上海商業銀行
SHANGHAI COMMERCIAL BANK

REGULATORY DISCLOSURES

As at 31 December 2022
(Unaudited)

CONTENTS

(All amounts in HK dollar thousands unless otherwise stated)

The following disclosures are prepared under regulatory scope of consolidation to comply with the Banking (Disclosure) Rules and do not form part of the audited financial statements.

1 Key prudential ratios

		31 December 2022	30 September 2022	30 June 2022	31 March 2022	31 December 2021
Regulatory capital (amount)						
1	Common Equity Tier 1 (CET1)	31,564,599	30,631,433	30,870,615	31,221,077	32,124,445
2	Tier 1	31,564,599	30,631,433	30,870,615	31,221,077	32,124,445
3	Total capital	35,436,431	36,363,933	36,597,182	36,930,421	37,828,854
Risk Weighted Amounts (RWA)						
4	Total RWA	161,184,137	164,392,099	170,617,169	175,706,888	176,262,604
Risk-based regulatory capital ratios (as a percentage of RWA)						
5	CET1 ratio (%)	19.6%	18.6%	18.1%	17.8%	18.2%
6	Tier 1 ratio (%)	19.6%	18.6%	18.1%	17.8%	18.2%
7	Total capital ratio (%)	22.0%	22.1%	21.4%	21.0%	21.5%
Additional CET1 buffer requirements (as a percentage of RWA)						
8	Capital conservation buffer requirement (%)	2.5%	2.5%	2.5%	2.5%	2.5%
9	Countercyclical capital buffer requirement (%)	0.6%	0.6%	0.6%	0.6%	0.6%
10	Higher loss absorbency requirements (%) (applicable only to G-SIBs or D-SIBs)	N/A	N/A	N/A	N/A	N/A
11	Total AI-specific CET1 buffer requirements (%)	3.1%	3.1%	3.1%	3.1%	3.1%
12	CET1 available after meeting the AI's minimum capital requirements (%)	13.6%	12.6%	12.1%	11.8%	12.2%
Basel III leverage ratio						
13	Total leverage ratio (LR) exposure measure	231,523,758	238,811,033	242,454,957	247,021,195	243,146,840
14	LR (%)	13.6%	12.8%	12.7%	12.6%	13.2%
Liquidity Coverage Ratio (LCR)/Liquidity Maintenance Ratio (LMR)						
	Applicable to category 1 institution only:					
15	Total high quality liquid assets (HQLA)	N/A	N/A	N/A	N/A	N/A
16	Total net cash outflows	N/A	N/A	N/A	N/A	N/A
17	LCR (%)	N/A	N/A	N/A	N/A	N/A
	Applicable to category 2 institution only:					
17a	LMR (%)	52.8%	50.7%	56.8%	60.0%	61.2%
Net Stable Funding Ratio (NSFR)/Core Funding Ratio (CFR)						
	Applicable to category 1 institution only:					
18	Total available stable funding	N/A	N/A	N/A	N/A	N/A
19	Total required stable funding	N/A	N/A	N/A	N/A	N/A
20	NSFR (%)	N/A	N/A	N/A	N/A	N/A
	Applicable to category 2A institution only:					
20a	CFR (%)	225.6%	225.3%	224.0%	236.7%	240.5%

(All amounts in HK dollar thousands unless otherwise stated)

2 Capital structure and adequacy

The calculation of the capital adequacy ratio as at 31 December 2022 is based on the Banking (Capital) Rules ("BCR"). The capital adequacy ratio represents the consolidated ratio of the Bank's Hong Kong offices and its overseas branches, Shacom Property (CA), Inc., Shacom Property (NY), Inc., Shacom Property Holdings (BVI) Limited, Shacom Investment Limited, Shacom Assets Investments Limited, Right Honour Investments Limited, Glory Step Westpoint Investments Limited, Silver Wisdom Westpoint Investments Limited, Shacom Insurance Brokers Limited, KCC 23F Limited, KCC 25F Limited, and KCC 26F Limited computed in accordance with Section 3C(1) of the BCR.

For accounting purposes, the basis of consolidation is described in Note 2.2 to the consolidated financial statements.

The table below shows the balance sheet based on accounting scope of consolidation and the regulatory scope of consolidation, and the reconciliation of the capital components from balance sheet based on regulatory scope of consolidation to the Composition of Regulatory Capital as at 31 December 2022.

Reconciliation of regulatory capital to balance sheet

	Balance sheet as in published financial statements	Under regulatory scope of consolidation	Cross-referenced to Composition of Regulatory Capital
Assets			
Cash and balances with banks	44,796,626	44,795,252	
of which: Stage 1 and Stage 2 impairment allowances reflected in regulatory capital	–	(1,071)	(1)
Placements with banks	17,645,562	17,645,562	
of which: Stage 1 and Stage 2 impairment allowances reflected in regulatory capital	–	(431)	(2)
Loans and advances to customers	95,995,971	95,995,971	
of which: Stage 1 and Stage 2 impairment allowances reflected in regulatory capital	–	(559,977)	(3)
Financial assets at fair value through profit or loss	970,847	931,669	
of which: insignificant capital investments in financial sector entities exceeding 10% threshold	–	–	(4)
Derivative financial instruments	552,801	552,801	
Investment securities at fair value through other comprehensive income	51,277,567	51,277,567	
of which: insignificant capital investments in financial sector entities exceeding 10% threshold	–	–	(5)
Investment securities at amortised cost	4,728,167	4,728,167	
of which: Stage 1 and Stage 2 impairment allowances reflected in regulatory capital	–	(104)	(6)
Properties for sale	756,643	756,643	
Investments in associates and joint venture	414,706	188,000	
Investments in and amounts due from subsidiaries	–	353,141	
of which: Stage 1 and Stage 2 impairment allowances reflected in regulatory capital	–	(15,878)	(7)
Properties and equipment	2,456,376	2,418,721	
Investment properties	993,778	1,022,496	
Deferred income tax assets	486,029	488,702	(8)
Other assets	2,259,048	2,216,281	
of which: Stage 1 and Stage 2 impairment allowances reflected in regulatory capital	–	(2,248)	(9)
Total assets	223,334,121	223,370,973	

(All amounts in HK dollar thousands unless otherwise stated)

2 Capital structure and adequacy (Continued)

Reconciliation of regulatory capital to balance sheet (Continued)

	Balance sheet as in published financial statements	Under regulatory scope of consolidation	Cross-referenced to Composition of Regulatory Capital
Liabilities			
Deposits and balances from banks	7,471,442	7,471,442	
Deposits from customers	176,501,730	176,501,730	
Derivative financial instruments	598,173	598,173	
Amounts due to subsidiaries	–	636,788	
Subordinated debts	2,328,890	2,328,890	(10)
Other liabilities	2,782,920	2,650,056	
of which: Stage 1 and Stage 2 impairment allowances reflected in regulatory capital	–	27,770	(11)
Current income tax liabilities	185,851	185,846	
Deferred income tax liabilities	7,315	7,236	
Total liabilities	189,876,321	190,380,161	
Equity			
Share capital	2,000,000	2,000,000	(12)
Retained earnings	23,809,577	23,312,957	(13)
Reserves	7,547,028	7,677,855	
of which: accumulated other comprehensive income/(loss), other than regulatory reserve	–	6,742,392	(14)
regulatory reserve	–	935,463	(15)
Non-controlling interests in equity	101,195	–	
Total equity	33,457,800	32,990,812	
Total equity and liabilities	223,334,121	223,370,973	

(All amounts in HK dollar thousands unless otherwise stated)

2 Capital structure and adequacy (Continued)

Composition of regulatory capital

The Bank has already applied full capital deductions under the BCR. The Composition of Regulatory Capital as at 31 December 2022 is shown below:

		Component of regulatory capital reported by bank	Cross-referenced to balance sheet under regulatory scope of consolidation
CET1 capital: instruments and reserves			
1	Directly issued qualifying CET1 capital instruments plus any related share premium	2,000,000	(12)
2	Retained earnings	23,312,957	(13)
3	Disclosed reserves	7,677,855	(14) + (15)
4	Directly issued capital subject to phase-out arrangements from CET1 (only applicable to non-joint stock companies)	Not applicable	
5	Minority interests arising from CET1 capital instruments issued by consolidated bank subsidiaries and held by third parties (amount allowed in CET1 capital of the consolidation group)	–	
6	**CET1 capital before regulatory deductions**	**32,990,812**	
CET1 capital: regulatory deductions			
7	Valuation adjustments	2,048	
8	Goodwill (net of associated deferred tax liabilities)	–	
9	Other intangible assets (net of associated deferred tax liabilities)	–	
10	Deferred tax assets (net of associated deferred tax liabilities)	488,702	(8)
11	Cash flow hedge reserve	–	
12	Excess of total EL amount over total eligible provisions under the IRB approach	–	
13	Credit-enhancing interest-only strip, and any gain-on-sale and other increase in the CET1 capital arising from securitization transactions	–	
14	Gains and losses due to changes in own credit risk on fair valued liabilities	–	
15	Defined benefit pension fund net assets (net of associated deferred tax liabilities)	–	
16	Investments in own CET1 capital instruments (if not already netted off paid-in capital on reported balance sheet)	–	
17	Reciprocal cross-holdings in CET1 capital instruments	–	
18	Insignificant LAC investments in CET1 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation (amount above 10% threshold)	–	(4) + (5)
19	Significant LAC investments in CET1 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation (amount above 10% threshold)	–	
20	Mortgage servicing rights (net of associated deferred tax liabilities)	Not applicable	
21	Deferred tax assets arising from temporary differences (net of associated deferred tax liabilities)	Not applicable	
22	Amount exceeding the 15% threshold	Not applicable	
23	of which: significant investments in the ordinary share of financial sector entities	Not applicable	

(All amounts in HK dollar thousands unless otherwise stated)

2 Capital structure and adequacy (Continued)

Composition of regulatory capital (Continued)

		Component of regulatory capital reported by bank	Cross-referenced to balance sheet under regulatory scope of consolidation
24	of which: mortgage servicing rights	Not applicable	
25	of which: deferred tax assets arising from temporary differences	Not applicable	
26	National specific regulatory adjustments applied to CET1 capital	935,463	
26a	Cumulative fair value gains arising from the revaluation of land and buildings (own-use and investment properties)	–	
26b	Regulatory reserve for general banking risks	935,463	(15)
26c	Securitization exposures specified in a notice given by the Monetary Authority	–	
26d	Cumulative losses below depreciated cost arising from the institution's holdings of land and buildings	–	
26e	Capital shortfall of regulated non-bank subsidiaries	–	
26f	Capital investment in a connected company which is a commercial entity (amount above 15% of the reporting institution's capital base)	–	
27	Regulatory deductions applied to CET1 capital due to insufficient AT1 capital and Tier 2 capital to cover deductions	–	
28	**Total regulatory deductions to CET1 capital**	**1,426,213**	
29	**CET1 capital**	**31,564,599**	
AT1 capital: instruments			
30	Qualifying AT1 capital instruments plus any related share premium	–	
31	of which: classified as equity under applicable accounting standards	–	
32	of which: classified as liabilities under applicable accounting standards	–	
33	Capital instruments subject to phase-out arrangements from AT1 capital	–	
34	AT1 capital instruments issued by consolidated bank subsidiaries and held by third parties (amount allowed in AT1 capital of the consolidation group)	–	
35	of which: AT1 capital instruments issued by subsidiaries subject to phase-out arrangements	–	
36	**AT1 capital before regulatory deductions**	**–**	
AT1 capital: regulatory deductions			
37	Investments in own AT1 capital instruments	–	
38	Reciprocal cross-holdings in AT1 capital instruments	–	
39	Insignificant LAC investments in AT1 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation (amount above 10% threshold)	–	
40	Significant LAC investments in AT1 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation	–	
41	National specific regulatory adjustments applied to AT1 capital	–	
42	Regulatory deductions applied to AT1 capital due to insufficient Tier 2 capital to cover deductions	–	
43	**Total regulatory deductions to AT1 capital**	**–**	
44	**AT1 capital**	**–**	
45	**Tier 1 capital (Tier 1 = CET1 + AT1)**	**31,564,599**	

