上海商業銀行
SHANGHAI COMMERCIAL BANK

REGULATORY DISCLOSURES

As at 31 December 2018
(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 2018	30 September 2018	30 June 2018	31 March 2018	31 December 2017
	Regulatory capital (amount)					
1	Common Equity Tier 1 (CET1)	**25,126,647**	24,184,814	23,456,456	23,356,671	22,775,378
2	Tier 1	**25,126,647**	24,184,814	23,456,456	23,356,671	22,775,378
3	Total capital	**28,160,772**	27,205,692	26,485,373	26,383,849	25,769,482
	Risk Weighted Amounts (RWA)					
4	Total RWA	**151,367,613**	144,978,137	142,008,259	138,241,149	136,106,777
	Risk-based regulatory capital ratios (as a percentage of RWA)					
5	CET1 ratio (%)	**16.6%**	16.7%	16.5%	16.9%	16.7%
6	Tier 1 ratio (%)	**16.6%**	16.7%	16.5%	16.9%	16.7%
7	Total capital ratio (%)	**18.6%**	18.8%	18.7%	19.1%	18.9%
	Additional CET1 buffer requirements (as a percentage of RWA)					
8	Capital conservation buffer requirement (%)	**1.9%**	1.9%	1.9%	1.9%	1.3%
9	Countercyclical capital buffer requirement (%)	**1.1%**	1.2%	1.2%	1.2%	0.8%
10	Higher loss absorbency requirements (%) (applicable only to G-SIBs or D-SIBs)	**0.0%**	0.0%	0.0%	0.0%	0.0%
11	Total AI-specific CET1 buffer requirements (%)	**3.0%**	3.1%	3.1%	3.1%	2.1%
12	CET1 available after meeting the AI's minimum capital requirements (%)	**10.6%**	10.7%	10.5%	10.9%	10.7%
	Basel III leverage ratio					
13	Total leverage ratio (LR) exposure measure	**208,591,012**	202,623,550	196,710,865	195,744,711	193,118,657
14	LR (%)	**12.0%**	11.9%	11.9%	11.9%	11.8%
	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 (%)	**48.2%**	44.1%	44.1%	46.3%	46.1%
	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 (%)	**191.7%**	182.5%	182.5%	193.1%	N/A

Footnote:

N/A Not applicable

(All amounts in HK dollar thousands unless otherwise stated)

2 Capital structure and adequacy

The calculation of the capital adequacy ratios as at 31 December 2018 is based on the Banking (Capital) Rules ("BCR"). The capital adequacy ratios represent the consolidated ratios of the Bank's Hong Kong offices, 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 2018.

	Balance sheet as in published financial statements	Under regulatory scope of consolidation	Cross reference to Composition of Regulatory Capital
Assets			
Cash and balances with banks	28,608,498	28,606,224	
of which: Stage 1 and Stage 2 impairment allowances reflected in regulatory capital		*(535)*	(1)
Placements with banks	8,643,722	8,643,722	
of which: Stage 1 and Stage 2 impairment allowances reflected in regulatory capital		*(164)*	(2)
Loans and advances to customers	86,725,546	86,725,546	
of which: Stage 1 and Stage 2 impairment allowances reflected in regulatory capital		*(331,117)*	(3)
Financial assets at fair value through profit or loss	1,858,984	1,838,890	
Derivative financial instruments	313,320	*313,320*	
Investment securities at fair value through other comprehensive income	63,399,110	63,343,900	
of which: insignificant capital investments in financial sector entities exceeding 10% threshold		*1,568,318*	(4)
Investment securities at amortised cost	2,413,650	2,412,731	
of which: Stage 1 and Stage 2 impairment allowances reflected in regulatory capital		*(20)*	(5)
Properties for sale	416,346	416,346	
Investments in joint ventures	388,447	188,000	
Investments in and amounts due from subsidiaries	–	219,423	
of which: Stage 1 and Stage 2 impairment allowances reflected in regulatory capital		*(7,603)*	(6)
Properties and equipment	2,332,709	2,273,900	
Investment properties	1,025,892	1,056,322	
Deferred income tax assets	72,193	73,412	(7)
Other assets	1,421,495	1,357,594	
of which: Stage 1 and Stage 2 impairment allowances reflected in regulatory capital		*(114)*	(8)
Total assets	197,619,912	197,469,330	

(All amounts in HK dollar thousands unless otherwise stated)

2 Capital structure and adequacy (Continued)

	Balance sheet as in published financial statements	Under regulatory scope of consolidation	Cross reference to Composition of Regulatory Capital
Liabilities			
Deposits and balances from banks	10,344,988	10,344,987	
Deposits from customers	154,614,718	154,614,718	
Derivatives financial instruments	305,731	305,731	
Amounts due to subsidiaries	–	406,494	
Subordinated debt	1,945,079	1,945,079	(9)
Other liabilities	2,266,587	2,108,431	
of which: Stage 1 and Stage 2 impairment allowances reflected in regulatory capital		*12,758*	(10)
Provisions	149,602	147,496	
Current income tax liabilities	91,316	91,282	
Deferred income tax liabilities	27	–	
Total liabilities	169,718,048	169,964,218	
Equity			
Share capital	2,000,000	2,000,000	(11)
Retained earnings	15,317,380	14,999,065	(12)
Reserves	10,503,623	10,506,047	
of which: accumulated other comprehensive income/(loss), other than regulatory reserve		*9,769,312*	(13)
regulatory reserve		*736,735*	(14)
Non-controlling interests	80,861	–	
Total equity	27,901,864	27,505,112	
Total equity and liabilities	197,619,912	197,469,330	

(All amounts in HK dollar thousands unless otherwise stated)

2 Capital structure and adequacy (Continued)

The Bank has already applied full capital deductions under the BCR. The Composition of Regulatory Capital as at 31 December 2018 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	(11)
2	Retained earnings	14,999,065	(12)
3	Disclosed reserves	10,506,047	(13) + (14)
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**	**27,505,112**	
	CET1 capital: regulatory deductions		
7	Valuation adjustments	–	
8	Goodwill (net of associated deferred tax liability)	–	
9	Other intangible assets (net of associated deferred tax liability)	–	
10	Deferred tax assets (net of associated deferred tax liabilities)	73,412	(7)
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 capital investments in CET1 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation (amount above 10% threshold)	1,568,318	(4)
19	Significant capital 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	
24	of which: mortgage servicing rights	Not applicable	
25	of which: deferred tax assets arising from temporary differences	Not applicable	

