The Hongkong and Shanghai Banking Corporation Limited

Annual Report and Accounts 2022

HSBC

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Certain defined terms

This document comprises the *Annual Report and Accounts 2022* 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.

Please see page 140 for the additional cautionary statement regarding environmental, social and governance, as well as climate-related data, metrics and forward-looking statements.

Chinese translation

A Chinese translation of the *Annual Report and Accounts 2022* 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

	2022	2021
	HK$m	HK$m
For the year		
Net operating income before change in expected credit losses and other credit impairment charges	**205,692**	178,658
Profit before tax	**97,611**	86,563
Profit attributable to shareholders	**78,245**	67,348
At the year-end		
Total shareholders' equity	**875,320**	856,809
Total equity	**941,263**	923,511
Total capital[1]	**607,312**	590,478
Customer accounts	**6,113,709**	6,177,182
Total assets	**10,324,152**	9,903,393
Ratios	**%**	%
Return on average ordinary shareholders' equity	**9.3**	8.0
Post-tax return on average total assets	**0.8**	0.7
Cost efficiency ratio	**53.7**	58.7
Net interest margin	**1.67**	1.37
Advances-to-deposits ratio	**60.6**	62.2
Capital ratios		
Common equity tier 1 capital	**15.3**	15.4
Tier 1 capital	**16.9**	16.8
Total capital	**18.8**	18.7

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 Asian markets. By increasing investment in our people and technology, we will further grow our top tier Asia Wealth Management business, while maintaining our distinct position as the leading international bank for our corporate and commercial clients. We remain focused on connecting Asian markets to each other and the world through HSBC's global network, supporting the ongoing transition to a low-carbon economy with Sustainable Finance, continually streamlining our organisation to realise greater operating efficiencies, and improving service for our domestic, regional, and global clients through our technology, talent, and 157 years of experience in the region.

Consolidated Financial Statements

The consolidated financial statements of the group are set out on pages 79 to 139.

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 2022 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 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 (since June 2021)

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, 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. He was non-executive Chairman of HSBC Bank Middle East Limited from 2011 to 2021. He was non-executive Chairman and a Director of Octopus Holdings Limited, Octopus Cards Limited and Octopus Cards Client Funds Limited from 2016 until the end of 2022.

David Yi Chien LIAO

Co-Chief Executive Officer (since June 2021)

He is also a member of the Group Executive Committee of HSBC Holdings plc and 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 June 2021)

He is also a member of the Group Executive Committee of HSBC Holdings plc and an executive Director of HSBC Bank Malaysia Berhad. 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.

Sonia Chi Man CHENG

Independent non-executive Director (since November 2020)

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

Yiu Kwan CHOI

Independent non-executive Director (since October 2017)

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 an independent non-executive Director of HSBC Bank (China) Company Limited from December 2016 to December 2022. 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.

Andrea Lisa DELLA MATTEA

Independent non-executive Director (since 11 March 2022)

She is also the Asia Pacific President of Microsoft Operations Pte Ltd. She holds a Bachelor of Engineering and an Honorary Doctor of Engineering from James Cook University of North Queensland, Australia.

She has previously held senior leadership roles at Insight Enterprises, Inc from 2007 to 2017, including Asia Pacific Managing Director, and at Software Spectrum Inc from 1996 to 2006.

Rajnish KUMAR

Independent non-executive Director (since August 2021)

He is also non-executive Chairman of Resilient Innovations Pvt. Ltd., an independent non-executive Director of Larsen & Toubro Infotech Limited and Ambuja Cements Limited, an advisor 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 advisor 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. He is an Associate of the Indian Institute of Bankers.

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

Beau Khoon Chen KUOK

Independent non-executive Director (since August 2020)

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 a non-executive Director of Wilmar International Limited.

Irene Yun-lien LEE

Independent non-executive Director (since October 2013)

She is also executive Chairman of Hysan Development Company Limited. She is also independent non-executive Chairman of Hang Seng Bank Limited and an independent non-executive Director of Alibaba Group Holding 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.

She was an independent non-executive Director of HSBC Holdings plc from 2015 to 2022.

Victor Tzar Kuoi LI

Non-executive Director (since May 1992)

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 in Civil Engineering and a Master of Science in Civil Engineering, both received from Stanford University; and a Doctor of Laws, honoris causa (LL.D.) from The University of Western Ontario.

Annabelle Yu LONG

Independent non-executive Director (since 17 August 2022)

She is also the Founding and Managing Partner of BAI Capital Fund I, L.P. and a Group Management Committee Member of Bertelsmann SE & Co. KGaA. She is an independent Director of Tapestry Inc., LexinFintech Holdings Ltd., Nio Inc. and Linmon Media Limited. She holds a Master in Business Administration from Stanford Graduate School of Business, United States and a Bachelor of Science in Electrical Engineering from University of Electronic Science and Technology, China.

Kevin Anthony WESTLEY, BBS

Independent non-executive Director (since September 2016)

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 Wardley Limited) until his retirement in 2000 and subsequently acted as an advisor to the Bank and the Group in Hong Kong. He was an independent non-executive Director of the Bank from 2013 to 2015 and rejoined the Board in September 2016.

During the year, Andrea Lisa Della Mattea and Annabelle Yu Long were appointed independent non-executive Directors with effect from 11 March and 17 August 2022 respectively. At the conclusion of the 2022 Annual General Meeting ('AGM') held on 1 June 2022, Graham John Bradley, Christopher Wai Chee Cheng and Francis Sock Ping Yeoh stepped down as Directors. Ewen James Stevenson stepped down as Director with effect from 25 October 2022. 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 2022 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.

From 2022 to incentivise sustainable long-term performance and alignment with shareholder interests, Senior Management of Holdings plc including the Co-Chief Executives of the Bank are eligible to receive Long-Term Incentive (LTI) Share Award. These awards which have been made to executive Directors of Holdings plc are subject to three-year forward-looking performance measures and a seven-year vesting period with a one-year post-vesting retention period, which is not accelerated on departure. The weighted average holding period of an LTI award within HSBC is therefore six years, in excess of the five-year holding period typically implemented by FTSE-listed companies. When the individual ceases employment, if they are treated as a good leaver under our policy, any LTI awards granted will continue to be released over a period of up to eight years, subject to the outcome of performance conditions. For more details on the operation of the plan, please refer to HSBC Holdings plc annual report and accounts.

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, 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. Peter Wong in his former capacity as executive Director in 2021 received a 2021 performance year variable pay award in March 2022 to which part of the award was made in share-linked instruments of HSBC Holding plc.

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$439m (2021: HK$380m).

Compliance with the Banking (Disclosure) Rules

The Directors are of the view that the *Annual Report and Accounts 2022* and Banking Disclosure Statements 2022 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 the membership of the Bank's Nomination Committee does not comprise 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 operates in accordance 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 Subsidiary Accountability Framework, which was refreshed in 2022, 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; one other non-executive Director; and eight 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 eight 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. 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 policies 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 heads of Global Businesses and Global Functions and country/territory Chief Executive Officers in Asia-Pacific report to the co-Chief Executive Officers.

Role profiles for the Chairman and co-Chief Executive Officers were approved by the Board in May 2021.

Deputy Chairman

The role of the 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 also involves maintaining external relationships with key stakeholders and communicating their views to the Board.

The role profile for the Deputy Chairman was approved by the Board in April 2021.

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 co-Chairmen of the Executive Committee and the Chairman 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.

The Board and each Board committee have terms of reference to document their responsibilities and governance procedures. The key roles of the Board 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); 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); Luanne Lim (Chief Executive Officer, Hong Kong); Amanda Murphy (Head of Commercial Banking, Southeast Asia and South Asia); Susan Sayers (Regional General Counsel, Asia-Pacific); Antony Shaw (Chief Executive Officer, Australia); Omar Siddiq (Chief Executive Officer, Malaysia); 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: Astor Law (Head of Global Internal Audit, Asia-Pacific) and Jessica Lee (Regional Head of Communications, Asia-Pacific). The Committee met ten times in 2022. 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 recovery and resolution planning activities, and the oversight of treasury sustainability related matters in support of the Group's sustainability objectives.

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 2022.

Risk Management Meeting

The Risk Management Meeting is chaired by the Chief Risk Officer and is a formal governance forum 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, the Chief Executive Officer of Hang Seng Bank Limited, the Head of Wholesale Credit and Market Risk, Asia-Pacific and other senior executives of the Bank most of whom are members of the Executive Committee. The Risk Management Meeting met six times in 2022.

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), Yiu Kwan Choi, David Eldon, Rajnish Kumar and Irene Lee. Except for David Eldon, who is a non-executive Director, all members are independent non-executive Directors. The Committee met four times in 2022.

The Audit Committee monitors the integrity of the Consolidated Financial Statements, banking disclosure 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 Yiu Kwan Choi (Chairman of the Committee), Sonia Cheng, David Eldon, Rajnish Kumar, Irene Lee, Annabelle Long and Kevin Westley. Except for David Eldon, who is a non-executive Director, all members are independent non-executive Directors. The Committee met four times in 2022.

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 certain 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, and undertakes an annual review of the time commitment and any potential conflicts of interests of each Director. The Committee also reviews the board succession plans of certain subsidiaries of the Bank and considers and endorses appointments to boards of directors of specified subsidiaries.

The current members of the Committee are Beau Kuok (Chairman of the Committee), Peter Wong (Chairman of the Board), David Eldon (Deputy Chairman of the Board) and Kevin Westley. Beau Kuok and Kevin Westley are independent non-executive Directors and Peter Wong and David Eldon are non-executive Directors. The Committee met seven times in 2022.

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 two times in 2022.

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 current members of the Committee, all being independent non-executive Directors, are Irene Lee (Chairman of the Committee), Beau Kuok and Sonia Cheng.

The Committee met six times in 2022. The following is a summary of the Committee's key activities during 2022:

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 2021/2022 performance year pay review matters • Reviewed remuneration framework effectiveness • Received updates on notable events and regulatory and corporate governance matters • Reviewed and approved 2022 Material Risk Taker ('MRT') identification approaches and outcomes • Reviewed attrition data and plans to address area of concerns • Approved 2022 remuneration related regulatory submissions

* *Senior Management includes the Co-Chief Executives 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 framework is underpinned by our Group's Remuneration Strategy and principles aims to competitively reward long-term sustainable performance. Our goal is to attract, motivate and retain the very best people, regardless of gender, ethnicity, age, disability or any other factor unrelated to performance or experience. This supports the long-term interests of our stakeholders, which includes the customers and the communities we serve, our shareholders and our regulators. Our approach to performance and pay in 2022 for the broader workforce was 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 towards an individual's ethnicity, gender, age, or any other characteristic and making sure employees are fairly rewarded and recognized. 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. As such, subject to local law, employee receive a behavior rating as well as a performance rating. Analytical reviews were also completed to ensure there is a clear differentiation across both performance and behavior ratings;
- Supporting a culture of continuous feedback through manager and employee empowerment. Focusing to obtain feedback from colleagues to learn what was going well, learn and improve from experience and discover the skills and behavior colleagues need to grow; and
- Delivering a balanced, simple and transparent total reward package that supports employee well-being.

More details of the Bank's remuneration strategy are contained within the *Annual Report and Accounts 2022* 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 2021 was commissioned externally to Deloitte LLP and the results were approved by the Remuneration Committee in April 2022. 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 recovery plans that are designed to outline credible actions that could be implemented in the event of stress in order to restore capital and its business to a stable and sustainable condition. The Bank typically submits recovery plan on an annual basis to the HKMA and submits local recovery plans to other host regulators where local requirements are in place. The Bank's recovery plans are continually re-appraised to meet regulatory and internal feedback, and this involves stress testing and 'fire drill' tests.

Resolution

In general terms, 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 recovery action could be taken that would result in the institution recovering.

In view of HSBC Group's corporate structure, which comprises a group of locally regulated operating banks, the preferred resolution strategy for the HSBC Group, as confirmed by its regulators, is multiple point of entry ('MPE') bail-in strategy. This provides flexibility for HSBC Group to be resolved either (i) through a bail-in at the HSBC Holdings plc level, which enables the recapitalisation of operating bank subsidiaries in the HSBC Group (as required) while restructuring actions are undertaken, with the HSBC Group remaining together; or (ii) at a local subsidiary level pursuant to the application of statutory resolution powers by local resolution authorities.

The group is part of the HSBC Group-wide Resolvability Assessment Framework ('RAF') implementation along with continued efforts to work bilaterally 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 group is already compliant with HKMA issued Financial Institutions (Resolution) (Loss-absorbing Capacity Requirements – Banking Sector) Rules ('LAC Rules'), and in the process to comply with new policies on Operational Continuity in Resolution ('OCIR-1'), Financial Institutions (Resolution) (Contractual Recognition of Suspension of Termination Rights – Banking Sector) Rules ('Stay Rules') and Liquidity and Funding in Resolution ('LFIR-1') within the regulatory timeline.

As part of the RAF issued by the Bank of England ('BoE') and Prudential Regulation Authority ('PRA') which places the onus on firms to demonstrate their own resolvability, HSBC Group, including the group was required to have capabilities as of 1 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 RAF requires HSBC Group to prepare a report on the assessment of its preparedness for resolution, which must be submitted to the PRA on a biennial basis. HSBC Group submitted its first such report to the BoE in October 2021 summarising the progress in terms of BoE's RAF, followed by an additional addendum in February 2022. On 10 June 2022 HSBC Group made its first public disclosure on its resolvability, which summarised the key findings from its RAF self-assessment. Alongside this report, the BoE publicly disclosed its own assessment of HSBC Group's resolvability. Certain shortcomings and areas of further enhancement were identified under the first RAF cycle and HSBC Group, including the group is currently addressing these to ensure it meets the objectives of the RAF. Regular engagement with the BoE and PRA will continue as HSBC Group prepares for the second RAF cycle, whereby the Group's next Self-assessment is due in 2023.

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

21 February 2023

Environmental, Social and Governance (unaudited)

The Group is on a journey to incorporate environmental, social and governance ('ESG') principles throughout the organisation, and has taken significant steps to embed sustainability into its purpose and corporate strategy.

Approach to ESG Reporting

The information set out in the ESG Review, taken together with other information relating to ESG issues included in the Annual Report and Accounts 2022, provides key ESG information and data relevant to the group's operations for the year ended 31 December 2022. The data is compiled for the financial year 1 January to 31 December 2022 unless otherwise specified. Measurement techniques and calculations are explained next to data tables where necessary. The group is guided by the Group's consideration of material ESG topics. For Group's material ESG topics and how they decide what to measure, see the Group's *Annual Report and Accounts 2022*.

The group has considered its 'comply or explain' obligation under the Hong Kong Monetary Authority's ('HKMA') Supervisory Policy Manual ('SPM') GS-1 on Climate Risk Management issued in December 2021. The group has made disclosures consistent with the Task Force on Climate-related Financial Disclosures ('TCFD') Recommendations and Recommended Disclosures, issued in July 2017 and its updated guidance in October 2021, in this Annual Report and Accounts save for certain items, which are described on pages 12 to 15. Further details have been included in this section and the Risk Review section on pages 61 to 64. Our TCFD disclosures are highlighted with the following symbol: **TCFD**

How ESG is governed TCFD

The Board takes overall responsibility for ESG and approved the climate strategy in 2022, overseeing executive management in developing the approach, execution and associated reporting. The group's developments in relation to its strategies was reviewed through Board discussions at six meetings in 2022. In addition, Board members received a training on global and regional developments in climate and sustainability, as part of their ongoing development. The 2022 annual incentive scorecards of the Co-CEOs of Asia-Pacific and most of the Executive Committee members include outcomes linked to realisation of different ESG metrics such as customer satisfaction, employee sentiment, carbon reduction and sustainable finance measures. Governance structures exist to ensure executive oversight of the group's progress in ESG performance, including involvement of the group Risk Committee ('RC'). The RC reviews the effectiveness of the group's conduct framework, which is designed to deliver fair outcomes for customers, and to preserve the orderly and transparent operation of financial markets, as well as to oversee and advise the Board on risk-related matters, including both financial and non-financial risks. In addition, the Executive Committee reviews an ESG dashboard including key metrics such as sustainable finance and own operations emissions on a quarterly basis.

The group Sustainability Committee and the group Climate Risk Oversight Forum ('CROF') are governance forums established in Asia-Pacific to support the Group's climate ambition. The group Sustainability Committee, chaired by the Co-CEOs of Asia-Pacific, oversees the group's contribution to the Group's climate plan, which was announced in October 2020. This includes overseeing delivery across Asia-Pacific of the Group's ambition to provide and facilitate a share of the global target of between US$750bn and US$1tn of sustainable finance and investment for its customers in Asia-Pacific in their transition to net zero and a sustainable future by 2030. The group CROF is a sub-committee of the Risk Management Meeting. These committees, forums and meetings govern the group's performance in Asia-Pacific and provide oversight of all risk activities relating to the group's approach to climate and nature related risk management.

The group's ESG governance approach is expected to continue to develop, in line with its evolving approach to ESG matters and stakeholder expectations.

Environmental - Transition to net zero TCFD

One of the Group's strategic pillars is to support the transition to a net zero global economy. The Group's ambition is to align its financed emissions to the Paris Agreement goal to achieve net zero by 2050 or sooner. The Paris Agreement aims to limit the rise in global temperatures to well below 2°C, preferably to 1.5°C, above pre-industrial levels.

The transition to net zero is one of the biggest challenges for our generation. Success will require governments, customers and finance providers to work together. The Group's global footprint means that many of its clients operate in high-emitting sectors and regions that face the greatest challenge in reducing emissions. This means that the Group's transition will be challenging but is an opportunity to make an impact.

The Group recognises that to achieve its climate ambition it needs to be transparent on the opportunities, challenges, related risks and progress it makes. To deliver on the ambition, it requires enhanced processes and controls, and new sources of data. The Group continues to invest in climate resources and skills, and develop its business management process to integrate climate impacts. Until systems, processes, controls and governance are enhanced, certain aspects of the Group's reporting will rely on manual sourcing and categorisation of data. In 2023, the Group will continue to review its approach to disclosures. Reporting will need to evolve to keep pace with market developments.

Explaining scope 1, 2 and 3 emissions

To measure and manage the group's greenhouse gas emissions, the group follows the Greenhouse Gas Protocol global framework, which identifies three scopes of emissions. Scope 1 represents the direct emissions the group creates. Scope 2 represents the indirect emissions resulting from the use of electricity and energy to run a business. Scope 3 represents indirect emissions attributed to upstream and downstream activities taking place to provide services to customers. The group's upstream activities include business travel and emissions from its supply chain including transport, distribution and waste. The group's downstream activities include those related to investments and financed emissions.

Under the protocol, scope 3 emissions are broken down into 15 categories. The group provides reporting emissions data in relation to business travel (category 6), an upstream activity. More information in relation to the group's greenhouse gas emissions is set out on page 10.

Supporting customers through net zero transition TCFD

The group's ability to steer financing for the transformation of businesses and infrastructure will be key in helping to enable the transition to a net zero global economy. The group, as a financial institution, has a critical role to play in facilitating the transition to net zero. The most significant contribution the group can make is by mobilising finance to support its customers to enable decarbonisation in the real economy.

Given the Group's global presence and relationships with clients across industries and client groups, it recognises the role it can play to encourage the global transition to net zero. The Board endorsed a climate strategy, which includes the 'transition to net zero' strategic pillar and key enablers to support its implementation, also highlights the Board's continued role in overseeing the implementation of the Group's strategic climate objectives in Asia-Pacific. For details of the Group's climate strategy, please refer to https://www.hsbc.com/who-we-are/our-climate-strategy.

Mobilising sustainable finance and investments

The group's sustainable finance ambition has contributed to sustainable infrastructure and energy systems, promoted decarbonisation efforts across the real economy, and enhanced investor capital through sustainable investment. The group continues to identify financing and investing opportunities and prioritizes the themes necessary to support the net-zero transition. These opportunities look to direct capital, financing solutions and resource allocation towards the themes which will maximize

climate and commercial impact at scale. They are designed to support clients in their transition journey and to address financing needs to accelerate the infrastructure, technologies, and new business models critical for industries to transition to net zero. The group offers a broad suite of sustainable finance capabilities across its global businesses, enabling customers to manage risk and pursue ESG-related opportunities.

In 2022, the group continued to expand the horizons of sustainable finance, channeling capital to enable emissions reduction in the real economy. An example is the US$5bn Greater Bay Area ('GBA') Sustainable Finance Scheme to support business of all sizes, including manufacturing and real estate, to transition to low carbon operations in the GBA. In addition, the group initiated green mortgage offerings to retail customers in mainland China, Hong Kong and India.

The Group was recognised by Euromoney as the Best Bank for Sustainable Finance in Asia for the fifth time in 2022. It also secured the Asia-Pacific Triple A: Sustainable Infrastructure Awards 2022 for Export Credit Agency Coordinator Bank of the Year, Asia-Pacific Loan Market Association for Green and Sustainability advisor of the year, and FinanceAsia for Best Sustainable Bank in Hong Kong.

The group's sustainable finance and investment progress is set out below, with detailed definitions available in the Group's Sustainable Finance and Investment Data Dictionary (see www.hsbc.com/who-we-are/esg-and-responsible-business/esg-reporting-centre). Green finance taxonomies are not consistent globally, and evolving taxonomies and practices could result in revisions in the Group's sustainable finance reporting going forward. The Group recognises that there can be differing views of external stakeholders in relation to these evolving taxonomies, and will seek to align to enhanced industry standards as they are further developed.

Sustainable finance summary – Asia-Pacific[1]

	2022 HK$m
Balance sheet-related transactions provided	126,845
Capital markets/advisory (facilitated)	45,301
Total contribution	**172,146**

1 *This table has been prepared in accordance with the Group's Sustainable Finance and Investment Data Dictionary 2022, which includes green, social and sustainability activities. The amounts provided and facilitated include: the limits agreed for balance sheet-related transactions provided, the proportional share of facilitated capital markets/advisory activities.*

Working with customers

The Group's net zero ambition is underpinned by its relationships with customers. The Group is setting targets on a sector by sector basis that are consistent with net zero outcomes by 2050. In assessing financed emissions, the Group focuses on those parts of the sector that are most material in terms of greenhouse gas emissions, and where it believes engagement and climate action have the greatest potential to effect change, taking into account industry and scientific guidance. In 2021, the Group defined targets for the oil and gas, and power and utilities sectors to be achieved by 2030. The group will continue to request and assess relevant client transition plans, and to unlock transition solutions for its portfolio of customers. The group considers reporting and emissions disclosure, level of ambition and targets set, detail of plans to achieve targets and evidence of activities to achieve objectives.

Our approach to our own operations TCFD

Part of the Group's ambition to be a net zero bank is to achieve net zero carbon emissions in its operations and supply chain by 2030 or earlier.

The Group has three elements to its strategy: reduce, replace and remove. The first focus is to reduce carbon emissions from consumption, and then subsequently replace remaining emissions with low-carbon alternatives in line with the Paris Agreement.

Finally, the Group plans to remove the remaining emissions that cannot be reduced or replaced by procuring, in accordance with prevailing regulatory requirements, high-quality offsets at a later stage.

In October 2020, the Group announced its ambition to reduce energy consumption by 50% by 2030 against a 2019 baseline. This will be achieved by optimising the utilisation of the Group's real estate portfolio, and strategically reducing office space and data centres. In addition, the Group is adopting new technologies and emerging products to make its spaces more energy efficient.

As part of the Group's ambition to achieve 100% renewable power across its operations by 2030, it continues to look for opportunities to procure green energy in each of its markets. A key challenge remains the limited opportunity to pursue power purchase agreements or green tariffs in key markets.

Business travel and employee commuting

The group's travel emissions were relatively low in 2022, with international travel restrictions in key markets limiting business travel. The Group is closely managing the gradual resumption of travel through internal reporting and review of emissions, and through the introduction of internal carbon budgets, in line with its aim to halve travel emissions by 2030, compared with pre-pandemic levels. With hybrid working embedded across the group, technology has reduced to some extent the need to travel to meet with colleagues and customers face to face.

The group reports its emissions following the Greenhouse Gas Protocol, which incorporates the scope 2 market-based emissions methodology. The group reports greenhouse gas emissions resulting from the energy used in its buildings and employees' business travel. Due to the nature of the group's primary business, carbon dioxide is the main type of greenhouse gas applicable to its operations. While the amount is immaterial, the group's current reporting also incorporates methane and nitrous oxide for completeness. The group does not report employee home working emissions in its scope 1 and 2 performance data. The environmental data for the group's own operations is based on a 12-month period to 30 September each year.

In 2022, the group collected data on energy use and business travel for its own operations in 12 markets across the region, which accounted for approximately 87% of its full-time equivalent employees ('FTEs').

Greenhouse gas emissions in tonnes CO_2e[1,2]

	2022
Scope 1 - direct	915
Scope 2 - indirect	104,162
Scope 3 - indirect (upstream activities - business travel)	11,120
Total	**116,197**
Greenhouse gas emissions in tonnes CO_2e per FTE	2.16

1 *The data of the group's operations in some countries and territories where it has operational control and a small presence may have not been included due to the data collection challenges.*
2 *CO_2e refers to carbon dioxide equivalent.*

Engaging with supply chain

As the majority of the Group's emissions are within its supply chain, it is recognised that it cannot achieve the net zero goal without its suppliers joining the journey. In 2020, the Group began a three-year process of encouraging its largest suppliers to make their own carbon commitments, and to disclose their emissions via the CDP (formerly Carbon Disclosure Project) supply chain programme. The Group will continue to engage with its supply chain through CDP and direct supplier discussions on how they can further support the Group's transition to net zero.

Approach to climate risk TCFD

Managing risk for stakeholders

Climate risk relates to the financial and non-financial impacts that may arise from climate change and the move to a greener economy. The group manages climate risk across all its businesses and is taking into account climate considerations in its risk taxonomy in line with the Group-wide risk management framework. The group's most material exposure to climate risk relates to corporate and retail client financing activity within its banking portfolio, and in its responsibilities in relation to asset ownership by its insurance and asset management businesses.

In the table below, the group sets out its duties to its stakeholders in the three most material roles. For further details of the group's approach to climate risk, see Climate risks on page 61.

Banking	Asset management	Insurance
The group manages the climate risk in its banking portfolios through its risk appetite and policies for financial and non-financial risks.	The group's asset management operations' investment solutions are increasingly considering both physical and transition risks.	The group's insurance operations consider climate risk in their portfolio of assets.
↓	↓	↓
	Climate Risk	
↓	↓	↓
This helps the group to identify opportunities to support its customers, while continuing to meet stakeholder expectations.	A key approach to managing climate risk is by engaging with investees on topics related to climate change.	HSBC Life has established an evolving ESG programme to meet changing external expectations and customer demands.

Banking

The group's banking business is well positioned to support its customers to manage their own climate risk through financing. For wholesale customers, the group uses a transition and physical risk questionnaire as part of its transition and physical risk framework to understand their climate strategies and risk. The Group has set out a suite of policies to guide the management of climate risk, including the recently updated energy policy and thermal coal phase-out policy (see page 62). Climate scenario analysis is used as a risk assessment tool to provide insights on the long-term effects of transition and physical risks across the Group's corporate and retail banking portfolios, as well as its own operations.

Asset management

When assessing the impact of climate-related risk to its portfolios, the group's asset management operations are increasingly considering both physical and transition risks. As a result, ESG and climate analysis is integrated into the group's assessment of the risks faced by investees throughout the investment decision-making process. Investment teams use portfolio management tools to assess, examine and determine the level of potential ESG risks that could impact the current and future value of issuers.

In September 2022, the Group's asset management operations published their thermal coal phase-out policy, which will not hold listed securities of issuers with more than de minimis revenue exposure to thermal coal in its actively managed portfolios beyond 2030 for EU and OECD markets, and 2040 for all other markets.

One of the key approaches for the group's asset management operations to manage climate risk is to engage with the companies in which they invest. The HSBC Asset Management Stewardship Plan outlines their approach to engaging with issuers, including on the topic of climate change.

Insurance

The group's insurance operations updated their sustainability policy in 2022 to align with the Group's thermal coal phase-out policy. An ESG policy on corporate underwriting was also introduced. Risk appetite was reviewed with respect to ESG risks, and ESG standards were embedded into insurance product development processes and operational capabilities.

Insights from scenario analysis TCFD

Introduction

Scenario analysis supports the Group's strategy by assessing its position under a range of climate scenarios. This helps to build the Group's awareness of climate change and future planning including in the context of evolving regulatory requirements.

Following the first Group-wide climate change scenario analysis and the pilot climate risk stress test for Hong Kong Monetary Authority, the Group has performed stress tests for a number of regulators in Asia-Pacific including the Monetary Authority of Singapore in 2022.

The Group's scenario analysis considers separately:

- transition risk arising from the process of moving to a net zero economy, including changes in policy, technology, customer behaviour and stakeholder perception, which could each impact borrowers' operating income, financing requirements and asset values; and
- physical risk arising from the increased frequency and severity of weather events, such as hurricanes and floods, or chronic shifts in weather patterns, which could impact property values and repair costs and lead to business interruptions.

The Group will continue to enhance its climate scenario analysis to enable a more comprehensive understanding of climate headwinds, risks and opportunities that will support its strategic planning and actions.

Our climate scenarios

In 2022, the Group undertook its internal climate scenario analysis exercise using four bespoke scenarios that were designed to articulate a view of the range of potential outcomes for global climate change between the 2022 and 2050-time period.

These internal scenarios were formed with reference to external publicly available climate scenarios, including those produced by the Network for Greening the Financial System, the Intergovernmental Panel on Climate Change and the International Energy Agency. The Group adapted these scenarios by incorporating its unique climate risks and vulnerabilities to which the organisation and customers across different global businesses and geographies are exposed. This resulted in the following four scenarios:

- Net Zero scenario, which aligns with the Group's net zero strategy and is consistent with the Paris Agreement;
- Current Commitments scenario, which assumes that climate action is limited to the current governmental commitments and pledges;
- Downside Transition Risk scenario, which assumes that climate action is delayed until 2030, but will be rapid enough to limit global temperature by the end of the century; and
- Downside Physical Risk scenario, which assumes climate action is limited to current governmental policies, leading to extreme global warming.

The group follows the Group's four scenarios, which reflect different levels of physical and transition risks, underpinned by various assumptions of governmental climate policy changes, macroeconomic factors and technological developments.

Developments in climate science, data, methodology, and scenario analysis techniques will help further enhance the

approach in the future. Consequentially, the view of risk is expected to change over time.

Analysing the outputs of the climate scenario analysis

Climate scenario analysis allows the Group to model how different potential climate pathways may affect its customers and portfolios, particularly in respect of credit losses. Climate-related losses could be expected within sectors with higher carbon emitting activities due to the possibility of carbon reduction policies. These carbon reduction policies will help to dictate the pace of the transition to net zero and will vary by geography and sector. Customers' climate transition plans will help to mitigate the group's climate and credit risks.

In terms of physical risk, the Group assessed perils that could impact the value of properties in selected entities, including tropical cyclones and related storm surges. The defaults within the retail mortgage portfolio are expected to remain low through to 2050 in Hong Kong due to buildings being designed to withstand high wind speeds and investment into sea defences. Similarly, losses in Singapore were low in all the scenarios due to its geographical location and strong sea defences.

The analysis generated insights of the underlying drivers of risk and how the group can navigate through this complex and evolving landscape. The group explored strategic responses to the results of the climate scenario analysis, which allow it to identify and prioritise the sectors and sub-sectors that require the greatest support to transition. This also allows the group to test the impact of actions that can support customers' transition and its net zero ambition.

Use of outputs and next steps

Climate scenario analysis informs the Group's strategy and supports how opportunities are captured while minimising risks, and enabling the Group to navigate through the climate transition. The Group will continue to enhance its capabilities in relation to climate scenario analysis and use the results for decision making, particularly in respect of strategy, client engagement and risk appetite.

Social matters

The Group aims to play an active role in opening up a world of opportunity for its customers, colleagues and communities as it brings the benefits of connectivity and the global economy to more people around the world.

To achieve its purpose and deliver its strategy in a way that is sustainable, the Group is guided by its values: we value difference; we succeed together; we take responsibility; and we get it done.

Human rights

Details of the Group's commitment to respecting human rights are set out in the Group's Statement on Human Rights, which is available on www.hsbc.com/our-approach/measuring-our-impact.

Anti-bribery and corruption policy

The Group requires compliance with all applicable anti-bribery and corruption laws in all markets and jurisdictions in which it operates. These include, but are not limited to, the UK Bribery Act, the US Foreign Corrupt Practices Act, the Hong Kong Prevention of Bribery Ordinance and France's 'Sapin II' law. The Group has 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 its commitment to ethical behaviours and conduct as part of the environmental, social and corporate governance approach.

Task Force on Climate-related Financial Disclosures ('TCFD') index table TCFD

The table below sets out the 11 TCFD recommendations and summarises where additional information can be found.

Where the group has not included climate-related financial disclosures consistent with all of the TCFD recommendations and recommended disclosures, the reasons for this and steps being undertaken are set out accordingly. The group will continue to develop and refine its reporting and disclosures on ESG matters in line with the group's obligations under the HKMA SPM GS-1.

With respect to the group's obligations under HKMA SPM GS-1 as part of considering what to measure and publicly report, the group performs an assessment to ascertain the appropriate level of detail to be included in the TCFD that is set out in its Annual Report and Accounts. The assessment takes into account factors such as the level of the group's exposure to climate-related risks and opportunities, the scope and objectives of its climate-related strategy, transitional challenges, and the nature, size and complexity of its business.