(All amounts in HK dollar thousands unless otherwise stated)

2 Capital structure and adequacy (Continued)

Composition of regulatory capital (Continued)

		Component of regulatory capital reported by bank	Cross-referenced to balance sheet under regulatory scope of consolidation
Tier 2 capital: instruments and provisions			
46	Qualifying Tier 2 capital instruments plus any related share premium	2,328,890	(10)
47	Capital instruments subject to phase-out arrangements from Tier 2 capital	–	
48	Tier 2 capital instruments issued by consolidated bank subsidiaries and held by third parties (amount allowed in Tier 2 capital of the consolidation group)	–	
49	of which: capital instruments issued by subsidiaries subject to phase-out arrangements	–	
50	Collective provisions and regulatory reserve for general banking risks eligible for inclusion in Tier 2 capital	1,542,942	(11) + (15) – (1) – (2) – (3) – (6) – (7) – (9)
51	**Tier 2 capital before regulatory deductions**	**3,871,832**	
Tier 2 capital: regulatory deductions			
52	Investments in own Tier 2 capital instruments	–	
53	Reciprocal cross-holdings in Tier 2 capital instruments and non-capital LAC liabilities	–	
54	Insignificant LAC investments in Tier 2 capital instruments issued by, and non-capital LAC liabilities of, financial sector entities that are outside the scope of regulatory consolidation (amount above 10% threshold and, where applicable, 5% threshold)	–	
54a	Insignificant LAC investments in non-capital LAC liabilities of financial sector entities that are outside the scope of regulatory consolidation (amount formerly designated for the 5% threshold but no longer meets the conditions) (for institutions defined as “section 2 institution” under §2(1) of Schedule 4F to BCR only)	–	
55	Significant LAC investments in Tier 2 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation (net of eligible short positions)	–	
55a	Significant LAC investments in non-capital LAC liabilities of financial sector entities that are outside the scope of regulatory consolidation (net of eligible short positions)	–	
56	National specific regulatory adjustments applied to Tier 2 capital	–	
56a	Add back of cumulative fair value gains arising from the revaluation of land and buildings (own-use and investment properties) eligible for inclusion in Tier 2 capital	–	
56b	Regulatory deductions applied to Tier 2 capital to cover the required deductions falling within §48(1)(g) of BCR	–	
57	**Total regulatory adjustments to Tier 2 capital**	–	
58	**Tier 2 capital**	**3,871,832**	
59	**Total regulatory capital (TC = Tier 1 + Tier 2)**	**35,436,431**	
60	**Total risk weighted assets**	**161,184,137**	

(All amounts in HK dollar thousands unless otherwise stated)

2 Capital structure and adequacy (Continued)

Composition of regulatory capital (Continued)

		Component of regulatory capital reported by bank	Cross-referenced to balance sheet under regulatory scope of consolidation
Capital ratios (as a percentage of risk weighted assets)			
61	**CET1 capital ratio**	**19.6%**	
62	**Tier 1 capital ratio**	**19.6%**	
63	**Total capital ratio**	**22.0%**	
64	**Institution-specific buffer requirement (capital conservation buffer plus countercyclical capital buffer plus higher loss absorbency requirements)**	**3.1%**	
65	of which: capital conservation buffer requirement	2.5%	
66	of which: bank specific countercyclical capital buffer requirement	0.6%	
67	of which: higher loss absorbency requirement	–	
68	**CET1 (as a percentage of RWA) available after meeting minimum capital requirements**	**13.6%**	
National minima (if different from Basel 3 minimum)			
69	National CET1 minimum ratio	Not applicable	
70	National Tier 1 minimum ratio	Not applicable	
71	National Total capital minimum ratio	Not applicable	
Amounts below the thresholds for deduction (before risk weighting)			
72	Insignificant LAC investments in CET1, AT1 and Tier 2 capital instruments issued by, and non-capital LAC liabilities of, financial sector entities that are outside the scope of regulatory consolidation	3,126,530	
73	Significant LAC investments in CET1 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation	664,203	
74	Mortgage servicing rights (net of associated deferred tax liabilities)	Not applicable	
75	Deferred tax assets arising from temporary differences (net of associated deferred tax liabilities)	Not applicable	
Applicable caps on the inclusion of provisions in Tier 2 capital			
76	Provisions eligible for inclusion in Tier 2 in respect of exposures subject to the BSC approach, or the STC approach and SEC-ERBA, SEC-SA and SEC-FBA (prior to application of cap)	1,542,942	
77	Cap on inclusion of provisions in Tier 2 under the BSC approach, or the STC approach, and SEC-ERBA, SEC-SA and SEC-FBA	1,826,040	
78	Provisions eligible for inclusion in Tier 2 in respect of exposures subject to the IRB approach and SEC-IRBA (prior to application of cap)	–	
79	Cap for inclusion of provisions in Tier 2 under the IRB approach and SEC-IRBA	–	

(All amounts in HK dollar thousands unless otherwise stated)

2 Capital structure and adequacy (Continued)

Composition of regulatory capital (Continued)

		Component of regulatory capital reported by bank	Cross-referenced to balance sheet under regulatory scope of consolidation
Capital instruments subject to phase-out arrangements (only applicable between 1 January 2018 and 1 January 2022)			
80	Current cap on CET1 capital instruments subject to phase-out arrangements	Not applicable	
81	Amount excluded from CET1 capital due to cap (excess over cap after redemptions and maturities)	Not applicable	
82	Current cap on AT1 capital instruments subject to phase-out arrangements	–	
83	Amount excluded from AT1 capital due to cap (excess over cap after redemptions and maturities)	–	
84	Current cap on Tier 2 capital instruments subject to phase-out arrangements	–	
85	Amount excluded from Tier 2 capital due to cap (excess over cap after redemptions and maturities)	–	

Note to the template:

Element where a more conservative definition has been applied in the BCR relative to that set out in Basel III capital standards:

Row No.	Description	Hong Kong basis	Basel III basis
10	**Deferred tax assets ("DTA") (net of associated deferred tax liabilities)**	**488,702**	–
	Explanation As set out in paragraphs 69 and 87 of the Basel III text issued by the Basel Committee (December 2010), DTAs of the bank to be realized are to be deducted, whereas DTAs which relate to temporary differences may be given limited recognition in CET1 capital (and hence be excluded from deduction from CET1 capital up to the specified threshold). In Hong Kong, an AI is required to deduct all DTAs in full, irrespective of their origin, from CET1 capital. Therefore, the amount to be deducted as reported in row 10 may be greater than that required under Basel III. The amount reported under the column "Basel III basis" in this box represents the amount reported in row 10 (i.e. the amount reported under the "Hong Kong basis") adjusted by reducing the amount of DTAs to be deducted which relate to temporary differences to the extent not in excess of the 10% threshold set for DTAs arising from temporary differences and the aggregate 15% threshold set for MSRs, DTAs arising from temporary differences and significant investments in CET1 capital instruments issued by financial sector entities (excluding those that are loans, facilities or other credit exposures to connected companies) under Basel III.		
Remarks: The amount of the 10% threshold mentioned above is calculated based on the amount of CET1 capital determined in accordance with the deduction methods set out in BCR Schedule 4F. The 15% threshold is referring to paragraph 88 of the Basel III text issued by the Basel Committee (December 2010) and has no effect to the Hong Kong regime.			

2 Capital structure and adequacy (Continued)

Main features of regulatory capital instruments

The main features of regulatory capital instruments as at 31 December 2022 are shown below. Full terms and conditions are published in the Bank's website of http://www.shacombank.com.hk and are accessible at the following direct link: http://www.shacombank.com.hk/eng/about/regulatory/20221231.jsp

		Ordinary shares	Subordinated notes due 2029
1	Issuer	Shanghai Commercial Bank Limited	Shanghai Commercial Bank Limited
2	Unique identifier (e.g. CUSIP, ISIN or Bloomberg identifier for private placement)	N/A	ISIN: XS1892105823
3	Governing law(s) of the instrument	Laws of Hong Kong	English Law, except that the subordination provisions shall be governed by the laws of Hong Kong.
	Regulatory treatment		
4	Transitional Basel III rules#	N/A	N/A
5	Post-transitional Basel III rules+	Common Equity Tier 1	Tier 2
6	Eligible at solo*/group/solo and group	Solo and Group	Solo and Group
7	Instrument type (types to be specified by each jurisdiction)	Ordinary shares	Other Tier 2 instruments
8	Amount recognised in regulatory capital (Currency in million, as of most recent reporting date)	HK$2,000 million	HK$2,329 million
9	Par value of instrument	N/A	US$300 million
10	Accounting classification	Shareholders' equity	Liability-amortised cost
11	Original date of issuance	1951, 1968, 1969,1970, 1972, 1973, 1975, 1979, 1981, 1985, 1988, 1990, 1991, 1996, 2000	17 January 2019
12	Perpetual or dated	Perpetual	Dated
13	Original maturity date	No maturity	17 January 2029
14	Issuer call subject to prior supervisory approval	No	Yes
15	Optional call date, contingent call dates and redemption amount	N/A	One-off call date: 17 January 2024. Additional optional redemption in whole at 100% of principal amount with accrued interest for taxation reasons, tax deductions reasons and regulatory reasons. Redemption amount subject to adjustment following occurrence of a Non-Viability Event. Redemption subject to prior written consent of the HKMA.
16	Subsequent call dates, if applicable	N/A	N/A

(All amounts in HK dollar thousands unless otherwise stated)

2 Capital structure and adequacy (Continued)

Main features of regulatory capital instruments (Continued)

		Ordinary shares	Subordinated notes due 2029
	Coupons/dividends		
17	Fixed or floating dividend/coupon	Floating	Fixed
18	Coupon rate and any related index	N/A	5.00% p.a. Fixed until 17 January 2024 and thereafter reset to a new fixed rate equal to the sum of the then prevailing U.S. Treasury Rate and the Spread at Pricing.
19	Existence of a dividend stopper	No	No
20	Fully discretionary, partially discretionary or mandatory	Fully discretionary	Mandatory
21	Existence of step up or other incentive to redeem	No	No
22	Non-cumulative or cumulative	Non-cumulative	Cumulative
23	Convertible or non-convertible	Non-convertible	Non-convertible
24	If convertible, conversion trigger(s)	N/A	N/A
25	If convertible, fully or partially	N/A	N/A
26	If convertible, conversion rate	N/A	N/A
27	If convertible, mandatory or optional conversion	N/A	N/A
28	If convertible, specify instrument type convertible into	N/A	N/A
29	If convertible, specify issuer of instrument it converts into	N/A	N/A
30	Write-down feature	No	Yes
31	If write-down, write-down trigger(s)	N/A	The earlier of the HKMA notifying the issuer in writing: (i) that the HKMA is of the opinion that a write-off or conversion is necessary, without which the Issuer would become non-viable or (ii) that a decision has been made by the government body, a government officer or other relevant regulatory body with the authority to make such a decision, that a public sector injection of capital or equivalent support is necessary, without which the Issuer would become non-viable.

