recovered to pre-pandemic levels. In Hong Kong, unemployment declines to levels only slightly higher than existed pre-pandemic.
- Covid related fiscal spending recedes in 2022 as fewer restrictions on activity allow fiscal support to be withdrawn. Deficits remain high in several countries as they embark on multi-year investment programmes to support recovery, productivity growth and climate transition.
- Inflation across many of our key markets remains elevated through 2022. Supply-driven price pressures persist through the first half of 2022 before gradually easing. In subsequent years, inflation quickly converges back towards central bank target rates.
- Policy interest rates in key markets rise gradually over our projection period, in line with economic recovery.
- The West Texas Intermediate oil price is forecast to average US$62 per barrel over the projection period.

In the longer term, growth reverts back towards similar levels that existed prior to the pandemic, suggesting that the damage to long-term economic prospects is expected to be minimal. The Central scenario was first created with forecasts available in November, and subsequently updated in December. Probability weights assigned to the Central scenario vary from 70% to 80% and reflect relative differences in uncertainty across markets.

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

Central scenario 2022-2026

	Hong Kong	Mainland China
	%	%
GDP growth rate (annual average rate)		
2022	3.1	5.3
2023	2.9	5.4
2024	2.6	5.1
5 Year average	2.7	5.1
Unemployment rate (annual average rate)		
2022	4.1	3.8
2023	3.6	3.7
2024	3.5	3.8
5 Year average	3.6	3.8
House price growth (annual average rate)		
2022	3.4	0.3
2023	2.4	4.7
2024	2.0	4.9
5 Year average	2.6	3.5
Short term interest rate (annual average rate)		
2022	0.5	3.1
2023	1.1	3.2
2024	1.6	3.4
5 Year average	1.4	3.4
Probability	70.0	80.0

The consensus Upside scenario

Compared with the Central scenario, the consensus Upside scenario features a faster recovery in economic activity during the first two years, before converging to long-run trend expectations.

The scenario is consistent with a number of key upside risk themes. These include the orderly and rapid global abatement of Covid-19 via successful containment and ongoing vaccine efficacy; de-escalation of tensions between the US and China and continued fiscal and monetary support.

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

Consensus Upside scenario best outcome

	Hong Kong	Mainland China
	%	%
GDP growth rate	10.3 (4Q22)	11.8 (4Q22)
Unemployment rate	2.7 (4Q23)	3.5 (1Q23)
House price growth	11.9 (4Q22)	8.2 (4Q22)
Short-term interest rate	0.6 (1Q22)	3.2 (1Q22)
Probability	5.0	5.0

Note: Extreme point in the consensus Upside is 'best outcome' in the scenario, for example the highest GDP growth and the lowest unemployment rate etc, in first two years of the scenario.

Downside scenarios

The progress of the pandemic and the ongoing public policy response continues to be a key source of risk. Downside scenarios assume that new strains of the virus result in an acceleration in infection rates and increased pressure on public health services, necessitating restrictions on activity. The reimposition of such restrictions could be assumed to have damaging effect on consumer and business confidence.

Government fiscal programmes in advanced economies in 2020 and 2021 were supported by accommodative actions taken by central banks. These measures have provided households and firms with significant support. An inability or unwillingness to continue with such support or the untimely withdrawal of support present a downside risk to growth.

While Covid-19 and related risks dominate the economic outlook, geopolitical risks also present a threat. These risks include:

- continued differences between the US and other countries with China, which could affect sentiment and restrict global economic activity; and
- the re-emergence of social unrest in Hong Kong.

The consensus Downside Scenario

In the consensus Downside scenario, the economic recovery is considerably weaker compared with the Central scenario. GDP growth is expected to be lower, unemployment rates rise moderately and asset and commodity prices fall, before gradually recovering towards their long-run trend expectations. The scenario is consistent with the key downside risks articulated above. Further outbreaks of Covid-19, coupled with delays in vaccination programmes, lead to longer-lasting restrictions on economic activity in this scenario. Other global risks also increase and drive increased risk-aversion in asset markets.

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

Consensus Downside scenario worst outcome

	Hong Kong	Mainland China
	%	%
GDP growth rate	(1.0) (4Q22)	2.3 (4Q22)
Unemployment rate	5.6 (2Q22)	4.0 (2Q22)
House price growth	(7.9) (4Q22)	(3.7) (2Q22)
Short-term interest rate	0.4 (1Q22)	2.9 (1Q22)
Probability	20.0	10.0

Note: Extreme point in the consensus Downside is 'worst outcome' in the scenario, i.e. lowest GDP growth, highest unemployment rate etc, in first two years of the scenario.

Downside 2 scenario

The Downside 2 scenario features a deep global recession. In this scenario, new Covid-19 variants emerge that cause infections to rise sharply in 2022, resulting in setbacks to vaccination programmes and the rapid imposition of restrictions on mobility and travel across some countries. The scenario also assumes governments and central banks are unable to significantly increase fiscal and monetary support, which results in abrupt corrections in labour and asset markets.

The following table describes key macroeconomic variables and the probabilities assigned in the Downside 2 scenario.

Downside 2 scenario worst outcome

	Hong Kong	Mainland China
	%	%
GDP growth rate	(8.2) (4Q22)	(4.8) (4Q22)
Unemployment rate	6.1 (4Q22)	5.4 (4Q23)
House price growth	(17.7) (4Q22)	(24.8) (4Q22)
Short-term interest rate	1.3 (2Q22)	4.0 (2Q22)
Probability	5.0	5.0

Note: Extreme point in the Downside 2 is 'worst outcome' in the scenario, for example lowest GDP growth and the highest unemployment rate, in first two years of the scenario.

Scenario weighting

In reviewing the economic conjuncture, the level of uncertainty and risks, management has considered both global and country-specific factors. This has led management to assign scenario probabilities that are tailored to its view of uncertainty in individual markets.

To inform its view, management have considered the progression of the virus in individual markets, the efficacy of vaccine roll-outs, the degree of current and expected future government support and connectivity with other countries. Management has also been guided by the policy response and economic performance through the pandemic, as well as the evidence that economies have adapted as the virus has progressed.

A key consideration in the fourth quarter was the emergence of the new variant, Omicron. The virulence and severity of the new strain, in addition to the continued efficacy of vaccines against it, was unknown when the variant first first emerged. Management therefore determined that uncertainty attached to forecasts has increased and sought to reflect this in scenario weightings.

China's significant capacity to extend policy support to the economy and manage through Covid related disruptions, led management to conclude that the outlook for mainland China was the least uncertain of our key markets. The Central scenario was given an 80% probability while a total of 15% has been assigned to the two Downside scenarios. In Hong Kong, the combination of recurrent outbreaks and the other risks outlined above, led management to assign a 25% weight to the two Downside scenarios.

Critical accounting estimates and judgements

The calculation of ECL under HKFRS 9 involves significant judgements, assumptions and estimates. Despite a general recovery in economic conditions during 2021, the level of estimation uncertainty and judgement has remained high during 2021 as a result of the ongoing economic effects of the Covid-19 pandemic and other sources of economic instability, including significant judgements relating to:

- the selection and weighting of economic scenarios, given rapidly changing economic conditions in an unprecedented manner, uncertainty as to the effect of government and central bank support measures designed to alleviate adverse economic impacts, and a wider distribution of economic forecasts than before the pandemic. The key judgements are the length of time over which the economic effects of the pandemic will occur and the speed and shape of recovery. The main factors include the effectiveness of pandemic containment measures, the pace of roll-out and effectiveness of vaccines, and the emergence of new variants of the virus, plus a range of geopolitical uncertainties, which together represent a high degree of estimation uncertainty, particularly in assessing Downside scenarios;
- estimating the economic effects of those scenarios on ECL, where there is no observable historical trend that can be reflected in the models that will accurately represent the effects of the economic changes of the severity and speed brought about by the Covid-19 pandemic and recovery from those conditions. Modelled assumptions and linkages between economic factors and credit losses may underestimate or overestimate ECL in these conditions, and there is significant uncertainty in the estimation of parameters such as collateral values and loss severity; and
- the identification of customers experiencing significant increases in credit risk and credit impairment, particularly where those customers have accepted payment deferrals and other reliefs designed to address short-term liquidity issues given muted default experience to date. The use of segmentation techniques for indicators of significant increases in credit risk involves significant estimation uncertainty.

How economic scenarios are reflected in of ECL calculations

Models are used to reflect economic scenarios on ECL estimates. As described above, modelled assumptions and linkages based on historical information could not alone produce relevant information under the conditions experienced in 2021, and judgemental adjustments were still required to support modelled outcomes.

We have developed a globally consistent methodologies for the application of forward economic guidance into the calculation of ECL for wholesale and retail credit risk. These standard approaches are described below, followed by the management judgemental adjustments made, including those to reflect the circumstances experienced in 2021.

For our wholesale portfolios, a global methodology is used for 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, we incorporate forward economic guidance proportionate to the probability-weighted outcome and the Central scenario outcome for non-stage 3 populations.

For our retail portfolios, the impact of economic scenarios on PD is modelled at a portfolio level. Historical relationships between observed default rates and macroeconomic variables are integrated into HKFRS 9 ECL estimates by using economic response models. The impact of these scenarios on PD is modelled over a period equal to the remaining maturity of the 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 using national level forecasts of the house price index and applying the corresponding LGD expectation.

These models are based largely on historical observations and correlations with default rates. Management judgemental adjustments are described below.

Management judgemental adjustments

In the context of HKFRS 9, management judgemental adjustments are short-term increases or decreases to the ECL at either a customer, segment or portfolio level to account for late-breaking events, model and data limitations and deficiencies, and expert credit judgement applied following management review and challenge.

At 31 December 2021, management judgements were applied to reflect credit risk dynamics not captured by our models. The drivers of the management judgemental adjustments reflect the changing economic outlook and evolving risks across our geographies.

Where the macroeconomic and portfolio risk outlook continues to improve, supported by low levels of observed defaults, adjustments initially taken to reflect increased risk expectations have been retired or reduced.

However, other adjustments have increased where modelled outcomes are overly sensitive and not aligned to observed changes in the risk of the underlying portfolios during the pandemic, or where sector-specific risks are not adequately captured.

The effect of management judgmental adjustments are considered for balances and ECL when determining whether or not a significant increase in credit risk has occurred and are attributed or allocated to a stage as appropriate. This is in accordance with the internal adjustments framework.

Management judgmental adjustments are reviewed under the governance process for HKFRS 9 (as detailed in the unaudited section 'Credit risk management' on page 29). Review and challenge focuses on the rationale and quantum of the adjustments with further review by the second line of defence where significant. For some management judgemental adjustments, internal frameworks establish the conditions under which these adjustments should no longer be required and as such are considered as part of the governance process. This internal governance process allows management judgemental adjustments to be reviewed regularly and, where possible, to reduce the reliance on these through model recalibration or redevelopment, as appropriate.

Management judgemental adjustments made in estimating the scenario-weighted reported ECL at 31 December 2021 are set out in the following table. The table includes adjustments in relation to data and model limitations, including those driven by late-breaking events and sector specific risks and as a result of the regular process of model development and implementation.

Management judgemental adjustments to ECL as at 31 December 2021[1]

	Retail HK$bn	Wholesale HK$bn	Total HK$bn
Low-risk counterparties (banks, sovereigns and government entities)[2]	**0.1**	**(0.2)**	**(0.1)**
Corporate lending adjustments		**4.1**	**4.1**
Retail model default suppression adjustments	**—**		**—**
Macroeconomic-related adjustments	**(0.4)**		**(0.4)**
Pandemic-related economic recovery adjustments	**0.6**		**0.6**
Other retail lending adjustments	**0.7**		**0.7**
Total	**1.0**	**3.9**	**4.9**

Management judgemental adjustments to ECL as at 31 December 2020[1]

	Retail HK$bn	Wholesale HK$bn	Total HK$bn
Low-risk counterparties (banks, sovereigns and government entities)[2]	0.2	—	0.2
Corporate lending adjustments		3.0	3.0
Retail model default suppression adjustments	1.3		1.3
Macroeconomic-related adjustments[3]	0.9		0.9
Pandemic-related economic recovery adjustments	—		—
Other retail lending adjustments[3]	0.3		0.3
Total	2.7	3.0	5.7

1 *Management judgemental adjustments presented in the table reflect increases in ECL.*
2 *Low-risk counterparties for Retail is comprised of adjustments relating to WPB Insurance only.*
3 *Retail lending probability of default adjustments are reported under 'Macroeconomic-related adjustments' and 'Other retail lending adjustments'. Comparatives are re-presented to conform to the current year's presentation.*

Management judgemental adjustments at 31 December 2021 were an increase to ECL of HK$3.9bn for the wholesale portfolio and an increase to ECL of HK$1bn for the retail portfolio.

During 2021, management judgemental adjustments reflected an evolving macroeconomic outlook and the relationship of the modelled ECL to this outlook and to late-breaking and sector specific risks.

At 31 December 2021, wholesale management judgemental adjustments were an ECL increase of HK$0.9bn mainly from increase in Corporate lending adjustment by HK$1.2bn. These principally reflected the outcome of management judgements for high-risk and vulnerable sectors in some of our key markets, supported by credit experts' input, portfolio risk metrics, quantitative analyses and benchmarks. Considerations include risk of individual exposures under different macroeconomic scenarios and comparison of key risk metrics to pre-pandemic levels, resulting in either releases or increases to ECL in each geography.

The increase in adjustment impact relative to 31 December 2020 was mostly driven by management judgements as a result of the effect of further improvement of macroeconomic scenarios on modelled outcomes and increased dislocation of modelled outcomes to management expectations for high-risk sectors, mainly for real estate sector. The adjustment for real estate was recommended focusing on the uncertainty for the higher risk China commercial real estate offshore exposures booked in Hong Kong on account of tightening liquidity and increased refinancing risks, resulting in the downgrade of some previously highly-rated borrowers. The increase management adjustment for real estate sector was partly offset by adjustment releases in other sectors resulted from improvement in industry outlook and portfolio quality.

At 31 December 2021, retail management judgemental adjustments were an ECL increase of HK$1.0bn (31 December 2020: HK$2.7bn increase):

- Pandemic-related economic recovery adjustments increased ECL by HK$0.6bn (31 December 2020: HK$0) to adjust for the effects of the volatile pace of recovery from the pandemic. This is where in management's judgement, supported by quantitative analyses of portfolio and economic metrics, modelled outcomes are overly sensitive given the limited observed deterioration in the underlying portfolio during the pandemic.
- Other retail lending adjustments increased ECL by HK$0.7bn (31 December 2020: HK$0.3bn) and macroeconomic-related adjustments decreased ECL by HK$0.4bn (31 December 2020: HK$0.9bn increase). These were primarily to address areas such as model recalibration and redevelopment, customer relief and data limitations.
- All retail model default suppression adjustments were removed in 2021.

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 a significant increase in credit risk and the measurement of the resulting ECL.

The ECL calculated for the Upside and Downside scenarios should not be taken to represent the lower and upper limits of possible ECL outcomes. The impact of defaults that might occur in the future under different economic scenarios is captured by recalculating ECL for loans at the balance sheet date.

There is a particularly high degree of estimation uncertainty in numbers representing more severe 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. Therefore, it is impracticable to separate the effect of macroeconomic factors in individual assessments. When compared with the performing portfolio, the defaulted obligors represent a significantly smaller portion of the wholesale exposures, even if accounting for the larger portion of the allowance for ECL.

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.

Wholesale and retail sensitivity

The wholesale and retail sensitivity analysis is stated inclusive of management judgemental adjustments, as appropriate to each scenario. The results tables exclude portfolios held by the insurance business and small portfolios, and as such cannot be directly compared to personal and wholesale lending presented in other credit risk tables. Additionally in both the wholesale and retail analysis, the comparative period results for additional and alternative Downside scenarios are not directly comparable to the current period, because they reflect different risk profiles relative with the Consensus scenarios for the period end.

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 2021[2]	**HK$m**	**HK$m**
Reported ECL	**5,981**	**1,162**
Consensus scenarios ECL		
Central scenario	**5,085**	**881**
Upside scenario	**3,712**	**281**
Downside scenario	**7,674**	**1,684**
Alternative (Downside 2) scenario ECL	**14,575**	**6,286**

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 2020[2]	HK$m	HK$m
Reported ECL	3,675	897
Consensus scenarios		
Central scenario	3,009	718
Upside scenario	1,638	217
Downside scenario	5,208	1,954
Alternative scenarios	10,568	8,979

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.*

At 31 December 2021, the most significant level of ECL sensitivity related to the judgements over the China offshore real estate portfolio booked in Hong Kong.

Retail analysis

HKFRS 9 ECL sensitivity to future economic conditions[1]

	Reported ECL	Central Scenario	Upside Scenario	Downside Scenario	Alternative Scenarios
ECL coverage of loans and advances to customers	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**
At 31 December 2021[2]					
Hong Kong	**2,554**	**2,395**	**1,884**	**2,802**	**4,198**

HKFRS 9 ECL sensitivity to future economic conditions[1]

	Reported ECL	Central Scenario	Upside Scenario	Downside Scenario	Alternative Scenarios
ECL coverage of loans and advances to customers	HK$m	HK$m	HK$m	HK$m	HK$m
At 31 December 2020[2]					
Hong Kong	2,959	2,822	2,711	3,043	4,153

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.*

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

(Unaudited)

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 customer risk rating ('CRR')/probability of default ('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 2021	5,254,097	(4,978)	567,753	(6,781)	35,984	(17,739)	855	(362)	5,858,689	(29,860)
Transfers of financial instruments:	(82,216)	(1,758)	62,505	3,758	19,711	(2,000)	–	–	–	–
– transfers from stage 1 to stage 2	(790,973)	1,689	790,973	(1,689)	–	–	–	–	–	–
– transfers from stage 2 to stage 1	716,431	(3,412)	(716,431)	3,412	–	–	–	–	–	–
– transfers to stage 3	(9,067)	104	(14,911)	2,238	23,978	(2,342)	–	–	–	–
– transfers from stage 3	1,393	(139)	2,874	(203)	(4,267)	342	–	–	–	–
Net remeasurement of ECL arising from transfer of stage	–	1,686	–	(2,347)	–	(107)	–	–	–	(768)
New financial assets originated and purchased	1,621,239	(1,183)	–	–	–	–	973	–	1,622,212	(1,183)
Assets derecognised (including final repayments)	(1,086,986)	314	(120,885)	674	(5,745)	1,165	(9)	–	(1,213,625)	2,153
Changes to risk parameters – further lending/repayment	(93,466)	1,078	19,540	87	(2,332)	998	(263)	25	(76,521)	2,188
Changes in risk parameters – credit quality	–	2,078	–	(4,768)	–	(6,612)	–	49	–	(9,253)
Changes to model used for ECL calculation	–	(126)	–	(377)	–	7	–	–	–	(496)
Assets written off	–	–	–	–	(4,531)	4,531	–	–	(4,531)	4,531
Credit-related modifications that resulted in derecognition	–	–	–	–	(973)	–	–	–	(973)	–
Foreign exchange	(23,231)	(28)	684	18	(478)	65	2	(1)	(23,023)	54
Others	43	1	–	(1)	3	(1)	–	(45)	46	(46)
At 31 Dec 2021	5,589,480	(2,916)	529,597	(9,737)	41,639	(19,693)	1,558	(334)	6,162,274	(32,680)
ECL income statement charge for the year										(7,359)
Recoveries										1,011
Others										(169)
Total ECL income statement charge for the year										(6,517)

	At 31 Dec 2021		Year ended 31 Dec 2021
	Gross carrying/ nominal amount	Allowance for ECL	ECL charge
	HK$m	HK$m	HK$m
As above	6,162,274	(32,680)	(6,517)
Other financial assets measured at amortised cost	2,114,301	(639)	(184)
Non-trading reverse repurchase agreement commitments	3,605	–	–
Performance and other guarantees not considered for HKFRS 9	N/A	N/A	145
Amounts due from Group companies	99,604	–	–
Summary of financial instruments to which the impairment requirements in HKFRS 9 are applied/Summary consolidated income statement	8,379,784	(33,319)	(6,556)
Debt instruments measured at FVOCI	1,541,909	(121)	17
Total allowance for ECL/total income statement ECL charge for the year	N/A	(33,440)	(6,539)

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 2020	5,383,650	(3,839)	331,701	(4,874)	16,775	(9,032)	1,152	(300)	5,733,278	(18,045)
Transfers of financial instruments:	(288,695)	(2,585)	259,962	4,322	28,733	(1,737)	—	—	—	—
– transfers from stage 1 to stage 2	(975,023)	2,504	975,023	(2,504)	—	—	—	—	—	—
– transfers from stage 2 to stage 1	702,624	(5,130)	(702,624)	5,130	—	—	—	—	—	—
– transfers to stage 3	(17,478)	95	(14,362)	1,821	31,840	(1,916)	—	—	—	—
– transfers from stage 3	1,182	(54)	1,925	(125)	(3,107)	179	—	—	—	—
Net remeasurement of ECL arising from transfer of stage	—	1,978	—	(2,598)	—	(5,702)	—	—	—	(6,322)
New financial assets originated and purchased	1,422,036	(1,743)	—	—	—	—	2	—	1,422,038	(1,743)
Assets derecognised (including final repayments)	(1,093,254)	320	(182,195)	687	(4,244)	1,357	—	—	(1,279,693)	2,364
Changes to risk parameters – further lending/repayment	(235,616)	(1,037)	140,675	4	41	606	(293)	10	(95,193)	(417)
Changes in risk parameters – credit quality	—	1,501	—	(6,709)	—	(9,339)	—	(71)	—	(14,618)
Changes to model used for ECL calculation	—	489	—	2,626	—	26	—	—	—	3,141
Assets written off	—	—	—	—	(6,064)	6,058	—	—	(6,064)	6,058
Credit-related modifications that resulted in derecognition	—	—	—	—	(4)	2	—	—	(4)	2
Foreign exchange	65,974	(67)	17,610	(237)	744	14	(6)	(1)	84,322	(291)
Others	2	5	—	(2)	3	8	—	—	5	11
At 31 Dec 2020	5,254,097	(4,978)	567,753	(6,781)	35,984	(17,739)	855	(362)	5,858,689	(29,860)
ECL income statement charge for the year										(17,595)
Recoveries										733
Others										(154)
Total ECL income statement charge for the year										(17,016)

	At 31 Dec 2020		Year ended 31 Dec 2020
	Gross carrying/nominal amount	Allowance for ECL	ECL charge
	HK$m	HK$m	HK$m
As above	5,858,689	(29,860)	(17,016)
Other financial assets measured at amortised cost	1,869,268	(713)	(452)
Non-trading reverse repurchase agreement commitments	1,108	—	—
Performance and other guarantees not considered for HKFRS 9	N/A	N/A	(147)
Amounts due from Group companies	82,849	—	—
Summary of financial instruments to which the impairment requirements in HKFRS 9 are applied/Summary consolidated income statement	7,811,914	(30,573)	(17,615)
Debt instruments measured at FVOCI	1,689,820	(167)	(104)
Total allowance for ECL/total income statement ECL charge for the year	N/A	(30,740)	(17,719)

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 on page 30 (unaudited).

Distribution of financial instruments by credit quality at 31 December 2021

(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	2,076,114	876,388	838,222	39,342	42,890	3,872,956	(32,017)	3,840,939
– personal	1,290,946	136,390	91,809	3,008	10,158	1,532,311	(5,966)	1,526,345
– corporate and commercial	648,930	653,853	685,887	36,117	32,624	2,057,411	(25,706)	2,031,705
– non-bank financial institutions	136,238	86,145	60,526	217	108	283,234	(345)	282,889
Loans and advances to banks	423,839	5,750	2,611	86	–	432,286	(39)	432,247
Cash and balances at central banks	269,108	7,663	86	–	–	276,857	–	276,857
Items in the course of collection from other banks	21,632	–	–	–	–	21,632	–	21,632
Hong Kong Government certificates of indebtedness	332,044	–	–	–	–	332,044	–	332,044
Reverse repurchase agreements – non-trading	530,900	144,373	128,502	–	–	803,775	–	803,775
Financial investments held at amortised cost	406,588	88,765	7,644	–	–	502,997	(433)	502,564
Prepayments, accrued income and other assets	95,520	45,945	34,642	599	290	176,996	(206)	176,790
Debt instruments measured at fair value through other comprehensive income[1]	1,438,300	72,697	30,085	–	–	1,541,082	(121)	1,540,961
Out-of-scope for HKFRS 9 impairment						–		–
Trading assets	389,531	65,272	21,676	518	1,033	478,030	–	478,030
Other financial assets designated and otherwise mandatorily measured at fair value through profit or loss	25,738	2,386	900	–	–	29,024	–	29,024
Derivatives	161,471	49,735	5,222	45	–	216,473	–	216,473
Total gross carrying amount on-balance sheet	6,170,785	1,358,974	1,069,590	40,590	44,213	8,684,152	(32,816)	8,651,336
Percentage of total credit quality	71%	16%	12%	–%	1%	100%		
Loan and other credit related commitments	1,732,590	699,474	491,037	19,400	983	2,943,484	(580)	2,942,904
Financial guarantee and similar contracts	135,199	151,565	64,012	3,647	456	354,879	(204)	354,675
Total nominal off-balance sheet amount	1,867,789	851,039	555,049	23,047	1,439	3,298,363	(784)	3,297,579

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.