Recommendation	Response	Disclosure location
Governance		
a) Describe the Board's oversight of climate-related risks and opportunities		
Process, frequency and training	The Board takes overall responsibility for ESG. The group's developments in relation to its strategies was reviewed through Board discussions at six meetings in 2022. In addition, Board members received a training on global and regional developments in climate and sustainability, as part of their ongoing development. The Board is updated on wider topics in relation to the evolving climate agenda as appropriate.	Page 9
Sub-committee accountability, processes and frequency	The group RC receives regular updates on the climate risk profile, top and emerging climate risks, and climate risk programme.	Page 62
Examples of the Board and relevant Board committees taking climate into account	The Board approved the climate strategy in 2022, overseeing executive management in developing the approach, execution, financial planning and associated reporting. The 2022 annual incentive scorecards of the Co-CEOs of Asia-Pacific and of most of the Executive Committee members include outcomes linked to the realisation of different ESG metrics such as customer satisfaction, employee sentiment, carbon reduction and sustainable finance measures.	Page 62 Page 9
b) Describe management's role in assessing and managing climate-related risks and opportunities		

Task Force on Climate-related Financial Disclosures 'TCFD' (continued)

Recommendation	Response	Disclosure location
Who manages climate-related risks and opportunities	The group Sustainability Committee, chaired by the Co-CEOs of Asia-Pacific, oversees the delivery of the Group's climate plan announced in October 2020 in Asia-Pacific. The group CROF oversees all risk activities relating to climate risk management and escalation of climate risks.	Page 9
How management reports to the Board	The Co-CEOs of Asia-Pacific reported to the Board six times on ESG and climate matters during 2022.	Page 9
Processes used to inform management	The Executive Committee reviews an ESG dashboard including key metrics such as sustainable finance and own operations emissions on a quarterly basis.	Page 9
Strategy		
a) Describe the climate-related risks and opportunities the organisation has identified over the short, medium and long term		
Processes used to determine material risks and opportunities	For wholesale customers in the six high climate transition risk sectors, the group rolled out the transition and physical risk questionnaire to assess and improve its understanding of the impact of climate changes on certain customers' business models. Relationship managers worked with customers to record questionnaire responses, which also help to identify potential business opportunities to support customers' transition. The Group completed a detailed asset-level analysis of the retail mortgage business in Hong Kong, Singapore and Australia which represent three of the group's largest residential mortgage portfolios in Asia-Pacific.	Page 62 Page 63
Relevant short, medium, and long term time horizons	The group continues to contribute to the Group's ambitions to achieve net zero in its financed emissions by 2050, in its own operations and supply chain by 2030, and to provide and facilitate a share of the global target of between US$750bn and US$1tn of sustainable finance and investment for its customers in Asia-Pacific in their transition to net zero and a sustainable future by 2030. The group aligns with the Group's definition of short, medium, and long term time horizon: short term up to 2025; medium term between 2026 to 2035; and long term between 2036 to 2050. The group is part of the Group's climate scenario analysis exercise and formed part of the Group's result of the expected credit losses and physical risk impacts on the Group's premises between the 2022 and 2050 time period. For details, see the Group's Annual Report and Account 2022.	Page 10 Page 11
Transition or physical climate-related issues identified	Transition or physical climate-related risk, together with greenwashing risk exist across the Group's risk taxonomy. The group is supporting its customers in their transition through its sustainable finance and investment ambition. The Group's sustainable finance and investment data dictionary includes a detailed definition of contributing activities.	Page 61 Page 10
Risks and opportunities by sector and/or geography	Scenario analysis supports the group's risks and opportunities under a range of climate scenarios. It helps to build the group's awareness of the impact of climate change and future planning. The Group completed a detailed asset-level analysis of the retail mortgage business in Hong Kong, Singapore and Australia, which represent three of the group's largest residential mortgage portfolios in Asia-Pacific. The group does not currently fully disclose the impacts of transition and physical risk quantitatively by sector/geography, due to transitional challenges including data limitations and evolving science and methodologies. The group is working to address these challenges in the medium term.	Page 11 page 63
Concentrations of credit exposure to carbon-related assets (supplemental guidance for banks)	The Group has identified six sectors where wholesale credit customers have the highest climate risk, based on their carbon emissions. These are automotive, chemicals, construction and building materials, metals and mining, oil and gas, and power and utilities. The group internally reports its exposure to the six high transition risk sectors in the wholesale portfolio, and will further enhance its disclosure as more data becomes available.	Page 62
Climate-related risks in lending and other financial intermediary business activities (supplemental guidance for banks)	The group's material exposure to climate risk relates to corporate and retail client financing activity within its banking portfolio, and in its responsibilities in relation to asset ownership by its insurance and asset management businesses.	Page 11
b) Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy and financial planning		
Impact on strategy, business, and financial planning	Transition to net zero represents one of the Group's four strategic pillars. The Group aims to be net zero in its operations and supply chain by 2030 and in financed emissions by 2050. The group does not currently fully disclose the impacts of climate-related issues on financial planning, and particularly the impact of climate-related issues on its financial performance (for example, revenues and costs) and financial position (for example, assets and liabilities), acquisitions/divestments or access to capital, in each case due to lack of data and systems for compiling the relevant financial impacts. In 2022, the group incorporated certain aspects of sustainable finance and financed emissions within its financial planning process. This will be further enhanced in the medium term as more data is available.	Page 9
Impact on products and services	The group supports the Group's ambition in helping its customers' transition to net zero and a sustainable future through providing and facilitating a share of the global target of between US$750bn and US$1tn of sustainable finance and investment for its customers in Asia-Pacific by 2030.	Page 9
Impact on supply chain and/or value chain	The group has started working with its largest suppliers to encourage them to make their own carbon commitments, and to disclose their emissions. The Group's third-party risk management process incorporates climate-related risks.	Page 10
Impact on operations	The group is developing a deeper understanding of the risks to which its properties are subject, and necessary mitigants to ensure ongoing operational resilience.	Page 63

Task Force on Climate-related Financial Disclosures 'TCFD' (continued)

Recommendation	Response	Disclosure location
Impact on adaptation and mitigation activities	The Group announced its ambition to achieve 100% renewable power across its operations by 2030, and continues to look for opportunities to procure green energy. The Group regularly reviews and enhances its building selection process and global engineering standards to help ensure they reflect the potential impacts of climate change.	Page 10
Impact on operations	The group is developing a deeper understanding of the risks to which its properties are subject, and necessary mitigants to ensure ongoing operational resilience.	Page 63
Impact on investment in research and development	The Group is working with the World Resources Institute and World Wide Fund For Nature, focusing its collective efforts on climate-related innovation, nature-based solutions and energy efficiency initiatives in Asia-Pacific.	
Transition plan to a low-carbon economy	The Group has committed to publish its own climate transition plan in 2023. The plan will outline, in one place, not only the Group's commitments, targets and approach to net zero across the sectors and markets that it serves, but also how the Group is transforming to embed net zero and help finance the transition. The group will be guided by this transition plan once published.	
c) Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario		
Embedding climate into scenario analysis	In 2022, the Group enhanced the approach to analysing climate scenarios and delivered the internal climate scenario analysis ('ICSA') exercise applying four bespoke climate scenarios: Net Zero, Current Commitments, Downside Transition Risk, and Downside Physical Risk. The four scenarios used in the Group's ICSA exercise were designed to articulate the Group's view of the range of potential outcomes for global climate change between the 2022 and 2050- time period. The relevant assumptions are detailed in Group Annual Report and Accounts 2022.	Page 11
Key drivers of performance and how these have been taken into account	The ICSA scenarios reflect different levels of physical and transition risk and, underpinned by various assumptions of governmental climate policy changes, macroeconomic factors and technological developments.	Page 11
Scenarios used and how they factored in government policies	The ICSA scenarios reflect external publicly available climate scenarios, including those produced by the Network for Greening the Financial System, the Intergovernmental Panel on Climate Change and the International Energy Agency.	Page 11
How our strategies may change and adapt	The Group will continue to enhance its capabilities for climate scenario analysis and use the results for decision making, particularly in respect of strategy, client engagement and risk appetite.	Page 12
Risk management		
a) Describe the organisation's processes for identifying and assessing climate-related risks		
Traditional banking risk types considered	The Group's approach to identifying and assessing climate-related risks is initially focused on understanding physical and transition impacts across five priority risk types: wholesale credit risk, retail credit risk, resilience risk, regulatory compliance risk and reputational risk.	Page 61
Process	For wholesale customers, the group uses a transition and physical risk questionnaire as part of its transition and physical risk framework to understand their climate strategies and risk. Climate scenario analysis is used as a risk assessment tool to provide insights on the long-term effects of transition and physical risks across the Group's corporate and retail banking portfolios, as well as its own operations. The group does not currently fully disclose the detailed impacts of transition and physical risk, due to transitional challenges including data limitations and evolving science and methodologies.	Page 11
Integration into policies and procedures	The Group is integrating climate risk into the policies, processes and controls across many of its global businesses and functions, and will continue to enhance these as its climate risk management capabilities mature. In 2022, the Group has published its updated energy policy, covering oil and gas, power and utilities, hydrogen, renewables, nuclear and biomass sectors, as well as updating its thermal coal phase-out policy after its initial publication in 2021.	Page 62
Consider climate-related risks in traditional banking industry risk categories (supplementary guidance for banks)	In 2022, the Group broadened its climate risk approach to include all risk types (including treasury risk and traded risk) in its risk taxonomy.	Page 64
b) Describe the organisation's processes for managing climate-related risks		
Process and how we make decisions	The group Risk Management Meeting and group RC receive regular updates on the climate risk profile, and the top and emerging climate risks. The group's initial risk appetite has focused on the oversight and management of climate risks across the five priority risk types, including exposure to high transition risk sectors in its wholesale portfolio and physical risk exposures in retail portfolio. These metrics have been implemented at group level and locally where appropriate. The group continues to review its risk appetite regularly to capture the material climate risks and will enhance its metrics over time.	Page 62
c) Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organisation's overall risk management framework		
How we have aligned and integrated our approach	The group's approach to climate risk management is aligned to the Group-wide risk management framework and three lines of defence model.	Page 61
How we take into account interconnections between entities, functions	The group's dedicated climate risk programme drives the development of its climate risk management capabilities, taking into account relevant interconnections within the group's businesses, functions and entities.	Page 62
Metrics and targets		
a) Disclose the metrics used by the organisation to assess climate-related risk and opportunities in line with its strategy and risk management process		

Task Force on Climate-related Financial Disclosures 'TCFD' (continued)

Recommendation	Response	Disclosure location
Metrics used to assess the impact of climate-related risks on our loan portfolio	The group monitors wholesale loan exposure to the Group's six highest climate risk sectors. In 2022, the group developed new climate risk metrics to assess the impact of physical risk on its retail mortgage portfolio in Hong Kong, as detailed on page 63. The group's climate risk management information dashboard incorporates key climate risk metrics, and is reported to the group CROF.	Page 62
Metrics used to assess progress against opportunities	The Group tracks its net zero progress using multiple metrics, tailoring methodologies to the specific measures. The group contributes to the Group's energy consumption, water consumption, waste management, and land use. For details, see the Group's Annual Report and Account 2022 and ESG Data Pack. The group disclosed its contribution in 2022 to the Group's sustainable finance ambition of providing and facilitating a share of the global target of between US$750bn to US$1tn for its customers in Asia-Pacific. The group does not currently fully disclose the proportion of revenue or proportion of assets, capital deployment or other business activities aligned with climate-related opportunities, including revenue from products and services, internal carbon prices, forward-looking metrics consistent with its business or strategic planning time horizons. In relation to sustainable finance revenue and assets, the Group is disclosing certain elements. The group expects climate related metrics to be further integrated into financial planning and forecasting as data and system limitations are addressed.	Page 9
Board or senior management incentives	The 2022 annual incentive scorecards of the Co-CEOs of Asia-Pacific and most of the Executive Committee members include outcomes linked to the realisation of different ESG metrics such as customer satisfaction, employee sentiment, carbon reduction and sustainable finance measures.	Page 9
Metrics used to assess the impact of climate risk on lending and financial intermediary business (supplemental guidance for banks)	The group does not fully disclose metrics used to assess the impact of physical and transition climate-related risks on retail lending, wholesale lending and other business activities (specifically credit exposure, equity and debt holdings, or trading positions, each broken down by industry, geography, credit quality, average tenor). This is due to data and system limitations which the group is working to address.	
b) Disclose scope 1, scope 2 and, if appropriate, scope 3 greenhouse gas emissions and the related risks		
GHG emissions for lending and financial intermediary business (supplemental guidance for Banks)	In relation to financed emissions, the Group has disclosed on-balance sheet financed emissions for certain sectors. The Group does not fully disclose financed emissions data. Further disclosure on scope 3 financed emissions and related risks in relation to customers is reliant on the Group's customers publicly disclosing their carbon emissions and related risks. The Group's approach to disclosure of financed emissions can be found on: www.hsbc.com/who-we-are/esg-and-responsible-business/esg-reporting-centre.	
c) Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets		
Details of targets set and whether they are absolute or intensity based	The Group's ambition is to achieve net zero financed emissions by 2050 or sooner, and has set interim 2030 targets for on-balance sheet financed emissions for certain sectors. The Group aims to support its customers' transition to net zero through providing and facilitating a share of the global target of between US$750bn and US$1tn of sustainable finance and investment for its customers in Asia-Pacific by 2030. In addition, the Group targets to achieve net zero carbon emissions in its operations and supply chain by 2030 or sooner. In addition to the above mentioned, the group contributes to the Group's other ambitions such as land use, waste management, energy consumption and percentage of renewable electricity sourced. For details of Group's ambitions, please refer to the Group's Annual Report and Accounts 2022. The group does not currently disclose its targets used to measure and manage physical and transition risk, or capital deployment, or climate-related opportunities due to transitional challenges such as data and system limitations which the group is working to address in the medium term. Taking into account the nature of its business, the group does not consider water usage to be a material target for its business and, therefore, the group has not included a target in this year's disclosure.	

Financial Review

Results for 2022

(Unaudited)

Profit before tax for 2022 reported by The Hongkong and Shanghai Banking Corporation Limited ('the Bank') and its subsidiaries (together 'the group') increased by HK$11,048m, or 13%, to HK$97,611m.

(Audited)

	Wealth and Personal Banking	Commercial Banking	Global Banking	Markets and Securities Services	Corporate Centre[1]	Other (GBM-other)	Total
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
Year ended 31 Dec 2022							
Net interest income/(expense)	**71,397**	**43,087**	**18,703**	**4,370**	**(12,718)**	**2,013**	**126,852**
Net fee income/(expense)	**17,895**	**9,727**	**5,086**	**3,701**	**247**	**(56)**	**36,600**
Net income/(expense) from financial instruments measured at fair value through profit or loss	**(9,603)**	**3,728**	**(110)**	**22,372**	**11,079**	**345**	**27,811**
Gains less losses from financial investments	**(34)**	**64**	**—**	**—**	**—**	**17**	**47**
Net insurance premium income/(expense)	**76,848**	**3,997**	**—**	**—**	**(430)**	**—**	**80,415**
Other operating income/(expense)	**2,329**	**(189)**	**369**	**1,208**	**315**	**(251)**	**3,781**
Total operating income/(expense)	**158,832**	**60,414**	**24,048**	**31,651**	**(1,507)**	**2,068**	**275,506**
Net insurance claims and benefits paid and movement in liabilities to policyholders	**(66,206)**	**(3,968)**	**—**	**—**	**360**	**—**	**(69,814)**
Net operating income/(expense) before change in expected credit losses and other credit impairment charges	**92,626**	**56,446**	**24,048**	**31,651**	**(1,147)**	**2,068**	**205,692**
– of which: external	***76,344***	***58,916***	***26,413***	***40,870***	***(8,191)***	***11,340***	***205,692***
inter-segment	***16,282***	***(2,470)***	***(2,365)***	***(9,219)***	***7,044***	***(9,272)***	***—***
Change in expected credit losses and other credit impairment charges	**(1,326)**	**(11,953)**	**(3,070)**	**22**	**1**	**(39)**	**(16,365)**
Net operating income/(expense)	**91,300**	**44,493**	**20,978**	**31,673**	**(1,146)**	**2,029**	**189,327**
Operating expenses	**(52,773)**	**(20,972)**	**(10,513)**	**(13,897)**	**(9,521)**	**(2,832)**	**(110,508)**
Operating profit/(loss)	**38,527**	**23,521**	**10,465**	**17,776**	**(10,667)**	**(803)**	**78,819**
Share of profit in associates and joint ventures	**140**	**—**	**—**	**—**	**18,652**	**—**	**18,792**
Profit/(loss) before tax	**38,667**	**23,521**	**10,465**	**17,776**	**7,985**	**(803)**	**97,611**
Balance sheet data at 31 Dec 2022							
Loans and advances to customers (net)	**1,536,664**	**1,231,972**	**880,581**	**40,563**	**1,403**	**13,966**	**3,705,149**
Customer accounts	**3,443,694**	**1,665,463**	**805,600**	**195,775**	**11**	**3,166**	**6,113,709**
Year ended 31 Dec 2021							
Net interest income/(expense)	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/(expense)	202	39	237	1,113	599	(157)	2,033
Total operating income/(expense)	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/(expense) 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/(expense)	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/(loss)	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

1 *Includes inter-segment elimination.*

Financial Review

The commentary in this financial review compares the group's financial performance for the year ended 31 December 2022 with the year ended 31 December 2021.

Results Commentary

(Unaudited)

The group reported profit before tax of HK$97,611m, an increase of HK$11,048m, or 13%. Net operating income before change in expected credit losses and other credit impairment charges increased by HK$27,034m, or 15%, primarily driven by higher net interest income. Operating expenses increased by HK$5,632m, or 5%, from investment in technology.

Net interest income increased by HK$28,739m, or 29%. Excluding the unfavourable foreign exchange impact, net interest income increased by HK$30,715m, or 32%, primarily driven by Hong Kong with wider customer deposit spreads and higher reinvestment yields as market interest rates increased, coupled with balance sheet growth. Net interest income in Singapore also increased, reflecting the favourable impact of the higher market interest rates.

Net fee income decreased by HK$8,696m, or 19%. Excluding the unfavourable foreign exchange impact, net fee income decreased by HK$7,928m, or 18%, driven by Wealth and Personal Banking ('WPB') in Hong Kong with lower transaction volumes resulting in decreases in unit trust income and brokerage income, coupled with lower funds under management fees reflecting the unfavourable market performance. To a lesser extent, net fee income in Markets and Securities Services ('MSS') also decreased, mainly from lower global custody and securities brokerage fees coupled with a drop in underwriting fees.

Net income from financial instruments measured at fair value through profit or loss decreased by HK$18,064m, or 39%.

Net income from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss decreased by HK$31,374m, mainly in Hong Kong and driven from losses on the equity portfolio held to support insurance and investment contracts, due to unfavourable equity market performance. To the extent that these losses 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 increased by HK$13,315m, or 47%, most notably in Hong Kong from higher gains on derivatives principally benefitting from rising interest rates, partly offset by lower equity trading income attributable to unfavourable market conditions. Mainland China also increased due to the favourable movement on foreign currency position held locally.

Net insurance premium income increased by HK$18,693m, or 30%, driven from higher sales volumes mainly in Hong Kong, and in Singapore with the acquisition of AXA Insurance Pte Limited ('AXA Singapore') during 2022.

Other operating income increased by HK$1,748m, or 86%, driven by the favourable movement in the present value of in-force long-term insurance business ('PVIF') of HK$1,038m, reflecting increases in Hong Kong from the value of new business written and the one-off gain from a pricing update for policyholder funds held on deposit to reflect the cost of provision of these services. This was partly offset by adverse assumption changes and experience variances in Hong Kong and Singapore, primarily due to interest rates movements.

The net movement in PVIF was partly offset by a corresponding movement in 'Net insurance claims and benefits paid and movement in liabilities to policyholders' to the extent gains or losses are attributable to the policy holders.

The overall increase also included a gain of HK$665m on completion of our acquisition of AXA Singapore.

Net insurance claims and benefits paid and movement in liabilities to policyholders decreased by HK$6,234m, or 8%, primarily due to a decline in returns on financial assets supporting contracts where the policyholder is subject to part or all of the investment risk, mainly in Hong Kong. This decrease was partially offset by higher sales volumes in Hong Kong.

Change in expected credit losses and other credit impairment charges increased by HK$9,826m, or 150%, notably in Commercial Banking ('CMB') and to a lesser extent in Global Banking ('GB'), mainly reflecting increases in allowances relating to exposures to the mainland China commercial real estate ('CRE') sector.

Total operating expenses increased by HK$5,632m, or 5%. Excluding the favourable foreign exchange impact, operating expenses increased by HK$7,459m, or 7%, reflecting an increase in investment in technology, including our digital capabilities to support business growth. Employee compensation and benefits also increased, mainly from higher performance-related pay and wage inflation.

Share of profit in associates and joint ventures decreased by HK$528m, or 3%. Excluding the unfavourable foreign exchange impact, the share of profit in associates and joint ventures increased by HK$32m, mainly from Bank of Communications Co., Limited.

Net interest income

(Unaudited)

	2022	2021
	HK$m	HK$m
Net interest income	126,852	98,113
Average interest-earning assets	7,589,538	7,173,973
	%	%
Net interest spread	1.55	1.32
Contribution from net free funds	0.12	0.05
Net interest margin	1.67	1.37

Net interest income ('NII') increased by HK$28,739m, or 29%. Excluding the unfavourable foreign exchange impact, net interest income increased by HK$30,715m, or 32%, primarily driven by Hong Kong with wider customer deposit spreads and higher reinvestment yields as market interest rates increased, coupled with balance sheet growth. Net interest income in Singapore also increased, reflecting the favourable impact of the higher market interest rates.

Average interest-earning assets increased by HK$416bn, or 6%, driven by Hong Kong, from growth in financial investments and reverse repurchase agreements.

Net interest margin ('NIM') increased by 30 basis points ('bps'), with increases noted across the region, including Hong Kong, Singapore and Malaysia with higher market interest rates compared to the prior year.

As a result, the NIM at the Bank's operations in Hong Kong increased by 34 bps to 1.09%, and at Hang Seng Bank, the NIM increased by 30 bps to 1.89%.

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

	2022	2021
	HK$m	HK$m
Insurance manufacturing operations[1]		
Net interest income	17,701	16,527
Net fee expense	(4,272)	(3,617)
Net income/(expense) from financial instruments measured at fair value	(14,599)	18,036
Net insurance premium income	80,839	62,135
Change in present value of in-force long-term insurance business	(256)	(1,294)
Other operating income	887	719
Total operating income	80,300	92,506
Net insurance claims and benefits paid and movement in liabilities to policyholders	(70,170)	(76,361)
Net operating income before change in expected credit losses and other credit impairment charges	10,130	16,145
Change in expected credit losses and other credit impairment charges	(36)	(216)
Net operating income	10,094	15,929
Total operating expenses	(5,798)	(3,464)
Operating profit	4,296	12,465
Share of profit in associates and joint ventures	139	137
Profit before tax	4,435	12,602
Annualised new business premiums of insurance manufacturing operations	15,420	19,136
Distribution income earned by the group's bank channels	4,437	4,135

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 insurance manufacturing operations decreased by HK$8,167m, or 65%, driven by unfavourable equity markets in the year compared to favourable markets in 2021, partially offset by higher new business volumes.

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

Net income from financial instruments measured at fair value decreased, mainly from losses on the equity portfolio held to support insurance and investment contracts in Hong Kong, due to the unfavourable equity markets.

Net insurance premium income increased from higher sales volumes mainly in Hong Kong which included a higher proportion of single premium business in its product mix, and in Singapore following the acquisition of AXA Singapore during 2022.

The favourable movement of HK$1,038m in PVIF compared to 2021 reflected increases in Hong Kong from the value of new business written and the one-off gain from a pricing update for policyholder funds held on deposit to reflect the cost of provision of these services. This was partly offset by the adverse assumption changes and experience variances in Hong Kong and Singapore, primarily due to interest rates movements.

To the extent losses are attributable to policyholders, there is an offsetting movement reported under '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$6,191m, or 8%, primarily due to a decline in returns on financial assets supporting contracts where the policyholder is subject to part or all of the investment risk, mainly in Hong Kong. This was partially offset by higher new business volumes in Hong Kong.

Annualised new business premiums ('ANP') decreased by HK$3,716m, or 19%, mainly in Hong Kong due to a change in product mix towards single premium new business, partially offset by higher ANP from business growth in mainland China and the inclusion of the results of AXA Singapore.

Balance sheet commentary compared with 31 December 2021

(Unaudited)

The consolidated balance sheet as at 31 December 2022 is set out in the Consolidated Financial Statements.

Gross loans and advances to customers decreased by HK$128bn, or 3%. Excluding the unfavourable foreign exchange translation effects of HK$90bn, gross loans and advances to customers decreased by HK$38bn. This was driven by a decrease in corporate and commercial lending of HK$88bn, primarily in Hong Kong, partly offset by increases in Australia, Japan and mainland China. The residential mortgage book increased by HK$35bn, mainly in Hong Kong and Australia, coupled with increases in lending to non-bank financial institutions of HK$29bn mainly in Korea, Hong Kong and India.

Total gross impaired loans and advances as a percentage of gross loans and advances stood at 1.69% at the end of 2022 (2021: 1.11%). The change in expected credit losses as a percentage of average gross customer advances was 0.40% for 2022 (2021: 0.18%), reflecting the impact of the deterioration in quality in the mainland China CRE portfolio.

Interests in associates and joint ventures

At 31 December 2022, 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 set out 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. Impairment, if determined, would be recognised in the income statement. The impact on group's common equity tier 1 ratio is expected to be minimal in the event of an impairment, as the adverse impact on common equity tier 1 capital from the impairment would be partly offset by the favourable impact from a lower carrying amount. 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 decreased by HK$63bn, or 1%, to HK$6,114bn. Excluding the unfavourable foreign exchange translation effects of HK$110bn, customer deposits increased by HK$47bn. The advances-to-deposits ratio was 60.6% at the end of the year (2021: 62.2%).

Shareholders' equity grew by HK$19bn to HK$875bn at 31 December 2022, mainly reflecting the current year's profit, net of dividend payments, coupled with the issuance of new ordinary shares and additional tier 1 capital instruments. These were partly offset by a decrease in foreign exchange reserves due to depreciation of various foreign currencies against the Hong Kong dollar.

Risk

Our approach to risk

(Unaudited)

Our risk appetite

We recognise the importance of a strong culture, which refers to our shared attitudes, beliefs, values and standards that shape behaviours including those 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 risks, 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 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.
- We consider and, where appropriate, mitigate reputational risk that may arise from our business activities and decisions.
- We monitor non-financial risk exposure against risk appetite, including inadequate or failed internal processes, people and systems, or events that impact our customers or can lead to sub-optimal returns to shareholders, censure, or reputational damage.

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 banking 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 regularly 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 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 any 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 material banking 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 22.

The implementation of our business strategy 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 effective 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 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 actively review and enhance our risk management framework and 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 and Compliance 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 Executive Officers group Chief Financial Officer group Chief Compliance Officer group Head of Internal Audit Chief Executive Officer of Hang Seng Bank Limited All other group Executive Committee members	• 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 and Compliance function

The group's Risk sub-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 sub-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 sub-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 and 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 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 sub-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.

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 analysis 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 required by 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 2022

We actively manage the risks related to macroeconomic uncertainties including inflation, fiscal and monetary policy, the Russia-Ukraine war, broader geopolitical uncertainties, the continued risks resulting from the Covid-19 pandemic, as well as other key risks described in this section.

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

- We continued to improve our risk governance decision making, particularly with regard to the governance of treasury risk to ensure senior executives have appropriate oversight and visibility of macroeconomic trends around inflation and interest rates.
- We adapted our interest rate risk management strategy as market and official interest rates increased in reaction to inflationary pressures.
- We began a process of enhancement of our country credit risk management framework in order to strengthen our control of risk tolerance and appetite at a country level.
- We continued to develop our approach to emerging risk identification and management, including the use of forward-looking indicators to support our analysis.
- We enhanced our enterprise risk reporting processes to place a greater focus on our emerging risks, including by capturing the materiality, oversight and individual monitoring of these risks.
- We further strengthened our third-party risk policy and processes to improve control and oversight of our material third parties to maintain our operational resilience, and to meet new and evolving regulatory requirements.
- We made progress with our comprehensive regulatory reporting programme to strengthen our global processes, improve consistency, and enhance controls.
- We have progressed with the simplification and reshaping of initiatives to ensure the we have a sustainable cost base, a resilient control environment and the skills and capabilities to support the global businesses.
- We continued to embed, the governance and oversight around model adjustments and related processes for HKFRS 9 models and Sarbanes-Oxley controls.
- We commenced a programme to enhance our framework for managing the risks associated with machine learning and artificial intelligence ('AI').
- Through our dedicated climate risk programme, we continued to embed climate considerations throughout the organisation, including updating the scope of our programme to cover all risk types, expanding the scope of climate related training and developing new climate risk metrics to monitor and manage exposures, and the development of our internal climate scenario exercise.
- We continued to improve the effectiveness of our financial crime controls, deploying advanced analytics capabilities into new markets. We are refreshing our financial crime policies, ensuring they remain up-to-date and address changing and emerging risks. We continue to monitor regulatory changes.

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. We update our top and emerging risks as necessary.

Our current top and emerging risks are as follows:

Externally driven

Geopolitical and macroeconomic risks

(Unaudited)

The Russia-Ukraine war has had far-reaching geopolitical and economic implications. The group is monitoring the impacts of the war and continues to respond to the extensive sanctions and trade restrictions that have been imposed, noting the challenges that arise in implementing the complex, novel and ambiguous aspects of certain of these sanctions. Sanctions were targeted against numerous Russian government officials and politically exposed individuals. Russia has implemented certain countermeasures in response. Further sanctions and counter sanctions in connection with Russia may adversely affect the group, its customers and the markets in which the group operates by creating regulatory, reputational and market risks.

Global commodity markets have been significantly impacted by the Russia-Ukraine war and localised Covid-19 outbreaks, leading to continued supply chain disruptions. This has resulted in product shortages appearing across several regions, and increased prices for both energy and non-energy commodities, such as food. We do not expect these to ease significantly in the near term. In turn, this has had a significant impact on global inflation.

Rising global inflation has prompted central banks to tighten monetary policy. The combined pressure of inflation and interest rate rises may lead to pressures on customers and their ability to repay debt. During 2022, the US Federal Reserve Board ('FRB') delivered a cumulative 425 basis points ('bps') increase in the Federal Funds rate. The Hong Kong dollar ('HKD') exchange rate peg against the US dollar means that HKD interest rates are expected to rise in line with respective US rates, yet HKD interbank rates lagged increases in US dollar interest rates during 2022 as the supply of local currency remained strong. The spread between the two is expected to narrow as the Hong Kong Aggregate Balance, a gauge of local interbank liquidity, fell below the HKD 100 billion mark. Interest-rate futures suggest an expectation that the FRB will ease monetary policy slightly beyond the six-month horizon. However, should central banks remain on a trajectory of continued monetary tightening, a realignment of market expectations could cause turbulence in financial asset prices.

We continue to monitor our risk profile closely in the context of uncertainty over global macroeconomic policies. Higher inflation and interest rate expectations around the world, and the resulting economic uncertainty, have had an impact on ECL. Our Central scenario used to calculate credit impairment assumes low growth and a higher inflation environment across many of our key markets. However, there is a high degree of risk and uncertainty associated with economic forecasts in the current environment. The degree of uncertainty varies by market, depending on exposure to commodity price increases, supply chain constraints, the monetary policy response to inflation and the public health policy response to the Covid-19 pandemic. 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 page 37.

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 US-China relationship 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. These include the freezing of assets of government officials, and the implementation of investment and import/export restrictions targeting certain Chinese companies.

There is a continued risk of additional sanctions being imposed by the US and other governments in relation to human rights and other issues with China, and this could create a more complex operating environment for the group and its customers.

China has in turn announced a number of its own sanctions and trade restrictions that target, or provide authority to target, foreign individuals and companies. China has also promulgated laws that provide a legal framework for imposing further sanctions and export restrictions.

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 dialogue with our regulators in various jurisdictions on the impact of legal and regulatory obligations on our business and customers.

Expanding data privacy, national security 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, and degrade our enterprise-wide financial crime risk management capabilities.

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 being taken 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 continue to manage sanctions and trade restrictions through the use of, and enhancements to, our existing controls.
- We have taken steps, where necessary, to enhance physical security in geographical areas deemed to be at high risk from terrorism and military conflicts.

Technology and cyber security risk

(Unaudited)

We operate an extensive and complex technology landscape, which must remain resilient in order to support customers, the group and markets in the region. Risks arise where technology is not understood, maintained, or developed appropriately. Together with other organisations, we continue to operate in an increasingly hostile cyber threat environment. These threats include potential unauthorised access to customer accounts, attacks on our systems or those of our third-party suppliers and require ongoing investment in business and technical controls to defend against them.

Mitigating actions

- We continue to invest in transforming how software solutions are developed, delivered and maintained. We invest both to improve system resilience and test service continuity. We continue to ensure security is built into our software development life cycle and improve our testing processes and tools.
- We continue to upgrade our IT systems, simplify our service provision and replace older IT infrastructure and publications.
- We continually evaluate threat levels for the most prevalent cyber-attack types and their potential outcomes. To further protect the group and our customers and help ensure the safe expansion of our global businesses, we continue to 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 markets to help ensure appropriate visibility and governance of the risk and mitigating actions.
- The Group participates globally in industry bodies and working groups to collaborate on tactics employed by cyber-crime groups and to collaborate in defending, detecting and preventing cyber-attacks on financial organisations.

Financial crime risk

(Unaudited)

Financial institutions remain under considerable regulatory scrutiny regarding their ability to prevent and detect financial crime which continues to evolve. Challenges include managing conflicting laws and approaches to legal and regulatory regimes, and implementing the unprecedented volume and diverse set of sanctions notably as a result of the Russia-Ukraine war.

Amid rising inflation and increasing cost of living pressures, we face increasing regulatory expectations with respect to increases in internal and external fraud and the abuse of vulnerable customers.

The digitisation of financial services continues to have an impact on the payments ecosystem, including new market entrants and payment mechanisms, not all of which are subject to the same level of regulatory scrutiny or regulations as financial institutions. This presents ongoing challenges in terms of maintaining required levels of payment transparency, notably where financial institutions serve as intermediaries. Developments around digital assets and currencies have continued at pace, with an increasing regulatory and enforcement focus.

Expectations with respect to the intersection of ESG issues and financial crime as our organisation, customers and suppliers transition to net zero, continue to increase, focused on potential 'greenwashing', human rights issues and environmental crimes. In addition, climate change itself could heighten risks linked to vulnerable migrant populations in countries where financial crime is already more prevalent.

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 continue to manage sanctions and trade restrictions through the use of, and enhancements to, our existing controls.
- We are strengthening our fraud 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, as well as risks associated with direct and indirect exposure to digital assets and currencies, in an effort to ensure our financial crime controls remain appropriate.
- We are assessing our existing policies and control framework in an effort 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.

Ibor transition

(Unaudited)

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

The publication of sterling, Swiss franc, euro and Japanese yen (JPY) London interbank offered rate ('Libor') interest rate benchmarks, as well as Euro Overnight Index Average ('Eonia'), ceased from the end of 2021. Our Ibor transition programme, which is tasked with the development of near risk-free replacement rate ('RFR') products and the transition of legacy Ibor products, has continued to support the transition of a limited number of remaining contracts in sterling and JPY Libor, which were published using a 'synthetic' interest rate methodology during 2022. Following the publication of 'synthetic' JPY Libor after 31 December 2022, and the announcements by the Financial Conduct Authority ('FCA') in September and November 2022 that 'synthetic' sterling Libor rates will cease to be published on 31 March 2023 or 31 March 2024, depending on setting, we have or are prepared to transition or remediate the remaining few contracts outstanding as at 31 December 2022 in advance of these dates.

For the cessation of the publication of US dollar Libor and other regional rates demising at dates ('demising regional rates') from 30 June 2023, we have implemented the majority of required processes, technology and RFR product capabilities in preparation for upcoming market events, and continue to transition outstanding legacy contracts through the first half of 2023. We have completed the transition of the majority of our uncommitted lending facilities and continue to make steady progress with the transition of the outstanding legacy committed lending facilities. Transition of our derivatives portfolio is progressing well with most clients reliant on industry mechanisms to transition to RFRs. For the limited number of bilateral derivatives trades where an alternative transition path is required, client engagement is continuing. For certain products and contracts, including bonds and syndicated loans, we remain reliant on the continued support of agents and third parties, but we continue to progress those contracts requiring transition. We will continue to monitor contracts that may be potentially more challenging to transition and need to rely upon legislative solutions. Additionally, following the FCA's consultation in November 2022 proposing that US dollar Libor is to be published using a 'synthetic' methodology for a defined period, we will continue to work with our clients to support them through the transition of their products if transition is not completed by 30 June 2023.

For the group's own debt securities issuances, we continue to have non-capital loss absorbing capacity ('LAC') instruments in US dollar and JPY where the terms provide for an Ibor benchmark to be used to reset the coupon rate if the group chooses not to redeem them on their call dates, the earliest of which is July 2023. We remain mindful of the various factors that impact on the Ibor remediation strategy for our non-capital LAC instruments, including but not limited to timescales for cessation of relevant Ibor rates, constraints relating to the governing law of outstanding instruments, the potential relevance of legislative solutions and industry best practice guidance.

For US dollar Libor, demising regional rates and other demising Ibors, we continue to be exposed to, and actively monitor, risks including:

- regulatory compliance and conduct risks, as the transition of legacy contracts to RFRs or alternative rates, or sales of products referencing RFRs, may not deliver fair client outcomes;
- resilience and operational risks, as changes to manual and automated processes, made in support of new RFR methodologies, and the transition of large volumes of Ibor contracts may lead to operational issues;
- legal risks, as issues arising from the use of legislative solutions and from legacy contracts that the group is unable to transition may result in unintended or unfavourable outcomes for clients and market participants, which could potentially increase the risk of disputes;
- model risk, as there is a risk that changes to our models to replace Ibor-related data, adversely affect the accuracy of model outputs; and
- market risk, because as a result of differences in Libor and RFRs interest rates, we are exposed to basis risk resulting from the asymmetric adoption of rates across assets, liabilities and products.

We will monitor these risks through the remainder of the transition of legacy contracts, with a focus on fair client outcomes. The level of risk is diminishing in line with our process implementation and continued transition of contracts. Throughout 2023, we continue to be committed to engaging with our clients and investors to complete an orderly transition of contracts that reference the remaining demising Ibors.

Mitigating actions

- The Group's 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.
- We have dedicated teams in place to support the transition.
- We have actively transitioned legacy contracts and ceased new issuance of Libor and demising regional rate based contracts, other than those allowed under regulatory exemptions, with implementation of 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) represent 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	JPY Libor	Sibor	GBP Libor	Others[1]
At 31 Dec 2022	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**
Non-derivative financial assets[2]	**172,370**	**—**	**30,338**	**938**	**4,474**
Non-derivative financial liabilities	**120,096**	**9,192**	**—**	**—**	**264**
Derivative notional contract amount	**8,506,925**	**—**	**—**	**—**	**435,263**
At 31 Dec 2021					
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

1 *Comprises financial instruments referencing other significant benchmark rates yet to transition to alternative benchmarks (Euro Libor, Swiss franc Libor, Mumbai Interbank Forward Offer Rate ('MIFOR'), SGD Swap Offer Rate ('SOR') and Thai baht Interest Rate Fixing ('THBFIX')). Announcements were made by regulators during 2022 on the cessation of the Canadian dollar offered rate ('CDOR') and Mexican Interbank equilibrium interest rate ('TIIE'), which will eventually transition to the Canadian overnight repo rate average ('CORRA') and a new Mexican overnight fall-back rate respectively. Therefore, CDOR and TIIE are included in the current period.*

2 *Gross carrying amount excluding allowances for expected credit losses.*

The amounts in the above table relate to the group's main operating entities where the group has material exposures impacted by Ibor reform including Hong Kong, Singapore, Thailand, Australia, India and Japan. The amounts 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.