2 Capital structure and adequacy (Continued)

Main features of regulatory capital instruments (Continued)

		Ordinary shares	Subordinated notes due 2029
32	If write-down, full or partial	N/A	May be in part or in full
33	If write-down, permanent or temporary	N/A	Permanent
34	If temporary write-down, description of write-up mechanism	N/A	N/A
35	Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument in the insolvency creditor hierarchy of the legal entity concerned).	N/A	The rights of the holders will, in the event of the winding up of the Bank, rank (i) subordinate and junior in right of payment to, and of all claims of, (a) all unsubordinated creditors of the Issuer (including its depositors), and (b) all other Subordinated Creditors of the Issuer whose claims are stated to rank senior to the Notes or rank senior to the Notes by operation of law or contract; (ii) pari passu in right of payment to and of all claims of the holders of Parity Obligations; and (iii) senior in right of payment to, and of all claims of, (a) the holders of Junior Obligations, and (b) holders of Tier 1 Capital Instruments of the Issuer.
36	Non-compliant transitioned features	No	No
37	If yes, specify non-compliant features	N/A	N/A

Footnote:

\# Regulatory treatment of capital instruments subject to transitional arrangements provided for in Schedule 4H to the BCR

\+ Regulatory treatment of capital instruments not subject to transitional arrangements provided for in Schedule 4H to the BCR

* Include solo-consolidated

3 Overview of risk management and RWA

(a) Overview of risk management

The Group's risk management framework is designed to cover all business processes and ensure various risks are properly managed and controlled in the course of conducting business. The key financial risks related to the Group's business include credit risk, counterparty credit risk, market risk, liquidity risk, interest rate risk and operational risk. Further information on the management of these risks is set out within the Regulatory Disclosures and Notes to the Consolidated Financial Statements as follows:

– Credit risk	– Note 7 of Regulatory Disclosures and Note 3.1 of Notes to the Consolidated Financial Statements
– Counterparty credit risk	– Note 8 of Regulatory Disclosures
– Market risk	– Note 9 of Regulatory Disclosures and Note 3.2 of Notes to the Consolidated Financial Statements
– Liquidity risk	– Note 10 of Regulatory Disclosures and Note 3.3 of Notes to the Consolidated Financial Statements
– Interest rate risk in the banking book	– Note 11 of Regulatory Disclosures and Note 3.2.4 of Notes to the Consolidated Financial Statements
– Operational risk	– Note 3.6 of Notes to the Consolidated Financial Statements

Risk culture

The Group has long recognised the importance of a strong risk culture which is the core value of the Group and is endorsed by the Board of Directors ("the Board") and being followed by the senior management. The risk culture of the Group is created through setting and complying with the risk management strategies and core risk management principles as well as establishing a sound risk management systems and effective risk management process to address material risks under normal and stressed conditions in a forward-looking approach. Risk awareness is promoted to all staff to enhance the Group's overall risk management through appropriate training. The Group's risk culture is further reinforced by the Group's remuneration system that is established to ensure that incentives would not create excessive or undue risk exposure and unethical behaviour which could threaten the reputation as well as safety and soundness of the Group.

Risk governance

The Board has the ultimate responsibility for the effective management of risk and approves and oversees the Group's overall risk management framework. The Board delegates its power to oversee the Group's major functional areas, including treasury, retail banking, corporate banking, risk management, wealth management, credit control and financial control, and the risks associated with them to the Risk Committee, the Audit Committee, the Executive Committee, and the Sustainability Committee. The Risk Committee in particular has the authority and responsibility to oversee and guide the overall management of the bank-wide risks undertaken by the Group.

The Chief Executive, Chief Risk Officer and the senior management have the responsibility to ensure various risk limits are appropriately established according to the risk management strategies set by the Board, and to oversee the effectiveness of managing and controlling risk in the day-to-day management of the Group.

Various business and functional units of the Group have their respective risk management responsibilities. Business units act as the first line of defence in risk management while other functional units, in particular Risk Management Division and Credit Division, which are independent from the business units and act as the second line of defence, assist in managing different kinds of risks.

The Internal Audit Department as the third line of defence, is responsible for providing independent assurance through conducting internal audits, and reporting to the Audit Committee on the quality of risk controls and management, and the adequacy and effectiveness of internal control environment of the Group.

3 Overview of risk management and RWA (Continued)

(a) Overview of risk management (Continued)

Risk appetite

The Group's Risk Appetite Statement is reviewed and approved by the Board from time to time but at least annually with reference to evolving industry and market development, which describes the level of risk that the Group is prepared to accept in pursuit of the Group's strategic objectives. The Group adopts a low risk appetite in managing and controlling risks in a prudent manner with a view to achieving steady growth and reasonable returns.

Various ratios and risk limits are set with reference to the legal and regulatory requirements to limit and control the risk exposure of the Group under a risk tolerance level acceptable to the Group and commensurate with the risk adverse culture as well as prudent management practice.

Stress testing

Stress testing is a risk management tool and involves the use of various techniques to assess the Group's potential vulnerability to adverse changes in market conditions. It is conducted with hypothetical as well as historical assumptions. With the establishment of various alerting levels under different scenarios, it helps to alert the management to adverse unexpected outcomes related to a variety of risks and provides an indication to the amount of financial resources (including capital and liquidity) that might be necessary for absorbing losses caused by, or to withstand, severe stressed conditions.

Risk measurement and information reporting

The Group has developed various systems for risk measurement and reporting for different risk exposures. Further information on the measurement and reporting of credit risk, market risk, liquidity risk and interest rate risk in the banking book exposures are provided in Note 7(a), Note 9(a), Note 10 and Note 11 of Regulatory Disclosures respectively.

A detailed report on risk exposures and risk management activities of the Group, which covers the assessment on major risk exposures including credit risk, market risk, interest rate risk in the banking book, liquidity risk, legal risk, compliance and regulatory risk, operational risk, reputation risk, strategic risk, technology risk and climate risk is presented to the Risk Committee for review on a quarterly basis. Besides, the results of stress tests, maintenance of regulatory risk limits and risk monitoring on overseas branches are also presented.

The Group continues to invest significant resources in IT systems and processes in order to maintain and improve the risk management capabilities. A number of key initiatives and projects to enhance consistent data aggregation, reporting and management, and work towards meeting new regulatory standards are in progress.

Risk mitigation

The Group applies different strategies and processes to hedge and mitigate different risks. Exposure to credit risk is usually mitigated by obtaining collateral and corporate and personal guarantees. The Group further mitigates credit risk by entering into netting arrangements with financial institutions to cover derivatives instruments while obtaining margin deposits from non-financial counterparties. For liquidity risk management, apart from establishing liquidity cushion, the Group uses results of stress-testing and reverse stress-testing to strengthen resilience to liquidity stress and serve as early-warning triggers for the formulation of management actions and contingency funding plan to mitigate potential stress and vulnerability which the Group might face.

(All amounts in HK dollar thousands unless otherwise stated)

3 Overview of risk management and RWA (Continued)

(b) Overview of RWA

The table below shows the breakdowns of RWA for various risks as at 31 December 2022 and 30 September 2022 and the minimum capital requirements as at 31 December 2022 which are calculated by multiplying the Group's RWA by 8%.

		RWA		Minimum capital requirements
		31 December 2022	30 September 2022	31 December 2022
1	Credit risk for non-securitization exposures	143,850,387	145,725,915	11,508,031
2	Of which STC approach	143,850,387	145,725,915	11,508,031
2a	Of which BSC approach	–	–	–
3	Of which foundation IRB approach	–	–	–
4	Of which supervisory slotting criteria approach	–	–	–
5	Of which advanced IRB approach	–	–	–
6	Counterparty default risk and default fund contributions	572,316	1,517,254	45,785
7	Of which SA-CCR approach	572,316	1,517,254	45,785
7a	Of which CEM	–	–	–
8	Of which IMM (CCR) approach	–	–	–
9	Of which others	–	–	–
10	CVA risk	129,713	292,625	10,377
11	Equity positions in banking book under the simple risk-weight method and internal models method	–	–	–
12	Collective investment scheme ("CIS") exposures – LTA	–	–	–
13	CIS exposures – MBA	–	–	–
14	CIS exposures – FBA	–	–	–
14a	CIS exposures – combination of approaches	–	–	–
15	Settlement risk	–	–	–
16	Securitization exposures in banking book	–	–	–
17	Of which SEC-IRBA	–	–	–
18	Of which SEC-ERBA (including IAA)	–	–	–
19	Of which SEC-SA	–	–	–
19a	Of which SEC-FBA	–	–	–
20	Market risk	5,452,350	5,598,625	436,188
21	Of which STM approach	5,452,350	5,598,625	436,188
22	Of which IMM approach	–	–	–
23	Capital charge for switch between exposures in trading book and banking book (not applicable before the revised market risk framework takes effect)	N/A	N/A	N/A
24	Operational risk	9,518,863	9,513,600	761,509
24a	Sovereign concentration risk	–	–	–
25	Amounts below the thresholds for deduction (subject to 250% RW)	1,660,508	1,744,080	132,841
26	Capital floor adjustment	–	–	–
26a	Deduction to RWA	–	–	–
26b	Of which portion of regulatory reserve for general banking risks and collective provisions which is not included in Tier 2 Capital	–	–	–
26c	Of which portion of cumulative fair value gains arising from the revaluation of land and buildings which is not included in Tier 2 Capital	–	–	–
27	**Total**	161,184,137	164,392,099	12,894,731

(All amounts in HK dollar thousands unless otherwise stated)

4 Linkages between financial statements and regulatory exposures

(a) Differences between accounting and regulatory scopes of consolidation and mapping of financial statement categories with regulatory risk categories

	Carrying values as reported in published financial statements	Carrying values under scope of regulatory consolidation	Carrying values of items:				
			subject to credit risk framework	subject to counterparty credit risk framework	subject to the securitisation framework	subject to market risk framework	not subject to capital requirements or subject to deduction from capital
Assets							
Cash and balances with banks	44,796,626	44,795,252	44,795,252	–	–	–	–
Placements with banks	17,645,562	17,645,562	17,645,562	–	–	–	–
Loans and advances to customers	95,995,971	95,995,971	95,995,971	–	–	–	–
Financial assets at fair value through profit or loss	970,847	931,669	12,242	–	–	919,427	–
Derivative financial instruments	552,801	552,801	–	552,801	–	552,801	–
Investment securities at fair value through other comprehensive income	51,277,567	51,277,567	51,277,567	–	–	–	–
Investment securities at amortised cost	4,728,167	4,728,167	4,728,167	–	–	–	–
Properties for sale	756,643	756,643	756,643	–	–	–	–
Investments in associates and joint venture	414,706	188,000	188,000	–	–	–	–
Investments in and amounts due from subsidiaries	–	353,141	353,141	–	–	–	–
Properties and equipment	2,456,376	2,418,721	2,418,721	–	–	–	–
Investment properties	993,778	1,022,496	1,022,496	–	–	–	–
Deferred income tax assets	486,029	488,702	–	–	–	–	488,702
Other assets	2,259,048	2,216,281	1,879,861	–	–	–	336,420
Total assets	**223,334,121**	**223,370,973**	**221,073,623**	**552,801**	**–**	**1,472,228**	**825,122**
Liabilities							
Deposits and balances from banks	7,471,442	7,471,442	–	–	–	–	7,471,442
Deposits from customers	176,501,730	176,501,730	–	–	–	–	176,501,730
Derivative financial instruments	598,173	598,173	–	–	–	–	598,173
Amounts due to subsidiaries	–	636,788	–	–	–	–	636,788
Subordinated debts	2,328,890	2,328,890	–	–	–	–	2,328,890
Other liabilities	2,782,920	2,650,056	–	–	–	–	2,650,056
Current income tax liabilities	185,851	185,846	–	–	–	–	185,846
Deferred income tax liabilities	7,315	7,236	–	–	–	–	7,236
Total liabilities	**189,876,321**	**190,380,161**	**–**	**–**	**–**	**–**	**190,380,161**

(All amounts in HK dollar thousands unless otherwise stated)

4 Linkages between financial statements and regulatory exposures (Continued)

(b) Main sources of differences between regulatory exposure amounts and carrying values in financial statements

	Total	Items subject to: credit risk framework	securitisation framework	counterparty credit risk framework	market risk framework
Asset carrying value amount under scope of regulatory consolidation (as per Regulatory Disclosures Note 4(a))	222,545,851	221,073,623	–	552,801	1,472,228
Liabilities carrying value amount under regulatory scope of consolidation (as per Regulatory Disclosures Note 4(a))	–	–	–	–	–
Total net amount under regulatory scope of consolidation	222,545,851	221,073,623	–	552,801	1,472,228
Off-balance sheet amounts	45,666,811	5,765,163	–	–	–
Differences due to consideration of provisions	579,709	579,709	–	–	–
Differences due to potential exposures for counterparty risk	808,548	–	–	808,548	–
Differences due to replacement cost for counterparty risk	(371,427)	–	–	(371,427)	–
Differences due to reversal of credit balance of other assets	1,249	1,249	–	–	–
Exposure amounts considered for regulatory purposes	269,230,741	227,419,744	–	989,922	1,472,228

(c) Explanations of differences between accounting and regulatory exposure amount

Basis of consolidation

The basis of consolidation for regulatory purposes is different from that for accounting purposes. Subsidiaries included in the consolidation for regulatory purposes are specified by the Hong Kong Monetary Authority. Subsidiaries not included in consolidation for regulatory purposes are mainly securities and insurance companies that are authorised and supervised by the Securities and Futures Commission and Insurance Authority respectively.