Distribution of financial instruments by credit quality at 31 December 2020 (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	1,926,557	861,848	832,072	40,484	36,607	3,697,568	(28,887)	3,668,681
– personal	1,220,972	146,492	70,098	5,723	9,062	1,452,347	(7,144)	1,445,203
– corporate and commercial	604,310	631,415	702,801	34,085	27,367	1,999,978	(21,448)	1,978,530
– non-bank financial institutions	101,275	83,941	59,173	676	178	245,243	(295)	244,948
Loans and advances to banks	393,732	8,441	1,650	85	—	403,908	(24)	403,884
Cash and balances at central banks	338,968	8,332	699	—	—	347,999	—	347,999
Items in the course of collection from other banks	21,943	—	—	—	—	21,943	—	21,943
Hong Kong Government certificates of indebtedness	313,404	—	—	—	—	313,404	—	313,404
Reverse repurchase agreements – non-trading	315,534	135,842	68,968	—	—	520,344	—	520,344
Financial investments held at amortised cost	389,024	75,792	10,737	—	—	475,553	(527)	475,026
Prepayments, accrued income and other assets	100,460	46,003	42,535	747	280	190,025	(186)	189,839
Debt instruments measured at fair value through other comprehensive income[1]	1,579,022	69,909	30,197	—	—	1,679,128	(167)	1,678,961
Out-of-scope for HKFRS 9 impairment						—		—
Trading assets	360,104	47,456	24,962	1,507	—	434,029	—	434,029
Other financial assets designated and otherwise mandatorily measured at fair value through profit or loss	23,285	6,068	2,197	—	—	31,550	—	31,550
Derivatives	258,643	75,131	11,431	318	2	345,525	—	345,525
Total gross carrying amount on-balance sheet	6,020,676	1,334,822	1,025,448	43,141	36,889	8,460,976	(29,791)	8,431,185
Percentage of total credit quality	71%	16%	12%	1%	0%	100%		
Loan and other credit related commitments	1,627,804	704,123	464,521	14,968	1,978	2,813,394	(825)	2,812,569
Financial guarantee and similar contracts	101,381	121,415	78,434	4,046	879	306,155	(432)	305,723
Total nominal off-balance sheet amount	1,729,185	825,538	542,955	19,014	2,857	3,119,549	(1,257)	3,118,292

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.*

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	423,839	5,750	2,611	86	–	432,286	(39)	432,247
– stage 1	423,561	5,241	2,244	33	–	431,079	(36)	431,043
– stage 2	278	509	367	53	–	1,207	(3)	1,204
– stage 3	–	–	–	–	–	–	–	–
– POCI	–	–	–	–	–	–	–	–
Loans and advances to customers at amortised cost	2,076,114	876,388	838,222	39,342	42,890	3,872,956	(32,017)	3,840,939
– stage 1	2,034,725	732,858	577,785	4,066	–	3,349,434	(2,603)	3,346,831
– stage 2	41,389	143,530	260,437	35,276	–	480,632	(9,426)	471,206
– stage 3	–	–	–	–	41,332	41,332	(19,654)	21,678
– POCI	–	–	–	–	1,558	1,558	(334)	1,224
Other financial assets measured at amortised cost	1,655,792	286,746	170,874	599	290	2,114,301	(639)	2,113,662
– stage 1	1,651,199	278,343	163,190	115	–	2,092,847	(482)	2,092,365
– stage 2	4,593	8,403	7,684	484	–	21,164	(140)	21,024
– stage 3	–	–	–	–	289	289	(17)	272
– POCI	–	–	–	–	1	1	–	1
Loan and other credit-related commitments	1,347,783	311,803	162,448	4,030	271	1,826,335	(580)	1,825,755
– stage 1	1,344,540	297,202	138,722	1,889	–	1,782,353	(260)	1,782,093
– stage 2	3,243	14,601	23,726	2,141	–	43,711	(295)	43,416
– stage 3	–	–	–	–	271	271	(25)	246
– POCI	–	–	–	–	–	–	–	–
Financial guarantees	11,350	12,188	9,883	841	40	34,302	(44)	34,258
– stage 1	11,127	10,890	8,038	159	–	30,214	(14)	30,200
– stage 2	223	1,298	1,845	682	–	4,048	(14)	4,034
– stage 3	–	–	–	–	40	40	(16)	24
– POCI	–	–	–	–	–	–	–	–
At 31 Dec 2021	**5,514,878**	**1,492,875**	**1,184,038**	**44,898**	**43,491**	**8,280,180**	**(33,319)**	**8,246,861**
Debt instruments at FVOCI[1]								
– stage 1	1,438,161	72,697	30,085	–	–	1,540,943	(121)	1,540,822
– stage 2	139	–	–	–	–	139	–	139
– stage 3	–	–	–	–	–	–	–	–
– POCI	–	–	–	–	–	–	–	–
At 31 Dec 2021	**1,438,300**	**72,697**	**30,085**	**–**	**–**	**1,541,082**	**(121)**	**1,540,961**

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.*

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	393,732	8,441	1,650	85	–	403,908	(24)	403,884
– stage 1	392,766	7,082	1,408	–	–	401,256	(19)	401,237
– stage 2	966	1,359	242	85	–	2,652	(5)	2,647
– stage 3	–	–	–	–	–	–	–	–
– POCI	–	–	–	–	–	–	–	–
Loans and advances to customers at amortised cost	1,926,557	861,848	832,072	40,484	36,607	3,697,568	(28,887)	3,668,681
– stage 1	1,907,066	697,619	541,177	5,059	–	3,150,921	(4,393)	3,146,528
– stage 2	19,491	164,229	290,895	35,425	–	510,040	(6,438)	503,602
– stage 3	–	–	–	–	35,752	35,752	(17,694)	18,058
– POCI	–	–	–	–	855	855	(362)	493
Other financial assets measured at amortised cost	1,479,334	265,966	122,941	747	280	1,869,268	(713)	1,868,555
– stage 1	1,475,066	263,384	115,572	132	–	1,854,154	(452)	1,853,702
– stage 2	4,268	2,582	7,369	615	–	14,834	(221)	14,613
– stage 3	–	–	–	–	279	279	(40)	239
– POCI	–	–	–	–	1	1	–	1
Loan and other credit-related commitments	1,270,557	328,523	122,817	3,883	183	1,725,963	(825)	1,725,138
– stage 1	1,269,249	307,836	98,578	1,579	–	1,677,242	(514)	1,676,728
– stage 2	1,308	20,687	24,239	2,304	–	48,538	(281)	48,257
– stage 3	–	–	–	–	183	183	(30)	153
– POCI	–	–	–	–	–	–	–	–
Financial guarantees	7,694	12,634	10,896	1,084	50	32,358	(124)	32,234
– stage 1	7,272	11,095	7,374	45	–	25,786	(51)	25,735
– stage 2	422	1,539	3,522	1,039	–	6,522	(56)	6,466
– stage 3	–	–	–	–	50	50	(17)	33
– POCI	–	–	–	–	–	–	–	–
At 31 Dec 2020	5,077,874	1,477,412	1,090,376	46,283	37,120	7,729,065	(30,573)	7,698,492
Debt instruments at FVOCI[1]								
– stage 1	1,578,971	69,886	30,197	–	–	1,679,054	(167)	1,678,887
– stage 2	50	24	–	–	–	74	–	74
– stage 3	–	–	–	–	–	–	–	–
– POCI	–	–	–	–	–	–	–	–
At 31 Dec 2020	1,579,021	69,910	30,197	–	–	1,679,128	(167)	1,678,961

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.

Mainland China commercial real estate

(Unaudited)

The following table presents the group's total exposure to mainland China commercial real estate ('CRE') at 31 December 2021, by country/territory and credit quality. Mainland China reported real estate exposures comprise exposures booked in mainland China and offshore where the ultimate parent and beneficial owner is based in mainland China, and all exposures booked on mainland China balance sheets.

Mainland China CRE exposure

	Hong Kong	Mainland China	Rest of Asia-Pacific	Total
	HK$m	HK$m	HK$m	HK$m
Loans and advances to customers[1]	77,229	53,116	658	131,003
Guarantees issued and others[2]	13,624	18,533	127	32,284
Total mainland China CRE exposure at 31 Dec 2021	90,853	71,649	785	163,287
Distribution of mainland China CRE exposure by credit quality				
– Strong	27,630	30,141	239	58,010
– Good	20,681	18,357	–	39,038
– Satisfactory	26,384	22,263	546	49,193
– Sub-standard	12,245	94	–	12,339
– Impaired	3,913	794	–	4,707
At 31 Dec 2021	90,853	71,649	785	163,287
Allowance for ECL	4,371	379	15	4,765

1 Amounts represent gross carrying amount.

2 Amounts represent nominal amount.

At 31 December 2021, the group had no direct credit exposure to developers in the 'red' category of the Chinese government's 'three red lines' framework. The group's exposures related to companies whose primary activities are focused on residential, commercial and mixed-use real estate activities. Lending is generally focused on tier 1 and 2 cities.

Booked in Hong Kong are higher risk exposures to a combination of state and privately owned enterprises. This portfolio had 89% of exposure booked with a credit quality of 'satisfactory' or above, but had a higher degree of uncertainty due to tightening liquidity and increased refinancing risks. In addition, offshore exposures are typically higher risk than onshore exposures. At 31 December 2021, the group had allowances for ECL of HK$4,371m held against mainland China commercial real estate exposures booked in Hong Kong. We will continue to monitor the prevailing situation closely.

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.

Customer relief programmes

(Unaudited)

In response to the Covid-19 outbreak, governments and regulators across Asia-Pacific have introduced a number of support measures for both personal and wholesale customers in market-wide schemes. The following table presents the number of personal accounts/wholesale customers and the associated drawn loan values of customers under these schemes and HSBC-specific measures for major markets at 31 December 2021. When schemes expire, accounts and customers and their associated drawn balances are no longer reported under relief regardless of their repayment status. In relation to personal lending, the majority of relief measures, including payment holidays, relate to existing lending, while in wholesale lending the relief measures comprise payment holidays, refinancing of existing facilities and new lending under government-backed schemes.

At 31 December 2021, the gross carrying value of loans to personal customers under relief was HK$10.5bn (31 December 2020: HK$19.9bn). The decrease in personal customer relief during the year was driven by customers exiting relief measures. The gross carrying value of loans to wholesale customers under relief was HK$67.3bn (31 December 2020: HK$91.8bn). We continue to monitor the recoverability of loans granted under customer relief programs, including loans to a small number of customers that were subsequently found to be ineligible for such relief. The ongoing performance of such loans remains an area of uncertainty at 31 December 2021.

Personal lending

		31 Dec 2021			31 Dec 2020		
		Hong Kong	**Other markets[1]**	**Total**	Hong Kong	Other markets[1]	Total
Market-wide schemes							
Number of accounts in mortgage customer relief	000s	**–**	**8**	**8**	–	6	6
Drawn loan value of accounts in mortgage customer relief	HK$m	**–**	**5,284**	**5,284**	–	7,518	7,518
Number of accounts in other personal lending customer relief	000s	**–**	**33**	**33**	–	37	37
Drawn loan value of accounts in other personal lending customer relief	HK$m	**–**	**4,455**	**4,455**	–	2,818	2,818
HSBC-specific measures							
Number of accounts in mortgage customer relief	000s	**–**	**–**	**–**	3	–	3
Drawn loan value of accounts in mortgage customer relief	HK$m	**448**	**23**	**471**	8,713	128	8,841
Number of accounts in other personal lending customer relief	000s	**–**	**2**	**2**	1	5	6
Drawn loan value of accounts in other personal lending customer relief	HK$m	**267**	**35**	**302**	582	196	778
Total personal lending under market-wide schemes and HSBC-specific measures							
Number of accounts in mortgage customer relief	000s	**–**	**8**	**8**	3	6	9
Drawn loan value of accounts in mortgage customer relief	HK$m	**448**	**5,307**	**5,755**	8,713	7,646	16,359
Number of accounts in other personal lending customer relief	000s	**–**	**35**	**35**	1	42	43
Drawn loan value of accounts in other personal lending customer relief	HK$m	**267**	**4,490**	**4,757**	582	3,014	3,596
Market-wide schemes and HSBC-specific measures – mortgage relief as a proportion of total mortgages	%	**0.1**	**1.3**	**0.5**	1.2	2.0	1.5
Market-wide schemes and HSBC-specific measures – other personal lending relief as a proportion of total other personal lending loans and advance	%	**0.1**	**4.2**	**1.3**	0.2	2.7	1.0

Wholesale lending

		31 Dec 2021			31 Dec 2020		
		Hong Kong	**Other markets**	**Total**	Hong Kong	Other markets	Total
Market-wide schemes							
Number of customers under market-wide measures	000s	**1**	**1**	**2**	3	–	3
Drawn loan value of customers under market-wide schemes	HK$m	**22,671**	**5,152**	**27,823**	82,356	5,178	87,534
HSBC-specific measures							
Number of customers under HSBC-specific measures	000s	**5**	**1**	**6**	–	–	–
Drawn loan value of customers under HSBC-specific measures	HK$m	**35,958**	**3,497**	**39,455**	1	4,295	4,296
Total wholesale lending under market-wide schemes and HSBC-specific measures							
Number of customers	000s	**6**	**2**	**8**	3	–	3
Drawn loan values	HK$m	**58,629**	**8,649**	**67,278**	82,357	9,473	91,830
Market-wide schemes and HSBC-specific measures as a proportion of total wholesale lending loans and advances	%	**4.1**	**0.9**	**2.9**	5.9	1.1	4.1

Number of accounts/customers below 500 is rounded to zero in the above table.

1 *Other markets in personal lending mainly represent Malaysia and Singapore.*

The initial granting of customer relief does not automatically trigger a migration to stage 2 or 3. However, information provided by payment deferrals is considered in the context of other reasonable and supportable information. This forms part of the overall assessment for significant increase in credit risk and for credit impairment, to identify loans for which lifetime ECL is appropriate. An extension in payment deferral does not automatically result in stage 2 or stage 3. The key accounting and credit risk judgement to ascertain whether a significant increase in credit risk has occurred is whether the economic effects of Covid-19 on the customer are likely to be temporary over the lifetime of the loan, and do not indicate that a concession is being made in respect of financial difficulty that would be consistent with stage 3.

The following narratives provides further details on the major relief programmes offered in Hong Kong and Malaysia.

Wholesale lending

Given the persistence of the Covid-19 pandemic around the world and the severity of the ensuing impact on the global and local economy, HKMA – together with the Banking Sector SME Lending Coordination Mechanism – announced on 21 September 2021 that the Pre-approved Principal Payment Holiday Scheme would be extended for another six months until April 2022. HKMA and the coordination mechanism agreed that all principal payments of loans falling due between November 2021 and April 2022 by eligible corporate customers would be deferred by another six months except for repayments of trade loans, which would be deferred by 90 days.

Personal lending

Hong Kong

Mortgages

Customer relief granted on Hong Kong mortgages consists of deferred principal repayment of up to 12 months. This relief programme was available to existing HSBC mortgage loan customers who had a good repayment record during the six months prior to application. The scheme has now been closed to applications.

Malaysia

The Malaysian government has since April 2020 mandated several targeted relief assistance for customers impacted by Covid-19. The programs mainly comprised 6-month payment moratorium for unemployed or a reduction in monthly payment corresponding to reduction in income. The active relief takers in the portfolio comprises enrolments into the targeted relief assistance rolled out from 7 July 2021 where eligibility criteria was relaxed. The latest mandated relief assistance rolled out since 15 November 2021 is targeted at the lower income segment, requires documentary proof of unemployment or income reduction and a notification to the credit bureau. Repeated enrolments are allowed.

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

(Audited)

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

(Unaudited)

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)

	2021		2020	
	Gross carrying/ nominal amount	ECL coverage	Gross carrying/ nominal amount	ECL coverage
	HK$m	%	HK$m	%
Stage 1				
Fully collateralised	1,201,044	0.0	1,124,513	0.0
LTV ratio:				
– less than 70%	1,004,531	0.0	940,033	0.0
– 71% to 90%	169,824	0.0	148,242	0.0
– 91% to 100%	26,689	0.0	36,238	0.0
Partially collateralised (A):	256	0.0	2,852	0.0
– *collateral value on A*	*242*		*2,762*	
Total	1,201,300	0.0	1,127,365	0.0
Stage 2				
Fully collateralised	23,758	0.4	26,554	0.6
LTV ratio:				
– less than 70%	20,691	0.3	22,045	0.4
– 71% to 90%	2,860	1.0	4,059	1.4
– 91% to 100%	207	2.4	450	2.0
Partially collateralised (B):	28	3.6	116	3.4
– *collateral value on B*	*23*		*111*	
Total	23,786	0.4	26,670	0.6
Stage 3				
Fully collateralised	5,113	5.2	4,556	6.4
LTV ratio:				
– less than 70%	4,153	4.5	3,185	4.7
– 71% to 90%	827	7.7	1,245	8.8
– 91% to 100%	133	14.3	126	25.4
Partially collateralised (C):	104	29.8	119	52.1
– *collateral value on C*	*91*		*103*	
Total	5,217	5.7	4,675	7.5
At 31 Dec	1,230,303	0.0	1,158,710	0.1

Other personal lending

(Unaudited)

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

(Unaudited)

The value of commercial real estate collateral is determined by using a combination of external and internal valuations and physical inspections. For commercial real estate, where the facility exceeds regulatory threshold requirements, group policy requires an independent review of the valuation at least every three years, or more frequently as the need arises. 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)

	2021		2020	
	Gross carrying nominal amount	**ECL coverage**	Gross carrying/ nominal amount	ECL coverage
	HK$m	**%**	HK$m	%
Stage 1				
Not collateralised	**268,397**	**0.0**	303,890	0.0
Fully collateralised	**315,939**	**0.1**	321,650	0.1
Partially collateralised (A):	**14,260**	**0.1**	20,941	0.3
– *collateral value on A*	***7,790***		*12,163*	
Total	**598,596**	**0.0**	646,481	0.1
Stage 2				
Not collateralised	**68,871**	**5.8**	23,644	0.1
Fully collateralised	**69,438**	**0.7**	73,991	0.6
Partially collateralised (B):	**7,626**	**2.2**	3,092	1.3
– *collateral value on B*	***3,159***		*1,315*	
Total	**145,935**	**3.2**	100,727	0.5
Stage 3				
Not collateralised	**1,541**	**35.8**	—	—
Fully collateralised	**3,085**	**11.3**	298	6.4
Partially collateralised (C):	**21**	**33.3**	—	—
– *collateral value on C*	***14***		—	
Total	**4,647**	**19.5**	298	6.4
POCI				
Not collateralised	**—**	**—**	—	—
Fully collateralised	**764**	**—**	—	—
Partially collateralised (D):	**—**	**—**	—	—
– *collateral value on D*	**—**		—	
Total	**764**	**—**	—	—
At 31 Dec	**749,942**	**0.8**	747,506	0.1

Other corporate, commercial and non-bank financial institutions lending

(Unaudited)

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)

	2021		2020	
	Gross carrying/ nominal amount	ECL coverage	Gross carrying/ nominal amount	ECL coverage
	HK$m	%	HK$m	%
Stage 1				
Not collateralised	**2,044,385**	**0.0**	1,918,586	0.1
Fully collateralised	**431,547**	**0.1**	398,232	0.1
Partially collateralised (A):	**262,118**	**0.0**	242,375	0.1
– *collateral value on A*	***108,645***		*103,582*	
Total	**2,738,050**	**0.0**	2,559,193	0.1
Stage 2				
Not collateralised	**314,470**	**0.4**	294,547	0.4
Fully collateralised	**113,991**	**0.7**	129,799	0.9
Partially collateralised (B):	**37,862**	**0.4**	40,104	1.1
– *collateral value on B*	***15,205***		*19,214*	
Total	**466,323**	**0.4**	464,450	0.6
Stage 3				
Not collateralised	**17,171**	**80.2**	16,948	75.1
Fully collateralised	**2,551**	**17.3**	3,555	18.4
Partially collateralised (C):	**7,621**	**36.8**	7,753	31.8
– *collateral value on C*	***4,102***		*4,171*	
Total	**27,343**	**62.2**	28,256	56.1
POCI				
Not collateralised	**351**	**47.6**	506	36.4
Fully collateralised	**442**	**37.8**	348	51.4
Partially collateralised (D):	**—**	**—**	—	—
– *collateral value on D*	**—**		—	
Total	**793**	**42.1**	854	42.5
At 31 Dec	**3,232,509**	**0.6**	3,052,753	0.7

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').

Treasury Risk

Overview

(Unaudited)

Treasury risk is the risk of having insufficient capital, liquidity or funding resources to meet financial obligations and satisfy regulatory requirements, including the risk of adverse impact on earnings or capital due to structural foreign exchange exposures and changes in market interest rates, together with pension and insurance risk.

Treasury risk arises from changes to the respective resources and risk profiles driven by customer behaviour, management decisions or the external environment.

Approach and policy

(Unaudited)

The main objective in the management of treasury risk is to maintain appropriate levels of capital, liquidity, funding, foreign exchange and market risk to support business strategy, and meet regulatory and stress testing-related requirements.

The approach to treasury management is driven by our strategic and organisational requirements, taking into account the regulatory, economic and commercial environment. We aim to maintain a strong capital and liquidity base to support the risks inherent in our business and invest in accordance with our strategy, meeting both consolidated and local regulatory requirements at all times.

Our policy is underpinned by our risk management framework, our internal capital adequacy assessment process (‘ICAAP’) and our internal liquidity adequacy assessment process (‘ILAAP’). The risk framework incorporates a number of measures aligned to our assessment of risks for both internal and regulatory purposes.

Treasury risk management

Key developments in 2021

(Unaudited)

- We continued to roll out second line of defence for liquidity, capital and interest rate risk in the banking book ('IRRBB') in Asia-Pacific sites during 2021.
- An internal liquidity metric (‘ILM’) was introduced during 2021 for all Asia-Pacific sites to supplement the Liquidity Coverage Ratio ('LCR') and Net Stable Funding Ratio ('NSFR') metrics.
- We enhanced our risk management of structural foreign exchange (‘SFX’) risk. We hedge structural foreign exchange positions where it is capital efficient to do so, and subject to approved limits.
- A first line team was created within the Global Treasury function to be accountable for monitoring and managing the financial risk and capital implications of the Group’s employee defined benefit pension plans. This change creates clearer delineation of the roles and responsibilities of the first and second lines of defence.

Governance and structure

(Unaudited)

The Board approves the policy and risk appetite for Liquidity and Capital. It is supported and advised by the Risk Committee (‘RC’).

The Global Treasury function actively manages capital and liquidity risk on an on-going basis and provides support to the Asset and Liability Management Committee (‘ALCO’), and is overseen by the Treasury Risk Management function and the Risk Management Meeting (‘RMM’). Global Treasury also manages SFX risk, including implementing hedging strategies approved by Chief Financial Officer, supported by ALCO, and treasury risk.

The Global Treasury function further manages interest rate risk in the non-trading banking book, maintaining the transfer pricing framework and informing the ALCO and local ALCOs of the group and site’s overall banking book interest rate exposure. Banking book interest rate positions may be transferred to be managed by the Global Treasury business, within the market risk limits approved by the RMM.

Pension risk is managed through a network of local governance forums. The regional Pension Risk Management Meeting oversees all pension plans sponsored by HSBC in Asia-Pacific, and is chaired by the Regional Head of Traded and Treasury Risk Management.

The Treasury Risk Management function carries out independent review, challenge and assurance of the appropriateness of the risk management activities undertaken by Global Treasury. Internal Audit provides independent assurance that risk is managed effectively.

Capital risk

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 risks inherent in our business, to invest in accordance with our strategy 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 and our ICAAP. The framework incorporates key capital risk appetites for CET1, Tier1, Total Capital, Loss Absorbing Capacity ('LAC') and Leverage Ratio, 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:

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

ICAAP is an assessment of the group’s capital position, outlining both regulatory and internal capital resources and requirements resulting from our business model, strategy, risk profile and management, performance and planning, risks to capital, and the implications of stress testing. Our assessment of capital adequacy is driven by an assessment of risks. These risks include credit, market, operational, pension, insurance, structural foreign exchange, interest rate risk in the banking book. The group’s ICAAP supports the determination of the capital risk appetite and target ratios, as well as enables the assessment and determination of capital requirements 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.

Regulatory capital requirements

(Audited)

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 standardised (counterparty credit risk) approach and the internal models approach to calculate its default risk exposures for derivatives, and the comprehensive approach for SFTs. 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 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%. At 31 December 2021, 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 2.5% and is designed to ensure banks build up capital outside periods of stress. 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 28 October 2021, the HKMA maintained the CCyB for Hong Kong at 1.0%. On 24 December 2021, the HKMA maintained the D-SIB designation as well as HLA requirement at 2.5% for the group.

The group is classified as a material subsidiary under the Financial Institutions (Resolution) (Loss-absorbing Capacity Requirements – Banking Sector) Rules ('LAC Rules') 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 minimums.

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 tier 1 capital divided by total on- and off-balance sheet exposures.

	At	
	31 Dec 2021	31 Dec 2020
	%	%
Leverage ratio	**5.8**	6.4
Capital and leverage ratio exposure measure	**HK$m**	HK$m
Tier 1 capital	**530,701**	555,553
Total exposure measure	**9,192,814**	8,705,672

The decrease in the leverage ratio from 31 December 2020 to 31 December 2021 was mainly due to the rise in the exposure measure and the decrease in Tier 1 capital.

Further details regarding the group's leverage position can be viewed in the Banking Disclosure Statement 2021, which will be available in the Regulatory Disclosure Section of our website: www.hsbc.com.hk.

Capital adequacy at 31 December 2021

(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 2021. 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 threshold.

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 2021, the effect of this requirement is to reduce the amount of reserves which can be distributed to shareholders by HK$18,587m (31 December 2020: HK$18,063m).

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, which is currently scheduled for implementation by the HKMA starting from 1 July 2023. We will continue to participate in consultations and monitor progress on the implementation. Based on the results of latest HKMA consultations, we foresee a mild positive impact on our capital ratios on initial application. The RWA output floor under the Basel III Reforms will commence once implemented, with a five-year transitional provision. Any impact from the output floor would be towards the end of the transition period. We are expecting the issuance of draft rules in 2022 which will enable us to better estimate the impact.

Capital ratios

(Unaudited)

	At	
	31 Dec 2021	31 Dec 2020
	%	%
Common equity tier 1 ('CET1') capital ratio	**15.4**	17.2
Tier 1 capital ratio	**16.8**	18.8
Total capital ratio	**18.7**	20.8

Risk-weighted assets by risk type

(Unaudited)

	At	
	31 Dec 2021	31 Dec 2020
	HK$m	HK$m
Credit risk	**2,497,803**	2,378,821
Counterparty credit risk	**148,188**	113,650
Market risk	**172,831**	107,661
Operational risk	**337,731**	356,861
Total	**3,156,553**	2,956,993

Risk-weighted assets by reportable segments

(Unaudited)

	At	
	31 Dec 2021	31 Dec 2020
	HK$m	HK$m
Wealth and Personal Banking	**621,757**	583,078
Commercial Banking	**1,157,241**	1,072,171
Global Banking	**566,587**	561,332
Markets and Securities Services	**410,599**	322,828
Corporate Centre	**334,450**	356,801
Other (GBM-other)	**65,919**	60,783
Total	**3,156,553**	2,956,993

Capital base

(Unaudited)

The following table sets out the composition of the group's capital base under Basel III at 31 December 2021.

Capital base

(Unaudited)

	At 31 Dec 2021 HK$m	At 31 Dec 2020 HK$m
Common equity tier 1 ('CET1') capital		
Shareholders' equity	**714,139**	712,119
– shareholders' equity per balance sheet	**856,809**	845,353
– revaluation reserve capitalisation issue	**(1,454)**	(1,454)
– other equity instruments	**(44,615)**	(44,615)
– unconsolidated subsidiaries	**(96,601)**	(87,165)
Non-controlling interests	**28,730**	27,907
– non-controlling interests per balance sheet	**66,702**	66,178
– non-controlling interests in unconsolidated subsidiaries	**(11,800)**	(10,801)
– surplus non-controlling interests disallowed in CET1	**(26,172)**	(27,470)
Regulatory deductions to CET1 capital	**(258,215)**	(230,574)
– valuation adjustments	**(1,834)**	(1,648)
– goodwill and intangible assets	**(28,883)**	(23,276)
– deferred tax assets net of deferred tax liabilities	**(3,353)**	(3,273)
– cash flow hedging reserve	**(60)**	(33)
– changes in own credit risk on fair valued liabilities	**1,322**	1,814
– defined benefit pension fund assets	**(18)**	(12)
– significant Loss-absorbing capacity ('LAC') investments in unconsolidated financial sector entities	**(139,239)**	(119,868)
– property revaluation reserves[1]	**(67,563)**	(66,215)
– regulatory reserve	**(18,587)**	(18,063)
Total CET1 capital	**484,654**	509,452
Additional tier 1 ('AT1') capital		
Total AT1 capital before regulatory deductions	**46,073**	46,101
– perpetual subordinated loans	**44,615**	44,615
– allowable non-controlling interests in AT1 capital	**1,458**	1,486
Regulatory deductions to AT1 capital	**(26)**	—
– significant LAC investments in unconsolidated financial sector entities	**(26)**	—
Total AT1 capital	**46,047**	46,101
Total tier 1 capital	**530,701**	555,553
Tier 2 capital		
Total tier 2 capital before regulatory deductions	**67,802**	66,717
– perpetual subordinated debt[2]	**3,119**	3,101
– term subordinated debt	**14,972**	15,698
– property revaluation reserves[1]	**31,057**	30,451
– impairment allowances and regulatory reserve eligible for inclusion in tier 2 capital	**17,471**	16,451
– allowable non-controlling interests in tier 2 capital	**1,183**	1,016
Regulatory deductions to tier 2 capital	**(8,025)**	(7,725)
– significant LAC investments in unconsolidated financial sector entities	**(8,025)**	(7,725)
Total tier 2 capital	**59,777**	58,992
Total capital	**590,478**	614,545

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 2021.

Non-trading book foreign exchange exposures

Structural foreign exchange exposures

(Unaudited)

Structural foreign exchange exposures represent net assets or capital investments in subsidiaries, branches, joint arrangements or associates, the functional currencies of which are currencies other than the Hong Kong 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 ('OCI'). The group uses Hong Kong dollar as our presentation currency in our consolidated financial statements. Therefore, our consolidated balance sheet is affected by exchange differences between Hong Kong dollar and all the non-Hong Kong dollar functional currencies of underlying subsidiaries.