Environmental, social and governance risk

(Unaudited)

We are subject to financial and non-financial risks associated with environmental, social and governance ('ESG') related matters. Our current areas of focus are climate risk, nature-related risks and human rights risks. These can impact us both directly and indirectly through our business activities and relationships. For details on how we govern ESG, see page 9.

Focus on climate-related risk continued to increase during 2022, 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.

We could face direct impact, owing to the increase in frequency and severity of weather events and chronic shifts in weather patterns, which could affect our ability to conduct our day-to-day operations.

Our customers may find that their business models fail to align to a net zero economy or face disruption to their operations or deterioration to their assets as a result of extreme weather.

We face increased reputational, legal and regulatory risk as we make progress towards our net zero ambition, with stakeholders likely to place greater focus on our actions such as the development of climate-related policies, our disclosures and financing and investment decisions relating to our ambition.

We will face additional risks if we are perceived to mislead stakeholders in respect of our climate strategy, the climate impact of a product or service, or the commitments of our customers. Climate risk may also impact model risk, as the uncertain impacts of climate change and data and methodology limitations present challenges to creating reliable and accurate model outputs.

We also face reporting risk in relation to our climate disclosures, as any data, methodologies and standards we have used may evolve over time in line with market practice, regulation or owing to developments in climate science. The use of inaccurate/ incomplete data and models could result in sub optimal decision making. Any changes could result in revisions to our internal frameworks and reported data, and could mean that reported figures are not reconcilable or comparable year on year. We may also have to reevaluate our progress towards our climate-related targets in future and this could result in reputational, legal and regulatory risks.

There is increasing evidence that a number of nature-related risks beyond climate change, which include risks that can be represented more broadly by impact and dependence 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, ecosystem degradation arising from economic activity 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 the group and our customers. We 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 be transparent about their efforts to identify and respond to the risk of negative human rights impacts arising from their business activities and relationships.

Mitigating actions

- We continue to deepen our understanding of the drivers of climate risk. A dedicated Climate Risk Oversight Forum is responsible for shaping and overseeing our approach and providing support in managing climate risk. *For further details on the group's ESG governance structure, see page 9*.
- The Group climate risk programme continues to support 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 management.
- In December, the Group published our updated energy policy, covering the oil and gas, power and utilities and hydrogen sectors, as well as expanded our thermal coal phase-out policy, in which we committed to not provide new finance or advisory services specifically for the conversion of existing coal-to-gas-fired power plants, or new metallurgical coal mines (see page 11).
- Climate stress tests and scenarios are being used to further improve our understanding of our risk exposures for use in risk management and business decision making.
- In 2022, building on an earlier review which had identified modern slavery and discrimination as priority human rights issues, the Group conducted the first comprehensive review to refresh our salient human rights issues, which are the human

rights at risk of the most severe negative impact through our business activities and relationships. The review identified five salient human rights issues, including the right to decent work and the right to equality and freedom from discrimination, amongst others. The Group incorporated additional human rights elements into our existing procurement processes and supplier code of conduct, and will continue to develop our in-house capability on human rights. *For further details refer to ESG review on page 9.*

- In 2021, the Group joined several industry working groups dedicated to helping assess and manage nature-related risks, such as the Taskforce on Nature-Related Financial Disclosure ('TNFD'). In 2022, the Group's asset management business also published its biodiversity policy to publicly explain how the Group's analysts address nature-related issues.
- We continue to engage with our customers 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.

For further details on our approach to climate risk management, see 'Climate Risk' on page 61.

For further details on ESG risk management, see 'Financial crime risk environment' on page 24 .

Our ESG review can be found on page 9.

Digitalisation and technological advances

(Unaudited)

Developments in technology and changes to regulations are enabling new entrants to the industry. This challenges the group to continue innovating and taking advantage of new digital capabilities so that we improve how we serve our customers, drive efficiency and adapt our products to attract and retain customers. As a result, we may need to increase our investment in our business to adapt or develop products and services to respond to our customer evolving needs. We also need to ensure that new digital capabilities do not weaken our resilience.

Mitigating actions

- We continue to monitor this emerging risk, as well as the advances in technology, and changes in customer behaviours to understand how these changes may impact our business.
- We assess new technologies to develop appropriate controls and maintain resilience.
- We closely monitor and assess financial crime and the impact on payment transparency and architecture.

Internally driven

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

(Unaudited)

Our global businesses and functions in all of our markets are exposed to risks associated with workforce capacity challenges, including challenges to retain, develop and attract high-performing employees in key labour markets, and compliance with employment laws and regulations. Changed working arrangements, and the residual impact of local Covid-19 restrictions and health concerns during the pandemic have also affected employee mental health and well-being.

Mitigating actions

- We promote a diverse and inclusive workforce and provide active health and well-being support. We continue to build our speak-up culture through active campaigns.
- We monitor the size and shape of our workforce and levels of employee attrition, and each business and function have workforce plans in place to ensure effective hiring and forecasting to meet business demands.
- 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 the group 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.

Risks arising from the receipt of services from third parties

(Unaudited)

We use third parties to provide a range of goods and services. Risks arising from the use of third party providers and their supply chain may be harder to identify. 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 support our customers and meet regulatory expectations.

Mitigating actions

- We continue to monitor the effectiveness of the controls operated by our third-party through obtaining third-party control reports. We have made further enhancements to our framework to ensure risks associated with these arrangements are understood and managed effectively by our global businesses, global functions and regions.
- We continue to enhance the effective management of our intra-group arrangements as we have for external third-party arrangements using the same control standards.
- We are implementing the changes required by the new regulations as defined by our regulators.

Model risk

(Unaudited)

Model risk arises whenever business decision making includes reliance on models. We use models in both financial and non-financial contexts, as well as in a range of business applications such as customer selection, product pricing, financial crime transaction monitoring, creditworthiness evaluation and financial reporting. Assessing model performance is a continuous undertaking. Models can need redevelopment as market conditions change. Significant increases in global inflation and interest rates have impacted the reliability and accuracy of both credit and traded risk models, such as the value at risk model and HKFRS 17 models.

We continued to prioritise the redevelopment of internal ratings-based ('IRB') and internal model methods ('IMM') models, in relation to counterparty credit, as part of the IRB repair and Basel III programmes with a key focus on enhancing the quality of data used as model inputs. A number of these models have been submitted to the UK's Prudential Regulation Authority ('PRA'), the Hong Kong Monetary Authority ('HKMA') and other key regulators for feedback and approval is in progress. Some IMM and internal model approach ('IMA') models have been approved for use, and feedback has been received for some IRB models. Climate risk modelling is a key focus for the group as HSBC's commitment to sustainability has become a critical part of the group's strategy.

Model risk remains a key area of focus as regulatory scrutiny in this space remains strong with local regulatory exams taking place in many jurisdictions and further developments in policy expected from many regulators, including the PRA and HKMA.

Mitigating actions

- We have continued to embed the enhanced monitoring, review and challenge of loss model performance through our Model

Risk Management sub-function as part of a broader quarterly process to determine loss levels. The Model Risk Management team aims to provide strong and effective review and challenge of any future redevelopment of these models.

- Model Risk Management works closely with businesses to ensure that IRB/IMM/IMA models in development meet risk management, pricing and capital management needs. Global Internal Audit provides assurance over the risk management framework for models.
- Additional assurance work is performed by the model risk governance teams, which act as second lines of defence. The teams test whether controls implemented by model users comply with model risk policy and if model risk standards are adequate.
- The group engagement strategy was rolled out to enhance the understanding of model inventory, model limitations and risk controls across the region. Targeted briefing sessions were conducted to strengthen the awareness of models used and the engagement between the model user community and model developing areas.
- Models using advanced machine learning techniques are validated and monitored to ensure that risks that are determined by the algorithms have adequate oversight and review. A framework to manage the range of risks that are generated by these advanced techniques is being developed that recognises the multi-disciplinary nature of these risks.

Data risk

(Unaudited)

We use multiple systems and growing quantities of data to support our customers. Risk arises if data is incorrect, unavailable, misused, or 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 239 guidelines '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 proactively monitor the quality, availability and security of data that supports our customers and internal processes. We work towards resolving any identified data issues in a timely manner.
- We have made improvements to our data policies. We are implementing an updated control framework (including trusted sources, data flows, and data quality) to enhance the end-to-end management of data risk.
- The Group has established a global data utility and continue to simplify and unify data management activities across the Group.
- We protect customer data through 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 AI.
- We educate our employees on data risk and data management. We delivered regular global mandatory training on how to protect and manage data appropriately.

Change execution risk

(Unaudited)

We have continued 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

- In 2022, we added change execution risk to our risk taxonomy and control library, so that it could be defined, managed, reported and overseen in the same way as our other material risks.
- The Group Transformation Oversight Executive Committee oversees the prioritisation, strategic alignment and management of execution risk for all change portfolios and initiatives.

Areas of special interest

(Unaudited)

During 2022, 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 macroeconomic outlook.

Risks related to Covid-19

Covid-19 remains a risk to our customers and organisation. However, the policy for broad lockdowns and public health restrictions has been eased following successful vaccine rollouts, and as societies have adapted. Countries continue to differ to a degree in their approach, although China has recently reversed many restrictions on activity and mobility.

In most countries, high vaccination rates and acquired population immunity have reduced the public health risks and the need for restrictions. In mainland China and Hong Kong, however, adherence to more stringent public health restrictions had adverse economic implications through much of 2022. Government imposed lockdowns of major cities in mainland China and restrictions on travel, adversely affected global tourism and supply chains.

With the relaxation of restrictions in December 2022, the prospect of a sustained recovery has emerged, given the opportunity for the persistent disruptions to activity to abate and for travel and tourism to resume. Such a recovery would have global implications given the size of the Chinese economy. Recovery in China raises the prospect of stronger global growth, although that could also lead to renewed inflationary pressures as demand for commodities and other goods rises. There are still short term risks, however, as the recent surge in infections may dampen confidence and activity, while there are also fears that the surge in infections risks giving opportunity for the emergence of a new variant of the virus.

We continue to monitor the situation closely, and given the continuing uncertainties related to the post-pandemic landscape, additional mitigating actions may be required.

Mainland China real estate sector

The policy measures issued in the latter part of 2022 have increased liquidity and the supply of credit to the mainland China real estate sector. Recovery in the underlying domestic residential demand and improved customer sentiment will be necessary to support the ongoing health of the sector. We continue to monitor the situation closely, notably the risk of further idiosyncratic real estate defaults and associated impact on market, investor and consumer sentiment.

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 the external environment.	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 portfolios and non-trading portfolios. Market risk for non-trading portfolios is discussed in the Treasury risk section on page 53. Market risk exposures arising from our insurance operations are discussed on page 67.	Market risk is: • measured using sensitivities, value at risk ('VaR') and stress testing, giving a detailed picture of potential gains and losses for a range of market movements and scenarios, as well as tail risks over specified time horizons; • monitored using VaR, stress testing and other measures; and • managed using risk limits approved by the Board for the group and the various global businesses.
Climate risk		
Climate risk relates to the financial and non-financial impacts that may arise as a result of climate change and the move to a greener economy.	Climate risk is likely to materialise through: • physical risk, which arises from the increased frequency and severity of weather events; • transition risk, which arises from the process of moving to a low-carbon economy; and • greenwashing risk, which arises from the act of knowingly or unknowingly misleading stakeholders regarding our strategy relating to climate, the climate impact/benefit of a produce or service, or the climate commitments or performance of our customers.	Climate risk is: • measured using a variety of risk appetite metrics and Key Management Indicators, which assess the impact of climate risk across the risk taxonomy; • monitored using stress testing; and • managed through adherence to risk appetite thresholds and via specific policies.
Resilience risk		
Resilience risk is the risk of sustained and significant business disruption, execution, delivery or physical security or safety events, causing the inability to provide critical services to our customers, affiliates and counterparties.	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.

Description of risks – banking operations (continued)

(Audited)

Risks	Arising from	Measurement, monitoring and management of risk
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 failure to observe the relevant laws, codes, rules and regulations and can manifest itself in poor market or customer outcomes and lead to fines, penalties and reputational damage to our business.	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.
Financial crime risk		
Financial crime risk is the risk that HSBC's products and services will be exploited for criminal activity. This includes fraud, bribery and corruption, tax evasion, sanctions and export control violations, money laundering, terrorist financing and proliferation financing.	Financial crime risk arises from day-to-day banking operations involving customers, third parties and employees.	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 risk of inappropriate or incorrect business decisions arising from the use of models that have been inadequately designed, implemented or used, or that the 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 many of the same risks as our banking operations, and these are covered by the group's risk management processes. However, 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 risk 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 2022

(Unaudited)

We made need based changes to the policies and practices for the management of credit risk in 2022 to manage evolving situations. We continued to apply the requirements of HKFRS 9 'Financial Instruments' within the Credit Risk sub-function. For certain retail portfolios we enhanced the significant increase in credit risk ('SICR') approach to capture relative movements in PD since origination.

For our retail portfolios, we adopted the European Banking Authority 'Guidelines on the application of definition of default' during 2022 and, for our wholesale portfolios, these guidelines were adopted during 2021. Adoption of these guidelines did not have a material impact on our portfolios and comparative disclosures have not been restated.

We actively managed the risks related to macroeconomic uncertainties, including inflation, fiscal and monetary policy, the Russia-Ukraine war, broader geopolitical uncertainties, and the continued risks resulting from the Covid-19 pandemic and developments in the mainland China CRE sector.

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

Governance

(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. The key site and group approvals at the group Impairment Committee are subsequently reported to the global business impairment committee for final approval of the Group's ECL for the period.

Required members of the group Impairment Committee are the group's Chief Risk Officer, Chief Credit Officer, Wealth and Personal Banking Chief Risk Officer, as well as the group's Chief Financial Officer and 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. As such, 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)

A 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 Point-in-time ('PIT') Probability of Default ('PD').*

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

Forborne loans and forbearance

(Audited)

Forbearance measures consist of concessions towards an obligor that is experiencing or is about to experience difficulties in meeting its financial commitments.

We continue to class loans as forborne when we modify the contractual payment terms due to having significant concerns about the borrowers' ability to meet contractual payments when they were due.

In 2022, we expanded our definition of forborne to capture non-payment-related concessions, such as covenant waivers. For our wholesale portfolio, we began identifying non-payment-related concessions in 2021 when our internal policies were changed. For our retail portfolios, we began identifying them during 2022.

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

Credit quality of forborne loans

(Unaudited)

For wholesale lending, where payment-related forbearance measures result in a diminished financial obligation, or if there are other indicators of impairment, the loan will be classified as credit impaired if it is not already so classified. All facilities with a customer, including loans that have not been modified, are considered credit impaired following the identification of a payment-related forborne loan. For retail lending, where a material concession has been granted, the loan will be classified as credit impaired. In isolation, non-payment forbearance measures may not result in the loan being classified as credit impaired unless combined with other indicators of credit impairment. These are classed as performing forborne loans for both wholesale and retail lending.

Wholesale and retail lending forborne 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. Any forborne loans not considered credit impaired will remain forborne for a minimum of two years from the date that credit impairment no longer applies. For wholesale and retail lending, any forbearance measures granted on a loan already classed as forborne results in the customer being classed as credit impaired.

Forborne loans and recognition of expected credit losses

(Audited)

Forborne loans expected credit loss assessments reflect the higher rates of losses typically experienced with these types of loans such that they are in stage 2 and stage 3. The higher rates are more pronounced in unsecured retail lending requiring further segmentation. For wholesale lending, forborne 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 forborne loans.

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)

	2022		2021	
	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	**3,745,113**	**(39,964)**	3,872,956	(32,017)
Loans and advances to banks	**519,068**	**(44)**	432,286	(39)
Other financial assets measured at amortised cost	**2,768,171**	**(681)**	2,114,301	(639)
– cash and balances at central banks	**232,748**	**(8)**	276,857	—
– items in the course of collection from other banks	**28,557**	**—**	21,632	—
– Hong Kong Government certificates of indebtedness	**341,354**	**—**	332,044	—
– reverse repurchase agreements – non-trading	**927,976**	**—**	803,775	—
– financial investments	**975,174**	**(465)**	502,997	(433)
– prepayments, accrued income and other assets[2]	**262,362**	**(208)**	176,996	(206)
Amounts due from Group companies	**129,357**	**—**	99,604	—
Total gross carrying amount on-balance sheet	**7,161,709**	**(40,689)**	6,519,147	(32,695)
Loans and other credit related commitments	**1,892,401**	**(864)**	1,826,335	(580)
Financial guarantee	**35,646**	**(63)**	34,302	(44)
Total nominal amount off-balance sheet[3]	**1,928,047**	**(927)**	1,860,637	(624)
	9,089,756	**(41,616)**	8,379,784	(33,319)

	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]	**1,239,527**	**(344)**	1,541,909	(121)

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 81, 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	3,219,645	462,083	62,763	622	3,745,113	(2,755)	(11,200)	(25,818)	(191)	(39,964)	0.1	2.4	41.1	30.7	1.1
– personal	1,448,675	68,001	8,708	–	1,525,384	(1,080)	(2,830)	(1,459)	–	(5,369)	0.1	4.2	16.8	–	0.4
– corporate[2]	1,492,792	370,199	53,141	620	1,916,752	(1,414)	(8,045)	(24,351)	(189)	(33,999)	0.1	2.2	45.8	30.5	1.8
– financial institutions[3]	278,178	23,883	914	2	302,977	(261)	(325)	(8)	(2)	(596)	0.1	1.4	0.9	100.0	0.2
Loans and advances to banks	516,934	2,134	–	–	519,068	(39)	(5)	–	–	(44)	0.0	0.2	–	–	0.0
Other financial assets	2,739,060	28,646	464	1	2,768,171	(391)	(231)	(59)	–	(681)	0.0	0.8	12.7	–	0.0
Loan and other credit-related commitments	1,821,355	65,288	5,758	–	1,892,401	(427)	(397)	(40)	–	(864)	0.0	0.6	0.7	–	0.0
– personal	1,321,908	22,721	4,940	–	1,349,569	(18)	(1)	–	–	(19)	0.0	0.0	–	–	0.0
– corporate[2]	383,717	39,191	818	–	423,726	(394)	(389)	(40)	–	(823)	0.1	1.0	4.9	–	0.2
– financial institutions[3]	115,730	3,376	–	–	119,106	(15)	(7)	–	–	(22)	0.0	0.2	–	–	0.0
Financial guarantee	30,738	4,840	68	–	35,646	(18)	(17)	(28)	–	(63)	0.1	0.4	41.2	–	0.2
– personal	4,176	6	1	–	4,183	–	–	–	–	–	–	–	–	–	–
– corporate[2]	24,093	4,483	67	–	28,643	(18)	(17)	(28)	–	(63)	0.1	0.4	41.8	–	0.2
– financial institutions[3]	2,469	351	–	–	2,820	–	–	–	–	–	–	–	–	–	–
At 31 Dec 2022	**8,327,732**	**562,991**	**69,053**	**623**	**8,960,399**	**(3,630)**	**(11,850)**	**(25,945)**	**(191)**	**(41,616)**	**0.0**	**2.1**	**37.6**	**30.7**	**0.5**

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 2022												
Loans and advances to customers at amortised cost	462,083	*450,189*	*8,816*	*3,078*	(11,200)	*(10,645)*	*(198)*	*(357)*	2.4	*2.4*	*2.2*	*11.6*
– personal	68,001	*58,182*	*7,202*	*2,617*	(2,830)	*(2,308)*	*(172)*	*(350)*	4.2	*4.0*	*2.4*	*13.4*
– corporate and commercial	370,199	*368,249*	*1,491*	*459*	(8,045)	*(8,012)*	*(26)*	*(7)*	2.2	*2.2*	*1.7*	*1.5*
– non-bank financial institutions	23,883	*23,758*	*123*	*2*	(325)	*(325)*	*–*	*–*	1.4	*1.4*	*–*	*–*

1 Days past due ('DPD').
2 The DPD 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	3,349,434	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.

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 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 DPD 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 and is net of allowance for ECL. For financial guarantees and other guarantees granted, it is the maximum amount that we would have to pay if the guarantees were called upon. For loan commitments and other credit-related commitments, it is generally the full amount of the committed facilities.

Other credit risk mitigants

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

Collateral available to mitigate credit risk is disclosed in the Collateral section on pages 49-52.

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

(Audited)

	2022 HK$m	2021 HK$m
Cash and balances at central banks	**232,739**	276,857
Items in the course of collection from other banks	**28,557**	21,632
Hong Kong Government certificates of indebtedness	**341,354**	332,044
Trading assets	**435,358**	478,030
Derivatives	**502,771**	365,167
Financial assets designated at fair value	**39,495**	33,274
Reverse repurchase agreements – non-trading	**927,976**	803,775
Loans and advances to banks	**519,024**	432,247
Loans and advances to customers	**3,705,149**	3,840,939
Financial investments	**2,214,236**	2,044,473
Amounts due from Group companies	**140,546**	112,719
Other assets	**267,972**	180,757
Total on-balance sheet exposure to credit risk	**9,355,177**	8,921,914
Total off-balance sheet	**3,587,491**	3,506,253
Financial guarantees and other similar contracts	**396,491**	377,487
Loan and other credit-related exposure	**3,191,000**	3,128,766
At 31 Dec	**12,942,668**	12,428,167

Total exposure to credit risk remained broadly unchanged in 2022 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)

Amid a deterioration in the economic and geopolitical environment, management judgements and estimates continued to be subject to a high degree of uncertainty in relation to assessing economic scenarios for impairment allowances in 2022.

Inflation, economic contraction and high interest rates combined with an unstable geopolitical environment and the effects of global supply chain disruption contributed to elevated levels of uncertainty during the year.

At 31 December 2022, as a result of this uncertainty, additional stage 1 and 2 allowances have been recognised; while management judgement and estimates continue to reflect a degree of caution both in the selection of economic scenarios and their weightings, and in the use of management judgemental adjustments, described in more detail below.

The recognition and measurement of ECL involve 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 global 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 HSBC's top and emerging risks.

Three of the scenarios are drawn from consensus forecasts and distributional estimates. The Central scenario is deemed the 'most likely' scenario, 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 consensus Downside and the consensus Upside scenarios are each constructed to be consistent with a 10% probability. The Downside 2 is constructed with 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. However, management may depart from this probability-based scenario weighting approach when the economic outlook is determined to be particularly uncertain and risks are elevated.

In light of ongoing risks, management deviated from this probability weighting in all markets in the fourth quarter of 2022.

Description of economic scenarios

The economic assumptions presented in this section have been formed by HSBC with reference to external forecasts and estimates, specifically for the purpose of calculating ECL.

Global economic growth is slowing and economic forecasts for our main markets deteriorated in the fourth quarter. In North America and Europe, high inflation and rising interest rates are reducing real household incomes and raising business costs, dampening consumption and investment and lowering growth expectations. The effects of higher interest rate expectations and lower growth are also evident in asset price expectations and house prices forecasts, in particular, have been lowered significantly.

In Asia, economic forecasts have also been lowered, with expectations for Hong Kong and mainland China trimmed following weaker than expected third quarter GDP growth and mainland China's adherence to stringent pandemic-related public health policy response. That policy saw an abrupt reversal during December, but amid a very high degree of uncertainty, to both the upside and downside, forecasts are slow to adjust. The increased uncertainty caused by the lifting of restrictions has been reflected in management's assessment of scenario probabilities.

Economic forecasts remain subject to a high degree of uncertainty. In the fourth quarter, risks to the economic outlook included the persistence of inflation and the consequences that has for monetary policy. Rapid changes to public policy also increased forecast uncertainty. In Asia, the removal of Chinese public health restrictions is a key source of potential upside risk, but with significant near term uncertainty relating to the surge of infection. This policy change could also have global implications.

Geopolitical risks also remain significant and include the possibility of a prolonged and escalating Russia-Ukraine war, and continued differences between the US and other countries with China over a range of economic and strategic issues.

The scenarios used to calculate ECL in the *Annual Report and Accounts 2022* are described below.

The consensus Central scenario

HSBC's Central scenario reflects a low growth and higher inflation environment across many of our key markets. The scenario features an initial period of below-trend GDP growth in most of our main markets as higher inflation and tighter monetary policy causes a squeeze on business margins and households' real disposable income. Growth returns to its long term expected trend in later years as central banks bring inflation back to target.

There are two exceptions: in Hong Kong and mainland China, GDP growth is expected to be stronger in 2023 relative to 2022 following several quarters of negative GDP growth and the suspension of Covid-19 restrictions.

Our Central scenario assumes that inflation peaked in most of our key markets at the end of 2022 but remains high through 2023 before moderating as energy prices stabilise and supply chain disruptions abate. Central banks are expected to keep raising interest rates until midway through 2023. Inflation is forecast to revert to target in most markets, by early 2024.

Global GDP is expected to grow by 1.6% in 2023 in the Central scenario and the average rate of global GDP growth is 2.5% over the five-year forecast period. This is below 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 in European and North American markets continues to weaken. Most major economies are forecast to grow in 2023, but at very low rates. Hong Kong and mainland China are expected to see a recovery in activity from 2022 as Covid19 restrictions are lifted.
- In most markets, unemployment rises moderately from historic lows as economic activity slows. Labour markets remain fairly tight across our key markets.

- Inflation is expected to remain elevated across many of our key markets driven by energy and food prices. Inflation is subsequently expected to converge back towards central banks target rate over the next two years of the forecast.
- Policy interest rates in key markets will continue to rise in the near term but at a slower pace. Interest rates will stay elevated but start to ease as inflation returns to target.
- The West Texas Intermediate oil price is forecast to average $72 per barrel over the projection period.

The Central scenario was first created with forecasts available in November, and reviewed continuously until late December. Probability weights assigned to the Central scenario vary from 55% to 70% and reflect relative differences in risk and uncertainty across markets.

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

Central scenario 2023-2027

	Hong Kong	Mainland China
	%	%
GDP growth rate (annual average rate)		
2023	**2.7**	**4.6**
2024	**3.0**	**4.8**
2025	**2.7**	**4.7**
5 Year average	**2.7**	**4.6**
Unemployment rate (annual average rate)		
2023	**3.7**	**5.2**
2024	**3.5**	**5.1**
2025	**3.4**	**5.0**
5 Year average	**3.4**	**5.0**
House price growth (annual average rate)		
2023	**(10.0)**	**(0.1)**
2024	**(3.0)**	**2.9**
2025	**1.7**	**3.5**
5 Year average	**(1.0)**	**2.9**
Inflation rate (annual average rate)		
2023	**2.1**	**2.4**
2024	**2.1**	**2.2**
2025	**2.0**	**2.2**
5 Year average	**2.1**	**2.2**
Probability	**55.0**	**55.0**

The consensus Upside scenario

Compared with the Central scenario, the consensus Upside scenario features stronger economic activity in the near term, before converging to long-run trend expectations. It also incorporates a faster pace of disinflation than incorporated in the Central scenario.

The scenario is consistent with a number of key upside risk themes. These include faster resolution of supply chain issues; a rapid conclusion to the Russia-Ukraine war; de-escalation of tensions between the US and China; and relaxation of Covid-19 policies in Asia.

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 (annual average rate)	**9.0 (3Q23)**	**10.3 (2Q23)**
Unemployment rate (annual average rate)	**3.0 (4Q23)**	**4.7 (3Q24)**
House price growth (annual average rate)	**1.4 (4Q24)**	**6.9 (4Q24)**
Inflation rate (annual average rate)	**(0.1) (4Q23)**	**0.8 (4Q23)**
Probability	**20.0**	**20.0**

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. For inflation, lower inflation is interpreted as the 'best' outcome.

Downside scenarios

Downside scenarios explore the intensification and crystallisation of a number of key economic and financial risks.

High inflation and a stronger monetary policy response have become key concerns for global growth. In the downside scenarios, supply chain disruptions intensify, exacerbated by an escalation in the spread of Covid-19 and rising geopolitical tensions drive inflation higher.

There also remains a risk that energy and food prices rise further due to the Russia-Ukraine war, exacerbating global inflation and further pressuring household budgets and firm costs.

The risk of inflation expectations becoming detached from Central bank targets also remains a risk. A wage-price spiral triggered by higher inflation and pandemic related labour supply shortages across could put sustained upward pressure on wages, aggravating cost pressures and the squeeze on household real incomes and corporate margins. In turn, it raises the risk of a more forceful policy response from central banks, a steeper trajectory for interest rates and ultimately, deep economic recession.

The risks relating to Covid-19 are centred on the emergence of a new variant with greater vaccine resistance that necessitates the imposition of stringent public health policies. In Asia, despite the re-opening of China in December, management of Covid-19 remains a key source of uncertainty, with the rapid spread of the virus posing a heightened risk of a new variant emerging.

The geopolitical environment also present risks, including:

- a prolonged Russia-Ukraine war with escalation beyond Ukraine's borders; and
- continued differences between the US and other countries with China, which could affect sentiment and restrict global economic activity.

The consensus Downside scenario

In the consensus Downside scenario, economic activity is considerably weaker compared with the Central scenario. In this scenario, GDP growth weakens below the Central scenario, unemployment rates rise and asset prices fall. The scenario features a temporary supply side shock that keeps inflation higher than the baseline, before the effects of weaker demand begin to dominate leading to a fall in commodity prices and to lower inflation.

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 (annual average rate)	**(2.2) (4Q23)**	**(1.2) (4Q23)**
Unemployment rate (annual average rate)	**5.2 (3Q24)**	**5.9 (4Q23)**
House price growth (annual average rate)	**(14.9) (2Q23)**	**(1.9) (1Q23)**
Inflation rate (annual average rate) (min)	**0.3 (4Q24)**	**0.7 (4Q24)**
Inflation rate (annual average rate) (max)	**3.7 (4Q23)**	**4.0 (4Q23)**
Probability	**20.0**	**20.0**

Note: Extreme point in the consensus Downside is 'worst outcome' in the scenario, for example lowest GDP growth and the highest unemployment rate, in the first two years of the scenario. Due to the nature of the shock to inflation in the downside scenarios, both the lowest and the highest point is shown in the tables.

Downside 2 scenario

The Downside 2 scenario features a deep global recession and reflects managements view of the tail of the economic distribution. It incorporates the crystallisation of a number of risks simultaneously, including further escalation of the Russia-Ukraine war, worsening of supply chain disruptions and the emergence of a vaccine-resistant Covid-19 variant that necessitates a stringent public health policy response globally.

This scenario features an initial supply-side shock that pushes up inflation and interest rates higher. This impulse is expected to

prove short lived as a large downside demand pressures causes commodity prices to correct sharply and global price inflation to fall as a severe and prolonged recession takes hold.

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 (annual average rate)	(9.2) (4Q23)	(6.9) (4Q23)
Unemployment rate (annual average rate)	5.8 (1Q24)	6.8 (4Q24)
House price growth (annual average rate)	(18.2) (1Q24)	(18.5) (4Q23)
Inflation rate (annual average rate) (min)	0.6 (4Q24)	1.0 (4Q24)
Inflation rate (annual average rate) (max)	4.3 (4Q23)	4.6 (4Q23)
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 the first two years of the scenario. Due to the nature of the shock to inflation in the downside scenarios, both the lowest and the highest point is shown in the tables.

Scenario weighting

In reviewing the economic conjuncture, the level of risk and uncertainty, 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.

Key consideration in the fourth quarter around uncertainty attached to the Central scenario projections focused on:

- the progression of the Covid-19 pandemic in Asian countries and announcement of removal of Covid-19 measures and travel restrictions in mainland China and Hong Kong;
- further tightening of monetary policy and impact on borrowing costs in interest rate sensitive sectors, such as housing;
- the risks to gas supply security in Europe and subsequent impact on inflation and commodity prices and growth; and
- The ongoing risks to global supply chains.

In mainland China and Hong Kong, the announcement of relaxation of Covid-19 measures and travel restrictions has led to increased uncertainty around the Central scenario projection. It was managements view that easing of policy could increase risks to the upside in the form of increased spending and travel. However, the continuing risks to the downside were also acknowledged given the incipient surge in Covid-19 infections and the potential for a new variant. This led management to assign a combined weighting of 75% to the consensus Upside and Central scenarios in both markets.

Critical accounting estimates and judgements

The calculation of ECL under HKFRS 9 involves significant judgements, assumptions and estimates. The level of estimation uncertainty and judgement has remained elevated since 31 December 2021, including judgements relating to:

- the selection and weighting of economic scenarios, given rapidly changing economic conditions and a wide distribution of economic forecasts. There is judgement in making assumptions about the effects of inflation and interest, global growth, supply chain disruption; and
- estimating the economic effects of those scenarios on ECL, particularly as the historical relationship between macroeconomic variables and defaults might not reflect the dynamics of current macroeconomic conditions.

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 2022, and management judgemental adjustments were still required to support modelled outcomes.

We have developed 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 approach.

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.

This includes refining model inputs and outputs and using adjustments to ECL based on management judgement and higher-level quantitative analysis for impacts that are difficult to model.

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 section 'Credit risk management' on page 31). 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.

The drivers of management judgemental adjustments continue to evolve with the economic environment, and as new risks emerge.

At 31 December 2022, management judgement adjustments reduced by HK$1bn compared with 31 December 2021.

Adjustments related to Covid-19 and for sector specific risks were reduced as scenarios and modelled outcomes better reflected management expectations at 31 December 2022.

Management judgemental adjustments made in estimating the scenario-weighted reported ECL at 31 December 2022 are set out in the following table.

Management judgemental adjustments to ECL as at 31 December 2022[1]

	Retail HK$bn	Wholesale HK$bn	Total HK$bn
Banks, sovereigns government entities and low-risk counterparties[2]	(0.2)	0.2	–
Corporate lending adjustments		3.1	3.1
Retail lending Inflation-related adjustments	0.1		0.1
Other macroeconomic-related adjustments	0.4		0.4
Pandemic-related economic recovery adjustments	–		–
Other retail lending adjustments	0.3		0.3
Total	0.6	3.3	3.9

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

	Retail HK$bn	Wholesale HK$bn	Total HK$bn
Banks, sovereigns, government entities and low-risk counterparties)[2]	0.1	(0.2)	(0.1)
Corporate lending adjustments		4.1	4.1
Retail lending inflation-related adjustments	–		–
Other macroeconomic-related adjustments[3]	(0.4)		(0.4)
Pandemic-related economic recovery adjustments	0.6		0.6
Other retail lending adjustments[3]	0.7		0.7
Total	1.0	3.9	4.9

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 2022 were an increase of ECL of HK$3.3bn for the wholesale portfolio and an increase to ECL of HK$0.6bn for the retail portfolio.

At 31 December 2022, wholesale management judgemental adjustments were an ECL increase of HK$3.3bn (31 December 2021: HK$3.9bn increase).

- Adjustments to corporate exposures increased ECL by HK$3.1bn (31 December 2021: HK$4.1bn increase). These principally reflected the outcome of management judgements for high-risk and vulnerable sectors in some of our key markets. This was supported by credit experts' input, portfolio risk metrics, short- to medium-term risks under each scenario, model performance, quantitative analyses and benchmarks. Considerations include risk of individual exposures under different macroeconomic scenarios and sub-sector analyses. The largest increase in ECL was observed in the real estate sector, including material adjustments to reflect the uncertainty of the higher-risk Chinese commercial real estate exposures, booked in Hong Kong.

At 31 December 2022, retail management judgemental adjustments were an ECL increase of HK$0.6bn (31 December 2021: HK$1.0bn increase):

- Retail lending Inflation-related adjustments increased ECL by HK$0.1bn (31 December 2021: HK$0.0bn). These adjustments addressed where increasing inflation and interest rates were not fully captured by the modelled output.
- Other macroeconomic-related adjustments increased ECL by HK$0.4bn (31 December 2021: HK$0.4bn decrease). These adjustments were primarily in relation to country-specific risks related to future macroeconomic conditions.
- Other retail lending adjustments increased ECL by HK$0.3bn (31 December 2021: $0.7bn increase), reflecting all other data and model and judgemental adjustments.
- Material pandemic-related economic recovery adjustments were removed during the year as scenarios stabilized.