Most of the principal subsidiaries of the Group are included under scope of regulatory consolidation that there are no material differences between the carrying values of assets as reported in published financial statements and under scope of regulatory consolidation.

Exposure amounts considered for regulatory purposes require adjustments to be made to the carrying value of assets as reported in published financial statements. The main adjustments taken by the Group include the consideration of provisions, off-balance sheet exposures and potential exposure of default risk.

The Group uses the standardised approach to calculate the risk-weighted assets for its credit risk and market risk exposures. For operational risk, the Group uses the basic indicator approach to calculate its operational risk capital charge. During the reporting period, the Group did not have any securitisation exposure. Stage 1 and Stage 2 credit impairment allowances that are deducted from the carrying amount of exposures in the financial statements need to be reintegrated in the regulatory exposure value under the standardised approach. Off-balance sheet contracts, such as guarantees and commitments, also carry credit risks. These exposures are converted to credit equivalent amounts and added to the regulatory exposure amounts. The default risk exposures of OTC derivative contracts as reported in the published financial statements include their fair value only. Potential exposures for counterparty credit risk of OTC derivative contracts are therefore needed to be added to the regulatory exposure amount.

The Group operates subsidiaries in different countries where capital is governed by local rules and there may be restrictions on the transfer of funds or regulatory capital between members of the Group.

4 Linkages between financial statements and regulatory exposures (Continued)

(c) Explanations of differences between accounting and regulatory exposure amount (Continued)

Valuation control framework

The Group has in place fair valuation policy to ensure adequate governance and control processes for the designation and valuation of financial instruments to be measured at fair value for financial reporting, risk management and regulatory capital purposes.

The Risk Committee is delegated by the Board to approve the fair valuation policy and to review the governance structure and control framework to ensure that fair values are either determined or validated by control units independent of risk taking units. Control units have the overall responsibility for determination of valuation or independent verification of valuation results and ensuring the valuation process for financial instruments is conducted effectively and appropriately. Revaluation reports of trading and non-trading positions are compiled regularly and submitted to senior management for review. Any significant valuation issues are reported to senior management, Asset and Liability Committee and Risk Committee.

Valuation methodologies and process

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction in the principal (or most advantageous) market at the measurement date under current market conditions (i.e. an exit price) regardless whether the price is directly observable or estimated using another valuation technique.

For financial instrument with bid-offer close-out price, its fair value can be the price within the bid-offer price that is the most representative of fair value. All bid-offer market prices of the financial products, including foreign exchange, equities, debt securities and interest rate swap will be obtained from designated financial data service providers.

For financial instrument without bid-offer close-out price, the Group uses valuation techniques to establish the fair value of instruments including the use of recent arm's length market transactions between knowledgeable and willing parties, reference to the current fair value of another financial instrument that is substantially the same, discounted cash flow analysis, option pricing models and other valuation techniques commonly used by market participants.

Valuation adjustments

Valuation adjustments are an integral part of the valuation process. Appropriate valuation adjustments are made when the Group considers that there are additional factors that are not incorporated within the valuation methodologies or models such as illiquidity adjustment and valuation uncertainty adjustment.

Illiquidity adjustment may be taken if the securities are deemed illiquid, such as where the Group holds a security that has a significant concentration ratio (ratio of amount of security held by the Group to the total issuance size). To adopt illiquidity adjustment, securities with the same issuer and having nearby maturities as the security in subject would be selected and the yields of these securities would be extracted and interpolated as the yield of security in subject and the price of the illiquid security would then be calculated and compared with the price calculated by the usual valuation methodologies and processes.

The prices of certain debt securities may be less readily determinable from market data. If there is no quotation from designated financial data service providers, other sources will be sought such as the prices of most recent executed transactions. Standard deviation of the prices of the debt securities quoted by different rate sources will be calculated as the uncertainty of the prices quoted of the securities. The fair value of the debt securities will be adjusted by the standard deviation of the prices of the corresponding securities.

As at 31 December 2022, bid-offer spread valuation adjustment was made on certain assets and instruments to take into account the cost that would be incurred when closing out the positions. Other valuation adjustments are not required as most of the Group's investments were listed equities or debt securities of straight bonds that did not contain any complex features.

4 Linkages between financial statements and regulatory exposures (Continued)

(c) Explanations of differences between accounting and regulatory exposure amount (Continued)

Valuation adjustments (Continued)

		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
		Equity	Interest rates	FX	Credit	Commodities	Total	Of which: In the trading book	Of which: In the banking book
1	Close-out uncertainty, of which:	–	–	2,048	–	–	2,048	2,048	–
2	Mid-market value	–	–	–	–	–	–	–	–
3	Close-out costs	–	–	2,048	–	–	2,048	2,048	–
4	Concentration	–	–	–	–	–	–	–	–
5	Early termination	–	–	–	–	–	–	–	–
6	Model risk	–	–	–	–	–	–	–	–
7	Operational risks	–	–	–	–	–	–	–	–
8	Investing and funding costs						–	–	–
9	Unearned credit spreads						–	–	–
10	Future administrative costs	–	–	–	–	–	–	–	–
11	Other adjustments	–	–	–	–	–	–	–	–
12	**Total adjustments**	**–**	**–**	**2,048**	**–**	**–**	**2,048**	**2,048**	**–**

5 Countercyclical capital buffer ("CCyB") ratio

CCyB ratio is calculated as the weighted average of the applicable jurisdictional CCyB ("JCCyB") ratio effective at the date for which the determination is made, in respect of the jurisdictions (including Hong Kong) where the Bank has private sector credit exposures. The weight to be attributed to a given jurisdiction's applicable CCyB ratio is the ratio of the Bank's aggregate RWA for its private sector credit exposures (in both the banking book and the trading book) in that jurisdiction where the location of the exposures is determined as far as possible on an ultimate risk basis to the sum of the Bank's aggregate RWA across all jurisdictions in which the Bank has private sector credit exposures.

Key drivers for the changes in exposure amounts include asset quality, credit growth and credit portfolio. The applicable JCCyB ratio for Hong Kong is determined by the Hong Kong Monetary Authority based on the Initial Reference Calculator that is transparently calculated and made public, while the applicable JCCyB ratio in respect of a given jurisdiction outside Hong Kong may differ from the JCCyB ratio as determined by the relevant authority in that jurisdiction if the Hong Kong Monetary Authority has determined and announced the application of a higher or lower rate.

The following table shows the CCyB ratio, the geographical breakdown of the RWA in relation to private sector credit exposures that are relevant to the calculation of CCyB ratio and which have an applicable JCCyB ratio greater than zero as at 31 December 2022.

	Jurisdiction	Applicable JCCyB ratio in effect	Total RWA used in computation of CCyB ratio	CCyB ratio	CCyB amount
		%	HK$'000	%	HK$'000
1	Hong Kong SAR	1.0%	72,613,151		
	Sum		**72,613,151**		
	Total		**115,087,581**	**0.6%**	**1,023,519**

(All amounts in HK dollar thousands unless otherwise stated)

6 Leverage ratio

The leverage ratio ("LR") represents the consolidated ratio computed in the same regulatory consolidation basis as the capital adequacy ratio. The table below presents the summary comparison of accounting assets against leverage ratio exposure measure as at 31 December 2022.

Item		Value under the LR framework
1	Total consolidated assets as per published financial statements (before adjustments for specific and collective provisions)	224,107,424
2	Adjustment for investments in banking, financial, insurance or commercial entities that are consolidated for accounting purposes but outside the scope of regulatory consolidation	36,852
2a	Adjustment for securitised exposures that meet the operational requirements for the recognition of risk transference	–
3	Adjustment for fiduciary assets recognised on the balance sheet pursuant to the applicable accounting standard but excluded from the LR exposure measure	–
3a	Adjustments for eligible cash pooling transactions	–
4	Adjustments for derivative contracts	405,628
5	Adjustment for SFTs (i.e. repos and similar secured lending)	–
6	Adjustment for off-balance sheet ("OBS") items (i.e. conversion to credit equivalent amounts of OBS exposures)	9,173,370
6a	Adjustments for prudent valuation adjustments and specific and collective provisions that are allowed to be excluded from exposure measure	(773,303)
7	Other adjustments	(1,426,213)
8	**Leverage ratio exposure measure**	**231,523,758**

The leverage ratios as at 31 December 2022 and 30 September 2022 are shown below:

		31 December 2022	30 September 2022
On-balance sheet exposures			
1	On-balance sheet exposures (excluding those arising from derivative contracts and SFTs, but including collateral)	223,591,475	229,960,121
2	Less: Asset amounts deducted in determining Tier 1 capital	(1,426,213)	(1,444,808)
3	**Total on-balance sheet exposures (excluding derivative contracts and SFTs)**	222,165,262	228,515,313
Exposures arising from derivative contracts			
4	Replacement cost associated with all derivative contracts (where applicable net of eligible cash variation margin and/or with bilateral netting)	123,350	165,645
5	Add-on amounts for PFE associated with all derivative contracts	835,079	1,943,136
6	Gross-up for collateral provided in respect of derivative contracts where deducted from the balance sheet assets pursuant to the applicable accounting framework	–	–
7	Less: Deductions of receivables assets for cash variation margin provided under derivative contracts	–	–
8	Less: Exempted CCP leg of client-cleared trade exposures	–	–
9	Adjusted effective notional amount of written credit-related derivative contracts	–	–
10	Less: Adjusted effective notional offsets and add-on deductions for written credit-related derivative contracts	–	–
11	**Total exposures arising from derivative contracts**	958,429	2,108,781

(All amounts in HK dollar thousands unless otherwise stated)

6 Leverage ratio (Continued)

		31 December 2022	30 September 2022
Exposures arising from SFTs			
12	Gross SFT assets (with no recognition of netting), after adjusting for sale accounting transactions	–	–
13	Less: Netted amounts of cash payables and cash receivables of gross SFT assets	–	–
14	CCR exposure for SFT assets	–	–
15	Agent transaction exposures	–	–
16	**Total exposures arising from SFTs**	–	–
Other off-balance sheet exposures			
17	Off-balance sheet exposure at gross notional amount	45,666,811	44,484,879
18	Less: Adjustments for conversion to credit equivalent amounts	(36,493,441)	(35,642,816)
19	**Off-balance sheet items**	9,173,370	8,842,063
Capital and total exposures			
20	**Tier 1 capital**	31,564,599	30,631,433
20a	**Total exposures before adjustments for specific and collective provisions**	232,297,061	239,466,157
20b	**Adjustments for specific and collective provisions**	(773,303)	(655,124)
21	**Total exposures after adjustments for specific and collective provisions**	231,523,758	238,811,033
Leverage ratio			
22	**Leverage ratio**	13.6%	12.8%

Footnote:
CCP: Central counterparty
CCR: Counterparty credit risk
PFE: Potential future exposure
SFT: Securities financing transactions

7 Credit risk

(a) General information about credit risk

The Group takes on exposure to credit risk, which is the risk that a counterparty will cause a financial loss for the Group by failing to discharge an obligation. The Group's exposure to credit risk arises from a range of customer and product types, including exposures to corporate, retail and high net worth customers. The major corporate banking products offered by the Group include commercial loans and trade finance. The retail loans cover mortgage loans, consumer loans and credit cards.