(All amounts in HK dollar thousands unless otherwise stated)

2 Capital structure and adequacy (Continued)

		Component of regulatory capital reported by bank	Cross-referenced to balance sheet under regulatory scope of consolidation
26	National specific regulatory adjustments applied to CET1 capital	736,735	
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	736,735	(14)
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**	**2,378,465**	
29	**CET1 capital**	**25,126,647**	
	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 capital investments in AT1 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation (amount above 10% threshold)	–	
40	Significant capital 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)**	**25,126,647**	
	Tier 2 capital: instruments and provisions		
46	Qualifying Tier 2 capital instruments plus any related share premium	1,945,079	(9)
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)	–	

(All amounts in HK dollar thousands unless otherwise stated)

2 Capital structure and adequacy (Continued)

		Component of regulatory capital reported by bank	Cross-referenced to balance sheet under regulatory scope of consolidation
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	1,089,046	(10) + (14) – (1) – (2) – (3) –(5) – (6) – (8)
51	**Tier 2 capital before regulatory deductions**	**3,034,125**	
	Tier 2 capital: regulatory deductions		
52	Investments in own Tier 2 capital instruments	–	
53	Reciprocal cross-holdings in Tier 2 capital instruments	–	
54	Insignificant capital investments in Tier 2 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation (amount above 10% threshold)	–	
55	Significant capital investments in Tier 2 capital instruments issued by 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	–	
57	**Total regulatory deductions to Tier 2 capital**	–	
58	**Tier 2 capital**	**3,034,125**	
59	**Total capital (Total capital = Tier 1 + Tier 2)**	**28,160,772**	
60	**Total risk weighted assets**	**151,367,613**	
	Capital ratios (as a percentage of risk weighted assets)		
61	CET1 capital ratio	16.6%	
62	Tier 1 capital ratio	16.6%	
63	Total capital ratio	18.6%	
64	Institution-specific buffer requirement (capital conservation buffer plus countercyclical capital buffer plus higher loss absorbency requirements)	3.0%	
65	of which: capital conservation buffer requirement	1.9%	
66	of which: bank specific countercyclical capital buffer requirement	1.1%	
67	of which: higher loss absorbency requirement	0.0%	
68	CET1 (as a percentage of RWA) available after meeting minimum capital requirements	10.6%	
	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 capital investments in CET1 capital instruments, AT1 capital instruments and Tier 2 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation	2,669,497	

(All amounts in HK dollar thousands unless otherwise stated)

2 Capital structure and adequacy (Continued)

		Component of regulatory capital reported by bank	Cross-referenced to balance sheet under regulatory scope of consolidation
73	Significant capital investments in CET1 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation	1,009,524	
74	Mortgage servicing rights (net of associated deferred tax liabilities)	Not applicable	
75	Deferred tax assets arising from temporary differences (net of related tax liability)	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)	1,089,046	
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	1,696,803	
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	–	
	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)	–	

(All amounts in HK dollar thousands unless otherwise stated)

2 Capital structure and adequacy (Continued)

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)**	**73,412**	**–**
	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.			

Footnote:
CET1 Common Equity Tier 1
AT1 Additional Tier 1

2 Capital structure and adequacy (Continued)

The main features of regulatory capital instruments as at 31 December 2018 are shown below:

		Ordinary shares	Subordinated notes
1	Issuer	Shanghai Commercial Bank Limited	Shanghai Commercial Bank Limited
2	Unique identifier (eg CUSIP, ISIN or Bloomberg identifier for private placement)	N/A	XS1720518478
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/group & solo	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$1,945 million
9	Par value of instrument	N/A	US$250 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	29 November 2017
12	Perpetual or dated	Perpetual	Dated
13	Original maturity date	No maturity	29 November 2027
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: 29 November 2022. 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 Hong Kong Monetary Authority ("HKMA").
16	Subsequent call dates, if applicable	N/A	N/A
	Coupons/dividends		
17	Fixed or floating dividend/coupon	Floating	Fixed
18	Coupon rate and any related index	N/A	3.75% p.a. Fixed until 29 November 2022 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

(All amounts in HK dollar thousands unless otherwise stated)

2 Capital structure and adequacy (Continued)

		Ordinary shares	Subordinated notes
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.
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

2 Capital structure and adequacy (Continued)

		Ordinary shares	Subordinated notes
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 of the BCR

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

* Include solo-consolidated

N/A Not applicable

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	– 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 recognized 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 supervise the Group's major functional areas, including treasury, retail banking, corporate banking, wealth management, credit control and financial control, and the risks associated with them to the Risk Committee, the Audit Committee, and the Executive Committee. The Risk Committee in particular has the authority and responsibility to oversee and guide the overall management of the collective set of different 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 defense in risk management while other functional units, in particular Risk Management Division, which are independent from the business units and act as the second line of defense, assist in managing different kinds of risks.

Internal Audit Department as the third line of defense is responsible for providing independent assurance through conducting internal audits, and reporting to the Audit Committee on the quality of risk controls and management, the adequacy and the compliance of internal policies and procedures.

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 moderate 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 according 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 information reporting, risk measurement and reporting systems

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 and liquidity risk exposures are provided in Note 7(a), Note 9(a) and Note 10 of Regulatory Disclosures respectively.

A quarterly report on risk exposures and risk management activities of the Group is presented to the Risk Committee; which covers the assessment on major risk exposures including credit risk, market risk, interest rate risk, liquidity risk, legal risk, compliance and regulatory risk, operational risk, reputation risk, strategic risk and technology risk. Besides, the results of stress tests, maintenance of regulatory risk limits, 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 mitigated by obtaining collateral and corporate and personal guarantees. The Group further mitigates credit risk by entering into netting arrangements with counterparties such as banks with which it undertakes credit activities. Collateral or other security is not usually obtained for credit risk exposures on derivatives instruments, except where the Group requires margin deposits from counterparties. For liquidity risk management, 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 2018 and 30 September 2018 and the minimum capital requirements as at 31 December 2018 are calculated by multiplying the Group's RWA by 8%.