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 (stage 3) obligors. It is generally impracticable to separate the effect of macroeconomic factors in individual assessments of obligors in default. The measurement of stage 3 ECL is relatively more sensitive to credit factors specific to the obligor than future economic scenarios, and loans to defaulted obligors are a small portion of the overall wholesale lending exposure, even if representing the majority of the allowance for ECL. Therefore, the sensitivity analysis to macroeconomic scenarios does not capture the residual estimation risk arising from wholesale stage 3 exposures.

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. 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 risks 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 2022[2]	**HK$m**	**HK$m**
Reported ECL	**7,211**	**2,302**
Consensus scenarios ECL		
Central scenario	**6,386**	**1,887**
Upside scenario	**4,616**	**1,123**
Downside scenario	**10,252**	**3,235**
Alternative (Downside 2) scenario ECL	**16,852**	**9,572**

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		
Central scenario	5,085	881
Upside scenario	3,712	281
Downside scenario	7,674	1,684
Alternative scenarios	14,575	6,286

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 2022, the most significant level of ECL sensitivity related to the judgements over the mainland China offshore commercial 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 (Downside 2) scenario ECL
ECL coverage of loans and advances to customers	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**
At 31 December 2022[2]					
Hong Kong	**2,702**	**2,406**	**1,985**	**4,037**	**6,014**

HKFRS 9 ECL sensitivity to future economic conditions[1]

	Reported ECL	Central Scenario	Upside Scenario	Downside Scenario	Alternative (Downside 2) scenario ECL
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

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.*

At 31 December 2022, Hong Kong mortgages had low levels of reported ECL due to the credit quality of the portfolio. Credit cards and other unsecured lending are more sensitive to economic forecasts, and therefore reflected the highest level of ECL sensitivity during 2022.

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 reflect only the opening and closing position of the financial instrument.

The transfers of financial instruments represent 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 2022	**5,589,480**	**(2,916)**	**529,597**	**(9,737)**	**41,639**	**(19,693)**	**1,558**	**(334)**	**6,162,274**	**(32,680)**
Transfers of financial instruments:	(246,807)	(1,899)	204,008	7,046	42,799	(5,147)	–	–	–	–
– transfers from stage 1 to stage 2	(725,814)	1,072	725,814	(1,072)	–	–	–	–	–	–
– transfers from stage 2 to stage 1	483,955	(2,759)	(483,955)	2,759	–	–	–	–	–	–
– transfers to stage 3	(7,041)	10	(39,526)	5,591	46,567	(5,601)	–	–	–	–
– transfers from stage 3	2,093	(222)	1,675	(232)	(3,768)	454	–	–	–	–
Net remeasurement of ECL arising from transfer of stage	–	1,391	–	(1,645)	–	(400)	–	–	–	(654)
New financial assets originated and purchased	1,854,004	(1,209)	–	–	–	–	200	(18)	1,854,204	(1,227)
Assets derecognised (including final repayments)	(1,180,100)	224	(186,273)	653	(6,023)	1,220	(764)	–	(1,373,160)	2,097
Changes to risk parameters – further lending/repayment	(303,451)	80	9,824	701	(1,357)	768	(294)	20	(295,278)	1,569
Changes in risk parameters – credit quality	–	1,099	–	(8,822)	–	(10,412)	–	214	–	(17,921)
Changes to model used for ECL calculation	–	(31)	–	11	–	(12)	–	–	–	(32)
Assets written off	–	–	–	–	(7,215)	7,215	(78)	78	(7,293)	7,293
Credit-related modifications that resulted in derecognition	–	–	–	–	(241)	60	–	–	(241)	60
Foreign exchange	(126,786)	32	(22,811)	180	(1,024)	526	1	(1)	(150,620)	737
Others	4	(13)	–	(5)	3	(9)	–	(150)	7	(177)
At 31 Dec 2022	**5,586,344**	**(3,242)**	**534,345**	**(11,618)**	**68,581**	**(25,884)**	**623**	**(191)**	**6,189,893**	**(40,935)**
ECL income statement charge for the year										(16,168)
Recoveries										880
Others										(543)
Total ECL income statement charge for the year										**(15,831)**

	At 31 Dec 2022		Year ended 31 Dec 2022
	Gross carrying/ nominal amount	Allowance for ECL	ECL charge
	HK$m	HK$m	HK$m
As above	**6,189,893**	**(40,935)**	**(15,831)**
Other financial assets measured at amortised cost	2,768,171	(681)	(110)
Non-trading reverse repurchase agreement commitments	2,335	–	–
Performance and other guarantees not considered for HKFRS 9	N/A	N/A	(81)
Amounts due from Group companies	129,357	–	–
Summary of financial instruments to which the impairment requirements in HKFRS 9 are applied/Summary consolidated income statement	**9,089,756**	**(41,616)**	**(16,022)**
Debt instruments measured at FVOCI	1,239,527	(344)	(343)
Total allowance for ECL/total income statement ECL charge for the year	**N/A**	**(41,960)**	**(16,365)**

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 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)

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 32.

Distribution of financial instruments by credit quality at 31 December 2022

(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	2,093,077	773,808	737,137	77,706	63,385	3,745,113	(39,964)	3,705,149
– personal	1,290,517	144,757	76,102	5,300	8,708	1,525,384	(5,369)	1,520,015
– corporate and commercial	641,317	545,533	604,724	71,417	53,761	1,916,752	(33,999)	1,882,753
– non-bank financial institutions	161,243	83,518	56,311	989	916	302,977	(596)	302,381
Loans and advances to banks	504,751	9,461	1,368	3,488	–	519,068	(44)	519,024
Cash and balances at central banks	226,479	6,047	222	–	–	232,748	(8)	232,740
Items in the course of collection from other banks	28,557	–	–	–	–	28,557	–	28,557
Hong Kong Government certificates of indebtedness	341,354	–	–	–	–	341,354	–	341,354
Reverse repurchase agreements – non-trading	503,956	132,390	291,608	–	22	927,976	–	927,976
Financial investments held at amortised cost	856,621	109,105	9,446	2	–	975,174	(465)	974,709
Prepayments, accrued income and other assets	169,517	57,958	33,648	796	443	262,362	(208)	262,154
Debt instruments measured at fair value through other comprehensive income[1]	1,192,017	52,361	17,234	1,030	39	1,262,681	(344)	1,262,337
Out-of-scope for HKFRS 9 impairment						–		–
Trading assets	335,477	65,188	32,910	788	999	435,362	–	435,362
Other financial assets designated and otherwise mandatorily measured at fair value through profit or loss	30,724	3,166	1,050	–	–	34,940	–	34,940
Derivatives	269,923	52,467	11,351	823	5	334,569	–	334,569
Total gross carrying amount on-balance sheet	6,552,453	1,261,951	1,135,974	84,633	64,893	9,099,904	(41,033)	9,058,871
Percentage of total credit quality	72%	14%	12%	1%	1%	100%		
Loan and other credit related commitments	1,924,469	744,111	484,054	29,892	7,934	3,190,460	(864)	3,189,596
Financial guarantee and similar contracts	171,761	133,701	62,022	5,459	553	373,496	(293)	373,203
Total nominal off-balance sheet amount	2,096,230	877,812	546,076	35,351	8,487	3,563,956	(1,157)	3,562,799

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 2021 (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	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 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	504,751	9,461	1,368	3,488	—	519,068	(44)	519,024
– stage 1	503,622	8,731	1,338	3,243	—	516,934	(39)	516,895
– stage 2	1,129	730	30	245	—	2,134	(5)	2,129
– stage 3	—	—	—	—	—	—	—	—
– POCI	—	—	—	—	—	—	—	—
Loans and advances to customers at amortised cost	2,093,077	773,808	737,137	77,706	63,385	3,745,113	(39,964)	3,705,149
– stage 1	2,062,100	656,962	489,798	10,785	—	3,219,645	(2,755)	3,216,890
– stage 2	30,977	116,846	247,339	66,921	—	462,083	(11,200)	450,883
– stage 3	—	—	—	—	62,763	62,763	(25,818)	36,945
– POCI	—	—	—	—	622	622	(191)	431
Other financial assets measured at amortised cost	2,126,484	305,500	334,924	798	465	2,768,171	(681)	2,767,490
– stage 1	2,120,755	289,904	328,161	240	—	2,739,060	(391)	2,738,669
– stage 2	5,729	15,596	6,763	558	—	28,646	(231)	28,415
– stage 3	—	—	—	—	464	464	(59)	405
– POCI	—	—	—	—	1	1	—	1
Loan and other credit-related commitments	1,421,125	312,185	142,824	10,509	5,758	1,892,401	(864)	1,891,537
– stage 1	1,414,708	284,689	116,144	5,814	—	1,821,355	(427)	1,820,928
– stage 2	6,417	27,496	26,680	4,695	—	65,288	(397)	64,891
– stage 3	—	—	—	—	5,758	5,758	(40)	5,718
– POCI	—	—	—	—	—	—	—	—
Financial guarantees	14,274	11,643	8,649	1,012	68	35,646	(63)	35,583
– stage 1	13,938	9,994	6,627	179	—	30,738	(18)	30,720
– stage 2	336	1,649	2,022	833	—	4,840	(17)	4,823
– stage 3	—	—	—	—	68	68	(28)	40
– POCI	—	—	—	—	—	—	—	—
At 31 Dec 2022	**6,159,711**	**1,412,597**	**1,224,902**	**93,513**	**69,676**	**8,960,399**	**(41,616)**	**8,918,783**
Debt instruments at FVOCI[1]								
– stage 1	1,191,560	52,146	17,178	—	—	1,260,884	(67)	1,260,817
– stage 2	457	215	56	1,030	—	1,758	(277)	1,481
– stage 3	—	—	—	—	39	39	—	39
– POCI	—	—	—	—	—	—	—	—
At 31 Dec 2022	**1,192,017**	**52,361**	**17,234**	**1,030**	**39**	**1,262,681**	**(344)**	**1,262,337**

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	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.*

Mainland China commercial real estate

The following table presents the group's exposure to borrowers classified in the CRE sector where the ultimate parent is based in mainland China, as well as all CRE exposures booked on mainland China balance sheets. The exposures at 31 December 2022 are split by country/territory and credit quality including allowances for ECL by stage.

Mainland China CRE exposure

	At 31 Dec 2022			
	Hong Kong (audited)[1]	Mainland China (audited)[1]	Rest of Asia-Pacific (unaudited)[1]	Total (unaudited)[1]
	HK$m	HK$m	HK$m	HK$m
Loans and advances to customers[2]	**71,148**	**44,843**	**3,570**	**119,561**
Guarantees issued and others[3]	**1,957**	**5,884**	**268**	**8,109**
Total mainland China CRE exposure	**73,105**	**50,727**	**3,838**	**127,670**
Distribution of mainland China CRE exposure by credit quality				
– Strong	**11,105**	**16,510**	**638**	**28,253**
– Good	**5,431**	**8,475**	**2,543**	**16,449**
– Satisfactory	**9,896**	**17,521**	**168**	**27,585**
– Sub-standard	**22,509**	**6,072**	**349**	**28,930**
– Credit Impaired	**24,164**	**2,149**	**140**	**26,453**
	73,105	**50,727**	**3,838**	**127,670**
Allowance for ECL by credit quality				
– Strong	**—**	**(39)**	**—**	**(39)**
– Good	**(2)**	**(60)**	**(5)**	**(67)**
– Satisfactory	**(153)**	**(637)**	**(3)**	**(793)**
– Sub-standard	**(3,570)**	**(326)**	**(14)**	**(3,910)**
– Credit Impaired	**(9,884)**	**(816)**	**—**	**(10,700)**
	(13,609)	**(1,878)**	**(22)**	**(15,509)**
Allowance for ECL				
ECL Stage 1	**(6)**	**(69)**	**(4)**	**(79)**
ECL Stage 2	**(3,719)**	**(993)**	**(18)**	**(4,730)**
ECL Stage 3	**(9,884)**	**(816)**	**—**	**(10,700)**
	(13,609)	**(1,878)**	**(22)**	**(15,509)**
ECL coverage %	**18.6**	**3.7**	**0.6**	**12.1**

	At 31 Dec 2021			
	Hong Kong (restated)[4] (audited)[1]	Mainland China (audited)[1]	Rest of Asia-Pacific (unaudited)[1]	Total (unaudited)[1]
	HK$m	HK$m	HK$m	HK$m
Loans and advances to customers[2]	89,646	53,116	658	143,420
Guarantees issued and others[3]	1,207	18,533	127	19,867
Total mainland China CRE exposure	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
– Credit Impaired	3,913	794	—	4,707
	90,853	71,649	785	163,287
Allowance for ECL by credit quality				
– Strong	(116)	(53)	—	(169)
– Good	(292)	(78)	—	(370)
– Satisfactory	(849)	(154)	(15)	(1,018)
– Sub-standard	(2,320)	(8)	—	(2,328)
– Credit Impaired	(794)	(86)	—	(880)
	(4,371)	(379)	(15)	(4,765)
Allowance for ECL				
ECL Stage 1	(17)	(84)	(4)	(105)
ECL Stage 2	(3,560)	(209)	(11)	(3,780)
ECL Stage 3	(794)	(86)	—	(880)
	(4,371)	(379)	(15)	(4,765)
ECL coverage %	4.8	0.5	1.9	2.9

1 *Disclosures in respect of mainland China CRE exposures in Hong Kong and mainland China form part of the scope of the audit of the group's Annual Report. Amounts disclosed for mainland China CRE exposures elsewhere in the group have not been audited but are provided for completeness.*
2 *Amounts represent gross carrying amount.*
3 *Amounts represent nominal amount for guarantees and other contingent liabilities.*
4 *Comparative balances have been restated to reflect an exposure re-classification from "guarantees and others" to "loans and advances to customers", which better reflects the nature of product.*

(Unaudited)

CRE financing refers to lending that focuses on commercial development and investment in real estate and covers commercial, residential and industrial assets. CRE financing can also be provided to a corporate or financial entity for the purchase or financing of a property which supports the overall operations of the business.

The exposures in the table are 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.

The exposures in the table above had 57% (31 December 2021: 89%) of exposure booked with a credit quality of 'satisfactory' or above. This deterioration reflects increased funding risks and weaker sales performance for a number of our customers over the period.

Facilities booked in Hong Kong are exposures which represent relatively higher risk within the mainland China CRE portfolio. This portfolio had 36% (31 December 2021: 82%) of exposure booked with a credit quality of 'satisfactory' or above, reflecting sustained credit deterioration in this book over the course of the year. At 31 December 2022, the group had allowances for ECL of HK$13,609m (31 December 2021: HK$4,371m) held against mainland China CRE exposures booked in Hong Kong.

Over one third of the unimpaired exposure in the Hong Kong portfolio reflects lending to state owned enterprises, and much of the remaining is to relatively strong privately owned enterprises. This is reflected in the relatively low ECL allowance in this part of the portfolio.

Regulatory and policy developments in the latter part of 2022 appear to have stabilised the sector. Sustained liquidity support and improved domestic residential demand will be necessary to support a recovery.

The group has additional exposures to mainland China CRE as a result of lending to multinational corporates which is not incorporated in the table above.

Credit-impaired loans

(Audited)

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

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

Collateral and other credit enhancements

(Audited)

Although collateral can be an important mitigant of credit risk, it is the group's 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)

	2022		2021	
	Gross carrying/ nominal amount	**ECL coverage**	Gross carrying/ nominal amount	ECL coverage
	HK$m	**%**	HK$m	%
Stage 1				
Fully collateralised	**1,147,024**	**0.0**	1,201,044	0.0
LTV ratio:				
– less than 70%	**918,527**	**0.0**	1,004,531	0.0
– 71% to 90%	**147,785**	**0.0**	169,824	0.0
– 91% to 100%	**80,712**	**0.0**	26,689	0.0
Partially collateralised (A):	**50,317**	**0.0**	256	0.0
– *collateral value on A*	***48,009***		*242*	
Total	**1,197,341**	**0.0**	1,201,300	0.0
Stage 2				
Fully collateralised	**33,972**	**0.2**	23,758	0.4
LTV ratio:				
– less than 70%	**24,401**	**0.1**	20,691	0.3
– 71% to 90%	**8,730**	**0.4**	2,860	1.0
– 91% to 100%	**841**	**0.5**	207	2.4
Partially collateralised (B):	**425**	**0.7**	28	3.6
– *collateral value on B*	***401***		*23*	
Total	**34,397**	**0.2**	23,786	0.4
Stage 3				
Fully collateralised	**5,696**	**4.3**	5,113	5.2
LTV ratio:				
– less than 70%	**3,935**	**3.6**	4,153	4.5
– 71% to 90%	**1,270**	**5.6**	827	7.7
– 91% to 100%	**491**	**6.3**	133	14.3
Partially collateralised (C):	**113**	**40.7**	104	29.8
– *collateral value on C*	***95***		*91*	
Total	**5,809**	**5.0**	5,217	5.7
At 31 Dec	**1,237,547**	**0.0**	1,230,303	0.0

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)

	2022		2021	
	Gross carrying nominal amount	ECL coverage	Gross carrying/ nominal amount	ECL coverage
	HK$m	%	HK$m	%
Stage 1				
Not collateralised	**240,133**	**0.0**	268,397	0.0
Fully collateralised	**263,119**	**0.1**	315,939	0.1
Partially collateralised (A):	**13,898**	**0.1**	14,260	0.1
– *collateral value on A*	***7,292***		*7,790*	
Total	**517,150**	**0.1**	598,596	0.0
Stage 2				
Not collateralised	**51,128**	**7.7**	68,871	5.8
Fully collateralised	**85,421**	**1.9**	69,438	0.7
Partially collateralised (B):	**7,941**	**2.0**	7,626	2.2
– *collateral value on B*	***4,692***		*3,159*	
Total	**144,490**	**4.0**	145,935	3.2
Stage 3				
Not collateralised	**16,725**	**57.2**	1,541	35.8
Fully collateralised	**8,724**	**11.1**	3,085	11.3
Partially collateralised (C):	**982**	**36.2**	21	33.3
– *collateral value on C*	***697***		*14*	
Total	**26,431**	**41.2**	4,647	19.5
POCI				
Not collateralised	**–**	**–**	–	–
Fully collateralised	**–**	**–**	764	–
Partially collateralised (D):	**145**	**–**	–	–
– *collateral value on D*	***65***		–	
Total	**145**	**–**	764	–
At 31 Dec	**688,216**	**2.5**	749,942	0.8

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)

	2022		2021	
	Gross carrying/ nominal amount	ECL coverage	Gross carrying/ nominal amount	ECL coverage
	HK$m	%	HK$m	%
Stage 1				
Not collateralised	**2,155,095**	**0.1**	2,044,385	0.0
Fully collateralised	**379,471**	**0.1**	431,547	0.1
Partially collateralised (A):	**246,654**	**0.1**	262,118	0.0
– collateral value on A	***97,058***		*108,645*	
Total	**2,781,220**	**0.1**	2,738,050	0.0
Stage 2				
Not collateralised	**314,140**	**0.5**	314,470	0.4
Fully collateralised	**128,648**	**1.0**	113,991	0.7
Partially collateralised (B):	**55,804**	**0.6**	37,862	0.4
– collateral value on B	***22,737***		*15,205*	
Total	**498,592**	**0.6**	466,323	0.4
Stage 3				
Not collateralised	**14,373**	**68.2**	17,171	80.2
Fully collateralised	**5,689**	**7.2**	2,551	17.3
Partially collateralised (C):	**8,956**	**37.0**	7,621	36.8
– collateral value on C	***4,480***		*4,102*	
Total	**29,018**	**46.6**	27,343	62.2
POCI				
Not collateralised	**138**	**1.4**	351	47.6
Fully collateralised	**183**	**92.9**	442	37.8
Partially collateralised (D):	**156**	**12.2**	—	—
– collateral value on D	***125***		—	
Total	**477**	**40.0**	793	42.1
At 31 Dec	**3,309,307**	**0.6**	3,232,509	0.6

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 to our 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 2022

(Unaudited)

- We continued to build our second line of defence capabilities, providing independent oversight of treasury activities across capital risk, liquidity and funding risk, interest rate risk in the banking book ('IRRBB') and recovery and resolution planning in Asia-Pacific sites during 2022.
- The Board approved risk appetite for IRRBB for the group was further enhanced in 2022 to include NII sensitivity metric to monitor impact of 100bps interest rate shock on forecasted earnings of the Bank over next 1 year against the Board approved Risk Appetite.
- During the periods of high market volatility in the first half of 2022, we enhanced monitoring and forecasting of our capital positions. The mark-to-market movement in financial instruments that impacted our capital ratio arose from the portfolio of high-quality liquid assets ('HQLA') held by our Markets Treasury for liquidity risk management and as economic hedges of net interest income. This portfolio was largely accounted for at fair value through other comprehensive income ('FVOCI'), together with any hedge derivative held to offset the duration risk of the assets. During the year, we took steps to reduce the duration risk of this portfolio to minimise the capital impact from higher interest rates. As a result of these measures, the hold-to-collect-and-sell stressed value at risk ('VaR') exposure reduced from -HK$10.bn at the end of 2021 to -HK$3.7bn at the end of 2022.
- We implemented a new hold-to-collect business model, which will involve our portfolio of hold-to-collect assets forming a material part of our liquid asset buffer as well as a hedge to our structural interest rate risk. This will allow more flexibility in managing the hold-to-collect-and-sell portfolio to optimise returns from market movements while safeguarding the group capital and future earnings.

Governance and structure

(Unaudited)

The Board approves the policy and risk appetite for capital risk, liquidity and funding risk, and IRRBB. It is supported and advised by the Risk Committee ('RC').

The Global Treasury sub-function manages capital, liquidity and funding risk and structural foreign exchange 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 sub-function ('TRM') and the Risk Management Meeting ('RMM').

The Global Treasury sub-function also manages interest rate risk in the banking book, maintaining the transfer pricing framework and informing the regional 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 sub-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. Regulatory capital and economic capital are the two primary measures used 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, performance and planning, and the findings arising from stress testing. Our assessment of capital adequacy is driven by an assessment of risks that include credit, market, operational, pension, insurance, structural foreign exchange and interest rate risk in the banking book. Climate risk is also considered as part of the ICAAP, and we are continuing to develop our approach for climate risk management.

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. Banking subsidiaries prepare ICAAPs in line with global guidance, while considering their local regulatory regimes to determine their own risk appetites and ratios.

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. Capital and Risk-Weighted Assets ('RWAs') are monitored and managed against the plan, with capital forecasts reported to relevant governance committees. 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 our capital management objectives, 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 collective investment scheme exposures, the group uses the look-through approach and mandate-based approach to calculate the risk-weighted amount. 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 (counterparty credit risk) approach to calculate its default risk exposures for derivatives, and the comprehensive approach for securities financing transactions. For market risk, the group uses an internal models method approach ('IMM') to calculate its general market risk for the risk categories of interest rate and foreign exchange (including gold) exposures, and equity exposures. The group also uses an IMM approach to calculate its market risk in respect of specific risk for interest rate exposures and equity exposures. The group uses the standardised (market risk) 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 group issued various capital and LAC instruments in order to operate above required levels, including buffers.

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 2022, 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/territory basis and is built up during periods of excess credit growth to protect against future losses. The CCyB for Hong Kong and the list of D-SIB are regularly reviewed and last announced by the HKMA on 8 February 2023 and 30 December 2022 respectively. In its latest announcement, the HKMA maintained the CCyB for Hong Kong at 1.0% and 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 exposures (both on-balance sheet and off-balance sheet).

	At	
	31 Dec 2022	31 Dec 2021
	%	%
Leverage ratio	**5.9**	5.8
Capital and leverage ratio exposure measure	**HK$m**	HK$m
Tier 1 capital	**545,572**	530,701
Total exposure measure	**9,301,363**	9,192,814

The increase in the leverage ratio from 31 December 2021 to 31 December 2022 was mainly due to the increase in Tier 1 capital, partly offset by the rise in the exposure measure.

Further details regarding the group's leverage position can be viewed in the Banking Disclosure Statement at 31 December 2022, which will be available in the Regulatory Disclosure Section of our website: www.hsbc.com.hk.

Capital adequacy at 31 December 2022

(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 2022. 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 2022, the effect of this regulatory reserve requirement is to reduce the amount of reserves which can be distributed to shareholders by HK$16,413m (31 December 2021: HK$18,587m).

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 no earlier than 1 January 2024. We continue to participate in consultations and monitor progress on the implementation. Based on the results of the latest HKMA consultations, we foresee a positive impact on our capital ratios on initial application. The risk-weighted asset ('RWA') output floor under the Basel III Reforms will commence once implemented, with an expected 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 final rules in 2023 which will enable us to better estimate the impact.

Capital ratios

(Unaudited)

	At	
	31 Dec 2022	31 Dec 2021
	%	%
Common equity tier 1 ('CET1') capital ratio	**15.3**	15.4
Tier 1 capital ratio	**16.9**	16.8
Total capital ratio	**18.8**	18.7

Risk-weighted assets by risk type

(Unaudited)

	At	
	31 Dec 2022	31 Dec 2021
	HK$m	HK$m
Credit risk	**2,589,633**	2,497,803
Counterparty credit risk	**133,290**	148,188
Market risk	**160,533**	172,831
Operational risk	**337,004**	337,731
Sovereign concentration risk	**1,708**	—
Total	**3,222,168**	3,156,553

Risk-weighted assets by reportable segments

(Unaudited)

	At	
	31 Dec 2022	31 Dec 2021
	HK$m	HK$m
Wealth and Personal Banking	**640,626**	621,757
Commercial Banking	**1,209,888**	1,157,241
Global Banking	**562,404**	566,587
Markets and Securities Services	**410,401**	410,599
Corporate Centre	**338,254**	334,450
Other (GBM-other)	**60,595**	65,919
Total	**3,222,168**	3,156,553

Capital base

(Unaudited)

The following table sets out the composition of the group's capital base under Basel III at 31 December 2022.

Capital base

(Unaudited)

	At	
	31 Dec 2022	31 Dec 2021
	HK$m	HK$m
Common equity tier 1 ('CET1') capital		
Shareholders' equity	**727,880**	714,139
– shareholders' equity per balance sheet	**875,320**	856,809
– revaluation reserve capitalisation issue	**(1,454)**	(1,454)
– other equity instruments	**(52,386)**	(44,615)
– unconsolidated subsidiaries	**(93,600)**	(96,601)
Non-controlling interests	**30,106**	28,730
– non-controlling interests per balance sheet	**65,943**	66,702
– non-controlling interests in unconsolidated subsidiaries	**(11,365)**	(11,800)
– surplus non-controlling interests disallowed in CET1	**(24,472)**	(26,172)
Regulatory deductions to CET1 capital	**(266,424)**	(258,215)
– valuation adjustments	**(2,376)**	(1,834)
– goodwill and intangible assets	**(32,064)**	(28,883)
– deferred tax assets net of deferred tax liabilities	**(3,688)**	(3,353)
– cash flow hedging reserve	**233**	(60)
– changes in own credit risk on fair valued liabilities	**(3,494)**	1,322
– defined benefit pension fund assets	**(27)**	(18)
– significant Loss-absorbing capacity ('LAC') investments in unconsolidated financial sector entities	**(140,987)**	(139,239)
– property revaluation reserves[1]	**(67,608)**	(67,563)
– regulatory reserve	**(16,413)**	(18,587)
Total CET1 capital	**491,562**	484,654
Additional tier 1 ('AT1') capital		
Total AT1 capital before regulatory deductions	**54,019**	46,073
– perpetual subordinated loans	**52,386**	44,615
– allowable non-controlling interests in AT1 capital	**1,633**	1,458
Regulatory deductions to AT1 capital	**(9)**	(26)
– significant LAC investments in unconsolidated financial sector entities	**(9)**	(26)
Total AT1 capital	**54,010**	46,047
Total tier 1 capital	**545,572**	530,701
Tier 2 capital		
Total tier 2 capital before regulatory deductions	**68,118**	67,802
– perpetual subordinated debt[2]	**—**	3,119
– term subordinated debt	**19,505**	14,972
– property revaluation reserves[1]	**31,078**	31,057
– impairment allowances and regulatory reserve eligible for inclusion in tier 2 capital	**16,008**	17,471
– allowable non-controlling interests in tier 2 capital	**1,527**	1,183
Regulatory deductions to tier 2 capital	**(6,378)**	(8,025)
– significant LAC investments in unconsolidated financial sector entities	**(6,378)**	(8,025)
Total tier 2 capital	**61,740**	59,777
Total capital	**607,312**	590,478

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 has been 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 2022.

Non-trading book foreign exchange exposures

Structural foreign exchange exposures

(Unaudited)

A Structural foreign exchange exposure arises from the capital invested or net assets in a foreign operation together with any associated hedging. A foreign operation is defined as a subsidiary, associate, joint arrangement or branch, the activities of which are conducted in a currency other than that of the reporting entity. An entity's functional reporting 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 foreign operation.

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 greater than 10% of the total net structural foreign currency exposures:

	Local Currency (m)	HK$ equivalent (m)
At 31 Dec 2022		
Renminbi	**241,134**	**272,709**
US dollars	**10,891**	**84,902**
At 31 Dec 2021		
Renminbi	221,207	271,421
US dollars	10,224	79,731

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 Global Treasury sub-function within an agreed limit framework.

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 aim 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 and funding risk. 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 operating entity. Liquidity and funding risk 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 sub-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 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 risk appetite measures are the liquidity coverage ratio ('LCR') and net stable funding ratio ('NSFR'). An internal liquidity metric ('ILM') is used to supplement these regulatory 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 requirement;
- a legal entity depositor concentration limit;
- cumulative term funding maturity concentrations limit;
- liquidity metrics to monitor minimum 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, customer savings deposits payable on demand or at short notice and term deposits. 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

(Unaudited)

Group policy requires all operating entities to monitor material single currency ILM and 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 International Swaps and Derivatives Association ('ISDA') compliant credit support annex ('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 2022

(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 2022	31 Dec 2021
	%	%
Average LCR	**157.8**	154.3

The average LCR increased by 3.5 percentage points from 154.3% for the quarter ended 31 December 2021 to 157.8% for the quarter ended 31 December 2022.

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 2022	31 Dec 2021
	HK$m	HK$m
Level 1 assets	**1,744,471**	1,767,933
Level 2A assets	**80,348**	79,368
Level 2B assets	**61,184**	64,106
Total	**1,886,003**	1,911,407

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

	Quarter ended	
	31 Dec 2022	31 Dec 2021
	%	%
Net stable funding ratio	**152.3**	151.9

The NSFR increased by 0.4 percentage points from 151.9% for the quarter ended 31 December 2021 to 152.3% for the quarter ended 31 December 2022.

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)

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 in order to hedge positions held with trading intent. Interest rate risk that can be economically hedged may be transferred to the Global Treasury sub-function. Hedging is generally executed through interest rate derivatives or fixed-rate government bonds. Any interest rate risk that Global Treasury sub-function cannot economically hedge is not transferred and will remain within the global business where the risks originate.
The Global Treasury sub-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; and
- hold-to-collect-and-sell value at risk.

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, 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, early prepayment of mortgages. 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.

Further details of HSBC's risk management of interest rate risk in the banking book can be found in the Pillar 3 Disclosures at 31 December 2022.

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.

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);
- a change in interest rate expectations, causing an increase in the value of plan liabilities; and
- plan members living longer than expected (known as longevity risk).

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, including the review of de-risking opportunities. 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 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.

Market risk management

Key developments in 2022

(Unaudited)

There were no material changes to our policies and practices for the management of market risk in 2022.

Governance and structure

(Unaudited)

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

	Trading risk
Risk types	• Foreign exchange and commodities • Interest rates • Credit spreads • Equities
Global business	GBM
Risk measure	Value at risk | Sensitivity | Stress Testing

The objective of our risk management policies and measurement techniques 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 for management, or to separate books managed under the supervision of the local ALCO. The Traded Risk sub-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, value at risk ('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. 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 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 hypothetical loss back-testing exceptions, together with a number of other indicators, are used to assess model performance and to consider whether enhanced internal monitoring of a VaR model is required.

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

Market risk in 2022

(Unaudited)

During 2022, financial markets were driven by concerns over high inflation and recession risks, against the backdrop of the Russia-Ukraine conflict and continued Covid-19 pandemic restrictions in Asia. Throughout the year, major central banks tightened their monetary policies at a faster pace than previously anticipated in order to counter rising inflation. As a result, bond markets sold off sharply and bond yields rose to multi-year highs. Equity valuations saw pronounced volatility and fell across most market sectors due to recession risks and tighter liquidity conditions. Foreign exchange markets were largely dominated by a strong US dollar, as a result of global geopolitical instability and the relatively fast pace of monetary tightening by the US Federal Reserve. Investors sentiment remained fragile in credit markets, with credit spreads in investment-grade and high-yield debt benchmarks reaching their widest levels since the start of the Covid-19 pandemic. The Chinese property sector was underperforming in 2022, continuing the wave of defaults and debt restructuring from 2021.

We continued to manage market risk prudently during 2022. 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 the Markets and Securities Services business. Trading VaR was higher as at 31 December 2022 compared to 31 December 2021, mainly driven by increase in VaR exposed to interest rate risk and foreign exchange risk, partially offset by reduction in VaR from equity risk and credit spread risk.

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

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

(Audited)

	Foreign exchange and commodity HK$m	Interest rate HK$m	Equity HK$m	Credit spread HK$m	Portfolio diversification[2] HK$m	Total[3] HK$m
At 31 Dec 2022						
Year end	**95**	**195**	**48**	**18**	**(154)**	**202**
Average	**55**	**172**	**55**	**24**		**208**
Maximum	**99**	**272**	**98**	**42**		**357**
At 31 Dec 2021						
Year end	36	135	60	31	(74)	188
Average	49	158	77	34		177
Maximum	78	218	108	62		241

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.*

Climate risk (unaudited) TCFD

Overview

Climate risk relates to the financial and non-financial impacts that may arise as a result of climate change. Climate risk can materialise through:

- physical risk, which arises from the increased frequency and severity of weather events, such as typhoons and floods, or chronic shifts in weather patterns;
- transition risk, which arises from the process of moving to a low-carbon economy, including changes in government or public policy, technology and end-demand; and
- greenwashing risk, which arises from the act of knowingly or unknowingly misleading stakeholders regarding the group's strategy relating to climate, the climate impact/benefits of a product or service, or the climate commitments or performance of its customers.

Approach and policy

The group is affected by climate risks either directly or indirectly through its relationships with its customers, resulting in both financial and non-financial impacts.

The group may face direct exposure to the physical impacts of climate change, which could negatively affect its day-to-day operations. Any detrimental impact to its customers from climate risk could negatively impact the group either through credit losses on its loan book or losses on trading assets. The group may also be impacted by reputational concerns related to the climate action or inaction of its customers. In addition, if the group is perceived to mislead stakeholders on its business activities or if it is perceived to fail to achieve its stated net zero ambitions, it could face greenwashing risk resulting in significant regulatory and legal risks.

The group has integrated climate risk into its existing risk taxonomy, and incorporated it within the risk management framework through the policies and controls for existing risks where appropriate.

The group's climate risk approach is aligned to the Group-wide risk management framework and three lines of defence model, which sets out how the group identifies, assesses, and manages its risks. This approach ensures the group and senior management have visibility and oversight of the group's key climate risks.

The first line of defence has ultimate accountability for managing climate risk in line with risk appetite and owns the related controls.

The second line of defence sets policies and minimum control standards, provides subject matter expertise and reviews and challenges to first line activities to ensure actions relating to climate are appropriate. Risk Stewards in the existing risk taxonomy are responsible for the oversight of climate risk impacts on their risk types.

The third line of defence provides independent assurance to management that climate risk management, governance and control processes are designed and operating effectively.

The group's approach to managing climate risk is currently focused on understanding physical and transition impacts across five priority risk types: wholesale credit risk, retail credit risk, resilience risk, regulatory compliance risk and reputational risk.

On climate risk impact assessment, the group rely on the Group's high-level materiality rating on how climate risk may impact risk types within the Group's taxonomy over a 12-month horizon, and how the level of risk may increase over longer time horizons. However, the group observes that the pace of transition in Asia-Pacific varies market by market.

The group considers greenwashing to be an important risk that is likely to increase over time, as the group looks to develop capabilities and products to achieve its net zero ambition, and work with its clients to help them transition to a low-carbon economy. To reflect this, the group's climate risk approach has been updated to include greenwashing risk, and guidance has been provided to the first and second lines of defence on the key risk indicators, and how it should be managed.