The approach used for defining credit risk management policy and setting credit risk limits is described in Note 3.1 of Notes to the Consolidated Financial Statements.

Various analytical reports on credit risk exposures and credit risk management are provided monthly to senior management; including reports on loans and advances to customers, the credit risk profile of the Group, the portfolio distribution and credit quality, credit portfolio risk monitoring and compliance, impairment allowance and large exposures and risk concentrations.

(All amounts in HK dollar thousands unless otherwise stated)

7 Credit risk (Continued)

(a) General information about credit risk (Continued)

Credit risk management framework

The Group's organization structure establishes a clear set of authority and responsibility for monitoring compliance with policies, procedures and limits.

The Credit Committee is responsible for establishing credit policies, monitoring loan portfolio quality and impairment charge, ensuring compliance with statutory and internal lending limits, evaluating credit applications, making credit decisions and etc. Further information on the Credit Committee is set out in the Corporate Governance Report included in the 2022 Annual Report.

The Chief Risk Officer takes charge of the Group's overall credit risk management. He is responsible for ensuring that the Group's risk management framework, all related policies and control procedures, and business processes are effective, adequate and properly implemented and consistent with the overall risk appetite of the Group and credit related regulatory requirements. He is also responsible for assessing, evaluating and monitoring the use of risk limits and ensuring that quantifiable risks are within the approved limits.

Various units of the Group have their respective credit risk management responsibilities. Business units including branches and business departments, being the first line of defence, are responsible for performing on-going 'know your customer' checks. The Credit Appraisal Department, Credit Control Department, Credit Review & Policy Department, Market Risk & Risk Analytics Department and the Compliance Department, which are independent from the business units, act as the second line of defence. The Credit Appraisal Department is responsible for independent evaluation of credit applications, Credit Review & Policy Department is responsible for performing periodic credit review and formulating and reviewing credit risk policies and guidelines while Credit Control Department is responsible for performing credit control and monitoring. The Market Risk & Risk Analytics Department is responsible for monitoring the day-to-day management of the credit risk related to treasury operation. The Compliance Department is responsible for monitoring and ensuring that all the relevant regulatory and statutory requirements and limits are complied with by the Group. The Internal Audit Department is responsible for conducting regular review on the adequacy and effectiveness of the credit risk control and governance processes of the Group, and compliance with regulatory and statutory requirements.

(b) Credit quality of exposures as at 31 December 2022

		Gross carrying amounts of			Of which ECL accounting provisions for credit losses on STC approach exposures			
		Defaulted exposures	Non-defaulted exposures	Allowances/ impairments	Allocated in regulatory category of specific provisions	Allocated in regulatory category of collective provisions	Of which ECL accounting provisions for credit losses on IRB approach exposures	Net values
1	Loans	682,271	96,039,502	725,802	165,825	559,977	–	95,995,971
2	Debt securities	–	52,764,336	104	–	104	–	52,764,232
3	Off-balance sheet exposures	–	11,584,744	7,734	–	7,734	–	11,577,010
4	**Total**	**682,271**	**160,388,582**	**733,640**	**165,825**	**567,815**	**–**	**160,337,213**

(All amounts in HK dollar thousands unless otherwise stated)

7 Credit risk (Continued)

(c) Changes in defaulted loans and debt securities

		Amount
1	Defaulted loans and debt securities as at end June 2022	596,126
2	Loans and debt securities that have defaulted since the last reporting period	184,845
3	Returned to non-defaulted status	(22,351)
4	Amounts written off	(52,092)
5	Other changes	(24,257)
6	**Defaulted loans and debt securities as at end December 2022**	**682,271**

(d) Additional disclosures related to credit quality of exposures

The accounting definition of impaired exposures and the regulatory definition of defaulted exposures are generally aligned. In general, loans and advances overdue for more than 90 days are considered impaired unless other information is available to indicate the contrary. Loans and advances with a specific repayment date are classified as overdue when the principal or interest is past due and remains unpaid. Loans and advances repayable by regular instalments are classified as overdue when an instalment payment is past due and remains unpaid. Loans and advances repayable on demand are classified as overdue when a demand for repayment has been served on the borrower but repayment has not been made in accordance with the instruction.

The approach for determining impairment of financial assets is provided in Notes 2.6 and 3.1.1 of Notes to the Consolidated Financial Statements.

As at 31 December 2022, loans and advances which were past due for more than 90 days were all impaired.

Rescheduled loans and advances to customers are those loans and advances that have been rescheduled or renegotiated for reasons related to the borrower's financial difficulties. A rescheduled loan will normally require an adverse classification under the loan classification system (i.e. substandard or doubtful).

(All amounts in HK dollar thousands unless otherwise stated)

7 Credit risk (Continued)

(d) Additional disclosures related to credit quality of exposures (Continued)

(i) Breakdown of credit risk exposures as at 31 December 2022 by industry sector, geographical region and residual maturity

	Total	Impaired exposure	Stage 3 impairment allowances	Amounts written-off
Credit risk exposure – By industry sector				
– Property development	28,688,735	282,199	–	–
– Property investment	24,281,705	396,616	132,641	–
– Banks and financial institutions	30,838,826	–	–	–
– International, wholesale and retail trade	14,997,282	132,614	25,340	43,539
– Personal	14,210,807	39,678	3,790	793
– Others*	47,319,858	24,109	4,054	8,118
Total	**160,337,213**	**875,216**	**165,825**	**52,450**
Credit risk exposure – By geographical region				
– Hong Kong	90,459,069	171,285	22,520	793
– Mainland China	12,887,213	301,841	143,305	51,657
– United States	32,517,394	402,090	–	–
– Others	24,473,537	–	–	–
Total	**160,337,213**	**875,216**	**165,825**	**52,450**
Credit risk exposure – By residual maturity				
– Repayable on demand	4,407,416			
– Up to 1 month	12,739,770			
– 1-3 months	17,043,789			
– 3-12 months	34,543,727			
– 1-5 years	72,719,873			
– Over 5 years	18,079,400			
– Indefinite	803,238			
Total	**160,337,213**			

* Others include exposures to manufacturing, hotels, catering, telecommunication, transport and other commercial and industrial activities where exposure to each of these sectors is less than 10% of the Group's total RWA for credit risk.

(ii) Aging analysis of accounting past due exposures as at 31 December 2022

	Gross carrying amount
Past due over 3 months but less than 6 months	30,048
Past due over 6 month but less than 1 year	299,281
Past due over 1 year	352,942
Total	**682,271**

(iii) Breakdown of restructured exposures between impaired and non-impaired exposures as at 31 December 2022

	Gross carrying amount of	
	Impaired	Not impaired
Rescheduled loans and advances	20,132	–

7 Credit risk (Continued)

(e) Qualitative disclosures related to credit risk mitigation

Collateral

The Group employs a range of policies and practices to mitigate credit risk which is described in Note 3.1.4(a) of Notes to the Consolidated Financial Statements.

Revaluation and management of collateral

To ascertain the estimated fair value of the collateral offered to the Group, collateral other than the bank deposits is revalued according to the Guideline on Management of Collateral and Guarantees for monitoring the collateral position against relevant credit exposure.

The revaluation frequency depends on the collateral type but at least annually such as real estate, debt securities and equities. More frequent revaluation is needed for certain products, such as listed stocks which are revalued at least twice daily. The collateral value may be adjusted to reflect the likely net realizable value of such collateral.

Advice and service will be sought and employed from external legal professional whenever required to ensure all documentation creating the collateral and providing for the obligation of the parties with respect to each other in respect of the collateral is binding on all parties and legally enforceable in all relevant jurisdictions.

Recognition of risk mitigation under the standardised approach

The Group applies the simple approach for credit risk mitigation to all its on- and off-balance sheet banking book exposures that are subject to risk mitigation. Where a claim on a counterparty is secured against eligible collateral, the secured portion of the claim must be weighted according to the risk-weight applicable to the collateral (unless that produces a higher risk-weight than would be applicable to the original counterparty, in which case the risk-weight applicable to that counterparty should apply). The unsecured portion of the claim must be weighted according to the risk-weight applicable to the original counterparty. The main types of recognised credit risk mitigant used by the Group include deposits and bank guarantee. In addition, real estate collateral is also recognised for past due exposures.

Where a claim on a counterparty is secured by a guarantee from an eligible guarantor, the portion of the claim that is supported by the guarantee is to be weighted according to the risk-weight applicable to the guarantor (unless the risk-weight applicable to the original counterparty is lower). The unsecured portion of the claim must be weighted according to the risk-weight applicable to the original counterparty.

For capital calculation, the Group has not used any on-balance sheet or off-balance sheet recognised netting for credit risk mitigation.

Concentrations within credit risk mitigations

Concentrations within credit risk mitigations taken may occur if a number of guarantors and collaterals with similar economic characteristics are engaged in comparable activities with changes in economic or industry conditions affecting their ability to meet contractual obligations. A range of quantitative tools is used to monitor the Group's credit risk mitigating activities including dedicated stress tests.

Stress-tests and scenario analysis are conducted on the Group's portfolio of collateral to assess the impact under unusual market conditions and relevant reports are submitted to the senior management for review in accordance with the Stress-Testing Policy of the Group.

The credit concentrations within the credit risk mitigation (recognised collateral and guarantees for capital calculation) used by the Group are within acceptable levels.

(All amounts in HK dollar thousands unless otherwise stated)

7 Credit risk (Continued)

(f) Overview of recognised credit risk mitigation as at 31 December 2022

		Exposures unsecured: carrying amount	Exposures to be secured	Exposures secured by recognised collateral	Exposures secured by recognised guarantees	Exposures secured by recognised credit derivative contracts
1	Loans	94,194,550	1,801,421	1,645,453	155,968	–
2	Debt securities	52,764,232	–	–	–	–
3	**Total**	**146,958,782**	**1,801,421**	**1,645,453**	**155,968**	**–**
4	Of which defaulted	7,380	530,470	530,470	–	–

(g) Qualitative disclosures on use of ECAI ratings under STC approach

Under the standardised approach ("STC") for the calculation of credit risk within the Basel capital framework, banks are required to use credit assessments provided by external credit assessment institutions ("ECAIs"), recognised by the Hong Kong Monetary Authority for the purposes of regulatory capital calculation, to determine the risk-weights of the banks' credit exposures.

Standard & Poor's Ratings Services, Moody's Investors Service, Fitch Ratings and Rating and Investment Information, Inc. are the ECAIs that the Group has used for the determination of risk weightings for the following classes of exposure:

– Sovereign exposures;
– Public sector entity exposures;
– Bank exposures;
– Securities firm exposures;
– Corporate exposures; and
– Collective investment scheme exposures.