		RWA		Minimum capital requirements
		31 December 2018	30 September 2018	31 December 2018
1	Credit risk for non-securitization exposures	131,958,515	126,684,923	10,556,681
2	Of which STC approach	131,958,515	126,684,923	10,556,681
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	1,261,899	1,582,758	100,952
7	Of which SA-CCR	Not Applicable	Not Applicable	Not Applicable
7a	Of which CEM	1,261,899	1,582,758	100,952
8	Of which IMM(CCR) approach	–	–	–
9	Of which others	–	–	–
10	CVA risk	287,663	379,175	23,013
11	Equity positions in banking book under the simple risk-weight method and internal models method	–	–	–
12	Collective investment scheme ("CIS") exposures – LTA	Not Applicable	Not Applicable	Not Applicable
13	CIS exposures – MBA	Not Applicable	Not Applicable	Not Applicable
14	CIS exposures – FBA	Not Applicable	Not Applicable	Not Applicable
14a	CIS exposures – combination of approaches	Not Applicable	Not Applicable	Not Applicable
15	Settlement risk	–	–	–
16	Securitization exposures in banking book	–	–	–
17	Of which SEC-IRBA	–	–	–
18	Of which SEC-ERBA	–	–	–
19	Of which SEC-SA	–	–	–
19a	Of which SEC-FBA	–	–	–
20	Market risk	7,098,288	7,247,263	567,863
21	Of which STM approach	7,098,288	7,247,263	567,863
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)	Not Applicable	Not Applicable	Not Applicable
24	Operational risk	8,237,438	8,020,250	658,995
25	Amounts below the thresholds for deduction (subject to 250% RW)	2,523,810	1,063,768	201,905
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**	151,367,613	144,978,137	12,109,409

(All amounts in HK dollar thousands unless otherwise stated)

4 Linkages between financial statements and regulatory exposures

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

			Carrying values of items:				
	Carrying values as reported in published financial statements	Carrying values under scope of regulatory consolidation	subject to credit risk framework	subject to counterparty credit risk framework	subject to 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	28,608,498	28,606,224	28,606,224	–	–	–	–
Placements with banks	8,643,722	8,643,722	8,643,722	–	–	–	–
Loans and advances to customers	86,725,546	86,725,546	86,725,546	–	–	–	–
Financial assets at fair value through profit or loss	1,858,984	1,838,890	6,017	–	–	1,832,873	–
Derivative financial instruments	313,320	313,320	–	312,704	–	312,704	616
Investment securities at fair value through other comprehensive income	63,399,110	63,343,900	61,775,582	–	–	–	1,568,318
Investment securities at amortised cost	2,413,650	2,412,731	2,412,731	–	–	–	–
Properties for sale	416,346	416,346	416,346	–	–	–	–
Investments in joint ventures	388,447	188,000	188,000	–	–	–	–
Investments in and amounts due from subsidiaries	–	219,423	219,423	–	–	–	–
Properties and equipment	2,332,709	2,273,900	2,273,900	–	–	–	–
Investment properties	1,025,892	1,056,322	1,056,322	–	–	–	–
Deferred income tax assets	72,193	73,412	–	–	–	–	73,412
Other assets	1,421,495	1,357,594	1,099,987	–	–	–	257,607
Total assets	**197,619,912**	**197,469,330**	**193,423,800**	**312,704**	**–**	**2,145,577**	**1,899,953**
Liabilities							
Deposits and balances from banks	10,344,988	10,344,987	–	–	–	–	10,344,987
Deposits from customers	154,614,718	154,614,718	–	–	–	–	154,614,718
Derivatives financial instruments	305,731	305,731	–	–	–	–	305,731
Amounts due to subsidiaries	–	406,494	–	–	–	–	406,494
Subordinated debt	1,945,079	1,945,079	–	–	–	–	1,945,079
Other liabilities	2,266,587	2,108,431	–	–	–	–	2,108,431
Provisions	149,602	147,496	–	–	–	–	147,496
Current income tax liabilities	91,316	91,282	–	–	–	–	91,282
Deferred income tax liabilities	27	–	–	–	–	–	–
Total liabilities	**169,718,048**	**169,964,218**	**–**	**–**	**–**	**–**	**169,964,218**

(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

		Items subject to:			
	Total	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))	195,569,377	193,423,800	–	312,704	2,145,577
Liabilities carrying value amount under regulatory scope of consolidation (as per Regulatory Disclosures Note 4(a))	–	–	–	–	–
Total net amount under regulatory scope of consolidation	195,569,377	193,423,800	–	312,704	2,145,577
Off-balance sheet amounts	50,910,893	8,413,005	–	–	–
Differences due to consideration of provisions	339,553	339,553	–	–	–
Differences due to potential exposures for counterparty risk	1,603,926	–	–	1,603,926	–
Differences due to reversal of credit balance of other assets	16,233	16,233	–	–	–
Exposure amounts considered for regulatory purposes	248,439,982	202,192,591	–	1,916,630	2,145,577

(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 HKMA. 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 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.

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 overall responsibility for independent verification of valuation results from risk taking units 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, interest rate swap and bullion will be obtained from designated financial data service providers.

4 Linkages between financial statements and regulatory exposures (Continued)

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

Valuation methodologies and process (Continued)

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, concentration adjustment and valuation uncertainty adjustment.

Illiquidity adjustment will be taken if the securities are deemed illiquid that cannot be sold quickly due to a shortage of interested buyers or a lack of an established trading market. 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), concentration adjustment may be required. To adopt illiquidity or concentration adjustment, securities with the same issuer and have 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. If the standard deviation exceeds 2%, valuation uncertainty adjustment may be required. 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 2018, no valuation adjustment was required as most of the Group's investments were listed equities or debt securities of straight bonds that did not contain any complex features.

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 HKMA 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 HKMA 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 2018.