The tables below provide an overview of the climate risk drivers considered within the Group's climate risk framework. Primary risk drivers refer to risk drivers aligned to the Financial Stability Board's TCFD, which sets a framework to help public companies and other organisations disclose climate-related risks and opportunities. Thematic risk drivers are bespoke to the group's internal climate risk framework.

The following table provides an overview of the physical and transition climate risk drivers.

Climate risk – primary risk drivers		Details	Potential Impacts
Physical	Acute	Increased frequency and severity of weather events causing disruption to business operations	• Decreased real estate values • Decreased household income and wealth • Increased costs of legal and compliance • Increased public scrutiny • Decreased profitability • Lower asset performance
	Chronic	Longer-term shifts in climate patterns (e.g. sustained higher temperatures) that may cause sea level rise or chronic heat waves	
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 demand from individuals and corporates	
	Reputational	Increased scrutiny following a change in stakeholder perceptions and expectations of climate-related action or inaction	

The table below provides an overview of the drivers of greenwashing risk, which is considered to be a thematic risk driver within the Group's framework.

Climate risk – thematic risk drivers		Details
Greenwashing	Firm	Failure to be accurate and transparent in communicating the group's progress against its net zero ambition
	Product	Not taking steps to ensure the group's 'green' and 'sustainable' products are developed and marketed appropriately
	Client	Failing to check the group's products are being used for 'green' and 'sustainable' business activity and assessing the credibility of its customers' climate commitments and/or progress against key performance indicators

Climate risk management (unaudited)

Key developments in 2022

The group's dedicated climate risk programme continues to support the development of its climate risk management capabilities. The key developments in 2022 included:

- The Board approved the group climate strategy.
- The Group updated its climate risk approach to include all risk types in its risk taxonomy.
- The group provided a climate-related training for the Board, and expanded training to employees covering additional role-specific topics, as well as increasing the availability of training to the wider workforce.
- The group developed new climate risk metrics to assess the impact of physical risk on the group's retail mortgage portfolio in Hong Kong.
- The Group enhanced its transition and physical risk questionnaire and scoring tool, which helps the group to assess and improve its understanding of the impact of transition and physical risk on its customers' business models, and used them for certain corporate clients in high climate transition risk sectors.
- The Group developed its first internal climate scenario exercise, where it used bespoke scenarios that were designed to articulate a view of the range of potential outcomes for global climate change. For further details of the internal climate scenario analysis, see page 11.

Governance and structure

The Board takes overall responsibility for the group's climate strategy, overseeing executive management in developing the execution and associated reporting.

The group Chief Risk Officer is responsible for the management of climate-related risks, including responsibility for governance, risk management, stress testing and scenario analysis.

The group CROF oversees all risk activities relating to climate risk management and escalation of climate risks.

The group Risk Management Meeting and the group Risk Committee receive regular updates on the climate risk profile, top and emerging climate risks, and progress of the climate risk programme.

A working group was established to coordinate the regional implementation of climate risk-related enhancements across the Compliance sub-function.

Risk appetite

The group's climate risk appetite supports the oversight and management of the financial and non-financial risks from climate change, and supports the business to deliver its climate ambition in a safe and sustainable way. The group's initial risk appetite focuses on the oversight and management of climate risks across the five priority areas, including exposure to high transition risk sectors in its wholesale portfolio and physical risk exposures in its retail portfolio. These metrics have been implemented at group level and locally where appropriate. The group continues to review its risk appetite regularly to capture the most material climate risks and will enhance its metrics over time.

Policies, processes and controls

The group is integrating climate risk into the policies, processes and controls across many areas of its organisations, and the group will continue to update these as its climate risk management capabilities mature over time.

In 2022, the group incorporated climate considerations into new money request processes for its wholesale business. The group also continued to enhance its climate risk scoring tool, which will enable the group to assess its customers' exposures to climate risk.

The Group also published and updated the energy policy, covering oil and gas, power and utilities, hydrogen, renewables, nuclear and biomass sectors and it updated the thermal coal phase-out policy after its initial publication in 2021.

Wholesale credit risk

Identification and assessment

The Group has identified six sectors where its wholesale credit customers have the highest climate risk, based on their carbon emissions. These are automotive, chemicals, construction and building materials, metals and mining, oil and gas, and power and utilities. In these sectors, the Group has a transition and physical risk questionnaire to help assess and improve its understanding of the impact of climate changes on its customers' business models and any related transition strategies. Relationship managers work with customers to record questionnaire responses, which also help to identify potential business opportunities to support customers' transition. The questionnaire is also being completed for the Group's largest customers in the agriculture, industrials, real estate and transportation sectors.

The Group intends to continue increasing the scope of the questionnaire in 2023 by including more customers.

Management

In 2022, the Group updated its credit policy to require relationship managers to comment on climate risk factors in credit applications for new money requests. The Group continues to use a climate risk scoring tool, which provides a climate risk score for each customer based on the questionnaire responses. The climate risk score is used to inform portfolio level management decisions and is made available to relationship management and credit risk managements teams. The scoring tool will be enhanced and refined over time as more data becomes available.

In 2023, the Group aims to further embed climate risk considerations in its credit risk management processes.

Aggregation and reporting

The group internally reports its exposure and RWAs to the six high transition risk sectors in the wholesale portfolio. The group also reports the proportion of questionnaire responses that have a board policy or management plan for transition risk. These are included as part of the regular risk profile paper presented at the group CROF which is held quarterly.

Retail credit risk

Identification and assessment

The Group continues to improve its identification and assessment of climate risk within its retail mortgage portfolio, with increased investments in physical risk data and enhancements to its internal risk assessment capabilities. The Group prioritised applying these improvements to its largest mortgage markets to understand its physical risk exposure based on centrally available data. The Group has also started to identify and monitor potential physical risk in the remainder of its mortgage markets, using locally available data.

In 2022, the Group undertook a stress test exercise for Singapore at the behest of the Monetary Authority of Singapore. In addition, a Group-wide internal climate stress testing exercise was undertaken to further its understanding and assessment of the potential impact of physical risk to its mortgage portfolios. The Group completed a detailed asset-level analysis for Hong Kong, Singapore and Australia which represent three of the group's largest residential mortgage portfolios in Asia-Pacific.

Management

The Group continues to review and update its retail credit risk management policies and processes to further embed climate risk, whilst also monitoring local regulatory developments to ensure compliance.

Aggregation and reporting

The Group manages and monitors the integration of climate risk across Wealth and Personal Banking through the CROF.

The Group assesses the progress of the implementation of its strategic climate risk plans and ensures that operational processes and risk management frameworks are updated as its data and understanding of climate risk evolves.

How we are starting to measure climate risk

In 2022, the group implemented physical risk exposure assessment across mortgage portfolios in Asia-Pacific. For Hong Kong and Singapore, the assessment is based on property level peril data.

For other markets, locally relevant data sources were used to identify properties or areas with potentially heightened climate risk. These climate risk exposure metrics are in the early stages of development and the underlying data and methodologies may require refinement in the future, although they provide an indicative view.

Resilience risk

Identification and assessment

The group's Operational and Resilience Risk sub-function is responsible for overseeing the identification and assessment of physical and transition climate risks that may impact on its operational and resilience capabilities.

The group is developing a deeper understanding of the risks to which its properties are subject, and assess the mitigants to ensure ongoing operational resilience.

Management

Operational and Resilience Risk policies are reviewed and enhanced periodically so they remain relevant to evolving risks, including those linked to climate change. The capability of our colleagues is enhanced through training, periodic communications and dedicated guidance.

Aggregation and reporting

With its ambition to achieve net zero in its own operations, the Group is particularly focused on developing measures to facilitate proactive risk management and assess progress against this strategic target.

Operational and Resilience Risk is represented at the group's CROF.

Regulatory compliance risk

Identification and assessment

The Compliance sub-function continues to prioritise the identification and assessment of compliance risks that may arise from climate risk.

Throughout 2022, focus remained on greenwashing, particularly with regard to the development and ongoing governance of new, changed or withdrawn climate and ESG products and services, and ensuring sales practices and marketing materials were clear, fair and not misleading.

To support the ongoing management and mitigation of greenwashing, the Compliance sub-function worked across all business lines to enhance the group's product controls. This improved the group's ability to identify, assess and manage product-related greenwashing risks throughout the product governance lifecycle. Examples of ongoing enhancements include:

- integrating the consideration and mitigation of climate and ESG risks within the group's existing product governance framework;
- enhancing the group's product templates and forms to ensure climate risk is actively considered and documented by the business within product review and creation; and
- clarifying and improving product governance policies, associated guidance and key governance terms of reference to ensure new climate and ESG products, as well as climate- and ESG-related amendments to existing products, comply with both internal and external standards, and are subject to robust governance.

Management

The Group policies continue to set the Group-wide standards that are required to manage the risk of breaches of its regulatory duty to customers, including those related to climate risk, ensuring fair customer outcomes are achieved. The Group's product and customer lifecycle policies have been enhanced to ensure they take climate into consideration. They are reviewed on a periodic basis to ensure they remain relevant and up to date.

The Compliance sub-function continues to focus on improving the capability of colleagues through training, communications and dedicated guidance, with a particular focus on ensuring colleagues remain up to date with changes in the evolving regulatory landscape.

Aggregation and reporting

The Compliance sub-function continues to operate an ESG and Climate Risk Working Group at a Group level to track and monitor the integration and embedding of climate risk within the management of regulatory compliance risks. The working group also continues to monitor ongoing regulatory and legislative changes across the ESG and climate risk agenda. In Asia-Pacific, a

working group was established in February 2022 to coordinate the regional implementation of climate risk-related enhancements across the Compliance sub-function.

The Group has continued to develop its key climate risk-related metrics and indicators, aligned to the broader focus on regulatory compliance risks, to continually improve its risk monitoring capability. This has included the development of a climate-specific risk profile, which is produced at a Group level and regularly disseminated and reviewed at regional level, alongside the introduction and improvement of existing metrics and indicators.

The Compliance sub-function continues to be represented at the Group’s and the group's CROF.

Reputational risk

Identification and assessment

The Group implements sustainability risk policies, including the Equator Principles as part of its broader reputational risk framework. The Group focuses on sensitive sectors that may have a high adverse impact on people or the environment, and in which the Group has a significant number of customers. A key area of focus is high-carbon emission sectors, which include oil and gas, power generation, mining, agricultural commodities and forestry. In 2022, the Group published an updated energy policy, covering oil and gas, power and utilities, hydrogen, renewables, nuclear and biomass. It has also updated its thermal coal phase-out policy after its initial publication in 2021.

Management

As the primary point of contact for customers, the group’s relationship managers are responsible for checking that customers meet policies aimed at reducing carbon emissions. The group's network in Asia-Pacific of more than 20 sustainability risk managers provides local policy support and expertise to relationship managers. A regional Sustainability Risk team provides a higher level of guidance and is responsible for the oversight of policy compliance and implementation over wholesale banking activities.

Aggregation and reporting

The Sustainability Risk Oversight Forum provides a group-wide forum for senior members of the group's Risk, Compliance and global business management to support the management of sustainability risks. 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.

For the latest report, see: www.hsbc.com/who-we-are/our-climate-strategy/sustainability-risk/equator-principles.

Other risks

The following section outlines key developments that the Group made to embed climate considerations within other risk types in its risk taxonomy. All risk taxonomies, including those not referenced below, are assessed to determine the potential materiality of the impact of climate risk on their risk framework.

Treasury risk

The Group established a treasury risk-specific climate risk governance forum to provide oversight over climate-related topics that may impact Treasury. The plan in 2023 is to update relevant treasury risk policies to strengthen its climate risk guidance and requirements pertaining to treasury risk.

Traded risk

The Group established a climate stress testing-focused working group to coordinate the implementation of climate stress testing, and support the delivery of internal climate scenario analysis.

Resilience risk

(Unaudited)

Overview

Resilience risk is the risk of sustained and significant business disruption, execution, delivery or physical security or safety events, causing the inability to provide critical services to our customers, affiliates, and counterparties. Resilience risk arises from failures or inadequacies in processes, people, systems or external events.

Resilience risk management

Key developments in 2022

The Operational and Resilience Risk sub-function provides robust Risk Steward oversight of the management of resilience risk by the group businesses, functions and legal entities. This includes effective and timely independent challenge and expert advice. During the year, we carried out a number of initiatives to keep pace with geopolitical, regulatory and technology changes and to strengthen the management of resilience risk:

- We focused on enhancing our understanding of our risk and control environment, by updating our risk taxonomy and control libraries, and refreshing risk and control assessments.
- We implemented heightened monitoring and reporting of cyber, third party, business continuity and payment/sanctions risks resulting from the Russia/Ukraine war, and enhanced controls and key processes where needed.
- We provided analysis and easy-to-access risk and control information and metrics to enable management to focus on non-financial risks in their decision-making and appetite setting.
- We further strengthened our non-financial risk governance and senior leadership, and improved our coverage and Risk Steward Oversight for data privacy and change execution.

We prioritise our efforts on material risks and areas undergoing strategic growth, aligning our location strategy to this need.

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 nine sub-risk types related to: failure to manage third parties; technology and cybersecurity; transaction processing; failure to protect people and places from physical malevolent acts; business interruption and incident risk; data risk; change execution risk; building unavailability; and workplace safety.

Risk appetite and key escalations for resilience risk are reported to the group Risk Management Meeting, chaired by the group Chief Risk Officer, with an escalation path to the Group Risk Non-Financial Risk Management Board (NFRMB), chaired by the Group Chief Risk and Compliance Officer.

Key risk management processes

Operational resilience is our ability to anticipate, prevent, adapt, respond to, recover and learn from operational disruption while minimising customer and market impact. Resilience is determined by assessing whether we are able to continue to provide our most important services, within an agreed level. This is achieved via day-to-day oversight, periodic and ongoing assurance, such as deep dive reviews and controls testing, which may result in challenges being raised to the business by Risk Stewards. Further challenge is also raised in the form of quarterly Risk Steward opinion papers to formal governance. We accept we will not be able to prevent all disruption but we prioritise investment to continually improve the response and recovery strategies for our most important business services.

Regulatory compliance risk

(Unaudited)

Overview

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 failure to observe relevant laws, codes, rules and regulations and can manifest itself in poor market or customer outcomes and lead to fines, penalties and reputational damage to our business.

Regulatory compliance risk management

Key developments in 2022

The dedicated programme to embed our updated purpose-led conduct approach has concluded. Work to map applicable regulations to our risks and controls continues in 2023 alongside adoption of new tools to support enterprise-wide horizon scanning for new regulatory obligations and to manage our regulatory reporting inventories. Climate risk has been integrated into regulatory compliance policies and processes, with enhancements made to the product governance framework and controls in order to ensure the effective consideration of climate and in particular Greenwashing risks.

Governance and structure

The group Chief Compliance Officer reports to the Group Head of Risk and Compliance and group Co-Chief Executive at an entity level. They attend the RMM and the Risk Committee. The structure of the Compliance sub-function is substantively unchanged and the Group Regulatory Conduct capability and Group Financial Crime capability both continue to work closely with the Country/Markets Chief Compliance Officers and their respective teams to help them identify and manage regulatory and financial crime compliance risks across the region. They also work together, and with all relevant stakeholders, to ensure we achieve good conduct outcomes and provide enterprise-wide support on the Compliance risk agenda in collaboration with the Risk sub-function.

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 risk. It also devises the required frameworks, support processes and tools to protect against regulatory compliance risks. The Group capability 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. The Group's regulatory compliance risk policies are regularly reviewed. Global Policies and Procedures require the prompt identification and escalation of actual or potential regulatory breaches, and relevant reportable events are escalated to the RMM and the Risk Committee, as appropriate.

Financial crime risk

(Unaudited)

Overview

Financial crime risk is the risk that HSBC's products and services will be exploited for criminal activity. This includes fraud, bribery and corruption, tax evasion, sanctions and export control violations, money laundering, terrorist financing and proliferation financing. Financial crime risk arises from day-to-day banking operations involving customers, third parties and employees.

Financial crime risk management

Key developments in 2022

We regularly review the effectiveness of our financial crime risk management framework, which includes consideration of the complex and dynamic nature of sanctions compliance risk. In 2022, we adapted our policies, procedures and controls to respond to the unprecedented volume and diverse set of sanctions and

trade restrictions imposed against Russia following its invasion of Ukraine.

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

- We enhanced our screening and non-screening controls to aid the identification of potential sanctions risk related to Russia, as well as risk arising from export control restrictions.
- We deployed a key component of our intelligence-led, dynamic risk assessment capabilities for customer account monitoring in Singapore for Wealth and Private Banking (WPB) and Commercial Banking (CMB).
- We reconfigured our transaction screening capability in readiness for the global change to payment systems formatting under ISO20022 requirements, and enhanced transaction screening capabilities by implementing automated alert discounting.
- We to strengthened the first party lending fraud framework, reviewed and published an updated fraud policy and associated control library, and continued to develop fraud detection tools.

Governance and structure

The structure of the Financial Crime sub-function remained substantively unchanged in 2022, although we continued to review the effectiveness of our governance framework to manage financial crime risk. The group Head of Financial Crime and group Money Laundering Reporting Officer reports to the group Chief Compliance Officer, while the group Risk Committee retains oversight of matters relating to fraud, bribery and corruption, tax evasion, sanctions and export control breaches, money laundering, terrorist financing and proliferation financing.

Key risk management processes

We will not tolerate knowingly conducting business with individuals or entities believed to be engaged in criminal activity. We require everybody in HSBC to play their role in maintaining effective systems and controls to prevent and detect financial crime. Where we believe we have identified suspected criminal activity or vulnerabilities in our control framework, we will take appropriate mitigating action.

We manage financial crime risk because it is the right thing to do to protect our customers, shareholders, staff, the communities in which we operate, as well as the integrity of the financial system on which we all rely. We operate in a highly regulated industry in which these same policy goals are codified in laws and regulations. We are committed to complying with the law and regulation of all the markets in which we operate and applying a consistently high financial crime standard globally.

We continue to 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, improved our investigative and monitoring capabilities through technology deployments, as well as developed 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 and we participate in numerous public-private partnerships and information-sharing initiatives around the world. In 2022, our focus remained on measures to improve the overall effectiveness of the global financial crime framework, notably by providing input into legislative and regulatory reform activities. We did this by contributing to the development of responses to consultation papers focused on how financial crime risk management frameworks can deliver more effective outcomes in detecting and deterring criminal activity, including tackling evolving criminal behaviour such as fraud. Through our work with the Wolfsberg Group and the Institute of International Finance, we supported the efforts of the global standard setter, the Financial Action Task Force, on the use of technology and data pooling to advance information sharing, as well as their work to strengthen beneficial ownership standards. In addition, we participated in a number of public events related to tackling forestry crimes, wildlife trafficking and human trafficking.

Independent Reviews

In August 2022, the Board of Governors of the Federal Reserve System terminated the 2012 cease-and-decist order, with immediate effect. The order was the final regulatory enforcement action that HSBC entered into in 2012. In June 2021, the UK Financial Conduct Authority (FCA) had already determined that no further Skilled Person work was required under section 166 of the Financial Services and Markets Act. The Group Risk Committee retains oversight of matters relating to financial crime, including any remaining remedial activity not yet completed as part of previous recommendations.

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.

Model risk arises in both financial and non-financial contexts whenever business decision making includes reliance on models.

Key developments in 2022

In 2022, we continued to make improvements in our model risk management processes amid regulatory changes in model requirements.

Initiatives during the year included:

- Redeveloped, independently validated and submitted our models to the PRA and HKMA in response to regulatory capital changes, including the internal ratings-based ('IRB') approach for credit risk, internal model method ('IMM') for counterparty credit risk and internal model approach ('IMA') for market risk. These new models have been built to enhanced standards using improved data as a result of investment in processes and systems.
- Redeveloped and validated models impacted by the changes to the alternative rate setting mechanisms due to the IBOR transition.
- Embedded changes to our control framework for our Sarbanes-Oxley models. These changes were made to address control weaknesses that emerged as a result of significant increases in adjustments and overlays that were applied to compensate for the impact of the Covid-19 pandemic, and the subsequent volatility due to the effects of the rise in global interest rates on the ECL models.
- Businesses and Functions continued to be more involved in the development and management of models, and hiring colleagues with strong model risk skills. Enhanced focus was also placed on key model risk drivers such as data quality and model methodology.
- Enhanced the reporting that supports the model risk appetite measures, to support our Businesses and Functions in managing model risk more effectively.
- Rolled out our HBAP regional engagement strategy in response to the growing maturity of model risk management and demand, and enhanced the awareness of model inventory, model limitations and risk controls across the Region.
- Conducted targeted briefing sessions across the Region to strengthen the awareness of models used and the engagement between the model user community and model developing areas.
- Continued the transformation of the Model Risk Management team, with further enhancements to the independent model

validation processes, including new systems and working practises.

- Climate Risk, HKFRS 17 Insurance models and models using advanced analytics and machine learning, have become critical areas of focus that will grow in importance in 2023 and beyond. The model risk teams were enhanced with specialist skills to manage the increased model risk in these areas.

Governance

The group Model Risk Committee (MRC) provides oversight of models used in HBAP and focuses on local delivery and requirements. The Committee is chaired by the group's Chief Risk Officer and the Regional Heads of Businesses, senior executives from Risk, Finance and Compliance 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 and the group Risk Committee on a regular basis through the use of the risk map, risk appetite 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. 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, insurance salesforces, 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, although the proportion of sales through other sources such as independent financial advisers, tied agents and digital is increasing.

For the insurance 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. These arrangements are generally structured with our exclusive strategic partners and earn the group a combination of commissions, fees and a share of profits.

Insurance products are sold predominantly by WPB and CMB through our branches and direct channels.

Insurance manufacturing operations risk management

Key developments in 2022

(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, which have not changed materially over 2022. There has been continued market volatility observed over 2022 across interest rates, equity markets and foreign exchange rates. This has been predominantly driven by geopolitical factors and wider inflationary concerns. One area of key risk management focus over 2022 was the implementation of the new accounting standard, HKFRS 17 Insurance Contracts. Given the fundamental nature of the impact of the accounting standard on insurance accounting, this presents additional financial reporting and model risks for the group. Another area of focus has been the acquisition early in 2022 of an insurance business in Singapore and the subsequent integration of that business into the group's risk management framework.

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 sub-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') which are produced by all material entities.

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; and
- We design new products to mitigate market risk, such as changing the investment return sharing portion between policyholders and the shareholder.

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.

Risk appetite buffers are set to ensure that the operations are able to remain solvent, allowing for business-as-usual volatility and extreme but plausible stress events. In certain cases, entities use reinsurance to manage capital risk.

Liquidity risk is relatively minor for the insurance business. It 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 to third party reinsurers to keep risks within risk appetite, reduce volatility and improve capital efficiency; and
- oversight of expense and reserving risks by entity Financial Reporting Committees.

Insurance manufacturing operations risk in 2022

Measurement

(Unaudited)

The tables below show the composition of assets and liabilities by contract type. 89% (2021: 91%) of both assets and liabilities are derived from Hong Kong.

Balance sheet of insurance manufacturing subsidiaries by type of contract

(Audited)

	Non-linked	Unit-linked	Shareholders' assets and liabilities	Total
	HK$m	HK$m	HK$m	HK$m
At 31 Dec 2022				
Financial assets	**702,897**	**34,632**	**43,822**	**781,351**
– financial assets designated and otherwise mandatorily measured at fair value through profit or loss	**183,423**	**33,533**	**1,569**	**218,525**
– derivatives	**1,322**	**—**	**12**	**1,334**
– financial investments measured at amortised cost	**482,271**	**328**	**37,177**	**519,776**
– financial investments measured at fair value through other comprehensive income	**5,977**	**—**	**734**	**6,711**
– other financial assets[1]	**29,904**	**771**	**4,330**	**35,005**
Reinsurance assets	**35,320**	**17**	**—**	**35,337**
PVIF[2]	**—**	**—**	**65,537**	**65,537**
Other assets and investment properties	**14,564**	**9**	**6,370**	**20,943**
Total assets	**752,781**	**34,658**	**115,729**	**903,168**
Liabilities under investment contracts designated at fair value	**25,693**	**7,338**	**—**	**33,031**
Liabilities under insurance contracts	**679,567**	**21,299**		**700,866**
Deferred tax[3]	**559**	**—**	**10,665**	**11,224**
Other liabilities	**—**	**—**	**38,942**	**38,942**
Total liabilities	**705,819**	**28,637**	**49,607**	**784,063**
Total equity	**—**	**—**	**119,105**	**119,105**
Total equity and liabilities	**705,819**	**28,637**	**168,712**	**903,168**

Balance sheet of insurance manufacturing subsidiaries by type of contract

(Audited)

	Non-linked	Unit-linked	Shareholders' assets and liabilities	Total
	HK$m	HK$m	HK$m	HK$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

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 Present Value of In-force ('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 2022		31 Dec 2021	
	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	**(1,079)**	**(1,872)**	(1,257)	(2,036)
-100 basis points parallel shift in yield curves	**698**	**1,490**	1,201	1,980
10% increase in equity prices	**2,438**	**2,438**	2,388	2,388
10% decrease in equity prices	**(2,647)**	**(2,647)**	(2,426)	(2,426)
10% increase in USD exchange rate compared to all currencies	**767**	**767**	635	635
10% decrease in USD exchange rate compared to all currencies	**(767)**	**(767)**	(635)	(635)

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 69.

The credit quality of the reinsurers' share of liabilities under insurance contracts is assessed as 'strong' or 'good' (as defined on page 32), with 100% of the exposure being neither past due nor impaired (2021: 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 44. 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. Liquidity risk may be able to be shared with policyholders for products with DPF.

The following table shows the expected undiscounted cash flows for insurance liabilities at 31 December 2022.

The profile of the expected maturity of insurance contracts at 31 December 2022 remained comparable with 2021.

The remaining contractual maturity of investment contract liabilities is included in the table on page 118.

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 2022					
Non-linked insurance contracts	**55,359**	**198,209**	**348,404**	**940,565**	**1,542,537**
Unit-linked	**4,865**	**10,047**	**11,978**	**4,898**	**31,788**
	60,224	**208,256**	**360,382**	**945,463**	**1,574,325**
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

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. Lapse risk exposure on products with premium financing has increased over the year as rising interest rates have led to an increase in the cost of financing for customers.

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 69 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 2021.

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. 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.

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 because these entities have smaller portfolios over which to spread costs.

Sensitivity analysis

(Audited)

	2022	2021
	HK$m	HK$m
Effect on profit after tax and total equity at 31 Dec		
10% increase in mortality and/or morbidity rates	**(561)**	(637)
10% decrease in mortality and/or morbidity rates	**569**	650
10% increase in lapse rates	**(549)**	(606)
10% decrease in lapse rates	**535**	680
10% increase in expense rates	**(372)**	(368)
10% decrease in expense rates	**372**	359

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 74-78, 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 3-8 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

21 February 2023

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 79 to 139, comprise:

- the consolidated balance sheet as at 31 December 2022;
- 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 2022*, 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 2022, 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
- Disclosure of the impact of adoption of HKFRS 17, Insurance contracts

Allowances for expected credit losses on loans and advances to customers

Nature of the Key Audit Matter

At 31 December 2022, the group recorded allowances for expected credit losses ('ECL') on loans and advances to customers of HK$40.0bn.

The determination of the ECL on non-credit-impaired 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 used for ECL that we focused on for non-credit-impaired loans and advances to customers included 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.

Impacts from the Covid-19 infection rates in Asia, particularly in mainland China, ongoing developments related to the mainland China commercial real estate sector, the geopolitical landscape and certain 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 non-credit-impaired loans and advances to customers therefore continue to be made. This includes judgemental adjustments to the ECL for unsecured offshore mainland China Commercial Real Estate exposures.

The above ongoing developments have also resulted in significant credit-impaired corporate exposures related to the unsecured offshore mainland China Commercial Real Estate sector. The assumptions with the most significant impact here are those applied in estimating the recoverability of these exposures.

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 economic scenarios and their likelihood, management judgemental adjustments made to derive the ECL on loans and advances to customers, and future recoverability of certain significant credit-impaired wholesale exposures. We further discussed certain controls over the process in determining ECL on loans and advances to customers.

How our audit addressed the Key Audit Matter

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;
- We tested a sample of critical data used to determine ECL; and
- We have independently assessed other significant assumptions and obtained corroborating evidence.

For a sample of management judgemental adjustments and credit-impaired wholesale exposures, we challenged the appropriateness of these and assessed the ECL determined.

We further considered whether the judgements made in selecting the significant assumptions, as well as determining the management judgemental adjustments and credit-impaired wholesale exposures, 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 31-52

Note 1.2 (i) on the consolidated financial statements: Basis of preparation and significant accounting policies – Summary of significant accounting policies - Impairment of amortised cost and FVOCI financial assets, page 90-93

Note 2 (e) on the consolidated financial statements: Operating profit – Change in expected credit losses and other credit impairment charges, page 97

Note 10 on the consolidated financial statements: Loans and advances to customers, page 106-107

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

Nature of the Key Audit Matter

At 31 December 2022, the fair value of the investment in BoCom, based on the share price, was HK$118.8bn lower than the carrying value ('CV') of HK$182.3bn. This is an indicator of potential impairment. An impairment test was performed by management, with supporting sensitivity analysis, using a value in use ('VIU') model. The VIU was HK$0.7bn 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 as a percentage of customer advances, long-term effective tax rate, capital requirements – capital adequacy ratio, capital requirements – 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 which as relevant included past 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 would give rise to indicators of possible management bias.

We observed meetings 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 – Summary of significant accounting policies - Consolidation and related policies, page 87

Note 14 on the consolidated financial statements: Interests in associates and joint ventures, page 109-112

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

At 31 December 2022, the group has recorded an asset for PVIF of HK$65.5bn and liabilities under non-linked life insurance contracts of HK$679.5bn.

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.

How our audit addressed the Key Audit Matter

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 their application in models; and
- results aggregation and analysis processes.

With the assistance of our actuarial experts, we performed the following 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 judgements made in selecting 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 67-72

Note 1.2 (j) on the consolidated financial statements: Basis of preparation and significant accounting policies - Summary of significant accounting policies - Insurance contracts, page 93-94

Note 3 on the consolidated financial statements: Insurance business, page 97-98

Note 15 on the consolidated financial statements: Goodwill and intangible assets, page 112-113

Disclosure of the impact of adoption of HKFRS 17, Insurance Contracts

Nature of the Key Audit Matter	How our audit addressed the Key Audit Matter
HKFRS 17 'Insurance contracts' sets out the requirements that an entity should apply in accounting for insurance contracts it issues, reinsurance contracts it holds and investment contracts with discretionary participating features it issues. The group will adopt the standard retrospectively from 1 January 2023, with comparatives restated from 1 January 2022. As part of the transition to HKFRS 17, the group intends to apply the option under HKFRS 9 to re-designate holdings of financial assets held to support insurance liabilities currently measured at amortised cost, to fair value under HKFRS 9. The group has estimated and disclosed that the adoption will reduce the opening group equity as at 1 January 2022 by HK$75.4bn. In the consolidated financial statements it is disclosed that this estimate is based on accounting policies, assumptions, judgements and estimation techniques that remain subject to change. This is a new and complex standard and determining the impact as at 1 January 2022 requires judgement and interpretation in its implementation. This includes the selection of accounting policies and the use of complex actuarial methodologies that are applied in models and overlay adjustments to models. The selection and application of appropriate methodology requires significant professional judgement. It also requires the determination of assumptions which involve estimation uncertainty. **Matters discussed with the Audit Committee** Status updates were provided during the year. We discussed the appropriateness of the accounting policies, methodologies, their application, significant assumptions and the disclosures related to the impact of the coming adoption of HKFRS 17 with the Audit Committee. Perspectives were also shared on the control environment over the disclosures of the impact of adopting HKFRS 17.	We tested controls in place over accounting policies, methodologies, their application, significant assumptions and data used in determining the estimated reduction of the opening group equity as at 1 January 2022 disclosed. Specifically, these included controls over: • Selection and approval of the accounting policies; • Policy data reconciliations from the policyholder administration systems to the actuarial valuation models; • Assumption setting; and • Review and determination of methodologies used, and their application in the models, including model development, validation and monitoring. With the assistance of our actuarial professionals, we performed the following substantive audit procedures to assess the accounting policies, methodologies, their application, significant assumptions, data and disclosures: • We assessed the adherence of the accounting policies with the requirements in HKFRS 17; • We assessed the appropriateness of the methodologies used, their application in models and overlay adjustments to models and the mathematical accuracy of the calculations; • We challenged the appropriateness of the judgements made in selecting 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 risk to indicators of susceptibility to management bias; • We performed substantive audit procedures over critical data used to ensure these are relevant and reliable; • We performed substantive audit procedures over the re-designation of financial assets held to support insurance liabilities; and • We assessed the adequacy of the disclosures in the context of the applicable financial reporting framework.