The mapping of ECAI ratings of the above six classes of exposure to the risk weights under STC follows the process as prescribed in Part 4 of the Banking (Capital) Rules. Where an exposure of debt securities has an issue-specific external credit assessment, such assessment will be used. In case there is no specific issue rating published by the ECAI, the issuer rating is applied to the senior unsecured claims of that issuer subject to the conditions prescribed by the BCR.

(All amounts in HK dollar thousands unless otherwise stated)

7 Credit risk (Continued)

(h) Credit risk exposures and effects of recognised credit risk mitigation – for STC approach as at 31 December 2022

		Exposures pre-CCF and pre-CRM		Exposures post-CCF and post-CRM		RWA and RWA density	
	Exposure classes	On-balance sheet amount	Off-balance sheet amount	On-balance sheet amount	Off-balance sheet amount	RWA	RWA density
1	Sovereign exposures	11,636,193	–	11,664,074	–	69,585	1%
2	PSE exposures	2,824,555	250,000	2,796,674	125,000	584,335	20%
2a	Of which: domestic PSEs	2,824,555	250,000	2,796,674	125,000	584,335	20%
2b	Of which: foreign PSEs	–	–	–	–	–	–
3	Multilateral development bank exposures	1,334,538	–	1,334,538	–	–	–
4	Bank exposures	78,314,458	2,010,314	78,468,775	414,607	26,899,703	34%
5	Securities firm exposures	330,119	3,227,409	330,119	–	165,060	50%
6	Corporate exposures	100,103,038	28,778,577	99,279,047	4,059,628	95,409,269	92%
7	CIS exposures	–	–	–	–	–	–
8	Cash items	1,055,965	–	2,170,948	–	174,967	8%
9	Exposures in respect of failed delivery on transactions entered into on a basis other than a delivery-versus-payment basis	–	–	–	–	–	–
10	Regulatory retail exposures	3,278,575	2,299,783	3,175,879	123,999	2,474,910	75%
11	Residential mortgage loans	7,709,343	1,988,795	7,709,343	989,253	3,955,211	45%
12	Other exposures which are not past due exposures	13,865,744	7,111,933	13,523,131	52,676	13,575,807	100%
13	Past due exposures	537,850	–	537,850	–	541,540	101%
14	Significant exposures to commercial entities	–	–	–	–	–	–
15	**Total**	**220,990,378**	**45,666,811**	**220,990,378**	**5,765,163**	**143,850,387**	**63%**

(All amounts in HK dollar thousands unless otherwise stated)

7 Credit risk (Continued)

(i) Credit risk exposures by asset classes and by risk weights – for STC approach as at 31 December 2022

	Exposure class \ Risk Weight	0%	10%	20%	35%	50%	75%	100%	150%	250%	Others	Total credit risk exposures amount (post CCF and post CRM)
1	Sovereign exposures	11,316,147	–	347,927	–	–	–	–	–	–	–	**11,664,074**
2	PSE exposures	–	–	2,921,674	–	–	–	–	–	–	–	**2,921,674**
2a	Of which: domestic PSEs	–	–	2,921,674	–	–	–	–	–	–	–	**2,921,674**
2b	Of which: foreign PSEs	–	–	–	–	–	–	–	–	–	–	**–**
3	Multilateral development bank exposures	1,334,538	–	–	–	–	–	–	–	–	–	**1,334,538**
4	Bank exposures	–	–	41,807,813	–	37,074,858	–	711	–	–	–	**78,883,382**
5	Securities firm exposures	–	–	–	–	330,119	–	–	–	–	–	**330,119**
6	Corporate exposures	–	–	393,783	–	15,228,759	–	87,716,133	–	–	–	**103,338,675**
7	CIS exposures	–	–	–	–	–	–	–	–	–	–	**–**
8	Cash items	1,565,101	–	538,599	–	–	–	67,248	–	–	–	**2,170,948**
9	Exposures in respect of failed delivery on transactions entered into on a basis other than a delivery-versus-payment basis	–	–	–	–	–	–	–	–	–	–	**–**
10	Regulatory retail exposures	–	–	–	–	–	3,299,878	–	–	–	–	**3,299,878**
11	Residential mortgage loans	–	–	–	7,238,261	–	154,056	1,306,279	–	–	–	**8,698,596**
12	Other exposures which are not past due exposures	–	–	–	–	–	–	13,575,807	–	–	–	**13,575,807**
13	Past due exposures	–	–	–	–	–	–	530,470	7,380	–	–	**537,850**
14	Significant exposures to commercial entities	–	–	–	–	–	–	–	–	–	–	**–**
15	**Total**	**14,215,786**	**–**	**46,009,796**	**7,238,261**	**52,633,736**	**3,453,934**	**103,196,648**	**7,380**	**–**	**–**	**226,755,541**

(All amounts in HK dollar thousands unless otherwise stated)

8 Counterparty credit risk

(a) Qualitative disclosures related to counterparty credit risk (including those arising from clearing through CCPs)

Counterparty credit risk arises from over-the-counter ("OTC") derivative contracts and securities financing transactions both in trading and banking books, and is subject to the same risk management framework. Credit equivalent amount and capital charge for the relevant counterparty credit exposures are determined following the regulatory capital requirements. Starting from 30 June 2021, the Group adopts the standardised (counterparty credit risk) approach ("SA-CCR") to measure the credit equivalent amount, which comprises replacement cost and potential future exposure, multiplied by a scaling factor of 1.4. The relevant counterparty default risk capital charge is calculated under the standardised approach. The Group also adopts the standardised credit valuation adjustment ("CVA") method to calculate the relevant counterparty CVA capital charge.

The Group exercises strict control over counterparty credit risk exposure, including central counterparty ("CCP"). All credit limits are established in advance of transaction. Credit and settlement risk is captured, monitored and reported in accordance with the Group risk methodologies. The credit risk exposures associated with these contracts are predominantly their positive marked-to-market values. These credit risk exposures together with potential exposures from market movements are managed as part of the overall lending limits allowed to counterparties. In instance of financial institutions, close – out netting agreement (International Swaps and Derivatives Association "ISDA") and/or collateral netting agreement (Credit Support Annex "CSA") are used, while the Group generally requires margin deposits from corporate, commercial and retail customers for risk mitigation purpose. In the case of a 2-notch downgrade of the Group's credit rating, the impact on the Group's derivative collateral requirements is minimal.

Wrong-way risk occurs when the probability of default of a counterparty is positively correlated with general market risk factors (general wrong-way risk), and when exposure to a counterparty is positively correlated with the probability of default of the counterparty due to the nature of the transactions with the counterparty (specific wrong-way risk). The Group monitors and mitigates wrong-way risk by restricting the receipt of eligible collateral to low-risk and high-liquidity cash and bonds issued by sovereigns, central banks and multilateral development banks.

(b) Analysis of counterparty default risk exposures (other than those to CCPs) by approaches as at 31 December 2022

		Replacement cost (RC)	PFE	Effective EPE	Alpha (α) used for computing default risk exposure	Default risk exposure after CRM	RWA
1	SA-CCR approach (for derivative contracts)	129,553	577,534		1.4	989,922	572,316
1a	CEM (for derivative contracts)	–	–		1.4	–	–
2	IMM (CCR) approach			–	–	–	–
3	Simple approach (for SFTs)					–	–
4	Comprehensive approach (for SFTs)					–	–
5	VaR (for SFTs)					–	–
6	**Total**						**572,316**

(All amounts in HK dollar thousands unless otherwise stated)

8 Counterparty credit risk (Continued)

(c) CVA capital charge as at 31 December 2022

		EAD post CRM	RWA
	Netting sets for which CVA capital charge is calculated by the advanced CVA method		
1	(i) VaR (after application of multiplication factor if applicable)		–
2	(ii) Stressed VaR (after application of multiplication factor if applicable)		–
3	Netting sets for which CVA capital charge is calculated by the standardized CVA method	989,922	129,713
4	**Total**	**989,922**	**129,713**

(d) Counterparty default risk exposures (other than those to CCPs) by asset classes and by risk weights – for STC approach as at 31 December 2022

	Exposure class \ Risk Weight	0%	10%	20%	35%	50%	75%	100%	150%	250%	Others	Total default risk exposure after CRM
1	Sovereign exposures	–	–	–	–	–	–	–	–	–	–	**–**
2	PSE exposures	–	–	–	–	–	–	–	–	–	–	**–**
2a	Of which: domestic PSEs	–	–	–	–	–	–	–	–	–	–	**–**
2b	Of which: foreign PSEs	–	–	–	–	–	–	–	–	–	–	**–**
3	Multilateral development bank exposures	–	–	–	–	–	–	–	–	–	–	**–**
4	Bank exposures	–	–	107,105	–	631,998	–	–	–	–	–	**739,103**
5	Securities firm exposures	–	–	–	–	–	–	–	–	–	–	**–**
6	Corporate exposures	–	–	–	–	31,847	–	135,417	–	–	–	**167,264**
7	CIS exposures	–	–	–	–	–	–	–	–	–	–	**–**
8	Regulatory retail exposures	–	–	–	–	–	–	–	–	–	–	**–**
9	Residential mortgage loans	–	–	–	–	–	–	–	–	–	–	**–**
10	Other exposures which are not past due exposures	–	–	–	–	–	–	83,555	–	–	–	**83,555**
11	Significant exposures to commercial entities	–	–	–	–	–	–	–	–	–	–	**–**
12	**Total**	**–**	**–**	**107,105**	**–**	**663,845**	**–**	**218,972**	**–**	**–**	**–**	**989,922**

(All amounts in HK dollar thousands unless otherwise stated)

8 Counterparty credit risk (Continued)

(e) Composition of collateral for counterparty default risk exposures (including those for contracts or transactions cleared through CCPs) as at 31 December 2022

		Derivative contracts				SFTs	
		Fair value of recognised collateral received		Fair value of posted collateral		Fair value of recognised collateral received	Fair value of posted collateral
		Segregated	Unsegregated	Segregated	Unsegregated		
1	Cash – other currencies	–	87,499	–	157,451	–	–
2	**Total**	**–**	**87,499**	**–**	**157,451**	**–**	**–**

(f) Credit-related derivatives contracts

The Group did not have any credit-related derivatives contracts as at 31 December 2022.

(g) Exposures to CCPs

The Group did not have any exposures to CCPs as at 31 December 2022.

9 Market risk

(a) Qualitative disclosures related to market risk

Market risk is the risk that interest rates, foreign exchange rates, equity or commodity prices will move relative to positions taken, resulting in profits or losses. In the ordinary course of business, the Group enters into various types of financial instruments, mainly foreign exchange and equity contracts, that comprise transactions initiated for the Group's own account and customer needs.

The Group's positions are managed by the Treasury Division under the limits and guidelines laid down in the foreign exchange risk management policy and the policy on allocating transactions of financial instruments to the trading, non-trading or investment book, which are approved by the Executive Committee. The Risk Management Division is responsible for monitoring the transactions to ensure the activities are within the relevant limits and guidelines.

Further information on the management of foreign exchange risk and interest rate risk is provided in Note 3.2.3 and Note 3.2.4 of Notes to the Consolidated Financial Statements respectively.

Market risk measurement

The measuring procedures and limit structure used for market risk management have been approved by the Executive Committee. Limits on notional, stop loss and sensitivity are set for trading positions which are marked-to-market daily. Stress tests provide an indication of the potential size of losses that could arise in extreme conditions. The stress testing is tailored to the business and typically uses scenario analysis. The results of the stress tests are reviewed by management, the Asset and Liability Committee, the Risk Committee and the Board.

The Group measures the exposure of its assets and liabilities to fluctuations in interest rates primarily by way of gap analysis which provides the Group with a static view of the maturity and re-pricing characteristics of balance sheet positions. An interest rate gap report is prepared by classifying all assets and liabilities into various time period categories according to contracted maturities or anticipated re-pricing dates whichever is earlier. The difference in the amount of assets and liabilities maturing or being re-priced in any time period category would then give the Group an indication of the extent to which the Group is exposed to the risk of potential changes in the net interest income.