	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	1.9%	63,968,911		
2	United Kingdom	1.0%	362,488		
	Sum		**64,331,399**		
	Total		**104,687,731**	**1.1%**	**1,739,214**

(All amounts in HK dollar thousands unless otherwise stated)

6 Leverage ratio

The leverage ratios ("LR") represent the consolidated ratios 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 2018.

Item		Value under the LR framework
1	Total consolidated assets as per published financial statements (before adjustments for specific and collective provisions)	198,003,820
2	Adjustment for investments in banking, financial, insurance or commercial entities that are consolidated for accounting purposes but outside the scope of regulatory consolidation	(150,582)
3	Adjustment for fiduciary assets recognised on the balance sheet pursuant to the applicable accounting standard but excluded from the LR exposure measure	–
4	Adjustments for derivative contracts	1,603,926
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)	11,896,221
6a	Adjustment for specific and collective provisions that are allowed to be excluded from exposure measure	(383,908)
7	Other adjustments	(2,378,465)
8	**Leverage ratio exposure measure**	**208,591,012**

The leverage ratios as at 31 December 2018 and 30 September 2018 are shown below:

		31 December 2018	30 September 2018
	On-balance sheet exposures		
1	On-balance sheet exposures (excluding those arising from derivative contracts and SFTs, but including collateral)	197,539,918	192,721,921
2	Less: Asset amounts deducted in determining Tier 1 capital	(2,378,465)	(2,807,285)
3	**Total on-balance sheet exposures (excluding derivative contracts and SFTs)**	**195,161,453**	**189,914,636**
	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)	313,320	448,478
5	Add-on amounts for PFE associated with all derivative contracts	1,603,926	2,056,669
6	Gross-up for derivatives collateral provided 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 derivative contracts	–	–
10	Less: Adjusted effective notional offsets and add-on deductions for written credit derivative contracts	–	–
11	**Total exposures arising from derivative contracts**	**1,917,246**	**2,505,147**

(All amounts in HK dollar thousands unless otherwise stated)

6 Leverage ratio (Continued)

		31 December 2018	30 September 2018
	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	50,910,893	48,837,706
18	Less: Adjustments for conversion to credit equivalent amounts	(39,014,672)	(38,260,259)
19	**Off-balance sheet items**	11,896,221	10,577,447
	Capital and total exposures		
20	**Tier 1 capital**	25,126,647	24,184,814
20a	**Total exposures before adjustments for specific and collective provisions**	208,974,920	202,997,230
20b	**Adjustments for specific and collective provisions**	(383,908)	(373,680)
21	**Total exposures after adjustments for specific and collective provisions**	208,591,012	202,623,550
	Leverage ratio		
22	**Leverage ratio**	12.0%	11.9%

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 organisation 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 2018 Annual Report.

The Chief Risk Officer takes charges 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, Market Risk Management 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 while Credit Control Department is responsible for performing credit monitoring and review. The Market Risk Management 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, being the third line of defence, is responsible for examining and evaluating the adequacy, effectiveness, efficiency and reasonableness of the internal controls, risk management and governance systems and processes of the Group; and assessing compliance with regulatory and statutory requirements.

(b) Credit quality of exposures as at 31 December 2018

		Gross carrying amounts of			
		Defaulted exposures	Non-defaulted exposures	Allowances/ impairments	Net values
1	Loans	476,199	86,612,061	362,714	86,725,546
2	Debt securities	–	61,408,803	20	61,408,783
3	Off-balance sheet exposures	–	16,078,730	5,226	16,073,504
4	**Total**	**476,199**	**164,099,594**	**367,960**	**164,207,833**

(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 2018	454,001
2	Loans and debt securities that have defaulted since the last reporting period	37,661
3	Returned to non-defaulted status	(407)
4	Amounts written off	(2,001)
5	Other changes	(13,055)
6	**Defaulted loans and debt securities as at end December 2018**	**476,199**

(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 90 days or more 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 Note 2.12 of Notes to the Consolidated Financial Statements.

As at 31 December 2018, 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 2018 by industry sector, maturity and geographical region:

	Total	Impaired exposure	Individual impairment allowances	Amounts written-off
Credit risk exposure-By industry sector				
– Property investment	22,583,778	30,663	–	–
– Property development	25,298,328	391,170	–	–
– Banks and financial institutions	41,835,691	160	120	–
– International, wholesale and retail trade	15,246,023	63,664	20,575	163
– Personal	16,666,960	71,331	1,475	1,723
– Others*	42,577,053	55,721	9,427	115
Total	**164,207,833**	**612,709**	**31,597**	**2,001**
Credit risk exposure – By geographical region				
– Hong Kong	79,987,606	549,444	20,374	2,001
– Mainland China	30,159,181	35,902	11,107	–
– United States	28,711,443	14	9	–
– Others	25,349,603	27,349	107	–
Total	**164,207,833**	**612,709**	**31,597**	**2,001**
Credit risk exposure – By residual maturity				
– Repayable on demand	4,641,562			
– Up to 1 month	16,722,426			
– 1-3 months	14,477,504			
– 3-12 months	33,575,060			
– 1-5 years	73,593,445			
– Over 5 years	20,586,129			
– Indefinite	611,707			
Total	**164,207,833**			

* 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 2018:

	Gross carrying amount
Past due over 3 months but less than 6 months	29,087
Past due over 6 month but less than 1 year	9,601
Past due over 1 year	437,511
Total	**476,199**

(iii) Breakdown of restructured exposures between impaired and non-impaired exposures as at 31 December 2018:

	Gross carrying amount of	
	Impaired	Not impaired
Rescheduled loans and advances	25,810	–

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 Policy 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 listed stocks which are revalued at least twice daily and weekly respectively. 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 (recognized 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 recognized credit risk mitigation as at 31 December 2018

		Exposures unsecured: carrying amount	Exposures to be secured	Exposures secured by recognized collateral	Exposures secured by recognized guarantees	Exposures secured by recognized credit derivative contracts
1	Loans	83,142,285	3,583,261	1,987,781	1,595,480	–
2	Debt securities	61,408,783	–	–	–	–
3	**Total**	**144,551,068**	**3,583,261**	**1,987,781**	**1,595,480**	**–**
4	Of which defaulted	5,908	465,495	465,495	–	–