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 positions where it is capital efficient to do so, and subject to approved limits. Hedging positions are monitored and rebalanced periodically to manage RWA or downside risks associated with group's foreign currency investments.

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

	LCYm	HK$m equivalent
At 31 Dec 2021		
Renminbi	**221,207**	**271,421**
US dollars	**10,224**	**79,731**
At 31 Dec 2020		
Renminbi	210,707	250,116

Transactional foreign exchange exposures

(Unaudited)

Transactional foreign exchange exposures arise from transactions in the banking book generating profit and loss or OCI reserves in a currency other than the reporting currency of the operating entity. Transactional foreign exchange exposure generated through profit and loss is periodically transferred to Markets and Securities Services and managed within limits with the exception of limited residual foreign exchange exposure arising from timing differences or for other reasons. Transactional foreign exchange exposure generated through OCI reserves is managed by the Markets Treasury business within a limit framework to be agreed in the first half of 2022.

Liquidity and funding risk

Overview

(Audited)

Liquidity risk is the risk that we do not have sufficient financial resources to meet our obligations as they fall due. Liquidity risk arises from mismatches in the timing of cash flows.

Funding risk is the risk that we cannot raise funding or can only do so at excessive cost.

The group has comprehensive policies, metrics and controls, which aims to allow us to withstand severe but plausible liquidity stresses. The group manages liquidity and funding risk at an operating entity level to make sure 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 assessed through the Internal Liquidity Adequacy Assessment Process ('ILAAP'), which ensures that operating entities have robust strategies, policies, processes and systems for the identification, measurement, management and monitoring of liquidity risk over an appropriate set of time horizons, including intra-day. The ILAAP informs the validation of risk tolerance and the setting of risk appetite. It also assesses the capability to manage liquidity and funding effectively in each major entity. These metrics are set and managed locally but are subject to robust global review and challenge to ensure consistency of approach and application of the Group's policies and controls.

Framework

(Unaudited)

Global Treasury function is responsible for the application of policies and controls at a local operating entity level. The elements of liquidity and funding risk management framework are underpinned by a robust governance framework, with the two major elements being:

- 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 ILAAP document at appropriate frequency. Compliance with liquidity and funding requirements is monitored and reported to ALCO, RMM and Executive Committee on a regular basis.

Liquidity and Funding Risk management processes include:

- 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.

Management of liquidity and funding risk

(Audited)

Funding and liquidity plans form part of the financial resource plan that is approved by the Board. The Board-level appetite measures are the liquidity coverage ratio ('LCR') and net stable funding ratio ('NSFR'). An internal liquidity metric ('ILM') was introduced in January 2021 to supplement the LCR and NSFR metrics. An appropriate funding and liquidity profile is managed through a wider set of measures:

- a minimum LCR requirement;
- a minimum NSFR requirement or other appropriate metric;
- an ILM;
- a legal entity depositor concentration limit;
- cumulative term funding maturity concentrations limit;
- a minimum LCR requirement by currency;
- intra-day liquidity;
- the application of liquidity funds transfer pricing; and

- forward-looking funding assessments.

Sources of funding

(Unaudited)

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)

Group policy 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.

Additional collateral obligations

(Unaudited)

Under the terms of our current collateral obligations of 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.

Liquidity and funding risk in 2021

(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'), and is required to maintain both LCR and NSFR of not less than 100%.

The average LCR of the group for the period are as follows:

	Quarter ended	
	31 Dec 2021	31 Dec 2020
	%	%
Average LCR	**154.3**	172.1

The liquidity position of the group remained strong in 2021. The average LCR decreased by 17.8 percentage points from 172.1% for the quarter ended 31 December 2020 to 154.3% for the quarter ended 31 December 2021, mainly as a result of an increase in customer loans and other securities.

The majority of high quality liquid assets ('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 of the group for the period are as follows:

	Weighted amount (average value) at quarter ended	
	31 Dec 2021	31 Dec 2020
	HK$m	HK$m
Level 1 assets	**1,767,933**	1,870,016
Level 2A assets	**79,368**	78,515
Level 2B assets	**64,106**	34,468
Total	**1,911,407**	1,982,999

The NSFR of the group for the period are as follows:

	Quarter ended	
	31 Dec 2021	31 Dec 2020
	%	%
Net stable funding ratio	**151.9**	159.3

The funding position of the group remained robust in 2021, highlighting a surplus of stable funding relative to the required stable funding requirement. The NSFR decreased by 7.4 percentage points from 159.3% for the quarter ended. 31 December 2020 to 151.9% for the quarter ended 31 December 2021, mainly as a result of an increase in customer loans and other securities.

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

Interest Rate Risk in the Banking Book

(Unaudited)

Measurement of interest rate risk in the banking book processes

Assessment and risk appetite

Interest rate risk in the banking book is the risk of an adverse impact to earnings or capital due to changes in market interest rates. It is generated by our non-traded assets and liabilities, specifically loans, deposits and financial instruments that are not held for trading intent or held in order to hedge positions held with trading intent. Interest rate risk that can be economically hedged may be transferred to the Markets Treasury business. Hedging is generally executed through interest rate derivatives or fixed-rate government bonds. Any interest rate risk that Markets Treasury cannot economically hedge is not transferred and will remain within the global business where the risks originate.

The Global Treasury function uses a number of measures to monitor and control interest rate risk in the banking book, including:

- net interest income sensitivity; and
- economic value of equity sensitivity.

Net interest income sensitivity

A principal part of our management of non-traded interest rate risk is to monitor the sensitivity of expected net interest income ('NII') under varying interest rate scenarios (i.e. simulation modelling), where all other economic variables are held constant. This monitoring is undertaken at an entity level by local ALCOs, where entities calculate both one-year and five-year NII sensitivities across a range of interest rate scenarios.

NII sensitivity figures represent the effect of pro forma movements in projected yield curves based on a static balance sheet size and structure. The exception to this is where the size of the balances or repricing is deemed interest rate sensitive, for example, non-interest-bearing current account migration and fixed-rate loan early prepayment. These sensitivity calculations do not incorporate actions that would be taken by Markets Treasury or in the business that originates the risk to mitigate the effect of interest rate movements.

The NII sensitivity calculations assume that interest rates of all maturities move by the same amount in the 'up-shock' scenario. The sensitivity calculations in the 'down-shock' scenarios reflect no floors to the shocked market rates. However, customer product-specific interest rate floors are recognised where applicable.

Economic value of equity sensitivity

Economic value of equity ('EVE') represents the present value of the future banking book cash flows that could be distributed to equity holders under a managed run-off scenario. This equates to the current book value of equity plus the present value of future NII in this scenario. EVE can be used to assess the economic capital required to support interest rate risk in the banking book. An EVE sensitivity represents the expected movement in EVE due to pre-specified interest rate shocks, where all other economic variables are held constant. Operating entities are required to monitor EVE sensitivities as a percentage of capital resources.

Pension Risk

(Unaudited)

Our global pensions strategy is to move from defined benefit to defined contribution plans, where local law allows and it is considered competitive to do so. We will continue to review and enhance our risk appetite metrics to assist the internal monitoring of our de-risking programmes.

In defined contribution pension plans, the contributions that HSBC is required to make are known, while the ultimate pension benefit will vary, typically with investment returns achieved by investment choices made by the employee. While the market risk to HSBC of defined contribution plans is low, the group is still exposed to operational and reputational risk.

In defined benefit pension plans, the level of pension benefit is known. Therefore, the level of contributions required by HSBC will vary due to a number of risks, including:

- investments delivering a return below that required to provide the projected plan benefits;
- the prevailing economic environment leading to corporate failures, thus triggering write-downs in asset values (both equity and debt); and
- a change in interest rate expectations, causing an increase in the value of plan liabilities.

Pension risk is assessed using an economic capital model that takes into account potential variations in these factors. The impact of these variations on both pension assets and pension liabilities is assessed using a 1-in-200-year stress test. Scenario analysis and other stress tests are also used to support pension risk management. To fund the benefits associated with defined benefit plans, sponsoring group companies make regular contributions in accordance with advice from actuaries and in consultation with the plan's fiduciaries where relevant. These contributions are normally set to ensure that there are sufficient funds to meet the cost of the accruing benefits for the future service of active members. However, higher contributions are required when plan assets are considered insufficient to cover the existing pension liabilities. Contribution rates are typically revised annually or once every three years, depending on the plan.

The defined benefit plans invest contributions in a range of investments designed to limit the risk of assets failing to meet a plan's liabilities. Any changes in expected returns from the investments may also change future contribution requirements. In pursuit of these long-term objectives, an overall target allocation is established between asset classes of the defined benefit plan. In addition, each permitted asset class has its own benchmarks, such as stock-market indices. The target allocations are reviewed regularly, typically once every three to five years, and more frequently if required by local legislation or circumstances. The process generally involves an asset and liability review.

Market Risk

Overview

(Unaudited)

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 2021

(Unaudited)

There were no material changes to our policies and practices for the management of market risk in 2021.

Governance and structure

(Unaudited)

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	• Foreign exchange • Interest rates[1] • Credit spreads
Global business	MSS and GBM Other	MSS, GB, GBM Other, ALCM CMB and WPB
Risk measure	VaR | Sensitivity | Stress Testing	VaR | Sensitivity | Stress Testing

1 *The interest rate risk on the fixed-rate securities issued by HSBC Holdings is not included in the group value at risk.*

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.

Market risk is managed and controlled through limits approved by the group's Board of Directors. These limits are allocated across business lines and to the Group's legal entities. The group has an independent market risk management and control sub-function, which is responsible for measuring, monitoring and reporting market risk exposures against limits on a daily basis. Each operating entity is required to assess the market risks arising in its business and to transfer them either to its local Markets and Securities Services or Market Treasury unit for management, or to separate books managed under the supervision of the local ALCO. The Traded Risk function enforces the controls around trading in permissible instruments approved for each site as well as changes that follow completion of the new product approval process. Trading Risk also restricts trading in the more complex derivatives products to offices with appropriate levels of product expertise and robust control systems.

Key risk management processes

Monitoring and limiting market risk exposures

(Audited)

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 for trading desks with consideration of market liquidity, customer demand and capital constraints, among other factors.

Value at risk

(Audited)

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 that are calculated with reference to data from the past two years; and
- calculations 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

(Audited)

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

- the use of historical data as a proxy for estimating future 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 captures and capitalises 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, the stressed VaR measure also includes 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

(Unaudited)

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.

Trading portfolios

(Audited)

Trading portfolios comprise positions held for client servicing and market-making, with the intention of short-term resale and/or to hedge risks resulting from such positions.

Back-testing

(Audited)

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

The number of back-testing exceptions is used to gauge how well the models are performing. We consider enhanced internal monitoring of a VaR model if more than five profit exceptions or more than five loss exceptions occur in a 250-day period.

We back-test our VaR at set levels of our Group entity hierarchy.

Market risk in 2021

(Unaudited)

Financial markets were resilient in 2021. During the first half of the year, the rollout of Covid vaccination programmes, loose financial conditions and continued fiscal support contributed to a gradual reopening of major economies. Concerns of rising inflationary pressures were mainly interpreted as transitory. Whilst the path of monetary policies remained uncertain, central banks continued to provide liquidity. This supported risk assets valuations, while volatility in most asset classes remained subdued. In the second half of 2021, amid the emergence of new Covid variants, global equities reached further record highs, as investors focused on global economic resilience and corporate earnings. Yields followed a downward trend for most of 3Q-21, before reversing in the final weeks of the year, when markets began pricing a faster pace of interest rate rise in some of the major economies, due to persistently elevated inflation and the expectation of a tighter monetary policies. Credit markets remained strong, with credit benchmark indices for investment-grade and high-yield debt close to pre-pandemic levels. Nevertheless a wave of volatility and uncertainty in the Chinese property sector due to liquidity crunch resulting numerous rating downgrades and defaults during the second half of 2021.

We continued to manage market risk prudently during 2021. Sensitivity exposures and VaR remained within appetite as the business pursued its core market-making activity in support of our customers. Market risk was managed using a complementary set of risk measures and limits, including stress and scenario analysis.

Trading portfolios

(Audited)

Value at risk of the trading portfolios

Trading VaR was predominantly generated by Markets and Securities Services business. Interest rate risks from market-making activities were the main drivers of trading VaR. Total trading VaR was higher as at 31 December 2021 compared to. 31 December 2020 mainly due to the reduction in portfolio diversification across different asset class VaR.

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	Interest rate	Equity	Credit spread	Portfolio diversification[2]	Total[3]
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
At 31 Dec 2021						
Year end	**36**	**135**	**60**	**31**	**(74)**	**188**
Average	**49**	**158**	**77**	**34**		**177**
Maximum	**78**	**218**	**108**	**62**		**241**
At 31 Dec 2020						
Year end	50	130	62	45	(143)	144
Average	48	140	62	49		172
Maximum	96	250	118	106		251

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 is non-additive across risk types due to diversification effects.*

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.

Resilience risk management

Key developments in 2021

The Operational and Resilience Risk sub-function provides robust non-financial risk steward oversight of the management of risk by the Group businesses, functions and legal entities. It also provides effective and timely independent challenge. During the year we carried out a number of initiatives to strengthen the management of non-financial risks:

- We developed a more robust understanding of our risk and control environment, by updating our material risk taxonomy and control libraries, and refreshing material risk and control assessments.
- We further strengthened our non-financial risk governance and senior leadership focus.
- We created a consolidated view of all risk issues across the Group enabling better senior management focus, read across on material control issues and intervention as required.
- We improved how we provide better analysis and reporting of non-financial risks, with more risk practitioners having access to a wider range of management information on their risks and controls.
- We increased the capability of risk stewards to allow for effective stewardship to be in place across the Group.
- We strengthened read across of issues and near misses by implementing a Group-wide harmonized approach across businesses, functions and regions.
- We enhanced risk management oversight across our most material change initiatives to support growth in our strategic transformation in 2021.

We prioritise our efforts on material risks and areas undergoing strategic growth, aligning our location strategy to this need. We also remotely provide oversight and stewardship, including support of chief risk officers, in territories where we have no physical presence.

Governance and structure

The Operational and Resilience Risk target operating model provides a globally consistent view across resilience risks, strengthening our risk management oversight while operating effectively as part of a simplified non-financial risk structure. We view resilience risk across seven risk types related to: third parties and supply chains; information, technology and cybersecurity; payments and manual processing; physical security; business interruption and contingency risk; building unavailability; and workplace safety.

The principal senior management meeting for operational and resilience risk governance is the Non-Financial Risk Management Board, chaired by the Group Chief Risk and Compliance Officer, with an escalation path to the Group Risk Management Meeting.

Key risk management processes

Operational resilience is our ability to anticipate, prevent, adapt, respond to, recover and learn from internal or external disruption, protecting customers, the markets we operate in and economic stability. Resilience is determined by assessing whether we are able to continue to provide our most important services, within an agreed level. We accept we will not be able to prevent all disruption, we prioritise investment to continually improve the response and recovery strategies for our most important business services.

Business operations continuity

Business Continuity, in response to the Covid 19 pandemic, remains in place across a number of locations where the Group operates, allowing the majority of service level agreements to be maintained. There were no significant impacts to service delivery in locations where the Group operates.

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 inappropriate market conduct, as well as breaching regulatory licensing, permissions and rules.

Regulatory compliance risk management

Key developments in 2021

We have continued to embed the structural changes made in the prior year to our wider approach to Compliance Risk Management. The integration of the Risk and Compliance functions in May 2021 brought together two complementary functions which will strengthen the Regulatory Conduct mandate and our capability to drive ever greater standards in regard to conduct of our business.

In June 2021, we also announced HSBC's new purpose-led approach to conduct. As part of this, we took the opportunity to align and simplify our approach, making conduct easier to understand and showing how it fulfils our value: 'we take responsibility'.

Governance and structure

Following the creation of the Group Regulatory Conduct capability in May 2020, we have continued to evolve our structure in response to the ever-changing business and industry needs. In March 2021, a new Regulatory Conduct Strategic Delivery and Analytics team was created to drive the Regulatory Conduct strategic priorities, and provides oversight of Regulatory Conduct sponsored projects.

The Regulatory Conduct capability continues to work closely with the Chief Compliance Officers and their respective teams to help them identify and manage regulatory compliance risks across the Bank. They also work together to ensure good conduct outcomes and provide enterprise-wide support on the regulatory agenda.

Key risk management processes

The Group Regulatory Conduct capability is responsible for setting global policies, standards and risk appetite to guide the Group's management of regulatory compliance. It also devises clear frameworks and support processes to protect against regulatory compliance risks. The capability at the Group level provides oversight, review and challenge to the local Chief Compliance Officers and their teams to help them identify, assess and mitigate regulatory compliance risks, where required. Global policies are reviewed regularly and procedures are in place for prompt identification and escalation of actual or potential regulatory breach. Relevant reportable events are escalated to the RMM and the Risk Committee, as appropriate.

Conduct of business

Our new simplified Conduct Approach, which was launched in June 2021, guides us to do the right thing and to recognise the real impact we have for our customers and the financial markets in which we operate. It complements our Purpose and Values, setting outcomes to be achieved for our customers and markets. It recognises cultural and behavioural drivers of good conduct outcomes and applies across all risk disciplines, operational processes and technologies.

During 2021:

- We understood and serviced our customers' ongoing needs and continued to champion a strong conduct and customer-focused culture. This was demonstrated through providing support to our customers facing financial difficulties as a result of the prolonged impacts of the pandemic and the resulting uncertainty in trading conditions.
- We began the integration of climate risk into the Group's risk management approach to recognise the importance of strengthened controls and oversight for our related activities.
- We operated resiliently and securely to avoid harm to our customers and markets by continuing to embed conduct within our business line processes and through our Non- Financial and Financial Risk Steward activities.
- We continued our focus on culture and behaviours as a driver of good conduct outcomes.
- We placed a particular focus on the importance of well-being and collaborative working as we continued to adapt to changing working practices as the pace of change resulting from the pandemic varied across our markets.
- We continued to emphasise and worked to create an environment in which employees are encouraged and feel safe to speak up.
- We delivered our annual global mandatory training course on conduct to reinforce the importance of conduct for all colleagues.
- The Board continues to maintain oversight of conduct matters through the Risk Committee.

Financial crime risk

(Unaudited)

Overview

Financial crime risk is the risk of knowingly or unknowingly helping parties to commit or to further potentially illegal activity through HSBC, including money laundering, fraud, bribery and corruption, tax evasion, sanctions breaches, and terrorist and proliferation financing.

Financial crime risk management

Key developments in 2021

We consistently review the effectiveness of our financial crime risk management framework, which includes consideration of geopolitical and wider economic factors, and 2021 was no exception. We continued to support the Business in navigating the complex and dynamic nature of geopolitics as it relates to sanctions and export control risk. A key focus area in this regard relates to the array of new regulations and designations in 2021 and in alignment with our policy, which is to comply with all applicable sanctions regulations in the jurisdictions in which we operate.

We also continued to progress several key financial crime risk management initiatives, including:

- We deployed a key component of our intelligence-led, dynamic risk assessment capabilities for customer account monitoring in one of our home markets, and undertook important enhancements to our traditional transaction monitoring systems.
- We strengthened our anti-fraud capabilities, notably with respect to the early identification of first party lending fraud and the identification of new strategic detection tools.
- We continued to develop leading-edge surveillance technology and capabilities to identify potential market abuse, including testing machine learning capabilities to detect unauthorised trading.
- We invested in the use of artificial intelligence (AI) and advanced analytics techniques to manage financial crime risk, notably new automated capabilities in name and transaction screening.
- We implemented a market leading gifts and entertainment recording and approval system, which, in combination with an expenses reconciliation tool, allows us to manage our gifts and entertainment risk consistently and effectively.

Governance and structure

We have continued to review the effectiveness of our governance framework to manage financial crime risk. The framework aims to enable us to comply with the letter and the spirit of all applicable financial crime laws and regulations, as well as our own standards, values and policies relating to financial crime risks.

In 2021, the Risk and Compliance functions were integrated at Group level, allowing us to make better use of a broader range of perspectives from other risk disciplines.

Key risk management processes

We assess the effectiveness of our end-to-end financial crime risk management framework on an ongoing basis and invest in enhancing our operational control capabilities and technology solutions to deter and detect criminal activity. We have simplified our framework by streamlining and de-duplicating policy requirements. We also strengthened our financial crime risk taxonomy and control libraries, improving our investigative and monitoring capabilities through technology deployments, as well as developing more targeted metrics. We have also enhanced governance and reporting.

We are committed to working in partnership with the wider industry and the public sector in managing financial crime risk, protecting the integrity of the financial system and the communities we serve. We participate in numerous public-private partnerships and information-sharing initiatives around the world also supporting national governments and international standard setters' reform activity. In 2021, there was a particular focus on reform activity in Singapore where we are active participants in a key initiative undertaken by the Monetary Authority of Singapore, known as Project Cosmic, which establishes a framework to enable financial institutions to share information with each other when certain financial crime risk concerns have been identified. We took part in a number of roundtables organised by the Financial Action Task Force, the global money laundering and terrorist financing watchdog, supporting its strategic review. We also supported its work on digitisation and beneficial ownership registers. These align with our objectives of promoting a public policy and regulatory environment that embraces the use of technology in building the future financial crime framework to ensure our bank is more resilient and secure, while enabling benefits for customers.

Skilled Person/Independent Consultant

In December 2012, HSBC Holdings entered into a number of agreements, including an undertaking with the UK Financial Services Authority (replaced with a Direction issued by the UK Financial Conduct Authority ('FCA') in 2013 and again in 2020), as well as a cease-and-desist order with the US Federal Reserve Board ('FRB'), both of which contained certain forward-looking anti-money laundering and sanctions-related obligations. HSBC also agreed to retain an independent compliance monitor (who was, 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.

In 2020, HSBC's engagement with the independent compliance monitor, acting in his roles as both Skilled Person and Independent Consultant, concluded. The role of FCA Skilled Person was assigned to a new individual in the second quarter of 2020. Separately, a new FRB Independent Consultant was appointed in the second quarter of 2021 pursuant to the cease-and-desist order.

The new Skilled Person issued his final report in June 2021, concluding his review. The 2021 FCA Firm Evaluation Letter confirmed that there is no requirement for a further Skilled Person review. The new Independent Consultant carried out the eighth annual review for the FRB and issued his report in November 2021.

In accordance with the Direction issued by the FCA to HSBC Holdings in 2020, the Group Risk Committee retains oversight of matters relating to anti-money laundering, sanctions, terrorist financing and proliferation financing. Throughout 2021, the Group Risk Committee received regular updates on the Skilled Person's and the Independent Consultant's reviews.

Model risk

(Unaudited)

Overview

Model risk is the risk of inappropriate or incorrect business decisions arising from the use of models that have been inadequately designed, implemented or used, or from models that do not perform in line with expectations and predictions.

Key developments in 2021

In 2021, we continued to make improvements in our model risk management processes, amid regulatory changes in model requirements. Initiatives during the year included:

- Re-development, validation, and submission of critical Internal Rating Based ('IRB') Approach models for credit risk, Internal Model Method ('IMM') for counterparty credit risk and Internal Model Approach ('IMA') models for market risk, to the HKMA in response to regulatory capital changes. These new models have been built to enhance standards using improved data as a result of investment in processes and systems.
- Redeveloped and validated models impacted by changes to alternative rate setting mechanisms due to IBOR transition.
- Further enhancements to our control framework for our Sarbannes-Oxley were made to address the control weaknesses that emerged as a result of significant increases in model adjustments and overlays that were applied to compensate for the impact of COVID-19 on models and to introduce a requirement for second line to approve material models prior to use.
- Model owners in Business and Functions continued to embed the requirements included in the Model Risk Policy and Standards introduced in 2020. On-going training on model risk continued to be delivered to front line teams to improve their awareness of model risk and their adherence to the governance framework.
- New Model Risk Appetite measures were rolled out in HBAP, aligned across the Bank. The new measures are more forward looking and helped Businesses and Functions manage model risk more effectively.
- There has been greater level of involvement by Businesses and Functions in the development and management of models. This included hiring of staff with strong model risk skills and enhanced focus on key model risk drivers such as data quality and model methodology.
- The transformation of the Model Risk Management team continued with changes to the model validation processes including new system and process. Key hires were made during the year to strengthen oversight and expertise within the Function. Also, changes to the Model Inventory system provided Businesses and Functions improved functionality and more detailed information related to model risk.
- HBAP regional engagement strategy has been established in response to the growing maturity of model risk management and demand across the Region.
- Models related to climate risk and models using advanced analytics and machine learning became a critical area of focus and would grow in importance in 2022 and beyond. In response, qualified specialist skills were added to the model risk teams to manage the increased model risk in these areas.

Governance

The governance structure implemented in 2020 is fully operational. The HBAP Model Risk Committee (MRC) established in 2021 provides oversight of models used in HBAP. The Committee is chaired by the HBAP Chief Risk Officer and the Regional Heads of Businesses participate in these meetings. Authorised sub-forums operating under the remit of the HBAP MRC, oversee model risk management activities based on associated model categories.

Key risk management processes

A variety of modelling approaches, including regression, simulation, sampling, machine learning and judgemental scorecards for a range of business applications were used. These activities include customer selection, product pricing, financial crime transaction monitoring, creditworthiness evaluation and financial reporting.

Our model risk management policies and procedures were regularly reviewed, and required 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 also reports on model risk to senior management on a regular basis through the use of the risk map, risk appetite metrics and regular key updates.

The effectiveness of these processes, including the Regional model oversight committee structure, were regularly reviewed to ensure clarity in authority, coverage and escalations and that appropriate understanding and ownership of model risk continued to be embedded in the Businesses and Functions.

Insurance manufacturing operations risk

Overview

(Unaudited)

The key risks for our insurance manufacturing operations are market risks, in particular interest rate and equity, credit risks and insurance underwriting and operational risks. These have a direct impact on the financial results and capital positions of the insurance operations. Liquidity risk, whilst significant in other parts of the group, is relatively minor for our insurance operations.

HSBC's Insurance business

(Unaudited)

We sell insurance products through a range of channels including our branches, direct channels and third-party distributors. The majority of sales are through an integrated bancassurance model that 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 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, universal life and protection contracts.

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 small number 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 WPB and CMB through our branches and direct channels.

Insurance manufacturing operations risk management

Key developments in 2021

(Unaudited)

The insurance manufacturing subsidiaries follow the group's risk management framework. In addition, there are specific policies and practices relating to the risk management of insurance contracts. There were no material changes to these policies and practices over 2021, although enhancements were made to the product pricing and profitability framework to allow for the transition to HKFRS 17.

Governance and structure

(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 Global Insurance Risk Management Meeting oversees the risk and control framework for insurance business in the group.

The monitoring of the risks within our insurance operations is carried out by Insurance Risk teams. The Bank's risk stewardship functions support the 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. We participate in local and Group-wide regulatory stress tests, as well as internally developed stress and scenario tests, including Group internal stress test exercises. The results of these stress tests and the adequacy of management action plans to mitigate these risks are considered in the group ICAAP and the entities' regulatory Own Risk and Solvency Assessments ('ORSAs').

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. 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.
- 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.

Credit risk

(Audited)

Our insurance manufacturing subsidiaries also have credit risk mandates and limits within which they are permitted to operate, which consider the credit risk exposure, quality and performance of their investment portfolios. Our assessment of the creditworthiness of issuers and counterparties is based primarily upon internationally recognised credit ratings and other publicly available information.

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.

Capital and liquidity risk

(Audited)

Capital risk for our insurance manufacturing subsidiaries is assessed in the ICAAP based on their financial capacity to support the risks to which they are exposed. Capital adequacy is assessed on both the group's economic capital basis, and the relevant local insurance regulatory basis. The group's economic capital basis is largely aligned to European Solvency II regulations, other than in Hong Kong where this is based on the emerging Hong Kong Risk Based Capital regulations.