The Group uses different types of derivatives to manage foreign exchange and interest rate sensitivity primarily by hedging its underlying positions. The types of derivatives used by the Group including foreign exchange rate and interest rate contracts are managed within limits approved by the Executive Committee. The Group has not designated any derivatives in any hedge relationship for the application of hedge accounting.

9 Market risk (Continued)

(b) Market risk under STM approach as at 31 December 2022

		RWA
	Outright product exposures	
1	Interest rate exposures (general and specific risk)	812,300
2	Equity exposures (general and specific risk)	–
3	Foreign exchange (including gold) exposures	4,622,000
4	Commodity exposures	–
	Option exposures	
5	Simplified approach	–
6	Delta-plus approach	18,050
7	Other approach	–
8	Securitization exposures	–
9	**Total**	**5,452,350**

10 Liquidity risk

(a) Qualitative disclosure related to liquidity risk management

Governance of liquidity risk management

The Group's risk tolerance describes the level of risk that the Group is prepared to accept to achieve its strategic and business objectives. The risk tolerance is reviewed and approved by the Board periodically but at least annually with reference to changing industry and market developments. An acceptable risk tolerance is adopted in managing and controlling risks in a prudent manner with a view to achieving steady growth and reasonable returns. Various ratios and risk limits are set with reference to the legal and regulatory requirements to limit and control the risk exposure under an acceptable risk tolerance level and commensurate with prudent liquidity risk management practices.

The Board is ultimately responsible for overseeing the Group's liquidity risk management structure. The Risk Committee is delegated by the Board to oversee the Group's liquidity risk management, including approval of liquidity risk management policies and risk limits. The Asset and Liability Committee is delegated by the Board to oversee the Group's liquidity strategy, policies and practices, liquidity costs, benefits and risks are incorporated in the internal pricing, performance measurement and new product approval process for all significant activities, both on- and off-balance sheet.

The Risk Management Division is responsible for the day-to-day liquidity risk management. The Group's liquidity is managed by the Treasury Division in accordance with the guidelines and procedures laid down in the liquidity risk management policy.

Liquidity risk management

The Bank's operation is mainly funded by customer deposits and shareholders' funds. Diversified and stable funding sources are maintained by determining the appropriate mix of liabilities and building strong and lasting relationships with key fund providers in accordance with the liquidity risk management policy.

Liquidity is managed on a group basis, covering both the local and overseas operations as well as all related entities of the Bank. The formulation and management of the Group's funding strategy is centralised at the Treasury Division.

Adequate liquidity will be maintained at all times to meet obligations when they fall due in normal circumstances and an appropriate mix of additional stock of high quality liquid assets will be maintained to provide contingent liquidity in the event of a funding crisis. The normal borrowing capacity to obtain funds in the interbank market is estimated based on past experience and the wholesale funding need for both local and foreign currencies are limited to the amount which are comfortably within that borrowing capacity.

10 Liquidity risk (Continued)

(a) Qualitative disclosure related to liquidity risk management (Continued)

Liquidity risk management (Continued)

Liquidity risk is managed with regard to a variety of factors, including the liquidity maintenance ratio, core funding ratio, loan to deposit ratio, size of the liquidity cushion, maturity mismatch profile, the diversity and stability of the deposit base, and the ability to borrow in the interbank market to ensure that both the funding liquidity and market liquidity are properly handled. An adequate stock of high quality liquid assets is maintained at all times in order to enable the Group to meet deposit withdrawals, to repay interbank borrowings, and to make new loans and investments as and when required in a timely and cost effective manner under both normal business conditions and emergency situations.

Stress testing

The stress-testing results form an important component in assisting the Risk Committee in reviewing and endorsing the Group's risk tolerance levels, which are defined by internal limits on various risk ratios, as well as assisting the Asset and Liability Committee in managing the overall liquidity of the Group and to make informed strategic business decisions.

Contingency funding plan

The Contingency Funding Plan is a component of the Group's Business Continuity Plan, and describes the Group's strategy for dealing with any liquidity problems, and the procedures for making up cash flow deficits in emergency situations.

(b) Quantitative disclosure

Customised measurement tools or metrics

A cash-flow approach is adopted to managing liquidity risk by ensuring that a net positive cash-flow position is maintained or otherwise sufficient cash can be generated from assets or funding sources to cover any funding shortfalls. The starting point for the projection is an analysis of the contractual maturity of the financial liabilities and the expected collection date of the financial assets. The projection is forward-looking and covers liquidity risks stemming from on-balance sheet assets and liabilities and off-balance sheet positions. Cash-flow projection is made over daily time bands of up to 7 days ahead and wider time bands of up to 1 year ahead. Internal limits are set to control the size of the cumulative net mismatch positions for the shorter-term time bands. Cash-flow projection covers positions in HK dollar and in all currencies in aggregate. Separate cash-flow projections are also performed for individual foreign currencies in which there are significant positions, such as US dollar and the renminbi.

Concentration limits on collateral pools and sources of funding

Retail deposits account for an important part of the Group's funding base, and the composition and quality of such deposits are carefully monitored and managed. Core deposits are characterised by their stability and reliability and are identified based on internally defined criteria. An internal target is set for the proportion of core deposits against total deposits.

Liquidity exposures and funding needs at the level of individual legal entities, foreign branches and subsidiaries

The Group is not required to calculate the liquidity coverage ratio ("LCR") and net stable funding ratio ("NSFR") under the Banking (Liquidity) Rules. Instead, the Liquidity Maintenance Ratio ("LMR") and the Core Funding Ratio ("CFR") are used to measure respectively the short-term and long-term liquidity exposures of the Group against its funding needs. The LMR is the ratio of liquefiable assets to qualifying liabilities for the coming one month. Under the Banking Ordinance, the Group is subject to the statutory limit of the LMR, which is prescribed at 25%. The CFR is the ratio of the amount of available core funding to the amount of required core funding and measures the availability of funding from capital and liabilities to cover the amount of assets and off-balance sheet obligations that need to be funded. Under the Banking (Liquidity) Rules, the Group is under regulation to maintain a CFR of not less than 75% on average in each calendar month. Funding or liquidity support is provided to all branches outside of Hong Kong and such support is appropriately accounted for. The funding positions of the branches outside of Hong Kong are closely monitored and any regulatory or legal impediments to accessing liquidity will be addressed on a group basis. Other than branches outside of Hong Kong, the liquidity needs of other group companies are insignificant.

(All amounts in HK dollar thousands unless otherwise stated)

10 Liquidity risk (Continued)

(b) Quantitative disclosure (Continued)

Contractual maturity profile

	Next day	Within 1 month	> 1 month up to 3 months	> 3 months up to 1 year	> 1 year up to 5 years	Over 5 years	Balancing amount
Currency notes and coins	988,636	–	–	–	–	–	–
Amount receivable arising from derivative contracts	4,705	147,462	244,276	150,838	3,330	–	–
Due from MA for a/c of Exchange Fund	3,564,414	–	–	–	–	–	–
Due from overseas central banks	4,819	–	–	–	–	–	119,830
Due from banks	9,293,548	30,831,686	7,474,728	10,171,265	–	–	–
Debt securities, prescribed instruments and structured financial instruments held (net of short positions)	49,961,286	694,742	324,675	1,010,191	1,166,332	485,739	2,874
Acceptances and bills of exchange held	72,563	79,079	106,589	1,440	–	–	–
Loans and advances to non-bank customers	6,034,552	5,586,378	9,411,999	21,238,459	38,917,779	14,330,289	3,171,155
Other assets	344,893	521,483	125,934	448,172	880,601	63,738	6,981,355
Total on-balance sheet assets	**70,269,416**	**37,860,830**	**17,688,201**	**33,020,365**	**40,968,042**	**14,879,766**	**10,275,214**
Total off-balance sheet claims	**–**	**1,895,200**	**115,115**	**–**	**–**	**–**	**633,952**
Deposits from non-bank customers	65,424,314	39,117,076	50,590,581	21,301,144	314,476	11,766	–
Amount payable arising from derivative contracts	4,908	209,732	215,995	162,756	3,220	–	–
Due to MA for a/c of Exchange Fund	–	–	389,920	–	–	–	–
Due to banks	2,336,798	2,070,883	2,822,445	432,685	–	–	–
Other liabilities	682,357	993,339	368,712	364,119	93,844	81,369	–
Capital and reserves	–	–	–	–	2,328,890	–	33,906,575
Total on-balance sheet liabilities	**68,448,377**	**42,391,030**	**54,387,653**	**22,260,704**	**2,740,430**	**93,135**	**33,906,575**
Total off-balance sheet obligations	**2,554,563**	**2,616,566**	**3,182,238**	**14,749,748**	**3,519,010**	**1,771,275**	**–**
Contractual Maturity Mismatch	**(733,524)**	**(5,251,566)**	**(39,766,575)**	**(3,990,087)**	**34,708,602**	**13,015,356**	
Cumulative Contractual Maturity Mismatch	**(733,524)**	**(5,985,090)**	**(45,751,665)**	**(49,741,752)**	**(15,033,150)**	**(2,017,794)**	

(All amounts in HK dollar thousands unless otherwise stated)

11 Interest rate risk in the banking book ("IRRBB")

Qualitative disclosure and quantitative disclosure are described in Note 3.2.4 of Notes to the Consolidated Financial Statements.

12 Non-bank Mainland exposures

The Bank	2022			2021		
Types of counterparties	On-balance sheet exposures	Off-balance sheet exposures	Total	On-balance sheet exposures	Off-balance sheet exposures	Total
1. Central government, central government-owned entities and their subsidiaries and joint ventures	4,012,715	4,419	4,017,134	6,119,632	5,744	6,125,376
2. Local governments, local government-owned entities and their subsidiaries and joint ventures	–	–	–	–	–	–
3. PRC nationals residing in Mainland China or other entities incorporated in Mainland China and their subsidiaries and joint ventures	8,902,883	1,321,000	10,223,883	11,427,500	1,408,132	12,835,632
4. Other entities of central government not reported in item 1 above	70,855	–	70,855	96,412	–	96,412
5. Other entities of local governments not reported in item 2 above	160,580	–	160,580	189,795	–	189,795
6. PRC nationals residing outside Mainland China or entities incorporated outside Mainland China where the credit is granted for use in Mainland China	5,025,023	398,777	5,423,800	5,592,311	558,362	6,150,673
7. Other counterparties where the exposures are considered by the reporting institution to be non-bank Mainland China exposures	818,436	582	819,018	891,280	–	891,280
Total	18,990,492	1,724,778	20,715,270	24,316,930	1,972,238	26,289,168
Total assets after provision	212,670,991			220,362,505		
On-balance sheet exposures as percentage of total assets	8.93%			11.03%		

(All amounts in HK dollar thousands unless otherwise stated)

13 Currency concentrations

	2022						
Equivalent in Hong Kong Dollars	Spot assets	Spot liabilities	Forward purchases	Forward sales	Net options position	Net long/(short) position	Net structural position
US Dollars	92,566,000	(87,407,000)	50,099,000	(53,559,000)	(359,000)	1,340,000	5,684,000
Pound Sterling	8,616,000	(5,998,000)	3,012,000	(5,727,000)	–	(97,000)	69,000
Euro Dollars	1,479,000	(1,566,000)	335,000	(407,000)	93,000	(66,000)	–
Renminbi	22,749,000	(22,083,000)	4,096,000	(4,205,000)	(8,000)	549,000	3,852,000
Canadian Dollars	1,484,000	(1,468,000)	22,000	(23,000)	–	15,000	–
Australian Dollars	2,447,000	(2,472,000)	1,340,000	(1,308,000)	–	7,000	–
Other currencies and gold	2,575,000	(1,409,000)	3,026,000	(4,363,000)	274,000	103,000	–
	131,916,000	(122,403,000)	61,930,000	(69,592,000)	–	1,851,000	9,605,000

	2021						
Equivalent in Hong Kong Dollars	Spot assets	Spot liabilities	Forward purchases	Forward sales	Net options position	Net long/(short) position	Net structural position
US Dollars	99,377,000	(79,689,000)	22,560,000	(22,773,000)	161,000	19,636,000	1,919,000
Pound Sterling	7,758,000	(5,858,000)	2,495,000	(4,434,000)	4,000	(35,000)	64,000
Euro Dollars	1,550,000	(1,555,000)	736,000	(721,000)	(44,000)	(34,000)	–
Renminbi	24,218,000	(22,703,000)	2,791,000	(2,413,000)	(33,000)	1,860,000	5,548,000
Canadian Dollars	1,503,000	(1,539,000)	44,000	(14,000)	(33,000)	(39,000)	–
Australian Dollars	2,608,000	(2,671,000)	1,585,000	(1,566,000)	21,000	(23,000)	–
Other currencies and gold	2,761,000	(1,563,000)	6,302,000	(7,278,000)	(76,000)	146,000	–
	139,775,000	(115,578,000)	36,513,000	(39,199,000)	–	21,511,000	7,531,000

The net options position is calculated based on the delta-weighted positions of all foreign exchange option contracts.