(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 HKMA 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 standardised approach follows the process as prescribed in Part 4 of the BCR. 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 recognized credit risk mitigation – for STC approach as at 31 December 2018

		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	13,245,118	–	13,245,118	–	30,340	0%
2	PSE exposures	–	–	–	–	–	0%
2a	Of which: domestic PSEs	–	–	–	–	–	0%
2b	Of which: foreign PSEs	–	–	–	–	–	0%
3	Multilateral development bank exposures	56,903	–	56,903	–	–	0%
4	Bank exposures	70,955,943	348,054	72,103,781	87,753	28,002,651	39%
5	Securities firm exposures	420,812	1,360,909	420,812	–	210,406	50%
6	Corporate exposures	78,344,837	37,167,640	76,189,695	7,195,089	80,046,488	96%
7	CIS exposures	–	–	–	–	–	0%
8	Cash items	374,788	–	1,897,074	–	134,470	7%
9	Exposures in respect of failed delivery on transactions entered into on a basis other than a delivery-versus-payment basis	–	–	–	–	–	0%
10	Regulatory retail exposures	4,431,298	2,783,333	4,285,851	162,625	3,336,359	75%
11	Residential mortgage loans	10,155,779	1,770,592	10,155,779	850,449	5,662,709	51%
12	Other exposures which are not past due exposures	14,313,181	7,480,365	13,943,646	117,089	14,060,735	100%
13	Past due exposures	471,403	–	471,403	–	474,357	101%
14	Significant exposures to commercial entities	–	–	–	–	–	0%
15	**Total**	**192,770,062**	**50,910,893**	**192,770,062**	**8,413,005**	**131,958,515**	**66%**

(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 2018

	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	13,093,417	–	151,701	–	–	–	–	–	–	–	**13,245,118**
2	PSE exposures	–	–	–	–	–	–	–	–	–	–	**–**
2a	Of which: domestic PSEs	–	–	–	–	–	–	–	–	–	–	**–**
2b	Of which: foreign PSEs	–	–	–	–	–	–	–	–	–	–	**–**
3	Multilateral development bank exposures	56,903	–	–	–	–	–	–	–	–	–	**56,903**
4	Bank exposures	–	–	30,606,642	–	39,407,139	–	2,177,753	–	–	–	**72,191,534**
5	Securities firm exposures	–	–	–	–	420,812	–	–	–	–	–	**420,812**
6	Corporate exposures	–	–	204,407	–	6,349,540	–	76,830,837	–	–	–	**83,384,784**
7	CIS exposures	–	–	–	–	–	–	–	–	–	–	**–**
8	Cash items	1,290,762	–	589,803	–	–	–	16,509	–	–	–	**1,897,074**
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	–	–	–	–	–	4,448,476	–	–	–	–	**4,448,476**
11	Residential mortgage loans	–	–	–	8,109,497	–	289,385	2,607,346	–	–	–	**11,006,228**
12	Other exposures which are not past due exposures	–	–	–	–	–	–	14,060,735	–	–	–	**14,060,735**
13	Past due exposures	–	–	–	–	–	–	465,495	5,908	–	–	**471,403**
14	Significant exposures to commercial entities	–	–	–	–	–	–	–	–	–	–	**–**
15	**Total**	**14,441,082**	**–**	**31,552,553**	**8,109,497**	**46,177,491**	**4,737,861**	**96,158,675**	**5,908**	**–**	**–**	**201,183,067**

(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 book, 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. The Group adopts the current exposure method to measure the credit equivalent amount, which comprises current exposures and potential future exposures. 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. 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. Collateral or other security is not usually obtained for such credit risk exposures, except where the Group requires margin deposits from counterparties. 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 exposure to a counterparty is adversely correlated with the credit quality of that counterparty. It arises when default risk and credit exposure increase together. The OTC derivative contracts entered into by the Group are mainly foreign exchange contracts, most of which are not exposed to wrong-way risk. In instances where the Group has identified any significant general wrong-way risk, immediate and appropriate actions will be taken and the respective exposure will be under close monitoring in order to effectively manage the credit exposure and minimize losses. Specific wrong-way risk transactions are generally not allowed.

Up to the date of report, the Group has not entered into any transactions with central counterparty ("CCP"). As at 31 December 2018, there were no exposures to CCP.

(b) Analysis of counterparty default risk exposures (other than those to CCPs) by approaches as at 31 December 2018

		Replacement cost (RC)	PFE	Effective EPE	Alpha (α) used for computing default risk exposure	Default risk exposure after CRM	RWA
1	SA-CCR (for derivative contracts)	–	–		1.4	–	–
1a	CEM	312,704	1,603,926		–	1,916,630	1,261,899
2	IMM (CCR) approach			–	–	–	–
3	Simple Approach (for SFTs)					–	–
4	Comprehensive Approach (for SFTs)					–	–
5	VaR (for SFTs)					–	–
6	**Total**						**1,261,899**

(All amounts in HK dollar thousands unless otherwise stated)

8 Counterparty credit risk (Continued)

(c) CVA capital charge as at 31 December 2018

		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	1,916,630	287,663
4	**Total**	**1,916,630**	**287,663**

(d) Counterparty default risk exposures (other than those to CCPs) by asset classes and by risk weights – for STC approach as at 31 December 2018

	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	–	–	256,706	–	656,805	–	21,724	–	–	–	**935,235**
5	Securities firm exposures	–	–	–	–	–	–	–	–	–	–	–
6	Corporate exposures	–	–	–	–	241,926	–	526,908	–	–	–	**768,834**
7	CIS exposures	–	–	–	–	–	–	–	–	–	–	–
8	Regulatory retail exposures	–	–	–	–	–	–	–	–	–	–	–
9	Residential mortgage loans	–	–	–	–	–	–	–	–	–	–	–
10	Other exposures which are not past due exposures	–	–	–	–	–	–	212,561	–	–	–	**212,561**
11	Significant exposures to commercial entities	–	–	–	–	–	–	–	–	–	–	–
12	**Total**	**–**	**–**	**256,706**	**–**	**898,731**	**–**	**761,193**	**–**	**–**	**–**	**1,916,630**

(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 2018

		Derivative contracts				SFTs	
		Fair value of recognized collateral received		Fair value of posted collateral		Fair value of recognized collateral	Fair value of posted collateral
		Segregated	Unsegregated	Segregated	Unsegregated		
1	Cash – other currencies	–	–	–	54,265	–	–
2	**Total**	**–**	**–**	**–**	**54,265**	**–**	**–**

(f) Credit-related derivatives contracts

The Group did not have any credit-related derivatives contracts as at 31 December 2018.