Risk appetite buffers are set to ensure that the operations are able to remain solvent on both bases, allowing for business-as-usual volatility and extreme but plausible stress events.

Liquidity 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 underwriting risk

(Unaudited)

Our insurance manufacturing subsidiaries primarily use the following frameworks and processes to manage and mitigate insurance underwriting risks:

- a formal approval process for launching new products or making changes to products;
- a product pricing and profitability framework which requires initial and ongoing assessment of the adequacy of premiums charged on new insurance contracts to meet the risks associated with them;
- a framework for customer underwriting;
- reinsurance which cedes risks above our appetite thresholds to third party reinsurer thereby limiting our exposure; and
- oversight of expense and reserving risks by entity Actuarial Control Committees.

Insurance manufacturing operations risk in 2021

Measurement

(Unaudited)

The tables below show the composition of assets and liabilities by contract type. 91% (2020: 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 2021				
Financial assets	**637,317**	**37,382**	**46,971**	**721,670**
– financial assets designated and otherwise mandatorily measured at fair value through profit or loss	**160,555**	**35,906**	**457**	**196,918**
– derivatives	**631**	**6**	**3**	**640**
– financial investments measured at amortised cost	**432,733**	**479**	**37,734**	**470,946**
– financial investments measured at fair value through other comprehensive income	**5,780**	**—**	**592**	**6,372**
– other financial assets[1]	**37,618**	**991**	**8,185**	**46,794**
Reinsurance assets	**28,874**	**6**	**—**	**28,880**
PVIF[2]	**—**	**—**	**63,765**	**63,765**
Other assets and investment properties	**13,626**	**4**	**5,304**	**18,934**
Total assets	**679,817**	**37,392**	**116,040**	**833,249**
Liabilities under investment contracts designated at fair value	**28,397**	**7,030**	**—**	**35,427**
Liabilities under insurance contracts	**608,590**	**29,645**	**—**	**638,235**
Deferred tax[3]	**9**	**—**	**10,579**	**10,588**
Other liabilities	**—**	**—**	**35,269**	**35,269**
Total liabilities	**636,996**	**36,675**	**45,848**	**719,519**
Total equity	**—**	**—**	**113,730**	**113,730**
Total equity and liabilities	**636,996**	**36,675**	**159,578**	**833,249**
At 31 Dec 2020				
Financial assets	577,666	42,621	40,776	661,063
– financial assets designated and otherwise mandatorily measured at fair value through profit or loss	129,597	41,366	384	171,347
– derivatives	1,323	20	3	1,346
– financial investments measured at amortised cost	410,169	222	34,824	445,215
– financial investments measured at fair value through other comprehensive income	4,971	—	502	5,473
– other financial assets[1]	31,606	1,013	5,063	37,682
Reinsurance assets	27,299	6	—	27,305
PVIF[2]	—	—	65,052	65,052
Other assets and investment properties	13,422	1	4,652	18,075
Total assets	618,387	42,628	110,480	771,495
Liabilities under investment contracts designated at fair value	31,786	7,732	—	39,518
Liabilities under insurance contracts	547,128	34,348	—	581,476
Deferred tax[3]	9	—	10,436	10,445
Other liabilities	—	—	37,220	37,220
Total liabilities	578,923	42,080	47,656	668,659
Total equity	—	—	102,836	102,836
Total equity and liabilities	578,923	42,080	150,492	771,495

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.*
4 *Balance sheet of insurance manufacturing operations are shown before elimination of inter-company transactions with HSBC non-insurance operations.*

Key risk types

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'). 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 fixed interest assets, 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.

The cost of such guarantees is accounted for as a deduction from the present value of in-force 'PVIF' asset, unless the cost of such guarantees is already explicitly allowed for within the insurance contracts liabilities.

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

(Unaudited)

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.

The differences between the impacts on profit after tax and equity are driven by the changes in value of the bonds measured at fair value through other comprehensive income, which are only accounted for in equity.

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

(Audited)

	31 Dec 2021		31 Dec 2020	
	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	(1,257)	(2,036)	(1,673)	(2,283)
-100 basis points parallel shift in yield curves	1,201	1,980	1,613	2,223
10% increase in equity prices	2,388	2,388	2,167	2,167
10% decrease in equity prices	(2,426)	(2,426)	(2,183)	(2,183)
10% increase in USD exchange rate compared to all currencies	635	635	673	673
10% decrease in USD exchange rate compared to all currencies	(635)	(635)	(673)	(673)

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 64.

The credit quality of the reinsurers' share of liabilities under insurance contracts is assessed as 'strong' or 'good' (as defined on page 30), with 100% of the exposure being neither past due nor impaired (2020: 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 42. 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.

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 2021. 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 2021 remained comparable with 2020.

The remaining contractual maturity of investment contract liabilities is included in the table on page 111.

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 2021					
Non-linked insurance contracts	53,098	187,589	324,654	662,058	1,227,399
Unit-linked	8,073	14,353	14,852	8,115	45,393
	61,171	201,942	339,506	670,173	1,272,792
At 31 Dec 2020					
Non-linked insurance contracts	47,444	168,811	311,975	517,761	1,045,991
Unit-linked	8,558	18,308	14,708	9,162	50,736
	56,002	187,119	326,683	526,923	1,096,727

Insurance underwriting risk

Description and exposure

(Unaudited)

Insurance underwriting 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 expense rates.

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 64 analyses our life insurance risk exposures by type of contract.

The insurance risk profile and related exposures remain largely consistent with those observed at 31 December 2020.

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. For a portfolio of term assurance, an increase in lapse rates typically has a negative effect on profit due to the loss of future income on the lapsed policies. However, some contract lapses have a positive effect on profit due to the existence of policy surrender charges. We are most sensitive to a change in lapse rates on unit-linked and universal life contracts.

Expense rate risk is the exposure to a change in the allocated 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. The risk is generally greater for Singapore and mainland China than for Hong Kong.

Sensitivity analysis

(Audited)

	2021	2020
	HK$m	HK$m
Effect on profit after tax and total equity at 31 Dec		
10% increase in mortality and/or morbidity rates	**(637)**	(613)
10% decrease in mortality and/or morbidity rates	**650**	629
10% increase in lapse rates	**(606)**	(575)
10% decrease in lapse rates	**680**	676
10% increase in expense rates	**(368)**	(352)
10% decrease in expense rates	**359**	360

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 68-72, 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 as at the date of this report, whose names and functions are set out in the 'Report of the Directors' on pages 3-9 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

Peter Wong

Chairman

22 February 2022

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 (the 'group'), which are set out on pages 73 to 131, comprise:

- the consolidated balance sheet as at 31 December 2021;
- 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 significant accounting policies and other explanatory information.

1 *Certain required disclosures as described in Note 1.1(d) on the consolidated financial statements have been presented elsewhere in the* Annual Report and Accounts 2021*, rather than in the notes on 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 2021, 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:

- Allowances for expected credit losses on loans and advances to customers
- Impairment assessment of 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

Allowances for expected credit losses on loans and advances to customers

Nature of the Key Audit Matter	How our audit addressed the Key Audit Matter
At 31 December 2021, the group recorded allowances for expected credit losses ('ECL') on loans and advances to customers of HK$32.0bn. The determination of the ECL on loans and advances to customers requires the use of complex credit risk methodologies that are applied in models using the group's historic experience of the correlations between defaults and losses, borrower creditworthiness, segmentation of customers or portfolios and economic conditions. It also requires the determination of assumptions which involve estimation uncertainty. The assumptions that we focused our audit on include those with greater levels of management judgement and for which variations have the most significant impact on ECL on loans and advances to customers. Specifically, these included economic scenarios and their likelihood, as well as customer risk ratings. Likewise, there is inherent uncertainty with the consensus economic forecast data from external economists as well as the prospects of future recoverability of credit impaired wholesale exposures. The progression of the Covid-19 pandemic and other current macroeconomic conditions impact the inherent risk and estimation uncertainty involved in determining the ECL on loans and advances to customers. Management judgemental adjustments to ECL on loans and advances to customers therefore continue to be made. This includes judgemental adjustments to the ECL for certain wholesale sectors, as well as adjustments related to the retail portfolio. **Matters discussed with the Audit Committee** We discussed the appropriateness of the methodologies, their application, significant assumptions and related disclosures with the Audit Committee, giving consideration to the current macroeconomic conditions. This included management judgemental adjustments made to derive the ECL on loans and advances to customers. We further discussed the governance and controls over the process in determining ECL on loans and advances to customers.	We tested controls in place over the methodologies, their application, significant assumptions and data used to determine the ECL on loans and advances to customers. These included controls over: • Model development, validation and monitoring; • Approval of economic scenarios; • Approval of the probability weightings assigned to economic scenarios; • Assigning customer risk ratings; • Approval of management judgemental adjustments; and • Review of input and assumptions applied in estimating the recoverability of credit-impaired wholesale exposures. We performed substantive audit procedures over the compliance of ECL methodologies with the requirements of HKFRS 9. We engaged professionals with experience in ECL modelling to assess the appropriateness of changes to models during the year, and for a sample of those models, independently reperformed the modelling for certain aspects of the ECL calculation. We also assessed the appropriateness of methodologies and related models that did not change during the year. We further performed the following to assess the significant assumptions and data: • We challenged the appropriateness of the significant assumptions; • We involved our economic experts in assessing the reasonableness of the severity and likelihood of certain economic scenarios; • We tested a sample of customer risk ratings assigned to wholesale exposures; and • We have independently assessed other significant assumptions and obtained corroborating evidence. For a sample of management judgemental adjustments, we challenged the appropriateness of these and assessed the ECL determined. We further considered whether the judgements made in selecting the significant assumptions and determining the management judgemental adjustments would give rise to indicators of possible management bias. We assessed the adequacy of the disclosures in relation to ECL on loans and advances to customers made in the consolidated financial statements in the context of the applicable financial reporting framework.

Relevant references in the consolidated financial statements

Risk: Credit Risk, as cross-referenced from the consolidated financial statements (only information identified as audited), page 29-50

Note 1.2 (i) on the consolidated financial statements: Basis of preparation and significant accounting policies - Impairment of amortised cost and FVOCI financial assets, page 83-86

Note 2 (e) on the consolidated financial statements: Operating profit – Change in expected credit losses and other credit impairment charges, page 91

Note 10 on the consolidated financial statements: Loans and advances to customers, page 99

Impairment assessment of investment in associate – Bank of Communications Co., Limited ('BoCom')

Nature of the Key Audit Matter

At 31 December 2021, the fair value of the investment in BoCom, based on the share price, was HK$118.2bn lower than the carrying value ('CV') of HK$184.8bn. This is an indicator of potential impairment. An impairment test was performed, with supporting sensitivity analysis, using a value in use ('VIU') model. The VIU was HK$8.2bn in excess of the CV. On this basis, no impairment was recorded.

The methodology applied in the VIU model is dependent on various assumptions, both short term and long term in nature. These assumptions, which are subject to estimation uncertainty, are derived from a combination of management's judgement, analysts' forecasts, market data or other relevant information.

The assumptions that we focused our audit on were those with greater levels of management judgement and subjectivity, and for which variations had the most significant impact on the VIU. Specifically, these included the discount rate, operating income growth rate, long-term profit and asset growth rates, cost-income ratio, expected credit losses, effective tax rates, and capital requirements (including Capital Adequacy Ratio, Tier 1 Capital Adequacy ratio and risk-weighted assets as a percentage of total assets).

Matters discussed with the Audit Committee

We discussed the appropriateness of the methodology, its application and significant assumptions with the Audit Committee. We also discussed the disclosures made in relation to BoCom, including the use of sensitivity analysis to explain estimation uncertainty and the changes in certain assumptions that would result in the VIU being equal to the CV.

How our audit addressed the Key Audit Matter

We tested controls in place over significant assumptions, the methodology and its application used to determine the VIU. We assessed the appropriateness of the methodology used, its application, and the mathematical accuracy of the calculations. In respect of the significant assumptions, we performed the following:

- Challenged the appropriateness of the significant assumptions and, where relevant, their interrelationships;
- Obtained corroborating evidence for data supporting significant assumptions that may include historic experience, external market information, third-party sources including analyst reports, information from BoCom management and historical publicly available BoCom financial information;
- Determined a reasonable range for the discount rate assumption, with the assistance of our valuation experts, and compared it to the discount rate used by management; and
- Assessed whether the judgements made in selecting the significant assumptions give rise to indicators of possible management bias.

We observed the meetings in March, May, September and November 2021 between management and BoCom management, held specifically to identify facts and circumstances impacting significant assumptions relevant to the determination of the VIU.

Representations were obtained from the Bank that assumptions used were consistent with information currently available to the Bank.

We assessed the adequacy of the disclosures in relation to BoCom made in the consolidated financial statements in the context of the applicable financial reporting framework.

Relevant references in the consolidated financial statements

Note 1.2 (a) on the consolidated financial statements: Basis of preparation and significant accounting policies - Consolidated and related policies, page 80-81

Note 14 on the consolidated financial statements: Interests in associates and joint ventures, page 102-105

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	How our audit addressed the Key Audit Matter
At 31 December 2021, the group has recorded an asset for PVIF of HK$63.8bn and liabilities under non-linked life insurance contracts of HK$608.5bn. The determination of these balances requires the use of complex actuarial methodologies that are applied in models and involves judgement about future outcomes. Specifically, judgement is required in deriving the economic and non-economic assumptions. These assumptions are subject to estimation uncertainty, both for PVIF asset and the liabilities under non-linked life insurance contracts. **Matters discussed with the Audit Committee** We discussed the appropriateness of the methodologies, their application, significant assumptions and related disclosures with the Audit Committee. In relation to assumptions, we focused on those for which variations had the most significant impact on the valuation of PVIF and liabilities under non-linked life insurance contracts carrying value.	We tested controls in place over the methodologies, their application, significant assumptions and data for PVIF asset and the liabilities under non-linked life insurance contracts. Specifically, these included controls over: • policy data reconciliations from the policyholder administration system to the actuarial valuation system; • assumptions setting; • review and determination of methodologies used, and its application in models; and • results aggregation and analysis processes. With the assistance of our actuarial experts, we performed the following additional audit procedures to assess the methodologies used, their application, significant assumptions, data and disclosures: • We assessed the appropriateness of the methodologies used, their application and the mathematical accuracy of the calculations; • We challenged the appropriateness of the significant assumptions and, where relevant, their interrelationships. We have independently assessed these assumptions and obtained relevant corroborating evidence. We further considered whether the judgements made in selecting the significant assumptions would give rise to indicators of possible management bias; • We performed substantive audit procedures over critical data used in the determination of these balances to ensure these are relevant and reliable; and • We assessed the adequacy of the disclosures in relation to the asset for PVIF and liabilities under non-linked life insurance contracts made in the consolidated financial statements in the context of the applicable financial reporting framework.

Relevant references in the consolidated financial statements

Risk: Insurance manufacturing operations risk, as cross-referenced from the consolidated financial statements (only information identified as audited), page 62-66

Note 1.2 (j) on the consolidated financial statements: Basis for preparation and significant accounting policies - Insurance contracts, page 87

Note 3 on the consolidated financial statements: Insurance business, page 92

Note 15 on the consolidated financial statements: Goodwill and intangible assets, page 105-106

Other Information

The directors of the Bank are responsible for the other information. The other information comprises all of the information included in the *Annual Report and Accounts 2021*, Banking Disclosure Statement as at 31 December 2021 and List of the directors of the Bank's subsidiary undertakings (during the period from 1 January 2021 to 22 February 2022) other than the consolidated financial statements and our auditor's report thereon. We have obtained some of the other information including Certain defined terms, Cautionary statement regarding forward-looking statements, Chinese translation, Financial Highlights, Report of the Directors, Financial Review, Risk and Statement of Directors' Responsibilities sections of the *Annual Report and Accounts 2021* prior to the date of this auditor's report. The remaining other information, including Banking Disclosure Statement as at 31 December 2021 and List of the directors of the Bank's subsidiary undertakings (during the period from 1 January 2021 to 22 February 2022), is expected to be made available to us after that date. The other information does not include 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.

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.

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 remaining other information, 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, actions taken to eliminate threats or safeguards applied.

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 Lars Christian Jordy Nielsen.

PricewaterhouseCoopers

Certified Public Accountants

Hong Kong, 22 February 2022

Consolidated Financial Statements

Consolidated income statement

for the year ended 31 December

	Notes	2021 HK$m	2020 HK$m
Net interest income	2a	**98,113**	111,513
– interest income		**121,382**	147,376
– interest expense		**(23,269)**	(35,863)
Net fee income	2b	**45,296**	41,670
– fee income		**57,819**	52,370
– fee expense		**(12,523)**	(10,700)
Net income from financial instruments held for trading or managed on a fair value basis	2c	**28,359**	32,172
Net income from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss	2c	**18,180**	13,128
Changes in fair value of designated debts issued and related derivatives	2c	**(639)**	(171)
Changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	2c	**(25)**	138
Gains less losses from financial investments		**1,667**	1,624
Net insurance premium income	3	**61,722**	61,563
Other operating income	2d	**2,033**	5,612
Total operating income		**254,706**	267,249
Net insurance claims and benefits paid and movement in liabilities to policyholders	3	**(76,048)**	(77,911)
Net operating income before change in expected credit losses and other credit impairment charges		**178,658**	189,338
Change in expected credit losses and other credit impairment charges	2e	**(6,539)**	(17,719)
Net operating income		**172,119**	171,619
Employee compensation and benefits	4	**(39,261)**	(36,183)
General and administrative expenses	2f	**(52,327)**	(46,304)
Depreciation and impairment of property, plant and equipment	2g	**(8,891)**	(9,405)
Amortisation and impairment of intangible assets		**(4,397)**	(3,936)
Total operating expenses		**(104,876)**	(95,828)
Operating profit		**67,243**	75,791
Share of profit in associates and joint ventures		**19,320**	14,405
Profit before tax		**86,563**	90,196
Tax expense	5	**(14,015)**	(14,505)
Profit for the year		**72,548**	75,691
Attributable to:			
– ordinary shareholders of the parent company		**64,633**	66,997
– other equity holders		**2,715**	2,450
– non-controlling interests		**5,200**	6,244
Profit for the year		**72,548**	75,691

Consolidated statement of comprehensive income

for the year ended 31 December

	2021 HK$m	2020 HK$m
Profit for the year	**72,548**	75,691
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	**(4,009)**	2,238
– fair value gains/(losses)	**(3,907)**	4,642
– fair value gains transferred to the income statement	**(1,276)**	(1,648)
– expected credit (recoveries)/losses recognised in the income statement	**(17)**	112
– income taxes	**1,191**	(868)
Cash flow hedges	**(700)**	969
– fair value gains/(losses)	**7,038**	(4,393)
– fair value (gains)/losses reclassified to the income statement	**(7,850)**	5,551
– income taxes	**112**	(189)
Share of other comprehensive income/(expense) of associates and joint ventures	**596**	(726)
Exchange differences	**3,973**	17,891
Items that will not be reclassified subsequently to profit or loss:		
Property revaluation	**4,771**	(5,774)
– fair value gains/(losses)	**5,643**	(6,914)
– income taxes	**(872)**	1,140
Equity instruments designated at fair value through other comprehensive income	**(3,480)**	1,647
– fair value gains/(losses)	**(3,478)**	1,654
– income taxes	**(2)**	(7)
Changes in fair value of financial liabilities designated at fair value upon initial recognition arising from changes in own credit risk	**522**	257
– before income taxes	**631**	320
– income taxes	**(109)**	(63)
Remeasurement of defined benefit asset/liability	**724**	(315)
– before income taxes	**885**	(384)
– income taxes	**(161)**	69
Other comprehensive income for the year, net of tax	**2,397**	16,187
Total comprehensive income for the year	**74,945**	91,878
Attributable to:		
– ordinary shareholders of the parent company	**67,148**	82,738
– other equity holders	**2,715**	2,450
– non-controlling interests	**5,082**	6,690
Total comprehensive income for the year	**74,945**	91,878

Consolidated balance sheet

at 31 December

	Notes	2021 HK$m	2020 HK$m
Assets			
Cash and balances at central banks		**276,857**	347,999
Items in the course of collection from other banks		**21,632**	21,943
Hong Kong Government certificates of indebtedness		**332,044**	313,404
Trading assets	7	**777,450**	600,414
Derivatives	8	**365,167**	422,945
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	9	**202,399**	178,960
Reverse repurchase agreements – non-trading		**803,775**	520,344
Loans and advances to banks		**432,247**	403,884
Loans and advances to customers	10	**3,840,939**	3,668,681
Financial investments	11	**2,051,575**	2,175,432
Amounts due from Group companies	32	**112,719**	83,203
Interests in associates and joint ventures	14	**188,485**	168,754
Goodwill and intangible assets	15	**95,181**	89,968
Property, plant and equipment	16	**129,827**	128,537
Deferred tax assets	5	**3,353**	3,325
Prepayments, accrued income and other assets	17	**269,743**	288,610
Total assets		**9,903,393**	9,416,403
Liabilities			
Hong Kong currency notes in circulation		**332,044**	313,404
Items in the course of transmission to other banks		**25,701**	25,699
Repurchase agreements – non-trading		**255,374**	136,157
Deposits by banks		**280,310**	248,628
Customer accounts	18	**6,177,182**	5,911,396
Trading liabilities	19	**92,723**	60,812
Derivatives	8	**355,791**	428,211
Financial liabilities designated at fair value	20	**138,965**	167,013
Debt securities in issue	21	**67,364**	79,419
Retirement benefit liabilities	4	**1,890**	2,701
Amounts due to Group companies	32	**356,233**	296,308
Accruals and deferred income, other liabilities and provisions	22	**219,206**	215,987
Liabilities under insurance contracts	3	**638,145**	581,406
Current tax liabilities		**2,378**	2,669
Deferred tax liabilities	5	**32,522**	30,997
Subordinated liabilities	23	**4,054**	4,065
Total liabilities		**8,979,882**	8,504,872
Equity			
Share capital	24	**172,335**	172,335
Other equity instruments	25	**44,615**	44,615
Other reserves		**151,804**	149,500
Retained earnings		**488,055**	478,903
Total shareholders' equity		**856,809**	845,353
Non-controlling interests		**66,702**	66,178
Total equity		**923,511**	911,531
Total liabilities and equity		**9,903,393**	9,416,403

Consolidated statement of cash flows

for the year ended 31 December

	2021 HK$m	2020 HK$m
Profit before tax	**86,563**	90,196
Adjustments for non-cash items:		
Depreciation and amortisation	**13,288**	13,341
Net gain from investing activities	**(1,890)**	(567)
Share of profits in associates and joint ventures	**(19,320)**	(14,405)
(Gain)/Loss on disposal of subsidiaries, businesses, associates and joint ventures	**(4)**	70
Change in expected credit losses gross of recoveries and other credit impairment charges	**7,549**	18,452
Provisions	**607**	114
Share-based payment expense	**913**	735
Other non-cash items included in profit before tax	**5,416**	(3,896)
Elimination of exchange differences	**8,024**	(22,323)
Changes in operating assets and liabilities		
Change in net trading securities and derivatives	**(159,767)**	(10,696)
Change in loans and advances to banks and customers	**(172,484)**	11,959
Change in reverse repurchase agreements – non-trading	**(174,643)**	(60,741)
Change in financial assets designated and otherwise mandatorily measured at fair value through profit or loss	**(23,439)**	(25,449)
Change in other assets	**43,706**	(119,373)
Change in deposits by banks and customer accounts	**297,468**	547,781
Change in repurchase agreements – non-trading	**119,217**	29,761
Change in debt securities in issue	**(12,055)**	(27,514)
Change in financial liabilities designated at fair value	**(28,048)**	6,722
Change in other liabilities	**129,710**	42,517
Dividends received from associates	**5,525**	5,053
Contributions paid to defined benefit plans	**(356)**	(602)
Tax paid	**(12,648)**	(25,466)
Net cash from operating activities	**113,332**	455,669
Purchase of financial investments	**(1,233,472)**	(875,648)
Proceeds from the sale and maturity of financial investments	**1,193,780**	823,410
Purchase of property, plant and equipment	**(2,718)**	(3,768)
Proceeds from sale of property, plant and equipment and assets held for sale	**96**	72
Proceeds from disposal of customer loan portfolios	**2,267**	6,284
Net investment in intangible assets	**(10,835)**	(7,331)
Net cash inflow on sale of subsidiaries	**—**	69
Net cash outflow on purchase of subsidiaries	**(13)**	—
Net cash from investing activities	**(50,895)**	(56,912)
Subordinated loan capital issued[1]	**57,764**	—
Subordinated loan capital repaid[1]	**(24,102)**	—
Dividends paid to shareholders of the parent company and non-controlling interests	**(63,523)**	(59,121)
Net cash from financing activities	**(29,861)**	(59,121)
Net increase in cash and cash equivalents	**32,576**	339,636
Cash and cash equivalents at 1 Jan	**1,047,807**	677,664
Exchange differences in respect of cash and cash equivalents	**(25,299)**	30,507
Cash and cash equivalents at 31 Dec[2]	**1,055,084**	1,047,807
Cash and cash equivalents comprise		
– cash and balances at central banks	**276,857**	347,999
– items in the course of collection from other banks	**21,632**	21,943
– loans and advances to banks of one month or less	**326,691**	286,356
– net settlement accounts and cash collateral	**34,580**	43,570
– reverse repurchase agreements with banks of one month or less	**306,241**	186,599
– treasury bills, other bills and certificates of deposit less than three months	**114,784**	187,039
– less: items in the course of transmission to other banks	**(25,701)**	(25,699)
Cash and cash equivalents at 31 Dec[2]	**1,055,084**	1,047,807

Interest received was HK$133,964m (2020: HK$160,120m), interest paid was HK$26,553m (2020: HK$46,104m) and dividends received were HK$5,592m (2020: HK$3,946m).