Relevant references in the consolidated financial statements
Note 1.1 (b) on the consolidated financial statements: Basis of preparation and significant accounting policies - Basis of preparation - Future accounting developments, page 85-86

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 2022*, Banking Disclosure Statement as at 31 December 2022 and List of the directors of the Bank's subsidiary undertakings (during the period from 1 January 2022 to 21 February 2023) 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, Environmental, Social and Governance Review, Financial Review, Risk, Statement of Directors' Responsibilities and Additional information sections of the *Annual Report and Accounts 2022* prior to the date of this auditor's report. The remaining other information, including Banking Disclosure Statement as at 31 December 2022 and List of the directors of the Bank's subsidiary undertakings (during the period from 1 January 2022 to 21 February 2023), 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, 21 February 2023

Consolidated Financial Statements

Consolidated income statement

for the year ended 31 December

	Notes	2022 HK$m	2021 HK$m
Net interest income	2a	**126,852**	98,113
– interest income		**180,097**	121,382
– interest expense		**(53,245)**	(23,269)
Net fee income	2b	**36,600**	45,296
– fee income		**50,622**	57,819
– fee expense		**(14,022)**	(12,523)
Net income from financial instruments held for trading or managed on a fair value basis	2c	**41,674**	28,359
Net income/(expense) from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss	2c	**(13,194)**	18,180
Changes in fair value of designated debts issued and related derivatives	2c	**(703)**	(639)
Changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	2c	**34**	(25)
Gains less losses from financial investments		**47**	1,667
Net insurance premium income	3	**80,415**	61,722
Other operating income	2d	**3,781**	2,033
Total operating income		**275,506**	254,706
Net insurance claims and benefits paid and movement in liabilities to policyholders	3	**(69,814)**	(76,048)
Net operating income before change in expected credit losses and other credit impairment charges		**205,692**	178,658
Change in expected credit losses and other credit impairment charges	2e	**(16,365)**	(6,539)
Net operating income		**189,327**	172,119
Employee compensation and benefits	4	**(40,662)**	(39,261)
General and administrative expenses	2f	**(54,549)**	(52,327)
Depreciation and impairment of property, plant and equipment	2g	**(9,157)**	(8,891)
Amortisation and impairment of intangible assets		**(6,140)**	(4,397)
Total operating expenses		**(110,508)**	(104,876)
Operating profit		**78,819**	67,243
Share of profit in associates and joint ventures		**18,792**	19,320
Profit before tax		**97,611**	86,563
Tax expense	5	**(15,507)**	(14,015)
Profit for the year		**82,104**	72,548
Attributable to:			
– ordinary shareholders of the parent company		**75,506**	64,633
– other equity holders		**2,739**	2,715
– non-controlling interests		**3,859**	5,200
Profit for the year		**82,104**	72,548

Consolidated statement of comprehensive income

for the year ended 31 December

	2022 HK$m	2021 HK$m
Profit for the year	**82,104**	72,548
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	**(13,675)**	(4,009)
– fair value losses	**(17,077)**	(3,907)
– fair value gains transferred to the income statement	**(139)**	(1,276)
– expected credit (recoveries)/losses recognised in the income statement	**342**	(17)
– income taxes	**3,199**	1,191
Cash flow hedges	**(1,965)**	(700)
– fair value gains	**5,851**	7,038
– fair value gains reclassified to the income statement	**(8,228)**	(7,850)
– income taxes	**412**	112
Share of other comprehensive income/(expense) of associates and joint ventures	**(1,964)**	596
Exchange differences	**(32,051)**	3,973
Items that will not be reclassified subsequently to profit or loss:		
Property revaluation	**3,863**	4,771
– fair value gains	**4,683**	5,643
– income taxes	**(820)**	(872)
Equity instruments designated at fair value through other comprehensive income	**865**	(3,480)
– fair value gains/(losses)	**868**	(3,478)
– income taxes	**(3)**	(2)
Changes in fair value of financial liabilities designated at fair value upon initial recognition arising from changes in own credit risk	**4,588**	522
– before income taxes	**5,461**	631
– income taxes	**(873)**	(109)
Remeasurement of defined benefit asset/liability	**185**	724
– before income taxes	**232**	885
– income taxes	**(47)**	(161)
Other comprehensive income/(expense) for the year, net of tax	**(40,154)**	2,397
Total comprehensive income for the year	**41,950**	74,945
Attributable to:		
– ordinary shareholders of the parent company	**36,360**	67,148
– other equity holders	**2,739**	2,715
– non-controlling interests	**2,851**	5,082
Total comprehensive income for the year	**41,950**	74,945

Consolidated balance sheet

at 31 December

	Notes	2022 HK$m	2021 HK$m
Assets			
Cash and balances at central banks		**232,740**	276,857
Items in the course of collection from other banks		**28,557**	21,632
Hong Kong Government certificates of indebtedness		**341,354**	332,044
Trading assets	7	**699,805**	777,450
Derivatives	8	**502,771**	365,167
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	9	**226,451**	202,399
Reverse repurchase agreements – non-trading		**927,976**	803,775
Loans and advances to banks		**519,024**	432,247
Loans and advances to customers	10	**3,705,149**	3,840,939
Financial investments	11	**2,221,361**	2,051,575
Amounts due from Group companies	32	**140,546**	112,719
Interests in associates and joint ventures	14	**185,898**	188,485
Goodwill and intangible assets	15	**102,419**	95,181
Property, plant and equipment	16	**130,926**	129,827
Deferred tax assets	5	**3,856**	3,353
Prepayments, accrued income and other assets	17	**355,319**	269,743
Total assets		**10,324,152**	9,903,393
Liabilities			
Hong Kong currency notes in circulation		**341,354**	332,044
Items in the course of transmission to other banks		**33,073**	25,701
Repurchase agreements – non-trading		**351,093**	255,374
Deposits by banks		**198,908**	280,310
Customer accounts	18	**6,113,709**	6,177,182
Trading liabilities	19	**142,453**	92,723
Derivatives	8	**551,745**	355,791
Financial liabilities designated at fair value	20	**167,743**	138,965
Debt securities in issue	21	**100,909**	67,364
Retirement benefit liabilities	4	**1,655**	1,890
Amounts due to Group companies	32	**398,705**	356,233
Accruals and deferred income, other liabilities and provisions	22	**238,726**	219,206
Liabilities under insurance contracts	3	**700,758**	638,145
Current tax liabilities		**6,002**	2,378
Deferred tax liabilities	5	**32,937**	32,522
Subordinated liabilities	23	**3,119**	4,054
Total liabilities		**9,382,889**	8,979,882
Equity			
Share capital	24	**180,181**	172,335
Other equity instruments	25	**52,386**	44,615
Other reserves		**109,235**	151,804
Retained earnings		**533,518**	488,055
Total shareholders' equity		**875,320**	856,809
Non-controlling interests		**65,943**	66,702
Total equity		**941,263**	923,511
Total liabilities and equity		**10,324,152**	9,903,393

Consolidated statement of cash flows

for the year ended 31 December

	2022 HK$m	2021 HK$m
Profit before tax	**97,611**	86,563
Adjustments for non-cash items:		
Depreciation and amortisation	**15,297**	13,288
Net (gain)/loss from investing activities	**128**	(1,890)
Share of profits in associates and joint ventures	**(18,792)**	(19,320)
Gain on disposal of subsidiaries, businesses, associates and joint ventures	**(4)**	(4)
Gain on acquisition of subsidiary	**(665)**	—
Change in expected credit losses gross of recoveries and other credit impairment charges	**17,245**	7,549
Provisions	**592**	607
Share-based payment expense	**843**	913
Other non-cash items included in profit before tax	**(1,507)**	5,416
Elimination of exchange differences	**36,982**	8,024
Changes in operating assets and liabilities		
Change in net trading securities and derivatives	**185,431**	(159,767)
Change in loans and advances to banks and customers	**77,973**	(172,484)
Change in reverse repurchase agreements – non-trading	**(166,542)**	(174,643)
Change in financial assets designated and otherwise mandatorily measured at fair value through profit or loss	**4,728**	(23,439)
Change in other assets	**(91,989)**	43,706
Change in deposits by banks and customer accounts	**(144,875)**	297,468
Change in repurchase agreements – non-trading	**95,719**	119,217
Change in debt securities in issue	**33,545**	(12,055)
Change in financial liabilities designated at fair value	**26,028**	(28,048)
Change in other liabilities	**101,882**	129,710
Dividends received from associates	**6,003**	5,525
Contributions paid to defined benefit plans	**(345)**	(356)
Tax paid	**(11,463)**	(12,648)
Net cash from operating activities	**263,825**	113,332
Purchase of financial investments	**(1,256,919)**	(1,233,472)
Proceeds from the sale and maturity of financial investments	**1,093,359**	1,193,780
Purchase of property, plant and equipment	**(2,802)**	(2,718)
Proceeds from sale of property, plant and equipment and assets held for sale	**73**	96
Proceeds from disposal of customer loan portfolios	**1,449**	2,267
Net investment in intangible assets	**(11,771)**	(10,835)
Net cash outflow on purchase of subsidiaries	**(4,166)**	(13)
Net cash from investing activities	**(180,777)**	(50,895)
Issue of ordinary share capital and other equity instruments	**15,617**	—
Purchase of non-controlling interest	**(1,548)**	—
Subordinated loan capital issued[1]	**81,014**	57,764
Subordinated loan capital repaid[1]	**(22,367)**	(24,102)
Dividends paid to shareholders of the parent company and non-controlling interests	**(37,666)**	(63,523)
Net cash from financing activities	**35,050**	(29,861)
Net increase in cash and cash equivalents	**118,098**	32,576
Cash and cash equivalents at 1 Jan	**1,055,084**	1,047,807
Exchange differences in respect of cash and cash equivalents	**(51,487)**	(25,299)
Cash and cash equivalents at 31 Dec[2]	**1,121,695**	1,055,084
Cash and cash equivalents comprise		
– cash and balances at central banks	**232,740**	276,857
– items in the course of collection from other banks	**28,557**	21,632
– loans and advances to banks of one month or less	**368,946**	326,691
– net settlement accounts and cash collateral	**58,473**	34,580
– reverse repurchase agreements with banks of one month or less	**286,100**	306,241
– treasury bills, other bills and certificates of deposit less than three months	**179,952**	114,784
– less: items in the course of transmission to other banks	**(33,073)**	(25,701)
Cash and cash equivalents at 31 Dec[2]	**1,121,695**	1,055,084

Interest received was HK$181,301m (2021: HK$133,964m), interest paid was HK$50,873m (2021: HK$26,553m) and dividends received were HK$6,971m (2021: HK$5,592m).

1 *Changes in subordinated loan capital (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$1,991m in 2022 (2021: exchange loss of HK$494m) and fair value loss after hedging of HK$25,579m in 2022 (2021: HK$7,768m loss). These balances are presented under 'Amounts due to Group companies' in the consolidated balance sheet.*

2 *At 31 December 2022, HK$161,252m (2021: HK$128,756m) was not available for use by the group, of which HK$65,026m (2021: HK$67,340m) related to mandatory deposits at Central banks.*

Consolidated statement of changes in equity

for the year ended 31 December

	Share capital[1]	Other equity instru-ments	Retained earnings	Other reserves: Property revaluation reserve	Financial assets at FVOCI reserve	Cash flow hedge reserve	Foreign exchange reserve	Other[3]	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 2022	**172,335**	**44,615**	**488,055**	**64,990**	**3,869**	**153**	**(7,130)**	**89,922**	**856,809**	**66,702**	**923,511**
Profit for the year	–	–	78,245	–	–	–	–	–	78,245	3,859	82,104
Other comprehensive income/(expense) (net of tax)	–	–	4,772	3,646	(14,774)	(1,639)	(31,351)	200	(39,146)	(1,008)	(40,154)
– debt instruments at fair value through other comprehensive income	–	–	–	–	(13,364)	–	–	–	(13,364)	(311)	(13,675)
– equity instruments designated at fair value through other comprehensive income	–	–	–	–	745	–	–	–	745	120	865
– cash flow hedges	–	–	–	–	–	(1,639)	–	–	(1,639)	(326)	(1,965)
– changes in fair value of financial liabilities designated at fair value upon initial recognition arising from changes in own credit risk	–	–	4,590	–	–	–	–	–	4,590	(2)	4,588
– property revaluation	–	–	–	3,646	–	–	–	–	3,646	217	3,863
– remeasurement of defined benefit asset/liability	–	–	191	–	–	–	–	–	191	(6)	185
– share of other comprehensive income/(expense) of associates and joint ventures	–	–	(9)	–	(2,155)	–	–	200	(1,964)	–	(1,964)
– exchange differences	–	–	–	–	–	–	(31,351)	–	(31,351)	(700)	(32,051)
Total comprehensive income/ (expense) for the year	–	–	83,017	3,646	(14,774)	(1,639)	(31,351)	200	39,099	2,851	41,950
Shares issued[1]	7,846	–	–	–	–	–	–	–	7,846	–	7,846
Other equity instruments issued[2]	–	7,771	–	–	–	–	–	–	7,771	–	7,771
Dividends to shareholders[4]	–	–	(34,821)	–	–	–	–	–	(34,821)	(2,845)	(37,666)
Movement in respect of share-based payment arrangements	–	–	135	–	–	–	–	(137)	(2)	13	11
Transfers and other movements[5]	–	–	(2,868)	(3,488)	43	(1)	–	4,932	(1,382)	(778)	(2,160)
At 31 Dec 2022	**180,181**	**52,386**	**533,518**	**65,148**	**(10,862)**	**(1,487)**	**(38,481)**	**94,917**	**875,320**	**65,943**	**941,263**

Consolidated statement of changes in equity (continued)

for the year ended 31 December

	Share capital[1]	Other equity instruments	Retained earnings	Other reserves: Property revaluation reserve	Other reserves: Financial assets at FVOCI reserve	Other reserves: Cash flow hedge reserve	Other reserves: Foreign exchange reserve	Other reserves: Other[3]	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 to shareholders[4]	—	—	(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[5]	—	—	(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

1 *Ordinary share capital includes preference shares which have been redeemed or bought back via payments out of distributable profits in previous years. During 2022, 3,138.4m new ordinary shares were issued at an issue price of HK$2.5 each.*
2 *During 2022, an additional tier 1 capital instrument was issued amounted to US$1,000m on which there were US$10m issue costs.*
3 *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.*
4 *Including distributions paid on perpetual subordinated loans classified as equity under HKFRS.*
5 *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 2022

There were no new accounting standards or interpretations that had a significant effect on the group in 2022. 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 that are effective from 1 January 2023 and 1 January 2024. 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' is effective for annual reporting periods beginning on or after 1 January 2023 and is applied retrospectively.

HKFRS 17 sets out the requirements that the group will apply in accounting for insurance contracts it issues, reinsurance contracts it holds, and investment contracts with discretionary participation features.

The group is at an advanced stage in the implementation of HKFRS 17, having put in place accounting policies, data and models, and made progress with preparing 2022 comparative data. Below are set out our expectations of the impact of HKFRS 17 compared with our current accounting policy for insurance contracts, which is set out in policy 1.2(j) on page 93.

Under HKFRS 17, no present value of in-force business ('PVIF') asset is recognised. Instead, the measurement of the insurance contracts liability is based on groups of insurance contracts and will include fulfilment cash flows, as well as the contractual service margin ('CSM'), which represents the unearned profit.

To identify groups of insurance contracts, individual contracts subject to similar dominant risk and managed together are identified as a portfolio of insurance contracts. Each portfolio is further separated by profitability group and issue date into periodic cohorts.

The fulfilment cash flows comprise:

- the best estimates of future cash flows, including amounts expected to be collected from premiums and payouts for claims, benefits and expenses, which are projected using assumptions based on demographic and operating experience;
- an adjustment for the time value of money and financial risks associated with the future cash flows; and
- an adjustment for non-financial risk that reflects the uncertainty about the amount and timing of future cash flows.

In contrast to the group's HKFRS 4 accounting where profits are recognised upfront, the CSM will be systematically recognised in revenue, as services are provided over the expected coverage period of the group of contracts without any change to the overall profit of the contracts. Losses resulting from the recognition of onerous contracts are recognised in the income statement immediately.

The CSM is adjusted depending on the measurement model of the group of insurance contracts. While the general measurement model ('GMM') is the default measurement model under HKFRS 17, the Group expects that the majority of its contracts will be accounted for under the variable fee approach ('VFA'), which is mandatory to apply for insurance contracts with direct participation features upon meeting the eligibility criteria.

HKFRS 17 requires entities to apply HKFRS 17 retrospectively as if HKFRS 17 had always been applied, using the full retrospective approach ('FRA') unless it is impracticable. When FRA is impracticable such as when there is a lack of sufficient and reliable data, an entity has an accounting policy choice to use either the modified retrospective approach ('MRA') or the fair value approach ('FVA'). The group will apply the FRA for new business from 2018 at the earliest, subject to practicability, and FVA for the majority of contracts for which FRA is impracticable. Where the FVA is used, the measurement takes into account the cost of capital that a market participant within the jurisdiction would be expected to hold based on the asset and liability positions on the transition date.

The group will make use of the option to re-designate eligible financial assets held to support insurance liabilities currently measured at amortised cost, as financial assets measured at fair value through profit or loss. Following re-designation, interest income earned on these financial assets will no longer be shown in 'net interest income', and will instead form part of 'net income/(expense) from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss' in accordance with the group's income and expense policy set out in Note 1.2(b) on page 87.

The group will also make use of the risk mitigation option for a number of economic offsets between the VFA contracts and reinsurance contracts held that meet the requirements.

Impact of HKFRS 17

Changes to equity on transition are driven by the elimination of the PVIF asset, the re-designation of certain eligible financial assets in the scope of HKFRS 9, the remeasurement of insurance liabilities and assets under HKFRS 17, and the recognition of the CSM.

HKFRS 17 requires the use of current market values for the measurement of insurance liabilities. The shareholder's share of the investment experience and assumption changes will be absorbed by the CSM and released over time to profit or loss under VFA. For contracts measured under GMM, the shareholder's share of the investment volatility is recorded in profit or loss as it arises. Under HKFRS 17, operating expenses will be lower as directly attributable costs will be incorporated in the CSM and recognised in the insurance service result.

While the profit over the life of an individual contract will be unchanged, its emergence will be later under HKFRS 17.

All of these impacts will be subject to deferred tax.

Estimates of the opening balance sheet as at 1 January 2022 have been calculated and are presented below, showing separately the impact on the total assets, liabilities and equity of our insurance manufacturing operations and group equity. These estimates are based on accounting policies, assumptions, judgements and estimation techniques that remain subject to change.

Impact of transition to HKFRS 17, at 1 January 2022	Insurance manufacturing operations			group
	Assets	Liabilities	Equity	Equity
	HK$bn	HK$bn	HK$bn	HK$bn
Balance sheet values at 1 January 2022 under HKFRS 4	**833.2**	**719.5**	**113.7**	**923.5**
Removal of PVIF*	**(63.8)**	**—**	**(63.8)**	**(63.8)**
Replacement of HKFRS 4 liabilities with HKFRS 17	**(3.4)**	**57.8**	**(61.2)**	**(64.3)**
– Removal of HKFRS 4 liabilities and recording of HKFRS 17 fulfilment cash	**(3.1)**	**(5.7)**	**2.6**	**2.7**
– HKFRS 17 contractual service margin	**(0.3)**	**63.5**	**(63.8)**	**(67.0)**
Remeasurement effect of HKFRS 9 re-designations	**38.1**	**—**	**38.1**	**38.1**
Tax effect*	**3.6**	**(10.5)**	**14.1**	**14.6**
Estimated balance sheet values at 1 January 2022 under HKFRS 17	**807.7**	**766.8**	**40.9**	**848.1**

* *PVIF of HK$63.8bn less deferred tax of HK$10.5bn constitute the overall estimated reduction in intangible assets, after tax, of HK$53.3bn on transition to HKFRS 17.*

The group's accounting for insurance contracts considers a broader set of cash flows than those arising within the insurance manufacturing entities. This includes the effect of eliminating intra-group fees associated with distribution of policies through the group's banking channel and directly attributable costs incurred by other group entities. These factors lead to an increase to the group CSM after inclusion of distribution activities of approximately HK$3.2bn, with a consequential reduction to group equity of approximately HK$2.6bn after the inclusion of deferred tax.

(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 16 as specified as 'Audited'.
- Disclosures on 'Financial instruments impacted by IBOR reform' are included in the 'Top and Emerging Risks' section on page 25 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 31 to 61 and pages 68 to 72 as specified as 'Audited'.
- Capital disclosures are included in the 'Treasury Risk' section on pages 53 to 54 as specified as 'Audited'.

In accordance with the group's policy to provide disclosures that help 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.

Management has considered the impact of climate-related risks on the group's financial position and performance. While the effects of climate change are a source of uncertainty, as at 31 December 2022 we do not consider there to be a material impact on our critical

judgements and estimates from the physical, transition and other climate-related risks in the short to medium term. In particular management has considered the known and observable potential impact of climate-related risks of associated judgements and estimates in our value in use calculations.

(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 in structural changes from the Covid-19 pandemic, the Russia-Ukraine war, disrupted supply chains globally, slower Chinese economic activity, climate change and other top and emerging risks, as well as from the related impacts 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 expense

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, which is assumed to include the potential effects of a variety of factors including climate-related risks. 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 reasonably 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 sold shortly after origination, 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' or 'Changes in fair value of designated debt and related derivatives' 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 where doing so reduces an accounting mismatch, 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 fair value through other comprehensive income ('FVOCI'), and certain loan commitments and financial guarantee contracts. At initial recognition, an 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, an 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 that a concession has been granted to the borrower for economic or legal reasons relating to the borrower's financial condition, or 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.

Forbearance

Loans are identified as forborne and classified as either performing or non-performing when the group modifies the contractual terms due to financial difficulty of the borrower. Non-performing forborne loans are stage 3 and classified as non-performing until they meet the cure criteria, as specified by applicable credit risk policy (for example, when the loan is no longer in default and no other indicators of default have been present for at least 12 months). Any amount written off as a result of any modification of contractual terms upon entering forbearance would not be reversed.

In 2022, the group adopted the EBA Guidelines on the application of definition of default for our retail portfolios, which affects credit risk policies and our reporting in respect of the status of loans as credit impaired principally due to forbearance (or curing thereof). Further details are provided under 'Forborne loans and advances' on page 32.

Performing forborne loans are initially stage 2 and remain classified as forborne until they meet applicable cure criteria (for example, they continue to not be in default and no other indicators of default are present for a period of at least 24 months). At this point, the loan is either stage 1 or stage 2 as determined 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).

A forborne loan 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 forborne loan is a substantially different financial instrument. Any new loans that arise following derecognition events in these circumstances would generally be classified as POCI and will continue to be disclosed as forborne.

Loan modifications other than forborne loans

Loan modifications that are not identified as forborne are considered to be commercial restructurings. 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. Modifications of certain higher credit risk wholesale loans are assessed for derecognition having regard to changes in contractual terms that either individually or in combination are judged to result in a substantially different financial instrument. Mandatory and general offer loan modifications that are not borrower specific, for example market-wide customer relief programmes, generally do not result 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 PDs and through-the-cycle 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 32.

For retail portfolios, default risk is assessed using a reporting date 12-month PD derived from credit scores, which incorporate 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 homogenous 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 therefore identifies loans with a PD higher than would be expected from loans that are performing as originally expected and higher than that which would have been acceptable at origination. It therefore approximates a comparison of origination to reporting date PDs.

As additional data becomes available, the retail transfer criteria approach continues to be refined to utilise a more relative approach for certain portfolios. These enhancements take advantage of the increase in origination related data in the assessment of significant increases in credit risk by comparing remaining lifetime PD to the comparable remaining term lifetime PD at origination based on portfolio-specific origination segments. These enhancements resulted in significant migrations of loans to customers gross carrying amounts from stage 1 to stage 2, but did not have a significant impact on the overall ECL for these portfolios in 2022 due to low loan-to-value ratios.

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 new financial instruments recognised in most cases following the derecognition of forborne loans. The amount of change in lifetime ECL for a POCI loan is recognised in profit or loss until the POCI loan 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. In the case of non-performing forborne loans, such financial instruments are transferred out of stage 3 when they no longer exhibit any evidence of credit impairment and meet the curing criteria as described above.

Measurement of ECL

The assessment of credit risk, and the estimation of ECL, are unbiased and probability-weighted, and incorporate all available information which 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 and considers other factors such as climate-related risks.

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 recalibrated 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 of 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 work-out 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. 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. For wholesale overdraft facilities, credit risk management actions are taken no less frequently than on an annual basis.

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 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 37 to 41.

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. • Selecting applicable recovery strategies for certain wholesale credit-impaired loans.	• The sections 'Measurement uncertainty and sensitivity analysis of ECL estimates' marked as audited from pages 37 to 41, 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

<table>
<tr><td colspan="2">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).</td></tr>
<tr><th>Judgements</th><th>Estimates</th></tr>
<tr><td>• 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.</td><td>• 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 68 to 72, '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.</td></tr>
</table>

(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, 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.

In assessing the probability and sufficiency of future taxable profit, management considers the availability of evidence to support the recognition of deferred tax assets. taking into account the inherent risks in long-term forecasting, including climate change-related, and drivers of recent history of tax losses where applicable. Management also considers the future reversal of existing taxable temporary differences and tax planning strategies, including corporate reorganisations.

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:

	2022 HK$m	2021 HK$m
Interest income recognised on impaired financial assets	**821**	315
Interest income recognised on financial assets measured at amortised cost	**158,552**	106,916
Interest income recognised on financial assets measured at FVOCI	**21,563**	14,461
Interest expense on financial instruments, excluding interest on financial liabilities held for trading or designated or otherwise mandatorily measured at fair value[1]	**(47,525)**	(20,907)

1 Includes interest expenses on lease liabilities of HK$265m (2021: HK$374m).

(b) Net fee income

Net fee income by reportable segments

	Wealth and Personal Banking HK$m	Commercial Banking HK$m	Global Banking HK$m	Markets and Securities Services HK$m	Corporate Centre[1] HK$m	Other (GBM-other) HK$m	Total HK$m
Account services	807	979	366	75	–	–	2,227
Funds under management	4,894	592	16	1,824	–	–	7,326
Cards	7,826	257	52	–	–	–	8,135
Credit facilities	332	1,303	1,186	25	–	–	2,846
Broking income	3,513	53	–	737	–	–	4,303
Imports/exports	–	2,465	667	–	–	–	3,132
Unit trusts	4,534	112	2	–	–	–	4,648
Underwriting	–	–	325	237	–	–	562
Remittances	264	1,902	723	3	–	–	2,892
Global custody	858	39	32	3,174	–	–	4,103
Insurance agency commission	1,434	107	5	–	–	–	1,546
Other	3,132	2,638	2,322	3,240	(2,214)	(216)	8,902
Fee income	**27,594**	**10,447**	**5,696**	**9,315**	**(2,214)**	**(216)**	**50,622**
Fee expense	(9,699)	(720)	(610)	(5,614)	2,461	160	(14,022)
Year ended 31 Dec 2022	**17,895**	**9,727**	**5,086**	**3,701**	**247**	**(56)**	**36,600**

Net fee income by reportable segments (continued)

	Wealth and Personal Banking	Commercial Banking	Global Banking	Markets and Securities Services	Corporate Centre[1]	Other (GBM-other)	Total
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	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

1 *Includes inter-segment elimination.*

Net fee income includes:

	2022	2021
	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)	**9,286**	9,742
– fee income	**14,867**	15,173
– fee expense	**(5,581)**	(5,431)
Fee earned on trust and other fiduciary activities	**8,961**	11,242
– fee income	**11,290**	12,801
– fee expense	**(2,329)**	(1,559)

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

	2022	2021
	HK$m	HK$m
Net income/(expense) arising on:		
Net trading activities	**43,138**	29,888
Other instruments managed on a fair value basis	**(1,464)**	(1,529)
Net income from financial instruments held for trading or managed on a fair value basis	**41,674**	28,359
Financial assets held to meet liabilities under insurance and investment contracts	**(15,075)**	17,837
Liabilities to customers under investment contracts	**1,881**	343
Net income/(expense) from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss	**(13,194)**	18,180
Change in fair value of designated debt issued and related derivatives[1]	**(703)**	(639)
Changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	**34**	(25)
Year ended 31 Dec	**27,811**	45,875

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

	2022	2021
	HK$m	HK$m
Movement in present value of in-force insurance business	**(256)**	(1,294)
Gains/(losses) on investment properties	**(133)**	277
Losses on disposal of property, plant and equipment and assets held for sale	**(42)**	(54)
Gain on acquisition of subsidiary[1]	**665**	—
Gains on disposal of subsidiaries, associates and business portfolios	**4**	4
Rental income from investment properties	**437**	393
Dividend income	**233**	198
Other	**2,873**	2,509
Year ended 31 Dec	**3,781**	2,033

1 *Represents a gain of HK$665m from the acquisition of AXA Insurance Pte Limited. Details are included in Note 37 'Business acquisitions'.*

There was a gain on disposal of loans and receivables of HK$84m in the year (2021: HK$77m). There was no gain or loss on disposal of financial liabilities measured at amortised cost (2021: loss of HK$136m).

(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:

	2022	2021
	HK$m	HK$m
Loans and advances to banks and customers	**15,503**	7,055
– new allowances net of allowance releases	**16,383**	8,065
– recoveries of amounts previously written off	**(880)**	(1,010)
Loan commitments and guarantees	**409**	(683)
Other financial assets	**453**	167
Year ended 31 Dec	**16,365**	6,539

Change in expected credit losses as a percentage of average gross customer advances was 0.40% for 2022 (2021: 0.18%).

(f) General and administrative expenses

	2022	2021
	HK$m	HK$m
Premises and equipment	**2,956**	2,867
Marketing and advertising expenses	**2,622**	2,417
Other administrative expenses[1]	**48,971**	47,043
Year ended 31 Dec	**54,549**	52,327

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$47m (2021: HK$37m) 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$9m (2021: HK$4m).

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

	2022	2021
	HK$m	HK$m
Owned property, plant and equipment	**6,569**	6,019
Other right-of-use assets	**2,588**	2,872
Year ended 31 Dec	**9,157**	8,891

(h) Auditors' remuneration

Auditors' remuneration amounted to HK$172m (2021: HK$152m).

3 Insurance business

Net insurance premium income[1]

	Non-linked insurance	Unit-linked	Total
	HK$m	HK$m	HK$m
Gross insurance premium income	**88,141**	**1,302**	**89,443**
Reinsurers' share of gross insurance premium income	**(9,002)**	**(26)**	**(9,028)**
Year ended 31 Dec 2022	**79,139**	**1,276**	**80,415**
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

1 *The group's net insurance premium income is presented after elimination of inter-company transactions between our insurance manufacturing operations and other group entities.*

Net insurance claims and benefits paid and movement in liabilities to policyholders[1]

	Non-linked insurance	Unit-linked	Total
	HK$m	HK$m	HK$m
Gross claims and benefits paid and movement in liabilities to policyholders	**83,114**	**(4,162)**	**78,952**
– claims, benefits and surrenders paid	**29,275**	**3,800**	**33,075**
– movement in liabilities	**53,839**	**(7,962)**	**45,877**
Reinsurers' share of claims and benefits paid and movement in liabilities	**(9,107)**	**(31)**	**(9,138)**
– claims, benefits and surrenders paid	**(7,418)**	**(30)**	**(7,448)**
– movement in liabilities	**(1,689)**	**(1)**	**(1,690)**
Year ended 31 Dec 2022	**74,007**	**(4,193)**	**69,814**
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

1 *The group's net insurance claims and benefits paid and movement in liabilities to policyholders is presented after elimination of inter-company transactions between our insurance manufacturing operations and other group entities.*

Liabilities under insurance contracts

	2022			2021		
	Gross	**Reinsurers' share[2]**	**Net**	Gross	Reinsurers' share[2]	Net
	HK$m	**HK$m**	**HK$m**	HK$m	HK$m	HK$m
Non-linked insurance						
At 1 Jan	**608,500**	**(27,361)**	**581,139**	547,058	(25,361)	521,697
Claims and benefits paid	**(29,275)**	**7,418**	**(21,857)**	(18,573)	2,048	(16,525)
Increase/(decrease) in liabilities to policyholders	**83,114**	**(9,107)**	**74,007**	78,159	(4,013)	74,146
Exchange differences and other movements[1]	**17,120**	**(3,084)**	**14,036**	1,856	(35)	1,821
At 31 Dec	**679,459**	**(32,134)**	**647,325**	608,500	(27,361)	581,139
Unit-linked						
At 1 Jan	**29,645**	**(5)**	**29,640**	34,348	(4)	34,344
Claims and benefits paid	**3,800**	**(30)**	**3,770**	(6,735)	39	(6,696)
Increase/(decrease) in liabilities to policyholders	**(4,162)**	**(31)**	**(4,193)**	1,898	4	1,902
Exchange differences and other movements[1]	**(7,984)**	**49**	**(7,935)**	134	(44)	90
At 31 Dec	**21,299**	**(17)**	**21,282**	29,645	(5)	29,640
Total liabilities to policyholders	**700,758**	**(32,151)**	**668,607**	638,145	(27,366)	610,779

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

	2022	2021
	HK$m	HK$m
Wages and salaries[1]	**37,053**	35,736
Social security costs	**1,384**	1,344
Post-employment benefits	**2,225**	2,181
– defined contribution pension plans	**1,758**	1,651
– defined benefit pension plans	**467**	530
Year ended 31 Dec	**40,662**	39,261

1 *'Wages and salaries' includes the effect of share-based payments arrangements of HK$890m (2021: HK$951m).*

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 2022	**10,075**	**(11,945)**	**(1,870)**
Service cost	**—**	**(429)**	**(429)**
– current service cost	**—**	**(434)**	**(434)**
– past service cost and gains from settlements	**—**	**5**	**5**
Net interest income/(expense) on the net defined benefit asset/(liability)	**162**	**(197)**	**(35)**
Re-measurement effects recognised in other comprehensive income	**(841)**	**1,073**	**232**
– return on plan assets (excluding interest income)	**(841)**	**—**	**(841)**
– actuarial gains	**—**	**1,073**	**1,073**
Contributions by the group	**345**	**—**	**345**
Benefits paid	**(1,414)**	**1,487**	**73**
Exchange differences and other movements	**(61)**	**122**	**61**
At 31 Dec 2022	**8,266**	**(9,889)**	**(1,623)**
Retirement benefit liabilities recognised on the balance sheet			**(1,655)**
Retirement benefit assets recognised on the balance sheet (within 'Prepayment, accrued income and other assets')			**32**
At 1 Jan 2021	10,453	(13,140)	(2,687)
Service cost	—	(475)	(475)
– current service cost	—	(492)	(492)
– past service cost and gains 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

Fair value of plan assets by asset classes

	At 31 Dec 2022			At 31 Dec 2021		
	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	**8,266**	**8,266**	**195**	10,075	10,075	257
– equities	**1,078**	**1,078**	**—**	1,232	1,232	—
– bonds	**4,622**	**4,622**	**—**	5,676	5,676	—
– alternative investments	**2,112**	**2,112**	**—**	2,490	2,490	—
– other[1]	**454**	**454**	**195**	677	677	257

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, 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 2022	**4,424**	**(4,915)**	**(491)**	**3,945**	**(4,191)**	**(246)**
Service cost	**—**	**(162)**	**(162)**	**—**	**(141)**	**(141)**
– current service cost	**—**	**(162)**	**(162)**	**—**	**(141)**	**(141)**
Net interest income/(expense) on the net defined benefit asset/(liability)	**56**	**(61)**	**(5)**	**50**	**(52)**	**(2)**
Re-measurement effects recognised in other comprehensive income	**(409)**	**566**	**157**	**(364)**	**537**	**173**
– return on plan assets (excluding interest income)	**(409)**	**—**	**(409)**	**(364)**	**—**	**(364)**
– actuarial gains	**—**	**566**	**566**	**—**	**537**	**537**
Contributions	**191**	**—**	**191**	**123**	**—**	**123**
Benefits paid	**(737)**	**737**	**—**	**(515)**	**515**	**—**
Exchange differences and other movements	**60**	**(67)**	**(7)**	**(69)**	**67**	**(2)**
At 31 Dec 2022	**3,585**	**(3,902)**	**(317)**	**3,170**	**(3,265)**	**(95)**
Retirement benefit liabilities recognised on the balance sheet			**(317)**			**(95)**
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)

The group expects to make HK$180m of contributions to the defined benefit scheme of the Principal Plan during 2023 (during 2022: HK$160m) and ServCo expects to make HK$116m contributions to the defined benefit scheme of the Principal Plan during 2023 (during 2022: HK$136m). These expected contributions are 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]

	Within one year	One to two years	Two to three years	Three to four years	Four to five years	Five to ten years
As at 31 December 2022 as reported by:	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**
– The group	**292**	**373**	**382**	**371**	**396**	**1,892**
– ServCo	**187**	**299**	**340**	**271**	**338**	**1,825**
As at 31 December 2021 as reported by:						
– 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 six years for the Principal Plan under the disclosed assumptions (2021: seven years).*

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

	At 31 Dec 2022			At 31 Dec 2021		
	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	**6,755**	**6,755**	**51**	8,369	8,369	76
– equities	**1,581**	**1,581**	**—**	1,839	1,839	—
– bonds	**3,725**	**3,725**	**—**	4,731	4,731	—
– alternative investments	**1,398**	**1,398**	**—**	1,723	1,723	—
– other[1]	**51**	**51**	**51**	76	76	76

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	Rate of pay increase
	% p.a.	% p.a.
At 31 Dec 2022	**3.50**	**3.50% p.a. for 2023 and 3.00% p.a. thereafter**
At 31 Dec 2021	1.30	3.00

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	
	2022	2021	**2022**	2021
	HK$m	HK$m	**HK$m**	HK$m
Discount rate – increase/decrease of 0.25%	**(111)**	(158)	**114**	162
Rate of pay increase – increase/decrease of 0.25%	**115**	160	**(112)**	(157)

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$111m (2021: HK$131m). This comprises fees (which represent the aggregate emoluments paid to or receivable by directors in respect of their services as a director) of HK$37m (2021: HK$30m) and other emoluments of HK$74m (2021: HK$101m) which includes contributions to pension schemes of HK$3m (2021: HK$1m). Non-cash benefits which are included in other emoluments mainly relate to share-based payment awards, and the provision of housing and furnishings.

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% (2021: 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 2022. Deferred taxation is provided for in accordance with the group's accounting policy in Note 1.2(m).

Tax expense

	2022	2021
	HK$m	HK$m
Current tax	**14,839**	12,489
– Hong Kong taxation – on current year profit	**5,072**	5,719
– Hong Kong taxation – adjustments in respect of prior years	**(492)**	(158)
– overseas taxation – on current year profit	**10,692**	7,151
– overseas taxation – adjustments in respect of prior years	**(433)**	(223)
Deferred tax	**668**	1,526
– origination and reversal of temporary differences	**128**	1,209
– effect of changes in tax rates	**—**	9
– adjustments in respect of prior years	**540**	308
Year ended 31 Dec	**15,507**	14,015

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

	2022	2021
	HK$m	HK$m
Profit before tax	**97,611**	86,563
Notional tax on profit before tax, calculated at the rates applicable to profits in the countries concerned	**19,832**	17,463
Effects of profits in associates and joint ventures	**(3,100)**	(3,186)
Non-taxable income and gains	**(3,591)**	(3,181)
Local taxes and overseas withholding taxes	**1,848**	2,695
Permanent disallowables	**747**	577
Others	**(229)**	(353)
Year ended 31 Dec	**15,507**	14,015

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	**176**	**—**	**1,557**	**2,680**	**—**	**2,106**	**6,519**
Liabilities	**(580)**	**(10,428)**	**(18)**	**—**	**(14,985)**	**(9,677)**	**(35,688)**
At 1 Jan 2022	**(404)**	**(10,428)**	**1,539**	**2,680**	**(14,985)**	**(7,571)**	**(29,169)**
Exchange and other adjustments	**(15)**	**(544)**	**(157)**	**(312)**	**215**	**(396)**	**(1,209)**
Charge/(credit) to income statement	**(43)**	**158**	**(229)**	**1,002**	**759**	**(2,315)**	**(668)**
Charge/(credit) to other comprehensive income	**6**	**—**	**10**	**—**	**(812)**	**2,761**	**1,965**
At 31 Dec 2022	**(456)**	**(10,814)**	**1,163**	**3,370**	**(14,823)**	**(7,521)**	**(29,081)**
Assets[1]	**146**	**—**	**1,193**	**3,370**	**—**	**4,550**	**9,259**
Liabilities[1]	**(602)**	**(10,814)**	**(30)**	**—**	**(14,823)**	**(12,071)**	**(38,340)**
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)

1 *After netting off balances within countries, the balances as disclosed in the Consolidated Financial Statements are as follows: deferred tax assets HK$3,856m (2021: HK$3,353m); and deferred tax liabilities HK$32,937m (2021: HK$32,522m).*
2 *Other included deferred tax of HK$5,847m (2021: HK$5,523m) 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$4,537m (2021: HK$3,130m). Of this amount, HK$1,536m (2021: HK$733m) 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

	2022		2021	
	HK$ per share	HK$m	HK$ per share	HK$m
Dividends paid on ordinary shares				
In respect of previous year:				
– fourth interim dividend	**0.23**	**10,584**	0.47	21,665
In respect of current year:				
– first interim dividend paid	**0.17**	**7,761**	0.26	12,211
– second interim dividend paid	**0.12**	**5,887**	0.24	11,153
– third interim dividend paid	**0.16**	**7,850**	0.24	11,361
Total	**0.68**	**32,082**	1.21	56,390
Distributions on other equity instruments		**2,739**		2,715
Dividends to shareholders		**34,821**		59,105

On 14 February 2023, the Directors declared a fourth interim dividend in respect of the financial year ended 31 December 2022 of HK$0.27 per ordinary share (HK$13,500m) (2021: HK$0.23 per ordinary share (HK$10,584m)). No liability was recorded in the financial statements in respect of the fourth interim dividend for 2022.