(g) Exposures to CCPs

The Group did not have any exposures to CCPs as at 31 December 2018.

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 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 policy on allocating transactions of financial instruments to the trading, non-trading or investment book 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.

9 Market risk (Continued)

(a) Qualitative disclosures related to market risk (Continued)

Market risk measurement

The measuring procedures and limit system used for market risk management have been approved by the Executive Committee (and also Risk Committee for the measuring procedures). 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 include foreign exchange rate and interest rate contracts which are typically made OTC and are managed within limits approved by the Executive Committee and Risk Committee. The policy on the use of derivatives is reviewed by Risk Committee and recommended changes and amendments are approved by the Executive Committee or the Risk Committee. The Group has not designated any derivatives in any hedge relationship for the application of hedge accounting.

(b) Market risk under STM approach as at 31 December 2018

		RWA
	Outright product exposures	
1	Interest rate exposures (general and specific risk)	2,073,288
2	Equity exposures (general and specific risk)	–
3	Foreign exchange (including gold) exposures	5,025,000
4	Commodity exposures	–
	Option exposures	
5	Simplified approach	–
6	Delta-plus approach	–
7	Other approach	–
8	Securitization exposures	–
9	**Total**	**7,098,288**

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. A moderate 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 Group's liquidity is managed by the Treasury Division and monitored by management and the Asset and Liability Committee in accordance with the guidelines and procedures laid down in the liquidity risk management policy that has been approved by the Board.

Monitoring and reporting take the form of cash flow measurement and projections for the next day, week and month respectively, as these are key periods for liquidity management. The starting point for those projections is an analysis of the contractual maturity of the financial liabilities and the expected collection date of the financial assets.

The Asset and Liability Committee has been delegated by the Board to manage the Group's liquidity risk strategy, policies and practices. The Committee membership consists of the chiefs of risk and control functions, and various business lines. 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.

Funding strategy

The Bank's operation is mainly funded by customer deposits and shareholders' funds. Diversified and stable funding sources will be 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.

Liquidity risk mitigation techniques

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 will be estimated based on past experience and the wholesale funding needs for both local and foreign currencies will be limited to an amount which is comfortably within that borrowing capacity. Diversified and stable funding sources will be maintained by determining the appropriate mix of liabilities and building strong and lasting relationships with key fund providers.

Stress testing

The stress-testing results form an important component in assisting the Risk Committee with 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 planning.

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.

10 Liquidity risk (Continued)

(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 projections are forward-looking and covers liquidity risks stemming from on-balance sheet assets and liabilities and off-balance sheet positions. Cash-flow projections are 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 projections cover 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

			Contractual maturity of cash flows and securities flows arising from the relevant items										
	On-balance sheet liabilities	Total amount	Next day	2 to 7 days	8 days to 1 month	> 1 month up to 3 months	> 3 months up to 6 months	> 6 months up to 1 year	> 1 year up to 2 years	> 2 years up to 3 years	> 3 years up to 5 years	Over 5 years	Balancing amount
1	Deposits from non-bank customers												
	(a) Pledged deposits	2,816,550	116,708	169,858	215,651	605,840	801,616	768,982	6,539	39,165	22,342	69,849	
	(b) Demand, savings and current account deposits	61,818,171	61,818,171										
	(c) Term, call and notice deposits	90,019,269	2,558,534	7,965,016	24,885,891	34,327,959	12,471,552	7,707,802	83,226	9,522	9,767	–	
2	Amount payable arising from securities financing transactions (other than securities swap transactions)	–	–	–	–	–	–	–	–	–	–	–	
3	Amount payable arising from derivative contracts	417,574	249,881	1,523	4,080	16,579	25,265	54,023	66,223	–	–	–	
4	Due to MA for a/c of Exchange Fund	391,525	–	–	–	391,525	–	–	–	–	–	–	
5	Due to overseas central banks	–	–	–	–	–	–	–	–	–	–	–	
6	Due to banks	10,519,082	2,615,392	958,488	3,233,070	2,601,189	655,729	455,214	–	–	–	–	–
7	Debt securities, prescribed instruments and structured financial instruments issued and outstanding	–	–	–	–	–	–	–	–	–	–	–	–
8	Other liabilities	2,669,796	833,866	288,559	261,250	290,187	232,591	183,641	4,964	174	144	–	574,420
9	Capital and reserves	29,005,355	–	–	–	–	–	–	–	–	1,945,079	–	27,060,276
10	**Total**	**197,657,322**	**68,192,552**	**9,383,444**	**28,599,942**	**38,233,279**	**14,186,753**	**9,169,662**	**160,952**	**48,861**	**1,977,332**	**69,849**	**27,634,696**
	Off-balance sheet obligations												
11	Irrevocable loan commitments or facilities granted												
	(a) With dates and amounts of drawdown ascertained	1,674,326	10,316	4,139	25,033	108,550	10,313	21,028	43,279	45,633	91,795	1,314,240	
	(b) Others (not included in sub-item (a))	25,418,303	3,253,946	713	1,187,127	4,387,481	4,082,867	5,366,726	2,254,869	3,909,287	828,567	146,720	–
12	Contractual obligations arising from securities financing transactions (not included in item 2)	–	–	–	–	–	–	–	–	–	–	–	
13	Contractual obligations arising from derivative contracts (not included in item 3)	–	–	–	–	–	–	–	–	–	–	–	
14	Off-balance sheet obligations not included in items 11 to 13												
	(a) With dates and amounts of payment ascertained	2,567,918	198,965	422,430	360,162	831,561	302,688	452,112	–	–	–	–	
	(b) Others	2,715,624	23,592	36,175	518,762	529,903	449,726	615,228	400,147	47,587	72,598	21,906	–
15	**Total**	**32,376,171**	**3,486,819**	**463,457**	**2,091,084**	**5,857,495**	**4,845,594**	**6,455,094**	**2,698,295**	**4,002,507**	**992,960**	**1,482,866**	–