1 *Changes in subordinated liabilities (including those issued to group companies) during the year included amounts from issuance and repayments as presented above, and non-cash changes from foreign exchange loss of HK$494m in 2021 (2020: exchange gain of HK$303m) and fair value loss after hedging of HK$7,768m in 2021 (2020: HK$8,261m gain). These balances are presented under 'Amounts due to Group companies' in the consolidated balance sheet.*

2 *At 31 December 2021 HK$128,756m (2020: HK$149,565m) was not available for use by the group, of which HK$67,340m (2020: HK$71,049m) related to mandatory deposits at Central banks.*

Consolidated statement of changes in equity

for the year ended 31 December

				Other reserves							
	Share capital[1]	Other equity instru-ments	Retained earnings	Property revaluation reserve	Financial assets at FVOCI reserve	Cash flow hedge reserve	Foreign exchange reserve	Other[2]	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 1 Jan 2021	172,335	44,615	478,903	63,793	9,883	772	(10,688)	85,740	845,353	66,178	911,531
Profit for the year	–	–	67,348	–	–	–	–	–	67,348	5,200	72,548
Other comprehensive income/(expense) (net of tax)	–	–	1,160	4,359	(5,992)	(619)	3,558	49	2,515	(118)	2,397
– debt instruments at fair value through other comprehensive income	–	–	–	–	(3,775)	–	–	–	(3,775)	(234)	(4,009)
– equity instruments designated at fair value through other comprehensive income	–	–	–	–	(2,737)	–	–	–	(2,737)	(743)	(3,480)
– cash flow hedges	–	–	–	–	–	(619)	–	–	(619)	(81)	(700)
– changes in fair value of financial liabilities designated at fair value upon initial recognition arising from changes in own credit risk	–	–	521	–	–	–	–	–	521	1	522
– property revaluation	–	–	–	4,359	–	–	–	–	4,359	412	4,771
– remeasurement of defined benefit asset/liability	–	–	612	–	–	–	–	–	612	112	724
– share of other comprehensive income of associates and joint ventures	–	–	27	–	520	–	–	49	596	–	596
– exchange differences	–	–	–	–	–	–	3,558	–	3,558	415	3,973
Total comprehensive income/ (expense) for the year	–	–	68,508	4,359	(5,992)	(619)	3,558	49	69,863	5,082	74,945
Dividends paid[3]	–	–	(59,105)	–	–	–	–	–	(59,105)	(4,418)	(63,523)
Movement in respect of share-based payment arrangements	–	–	131	–	–	–	–	(173)	(42)	(2)	(44)
Transfers and other movements[4]	–	–	(382)	(3,162)	(22)	–	–	4,306	740	(138)	602
At 31 Dec 2021	172,335	44,615	488,055	64,990	3,869	153	(7,130)	89,922	856,809	66,702	923,511

Consolidated statement of changes in equity (continued)

for the year ended 31 December

	Share capital[1]	Other equity instruments	Retained earnings	Property revaluation reserve (Other reserves)	Financial assets at FVOCI reserve (Other reserves)	Cash flow hedge reserve (Other reserves)	Foreign exchange reserve (Other reserves)	Other[2] (Other reserves)	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 1 Jan 2020	172,335	44,615	464,629	72,013	6,959	(104)	(28,118)	82,349	814,678	64,603	879,281
Profit for the year	—	—	69,447	—	—	—	—	—	69,447	6,244	75,691
Other comprehensive income/(expense) (net of tax)	—	—	(98)	(5,286)	2,921	876	17,430	(102)	15,741	446	16,187
– debt instruments at fair value through other comprehensive income	—	—	—	—	2,203	—	—	—	2,203	35	2,238
– equity instruments designated at fair value through other comprehensive income	—	—	—	—	1,299	—	—	—	1,299	348	1,647
– cash flow hedges	—	—	—	—	—	876	—	—	876	93	969
– changes in fair value of financial liabilities designated at fair value upon initial recognition arising from changes in own credit risk	—	—	257	—	—	—	—	—	257	—	257
– property revaluation	—	—	—	(5,286)	—	—	—	—	(5,286)	(488)	(5,774)
– remeasurement of defined benefit asset/liability	—	—	(312)	—	—	—	—	—	(312)	(3)	(315)
– share of other comprehensive expense of associates and joint ventures	—	—	(43)	—	(581)	—	—	(102)	(726)	—	(726)
– exchange differences	—	—	—	—	—	—	17,430	—	17,430	461	17,891
Total comprehensive income/(expense) for the year	—	—	69,349	(5,286)	2,921	876	17,430	(102)	85,188	6,690	91,878
Dividends paid[3]	—	—	(54,268)	—	—	—	—	—	(54,268)	(4,853)	(59,121)
Movement in respect of share-based payment arrangements	—	—	120	—	—	—	—	213	333	12	345
Transfers and other movements[4]	—	—	(927)	(2,934)	3	—	—	3,280	(578)	(274)	(852)
At 31 Dec 2020	172,335	44,615	478,903	63,793	9,883	772	(10,688)	85,740	845,353	66,178	911,531

1 *Ordinary share capital includes preference shares which have been redeemed or bought back via payments out of distributable profits in previous years.*
2 *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.*
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.*

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 2021

There were no new accounting standards or interpretations that had a significant effect on the group in 2021. Accounting policies have been consistently applied to all the years presented, unless otherwise stated.

(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 2022 and 1 January 2023. The group expects they will have an insignificant effect, when adopted, on the Consolidated Financial Statements.

New HKFRSs

HKFRS 17 'Insurance Contracts'

HKFRS 17 'Insurance Contracts' was issued in January 2018, with amendments to the standard issued in October 2020. The standard sets out the requirements that an entity should apply in accounting for insurance contracts it issues and reinsurance contracts it holds. Following the amendments, HKFRS 17 is effective from 1 January 2023. The group is in the process of implementing HKFRS 17. Industry practice and interpretation of the standard are still developing. Therefore, the likely financial impact of its implementation remains uncertain. However, we have the following expectations as to the impact compared with the group's current accounting policy for insurance contracts, which is set out in Note 1.2(j) below:

- Under HKFRS 17, there will be no present value of in-force business ('PVIF') asset recognised. Instead the estimated future profit will be included in the measurement of the insurance contract liability as the contractual service margin ('CSM'), representing unearned profit, and this will be gradually recognised in revenue as services are provided over the duration of the insurance contract. While the profit over the life of an individual contract will be unchanged, its emergence will be later under HKFRS 17. The removal of the PVIF asset and the recognition of CSM, which is a liability, will reduce equity. The PVIF asset will be eliminated to equity on transition, together with other adjustments to assets and liabilities to reflect HKFRS 17 measurement requirements and any consequential amendments to financial assets in the scope of HKFRS 9.
- HKFRS 17 requires increased use of current market values in the measurement of insurance liabilities. Changes in market conditions for certain products measured under the general measurement approach are immediately recognised in profit or loss, while changes in market conditions for other products measured under the variable fee approach are included in the measurement of CSM.
- In accordance with HKFRS 17, directly attributable costs will be incorporated in the CSM and recognised in the results of insurance services as a reduction in reported revenue, as profit is recognised over the duration of insurance contracts. Costs that are not directly attributable will remain in operating expenses. This will result in a reduction in reported operating expenses compared with the current accounting policy.
- We intend to provide an update on the likely financial impacts on our insurance business in later 2022 financial reports, when we expect that this will be reasonably estimable.

(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 ('OCI') 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 rate of exchange at the balance sheet date, while their results are translated into Hong Kong dollars at the average rates of exchange for the reporting period. Exchange differences arising are recognised in OCI. On disposal of a foreign operation, exchange differences previously recognised in OCI 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 reportable segments are included in the 'Financial Review' on page 10 as specified as 'Audited'.
- Disclosures on 'Financial instruments impacted by IBOR reform' are included in the 'Top and Emerging Risks' section on page 20 as specified as 'Audited'.
- Disclosures concerning the nature and extent of risks relating to banking and insurance activities are included in the 'Risk' section on pages 29 to 59 and pages 62 to 66 as specified as 'Audited'.
- Capital disclosures are included in the 'Treasury Risk' section on pages 51 to 54 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 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. 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 Statements 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, capital requirements and capital resources. These considerations include stressed scenarios that reflect the uncertainty that the global Covid-19 pandemic has had on the group's operations, as well as considering potential impacts from other top and emerging risks, and the related impact on profitability, capital and liquidity.

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 once a year, 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 is included in the consolidated financial statements of the group based on either financial statements made up to 31 December or 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 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**
	• 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. • Key assumptions are 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 an 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 brokerage trades where the group acts as an agent in the transaction it 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 it has 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 and the sensitivity of their valuation to the effect of applying reasonable possible alternative assumptions in determining their fair value are set out in Note 33.

(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.

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 OCI until the assets are sold. Upon disposal, the cumulative gains or losses in OCI 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 the income statement.

(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 the income statement. Dividend income is recognised in the income statement.

(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.
- 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.
- 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 OCI 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 that 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 through profit or loss. 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 not part of fair value designated relationships, if 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 uses these derivatives or, where allowed, other non-derivative hedging instruments in 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 and 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 OCI and 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 OCI are reclassified to the income statement in the same periods in which the hedged item affects profit or loss. When a hedge relationship is discontinued, or partially discontinued, any cumulative gain or loss recognised in OCI 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 OCI 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 other than renegotiated loans

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. Mandatory and general offer loan modifications that are not borrower-specific, for example market-wide customer relief programmes, have not been classified as renegotiated loans and generally have not resulted in derecognition, but their stage allocation is determined considering all available and supportable information under our ECL impairment policy. Changes made to these financial instruments that are economically equivalent and required by interest rate benchmark reform do not result in the derecognition or a change in the carrying amount of the financial instrument, but instead require the effective interest rate to be updated to reflect the change of the interest rate benchmark.

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, which are 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 30.

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 is 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 income statement 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 makes use of 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

ECL 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 its 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/alternative 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 pages 35 to 39.

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 • Making management adjustments to account for late breaking events, model and data limitations and deficiencies, and expert credit judgements	• The sections 'Measurement uncertainty and sensitivity analysis of ECL estimates' marked as audited from pages 35 to 39, 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.

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 OCI, 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.

Liabilities under insurance contracts and Present value of in-force long-term insurance business

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.

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 and insurance contract liabilities are 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, investment returns 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. • Insurance contract liabilities are set in accordance with local actuarial principles in each market, aligned with local regulatory measurement frameworks. Core judgements made in applying these frameworks include demographic and behavioural assumptions, expense assumptions and investment return assumptions.	• The assumptions are reassessed at each reporting date and changes in the estimates which affect the value of PVIF and Insurance contract liabilities are reflected in the income statement. More information is included in Note 15 for PVIF and Note 3 for Liabilities under insurance contracts. • The sections marked as audited on pages 62 to 66, 'Insurance manufacturing operations risk management' provide an indication of the sensitivity of the result to the application of different weightings being applied to different economic and non-economic assumptions.

(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 on a straight-line basis 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 OCI. 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 OCI 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.

Contingent liabilities 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.

(o) Impairment of non-financial assets

Software under development is tested for impairment at least annually. Other non-financial assets such as property, plant and equipment, intangible assets (excluding goodwill) and right-of-use assets are tested for impairment at the individual asset level when there is indication of impairment at that level, or at the CGU level for assets that do not have a recoverable amount at the individual asset level. In addition, impairment is also tested at the CGU level when there is indication of impairment at that level. For this purpose, CGUs are considered to be the principal operating legal entities and branches divided in a similar manner as the group's operating segments.

Impairment testing compares the carrying amount of the non-financial asset or CGU with its recoverable amount, which is the higher of the fair value less costs of disposal or the value in use. The carrying amount of a CGU comprises the carrying value of its assets and liabilities, including non-financial assets that are directly attributable to it and non-financial assets that can be allocated to it on a reasonable and consistent basis. Non-financial assets that cannot be allocated to an individual CGU are tested for impairment at an appropriate grouping of CGUs. The recoverable amount of the CGU is the higher of the fair value less costs of disposal of the CGU, which is determined by independent and qualified valuers where relevant, and the value in use, which is calculated based on appropriate inputs.

When the recoverable amount of a CGU is less than its carrying amount, an impairment loss is recognised in the income statement to the extent that the impairment can be allocated on a pro-rata basis to the non-financial assets by reducing their carrying amounts to the higher of their respective individual recoverable amount or nil. This impairment is not allocated to financial assets within a CGU.

Impairment loss recognised in prior periods for non-financial assets is reversed when there has been a change in the estimate used to determine the recoverable amount. The impairment loss is reversed to the extent that the carrying amount of the non-financial assets would not exceed the amount that would have been determined (net of amortisation or depreciation) had no impairment loss been recognised in prior periods.

2 Operating profit

(a) Net interest income

Net interest income includes:

	2021 HK$m	2020 HK$m
Interest income recognised on impaired financial assets	315	220
Interest income recognised on financial assets measured at amortised cost	106,916	127,178
Interest income recognised on financial assets measured at FVOCI	14,461	20,167
Interest expense on financial instruments, excluding interest on financial liabilities held for trading or designated or otherwise mandatorily measured at fair value	(20,907)	(33,135)

(b) Net fee income

Net fee income by reportable segments

	Wealth and Personal Banking[1] HK$m	Commercial Banking[1] HK$m	Global Banking[1,2] HK$m	Markets and Securities Services[2] HK$m	Corporate Centre[3] HK$m	Other (GBM-other)[2] HK$m	Total HK$m
Account services	809	929	367	70	–	–	2,175
Funds under management	5,927	639	16	2,028	–	–	8,610
Cards	7,559	207	40	–	–	–	7,806
Credit facilities	409	1,371	1,304	62	–	–	3,146
Broking income	5,477	69	–	869	–	–	6,415
Imports/exports	–	2,462	594	–	–	–	3,056
Unit trusts	7,373	176	1	–	–	–	7,550
Underwriting	1	1	869	683	–	–	1,554
Remittances	255	1,843	715	–	–	–	2,813
Global custody	976	50	47	3,414	–	–	4,487
Insurance agency commission	1,326	114	1	–	–	–	1,441
Other	2,329	2,675	2,497	3,413	(2,156)	8	8,766
Fee income	32,441	10,536	6,451	10,539	(2,156)	8	57,819
Fee expense	(8,614)	(708)	(705)	(4,809)	2,399	(86)	(12,523)
Year ended 31 Dec 2021	23,827	9,828	5,746	5,730	243	(78)	45,296

Net fee income by reportable segments (continued)

	Wealth and Personal Banking[1]	Commercial Banking[1]	Global Banking[1,2]	Markets and Securities Services[2]	Corporate Centre[3]	Other (GBM-other)[2]	Total
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
Account services	864	864	297	62	3	8	2,098
Funds under management	5,071	677	8	1,788	—	—	7,544
Cards	6,732	171	35	—	1	—	6,939
Credit facilities	349	1,347	1,175	—	—	—	2,871
Broking income	5,473	58	—	682	—	—	6,213
Imports/exports	—	2,176	755	—	1	—	2,932
Unit trusts	5,991	142	1	—	—	—	6,134
Underwriting	1	1	838	683	(12)	—	1,511
Remittances	290	1,630	697	—	(18)	—	2,599
Global custody	942	53	70	2,928	—	—	3,993
Insurance agency commission	1,308	107	1	—	—	—	1,416
Other	2,312	2,363	2,288	3,263	(2,121)	15	8,120
Fee income	29,333	9,589	6,165	9,406	(2,146)	23	52,370
Fee expense	(7,159)	(587)	(783)	(4,433)	2,308	(46)	(10,700)
Year ended 31 Dec 2020	22,174	9,002	5,382	4,973	162	(23)	41,670

1 *In 2021, the cards acquiring business has been transferred from Commercial Banking ('CMB') and Global Banking ('GB') to Wealth and Personal Banking ('WPB') to align with the business model. Comparatives have been re-presented to conform to the current year's presentation.*
2 *In the second half of 2021, the reportable segments have been changed to reflect the change in the management of the Global Banking and Markets ('GBM') business, with the splitting out of GB and Markets and Securities Services ('MSS') as separate reportable segments, whilst GBM-Other (previously reported within GBM) is now reported under 'Other (GBM-other)'. Comparatives have been re-presented to conform to the current year's presentation. Further details on the change in reportable segments are set out in Note 31 'Segmental analysis' in the Consolidated Financial Statements.*
3 *Includes inter-segment elimination.*

Net fee income includes:

	2021	2020
	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)	**9,742**	9,373
– fee income	**15,173**	13,850
– fee expense	**(5,431)**	(4,477)
Fee earned on trust and other fiduciary activities	**11,242**	9,745
– fee income	**12,801**	11,012
– fee expense	**(1,559)**	(1,267)

(c) Net income from financial instruments measured at fair value through profit or loss

	2021	2020
	HK$m	HK$m
Net income/(expense) arising on:		
Net trading activities	**29,888**	35,141
Other instruments managed on a fair value basis	**(1,529)**	(2,969)
Net income from financial instruments held for trading or managed on a fair value basis	**28,359**	32,172
Financial assets held to meet liabilities under insurance and investment contracts	**17,837**	15,873
Liabilities to customers under investment contracts	**343**	(2,745)
Net income from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss	**18,180**	13,128
Change in fair value of designated debt issued and related derivatives[1]	**(639)**	(171)
Changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	**(25)**	138
Year ended 31 Dec	**45,875**	45,267

1 *Includes debt instruments which are issued for funding purposes and are designated under the fair value option to reduce an accounting mismatch.*

(d) Other operating income

	2021	2020
	HK$m	HK$m
Movement in present value of in-force insurance business	**(1,294)**	3,840
Gains/(losses) on investment properties	**277**	(996)
Losses on disposal of property, plant and equipment and assets held for sale	**(54)**	(61)
Gains/(losses) on disposal of subsidiaries, associates and business portfolios	**4**	(70)
Rental income from investment properties	**393**	370
Dividend income	**198**	165
Other	**2,509**	2,364
Year ended 31 Dec	**2,033**	5,612

There was a gain on disposal of loans and receivables of HK$77m in the year (2020: loss of HK$52m). There was a loss on disposal of financial liabilities measured at amortised cost of HK$136m in the year (2020: nil).

(e) Change in expected credit losses and other credit impairment charges

Change in expected credit losses and other credit impairment charges arising from the following asset categories:

	2021	2020
	HK$m	HK$m
Loans and advances to banks and customers	**7,055**	16,509
– new allowances net of allowance releases	**8,065**	17,242
– recoveries of amounts previously written off	**(1,010)**	(733)
Loan commitments and guarantees	**(683)**	654
Other financial assets	**167**	556
Year ended 31 Dec	**6,539**	17,719

Change in expected credit losses as a percentage of average gross customer advances was 0.18% for 2021 (2020: 0.44%).

(f) General and administrative expenses

	2021	2020
	HK$m	HK$m
Premises and equipment	**2,867**	2,804
Marketing and advertising expenses	**2,417**	1,959
Other administrative expenses[1]	**47,043**	41,541
Year ended 31 Dec	**52,327**	46,304

1 *Include recharges from fellow group entities. Further details are set out in Note 32.*

Included in operating expenses were direct operating expenses of HK$37m (2020: HK$31m) 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$4m (2020: HK$3m).

(g) Depreciation and impairment of property, plant and equipment

	2021	2020
	HK$m	HK$m
Owned property, plant and equipment	**6,019**	6,059
Other right-of-use assets	**2,872**	3,346
Year ended 31 Dec	**8,891**	9,405

(h) Auditors' remuneration

Auditors' remuneration amounted to HK$152m (2020: HK$163m).

3 Insurance business

Net insurance premium Income

	Non-linked insurance HK$m	Unit-linked HK$m	Total HK$m
Gross insurance premium income	**62,937**	**2,398**	**65,335**
Reinsurers' share of gross insurance premium income	**(3,594)**	**(19)**	**(3,613)**
Year ended 31 Dec 2021	**59,343**	**2,379**	**61,722**
Gross insurance premium income	61,979	1,693	63,672
Reinsurers' share of gross insurance premium income	(2,091)	(18)	(2,109)
Year ended 31 Dec 2020	59,888	1,675	61,563

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

	Non-linked insurance HK$m	Unit-linked HK$m	Total HK$m
Gross claims and benefits paid and movement in liabilities to policyholders	**78,159**	**1,898**	**80,057**
– claims, benefits and surrenders paid	**18,573**	**6,735**	**25,308**
– movement in liabilities	**59,586**	**(4,837)**	**54,749**
Reinsurers' share of claims and benefits paid and movement in liabilities	**(4,013)**	**4**	**(4,009)**
– claims, benefits and surrenders paid	**(2,048)**	**(39)**	**(2,087)**
– movement in liabilities	**(1,965)**	**43**	**(1,922)**
Year ended 31 Dec 2021	**74,146**	**1,902**	**76,048**
Gross claims and benefits paid and movement in liabilities to policyholders	74,810	5,594	80,404
– claims, benefits and surrenders paid	25,876	5,990	31,866
– movement in liabilities	48,934	(396)	48,538
Reinsurers' share of claims and benefits paid and movement in liabilities	(2,459)	(34)	(2,493)
– claims, benefits and surrenders paid	(2,773)	(50)	(2,823)
– movement in liabilities	314	16	330
Year ended 31 Dec 2020	72,351	5,560	77,911

Liabilities under insurance contracts

	2021			2020		
	Gross HK$m	**Reinsurers' share[2] HK$m**	**Net HK$m**	Gross HK$m	Reinsurers' share[2] HK$m	Net HK$m
Non-linked insurance						
At 1 Jan	**547,058**	**(25,361)**	**521,697**	494,181	(26,247)	467,934
Claims and benefits paid	**(18,573)**	**2,048**	**(16,525)**	(25,876)	2,773	(23,103)
Increase/(decrease) in liabilities to policyholders	**78,159**	**(4,013)**	**74,146**	74,810	(2,459)	72,351
Exchange differences and other movements[1]	**1,856**	**(35)**	**1,821**	3,943	572	4,515
At 31 Dec	**608,500**	**(27,361)**	**581,139**	547,058	(25,361)	521,697
Unit-linked						
At 1 Jan	**34,348**	**(4)**	**34,344**	34,579	(35)	34,544
Claims and benefits paid	**(6,735)**	**39**	**(6,696)**	(5,990)	50	(5,940)
Increase/(decrease) in liabilities to policyholders	**1,898**	**4**	**1,902**	5,594	(34)	5,560
Exchange differences and other movements[1]	**134**	**(44)**	**90**	165	15	180
At 31 Dec	**29,645**	**(5)**	**29,640**	34,348	(4)	34,344
Total liabilities to policyholders	**638,145**	**(27,366)**	**610,779**	581,406	(25,365)	556,041

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

	2021	2020
	HK$m	HK$m
Wages and salaries[1]	35,736	33,367
Social security costs	1,344	893
Post-employment benefits	2,181	1,923
– defined contribution pension plans	1,651	1,528
– defined benefit pension plans	530	395
Year ended 31 Dec	**39,261**	36,183

1 *'Wages and salaries' includes the effect of share-based payments arrangements of HK$951m (2020: HK$694m).*

Post-employment benefit plans

The group operates a number of post-employment benefit plans for its employees. 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 2021	**10,453**	**(13,140)**	**(2,687)**
Service cost	**—**	**(475)**	**(475)**
– current service cost	**—**	**(492)**	**(492)**
– past service cost and gains/(losses) from settlements	**—**	**17**	**17**
Net interest income/(expense) on the net defined benefit asset/(liability)	**79**	**(125)**	**(46)**
Re-measurement effects recognised in other comprehensive income	**500**	**385**	**885**
– return on plan assets (excluding interest income)	**500**	**—**	**500**
– actuarial gains	**—**	**385**	**385**
Contributions by the group	**356**	**—**	**356**
Benefits paid	**(1,340)**	**1,407**	**67**
Exchange differences and other movements	**27**	**3**	**30**
At 31 Dec 2021	**10,075**	**(11,945)**	**(1,870)**
Retirement benefit liabilities recognised on the balance sheet			**(1,890)**
Retirement benefit assets recognised on the balance sheet (within 'Prepayment, accrued income and other assets')			**20**
At 1 Jan 2020	10,302	(12,848)	(2,546)
Service cost	—	(318)	(318)
– current service cost	—	(492)	(492)
– past service cost and gains/(losses) from settlements	—	174	174
Net interest income/ (expense) on the net defined benefit asset/(liability)	202	(263)	(61)
Re-measurement effects recognised in other comprehensive income	446	(830)	(384)
– return on plan assets (excluding interest income)	446	—	446
– actuarial losses	—	(830)	(830)
Contributions by the group	602	—	602
Benefits paid	(1,097)	1,153	56
Exchange differences and other movements	(2)	(34)	(36)
At 31 Dec 2020	10,453	(13,140)	(2,687)
Retirement benefit liabilities recognised on the balance sheet			(2,701)
Retirement benefit assets recognised on the balance sheet (within 'Prepayment, accrued income and other assets')			14

Fair value of plan assets by asset classes

	At 31 Dec 2021			At 31 Dec 2020		
	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	10,075	10,075	257	10,453	10,453	219
– equities	1,232	1,232	—	1,547	1,547	—
– bonds	5,676	5,676	—	5,562	5,562	—
– alternative investments	2,490	2,490	—	2,838	2,838	—
– other[1]	677	677	257	506	506	219

1 *Other mainly consists of cash and cash deposits.*

The Principal Plan

In Hong Kong, the HSBC Group Hong Kong Local Staff Retirement Benefit Scheme ('LSRBS'), the Principal Plan, covers employees of the group 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 is as follows: Fixed income investments 75% and Equity 25%. 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.

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 the group			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 2021	4,486	(5,330)	(844)	4,288	(5,001)	(713)
Service cost	—	(179)	(179)	—	(171)	(171)
– current service cost	—	(179)	(179)	—	(171)	(171)
Net interest income/(expense) on the net defined benefit asset/(liability)	22	(26)	(4)	21	(24)	(3)
Re-measurement effects recognised in other comprehensive income	265	118	383	250	240	490
– return on plan assets (excluding interest income)	265	—	265	250	—	250
– actuarial gains	—	118	118	—	240	240
Contributions	166	—	166	149	—	149
Benefits paid	(585)	585	—	(682)	682	—
Exchange differences and other movements	70	(83)	(13)	(81)	83	2
At 31 Dec 2021	4,424	(4,915)	(491)	3,945	(4,191)	(246)
Retirement benefit liabilities recognised on the balance sheet			(491)			(246)
At 1 Jan 2020	4,654	(5,252)	(598)	4,445	(4,960)	(515)
Service cost	—	(182)	(182)	—	(175)	(175)
– current service cost	—	(182)	(182)	—	(175)	(175)
Net interest income/ (expense) on the net defined benefit asset/(liability)	80	(89)	(9)	76	(84)	(8)
Re-measurement effects recognised in other comprehensive income	114	(325)	(211)	110	(297)	(187)
– return on plan assets (excluding interest income)	114	—	114	110	—	110
– actuarial losses	—	(325)	(325)	—	(297)	(297)
Contributions	183	—	183	174	—	174
Benefits paid	(549)	549	—	(484)	484	—
Exchange differences and other movements	4	(31)	(27)	(33)	31	(2)
At 31 Dec 2020	4,486	(5,330)	(844)	4,288	(5,001)	(713)
Retirement benefit liabilities recognised on the balance sheet			(844)			(713)

The group expects to make HK$160m of contributions to the defined benefit scheme of the Principal Plan and ServCo expects to make HK$136m contributions to the defined benefit scheme of the Principal Plan during 2022. This is determined separately by 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]

As reported by:	2022 HK$m	2023 HK$m	2024 HK$m	2025 HK$m	2026 HK$m	2027-2031 HK$m
– The group	381	467	383	362	396	1,896
– ServCo	286	284	333	365	287	1,785

1 *The duration of the defined benefit obligation is seven years for the Principal Plan under the disclosure assumptions adopted (2020: seven years).*

Fair value of plan assets of the defined benefit scheme of the Principal Plan by asset classes

	At 31 Dec 2021			At 31 Dec 2020		
	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	8,369	8,369	76	8,775	8,775	124
– equities	1,839	1,839	—	2,448	2,448	—
– bonds	4,731	4,731	—	4,537	4,537	—
– alternative investments	1,723	1,723	—	1,676	1,676	—
– other[1]	76	76	76	114	114	124

1 *Other mainly consists of cash and cash deposits.*

The Principal Plan's key actuarial financial assumptions

The group and ServCo determine 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 % p.a.	Rate of pay increase % p.a.
At 31 Dec 2021	**1.30**	**3.00**
At 31 Dec 2020	0.50	2% p.a. for 2020 and 2021 and 3% p.a. thereafter

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	
	2021	2020	2021	2020
	HK$m	HK$m	HK$m	HK$m
Discount rate – increase/decrease of 0.25%	(158)	(180)	162	185
Pay – increase/decrease of 0.25%	160	182	(157)	(178)

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$131m (2020: HK$106m). This comprises fees (which represent the aggregate emoluments paid to or receivable by directors in respect of their services as a director) of HK$30m (2020: HK$26m) and other emoluments of HK$101m (2020: HK$80m) which includes contributions to pension schemes of HK$1m (2020: nil). 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 32.

5 Tax

The Bank and its subsidiaries in Hong Kong have provided for Hong Kong profits tax at the rate of 16.5% (2020: 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 2021. Deferred taxation is provided for in accordance with the group's accounting policy in Note 1.2(m).