Total coupons on other equity instruments

	2022 HK$m	2021 HK$m
US$900m Fixed rate perpetual subordinated loan (interest rate fixed at 6.510%)	**460**	456
US$900m Fixed rate perpetual subordinated loan (interest rate fixed at 6.030%)	**426**	422
US$1,000m Fixed rate perpetual subordinated loan (interest rate fixed at 6.090%)	**477**	474
US$1,200m Fixed rate perpetual subordinated loan (interest rate fixed at 6.172%)	**580**	576
US$600m Fixed rate perpetual subordinated loan (interest rate fixed at 5.910%)	**278**	275
US$1,100m Fixed rate perpetual subordinated loan (interest rate fixed at 6.000%)	**518**	512
Total	**2,739**	2,715

7 Trading assets

	2022 HK$m	2021 HK$m
Treasury and other eligible bills	**132,737**	132,104
Debt securities	**231,601**	274,508
Equity securities	**264,447**	299,420
Reverse repurchase agreements and other similar secured lending[1]	**59,398**	63,519
Other[1,2]	**11,622**	7,899
At 31 Dec	**699,805**	777,450

1 Further product details have been included to reconcile to Note 30 'Offsetting of financial assets and financial liabilities' with effect from 31 December 2022.
2 'Other' includes 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 HK$m	Hedging HK$m	Trading HK$m	Hedging HK$m	Total HK$m	Trading HK$m	Hedging HK$m	Total HK$m
Foreign Exchange	**19,574,143**	**34,877**	**263,215**	**3,226**	**266,441**	**281,468**	**14**	**281,482**
Interest rate	**32,534,469**	**456,741**	**529,327**	**12,416**	**541,743**	**575,665**	**3,326**	**578,991**
Equity	**785,281**	**—**	**18,363**	**—**	**18,363**	**14,017**	**—**	**14,017**
Credit	**462,180**	**—**	**2,386**	**—**	**2,386**	**2,708**	**—**	**2,708**
Commodity and other	**159,242**	**—**	**3,230**	**—**	**3,230**	**3,939**	**—**	**3,939**
Gross total	**53,515,315**	**491,618**	**816,521**	**15,642**	**832,163**	**877,797**	**3,340**	**881,137**
Offset					**(329,392)**			**(329,392)**
At 31 Dec 2022					**502,771**			**551,745**
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

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 interest rate and foreign exchange risk. 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.

Hedged risk components

The group designates a portion of cash flows of a financial instrument or a group of financial instruments for a specific interest rate or foreign currency risk component in a fair value or cash flow hedge. The designated risks and portions are either contractually specified or otherwise separately identifiable components of the financial instrument that are reliably measurable. Risk-free or benchmark interest rates generally are regarded as being both separately identifiable and reliably measurable, except for the Ibor reform transition where the group designates alternative benchmark rates as the hedged risk which may not have been separately identifiable upon initial designation, provided the group reasonably expects it will meet the requirement within 24 months from the first designation date. The designated risk component accounts for a significant portion of the overall changes in fair value or cash flows of the hedged item(s).

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.

HSBC hedging instrument by hedged risk

	Hedging instrument				
		Carrying amount			
	Notional amount[1]	Assets	Liabilities	Balance sheet presentation	Change in fair value[2]
Hedged risk	HK$m	HK$m	HK$m		HK$m
Interest rate	309,450	11,761	2,281	Derivatives	6,130
At 31 Dec 2022	**309,450**	**11,761**	**2,281**		**6,130**
Interest rate	203,871	4,148	1,387	Derivatives	2,488
At 31 Dec 2021	203,871	4,148	1,387		2,488

1 The notional contract amounts of derivatives designated in qualifying hedge accounting relationships indicate the nominal value of transactions outstanding at the balance sheet date. They do not represent amounts at risk.
2 Used in effectiveness testing, which uses the full fair value change of the hedging instrument not excluding any component.

HSBC hedged item by hedged risk

	Hedged item						Ineffectiveness	
	Carrying amount		Accumulated fair value hedge adjustments included in carrying amount[2]					
	Assets	Liabilities	Assets	Liabilities		Change in fair value[1]	Recognised in profit and loss	Profit and loss presentation
Hedged risk	HK$m	HK$m	HK$m	HK$m	Balance sheet presentation	HK$m	HK$m	
Interest rate	257,126		(10,312)		Financial investments measured at fair value through other comprehensive income	(10,716)	(237)	Net income from financial instruments held for trading or managed on a fair value basis
	5,755		(435)		Loans and advances to customers	(351)		
		1,161		–	Debt securities in issue	8		
		33,113		(2,260)	Subordinated liabilities[3]	4,692		
At 31 Dec 2022	**262,881**	**34,274**	**(10,747)**	**(2,260)**		**(6,367)**	**(237)**	
Interest rate	162,769		116		Financial investments measured at fair value through other comprehensive income	(4,930)	(77)	Net income from financial instruments held for trading or managed on a fair value basis
	6,465		(72)		Loans and advances to customers	(110)		
		1,269		9	Debt securities in issue	3		
		37,783		2,413	Subordinated liabilities[3]	2,472		
At 31 Dec 2021	169,234	39,052	44	2,422		(2,565)	(77)	

1 Used in effectiveness testing, which comprise an amount attributable to the designated hedged risk that can be a risk component.
2 The accumulated amount of fair value adjustments remaining in the statement of financial position for hedged items that have ceased to be adjusted for hedging gains and losses were assets of HK$143m (2021: HK$164m) for FVOCI assets and assets of HK$1,243m (2021: nil) for subordinated liabilities.
3 Represents Loss Absorbing Capacity ('LAC') instruments issued by the Bank to HSBC Asia Holdings Limited, the balance of which is included in "amounts due to Group companies".

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.

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.

Hedging instrument by hedged risk

	Hedging instrument					Hedged item	Ineffectiveness	
		Carrying amount						
	Notional amount[1]	Assets	Liabilities	Balance sheet presentation	Change in fair value[2]	Change in fair value[3]	Recognised in profit and loss	Profit and loss presentation
Hedged risk	HK$m	HK$m	HK$m		HK$m	HK$m	HK$m	
Foreign currency	**34,877**	**3,226**	**14**	**Derivatives**	**5,461**	**5,461**	**–**	**Net income from financial instruments held for trading or managed on a fair value basis**
Interest rate	**147,291**	**655**	**1,045**	**Derivatives**	**(448)**	**(448)**	**–**	
At 31 Dec 2022	**182,168**	**3,881**	**1,059**		**5,013**	**5,013**	**–**	
Foreign currency	74,732	3,401	523	Derivatives	6,062	6,062	–	Net income from financial instruments held for trading or managed on a fair value basis
Interest rate	15,014	173	19	Derivatives	140	140	–	
At 31 Dec 2021	89,746	3,574	542		6,202	6,202	–	

1 *The notional contract amounts of derivatives designated in qualifying hedge accounting relationships indicate the nominal value of transactions outstanding at the balance sheet date. They do not represent amounts at risk.*
2 *Used in effectiveness testing; comprising the full fair value change of the hedging instrument not excluding any component.*
3 *Used in effectiveness assessment; comprising amount attributable to the designated hedged risk that can be a risk component.*

Sources of hedge ineffectiveness may arise from basis risk, including but not limited to timing differences between the hedged items and hedging instruments, and hedges using instruments with a non-zero fair value.

Reconciliation of equity and analysis of other comprehensive income by risk type

	Interest rate	Foreign currency
	HK$m	HK$m
Cash flow hedging reserve at 1 Jan 2022	**108**	**45**
Fair value gains/(losses)	**(448)**	**5,461**
Fair value (gains) reclassified from the cash flow hedge reserve to the income statement in respect of:		
Hedged items that have affected profit or loss	**(109)**	**(6,891)**
Income taxes	**112**	**236**
Others	**(1)**	**–**
Cash flow hedging reserve at 31 Dec 2022	**(338)**	**(1,149)**
Cash flow hedging reserve at 1 Jan 2021	35	737
Fair value gains	140	6,062
Fair value (gains) reclassified from the cash flow hedge reserve to the income statement in respect of:		
Hedged items that have affected profit or loss	(30)	(6,886)
Income taxes	(37)	132
Others	–	–
Cash flow hedging reserve at 31 Dec 2021	108	45

Interest rate benchmark reform

At 31 December 2022, HK$157,460m (2021: HK$99,608m) of the notional amounts of interest rate derivatives designated in hedge accounting relationships are expected to be directly affected by market-wide Ibors reform and in scope of HKFRS Interest Rate Benchmark Reform Phase 1 amendments. They do not represent the extent of the risk exposure managed by the group.

Further details regarding the impact of the market-wide benchmarks reform is set out in the 'Top and emerging risks' section on page 25-26 as specified as 'Audited'.

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

	2022			2021		
	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	**—**	**743**	**743**	—	241	241
Debt securities	**18,754**	**10,492**	**29,246**	12,847	11,066	23,913
Equity securities	**—**	**186,955**	**186,955**	—	169,125	169,125
Reverse repurchase agreements and other similar secured lending[1]	**—**	**1,764**	**1,764**	—	777	777
Other[1,2]	**—**	**7,743**	**7,743**	—	8,343	8,343
At 31 Dec	**18,754**	**207,697**	**226,451**	12,847	189,552	202,399

1 *Further product details have been included to reconcile to Note 30 'Offsetting of financial assets and financial liabilities' with effect from 31 December 2022.*
2 *'Other' includes term lending to banks and customers, and default fund contribution.*

10 Loans and advances to customers

	2022	2021
	HK$m	HK$m
Gross loans and advances to customers	**3,745,113**	3,872,956
Expected credit loss allowances	**(39,964)**	(32,017)
At 31 Dec	**3,705,149**	3,840,939

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

	2022	2021
	HK$m	HK$m
Residential mortgages	**1,177,614**	1,167,487
Credit card advances	**92,023**	89,005
Other personal	**255,747**	275,819
Total personal	**1,525,384**	1,532,311
Real estate	**570,370**	635,217
Wholesale and retail trade	**377,359**	428,785
Manufacturing	**372,060**	410,033
Transportation and storage	**106,172**	111,388
Other	**490,791**	471,988
Total corporate and commercial	**1,916,752**	2,057,411
Non-bank financial institutions	**302,977**	283,234
At 31 Dec	**3,745,113**	3,872,956
By geography[1]		
Hong Kong	**2,332,813**	2,447,799
Rest of Asia Pacific	**1,412,300**	1,425,157

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

	2022			2021		
	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	**2,971**	**(783)**	**2,188**	4,205	(1,213)	2,992
– one to two years	**2,538**	**(724)**	**1,814**	3,543	(1,051)	2,492
– two to three years	**2,287**	**(677)**	**1,610**	2,757	(912)	1,845
– three to four years	**2,226**	**(644)**	**1,582**	2,357	(762)	1,595
– four to five years	**2,172**	**(619)**	**1,553**	2,200	(647)	1,553
– after five years	**24,585**	**(4,729)**	**19,856**	22,133	(3,203)	18,930
	36,779	**(8,176)**	**28,603**	37,195	(7,788)	29,407
Expected credit loss allowances			**(309)**			(378)
At 31 Dec			**28,294**			29,029

11 Financial investments

	2022	2021
	HK$m	HK$m
Financial investments measured at fair value through other comprehensive income	**1,246,652**	1,549,011
– treasury and other eligible bills	**612,990**	653,245
– debt securities	**626,537**	888,664
– equity securities	**7,125**	7,102
Debt instruments measured at amortised cost	**974,709**	502,564
– treasury and other eligible bills	**135,216**	6,900
– debt securities	**839,493**	495,664
At 31 Dec	**2,221,361**	2,051,575

Equity instruments measured at fair value through other comprehensive income

	2022		2021	
	Fair value	**Dividends recognised**	Fair value	Dividends recognised
Type of equity instruments	**HK$m**	**HK$m**	HK$m	HK$m
Business facilitation	**6,615**	**217**	6,540	189
Investments required by central institutions	**404**	**3**	420	3
Others	**106**	**–**	142	6
At 31 Dec	**7,125**	**220**	7,102	198

12 Assets pledged, assets transferred and collateral received

Assets pledged

Financial assets pledged to secure liabilities

	2022	2021
	HK$m	HK$m
Treasury bills and other eligible securities	121,131	57,631
Loans and advances to banks	4,372	3,211
Loans and advances to customers	22,512	30,975
Debt securities	149,687	134,747
Equity securities	34,388	47,453
Cash collateral included in other assets	129,025	75,951
Assets pledged at 31 Dec	461,115	349,968
Amount of liabilities secured	354,146	275,815

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$193,461m (2021: HK$85,162m).

Assets transferred

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

	2022		2021	
	Carrying amount of:		Carrying amount of:	
	Transferred assets	Associated liabilities	Transferred assets	Associated liabilities
	HK$m	HK$m	HK$m	HK$m
Repurchase agreements	167,260	151,677	135,994	124,663
Securities lending agreements	70,036	3,644	44,171	282
	237,296	155,321	180,165	124,945

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

	2022	2021
	HK$m	HK$m
Fair value of collateral permitted to sell or repledge in the absence of default	1,337,822	1,134,296
Fair value of collateral actually sold or repledged	520,756	377,117

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	mainland 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 of the above subsidiaries are included in the group's consolidated financial statements. 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

	2022	2021
	HK$m	HK$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	**3,835**	5,272
Accumulated non-controlling interests of the subsidiary	**65,237**	65,431
Dividends paid to non-controlling interests	**2,823**	4,415
Summarised financial information (before intra-group eliminations):		
– total assets	**1,893,805**	1,820,185
– total liabilities	**1,709,844**	1,635,769
– net operating income before change in expected credit losses and other credit impairment charges	**33,864**	33,265
– profit for the year	**10,151**	13,946
– other comprehensive expense for the year, net of tax	**(2,446)**	(357)
– total comprehensive income for the year	**7,705**	13,589

14 Interests in associates and joint ventures

Associates and joint ventures

	2022	2021
	HK$m	HK$m
Share of net assets	**182,137**	184,402
Goodwill	**3,815**	4,141
Impairment	**(54)**	(58)
At 31 Dec	**185,898**	188,485

As 31 December 2022, the group's interests in associates amounted to HK$185,888m (2021: HK$188,485m).

Principal associate

	Place of incorporation	The group's interest in issued share capital
Bank of Communications Co., Ltd	mainland 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$63,469m at 31 December 2022 (2021: HK$66,579m).

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 2022, the fair value of the group's investment in BoCom had been below the carrying amount for approximately eleven years. As a result, the group performed an impairment test on the carrying amount, which confirmed that there was no impairment at 31 December 2022 as the recoverable amount as determined by a value-in-use ('VIU') calculation was higher than the carrying value.

	At					
	31 Dec 2022			31 Dec 2021		
	VIU	**Carrying value**	**Fair value**	VIU	Carrying value	Fair value
	HK$bn	**HK$bn**	**HK$bn**	HK$bn	HK$bn	HK$bn
BoCom	**183.0**	**182.3**	**63.5**	193.0	184.8	66.6

The headroom, which is defined as the extent to which the VIU exceeds the carrying value decreased by HK$7.5bn compared with 31 December 2021. The decrease in headroom was principally due to revisions to management's best estimates of BoCom's future earnings in the short to medium term, and the impact from BoCom's actual performance.

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.

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. Forecast earnings growth over the short to medium term are lower than recent (within the last five years) historical actual growth and reflect 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% (2021: 3%) for periods after 2026, which does not exceed forecast GDP growth in mainland China and is similar to forecasts by external analysts.
- Long-term asset growth rate: 3% (2021: 3%) for periods after 2026, which is the rate that assets are expected to grow to achieve long-term profit growth of 3%.
- Discount rate: 10.04% (2021: 10.03%), which is based on a capital asset pricing model ('CAPM'), using market data. The discount rate used is within the range of 8.4% to 10.4% (2021: 8.7% to 10.1%) indicated by the CAPM. While the CAPM range sits at the lower end of the range adopted by selected external analysts of 8.8% to 13.5% (2021: 9.9% to 13.5%), we continue to regard the CAPM range as the most appropriate basis for determining this assumption.
- Expected credit losses ('ECL') as a percentage of customer advances: ranges from 0.99% to 1.05% (2021: 0.98% to 1.12%) in the short to medium term, reflecting reported credit experience through the ongoing Covid-19 pandemic in mainland China followed by an expected reversion to recent historical levels. For periods after 2026, the ratio is 0.97% (2021: 0.97%), which is higher than BoCom's average ECL as a percentage of customer advances in recent years prior to the pandemic.
- Risk-weighted assets as a percentage of total assets: ranges from 61.0% to 64.4% (2021: 61.0% to 62.4%) in the short to medium term, reflecting higher risk-weights in the short term followed by an expected reversion to recent historical levels. For periods after 2026, the ratio is 61.0% (2021: 61.0%), which is similar to BoCom's actual results in recent years.
- Operating income growth rate: ranges from 1.9% to 7.7% (2021: 5.1% to 6.2%) in the short to medium term, is lower than BoCom's actual results in recent years and is similar to the forecasts disclosed by external analysts. This reflects BoCom's most recent actual results, global trade tensions and industry developments in mainland China.
- Cost-income ratio: ranges from 35.5% to 36.3% (2021: 35.5% to 36.1%) 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 4.4% to 15.0% (2021: 6.8% to 15.0%) 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 2026, the rate is 15.0% (2021: 15.0%), 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 of 12.5% (2021: 12.5%) and tier 1 capital adequacy ratio of 9.5% (2021: 9.5%), based on BoCom's capital risk appetite and capital requirements respectively.

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 2 basis points
• Long-term asset growth rate	• Increase by 2 basis points
• Discount rate	• Increase by 3 basis points
• Expected credit losses as a percentage of customer advances	• Increase by <1 basis points
• Risk-weighted assets as a percentage of total assets	• Increase by 14 basis points
• Operating income growth rate	• Decrease by 3 basis points
• Cost-income ratio	• Increase by 9 basis points
• Long-term effective tax rate	• Increase by 26 basis points
• Capital requirements – capital adequacy ratio	• Increase by 3 basis points
• Capital requirements – tier 1 capital adequacy ratio	• Increase by 173 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 based on external analysts' forecasts, statutory requirements and other relevant external data sources, which can change period to period.

Sensitivity of VIU to reasonably possible changes in key assumptions

	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 2022						
Long-term profit growth rate[1]	**+75**	**28.1**	**211.1**	**-71**	**(21.1)**	**161.9**
Long-term asset growth rate[1]	**-71**	**24.2**	**207.2**	**+75**	**(31.8)**	**151.2**
Discount rate	**-164**	**54.3**	**237.3**	**+136**	**(28.7)**	**154.3**
Expected credit losses as a percentage of customer advances	**2022 to 2026: 95 2027 onwards: 91**	**14.9**	**197.9**	**2022 to 2026: 120 2027 onwards: 104**	**(22.5)**	**160.5**
Risk-weighted assets as a percentage of total assets	**-118**	**0.6**	**183.6**	**+239**	**(17.5)**	**165.5**
Operating income growth rate	**+44**	**10.5**	**193.5**	**-83**	**(19.3)**	**163.7**
Cost-income ratio	**-122**	**8.1**	**191.1**	**+174**	**(16.5)**	**166.5**
Long-term effective tax rate	**-426**	**11.8**	**194.8**	**+1000**	**(27.7)**	**155.3**
Capital requirements – capital adequacy ratio	**—**	**—**	**183.0**	**+191**	**(48.8)**	**134.2**
Capital requirements – tier 1 capital adequacy ratio	**—**	**—**	**183.0**	**+266**	**(24.8)**	**158.2**
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	-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

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.*

Considering the interrelationship of the changes set out in the table above, management estimates that the reasonably possible range of VIU is HK$131.9bn to HK$223.9bn (2021: HK$148.3bn to HK$228.4bn). 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. All other long-term assumptions, and the basis of the CMC have been kept unchanged when determining the reasonably possible range of the VIU. Impairment, if determined, would be recognised in the income statement. The impact on group's CET1 ratio is expected to be minimal in the event of an impairment, as the adverse impact on CET1 capital from the impairment would be partly offset by the favourable impact from a lower carrying value.

Selected financial information of BoCom

The statutory accounting reference date of BoCom is 31 December. For the year ended 31 December 2022, the group included the associate's results on the basis of financial statements made up for the 12 months to 30 September 2022, but taking into account the financial effect of significant transactions or events in the period from 1 October 2022 to 31 December 2022.

Selected balance sheet information of BoCom

	At 30 Sep	
	2022	2021
	HK$m	HK$m
Cash and balances with central banks	**891,754**	960,732
Due from and placements with banks and other financial institutions	**778,032**	771,522
Loans and advances to customers	**7,968,993**	7,751,362
Other financial assets	**4,282,704**	4,223,488
Other assets	**438,653**	375,073
Total assets	**14,360,136**	14,082,177
Due to and placements from banks and other financial institutions	**2,160,865**	2,238,612
Deposits from customers	**8,920,656**	8,572,625
Other financial liabilities	**1,851,657**	1,779,110
Other liabilities	**277,086**	312,486
Total liabilities	**13,210,264**	12,902,833
Total equity	**1,149,872**	1,179,344

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

	At 30 Sep	
	2022	2021
	HK$m	HK$m
The group's share of ordinary shareholders' equity	**178,526**	180,738
Goodwill	**3,728**	4,044
Carrying amount	**182,254**	184,782

Selected income statement information of BoCom

	For the 12 months ended 30 Sep	
	2022	2021
	HK$m	HK$m
Net interest income	**198,218**	191,076
Net fee and commission income	**53,667**	55,735
Credit and impairment losses	**(76,046)**	(75,402)
Depreciation and amortisation	**(18,406)**	(17,851)
Tax expense	**(4,681)**	(8,119)
– profit for the year	**106,352**	110,370
– other comprehensive expense	**(1,921)**	(2,861)
Total comprehensive income	**104,431**	107,509
Dividends received from BoCom	**5,881**	5,386

Using the latest period for which BoCom has disclosed this information (at 30 June 2022), the group's share of associate's contingent liabilities was HK$442,884m (2021: HK$432,259m).

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.

	2022	2021
	HK$m	HK$m
Goodwill	**6,795**	7,116
Present value of in-force long-term insurance business	**65,537**	63,765
Other intangible assets[1]	**30,087**	24,300
At 31 Dec	**102,419**	95,181

1 *Included within other intangible assets is internally generated software with a net carrying value of HK$27,209m (2021: HK$21,670m). During the year, capitalisation of internally generated software was HK$11,570m (2021: HK$10,681m), amortisation charge was HK$5,610m (2021: HK$4,115m) and impairment charge was HK$332m (2021: HK$184m).*

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.

Financial Reporting 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 Financial Reporting Committee.

Movements in PVIF

	2022	2021
	HK$m	HK$m
At 1 Jan	**63,765**	65,052
Acquisition	**2,114**	
Changes in PVIF of long-term insurance business	**(256)**	(1,294)
– value of new business written during the year	**9,213**	7,381
– expected return[1]	**(5,326)**	(5,950)
– assumption changes and experience variances (see below)	**(3,967)**	(2,873)
– other adjustments	**(176)**	148
Exchange differences and other	**(86)**	7
At 31 Dec	**65,537**	63,765

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$(6,896)m (2021: HK$440m) decrease in PVIF due to rising interest rates, which is directly offset within the valuation of liabilities under insurance contracts.
- HK$(564)m (2021: HK$(2,519)m), 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$3,493m (2021: HK$(794)m), driven by other assumptions changes and experience variances.

Key assumptions used in the computation of PVIF for the main life insurance operations

Economic assumptions are set in a way that is consistent with observable market values. The valuation of PVIF is sensitive to observed market movements. The following are the key long-term assumptions used in the computation of PVIF for Hong Kong insurance entities, being the main life insurance operations:

	2022	2021
	%	%
Weighted average risk free rate	**3.85**	1.40
Weighted average risk discount rate	**7.33**	5.20
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 71 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 72 for further details on the impact of changes in non-economic assumptions on our insurance manufacturing operations.

16 Property, plant and equipment

	2022	2021
	HK$m	HK$m
Owned property, plant and equipment[1]	**123,491**	121,072
Other right-of-use assets	**7,435**	8,755
At 31 Dec	**130,926**	129,827

1 *Included leasehold land and buildings of HK$112,591m (2021: HK$110,458m) 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

	2022				2021			
	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	**102,367**	**13,465**	**15,747**	**131,579**	100,791	13,167	15,266	129,224
Exchange and other adjustments	**(797)**	**8**	**(679)**	**(1,468)**	(67)	16	(112)	(163)
Additions	**3,183**	**324**	**2,253**	**5,760**	667	2	2,049	2,718
Disposals	**(55)**	**—**	**(680)**	**(735)**	(58)	—	(1,456)	(1,514)
Transfers	**—**	**—**	**—**	**—**	—	—	—	—
Elimination of accumulated depreciation on revalued land and buildings	**(5,105)**	**—**	**—**	**(5,105)**	(4,633)	—	—	(4,633)
Surplus/(deficit) on revaluation	**4,683**	**(133)**	**—**	**4,550**	5,643	277	—	5,920
Reclassifications	**(2,849)**	**2,535**	**—**	**(314)**	24	3	—	27
At 31 Dec	**101,427**	**16,199**	**16,641**	**134,267**	102,367	13,465	15,747	131,579
Accumulated depreciation								
At 1 Jan	**87**	**—**	**10,420**	**10,507**	90	—	10,387	10,477
Exchange and other adjustments	**(42)**	**—**	**(533)**	**(575)**	30	—	(46)	(16)
Charge for the year	**5,151**	**—**	**1,418**	**6,569**	4,645	—	1,374	6,019
Disposals	**—**	**—**	**(620)**	**(620)**	(45)	—	(1,295)	(1,340)
Transfers	**—**	**—**	**—**	**—**	—	—	—	—
Elimination of accumulated depreciation on revalued land and buildings	**(5,105)**	**—**	**—**	**(5,105)**	(4,633)	—	—	(4,633)
At 31 Dec	**91**	**—**	**10,685**	**10,776**	87	—	10,420	10,507
Net book value at 31 Dec	**101,336**	**16,199**	**5,956**	**123,491**	102,280	13,465	5,327	121,072

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

	2022	2021
	HK$m	HK$m
Cost less accumulated depreciation	**18,584**	17,121

Valuation of land and buildings and investment properties

The group's land and buildings and investment properties were revalued as at 31 December 2022. 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$6,839m (2021: HK$6,854m) in respect of properties which were valued using the depreciated replacement cost method.

Valuation of land and buildings and investment properties in Hong Kong, Macau and mainland China were largely carried out by Cushman & Wakefield Limited, who have recent experience in the location and type of properties and who are members of the Hong Kong Institute of Surveyors. This represents 93% by value of the group's properties subject to valuation. Other properties were valued by different independent professionally qualified valuers.

17 Prepayments, accrued income and other assets

	2022	2021
	HK$m	HK$m
Prepayments and accrued income	**32,604**	24,986
Bullion	**50,253**	52,986
Acceptances and endorsements	**57,118**	55,789
Reinsurers' share of liabilities under insurance contracts (Note 3)	**32,151**	27,366
Current tax assets	**2,144**	2,674
Settlement accounts	**38,621**	24,577
Cash collateral and margin receivables	**94,850**	44,177
Other assets	**47,578**	37,188
At 31 Dec	**355,319**	269,743

Prepayments, accrued income and other assets included HK$267,972m (2021: HK$180,757m) of financial assets, the majority of which were measured at amortised cost.

18 Customer accounts

Customer accounts by country/territory

	2022	2021
	HK$m	HK$m
Hong Kong	4,229,531	4,284,719
Singapore	479,241	448,976
Mainland China	443,954	462,187
Australia	222,222	220,233
India	176,466	191,116
Malaysia	124,792	128,673
Taiwan	119,400	120,744
Indonesia	45,529	46,938
Other	272,574	273,596
At 31 Dec	**6,113,709**	6,177,182

19 Trading liabilities

	2022	2021
	HK$m	HK$m
Net short positions in securities	80,564	85,627
Repurchase agreements and other similar secured lending[1]	61,404	6,703
Customer accounts	485	393
At 31 Dec	**142,453**	92,723

1 Further product details have been included to reconcile to Note 30 'Offsetting of financial assets and financial liabilities' with effect from 31 December 2022.

20 Financial liabilities designated at fair value

	2022	2021
	HK$m	HK$m
Deposits by banks and customer accounts	89,258	59,611
Debt securities in issue	45,454	43,928
Liabilities to customers under investment contracts	33,031	35,426
At 31 Dec	**167,743**	138,965

The carrying amount of financial liabilities designated at fair value was HK$370m lower than the contractual amount at maturity (2021: HK$1,385m lower). The cumulative gain in fair value attributable to changes in credit risk was HK$138m (2021: HK$62m loss).

21 Debt securities in issue

	2022	2021
	HK$m	HK$m
Bonds and medium-term notes	78,537	79,852
Other debt securities in issue	67,826	31,440
Total debt securities in issue	**146,363**	111,292
Included within:		
– financial liabilities designated at fair value (Note 20)	(45,454)	(43,928)
At 31 Dec	**100,909**	67,364

22 Accruals and deferred income, other liabilities and provisions

	2022	2021
	HK$m	HK$m
Accruals and deferred income	32,779	23,020
Acceptances and endorsements	57,210	55,824
Settlement accounts	33,536	26,158
Cash collateral and margin payables	58,919	53,541
Share-based payment liability to HSBC Holdings plc	1,564	1,431
Lease liabilities	7,850	9,165
Other liabilities[1]	44,957	48,668
Provisions for liabilities and charges	1,911	1,399
At 31 Dec	**238,726**	219,206

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

Accruals and deferred income, other liabilities and provisions included HK$227,840m (2021: HK$209,441m) 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 2021	**148**	**466**	**614**
Additions	**468**	**243**	**711**
Amounts utilised	**(307)**	**(174)**	**(481)**
Unused amounts reversed	**(35)**	**(84)**	**(119)**
Exchange and other movements	**(3)**	**30**	**27**
At 31 Dec 2022	**271**	**481**	**752**
Contractual commitments[1]			
At 31 Dec 2021			**785**
Net change in expected credit loss provision and other movements			**374**
At 31 Dec 2022			**1,159**
Total Provisions at 31 Dec 2022			**1,911**
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			
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

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 to third parties measured at amortised cost consist of undated primary capital notes and other capital loan having an original term to maturity of five years or more. Subordinated liabilities to Group entities are not included in the table below.

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

1 *These securities were called in 2022.*

24 Share capital

	2022 HK$m	2021 HK$m
Paid up share capital in HK$	**123,949**	116,103
Paid up share capital in US$[1]	**56,232**	56,232
At 31 Dec	**180,181**	172,335

Ordinary shares issued and fully paid

	2022		2021	
	HK$m	**Number**	HK$m	Number
At 1 Jan	**172,335**	**46,440,991,798**	172,335	46,440,991,798
Shares issued during the year	**7,846**	**3,138,400,000**	—	—
At 31 Dec	**180,181**	**49,579,391,798**	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.*

3,138.4m new ordinary shares were issued during 2022 (2021: nil) at an issue price of HK$2.5 each for general corporate purposes and to further strengthen the capital base. 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.

		2022	2021
		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
US$1,000m	Floating rate perpetual subordinated loan, callable from May 2027[7]	**7,771**	—
At 31 Dec		**52,386**	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%.*
7 *Interest rate at compounded SOFR plus 5.090%.*

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 71. 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	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	232,740	–	–	–	–	–	–	–	232,740
Items in the course of collection from other banks	28,557	–	–	–	–	–	–	–	28,557
Hong Kong Government certificates of indebtedness	341,354	–	–	–	–	–	–	–	341,354
Trading assets	691,744	1,764	3,089	–	163	3,045	–	–	699,805
Derivatives	495,785	691	205	142	474	1,840	2,556	1,078	502,771
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	6,334	662	2,334	809	306	3,644	13,130	199,232	226,451
Reverse repurchase agreements – non-trading	585,333	256,887	54,039	7,679	7,172	13,402	3,464	–	927,976
Loans and advances to banks	321,807	99,229	39,705	6,132	13,686	16,445	22,020	–	519,024
Loans and advances to customers	567,455	370,175	301,012	151,506	146,803	441,860	632,986	1,093,352	3,705,149
Financial investments	313,122	516,476	135,636	71,865	73,234	217,677	391,288	502,063	2,221,361
Amounts due from Group companies	101,287	4,652	4,356	716	2,696	10,236	7,729	19	131,691
Accrued income and other financial assets	193,219	40,300	21,535	3,864	4,077	796	675	3,506	267,972
Financial assets at 31 Dec 2022	3,878,737	1,290,836	561,911	242,713	248,611	708,945	1,073,848	1,799,250	9,804,851
Non-financial assets	–	–	–	–	–	–	–	519,301	519,301
Total assets at 31 Dec 2022	3,878,737	1,290,836	561,911	242,713	248,611	708,945	1,073,848	2,318,551	10,324,152
Financial liabilities									
Hong Kong currency notes in circulation	341,354	–	–	–	–	–	–	–	341,354
Items in the course of transmission to other banks	33,073	–	–	–	–	–	–	–	33,073
Repurchase agreements – non-trading	335,467	2,173	2,557	–	5,027	5,869	–	–	351,093
Deposits by banks	193,147	1,249	3,513	811	176	12	–	–	198,908
Customer accounts	5,050,054	540,611	304,705	81,349	85,465	22,028	29,490	7	6,113,709
Trading liabilities	142,432	21	–	–	–	–	–	–	142,453
Derivatives	550,741	4	62	60	157	175	489	57	551,745
Financial liabilities designated at fair value	35,661	35,229	12,142	10,593	8,957	20,585	11,436	33,140	167,743
Debt securities in issue	13,723	13,266	24,251	13,388	1,054	9,674	22,382	3,171	100,909
Amounts due to Group companies	129,641	12,841	808	272	842	70,332	49,935	133,987	398,658
Accruals and other financial liabilities	138,862	41,883	22,569	5,525	7,098	5,566	5,228	1,109	227,840
Subordinated liabilities[1]	–	–	–	–	–	–	–	3,119	3,119
Total financial liabilities at 31 Dec 2022	6,964,155	647,277	370,607	111,998	108,776	134,241	118,960	174,590	8,630,604
Non-financial liabilities	–	–	–	–	–	–	–	752,285	752,285
Total liabilities at 31 Dec 2022	6,964,155	647,277	370,607	111,998	108,776	134,241	118,960	926,875	9,382,889

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	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
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

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 2022						
Hong Kong currency notes in circulation	**341,354**	**—**	**—**	**—**	**—**	**341,354**
Items in the course of transmission to other banks	**33,073**	**—**	**—**	**—**	**—**	**33,073**
Repurchase agreements – non-trading	**335,951**	**2,194**	**7,708**	**5,877**	**—**	**351,730**
Deposits by banks	**193,748**	**1,250**	**4,542**	**14**	**—**	**199,554**
Customer accounts	**5,053,321**	**552,623**	**481,006**	**55,739**	**16**	**6,142,705**
Trading liabilities	**142,453**	**—**	**—**	**—**	**—**	**142,453**
Derivatives	**551,094**	**67**	**253**	**603**	**60**	**552,077**
Financial liabilities designated at fair value	**37,062**	**36,310**	**32,404**	**33,198**	**33,170**	**172,144**
Debt securities in issue	**13,917**	**14,305**	**40,630**	**34,698**	**3,400**	**106,950**
Amounts due to Group companies	**129,728**	**14,509**	**11,396**	**155,038**	**170,299**	**480,970**
Other financial liabilities	**135,664**	**38,584**	**31,237**	**9,967**	**1,128**	**216,580**
Subordinated liabilities	**—**	**36**	**108**	**577**	**4,561**	**5,282**
	6,967,365	**659,878**	**609,284**	**295,711**	**212,634**	**8,744,872**
Loan and other credit-related commitments	**3,191,864**	**—**	**—**	**—**	**—**	**3,191,864**
Financial guarantees	**41,991**	**—**	**—**	**—**	**—**	**41,991**
	10,201,220	**659,878**	**609,284**	**295,711**	**212,634**	**11,978,727**
Proportion of cash flows payable in period	**85%**	**6%**	**5%**	**2%**	**2%**	
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%	

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

	2022 HK$m	2021 HK$m
Guarantees and contingent liabilities:		
– financial guarantees[1]	**41,991**	41,843
– performance and other guarantees[2]	**354,794**	335,849
– other contingent liabilities	**1,222**	1,751
At 31 Dec	**398,007**	379,443
Commitments[3]:		
– documentary credits and short-term trade-related transactions	**26,324**	32,284
– forward asset purchases and forward forward deposits placed	**48,560**	40,745
– undrawn formal standby facilities, credit lines and other commitments to lend	**3,116,980**	2,872,531
At 31 Dec	**3,191,864**	2,945,560

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$1,892,401m of commitments at 31 December 2022 (2021: HK$1,826,335m) 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 2022 included amounts in relation to legal and regulatory matters as set out in Note 38.