(All amounts in HK dollar thousands unless otherwise stated)

10 Liquidity risk (Continued)

(b) Quantitative disclosure (Continued)

Contractual maturity profile (Continued)

	On-balance sheet assets	Total amount	Contractual maturity of cash flows and securities flows arising from the relevant items										Balancing amount
			Next day	2 to 7 days	8 days to 1 month	> 1 month up to 3 months	> 3 months up to 6 months	> 6 months up to 1 year	> 1 year up to 2 years	> 2 years up to 3 years	> 3 years up to 5 years	Over 5 years	
16	Currency notes and coins	357,609	357,609	–	–	–	–	–	–	–	–	–	
17	Amount receivable arising from securities financing transactions (other than securities swap transactions)	–	–	–	–	–	–	–	–	–	–	–	–
18	Amount receivable arising from derivative contracts	425,164	257,470	1,523	4,080	16,579	25,266	54,023	66,223	–	–	–	–
19	Due from MA for a/c of Exchange Fund	2,841,729	2,841,729	–	–	–	–	–	–	–	–	–	–
20	Due from overseas central banks	203,780	4,812	–	–	–	–	–	–	–	–	–	198,968
21	Due from banks	33,854,779	16,663,300	3,470,532	5,077,069	5,939,185	1,678,699	1,025,994	–	–	–	–	–
22	Debt securities, prescribed instruments and structured financial instruments held (net of short positions)												
	(a) Readily monetizable	50,826,789	50,826,789										
	(b) Not readily monetizable												
	(i) Pledged to customers	–		–	–	–	–	–	–	–	–	–	–
	(ii) Others	12,413,368		–	–	671,140	1,148,045	1,001,256	4,063,549	2,341,200	1,311,854	1,873,450	2,874
23	Acceptances and bills of exchange held	454,122	85,235	50,417	114,486	174,494	28,568	922	–	–	–	–	–
24	Loans and advances to non-bank customers	87,735,507	4,832,123	1,278,610	4,513,795	8,903,763	5,914,403	11,752,263	8,872,393	8,561,525	12,385,839	19,058,739	1,662,054
25	Other assets	8,927,304	107,360	282,132	96,434	67,964	80,581	112,280	613,167	–	748	57,659	7,508,979
26	**Total**	**198,040,151**	**75,976,427**	**5,083,214**	**9,805,864**	**15,773,125**	**8,875,562**	**13,946,738**	**13,615,332**	**10,902,725**	**13,698,441**	**20,989,848**	**9,372,875**
	Off-balance sheet claims												
27	Irrevocable loan commitments or facilities received												
	(a) With dates and amounts of drawdown ascertained	–	–	–	–	–	–	–	–	–	–	–	
	(b) Others	–	–	–	–	–	–	–	–	–	–	–	–
28	Contractual claims arising from securities financing transactions (not included in item 17)	–	–	–	–	–	–	–	–	–	–	–	–
29	Contractual claims arising from derivative contracts (not included in item 18)	–	–	–	–	–	–	–	–	–	–	–	–
30	Off-balance sheet claims not included in items 27 to 29												
	(a) With dates and amounts of receipt of payment ascertained	348,054	–	348,054	–	–	–	–	–	–	–	–	
	(b) Others	634,915											634,915
31	**Total**	**982,969**	**–**	**348,054**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**634,915**
	Contractual Maturity Mismatch												
32	**Contractual Maturity Mismatch**		4,297,056	(4,415,633)	(20,885,162)	(28,317,649)	(10,156,785)	(1,678,018)	10,756,085	6,851,357	10,728,149	19,437,133	
33	**Cumulative Contractual Maturity Mismatch**		4,297,056	(118,577)	(21,003,739)	(49,321,388)	(59,478,173)	(61,156,191)	(50,400,106)	(43,548,749)	(32,820,600)	(13,383,467)	

(All amounts in HK dollar thousands unless otherwise stated)

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

(a) Qualitative disclosure related to IRRBB

The nature of the interest rate risk is described in Note 3.2.4 of Notes to the Consolidated Financial Statements.

Interest rate risk exposure analysis is used in managing the Group's interest rate risk, and analyses the timing mismatch of when interest receivable on assets and interest payable on liabilities are next repriced at the market rate on a contractual basis. Such assumption is also applied to loans with prepayment and deposits without a fixed maturity for the purposes of cash flow projection and IRRBB reporting.

(b) Quantitative disclosure

The level of mismatch of interest rate repricing is measured and monitored daily.

As at 31 December 2018, the variations in earnings over the next 12 months for 200 basis points interest rate rise, broken down by currencies are as follows. The effect of decline in earnings and increase in earnings with interest rate risk shock of 200 basis points downward are contra to that with interest rate risk shock of 200 basis points upward. The analysis is based on the methodology as set out by the HKMA in the completion instructions for the 'Return of Interest Rate Risk Exposure' which is compiled on a quarterly basis.

2018	Currency				
Equivalent in Hong Kong Dollars	HKD	USD	RMB	Others	Total
Interest rate risk shock (200 basis points upward) Increase/(decline) in earnings	351,984	32,726	(26,106)	(61,618)	296,986

12 Non-bank mainland exposures

The Bank	2018			2017		
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	6,292,131	2,208	6,294,339	4,219,582	12	4,219,594
2. Local governments, local government-owned entities and their subsidiaries and joint ventures	19,115	–	19,115	30,272	453,366	483,638
3. PRC nationals residing in Mainland China or other entities incorporated in Mainland China and their subsidiaries and joint ventures	7,298,028	1,372,484	8,670,512	9,209,284	948,601	10,157,885
4. Other entities of central government not reported in item 1 above	638,900	–	638,900	580,924	–	580,924
5. Other entities of local governments not reported in item 2 above	1,248,651	–	1,248,651	67,508	–	67,508
6. PRC nationals residing outside Mainland China or entities incorporated outside Mainland China where the credit is granted for use in Mainland China	7,056,484	1,113,220	8,169,704	4,423,548	843,733	5,267,281
7. Other counterparties where the exposures are considered by the reporting institution to be non-bank Mainland China exposures	600,757	519	601,276	566,744	56	566,800
Total	23,154,066	2,488,431	25,642,497	19,097,862	2,245,768	21,343,630
Total assets after provision	185,975,357			176,700,450		
On-balance sheet exposures as percentage of total assets	12.45%			10.81%		