Tax expense

	2021	2020
	HK$m	HK$m
Current tax	12,489	14,279
– Hong Kong taxation – on current year profit	5,719	7,316
– Hong Kong taxation – adjustments in respect of prior years	(158)	(457)
– overseas taxation – on current year profit	7,151	7,668
– overseas taxation – adjustments in respect of prior years	(223)	(248)
Deferred tax	1,526	226
– origination and reversal of temporary differences	1,209	(414)
– effect of changes in tax rates	9	36
– adjustments in respect of prior years	308	604
Year ended 31 Dec	**14,015**	14,505

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

	2021	2020
	HK$m	HK$m
Profit before tax	86,563	90,196
Notional tax on profit before tax, calculated at the rates applicable to profits in the countries concerned	17,463	18,058
Effects of profits in associates and joint ventures	(3,186)	(2,523)
Non-taxable income and gains	(3,181)	(3,291)
Local taxes and overseas withholding taxes	2,695	2,270
Permanent disallowables	577	523
Others	(353)	(532)
Year ended 31 Dec	**14,015**	14,505

Movements of deferred tax assets and liabilities

	Accelerated capital allowances	Insurance business	Expense provisions	Impairment allowance on financial instruments	Revaluation of properties	Other[2]	Total
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
Assets	102	—	1,294	2,676	—	3,088	7,160
Liabilities	(358)	(10,662)	—	—	(14,645)	(9,167)	(34,832)
At 1 Jan 2021	**(256)**	**(10,662)**	**1,294**	**2,676**	**(14,645)**	**(6,079)**	**(27,672)**
Exchange and other adjustments	(6)	2	(42)	(75)	(1)	(11)	(133)
Charge/(credit) to income statement	(142)	232	286	80	524	(2,506)	(1,526)
Charge/(credit) to other comprehensive income	—	—	1	(1)	(863)	1,025	162
At 31 Dec 2021	**(404)**	**(10,428)**	**1,539**	**2,680**	**(14,985)**	**(7,571)**	**(29,169)**
Assets[1]	176	—	1,557	2,680	—	2,106	6,519
Liabilities[1]	(580)	(10,428)	(18)	—	(14,985)	(9,677)	(35,688)
Assets	183	—	1,290	1,478	—	2,280	5,231
Liabilities	(332)	(10,140)	—	—	(16,462)	(6,007)	(32,941)
At 1 Jan 2020	(149)	(10,140)	1,290	1,478	(16,462)	(3,727)	(27,710)
Exchange and other adjustments	6	(19)	81	23	(52)	73	112
Charge/(credit) to income statement	(113)	(503)	(63)	1,176	729	(1,452)	(226)
Charge/(credit) to other comprehensive income	—	—	(14)	(1)	1,140	(973)	152
At 31 Dec 2020	(256)	(10,662)	1,294	2,676	(14,645)	(6,079)	(27,672)
Assets[1]	102	—	1,294	2,676	—	3,088	7,160
Liabilities[1]	(358)	(10,662)	—	—	(14,645)	(9,167)	(34,832)

1 *After netting off balances within countries, the balances as disclosed in the Consolidated Financial Statements are as follows: deferred tax assets HK$3,353m (2020: HK$3,325m); and deferred tax liabilities HK$32,522m (2020: HK$30,997m).*
2 *Other included deferred tax of HK$5,523m (2020: HK$4,295m) provided in respect of distributable reserves or post-acquisition reserves of associates that, on distribution or sale, would attract withholding tax.*

The amount of unused tax losses for which no deferred tax asset is recognised in the balance sheet is HK$3,130m (2020: HK$3,969m). Of this amount, HK$733m (2020: HK$1,917m) has no expiry date and the remaining will expire within 10 years.

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

	2021		2020	
	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**	**21,665**	0.58	27,026
In respect of current year:				
– first interim dividend paid	**0.26**	**12,211**	0.13	5,814
– second interim dividend paid	**0.24**	**11,153**	0.19	8,915
– third interim dividend paid	**0.24**	**11,361**	0.22	10,063
Total	**1.21**	**56,390**	1.12	51,818
Distributions on other equity instruments		**2,715**		2,450
Dividends to shareholders		**59,105**		54,268

On 15 February 2022, the Directors declared a fourth interim dividend in respect of the financial year ended 31 December 2021 of HK$0.23 per ordinary share (HK$10,584m) (2020: HK$0.47 per ordinary share (HK$21,665m)). No liability was recorded in the financial statements in respect of the fourth interim dividend for 2021.

Total coupons on other equity instruments

	2021	2020
	HK$m	HK$m
US$900m Fixed rate perpetual subordinated loan (interest rate fixed at 6.510%)[1]	**456**	454
US$900m Fixed rate perpetual subordinated loan (interest rate fixed at 6.030%)[1]	**422**	420
US$1,000m Fixed rate perpetual subordinated loan (interest rate fixed at 6.090%)[1]	**474**	370
US$1,200m Fixed rate perpetual subordinated loan (interest rate fixed at 6.172%)[1]	**576**	445
US$600m Fixed rate perpetual subordinated loan (interest rate fixed at 5.910%)[1]	**275**	249
US$1,100m Fixed rate perpetual subordinated loan (interest rate fixed at 6.000%)[1]	**512**	512
Total	**2,715**	2,450

1 *These subordinated loans were issued in May and June 2019 and discretionary coupons are paid annually.*

7 Trading assets

	2021	2020
	HK$m	HK$m
Treasury and other eligible bills	**132,104**	113,668
Debt securities	**274,508**	265,255
Equity securities	**299,420**	166,385
Other[1]	**71,418**	55,106
At 31 Dec	**777,450**	600,414

1 *'Other' includes reverse repos, stock borrowing, term lending 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	**17,721,333**	**74,732**	**155,110**	**3,401**	**158,511**	**150,034**	**523**	**150,557**
Interest rate	**30,392,783**	**218,885**	**368,523**	**4,321**	**372,844**	**372,342**	**1,406**	**373,748**
Equity	**845,058**	**—**	**18,611**	**—**	**18,611**	**14,800**	**—**	**14,800**
Credit	**413,340**	**—**	**3,446**	**—**	**3,446**	**4,437**	**—**	**4,437**
Commodity and other	**146,377**	**—**	**1,884**	**—**	**1,884**	**2,378**	**—**	**2,378**
Gross total	**49,518,891**	**293,617**	**547,574**	**7,722**	**555,296**	**543,991**	**1,929**	**545,920**
Offset					**(190,129)**			**(190,129)**
At 31 Dec 2021					**365,167**			**355,791**
Foreign Exchange	18,274,306	100,371	238,746	232	238,978	261,792	2,625	264,417
Interest rate	26,906,526	304,554	357,195	6,099	363,294	327,675	6,718	334,393
Equity	591,614	—	13,810	—	13,810	19,072	—	19,072
Credit	553,790	—	5,381	—	5,381	5,955	—	5,955
Commodity and other	115,673	—	2,138	—	2,138	5,030	—	5,030
Gross total	46,441,909	404,925	617,270	6,331	623,601	619,524	9,343	628,867
Offset					(200,656)			(200,656)
At 31 Dec 2020					422,945			428,211

The notional contract amounts of derivatives held for trading purposes and derivatives designated in hedge accounting relationships indicate the nominal value of transactions outstanding at the balance sheet date. They do not represent amounts at risk.

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 and foreign exchange. 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 its overall costs 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, or cash flow hedges.

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

At 31 December 2021, HK$99,608m (2020: HK$192,048m) of the notional amounts of interest rate derivatives designated in hedge accounting relationships do not represent the extent of the risk exposure managed by the group but they are expected to be directly affected by market-wide Ibors reform and in scope of HKFRS Interest Rate Benchmark Reform Phase 1 amendments.

Further details regarding the impact of the market-wide benchmarks reform is set out in the 'Top and emerging risks' section on page 20 as specified as 'Audited'.

9 Financial assets designated and otherwise mandatorily measured at fair value through profit or loss

	2021			2020		
	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	**—**	**241**	**241**	94	200	294
Debt securities	**12,847**	**11,066**	**23,913**	14,400	8,455	22,855
Equity securities	**—**	**169,125**	**169,125**	—	143,815	143,815
Other[1]	**—**	**9,120**	**9,120**	—	11,996	11,996
At 31 Dec	**12,847**	**189,552**	**202,399**	14,494	164,466	178,960

1 *'Other' includes loans and advance to banks and customers, and default fund contribution.*

10 Loans and advances to customers

	2021	2020
	HK$m	HK$m
Gross loans and advances to customers	**3,872,956**	3,697,568
Expected credit loss allowances	**(32,017)**	(28,887)
At 31 Dec	**3,840,939**	3,668,681

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

	2021	2020
	HK$m	HK$m
Residential mortgages	**1,167,487**	1,097,760
Credit card advances	**89,005**	86,735
Other personal	**275,819**	267,852
Total personal	**1,532,311**	1,452,347
Real estate	**635,217**	638,560
Wholesale and retail trade	**428,785**	394,624
Manufacturing	**410,033**	379,853
Transportation and storage	**111,388**	97,204
Other	**471,988**	489,737
Total corporate and commercial	**2,057,411**	1,999,978
Non-bank financial institutions	**283,234**	245,243
At 31 Dec	**3,872,956**	3,697,568
By geography[1]		
Hong Kong	**2,447,799**	2,357,375
Rest of Asia Pacific	**1,425,157**	1,340,193

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

	2021			2020		
	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	**4,205**	**(1,213)**	**2,992**	3,715	(811)	2,904
– one to two years	**3,543**	**(1,051)**	**2,492**	3,439	(678)	2,761
– two to three years	**2,757**	**(912)**	**1,845**	2,717	(554)	2,163
– three to four years	**2,357**	**(762)**	**1,595**	2,135	(475)	1,660
– four to five years	**2,200**	**(647)**	**1,553**	1,913	(415)	1,498
– after five years	**22,133**	**(3,203)**	**18,930**	22,186	(3,014)	19,172
	37,195	**(7,788)**	**29,407**	36,105	(5,947)	30,158
Expected credit loss allowances			**(378)**			(392)
At 31 Dec			**29,029**			29,766

11 Financial investments

	2021	2020
	HK$m	HK$m
Financial investments measured at fair value through other comprehensive income	**1,549,011**	1,700,406
– treasury and other eligible bills	**653,245**	790,627
– debt securities	**888,664**	899,193
– equity securities	**7,102**	10,586
Debt instruments measured at amortised cost	**502,564**	475,026
– treasury and other eligible bills	**6,900**	4,443
– debt securities	**495,664**	470,583
At 31 Dec	**2,051,575**	2,175,432

Equity instruments measured at fair value through other comprehensive income

	2021		2020	
	Fair value	**Dividends recognised**	Fair value	Dividends recognised
Type of equity instruments	**HK$m**	**HK$m**	HK$m	HK$m
Business facilitation	**6,540**	**189**	9,826	157
Investments required by central institutions	**420**	**3**	413	3
Others	**142**	**6**	347	6
At 31 Dec	**7,102**	**198**	10,586	166

12 Assets pledged, assets transferred and collateral received

Assets pledged

Financial assets pledged to secure liabilities

	2021	2020
	HK$m	HK$m
Treasury bills and other eligible securities	57,631	46,846
Loans and advances to banks	3,211	1,830
Loans and advances to customers	30,975	28,307
Debt securities	134,747	76,913
Equity securities	47,453	17,608
Cash collateral included in other assets	75,951	86,240
Assets pledged at 31 Dec	**349,968**	**257,744**
Amount of liabilities secured	275,815	210,185

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 repurchase agreements, securities lending, derivative margining, and include assets pledged to cover short positions and to facilitate settlement processes with clearing houses as well as swaps of equity and debt securities. The group places both cash and non-cash collateral in relation to derivative transactions.

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$85,162m (2020: HK$30,386m).

Assets transferred

Transferred financial assets not qualifying for full derecognition and associated financial liabilities

	2021		2020	
	Carrying amount of:		Carrying amount of:	
	Transferred assets	Associated liabilities	Transferred assets	Associated liabilities
	HK$m	HK$m	HK$m	HK$m
Repurchase agreements	135,994	124,663	85,715	77,322
Securities lending agreements	44,171	282	18,946	35
	180,165	124,945	104,661	77,357

The assets pledged include transfers to third parties that do not qualify for derecognition, notably secured borrowings such as debt securities held by counterparties as collateral under repurchase agreements and equity securities lent under securities lending agreements, as well as swaps of equity and debt securities. For secured borrowings, the transferred asset collateral continues to be recognised in full while a related liability, reflecting the group's obligation to repurchase the assets for a fixed price at a future date, is also recognised on the balance sheet. Where securities are swapped, the transferred asset continues to be recognised in full. There is no associated liability as the non-cash collateral received is not recognised on the balance sheet. The group is unable to use, sell or pledge the transferred assets for the duration of the transaction, and remains exposed to interest rate risk and credit risk on these pledged assets.

Collateral received

Assets accepted as collateral relate primarily to standard securities borrowing, reverse repurchase agreements, swaps of securities and derivative margining. The group is obliged to return equivalent securities. These transactions are conducted under terms that are usual and customary to standard securities borrowing, reverse repurchase agreements and derivative margining.

Fair value of collateral accepted as security for assets

	2021	2020
	HK$m	HK$m
Fair value of collateral permitted to sell or repledge in the absence of default	1,134,296	709,091
Fair value of collateral actually sold or repledged	377,117	128,783

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

	2021 HK$m	2020 HK$m
Hang Seng Bank Limited		
Proportion of ownership interests and voting rights held by non-controlling interests	**37.86%**	37.86%
Profit attributable to non-controlling interests	**5,272**	6,300
Accumulated non-controlling interests of the subsidiary	**65,431**	64,975
Dividends paid to non-controlling interests	**4,415**	4,849
Summarised financial information (before intra-group eliminations):		
– total assets	**1,820,185**	1,759,787
– total liabilities	**1,635,769**	1,576,592
– net operating income before change in expected credit losses and other credit impairment charges	**33,265**	35,433
– profit for the year	**13,946**	16,670
– other comprehensive income/(expense) for the year	**(357)**	1,079
– total comprehensive income for the year	**13,589**	17,749

14 Interests in associates and joint ventures

Associates

	2021 HK$m	2020 HK$m
Share of net assets	**184,402**	164,767
Goodwill	**4,141**	4,011
Impairment	**(58)**	(24)
At 31 Dec	**188,485**	168,754

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., Ltd	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$66,579m at 31 December 2021 (2020: HK$57,815m).

Bank of Communications Co., Ltd ('BoCom')

The group's investment in BoCom is classified as an associate. Significant influence in BoCom was established with consideration of all relevant factors, including representation on BoCom's Board of Directors and participation in a Resource and Experience Sharing agreement ('RES'). Under the RES, 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 2021, the fair value of the group's investment in BoCom had been below the carrying amount for approximately ten years. As a result, the group performed an impairment test on the carrying amount, which confirmed that there was no impairment at. 31 December 2021 as the recoverable amount as determined by a value-in-use ('VIU') calculation was higher than the carrying value.

	At					
	31 Dec 2021			31 Dec 2020		
	VIU	**Carrying value**	**Fair value**	VIU	Carrying value	Fair value
	HK$bn	**HK$bn**	**HK$bn**	HK$bn	HK$bn	HK$bn
BoCom	**193.0**	**184.8**	**66.6**	169.3	165.4	57.8

Compared with 31 December 2020, the extent to which the VIU exceeds the carrying value ('headroom') increased by HK$4.3bn. The increase in headroom was principally due to the impact on the VIU from BoCom's actual performance, which was better than earlier estimates, revisions to management's best estimates of BoCom's future earnings in the short to medium term, and the net impact of revisions to certain long-term assumptions.

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 underperformance 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 forecast of future asset growth or profitability. An increase in the discount rate 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. Reflecting management's intent to continue to retain its investment, earnings beyond the short to medium term are then extrapolated into 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 capital requirements over the forecast period, meaning that 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 capital requirements. An increase in the CMC as a result of a change to these principal inputs would reduce VIU. Additionally, management considers other 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% (2020: 3%) for periods after 2025, which does not exceed forecast GDP growth in mainland China and is consistent with forecasts by external analysts.
- Long-term asset growth rate: 3% (2020: 3%) for periods after 2025, which is the rate that assets are expected to grow to achieve long-term profit growth of 3%.
- Discount rate: 10.03% (2020: 11.37%) based on a capital asset pricing model ('CAPM'), using market data. The discount rate used is within the range of 8.7% to 10.1% (2020 equivalent range: 10.9% to 11.9%) indicated by the CAPM. The lower rate reflects the impact of a relative reduction in the volatility of Chinese banks equity prices and a decrease in mainland China's credit risk due to its relatively quick recovery from the impact of the Covid-19 outbreak. While the CAPM range sits at the lower end of the range adopted by selected external analysts of 9.9% to 13.5% (2020: 10.3% to 15.0%), we continue to regard the CAPM range as the most appropriate basis for determining this assumption.
- Expected credit losses as a percentage of customer advances ('ECLs'): ranges from 0.98% to 1.12% (2020: 0.98% to 1.22%) in the short to medium term, reflecting reported credit experience through the ongoing Covid-19 outbreak in mainland China followed by an expected reversion to recent historical levels. For periods after 2025, the ratio is 0.97% (2020: 0.88%), which is higher than BoCom's average ECLs in recent years prior to the Covid-19 outbreak.
- Risk-weighted assets as a percentage of total assets: ranges from 61.0% to 62.4% (2020: 61.0% to 62.0%) in the short to medium term, reflecting reductions that may arise from a subsequent lowering of ECLs and a continuation of the trend of strong retail loan growth. For periods after 2025, the ratio is 61.0% (2020: 61.0%). These rates are similar to BoCom's actual results in recent years and forecasts disclosed by external analysts.
- Operating income growth rate: ranges from 5.1% to 6.2% (2020: 3.5% to 6.7%) in the short to medium term, and is lower than BoCom's actual results in recent years and the forecasts disclosed by external analysts, reflecting BoCom's most recent actual results, global trade tensions and industry developments in mainland China.
- Cost-income ratio: ranges from 35.5% to 36.1% (2020: 36.3% to 36.8%) in the short to medium term. These ratios are similar to BoCom's actual results in recent years and forecasts disclosed by external analysts.
- Effective tax rate ('ETR'): ranges from 6.8% to 15.0% (2020: 7.8% to 16.5%) in the short to medium term, reflecting BoCom's actual results and an expected increase towards the long-term assumption through the forecast period. For periods after 2025, the rate is 15.0% (2020: 16.8%), which is higher than the recent historical average, and aligned to the minimum tax rate as proposed by the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting.

- Capital requirements: capital adequacy ratio ('CAR') of 12.5% (2020: 11.5%) and tier 1 capital adequacy ratio of 9.5% (2020: 9.5%), based on BoCom's capital risk appetite and capital requirements respectively. The CAR assumption was updated to 12.5% from 11.5% following the approval of BoCom's capital management plan in March 2021.

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 26 basis points
• Long-term asset growth rate	• Increase by 22 basis points
• Discount rate	• Increase by 34 basis points
• Expected credit losses as a percentage of customer advances	• Increase by 4 basis points
• Risk-weighted assets as a percentage of total assets	• Increase by 183 basis points
• Operating income growth rate	• Decrease by 37 basis points
• Cost-income ratio	• Increase by 102 basis points
• Long-term effective tax rate	• Increase by 301 basis points
• Capital requirements – capital adequacy ratio	• Increase by 37 basis points
• Capital requirements – tier 1 capital adequacy ratio	• Increase by 193 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 2021						
Long-term profit growth rate[1]	**+87**	**33.1**	**226.1**	**-69**	**(20.5)**	**172.5**
Long-term asset growth rate[1]	**-69**	**22.9**	**215.9**	**+87**	**(36.2)**	**156.8**
Discount rate[2]	**-133**	**42.2**	**235.2**	**+207**	**(40.8)**	**152.2**
Expected credit losses as a percentage of customer advances	**2021 to 2025: 103 2026 onwards: 91**	**11.9**	**204.9**	**2021 to 2025: 121 2026 onwards: 105**	**(21.0)**	**172.0**
Risk-weighted assets as a percentage of total assets	**-111**	**2.2**	**195.2**	**+280**	**(15.8)**	**177.2**
Operating income growth rate	**+37**	**8.2**	**201.2**	**-58**	**(13.6)**	**179.4**
Cost-income ratio	**-152**	**13.6**	**206.6**	**+174**	**(12.7)**	**180.3**
Long-term effective tax rate	**-104**	**2.9**	**195.9**	**+1000**	**(27.4)**	**165.6**
Capital requirements – capital adequacy ratio	**—**	**—**	**193.0**	**+325**	**(77.6)**	**115.4**
Capital requirements – tier 1 capital adequacy ratio	**—**	**—**	**193.0**	**+364**	**(50.0)**	**143.0**
At 31 December 2020						
Long-term profit growth rate[1]	—	—	169.3	-50	(10.0)	159.3
Long-term asset growth rate[1]	-50	11.0	180.3	—	—	169.3
Discount rate	-47	9.4	178.7	+53	(9.3)	160.0
Expected credit losses as a percentage of customer advances	2020 to 2024: 96 2025 onwards: 76	17.7	187.0	2020 to 2024: 122 2025 onwards: 95	(16.5)	152.8
Risk-weighted assets as a percentage of total assets	-40	0.4	169.7	+166	(6.7)	162.6
Operating income growth rate	+2	0.9	170.2	-69	(11.8)	157.5
Cost-income ratio	-149	9.9	179.2	+120	(9.6)	159.7
Long-term effective tax rate	-316	6.9	176.2	+820	(17.7)	151.6
Capital requirements – capital adequacy ratio	—	—	169.3	+297	(61.0)	108.3
Capital requirements – tier 1 capital adequacy ratio	—	—	169.3	+263	(41.5)	127.8

1 *The reasonably possible ranges of the long-term profit growth rate and long-term asset growth rate assumptions reflect the close relationship between these assumptions, which would result in offsetting changes to each assumption.*
2 *The unfavourable change in the reasonably possible ranges of the discount rate assumption reflects the impact of adopting the average of the rates adopted by selected external analysts.*

Considering the interrelationship of the changes set out in the table above, management estimates that the reasonably possible range of VIU is HK$148.3bn to HK$228.4bn (2020 equivalent range: HK$133.4bn to HK$199.1bn). The range is based on impacts set out in the table above arising from the favourable/unfavourable change in the earnings in the short to medium term, the long-term expected credit losses as a percentage of customer advances and a 50bps increase/decrease in the discount rate. The discount rate has been included this year reflecting the relative materiality of movements in this assumption. All other long-term assumptions, 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 2021, the group included the associate's results on the basis of financial statements made up for the 12 months to 30 September 2021, but taking into account the financial effect of significant transactions or events in the period from 1 October 2021 to 31 December 2021.

Selected balance sheet information of BoCom

	At 30 Sep	
	2021	2020
	HK$m	HK$m
Cash and balances at central banks	**960,732**	945,836
Loans and advances to banks and other financial institutions	**771,522**	832,226
Loans and advances to customers	**7,751,362**	6,751,280
Other financial assets	**4,223,488**	3,941,375
Other assets	**375,073**	349,120
Total assets	**14,082,177**	12,819,837
Deposits by banks and other financial institutions	**2,238,612**	2,122,220
Customer accounts	**8,572,625**	7,852,322
Other financial liabilities	**1,779,110**	1,605,846
Other liabilities	**312,486**	241,177
Total liabilities	**12,902,833**	11,821,565
Total equity	**1,179,344**	998,272

Reconciliation of BoCom’s net assets to carrying amount in the group’s consolidated financial statements

	At 30 Sep	
	2021	2020
	HK$m	HK$m
The group’s share of ordinary shareholders' equity	**180,738**	161,433
Goodwill	**4,044**	3,912
Carrying amount	**184,782**	165,345

Selected income statement information of BoCom

	For the 12 months ended 30 Sep	
	2021	2020
	HK$m	HK$m
Net interest income	**191,076**	170,586
Net fee and commission income	**55,735**	49,624
Change in expected credit losses	**(75,402)**	(75,220)
Depreciation and amortisation	**(17,851)**	(16,069)
Tax expense	**(8,119)**	(6,656)
– profit for the year	**110,370**	79,585
– other comprehensive income	**(2,861)**	(5,965)
Total comprehensive income	**107,509**	73,620
Dividends received from BoCom	**5,386**	4,907

Using the latest period for which BoCom has disclosed this information (at 30 June 2021), the group's share of associates' contingent liabilities was HK$432,259m (2020: HK$356,609m).

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.

	2021	2020
	HK$m	HK$m
Goodwill	**7,116**	7,109
Present value of in-force long-term insurance business	**63,765**	65,052
Other intangible assets[1]	**24,300**	17,807
At 31 Dec	**95,181**	89,968

1 *Included within other intangible assets is internally generated software with a net carrying value of HK$21,670m (2020: HK$15,283m). During the year, capitalisation of internally generated software was HK$10,681m (2020: HK$7,241m), amortisation charge was HK$4,115m (2020: HK$3,233m) and impairment charge was HK$184m (2020: HK$603m).*

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

	2021 HK$m	2020 HK$m
At 1 Jan	**65,052**	61,075
Changes in PVIF of long-term insurance business	**(1,294)**	3,840
– value of new business written during the year	**7,381**	5,360
– expected return[1]	**(5,950)**	(6,743)
– assumption changes and experience variances (see below)	**(2,873)**	5,268
– other adjustments	**148**	(45)
Exchange differences and other	**7**	137
At 31 Dec	**63,765**	65,052

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$440m (2020: HK$1,022m), directly offsetting interest rate-driven changes to the valuation of liabilities under insurance contracts.
- HK$(2,519)m (2020: HK$1,916m), reflecting the future expected sharing of returns with policyholders on contracts with discretionary participation features ('DPF'), to the extent this sharing is not already included in liabilities under insurance contracts.
- HK$(794)m (2020: HK$2,330m), 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:

	2021 %	2020 %
Weighted average risk free rate	**1.40**	0.71
Weighted average risk discount rate	**5.20**	4.96
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 65 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 66 for further details on the impact of changes in non-economic assumptions on our insurance manufacturing operations.

16 Property, plant and equipment

	2021 HK$m	2020 HK$m
Owned property, plant and equipment[1]	**121,072**	118,747
Other right-of-use assets	**8,755**	9,790
At 31 Dec	**129,827**	128,537

1 *Included leasehold land and buildings of HK$110,458m (2020: HK$108,320m) for which the right of use are considered sufficient to constitute control. They are therefore presented as owned assets.*

Movement in owned property, plant and equipment

	2021				2020			
	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 1 Jan	**100,791**	**13,167**	**15,266**	**129,224**	111,473	13,335	16,922	141,730
Exchange and other adjustments	**(67)**	**16**	**(112)**	**(163)**	453	31	365	849
Additions	**667**	**2**	**2,049**	**2,718**	770	635	2,363	3,768
Disposals	**(58)**	**—**	**(1,456)**	**(1,514)**	(12)	—	(4,384)	(4,396)
Transfers	**—**	**—**	**—**	**—**	—	—	—	—
Elimination of accumulated depreciation on revalued land and buildings	**(4,633)**	**—**	**—**	**(4,633)**	(4,737)	—	—	(4,737)
Surplus/(deficit) on revaluation	**5,643**	**277**	**—**	**5,920**	(6,914)	(996)	—	(7,910)
Reclassifications	**24**	**3**	**—**	**27**	(242)	162	—	(80)
At 31 Dec	**102,367**	**13,465**	**15,747**	**131,579**	100,791	13,167	15,266	129,224
Accumulated depreciation								
At 1 Jan	**90**	**—**	**10,387**	**10,477**	84	—	13,043	13,127
Exchange and other adjustments	**30**	**—**	**(46)**	**(16)**	10	—	305	315
Charge for the year	**4,645**	**—**	**1,374**	**6,019**	4,734	—	1,325	6,059
Disposals	**(45)**	**—**	**(1,295)**	**(1,340)**	(1)	—	(4,286)	(4,287)
Transfers	**—**	**—**	**—**	**—**	—	—	—	—
Elimination of accumulated depreciation on revalued land and buildings	**(4,633)**	**—**	**—**	**(4,633)**	(4,737)	—	—	(4,737)
At 31 Dec	**87**	**—**	**10,420**	**10,507**	90	—	10,387	10,477
Net book value at 31 Dec	**102,280**	**13,465**	**5,327**	**121,072**	100,701	13,167	4,879	118,747

The carrying amount of land and buildings, had they been stated at cost less accumulated depreciation, would have been as follows:

	2021	2020
	HK$m	HK$m
Cost less accumulated depreciation	**17,121**	17,085

Valuation of land and buildings and investment properties

The group's land and buildings and investment properties were revalued as at 31 December 2021. 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$6,854m (2020: HK$7,189m) 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 92% 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

	2021	2020
	HK$m	HK$m
Prepayments and accrued income	**24,986**	24,301
Bullion	**52,986**	61,269
Acceptances and endorsements	**55,789**	46,705
Reinsurers' share of liabilities under insurance contracts (Note 3)	**27,366**	25,365
Current tax assets	**2,674**	2,783
Settlement accounts	**24,577**	33,796
Cash collateral and margin receivables	**44,177**	58,584
Other assets	**37,188**	35,807
At 31 Dec	**269,743**	288,610

Prepayments, accrued income and other assets included HK$180,757m (2020: HK$197,362m) of financial assets, the majority of which were measured at amortised cost.