29 Other commitments

Capital commitments

At 31 December 2022, capital commitments, mainly related to the commitment for purchase of properties, were HK$3,834m (2021: HK$4,826m).

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
- cash and non-cash collateral (debt securities and equities) has been received/pledged for derivatives and reverse repurchase/repurchase, stock borrowing/lending and similar agreements to cover net exposure in the event of default or other predetermined events.

The effect of over-collateralisation is excluded.

'Amounts not subject to enforceable master netting agreements' include contracts executed in jurisdictions where the rights of set off may not be upheld under the local bankruptcy laws, and transactions where a legal opinion evidencing enforceability of the right of offset may not have been sought, or may have been unable to obtain.

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, including 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
At 31 Dec 2022								
Financial assets[2]								
Derivatives	**795,828**	**(329,392)**	**466,436**	**(397,121)**	**(39,022)**	**30,293**	**36,335**	**502,771**
Reverse repos, stock borrowing and similar agreements classified as:[4]								
– trading assets	**57,505**	**—**	**57,505**	**(57,273)**	**(227)**	**5**	**4,177**	**61,682**
– third party	**55,221**	**—**	**55,221**	**(54,994)**	**(227)**	**—**	**4,177**	**59,398**
– amounts due from Group companies	**2,284**	**—**	**2,284**	**(2,279)**	**—**	**5**	**—**	**2,284**
– reverse repurchase agreements - non-trading	**932,272**	**(29,470)**	**902,802**	**(901,205)**	**(1,597)**	**—**	**63,031**	**965,833**
– third party	**891,131**	**(26,186)**	**864,945**	**(863,840)**	**(1,105)**	**—**	**63,031**	**927,976**
– amounts due from Group companies	**41,141**	**(3,284)**	**37,857**	**(37,365)**	**(492)**	**—**	**—**	**37,857**
– financial assets designated and otherwise mandatorily measured at fair value through profit or loss								
– third party	**1,764**	**—**	**1,764**	**(1,764)**	**—**	**—**	**—**	**1,764**
	1,787,369	**(358,862)**	**1,428,507**	**(1,357,363)**	**(40,846)**	**30,298**	**103,543**	**1,532,050**
Financial liabilities[3]								
Derivatives	**849,582**	**(329,392)**	**520,190**	**(390,421)**	**(70,825)**	**58,944**	**31,555**	**551,745**
Repos, stock lending and similar agreements classified as:[4]								
– trading liabilities	**61,437**	**—**	**61,437**	**(61,436)**	**(1)**	**—**	**22**	**61,459**
– third party	**61,382**	**—**	**61,382**	**(61,381)**	**(1)**	**—**	**22**	**61,404**
– amounts due to Group companies	**55**	**—**	**55**	**(55)**	**—**	**—**	**—**	**55**
– repurchase agreements - non-trading	**403,019**	**(29,470)**	**373,549**	**(373,126)**	**(352)**	**71**	**37,064**	**410,613**
– third party	**340,215**	**(26,186)**	**314,029**	**(313,747)**	**(256)**	**26**	**37,064**	**351,093**
– amounts due to Group companies	**62,804**	**(3,284)**	**59,520**	**(59,379)**	**(96)**	**45**	**—**	**59,520**
	1,314,038	**(358,862)**	**955,176**	**(824,983)**	**(71,178)**	**59,015**	**68,641**	**1,023,817**
At 31 Dec 2021								
Financial assets[2]								
Derivatives	524,603	(190,129)	334,474	(279,958)	(36,005)	18,511	30,693	365,167
Reverse repos, stock borrowing and similar agreements classified as:[4]								
– trading assets	60,417	(79)	60,338	(59,771)	(552)	15	7,393	67,731
– third party	56,205	(79)	56,126	(55,561)	(552)	13	7,393	63,519
– amounts due from Group companies	4,212	—	4,212	(4,210)	—	2	—	4,212
– reverse repurchase agreements - non-trading	806,403	(71,333)	735,071	(733,647)	(197)	1,228	82,854	817,925
– third party	776,145	(55,224)	720,921	(720,662)	(197)	62	82,854	803,775
– amounts due from Group companies	30,258	(16,109)	14,149	(12,985)	—	1,166	—	14,149
– financial assets designated and otherwise mandatorily measured at fair value through profit or loss								
– third party	777	—	777	(777)	—	—	—	777
	1,392,200	(261,541)	1,130,659	(1,074,153)	(36,754)	19,752	120,940	1,251,599
Financial liabilities[3]								
Derivatives	516,525	(190,129)	326,396	(277,624)	(27,837)	20,935	29,395	355,791
Repos, stock lending and similar agreements classified as:[4]								
– trading liabilities	6,807	(79)	6,728	(6,721)	—	7	—	6,728
– third party	6,782	(79)	6,703	(6,697)	—	6	—	6,703
– amounts due to Group companies	25	—	25	(24)	—	1	—	25
– repurchase agreements - non-trading	323,559	(71,333)	252,226	(251,802)	(3)	421	68,664	320,890
– third party	241,934	(55,224)	186,710	(186,338)	(3)	369	68,664	255,374
– amounts due to Group companies	81,625	(16,109)	65,516	(65,464)	—	52	—	65,516
	846,891	(261,541)	585,350	(536,147)	(27,840)	21,363	98,059	683,409

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 Include balances due from Group companies of HK$208,343m (2021: HK$167,054m).
3 Include balances due to Group companies of HK$213,726m (2021: HK$217,572m).
4 Further product details have been included with effect from 31 December 2022.

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.

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.
- Other (GBM-other) mainly comprises other business activities which are jointly managed by GB and MSS.

Performance by reportable segments is presented in the 'Financial Review' on page 16 as specified as 'Audited'.

Information by geographical region

	Hong Kong HK$m	Rest of Asia-Pacific HK$m	Intra-segment elimination HK$m	Total HK$m
For the year ended 31 Dec 2022				
Total operating income	**184,065**	**90,536**	**905**	**275,506**
Profit before tax	**43,153**	**54,458**	**—**	**97,611**
At 31 Dec 2022				
Total assets	**7,450,156**	**3,898,235**	**(1,024,239)**	**10,324,152**
Total liabilities	**6,954,421**	**3,452,707**	**(1,024,239)**	**9,382,889**
Credit commitments and contingent liabilities (contract amounts)	**1,894,046**	**1,695,824**	**—**	**3,589,870**
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

Information by country/territory

	Revenue[1]		Non-current assets[2]	
	For the year ended 31 Dec		At 31 Dec	
	2022 HK$m	2021 HK$m	**2022 HK$m**	2021 HK$m
Hong Kong	**121,031**	106,966	**138,717**	134,400
Mainland China	**21,965**	19,381	**196,844**	196,477
Australia	**7,815**	7,351	**1,691**	1,837
India	**11,708**	10,614	**2,426**	2,534
Indonesia	**3,188**	3,242	**3,289**	3,584
Malaysia	**5,790**	5,174	**1,981**	2,022
Singapore	**15,473**	10,671	**3,453**	2,933
Taiwan	**3,823**	3,124	**2,473**	2,802
Other	**14,899**	12,135	**2,833**	3,140
Total	**205,692**	178,658	**353,707**	349,729

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:

	2022			2021		
	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	**—**	**50**	**1,276**	—	—	220
Interest expense[1]	**8,364**	**33**	**1,216**	6,773	(651)	(286)
Fee income	**—**	**17**	**2,246**	—	—	2,538
Fee expense	**—**	**8**	**1,739**	—	1	1,428
Net income/(losses) from financial instruments held for trading or managed on a fair value basis	**1,106**	**—**	**(374)**	—	1	(19)
Net insurance premium income	—	—	**238**	—	—	249
Other operating income	**—**	**120**	**1,913**	—	129	1,770
Net insurance claims and benefits paid and movement in liabilities to policyholders	—	—	**(204)**	—	—	(179)
General and administrative expenses[2]	**—**	**67**	**49,891**	—	(141)	47,842
At 31 Dec						
Assets	**24**	**3,403**	**305,321**	9	1,147	260,256
– trading assets[3,7]	**—**	**33**	**2,300**	—	22	4,232
– derivative assets	**—**	**2**	**168,200**	—	989	147,704
– other assets[3,6,8]	**24**	**3,368**	**134,821**	9	136	108,320
Liabilities	**256,031**	**3,804**	**293,021**	223,565	1,069	283,630
– trading liabilities[3,9]	**—**	**—**	**55**	—	—	25
– financial liabilities designated at fair value[3,4]	**183,760**	**—**	**6**	175,655	—	7
– derivative liabilities	**—**	**3,677**	**150,474**	—	18	152,013
– other liabilities[3,6,10]	**1,842**	**64**	**142,486**	1,388	980	131,585
– subordinated liabilities[3,5,6]	**70,429**	**63**	**—**	46,522	71	—
Guarantees	**—**	**—**	**23,289**	—	—	22,815
Commitments	**—**	**—**	**1,405**	—	—	2,076

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.*
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 2022 included capital and loss-absorbing capacity ('LAC') instruments of HK$183,760m (2021: HK$175,655m). During the year, there were repayment of HK$21,512m (2021: HK$4,437) and issuance of HK$51,579m (2021: HK$54,460m). The carrying amount of financial liabilities designated at fair value was HK$13,593m lower than the contractual amount at maturity (2021: HK$7,211m higher). The cumulative gain in fair value attributable to changes in credit risk was HK$3,456m (2021: HK$1,815m loss). The balances are under Level 2.*
5 *The balance at 31 December 2022 included subordinated liabilities of HK$70,429m to meet TLAC requirements (2021: HK$46,522m). During the year, there were no repayment (2021: HK$19,665m) and issuance of HK$29,435m (2021: HK$3,304m).*
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.*
7 *Includes trading reverse repo agreements and other similar secured lending of HK$2,284m (2021: HK$4,212m).*
8 *Includes non-trading reverse repo agreements and other similar secured lending of HK$37,857m (2021: HK$14,149m).*
9 *Includes trading repurchase agreements and other similar secured lending of HK$55m (2021: HK$25m).*
10 *Includes non-trading repurchase agreements and other similar secured lending of HK$59,520m (2021: HK$65,516m).*

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 2022 amounted to HK$3,299m and HK$1,564m respectively (2021: HK$3,436m and HK$1,431m respectively).

(c) Post-employment benefit plans

At 31 December 2022, HK$7.7bn (2021: HK$9.2bn) of the group's post-employment plan assets were under management by group companies, earning management fees of HK$59m in 2022 (2021: HK$65m). At 31 December 2022, the group's post-employment benefit plans had placed deposits of HK$735m (2021: HK$783m) with its banking subsidiaries, earning interest payable to the schemes of HK$1.1m (2021: HK$0.5m). 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

	2022		2021	
	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[1]	**57,513**	**51,402**	35,643	32,632
Amounts due to associates[1]	**19,862**	**10,099**	27,237	8,786
Amounts due to joint ventures	**40**	**16**	—	—
Fair value of derivative assets with associates[2]	**9,394**	**6,559**	7,299	3,644
Fair value of derivative liabilities with associates[2]	**33,673**	**28,440**	5,424	4,450
Guarantees and Commitments[2]	**1,769**	**287**	4,897	1,654

1 *Comparatives have been re-presented to incorporate certain balances previously not included.*
2 *With effect from 31 Dec 2022, derivatives assets and liabilities and guarantees provided are included in the disclosure. Comparatives have been re-presented to conform to the current year's presentation.*

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

	2022	2021
	HK$m	HK$m
Salaries and other short-term benefits	**320**	314
Post employment benefits	**12**	9
Termination benefits	**2**	5
Share-based payments	**87**	123
Total	**421**	451

Transactions, arrangements and agreements involving Key Management Personnel

	2022	2021
	HK$m	HK$m
During the year		
Highest average assets[1]	**97,366**	107,317
Highest average liabilities[1]	**81,323**	71,516
Contribution to group's profit before tax	**1,858**	1,510
At the year end		
Guarantees	**12,007**	13,263
Commitments	**12,186**	13,624

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 (2021: 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	
	2022	2021	**2022**	2021
	HK$m	HK$m	**HK$m**	HK$m
By the Bank	**1,483**	3,755	**2,769**	3,967
By subsidiaries	**12**	13	**14**	14
	1,495	3,768	**2,783**	3,981

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 and consider all material subjective valuations. 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.

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, recorded in other comprehensive income, 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. These are 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. These are 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. These are 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 2022						
Assets						
Trading assets[1]	**486,547**	**203,975**	**9,283**	**699,805**	**—**	**699,805**
Derivatives	**1,018**	**330,250**	**3,301**	**334,569**	**168,202**	**502,771**
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	**100,917**	**34,139**	**91,395**	**226,451**	**—**	**226,451**
Financial investments	**962,261**	**280,083**	**4,308**	**1,246,652**	**—**	**1,246,652**
Liabilities						
Trading liabilities[1]	**74,201**	**68,246**	**6**	**142,453**	**—**	**142,453**
Derivatives	**2,425**	**393,457**	**1,712**	**397,594**	**154,151**	**551,745**
Financial liabilities designated at fair value[1]	**—**	**133,009**	**34,734**	**167,743**	**—**	**167,743**
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

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 2022							
Transfers from Level 1 to Level 2	**29,781**	**23,312**	**5,825**	**—**	**132**	**—**	**—**
Transfers from Level 2 to Level 1	**60,104**	**36,025**	**9,493**	**—**	**1,443**	**—**	**—**
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	—	—

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

We adopt the use of fair value adjustments when we take into consideration additional factors not incorporated within the valuation model that would otherwise be considered by a market participant. We classify fair value adjustments as either 'risk-related' or 'model-related'. The majority of these adjustments relate to MSS. Movements in the level of fair value adjustments do not necessarily result in the recognition of profits or losses within the income statement. For example, as models are enhanced, fair value adjustments may no longer be required. Similarly, fair value adjustments will decrease when the related positions are unwound, but this may not result in profit or loss.

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'. Wrong-way risk is an adverse correlation between the counterparty's probability of default and the mark-to-market value of the underlying transaction. The risk can either be general, perhaps related to the currency of the issuer country, or specific to the transaction concerned. 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 current and future 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.

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	Trading liabilities	Designated at fair value	Derivatives	Total
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
Private equity and related investments	**3,742**	**16**	**90,767**	**—**	**94,525**	**6**	**—**	**—**	**6**
Structured notes	**—**	**—**	**—**	**—**	**—**	**—**	**34,734**	**—**	**34,734**
Others	**566**	**9,267**	**628**	**3,301**	**13,762**	**—**	**—**	**1,712**	**1,712**
At 31 Dec 2022	**4,308**	**9,283**	**91,395**	**3,301**	**108,287**	**6**	**34,734**	**1,712**	**36,452**
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

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	Trading liabilities	Designated at fair value[1]	Derivatives
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
At 1 Jan 2022	**3,674**	**3,246**	**74,652**	**3,294**	**—**	**20,449**	**2,130**
Total gains/(losses) recognised in profit or loss	**—**	**(952)**	**1,545**	**669**	**3**	**(851)**	**214**
– net income/(losses) from financial instruments held for trading or managed on a fair value basis	**—**	**(952)**	**—**	**669**	**3**	**—**	**214**
– changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	**—**	**—**	**1,545**	**—**	**—**	**(851)**	**—**
– gains less losses from financial investments at fair value through other comprehensive income	**—**	**—**	**—**	**—**	**—**	**—**	**—**
Total gains recognised in other comprehensive income ('OCI')	**676**	**(81)**	**(37)**	**(25)**	**—**	**(1,001)**	**(83)**
– financial investments: fair value gains/(losses)	**812**	**—**	**—**	**—**	**—**	**(5)**	**—**
– exchange differences	**(136)**	**(81)**	**(37)**	**(25)**	**—**	**(996)**	**(83)**
Purchases	**1,670**	**6,480**	**28,304**	**—**	**—**	**—**	**—**
New issuances	**—**	**—**	**—**	**—**	**—**	**5,936**	**—**
Sales	**(71)**	**(644)**	**(71)**	**—**	**—**	**—**	**—**
Settlements	**(1,641)**	**(4,742)**	**(12,809)**	**(557)**	**—**	**12,130**	**(553)**
Transfers out	**—**	**(772)**	**(289)**	**(394)**	**—**	**(2,671)**	**(190)**
Transfers in	**—**	**6,748**	**100**	**314**	**3**	**742**	**194**
At 31 Dec 2022	**4,308**	**9,283**	**91,395**	**3,301**	**6**	**34,734**	**1,712**
Unrealised gains/(losses) recognised in profit or loss relating to assets and liabilities held at 31 Dec 2022	**—**	**(734)**	**(1,615)**	**2,631**	**—**	**(19)**	**(78)**
– net income/(losses) from financial instruments held for trading or managed on a fair value basis	**—**	**(734)**	**—**	**2,631**	**—**	**—**	**(78)**
– changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	**—**	**—**	**(1,615)**	**—**	**—**	**(19)**	**—**
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/(losses) 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	—

1 *Includes structured deposits where the settlement balance represents the net of matured and new deposits.*

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

	2022				2021			
	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]	242	(308)	–	–	158	(162)	–	–
Financial assets and liabilities designated and otherwise mandatorily measured at fair value through profit or loss	4,580	(4,580)	–	–	3,741	(3,742)	–	–
Financial investments	–	–	187	(187)	–	–	157	(157)
At 31 Dec	4,822	(4,888)	187	(187)	3,899	(3,904)	157	(157)

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 2022.

Quantitative information about significant unobservable inputs in Level 3 valuations

	Fair value				2022		2021	
	Assets HK$m	Liabilities HK$m	Valuation techniques	Key unobservable inputs	Full range of inputs Lower	Higher	Full range of inputs Lower	Higher
Private equity and related investments	94,525	6	See below	See below				
Structured notes	–	34,734						
– equity-linked notes	–	12,917	Model – Option model	Equity volatility	6%	142%	6%	90%
			Model – Option model	Equity correlation	38%	98%	22%	97%
– FX-linked notes	–	20,972	Model – Option model	FX volatility	4%	37%	2%	36%
– other	–	845						
Others[1]	13,762	1,712						
At 31 Dec 2022	108,287	36,452						

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. The key unobservable inputs would be price and correlation. The valuation approach includes using a range of inputs that include company specific financials, traded comparable companies multiples, published net asset values and qualitative assumptions, which are not directly comparable or quantifiable.

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

	Carrying amount	Fair Value Hierarchy: 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 2022					
Assets[1]					
Reverse repurchase agreements – non-trading	**927,976**	**—**	**927,190**	**—**	**927,190**
Loans and advances to banks	**519,024**	**—**	**514,524**	**4,452**	**518,976**
Loans and advances to customers	**3,705,149**	**—**	**56,130**	**3,628,504**	**3,684,634**
Financial investments – at amortised cost	**974,709**	**455,444**	**448,341**	**1,960**	**905,745**
Liabilities[1]					
Repurchase agreements – non-trading	**351,093**	**—**	**349,133**	**—**	**349,133**
Deposits by banks	**198,908**	**—**	**198,905**	**—**	**198,905**
Customer accounts	**6,113,709**	**—**	**6,114,290**	**—**	**6,114,290**
Debt securities in issue	**100,909**	**—**	**101,414**	**—**	**101,414**
Subordinated liabilities	**3,119**	**—**	**2,191**	**—**	**2,191**
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

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

Total asset values of the entities (HK$bn)	Securitisations	HSBC managed funds	Non-HSBC managed funds	Other	Total
0–4	55	92	271	27	445
4–15	7	42	173	–	222
15–39	–	12	98	–	110
39–196	–	3	59	–	62
196+	–	1	11	–	12
Number of entities at 31 Dec 2022	62	150	612	27	851
	HK$m	HK$m	HK$m	HK$m	HK$m
Total assets in relation to the group's interests in the unconsolidated structured entities	17,564	34,071	109,351	5,245	166,231
– trading assets	–	2,527	–	82	2,609
– financial assets designated and otherwise mandatorily measured at fair value through profit or loss	–	31,544	109,351	–	140,895
– derivatives	–	–	–	10	10
– loans and advances to customers	17,564	–	–	5,070	22,634
– other assets	–	–	–	83	83
Total liabilities in relation to the group's interests in the unconsolidated structured entities	–	–	–	223	223
– derivatives	–	–	–	223	223
Other off balance sheet commitments	1,395	11,753	30,862	11,342	55,352
The group's maximum exposure at 31 Dec 2022	18,959	45,824	140,213	16,364	221,360

Nature and risks associated with the group's interests in unconsolidated structured entities (continued)

Total asset values of the entities (HK$bn)	Securitisations	HSBC managed funds	Non-HSBC managed funds	Other	Total
0–4	65	65	114	21	265
4–15	11	37	130	—	178
15–39	—	15	91	—	106
39–196	—	1	50	—	51
196+	—	1	3	—	4
Number of entities at 31 Dec 2021	76	119	388	21	604
	HK$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
– 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

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 2022 and 2021 were not significant.

36 Bank balance sheet and statement of changes in equity

Bank balance sheet at 31 December 2022

	2022 HK$m	2021 HK$m
Assets		
Cash and balances at central banks	**169,595**	203,988
Items in the course of collection from other banks	**22,886**	17,825
Hong Kong Government certificates of indebtedness	**341,354**	332,044
Trading assets	**587,760**	647,625
Derivatives	**481,979**	346,937
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	**5,431**	3,246
Reverse repurchase agreements – non-trading	**468,799**	488,312
Loans and advances to banks	**298,225**	230,592
Loans and advances to customers	**1,951,155**	1,984,297
Financial investments	**947,830**	893,848
Amounts due from Group companies	**720,765**	544,587
Investments in subsidiaries	**109,211**	101,535
Interests in associates and joint ventures	**39,830**	39,830
Goodwill and intangible assets	**23,659**	19,226
Property, plant and equipment	**71,555**	72,312
Deferred tax assets	**1,304**	1,275
Prepayments, accrued income and other assets	**214,624**	145,729
Total assets	**6,455,962**	6,073,208
Liabilities		
Hong Kong currency notes in circulation	**341,354**	332,044
Items in the course of transmission to other banks	**26,601**	19,101
Repurchase agreements – non-trading	**307,661**	175,476
Deposits by banks	**155,423**	224,650
Customer accounts	**3,740,697**	3,816,715
Trading liabilities	**95,097**	46,585
Derivatives	**532,325**	337,010
Financial liabilities designated at fair value	**49,396**	36,397
Debt securities in issue	**26,584**	25,393
Retirement benefit liabilities	**898**	1,098
Amounts due to Group companies	**563,368**	482,995
Accruals and deferred income, other liabilities and provisions	**132,141**	120,846
Current tax liabilities	**3,537**	481
Deferred tax liabilities	**9,267**	9,339
Subordinated liabilities	**3,119**	3,119
Total liabilities	**5,987,468**	5,631,249
Equity		
Share capital	**180,181**	172,335
Other equity instruments	**52,386**	44,615
Other reserves	**3,143**	19,218
Retained earnings	**232,784**	205,791
Total equity	**468,494**	441,959
Total equity and liabilities	**6,455,962**	6,073,208

Bank statement of changes in equity for the year ended 31 December 2022

	Share capital[1]	Other equity instruments	Retained earnings	Other reserves					Total equity
				Property revaluation reserve	Financial assets at FVOCI reserve	Cash flow hedge reserve	Foreign exchange reserve	Other[3]	
	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m	HK$m
At 1 Jan 2022	**172,335**	**44,615**	**205,791**	**36,900**	**1,524**	**63**	**(15,369)**	**(3,900)**	**441,959**
Profit for the year	—	—	54,987	—	—	—	—	—	54,987
Other comprehensive income/(expense) (net of tax)	—	—	4,600	2,948	(10,829)	(993)	(4,999)	—	(9,273)
– debt instruments at fair value through other comprehensive income	—	—	—	—	(11,369)	—	—	—	(11,369)
– equity instruments designated at fair value through other comprehensive income	—	—	—	—	540	—	—	—	540
– cash flow hedges	—	—	—	—	—	(993)	—	—	(993)
– changes in fair value of financial liabilities designated at fair value upon initial recognition arising from changes in own credit risk	—	—	4,432	—	—	—	—	—	4,432
– property revaluation	—	—	—	2,948	—	—	—	—	2,948
– remeasurement of defined benefit asset/liability	—	—	168	—	—	—	—	—	168
– exchange differences	—	—	—	—	—	—	(4,999)	—	(4,999)
Total comprehensive income/(expense) for the year	—	—	59,587	2,948	(10,829)	(993)	(4,999)	—	45,714
Shares issued[1]	7,846	—	—	—	—	—	—	—	7,846
Other equity instruments issued[2]	—	7,771	—	—	—	—	—	—	7,771
Dividends to shareholders[4]	—	—	(34,821)	—	—	—	—	—	(34,821)
Movement in respect of share-based payment arrangements	—	—	127	—	—	—	—	(127)	—
Transfers and other movements[5]	—	—	2,100	(2,080)	2	—	—	3	25
At 31 Dec 2022	**180,181**	**52,386**	**232,784**	**37,768**	**(9,303)**	**(930)**	**(20,368)**	**(4,024)**	**468,494**
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 to shareholders[4]	—	—	(59,105)	—	—	—	—	—	(59,105)
Movement in respect of share-based payment arrangements	—	—	115	—	—	—	—	(140)	(25)
Transfers and other movements[5]	—	—	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

1 *Ordinary share capital includes preference shares which have been redeemed or bought back via payments out of distributable profits in previous years. During 2022, 3,138.4m new ordinary shares were issued at an issue price of HK$2.5 each.*
2 *During 2022, an additional tier 1 capital instrument was issued amounted to US$1,000m on which there were US$10m issue costs.*
3 *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.*
4 *Including distributions paid on perpetual subordinated loans classified as equity under HKFRS.*
5 *The movements include transfers from the property revaluation reserve to retained earnings in relation to depreciation of revalued properties.*

37 Business acquisitions

The following acquisitions form part of our strategy to become a market leader in Asian wealth management:

- On 28 January 2022, HSBC Insurance (Asia-Pacific) Holdings Limited, a subsidiary of the group, notified the shareholders of Canara HSBC Life Insurance Company Limited ('Canara HSBC') of its intention to increase its shareholding in Canara HSBC 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 Canara HSBC, as well as internal and regulatory approvals. Established in 2008, Canara HSBC is a life insurance company based in India.
- On 11 February 2022, HSBC Insurance (Asia-Pacific) Holdings Limited completed the acquisition of 100% of AXA Insurance Pte Limited ('AXA Singapore') for HK$4.1bn. A gain on acquisition of HK$665m was recorded, reflecting the excess of the fair value of net assets acquired (gross assets of HK$35.6bn and gross liabilities of HK$30.8bn) over the acquisition price. The legal integration of AXA Singapore with HSBC's pre-existing insurance operations in the country concluded on 1 February 2023.
- On 6 April 2022, the Bank announced it had increased its shareholding in HSBC Qianhai Securities Limited, a partially-owned subsidiary, from 51% to 90%.
- On 23 June 2022, HSBC Insurance (Asia) Limited, a subsidiary of the group, acquired the remaining 50% equity interest in HSBC Life Insurance Company Limited. Headquartered in Shanghai, HSBC Life Insurance Company Limited offers a comprehensive range of insurance solutions covering annuity, whole life, critical illness and unit-linked insurance products.

38 Legal proceedings and regulatory matters

The group is party to legal proceedings and regulatory matters in a number of jurisdictions arising out of its normal business operations. Apart from the matters described below, the 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 2022. 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. For several years thereafter, HSBC 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 determined that no further Skilled Person work is required. Separately, the Independent Consultant's engagement is now complete and, in August 2022, the FRB terminated its cease-and-desist order.

Singapore Interbank Offered Rate ('Sibor') and Singapore Swap Offer Rate ('SOR')

In 2016, the Bank and other panel banks were named as defendants in a putative class action filed in the New York District Court on behalf of persons who transacted in products related to the Sibor and SOR benchmark rates. The complaint alleged, among other things, misconduct related to these benchmark rates in violation of US antitrust, commodities and racketeering laws, and state law.

In October 2021, the Bank reached a settlement-in-principle with the plaintiffs to resolve this action, the agreement for which was executed in May 2022. The court granted final approval of the settlement in November 2022.

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.

39 Ultimate holding company

The ultimate holding company of the Bank is HSBC Holdings plc, which is incorporated in England.

The largest group in which the accounts of the Bank are consolidated is that headed by HSBC Holdings plc. The consolidated accounts of HSBC Holdings plc are available to the public on the HSBC Group's website at www.hsbc.com or may be obtained from 8 Canada Square, London E14 5HQ, United Kingdom.

40 Events after the balance sheet date

There have been no events after the balance sheet date that would require disclosure in the consolidated financial statements.

41 Approval of financial statements

The Consolidated Financial Statements were approved and authorised for issue by the Board of Directors on 21 February 2023.

Additional cautionary statement regarding ESG and climate-related data, metrics and forward-looking statements

The Annual Report and Accounts 2022 contains a number of forward-looking statements (as defined above) with respect to the Group's (including the group's) ESG targets, commitments, ambitions, climate-related scenarios or pathways and the methodologies the Group uses to assess the Group's progress in relation to these ("ESG-related forward-looking statements").

In preparing the ESG-related information contained in the Annual Report and Accounts 2022, the group has relied on a number of key judgements, estimations and assumptions of the Group and the processes and issues involved are complex. The Group has used ESG and climate data, models and methodologies that it considers, as of the date on which they were used, to be appropriate and suitable to understand and assess climate change risk and its impact, to analyse financed emissions - and operational and supply chain emissions, to set ESG-related targets and to evaluate the classification of sustainable finance and investments. However, these data, models and methodologies are new, are rapidly evolving and are not of the same standard as those available in the context of other financial information, nor are they subject to the same or equivalent disclosure standards, historical reference points, benchmarks or globally accepted accounting principles. In particular, it is not possible to rely on historical data as a strong indicator of future trajectories, in the case of climate change and its evolution. Outputs of models, processed data and methodologies are also likely to be affected by underlying data quality, which can be hard to assess and the Group expects industry guidance, market practice, and regulations in this field to continue to change. In light of the highly uncertain nature of the evolution of climate change and its impact, the Group (including the group) may have to re-evaluate its progress towards its ESG ambitions, commitments and targets in the future, update the methodologies it uses or alter its collective approach to ESG and climate analysis and may be required to amend, update and recalculate its ESG disclosures and assessments in the future, as market practice and data quality and availability develops rapidly. The ESG-related forward-looking statements and metrics discussed in the Annual Report and Accounts 2022 therefore carry an additional degree of inherent risk and uncertainty.

No assurance can be given by or on behalf of the group as to the likelihood of the achievement or reasonableness of any projections, estimates, forecasts, targets, commitments, ambitions, prospects or returns contained herein. Readers are cautioned that a number of factors, both external and those specific to the Group (including the group), could cause actual achievements, results, performance or other future events or conditions of the group to differ, in some cases materially, from those stated, implied and/or reflected in any ESG-related forward-looking statements or metrics due to a variety of risks, uncertainties and other factors (including without limitation those referred to below):

- Climate change projection risk: this includes, for example, the evolution of climate change and its impacts, changes in the scientific assessment of climate change impacts, transition pathways and future risk exposure and limitations of climate scenario forecasts;
- Changes in the ESG regulatory landscape: this involves changes in government approach and regulatory treatment in relation to ESG disclosures and reporting requirements, and the current lack of a single standardised regulatory approach to ESG across all sectors and markets;
- Variation in reporting standards: ESG reporting standards are still developing and are not standardised or comparable across all sectors and markets, new reporting standards in relation to different ESG metrics are still emerging
- Data availability, accuracy, verifiability and data gaps: the Group's disclosures are limited by the availability of high quality data needed to calculate financed emissions. Where data is not available for all sectors or consistently year on year, there may be an impact to the Group's data quality scores. Whilst the Group expects its data quality scores to improve over time, as companies continue to expand their disclosures to meet growing regulatory and stakeholder expectations, there may be unexpected fluctuations within sectors year on year, and/or differences between the data quality scores between sectors. Any such changes in the availability and quality of data over time could result in revisions to reported data going forward, including on financed emissions, meaning that such data may not be reconcilable or comparable year-on year;
- Developing methodologies: the methodologies the Group (including the group) uses to assess financed emissions and set ESG-related targets may develop over time in line with market practice, regulation and/or developments in science, where applicable. Any such developments in methodologies could result in revisions to reported data going forward, including on financed emissions meaning that data outputs may not be reconcilable or comparable year-on year. In addition, climate scenarios and the models that analyse them have limitations that are sensitive to key assumptions and parameters, which are themselves subject to some uncertainty, and cannot fully capture all of the potential effects of climate, policy and technology driven outcomes; and
- Risk management capabilities: governments', customers', and the Group's (including the group's) actions may not be effective in supporting the global transition to net zero carbon emissions and in managing and mitigating ESG risks, including in particular climate risk, nature-related risks and human rights risks, each of which can impact the Group (including the group) both directly and indirectly through its customers, and which may result in potential financial and non-financial impacts to the Group (including the group). In particular:
  - the Group (including the group) may not be able to achieve its ESG targets, commitments and ambitions (including with respect to the commitments set forth in the Group's thermal coal phase-out policy, energy policy and targets to reduce on-balance sheet financed emissions in its portfolio of selected high-emitting sectors), which may result in its failure to achieve any of the expected benefits of its strategic priorities; and
  - the Group (including the group) may not be able to develop sustainable finance and climate-related products consistent with the evolving expectations of its regulators, and its capacity to measure the climate impact from its financing activity may diminish (including as a result of data and model limitations and changes in methodologies), which may affect its ability to achieve its climate ambition, its targets to reduce its on-balance sheet financed emissions in its portfolio of selected high-emitting sectors and the commitments set forth in the Group's thermal coal phase-out policy and energy policy, and increase the risk of greenwashing.

The group makes no commitment to revise or update any ESG forward-looking statements to reflect events or circumstances occurring or existing after the date of any ESG forward-looking statements. Written and/or oral ESG-related forward-looking statements may also be made in its periodic reports to its regulators, public offering or disclosure documents, press releases and other written materials, and in oral statements made by its Directors, officers or employees to third parties, including financial analysts.

The Group's data dictionaries and methodologies for preparing the above ESG-related metrics and third-party limited assurance reports can be found on: www.hsbc.com/who-we-are/esg-and-responsible-business/esg-reporting-centre.

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The Hongkong and Shanghai Banking Corporation Limited

HSBC Main Building
1 Queen's Road Central, Hong Kong
Telephone: (852) 2822 1111
www.hsbc.com.hk