The above disclosure is based on the significance of the Group's foreign currency exposures of the current year.

14 Disclosure on remuneration

Guiding principles

The Bank aims to sustain long-term capital preservation and financial strength for the benefits of all stakeholders and is committed to promoting a sound corporate culture of prudent risk-taking at all levels of the Bank, with staff at all times conscientiously serving the Bank by adhering to the established values. The Remuneration Policy (the "Policy") of the Bank is designed to promote fairness and consistency in the compensation approach; to attract, motivate and retain talents, to create and sustain a strong corporate culture that would drive performance prudently and appropriately as well as to help achieve the business goals under prudent risk management principles.

The Policy applies to the Bank in Hong Kong and its subsidiaries, where appropriate. While the basic principles are applicable to foreign branches, they are also subject to their local regulatory requirements in respective jurisdictions.

Nomination and Remuneration Committee

The Nomination and Remuneration Committee (the "Committee") is established with written Terms of Reference defining its authority and duties, regarding the remuneration aspect, to oversee the formulation and implementation of a sound remuneration policy by the Bank, and to ensure its consistency with the Bank's culture, long-term business and risk appetite, performance and control environment, the best practices and applicable legal and regulatory requirements; to review and make recommendations to the Board on the remuneration packages of all Directors, Chief Executive, senior management and key personnel of the Bank; to ensure a regular review on the Bank's remuneration system and its operation; to ensure that no Director, Chief Executive or any of their associates is involved in deciding their own remuneration; and to review and make recommendations to the Board on culture-related matters of the Bank.

Directly appointed by the Board of the Bank, majority of the members of the Committee are Independent Non-executive Directors. The Committee is chaired by Mr. Johnson Mou Daid CHA. The other members are Mr. Stephen Ching-yen LEE and Mr. Gordon Che-keung KWONG.

In 2022, the Committee held two physical meetings, mainly to approve the annual independent review report on the Bank's remuneration system carried out by Internal Audit Department; to review and approve the Remuneration Policy in response to the Hong Kong Monetary Authority Supervisory Policy Manual CG-5 "Guideline on a Sound Remuneration System" ("CG-5") and the independent review; to review the annual performance evaluation of Chief Executive and Deputy Chief Executives; to review and recommend to the Board discretionary bonus mechanism and the remuneration packages of senior management and key personnel (inclusive of the vesting of the previous years' deferred portion); and to review the culture-related matters of the Bank.

14 Disclosure on remuneration (Continued)

Remuneration policy

The Committee reviews the Policy and the remuneration system at least annually and any material changes to the Policy will be submitted to the Board for approval. The review in 2022 mainly covered the roles and responsibilities of the Chief Risk Officer in relation to the remuneration system, the major risk types being considered in risk assessment insofar as they affect the remuneration system, and the deferral arrangements of variable remuneration of senior management and key personnel for better alignment with the expectation outlined in the CG-5, leading to a more prudent remuneration system that is consistent with the Bank's risk appetite.

The Committee may at its discretion seek information and recommendations from relevant departments, committees or independent consultant as appropriate when conducting the review. In 2022, the Committee has not sought advice from external consultant on remuneration matters but has commissioned Internal Audit Department to conduct an independent review on the effectiveness of the Bank's remuneration system to ensure compliance with the principles set out in CG-5.

Remuneration of directors, senior management and key personnel

The Committee is responsible for making recommendations to the Board on the formulation and review of the remuneration packages for Directors, the Chief Executive, senior management and key personnel, with reference to the Bank's financial condition and future prospect, risk management framework, reward and people strategies. Such packages are subject to the final approval of the Board.

The following groups of employees have been identified as the "Senior Management" and "Key Personnel" as defined in CG-5:

"Senior management" of the Bank includes the Chief Executive, Deputy Chief Executives and Division Chiefs of the Bank who report directly to Chief Executive and are responsible for the development and execution of Bank-wide strategy and/or activities and are collectively responsible for the risks that may arise.

"Key personnel" refers to individual staff member whose duties or activities in the course of the employment involve the assumption of material risks or the taking on of material exposures on behalf of the Bank.

No individual director/staff or any of his/her associates shall be involved in deciding his/her own remuneration package.

Remuneration structure

The remuneration package is a combination of fixed and variable remuneration. Fixed remuneration consists of basic salary, allowances, double pay (which will be incorporated into the basic salary starting from January 2023) and provident fund contribution. Variable remuneration takes into account the overall financial and non-financial performance of the Bank and individual business units, while individual performance is measured against the established key performance indicators, adherence to risk management policies, compliance with legal and regulatory requirements and ethical standards. The variable remuneration is awarded in the form of cash bonus and/or cash incentives.

A proportion of the variable remuneration of senior management and key personnel will be deferred and the vesting criteria of the deferred payment are subject to the impact of financial and non-financial factors over a period of time.

14 Disclosure on remuneration (Continued)

Performance measurements and the distribution of variable remuneration

The Bank maintains a performance evaluation scheme to ensure individual staff performance, which covers financial, non-financial and risk factors, would be differentiated into various levels, and be adequately and effectively evaluated. Adverse performance in non-financial factors, such as non-adherence to risk management policies, non-compliance with internal and regulatory standards, shall outweigh financial achievements. Final approval of the discretionary bonus which is all cash-based is determined by various quantitative and qualitative assessment criteria set out in the performance appraisal system.

The employees within risk control functions are remunerated independently. The performance of business units where they oversee does not affect their remuneration. Management of business units should not be involved in determining the remuneration of the employees in risk control functions.

When deciding the remuneration measures, the Bank shall also take into account certain key risk factors such as its asset quality, liquidity position, business environments, respective staff performance, the overall business results as well as long-term financial position. When reviewing and determining the discretionary bonus scheme, various financial and non-financial criteria including the individual performance of the staff by measuring against key performance indicators, adherence to the Bank's established values, implementation and accomplishment of business strategies, goals and objectives of the business and/or functional units under his/her supervision, compliance with regulatory requirements, adherence to risk management policies, code of conduct and ethical standards shall be taken into account. The overall performance of the Bank, and other factors that might have an impact on the future profitability, liquidity, financials and payout of the Bank should also be considered. The criteria of discretionary incentive payment shall include non-financial factors such as adherence to compliance and quality assurance requirements, positive customer outcomes including but not limited to customer satisfaction, providing accurate and sufficient information, offering right products and service offered, meeting customer reasonable expectation, and etc. which outweigh the quantitative targets. The established remuneration measures continued to apply in 2022. The timing and the portion of the performance related bonus distribution are vested in the Committee and finally with the Board. The bonus (or part of it) may be withheld if the Bank's performance is not justified, or if the business objectives are not achieved, or when it is necessary to protect the financial soundness of the Bank. In the event that a staff is accountable for serious misconduct behaviour, including but not limited to, non-compliance with applicable laws, rules, regulations, policies, guidelines, etc. that leads to significant loss for the Bank, fraud or serious breach of internal rules, the performance evaluation of the staff should record the incident. Further, the salary and variable remuneration reviews (bonus and/or incentive payment), if any, should consider to reflect the misconduct outcome such as a reduction in variable remuneration, after taking into account the relevant indicators of the severity of the impact to the Bank.

Deferral arrangements

In view of the Bank's existing business model and organization structure, a portion of the discretionary bonus payment of senior management and key personnel is subject to an incremental deferral percentage to reflect their seniority, roles and responsibilities and bonus quantum, and vesting by equal portions over a period of three years in order to align with the long-term value creation and time horizons of risk. In circumstances where it is later established that any performance measurement is proven to have been manifestly misstated, or it is later established that the employee concerned has committed fraud, malfeasance, or has violated material internal control policies or breached the relevant rules and regulations, all or part of the unvested deferred variable remuneration for a particular year shall be foregone.

(All amounts in HK dollar thousands unless otherwise stated)

14 Disclosure on remuneration (Continued)

Senior management and key personnel remuneration

Quantitative information on remuneration for the Bank's senior management and key personnel during the financial year of 2022, split into fixed and variable remuneration, is set out below:

Remuneration amount and quantitative information		Senior management	Key personnel
Fixed remuneration	Number of employees	12	10
	Total fixed remuneration	**39,911**	**17,245**
	Cash-based	39,911	17,245
	Of which: deferred	–	–
	Other forms	–	–
	Of which: deferred	–	–
Variable remuneration	Number of employees	11	10
	Total variable remuneration	**34,438**	**11,094**
	Cash-based	34,438	11,094
	Of which: deferred	12,904	2,217
	Other forms	–	–
	Of which: deferred	–	–
Total remuneration		**74,349**	**28,339**

Notes:

(i) Remuneration refers to all remuneration payable to employees during the year when being appointed as senior management or key personnel under the Remuneration Policy.

(ii) For the purpose of Remuneration Policy, "senior management" of the Bank includes the Chief Executive, Deputy Chief Executives and Division Chiefs of the Bank who report directly to Chief Executive and are responsible for the development and execution of Bank-wide strategy and/or activities and are collectively responsible for the risks that may arise. "Key personnel" refers to employees whose duties or activities in the course of the employment involve the assumption of material risks or the taking on of material exposures on behalf of the Bank.

(All amounts in HK dollar thousands unless otherwise stated)

14 Disclosure on remuneration (Continued)

Senior management and key personnel remuneration (Continued)

Special payments	Guaranteed bonuses		Sign-on awards		Severance payments	
	Number of employees	Total amount	Number of employees	Total amount	Number of employees	Total amount
Senior management	–	–	1	4,318	–	–
Key personnel	–	–	–	–	–	–

Deferred and retained remuneration in 2022	Total amount of outstanding deferred remuneration	Of which: Total amount of outstanding deferred and retained remuneration exposed to ex post explicit and/or implicit adjustments	Total amount of amendment during the year of 2022 due to ex post explicit adjustments	Total amount of amendment during the year of 2022 due to ex post implicit adjustments	Total amount of deferred remuneration paid out in 2022
Senior management					
Cash	21,367	–	–	–	7,082
Other	–	–	–	–	–
Key personnel					
Cash	3,419	–	–	–	882
Other	–	–	–	–	–
Total	**24,786**	**–**	**–**	**–**	**7,964**

Note:

(i) The outstanding deferred remuneration in the financial year relates to the 2020, 2021 and 2022 variable remuneration.