18 Customer accounts

Customer accounts by country/territory

	2021	2020
	HK$m	HK$m
Hong Kong	**4,284,719**	4,120,955
Mainland China	**462,187**	440,608
Singapore	**448,976**	427,537
Australia	**220,233**	227,072
India	**191,116**	156,615
Malaysia	**128,673**	124,036
Taiwan	**120,744**	124,375
Indonesia	**46,938**	40,304
Other	**273,596**	249,894
At 31 Dec	**6,177,182**	5,911,396

19 Trading liabilities

	2021	2020
	HK$m	HK$m
Deposits by banks[1]	**1,005**	222
Customer accounts[1]	**6,091**	835
Net short positions in securities	**85,627**	59,755
At 31 Dec	**92,723**	60,812

1 *'Deposits by banks' and 'Customer accounts' include repos, stock lending and other amounts.*

20 Financial liabilities designated at fair value

	2021	2020
	HK$m	HK$m
Deposits by banks and customer accounts	**59,611**	77,822
Debt securities in issue	**43,928**	49,673
Liabilities to customers under investment contracts	**35,426**	39,518
At 31 Dec	**138,965**	167,013

The carrying amount of financial liabilities designated at fair value was HK$1,385m lower than the contractual amount at maturity (2020: HK$735m higher). The cumulative loss in fair value attributable to changes in credit risk was HK$62m (2020: HK$25m).

21 Debt securities in issue

	2021	2020
	HK$m	HK$m
Bonds and medium-term notes	**79,852**	94,894
Other debt securities in issue	**31,440**	34,198
Total debt securities in issue	**111,292**	129,092
Included within:		
– financial liabilities designated at fair value (Note 20)	**(43,928)**	(49,673)
At 31 Dec	**67,364**	79,419

22 Accruals and deferred income, other liabilities and provisions

	2021	2020
	HK$m	HK$m
Accruals and deferred income	**23,020**	21,588
Acceptances and endorsements	**55,824**	46,775
Settlement accounts	**26,158**	30,056
Cash collateral and margin payables	**53,541**	60,714
Share-based payment liability to HSBC Holdings plc	**1,431**	1,124
Lease liabilities	**9,165**	10,057
Other liabilities[1]	**48,668**	43,881
Provisions for liabilities and charges	**1,399**	1,792
At 31 Dec	**219,206**	215,987

1 *Mainly includes marginal deposit on letter of credit and credit card settlement account.*

Accruals and deferred income, other liabilities and provisions included HK$209,441m (2020: HK$207,899m) 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 2020	**116**	**419**	**535**
Additions	**357**	**333**	**690**
Amounts utilised	**(309)**	**(258)**	**(567)**
Unused amounts reversed	**(59)**	**(24)**	**(83)**
Exchange and other movements	**43**	**(4)**	**39**
At 31 Dec 2021	**148**	**466**	**614**
Contractual commitments[1]			
At 31 Dec 2020			**1,257**
Net change in expected credit loss provision and other movements			**(472)**
At 31 Dec 2021			**785**
Total Provisions at 31 Dec 2021			**1,399**
At 31 Dec 2019	208	812	1,020
Additions	222	296	518
Amounts utilised	(269)	(356)	(625)
Unused amounts reversed	(42)	(361)	(403)
Exchange and other movements	(3)	28	25
At 31 Dec 2020	116	419	535
Contractual commitments			
At 31 Dec 2019			776
Net change in expected credit loss provision and other movements			481
At 31 Dec 2019			1,257
Total Provisions at 31 Dec 2020			1,792

1 *Contractual commitments include provisions for contingent liabilities measured under HKFRS 9 'Financial Instruments' in respect of financial guarantees and expected credit loss provisions in relation to off-balance sheet guarantees and commitments.*

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 table below.

		2021 HK$m	2020 HK$m
US$400m	Undated floating rate primary capital notes	**3,119**	3,101
MYR500m	Fixed rate (5.050%) subordinated bonds due 2027, callable from 2022[1]	**935**	964
At 31 Dec		**4,054**	4,065

1 *The interest rate on the MYR500m 5.05% callable subordinated bonds due 2027 will increase by 1% from November 2022.*

24 Share capital

	2021 HK$m	2020 HK$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

	2021 HK$m	2021 Number	2020 HK$m	2020 Number
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 2021 (2020: 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.

25 Other equity instruments

Other equity instruments comprise additional tier 1 capital instruments in issue which are accounted for as equity.

		2021	2020
		HK$m	HK$m
US$1,000m	Fixed rate perpetual subordinated loan, callable from Mar 2025[1]	**7,834**	7,834
US$900m	Fixed rate perpetual subordinated loan, callable from Sep 2026[2]	**7,063**	7,063
US$700m	Fixed rate perpetual subordinated loan, callable from Mar 2025[3]	**5,467**	5,467
US$500m	Fixed rate perpetual subordinated loan, callable from Mar 2025[3]	**3,905**	3,905
US$600m	Fixed rate perpetual subordinated loan, callable from May 2027[4]	**4,685**	4,685
US$900m	Fixed rate perpetual subordinated loan, callable from Sep 2024[5]	**7,044**	7,044
US$1,100m	Fixed rate perpetual subordinated loan, callable from Jun 2024[6]	**8,617**	8,617
At 31 Dec		**44,615**	44,615

1 *Interest rate fixed at 6.090%.*
2 *Interest rate fixed at 6.510%.*
3 *Interest rate fixed at 6.172%.*
4 *Interest rate fixed at 5.910%.*
5 *Interest rate fixed at 6.030%.*
6 *Interest rate fixed at 6.000%.*

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.

26 Maturity analysis of assets and liabilities

The following tables provide 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 irrespective of contractual maturity included in the 'Due over 5 years' time bucket in the maturity table provided below. An analysis of the expected maturity of liabilities under insurance contracts based on undiscounted cash flows is provided on page 65. 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 than 1 month HK$m	Due over 1 month but not more than 3 months HK$m	Due over 3 months but not more than 6 months HK$m	Due over 6 months but not more than 9 months HK$m	Due over 9 months but not more than 1 year HK$m	Due over 1 year but not more than 2 years HK$m	Due over 2 years but not more than 5 years HK$m	Due over 5 years HK$m	Total HK$m
Financial assets									
Cash and balances at central banks	276,857	–	–	–	–	–	–	–	276,857
Items in the course of collection from other banks	21,632	–	–	–	–	–	–	–	21,632
Hong Kong Government certificates of indebtedness	332,044	–	–	–	–	–	–	–	332,044
Trading assets	768,376	7,082	208	431	–	815	538	–	777,450
Derivatives	361,447	1,079	466	769	131	441	713	121	365,167
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	5,880	172	1,636	884	1,561	3,781	11,244	177,241	202,399
Reverse repurchase agreements – non-trading	528,832	223,041	34,435	5,081	1,865	9,384	1,137	–	803,775
Loans and advances to banks	277,060	80,547	20,767	7,667	7,532	20,248	17,908	518	432,247
Loans and advances to customers	605,216	402,921	312,336	177,577	171,989	410,594	731,226	1,029,080	3,840,939
Financial investments	247,163	405,109	187,038	107,329	118,029	232,350	307,753	446,804	2,051,575
Amounts due from Group companies	84,688	1,302	1,189	2,227	2,441	6,138	5,857	17	103,859
Accrued income and other financial assets	119,499	31,449	19,062	3,708	2,034	805	750	3,450	180,757
Financial assets at 31 Dec 2021	3,628,694	1,152,702	577,137	305,673	305,582	684,556	1,077,126	1,657,231	9,388,701
Non-financial assets	–	–	–	–	–	–	–	514,692	514,692
Total assets at 31 Dec 2021	3,628,694	1,152,702	577,137	305,673	305,582	684,556	1,077,126	2,171,923	9,903,393
Financial liabilities									
Hong Kong currency notes in circulation	332,044	–	–	–	–	–	–	–	332,044
Items in the course of transmission to other banks	25,701	–	–	–	–	–	–	–	25,701
Repurchase agreements – non-trading	231,463	4,713	368	–	1,104	7,570	2,904	7,252	255,374
Deposits by banks	269,405	2,140	6,780	1,019	526	440	–	–	280,310
Customer accounts	5,722,470	272,462	88,483	34,813	32,417	11,792	14,741	4	6,177,182
Trading liabilities	92,723	–	–	–	–	–	–	–	92,723
Derivatives	354,567	304	74	212	79	241	274	40	355,791
Financial liabilities designated at fair value	32,086	21,849	11,059	4,967	5,574	8,789	18,899	35,742	138,965
Debt securities in issue	4,304	5,509	17,363	12,374	3,963	9,320	12,324	2,207	67,364
Amounts due to Group companies	114,388	17,504	1,401	222	223	21,699	66,205	134,534	356,176
Accruals and other financial liabilities	124,346	40,286	24,070	5,135	3,820	4,802	5,197	1,785	209,441
Subordinated liabilities[1]	–	–	–	–	–	–	–	4,054	4,054
Total financial liabilities at 31 Dec 2021	7,303,497	364,767	149,598	58,742	47,706	64,653	120,544	185,618	8,295,125
Non-financial liabilities	–	–	–	–	–	–	–	684,757	684,757
Total liabilities at 31 Dec 2021	7,303,497	364,767	149,598	58,742	47,706	64,653	120,544	870,375	8,979,882

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	347,999	—	—	—	—	—	—	—	347,999
Items in the course of collection from other banks	21,943	—	—	—	—	—	—	—	21,943
Hong Kong Government certificates of indebtedness	313,404	—	—	—	—	—	—	—	313,404
Trading assets	594,141	4,561	476	431	—	805	—	—	600,414
Derivatives	422,692	23	16	13	26	101	74	—	422,945
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	7,318	1,240	1,334	1,214	1,033	4,648	11,967	150,206	178,960
Reverse repurchase agreements – non-trading	372,199	113,000	19,150	2,869	1,000	4,143	7,983	—	520,344
Loans and advances to banks	239,097	81,318	22,587	19,576	16,278	8,792	15,186	1,050	403,884
Loans and advances to customers	641,990	313,288	277,385	180,152	159,612	411,350	693,898	991,006	3,668,681
Financial investments	248,651	488,129	251,982	75,127	127,736	218,219	330,863	434,725	2,175,432
Amounts due from Group companies	72,856	3,741	464	2	—	3,814	2,326	—	83,203
Accrued income and other financial assets	140,788	30,145	16,209	2,754	1,748	797	431	4,490	197,362
Financial assets at 31 Dec 2020	3,423,078	1,035,445	589,603	282,138	307,433	652,669	1,062,728	1,581,477	8,934,571
Non-financial assets	—	—	—	—	—	—	—	481,832	481,832
Total assets at 31 Dec 2020	3,423,078	1,035,445	589,603	282,138	307,433	652,669	1,062,728	2,063,309	9,416,403
Financial liabilities									
Hong Kong currency notes in circulation	313,404	—	—	—	—	—	—	—	313,404
Items in the course of transmission to other banks	25,699	—	—	—	—	—	—	—	25,699
Repurchase agreements – non-trading	109,062	4,816	—	1,187	5,223	—	8,024	7,845	136,157
Deposits by banks	237,905	3,157	2,782	3,621	76	1,087	—	—	248,628
Customer accounts	5,396,286	332,854	89,287	39,727	27,186	18,676	7,376	4	5,911,396
Trading liabilities	60,812	—	—	—	—	—	—	—	60,812
Derivatives	421,829	1,566	1,207	176	404	1,281	1,436	312	428,211
Financial liabilities designated at fair value	40,325	28,300	11,481	7,517	7,176	8,930	17,024	46,260	167,013
Debt securities in issue	5,056	11,234	12,556	13,611	3,991	16,025	14,374	2,572	79,419
Amounts due to Group companies	78,046	20,135	766	33	332	24,397	55,860	116,705	296,274
Accruals and other financial liabilities	128,880	37,418	20,038	3,326	4,565	4,516	5,357	3,799	207,899
Subordinated liabilities[1]	—	—	—	—	—	—	—	4,065	4,065
Financial liabilities at 31 Dec 2020	6,817,304	439,480	138,117	69,198	48,953	74,912	109,451	181,562	7,878,977
Non-financial liabilities	—	—	—	—	—	—	—	625,895	625,895
Total liabilities at 31 Dec 2020	6,817,304	439,480	138,117	69,198	48,953	74,912	109,451	807,457	8,504,872

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.*

27 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 2021						
Hong Kong currency notes in circulation	**332,044**	**—**	**—**	**—**	**—**	**332,044**
Items in the course of transmission to other banks	**25,701**	**—**	**—**	**—**	**—**	**25,701**
Repurchase agreements – non-trading	**231,531**	**4,714**	**1,517**	**10,530**	**7,289**	**255,581**
Deposits by banks	**269,681**	**2,140**	**8,341**	**451**	**—**	**280,613**
Customer accounts	**5,723,441**	**273,282**	**157,735**	**28,638**	**4**	**6,183,100**
Trading liabilities	**92,723**	**—**	**—**	**—**	**—**	**92,723**
Derivatives	**354,584**	**416**	**384**	**621**	**40**	**356,045**
Financial liabilities designated at fair value	**33,288**	**22,323**	**21,903**	**28,536**	**35,768**	**141,818**
Debt securities in issue	**4,336**	**5,667**	**34,629**	**22,632**	**2,370**	**69,634**
Amounts due to Group companies	**113,944**	**19,523**	**7,301**	**108,035**	**147,000**	**395,803**
Other financial liabilities	**123,460**	**39,607**	**31,486**	**10,630**	**1,854**	**207,037**
Subordinated liabilities	**—**	**15**	**44**	**236**	**4,207**	**4,502**
	7,304,733	**367,687**	**263,340**	**210,309**	**198,532**	**8,344,601**
Loan and other credit-related commitments	**2,945,560**	**—**	**—**	**—**	**—**	**2,945,560**
Financial guarantees	**41,843**	**—**	**—**	**—**	**—**	**41,843**
	10,292,136	**367,687**	**263,340**	**210,309**	**198,532**	**11,332,004**
Proportion of cash flows payable in period	**91%**	**3%**	**2%**	**2%**	**2%**	
At 31 Dec 2020						
Hong Kong currency notes in circulation	313,404	—	—	—	—	313,404
Items in the course of transmission to other banks	25,699	—	—	—	—	25,699
Repurchase agreements – non-trading	109,090	4,818	6,602	8,076	7,885	136,471
Deposits by banks	238,153	3,263	6,630	1,238	—	249,284
Customer accounts	5,397,993	333,682	158,267	28,007	16	5,917,965
Trading liabilities	60,812	—	—	—	—	60,812
Derivatives	421,811	1,462	1,561	2,840	312	427,986
Financial liabilities designated at fair value	40,602	29,077	26,457	26,549	46,371	169,056
Debt securities in issue	5,121	11,445	31,445	31,699	2,686	82,396
Amounts due to Group companies	78,063	21,920	5,873	97,021	122,569	325,446
Other financial liabilities	127,644	36,648	26,098	9,208	3,792	203,390
Subordinated liabilities	—	16	47	249	5,225	5,537
	6,818,392	442,331	262,980	204,887	188,856	7,917,446
Loan and other credit-related commitments	2,815,447	—	—	136	—	2,815,583
Financial guarantees	39,923	—	—	—	—	39,923
	9,673,762	442,331	262,980	205,023	188,856	10,772,952
Proportion of cash flows payable in period	90%	4%	2%	2%	2%	

The balances in the above tables incorporate all cash flows relating to principal and future coupon payments on an undiscounted basis. 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.

28 Contingent liabilities, contractual commitments and guarantees

	2021 HK$m	2020 HK$m
Guarantees and contingent liabilities:		
– financial guarantees[1]	**41,843**	39,923
– performance and other guarantees[2]	**335,849**	286,139
– other contingent liabilities	**1,751**	3,644
At 31 Dec	**379,443**	329,706
Commitments[3]:		
– documentary credits and short-term trade-related transactions	**32,284**	29,581
– forward asset purchases and forward forward deposits placed	**40,745**	38,246
– undrawn formal standby facilities, credit lines and other commitments to lend	**2,872,531**	2,747,756
At 31 Dec	**2,945,560**	2,815,583

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.*
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$1,826,335m of commitments at 31 December 2021 (2020: HK$1,725,963m) 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 other commitments as disclosed in Note 29), 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 proportion of guarantees and commitments are 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 2021 included amounts in relation to legal and regulatory matters as set out in Note 37.

29 Other commitments

Capital commitments

At 31 December 2021, capital commitments, mainly related to the commitment for purchase of properties, were HK$4,826m (2020: HK$8,531m).

30 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 arrange-ments[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 2021									
Financial assets[2]									
Derivatives	**524,603**	**(190,129)**	**334,474**	**(267,072)**	**(12,886)**	**(36,005)**	**18,511**	**30,693**	**365,167**
Reverse repos, stock borrowing and similar agreements classified as:	**867,597**	**(71,412)**	**796,185**	**—**	**(794,195)**	**(749)**	**1,241**	**90,247**	**886,432**
– trading assets	**60,417**	**(79)**	**60,338**	**—**	**(59,771)**	**(552)**	**15**	**7,393**	**67,731**
– non-trading assets[4]	**807,180**	**(71,333)**	**735,847**	**—**	**(734,424)**	**(197)**	**1,226**	**82,854**	**818,701**
	1,392,200	**(261,541)**	**1,130,659**	**(267,072)**	**(807,081)**	**(36,754)**	**19,752**	**120,940**	**1,251,599**
Financial liabilities[3]									
Derivatives	**516,525**	**(190,129)**	**326,396**	**(267,072)**	**(10,552)**	**(27,837)**	**20,935**	**29,395**	**355,791**
Repos, stock lending and similar agreements classified as:	**330,366**	**(71,412)**	**258,954**	**—**	**(258,523)**	**(3)**	**428**	**68,664**	**327,618**
– trading liabilities	**6,807**	**(79)**	**6,728**	**—**	**(6,721)**	**—**	**7**	**—**	**6,728**
– non-trading liabilities[5]	**323,559**	**(71,333)**	**252,226**	**—**	**(251,802)**	**(3)**	**421**	**68,664**	**320,890**
	846,891	**(261,541)**	**585,350**	**(267,072)**	**(269,075)**	**(27,840)**	**21,363**	**98,059**	**683,409**
At 31 Dec 2020									
Financial assets[2]									
Derivatives	583,241	(200,656)	382,585	(290,517)	(11,009)	(45,001)	36,058	40,360	422,945
Reverse repos, stock borrowing and similar agreements classified as:	532,974	(19,276)	513,698	—	(513,476)	(166)	56	61,715	575,413
– trading assets	46,922	—	46,922	—	(46,892)	—	30	4,680	51,602
– non-trading assets[4]	486,052	(19,276)	466,776	—	(466,584)	(166)	26	57,035	523,811
	1,116,215	(219,932)	896,283	(290,517)	(524,485)	(45,167)	36,114	102,075	998,358
Financial liabilities[3]									
Derivatives	584,214	(200,656)	383,558	(290,517)	(15,977)	(47,483)	29,581	44,653	428,211
Repos, stock lending and similar agreements classified as:	146,768	(19,276)	127,492	—	(127,281)	(21)	190	51,205	178,697
– trading liabilities	1,605	—	1,605	—	(1,595)	—	10	—	1,605
– non-trading liabilities[5]	145,163	(19,276)	125,887	—	(125,686)	(21)	180	51,205	177,092
	730,982	(219,932)	511,050	(290,517)	(143,258)	(47,504)	29,771	95,858	606,908

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$167,054m (2020: HK$79,027m).*
3 *Amounts presented in the balance sheet included balances due to Group companies of HK$217,572m (2020: HK$129,230m).*
4 *Amounts presented in the balance sheet included reverse repos with third parties of HK$803,775m (2020: HK$520,344m).*
5 *Amounts presented in the balance sheet included repos with third parties of HK$255,374m (2020: HK$136,157m).*

31 Segmental analysis

The Executive Committee ('EXCO') is considered the Chief Operating Decision Maker ('CODM') for the purpose of identifying the group's operating segments. Operating segment 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 operating segments, and the segmental analysis is presented based on reportable segments as assessed 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 other operating segments 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 operating segments are presented in the Corporate Centre.

Change in operating and reportable segments

Effective from the second half of 2021, the operating and reportable segments have been changed to reflect the change in management of the Global Banking and Markets business, with the splitting out of Global Banking, Markets and Securities Services and Global Banking and Markets – Other as separate operating segments following realignments within our internal reporting to the CODM. Global Banking and Markets and Securities Services are separate reportable segments. Global Banking and Markets – Other, which mainly comprises of business activities which are jointly managed by GB and MSS, is reported under 'Other (GBM-other)'. Comparatives have been re-presented to conform to the current year's presentation.

Our global businesses and reportable segments

The group provides a comprehensive range of banking and related financial services to our customers in our global businesses: Wealth and Personal Banking ('WPB'), Commercial Banking ('CMB') and Global Banking and Markets ('GBM'). The products and services offered to customers are organised by these global businesses.

- WPB provides a full range of retail banking and wealth products to our customers from personal banking to ultra high net worth individuals. Typically, customer offerings include retail banking products, such as current and savings accounts, mortgages and personal loans, credit cards, debit cards and local and international payment services. We also provide wealth management services, including insurance and investment products, global asset management services, investment management and Private Wealth Solutions for customers with more sophisticated and international requirements.
- 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, such as GBM, which include foreign exchange products, raising capital on debt and equity markets and advisory services.
- GBM comprises of two separate reportable segments: Global Banking ('GB') and Markets and Securities Services ('MSS'). GB 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. MSS provides services in credit, rates, foreign exchange, equities, money markets and securities services, and principal investment activities.
- Corporate Centre includes strategic investments such as our investment in BoCom, Central Treasury revenue, and costs which are not allocated to global businesses, mainly in relation to investments in technology.

Performance by reportable segments is presented in the 'Financial Review' on page 10 as specified as 'Audited'.

Information by geographical region

	Hong Kong	Rest of Asia-Pacific	Intra-segment elimination	Total
	HK$m	HK$m	HK$m	HK$m
For the year ended 31 Dec 2021				
Total operating income	**174,859**	**79,067**	**780**	**254,706**
Profit before tax	**41,043**	**45,520**	**–**	**86,563**
At 31 Dec 2021				
Total assets	**7,035,497**	**3,696,064**	**(828,168)**	**9,903,393**
Total liabilities	**6,559,271**	**3,248,779**	**(828,168)**	**8,979,882**
Credit commitments and contingent liabilities (contract amounts)	**1,792,675**	**1,532,328**	**–**	**3,325,003**
For the year ended 31 Dec 2020				
Total operating income	190,128	76,955	166	267,249
Profit before tax	57,937	32,259	–	90,196
At 31 Dec 2020				
Total assets	6,636,693	3,487,821	(708,111)	9,416,403
Total liabilities	6,141,296	3,071,687	(708,111)	8,504,872
Credit commitments and contingent liabilities (contract amounts)	1,727,502	1,417,787	–	3,145,289

Information by country/territory

	Revenue[1]		Non-current assets[2]	
	For the year ended 31 Dec		At 31 Dec	
	2021	2020	**2021**	2020
	HK$m	HK$m	**HK$m**	HK$m
Hong Kong	**106,966**	120,873	**134,400**	126,286
Mainland China	**19,381**	16,974	**196,477**	176,462
Australia	**7,351**	6,665	**1,837**	2,229
India	**10,614**	10,296	**2,534**	2,241
Indonesia	**3,242**	3,649	**3,584**	3,701
Malaysia	**5,174**	5,415	**2,022**	1,932
Singapore	**10,671**	9,924	**2,933**	3,040
Taiwan	**3,124**	2,932	**2,802**	2,687
Other	**12,135**	12,610	**3,140**	3,627
Total	**178,658**	189,338	**349,729**	322,205

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.*

32 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).

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 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.

The group shared the costs of certain IT projects and also used certain processing services of fellow subsidiaries. These costs are reported under 'General and administrative expenses – other administrative expenses in the income statement.

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:

	2021			2020		
	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	**–**	**–**	**220**	–	–	480
Interest expense[1]	**6,773**	**(651)**	**(286)**	6,489	(339)	39
Fee income	**–**	**–**	**2,538**	–	–	2,744
Fee expense	**–**	**1**	**1,428**	–	–	1,272
Net income from financial instruments held for trading or managed on a fair value basis	**–**	**1**	**(19)**	–	2	18
Net insurance premium income	–	–	**249**	–	–	–
Other operating income	**–**	**129**	**1,770**	–	787	916
Net insurance claims and benefits paid and movement in liabilities to policyholders	–	–	**(179)**	–	–	–
General and administrative expenses[2]	**–**	**(141)**	**47,842**	–	5,270	33,632
At 31 Dec						
Assets	**9**	**1,147**	**260,256**	–	2,707	157,916
– trading assets[3]	**–**	**22**	**4,232**	–	14	159
– derivative assets	**–**	**989**	**147,704**	–	2,488	74,932
– other assets[3,6]	**9**	**136**	**108,320**	–	205	82,825
Liabilities	**223,565**	**1,069**	**283,630**	198,211	3,676	182,145
– trading liabilities[3]	**–**	**–**	**25**	–	11	572
– financial liabilities designated at fair value[3,4]	**175,655**	**–**	**7**	131,370	–	8
– derivative liabilities	**–**	**18**	**152,013**	–	–	87,724
– other liabilities[3,6]	**1,388**	**980**	**131,585**	1,448	3,593	93,841
– subordinated liabilities[3,5,6]	**46,522**	**71**	**–**	65,393	72	–
Guarantees	**–**	**–**	**22,815**	–	–	19,907
Commitments	**–**	**–**	**2,076**	–	–	2,189

1 *The amount includes interest expenses on debt instruments issued by the group for funding purposes that are designated under the fair value option to reduce an accounting mismatch, and interest expenses/(income) on derivatives managed in conjunction with those debt instruments. Comparatives have been re-presented to conform to the current year's presentation.*
2 *This includes reimbursement of amount from ultimate holding company in accordance to the billing arrangement 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 2021 included subordinated liabilities of HK$175,655m to meet Total Loss Absorbing Capacity ('TLAC') requirements (2020: HK$131,370m). During the year, there were repayment of HK$4,437m and issuance of HK$54,460m (2020: no movement).The carrying amount of financial liabilities designated at fair value was HK$7,211m higher than the contractual amount at maturity (2020: HK$12,518m). The cumulative loss in fair value attributable to changes in credit risk was HK$1,815m (2020: HK$2,490m). The balances are largely under Level 2.*
5 *The balance at 31 December 2021 included subordinated liabilities of HK$46,522m to meet TLAC requirements (2020: HK$65,393m).During the year, there were repayment of HK$19,665m and issuance of HK$3,304m (2020: no movement).*
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.*

The above outstanding balances arose in the ordinary course of business and on substantially the same terms, including interest rates and security, as for comparable transactions with third-party counterparties.

(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 2021 amounted to HK$3,436m and HK$1,431m respectively (2020: HK$3,609m and HK$1,124m respectively).

(c) Post-employment benefit plans

At 31 December 2021, HK$9.2bn (2020: HK$9.3bn) of the group's post-employment plan assets were under management by group companies, earning management fees of HK$65m in 2021 (2020: HK$59m). At 31 December 2021, the group's post-employment benefit plans had placed deposits of HK$783m (2020: HK$641m) with its banking subsidiaries, earning interest payable to the schemes of HK$0.5m (2020: HK$0.2m). 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

	2021		2020	
	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	**35,304**	**32,663**	33,577	22,811
Amounts due to associates	**26,490**	**8,348**	42,377	17,263
Commitments	**4,722**	**1,479**	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 Executive Committee members of HSBC Holdings plc.

Compensation of Key Management Personnel

	2021	2020
	HK$m	HK$m
Salaries and other short-term benefits	**314**	315
Post employment benefits	**9**	9
Termination benefits	**5**	4
Share-based payments	**123**	103
Total	**451**	431

Transactions, arrangements and agreements involving Key Management Personnel

	2021	2020
	HK$m	HK$m
During the year		
Highest average assets[1]	**107,317**	100,834
Highest average liabilities[1]	**71,516**	71,488
Contribution to group's profit before tax	**1,510**	1,733
At the year end		
Guarantees	**13,263**	12,452
Commitments	**13,624**	16,701

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 (2020: insignificant).

On 8 October 2019, the group 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	
	2021	2020	**2021**	2020
	HK$m	HK$m	**HK$m**	HK$m
By the Bank	**3,755**	2,690	**3,967**	4,291
By subsidiaries	**13**	4	**14**	9
	3,768	2,694	**3,981**	4,300

These amounts include principal and interest, and the maximum liability that may be incurred under guarantees.

33 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 MSS and Insurance. The group'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 relevant Valuation Committees, which consist of independent support functions. Within MSS and Insurance, these Committees are overseen by the Group's Valuation Committee Review Group and the Group Insurance Valuation and Impairment Committee respectively. These two Group Committees considers all material subjective valuations.

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 2021						
Assets						
Trading assets[1]	**537,816**	**236,388**	**3,246**	**777,450**	**—**	**777,450**
Derivatives	**440**	**212,740**	**3,294**	**216,474**	**148,693**	**365,167**
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	**93,544**	**34,203**	**74,652**	**202,399**	**—**	**202,399**
Financial investments	**1,153,521**	**391,816**	**3,674**	**1,549,011**	**—**	**1,549,011**
Liabilities						
Trading liabilities[1]	**73,647**	**19,076**	**—**	**92,723**	**—**	**92,723**
Derivatives	**963**	**200,667**	**2,130**	**203,760**	**152,031**	**355,791**
Financial liabilities designated at fair value[1]	**—**	**118,516**	**20,449**	**138,965**	**—**	**138,965**
At 31 Dec 2020						
Assets						
Trading assets[1]	403,730	195,447	1,237	600,414	—	600,414
Derivatives	2,140	342,357	1,028	345,525	77,420	422,945
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	97,590	31,836	49,534	178,960	—	178,960
Financial investments	1,315,696	378,075	6,635	1,700,406	—	1,700,406
Liabilities						
Trading liabilities[1]	52,504	8,308	—	60,812	—	60,812
Derivatives	2,015	334,934	3,538	340,487	87,724	428,211
Financial liabilities designated at fair value[1]	—	146,529	20,484	167,013	—	167,013

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 2021							
Transfers from Level 1 to Level 2	**57,471**	**29,852**	**1,970**	**802**	**1,012**	**—**	**1,652**
Transfers from Level 2 to Level 1	**36,073**	**20,948**	**1,679**	**—**	**3,452**	**—**	**—**
At 31 Dec 2020							
Transfers from Level 1 to Level 2	31,809	20,534	1,901	—	236	—	—
Transfers from Level 2 to Level 1	37,387	26,796	1,860	5	191	—	—

Transfers between levels of the fair value hierarchy are deemed to occur at the end of each Group's 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.

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 related 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.

Fair value valuation bases

Financial instruments measured at fair value using a valuation technique with significant unobservable inputs – Level 3

	Assets					Liabilities		
	Financial investments	Trading assets	Designated and otherwise mandatorily measured at fair value through profit or loss	Derivatives	Total	Designated at fair value	Derivatives	Total
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
Private equity and related investments	**3,121**	**4**	**74,295**	**—**	**77,420**	**—**	**—**	**—**
Structured notes	**—**	**—**	**—**	**—**	**—**	**20,449**	**—**	**20,449**
Others	**553**	**3,242**	**357**	**3,294**	**7,446**	**—**	**2,130**	**2,130**
At 31 Dec 2021	**3,674**	**3,246**	**74,652**	**3,294**	**84,866**	**20,449**	**2,130**	**22,579**
Private equity and related investments	6,167	—	49,274	—	55,441	—	—	—
Structured notes	—	—	—	—	—	20,484	—	20,484
Others	468	1,237	260	1,028	2,993	—	3,538	3,538
At 31 Dec 2020	6,635	1,237	49,534	1,028	58,434	20,484	3,538	24,022

Private equity and related investments

The fair value of a private equity investment (including private equity, infrastructure and private credit, primarily held to support our Insurance business, 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; by reference to market valuations for similar entities quoted in an active market; the price at which similar companies have changed ownership; or from published net asset values ('NAVs') received. If necessary, adjustments are made to the NAV of funds to obtain the best estimate of fair value.

Structured notes

The fair value of Level 3 structured notes is derived from the fair value of the underlying debt security, and the fair value of the embedded derivative is determined as described in the paragraph below on derivatives. These structured notes comprise principally equity-linked notes issued by HSBC, which provide the counterparty with a return linked to the performance of equity securities and other portfolios.

Examples of the unobservable parameters include long-dated equity volatilities and correlations between equity prices, and interest and foreign exchange rates.

Derivatives

OTC derivative valuation models calculate the present value of expected future cash flows, based upon 'no arbitrage' principles. For many vanilla derivative products, the modelling approaches used are standard across the industry. For more complex derivative products, there may be some differences in market practice. Inputs to valuation models are determined from observable market data wherever possible, including prices available from exchanges, dealers, brokers or providers of consensus pricing. Certain inputs may not be observable in the market directly, but can be determined from observable prices via model calibration procedures or estimated from historical data or other sources.

Reconciliation of fair value measurements in Level 3 of the fair value hierarchy

Movement in Level 3 financial instruments

	Assets				Liabilities	
	Financial investments	Trading assets	Designated and otherwise mandatorily measured at fair value through profit or loss	Derivatives	Designated at fair value	Derivatives
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
At 1 Jan 2021	**6,635**	**1,237**	**49,534**	**1,028**	**20,484**	**3,538**
Total gains/(losses) recognised in profit or loss	**(7)**	**(2,211)**	**11,700**	**4,002**	**(3,207)**	**3,082**
– net income/(losses) from financial instruments held for trading or managed on a fair value basis	**–**	**(2,211)**	**–**	**4,002**	**–**	**3,082**
– changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	**–**	**–**	**11,700**	**–**	**(3,207)**	**–**
– gains less losses from financial investments at fair value through other comprehensive income	**(7)**	**–**	**–**	**–**	**–**	**–**
Total gains recognised in other comprehensive income ('OCI')	**(3,013)**	**10**	**11**	**18**	**386**	**23**
– financial investments: fair value (losses)	**(3,002)**	**–**	**–**	**–**	**(3)**	**–**
– exchange differences	**(11)**	**10**	**11**	**18**	**389**	**23**
Purchases	**1,383**	**5,082**	**22,232**	**–**	**–**	**–**
New issuances	**–**	**–**	**–**	**–**	**9,196**	**–**
Sales	**(35)**	**(561)**	**(6)**	**–**	**–**	**–**
Settlements	**(1,289)**	**(87)**	**(7,898)**	**(1,247)**	**(7,165)**	**(4,060)**
Transfers out	**–**	**(691)**	**(921)**	**(614)**	**(2,895)**	**(878)**
Transfers in	**–**	**467**	**–**	**107**	**3,650**	**425**
At 31 Dec 2021	**3,674**	**3,246**	**74,652**	**3,294**	**20,449**	**2,130**
Unrealised gains/(losses) recognised in profit or loss relating to assets and liabilities held at 31 Dec 2021	**–**	**(2,278)**	**11,236**	**2,686**	**113**	**(34)**
– net income/(losses) from financial instruments held for trading or managed on a fair value basis	**–**	**(2,278)**	**–**	**2,686**	**–**	**(34)**
– changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	**–**	**–**	**11,236**	**–**	**113**	**–**
At 1 Jan 2020	5,622	557	32,291	833	20,571	2,422
Total gains/(losses) recognised in profit or loss	–	43	3,205	2,627	(2,113)	3,401
– net income from financial instruments held for trading or managed on a fair value basis	–	43	–	2,627	–	3,401
– changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	–	–	3,205	–	(2,113)	–
– gains less losses from financial investments at fair value through other comprehensive income	–	–	–	–	–	–
Total gains/(losses) recognised in other comprehensive income ('OCI')	1,529	(2)	(6)	6	857	–
– financial investments: fair value gains/(losses)	1,485	–	–	–	(24)	–
– exchange differences	44	(2)	(6)	6	881	–
Purchases	554	852	16,714	–	–	–
New issuances	–	–	–	–	6,468	–
Sales	–	(335)	–	–	–	–
Settlements	(1,070)	–	(2,484)	(1,244)	(3,896)	(1,620)
Transfers out	–	(266)	(189)	(1,216)	(2,735)	(1,070)
Transfers in	–	388	3	22	1,332	405
At 31 Dec 2020	6,635	1,237	49,534	1,028	20,484	3,538
Unrealised gains/(losses) recognised in profit or loss relating to assets and liabilities held at 31 Dec 2020	–	5	2,741	587	(13)	(1,838)
– net income/(losses) from financial instruments held for trading or managed on a fair value basis	–	5	–	587	–	(1,838)
– changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	–	–	2,741	–	(13)	–

Transfers between levels of the fair value hierarchy are deemed to occur at the end of each Group's quarterly reporting period. Transfers into and out of levels of the fair value hierarchy are primarily attributable to observability of valuation inputs and price transparency.

Effect of changes in significant unobservable assumptions to reasonably possible alternatives

Sensitivity of fair values to reasonably possible alternative assumptions

	2021				2020			
	Reflected in profit or loss		Reflected in OCI		Reflected in profit or loss		Reflected in OCI	
	Favourable changes HK$m	Un-favourable changes HK$m	Favourable changes HK$m	Un-favourable changes HK$m	Favourable changes HK$m	Un-favourable changes HK$m	Favourable changes HK$m	Un-favourable changes HK$m
Derivatives, trading assets and trading liabilities[1]	158	(162)	—	—	211	(211)	—	—
Financial assets and liabilities designated and otherwise mandatorily measured at fair value through profit or loss	3,741	(3,742)	—	—	2,478	(2,478)	—	—
Financial investments	—	—	157	(157)	—	—	309	(309)
At 31 Dec	3,899	(3,904)	157	(157)	2,689	(2,689)	309	(309)

1 *'Derivatives, trading assets and trading liabilities' are presented as one category to reflect the manner in which these instruments are risk-managed.*

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, as well as the availability and reliability of observable proxy and historical data.

When the fair value of a financial instrument is affected by more than one unobservable assumption, the above table reflects the most favourable or the most unfavourable change from varying the assumptions individually.

Key unobservable inputs to Level 3 financial instruments

The following table lists key unobservable inputs to Level 3 financial instruments and provides the range of those inputs at 31 December 2021.

Quantitative information about significant unobservable inputs in Level 3 valuations

	Fair value				2021		2020	
					Full range of inputs		Full range of inputs	
	Assets HK$m	Liabilities HK$m	Valuation techniques	Key unobservable inputs	Lower	Higher	Lower	Higher
Private equity and related investments	77,420	—	See below	See below				
Structured notes	—	20,449						
– equity-linked notes	—	15,517	Model – Option model	Equity volatility	6%	90%	6%	72%
			Model – Option model	Equity correlation	22%	97%	39%	88%
– FX-linked notes	—	4,733	Model – Option model	FX volatility	2%	36%	3%	36%
– other	—	199						
Others[1]	7,446	2,130						
At 31 Dec 2021	84,866	22,579						

1 *'Others' includes a range of smaller asset holdings.*

Private equity and related investments

Given the bespoke nature of the analysis in respect of each holding, it is not practical to quote a range of key unobservable inputs.

Volatility

Volatility is a measure of the anticipated future variability of a market price. It varies by underlying reference market price, and by strike and maturity of the option. Certain volatilities, typically those of a longer-dated nature, are unobservable and are estimated from observable data. The range of unobservable volatilities reflects the wide variation in volatility inputs by reference market price.

Correlation

Correlation is a measure of the inter-relationship between two market prices and is expressed as a number between minus one and one. It is used to value more complex instruments where the payout is dependent upon more than one market price. There is a wide range of instruments for which correlation is an input, and consequently a wide range of both same-asset correlations and cross-asset correlations is used. In general, the range of same-asset correlations will be narrower than the range of cross-asset correlations.

Unobservable correlations may be estimated based upon a range of evidence, including consensus pricing services, group's trade prices, proxy correlations and examination of historical price relationships. The range of unobservable correlations quoted in the table reflects the wide variation in correlation inputs by market price pair.

Inter-relationships between key unobservable inputs

Key unobservable inputs to Level 3 financial instruments may not be independent of each other. As described above, market variables may be correlated. This correlation typically reflects the manner in which different markets tend to react to macroeconomic or other events. Furthermore, the effect of changing market variables on the group's portfolio will depend on the group's net risk position in respect of each variable.

34 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 2021					
Assets[1]					
Reverse repurchase agreements – non-trading	**803,775**	**–**	**802,881**	**947**	**803,828**
Loans and advances to banks	**432,247**	**–**	**424,175**	**8,356**	**432,531**
Loans and advances to customers	**3,840,939**	**–**	**65,268**	**3,765,148**	**3,830,416**
Financial investments – at amortised cost	**502,564**	**89,050**	**449,284**	**2,142**	**540,476**
Liabilities[1]					
Repurchase agreements – non-trading	**255,374**	**–**	**255,366**	**–**	**255,366**
Deposits by banks	**280,310**	**–**	**280,408**	**–**	**280,408**
Customer accounts	**6,177,182**	**–**	**6,177,676**	**–**	**6,177,676**
Debt securities in issue	**67,364**	**–**	**67,842**	**–**	**67,842**
Subordinated liabilities	**4,054**	**–**	**3,864**	**–**	**3,864**
At 31 Dec 2020					
Assets[1]					
Reverse repurchase agreements – non-trading	520,344	–	518,295	2,106	520,401
Loans and advances to banks	403,884	–	393,953	10,374	404,327
Loans and advances to customers	3,668,681	–	61,885	3,588,431	3,650,316
Financial investments – at amortised cost	475,025	81,912	450,962	2,012	534,886
Liabilities[1]					
Repurchase agreements – non-trading	136,157	–	136,157	–	136,157
Deposits by banks	248,628	–	248,629	–	248,629
Customer accounts	5,911,396	–	5,911,813	–	5,911,813
Debt securities in issue	79,419	–	80,066	–	80,066
Subordinated liabilities	4,065	–	3,749	–	3,749

1 Amounts with HSBC Group entities are not reflected here. Further details are set out in Note 32.

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, Hong Kong currency notes in circulation, other financial assets and other financial liabilities, 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.

35 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$bn)					
0–4	65	65	114	21	265
4–15	11	37	130	–	178
15–39	–	15	91	–	106
39–196	–	1	50	–	51
196+	–	1	3	–	4
Number of entities at 31 Dec 2021	**76**	**119**	**388**	**21**	**604**
	HK$m	HK$m	HK$m	HK$m	HK$m
Total assets in relation to the group's interests in the unconsolidated structured entities	35,225	32,223	86,044	10,140	163,632
– trading assets	–	1,041	–	432	1,473
– financial assets designated and otherwise mandatorily measured at fair value through profit or loss	–	31,182	86,044	–	117,226
– derivatives	–	–	–	–	–
– loans and advances to customers	35,225	–	–	9,625	44,850
– financial investments	–	–	–	–	–
– other assets	–	–	–	83	83
Total liabilities in relation to the group's interests in the unconsolidated structured entities	–	–	–	60	60
– derivatives	–	–	–	60	60
Other off balance sheet commitments	402	6,999	26,246	5,939	39,586
The group’s maximum exposure at 31 Dec 2021	**35,627**	**39,222**	**112,290**	**16,019**	**203,158**

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$bn)					
0–4	52	62	104	25	243
4–15	9	34	107	1	151
15–39	—	18	56	—	74
39–196	—	3	46	—	49
196+	—	1	5	—	6
Number of entities at 31 Dec 2020	61	118	318	26	523
	HK$m	HK$m	HK$m	HK$m	HK$m
Total assets in relation to the group's interests in the unconsolidated structured entities	26,808	26,476	71,481	8,521	133,286
– trading assets	204	1,653	—	—	1,857
– financial assets designated and otherwise mandatorily measured at fair value through profit or loss	—	24,823	71,481	—	96,304
– derivatives	—	—	—	—	—
– loans and advances to customers	26,604	—	—	8,218	34,822
– financial investments	—	—	—	—	—
– other assets	—	—	—	303	303
Total liabilities in relation to the group's interests in the unconsolidated structured entities	—	—	—	56	56
– derivatives	—	—	—	56	56
Other off balance sheet commitments	539	3,822	23,024	7,137	34,522
The group's maximum exposure at 31 Dec 2020	27,347	30,298	94,505	15,602	167,752

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.

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 2021 and 2020 were not significant.

36 Bank balance sheet and statement of changes in equity

Bank balance sheet at 31 December 2021

	2021 HK$m	2020 HK$m
Assets		
Cash and balances at central banks	**203,988**	291,071
Items in the course of collection from other banks	**17,825**	16,836
Hong Kong Government certificates of indebtedness	**332,044**	313,404
Trading assets	**647,625**	486,764
Derivatives	**346,937**	396,126
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	**3,246**	5,945
Reverse repurchase agreements – non-trading	**488,312**	299,876
Loans and advances to banks	**230,592**	243,107
Loans and advances to customers	**1,984,297**	1,928,622
Financial investments	**893,848**	950,866
Amounts due from Group companies	**544,587**	400,073
Investments in subsidiaries	**101,535**	95,241
Interests in associates and joint ventures	**39,830**	39,830
Goodwill and intangible assets	**19,226**	14,009
Property, plant and equipment	**72,312**	71,523
Deferred tax assets	**1,275**	1,266
Prepayments, accrued income and other assets	**145,729**	165,667
Total assets	**6,073,208**	5,720,226
Liabilities		
Hong Kong currency notes in circulation	**332,044**	313,404
Items in the course of transmission to other banks	**19,101**	18,404
Repurchase agreements – non-trading	**175,476**	73,606
Deposits by banks	**224,650**	194,778
Customer accounts	**3,816,715**	3,610,409
Trading liabilities	**46,585**	29,039
Derivatives	**337,010**	396,212
Financial liabilities designated at fair value	**36,397**	41,507
Debt securities in issue	**25,393**	29,452
Retirement benefit liabilities	**1,098**	1,574
Amounts due to Group companies	**482,995**	413,865
Accruals and deferred income, other liabilities and provisions	**120,846**	121,091
Current tax liabilities	**481**	616
Deferred tax liabilities	**9,339**	9,192
Subordinated liabilities	**3,119**	3,101
Total liabilities	**5,631,249**	5,256,250
Equity		
Share capital	**172,335**	172,335
Other equity instruments	**44,615**	44,615
Other reserves	**19,218**	25,726
Retained earnings	**205,791**	221,300
Total equity	**441,959**	463,976
Total equity and liabilities	**6,073,208**	5,720,226

Bank statement of changes in equity for the year ended 31 December 2021

				Other reserves					
	Share capital[1]	Other equity instruments	Retained earnings	Property revaluation reserve	Financial assets at FVOCI reserve	Cash flow hedge reserve	Foreign exchange reserve	Other[2]	Total equity
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
At 1 Jan 2021	**172,335**	**44,615**	**221,300**	**35,196**	**6,364**	**605**	**(12,679)**	**(3,760)**	**463,976**
Profit for the year	**—**	**—**	**40,815**	**—**	**—**	**—**	**—**	**—**	**40,815**
Other comprehensive income/(expense) (net of tax)	**—**	**—**	**912**	**3,453**	**(4,834)**	**(542)**	**(2,690)**	**—**	**(3,701)**
– debt instruments at fair value through other comprehensive income	**—**	**—**	**—**	**—**	**(3,289)**	**—**	**—**	**—**	**(3,289)**
– equity instruments designated at fair value through other comprehensive income	**—**	**—**	**—**	**—**	**(1,545)**	**—**	**—**	**—**	**(1,545)**
– cash flow hedges	**—**	**—**	**—**	**—**	**—**	**(542)**	**—**	**—**	**(542)**
– changes in fair value of financial liabilities designated at fair value upon initial recognition arising from changes in own credit risk	**—**	**—**	**524**	**—**	**—**	**—**	**—**	**—**	**524**
– property revaluation	**—**	**—**	**—**	**3,453**	**—**	**—**	**—**	**—**	**3,453**
– remeasurement of defined benefit asset/liability	**—**	**—**	**388**	**—**	**—**	**—**	**—**	**—**	**388**
– exchange differences	**—**	**—**	**—**	**—**	**—**	**—**	**(2,690)**	**—**	**(2,690)**
Total comprehensive income/(expense) for the year	**—**	**—**	**41,727**	**3,453**	**(4,834)**	**(542)**	**(2,690)**	**—**	**37,114**
Dividends paid[3]	**—**	**—**	**(59,105)**	**—**	**—**	**—**	**—**	**—**	**(59,105)**
Movement in respect of share-based payment arrangements	**—**	**—**	**115**	**—**	**—**	**—**	**—**	**(140)**	**(25)**
Transfers and other movements[4]	**—**	**—**	**1,754**	**(1,749)**	**(6)**	**—**	**—**	**—**	**(1)**
At 31 Dec 2021	**172,335**	**44,615**	**205,791**	**36,900**	**1,524**	**63**	**(15,369)**	**(3,900)**	**441,959**
At 1 Jan 2020	172,335	44,615	223,538	40,976	3,504	(119)	(13,327)	(3,933)	467,589
Profit for the year	—	—	50,414	—	—	—	—	—	50,414
Other comprehensive income/(expense) (net of tax)	—	—	2	(4,255)	2,860	724	648	—	(21)
– debt instruments at fair value through other comprehensive income	—	—	—	—	2,149	—	—	—	2,149
– equity instruments designated at fair value through other comprehensive income	—	—	—	—	711	—	—	—	711
– cash flow hedges	—	—	—	—	—	724	—	—	724
– changes in fair value of financial liabilities designated at fair value upon initial recognition arising from changes in own credit risk	—	—	306	—	—	—	—	—	306
– property revaluation	—	—	—	(4,255)	—	—	—	—	(4,255)
– remeasurement of defined benefit asset/liability	—	—	(304)	—	—	—	—	—	(304)
– exchange differences	—	—	—	—	—	—	648	—	648
Total comprehensive income/(expense) for the year	—	—	50,416	(4,255)	2,860	724	648	—	50,393
Dividends paid[3]	—	—	(54,268)	—	—	—	—	—	(54,268)
Movement in respect of share-based payment arrangements	—	—	103	—	—	—	—	173	276
Transfers and other movements[4]	—	—	1,511	(1,525)	—	—	—	—	(14)
At 31 Dec 2020	172,335	44,615	221,300	35,196	6,364	605	(12,679)	(3,760)	463,976

1 *Ordinary share capital includes preference shares which have been redeemed or bought back via payments out of distributable profits in previous years.*
2 *The other reserves mainly comprise 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.*
3 *Including distributions paid on perpetual subordinated loans classified as equity under HKFRS.*
4 *The movements include transfers from the property revaluation reserve to retained earnings in relation to depreciation of revalued properties.*

37 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 group 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 outcomes of legal proceedings and regulatory matters are 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 2021. 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, HSBC Holdings plc ('HSBC Holdings') entered into a number of agreements, including an undertaking with the UK Financial Services Authority (replaced with a Direction issued by the UK Financial Conduct Authority ('FCA') in 2013 and again in 2020) as well as 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. Over the past several years, HSBC has retained a Skilled Person under section 166 of the Financial Services and Markets Act and an Independent Consultant, under the FRB cease-and-desist order to produce periodic assessments of the Group's AML and sanctions compliance programme. The Skilled Person completed its engagement in the second quarter of 2021, and the FCA has determined that no further Skilled Person work is required. Separately, the Independent Consultant continues to work pursuant to the FRB cease-and-desist order.

Based on the facts currently known, it is not practicable to predict the resolution of these matters, including the timing or any possible impact on HSBC, which could be significant.

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, in October 2021, the Bank reached a settlement in principle with the plaintiffs to resolve this action. The settlement remains subject to court approval.

In the BBSW litigation, in November 2018, the court dismissed all foreign defendants, including all HSBC entities, on personal jurisdiction grounds. In April 2019, the plaintiffs filed an amended complaint, which the defendants moved to dismiss. In February 2020, the court again dismissed the plaintiffs' amended complaint against all HSBC entities.

There are many factors that may affect the range of outcomes, and the resulting financial impact of these matters, which could be significant.

Foreign exchange-related investigations

In January 2018, following the conclusion of the US Department of Justice's ('DoJ') investigation into HSBC's historical foreign exchange activities, HSBC Holdings entered into a three-year deferred prosecution agreement with the Criminal Division of the DoJ (the 'FX DPA'), regarding fraudulent conduct in connection with two particular transactions in 2010 and 2011. In January 2021, the FX DPA expired and, in August 2021, the charges deferred by the FX DPA were dismissed.

Other regulatory investigations, reviews and litigation

The Bank and/or certain of its affiliates are subject to a number of other investigations and reviews by various regulators and competition and law enforcement authorities, as well as litigation, in connection with various matters relating to the firm's businesses and operations, including investigations by tax administration, regulatory and law enforcement authorities in India and elsewhere in connection with allegations of tax evasion or tax fraud, money laundering and unlawful cross-border banking solicitation.

There are many factors that may affect the range of outcomes, and the resulting financial impact, of these matters, which could be significant.

38 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.

39 Events after the balance sheet date

The following recently announced acquisitions form part of our strategy to grow our insurance business, helping to deliver on our strategic priority to become a market leader in Asian wealth management.

- On 11 February 2022, following the completion of all regulatory approvals, HSBC Insurance (Asia-Pacific) Holdings Ltd, a wholly-owned subsidiary of the group, acquired 100% of the issued share capital of AXA Insurance Pte Limited for HK$4.1bn, subject to adjustment for closing items. This will be reflected in our 2022 results by which time determination of the initial acquisition accounting will have been completed.
- On 30 December 2021, HSBC Insurance (Asia) Limited, a wholly-owned subsidiary of the group, received approval from the China Banking and Insurance Regulatory Commission to acquire the remaining 50% equity interest in HSBC Life Insurance Company Limited (HSBC Life China). Completion is expected to occur during the first half of 2022. Headquartered in Shanghai, HSBC Life China offers a comprehensive range of insurance solutions covering annuity, whole life, critical illness and unit-linked insurance products and in 2021 reported gross written premiums of approximately HK$3.0bn (2020: HK$2.2bn).
- On 28 January 2022, HSBC Insurance (Asia–Pacific) Holdings Limited notified the shareholders of Canara HSBC Oriental Bank of Commerce Life Insurance Company Limited ('CHOICe') of its intention to increase its shareholding in CHOICe up to 49%. The group currently has a 26% shareholding which is accounted for as an associate. Any increase in shareholding is subject to agreement with other shareholders in CHOICe, as well as internal and regulatory approvals. Established in 2008, CHOICe is a life insurance company based in India with reported gross written premiums of approximately HK$5.4bn for the year to 31 March 2021 (31 March 2020: HK$4.1bn).

40 Approval of financial statements

The Consolidated Financial Statements were approved and authorised for issue by the Board of Directors on 22 February 2022.

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