(All amounts in HK dollar thousands unless otherwise stated)

13 Currency concentrations

	2018						
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	76,854,000	(67,708,000)	17,276,000	(19,360,000)	–	7,062,000	2,310,000
Pound Sterling	4,944,000	(4,923,000)	732,000	(757,000)	–	(4,000)	35,000
Euro Dollars	1,482,000	(1,479,000)	455,000	(456,000)	–	2,000	–
Renminbi	18,474,000	(17,488,000)	9,258,000	(9,423,000)	–	821,000	5,678,000
Canadian Dollars	1,260,000	(1,450,000)	218,000	(27,000)	–	1,000	–
Australian Dollars	3,512,000	(3,500,000)	875,000	(892,000)	–	(5,000)	–
Other currencies and gold	1,289,000	(1,081,000)	793,000	(982,000)	–	19,000	–
	107,815,000	(97,629,000)	29,607,000	(31,897,000)	–	7,896,000	8,023,000

	2017						
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	67,811,000	(64,626,000)	5,829,000	(6,433,000)	–	2,581,000	6,865,000
Pound Sterling	3,328,000	(3,377,000)	793,000	(770,000)	–	(26,000)	34,000
Euro Dollars	1,303,000	(1,354,000)	754,000	(700,000)	–	3,000	–
Renminbi	19,262,000	(18,584,000)	3,746,000	(3,713,000)	–	711,000	1,963,000
Canadian Dollars	1,638,000	(1,689,000)	83,000	(31,000)	–	1,000	–
Australian Dollars	3,647,000	(3,629,000)	262,000	(253,000)	–	27,000	–
Other currencies and gold	1,283,000	(1,370,000)	580,000	(460,000)	–	33,000	–
	98,272,000	(94,629,000)	12,047,000	(12,360,000)	–	3,330,000	8,862,000

Net structural position includes structural positions of the Bank's overseas branches and subsidiaries. Structural assets and liabilities include:

– investments in properties and equipment, net of depreciation;

– capital, statutory reserves and unremitted profits of overseas branches; and

– investments in overseas subsidiaries and related company.

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, 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.

REMUNERATION COMMITTEE

The Remuneration Committee (the "Committee") is established with written Terms of Reference defining its authority and duties to oversee the formulation and implementation of a sound remuneration policy by the Bank, and to ensure its consistency with the best practices and applicable legal and regulatory requirements.

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 Dr. Richard LEE and Mr. Hung-ching YUNG. The fees for members of the Committee for the year are as follows:

	2018	2017
Chairman	200	200
Member	100	100

The Committee reviews the Policy and the remuneration structure at least annually and the Policy will be submitted to the Board for approval. In 2018, the Committee held two meetings. The review covered the composition of the senior management and key personnel, the risk level and financial stability of the Bank, and the vesting of variable remuneration with reference to the risk appetite and the risk exposure of the Bank.

The Committee may at its discretion seek information and recommendations from relevant departments, committees or independent consultant as appropriate when conducting the review. In 2018, 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 the Supervisory Policy Manual CG-5 "Guideline on a Sound Remuneration System" issued by the HKMA.

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.

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

14 Disclosure on Remuneration (Continued)

REMUNERATION STRUCTURE

The remuneration package is a combination of fixed and variable remuneration. Fixed remuneration consists of basic salary, allowances, double pay and provident fund contribution. Variable remuneration takes into account the overall 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.

A proportion of the variable remuneration 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.

PERFORMANCE MEASUREMENTS AND THE DISTRIBUTION OF VARIABLE REMUNERATION

The Bank maintains a performance evaluation scheme to ensure individual staff performance would be differentiated into various levels, and be adequately and effectively evaluated. 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.

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. The established remuneration measures continued to apply in 2018. 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.

DEFERRAL ARRANGEMENTS

In view of the Bank's existing business model and organisation structure, a portion of the discretionary bonus payment of senior management and key personnel is subject to deferment arrangements as determined by the Committee 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, a claw back of unvested deferred variable remuneration shall apply.

(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 year, split into fixed and variable remuneration, is set out below:

Remuneration amount and quantitative information		2018	2017
Senior management			
Fixed remuneration	Number of employees	12	13
	Total fixed remuneration	40,985	40,415
	Of which: cash-based	40,985	40,415
	Of which: deferred	–	–
	Of which: other forms	–	–
	Of which: deferred	–	–
Variable remuneration	Number of employees	12	12
	Total variable remuneration	28,610	26,058
	Of which: cash-based	23,010	20,912
	Of which: deferred	5,600	5,146
	Of which: other forms	–	–
	Of which: deferred	–	–
Key personnel			
Fixed remuneration	Number of employees	6	7
	Total fixed remuneration	8,519	6,876
	Of which: cash-based	8,519	6,876
	Of which: deferred	–	–
	Of which: other forms	–	–
	Of which: deferred	–	–
Variable remuneration	Number of employees	5	5
	Total variable remuneration	3,283	2,753
	Of which: cash-based	2,733	2,373
	Of which: deferred	550	380
	Of which: other forms	–	–
	Of which: deferred	–	–
Total value of remuneration awards for the financial year		81,397	76,102

Notes:

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

(ii) Senior management refers to the Chief Executive and division heads of major businesses and operations at the rank of Executive Vice President or above. Key personnel refers to employees whose duties or activities in the course of the employment involve the assumption of material risk or the taking on of material exposures on behalf of the Bank. In 2018, there are 12 employees categorised as senior management (2017: 13) and 6 employees categorised as key personnel (2017: 7).

(iii) No senior management or key personnel has been awarded or paid sign-on award, guaranteed bonus or severance payment during the years of 2018 and 2017.

(All amounts in HK dollar thousands unless otherwise stated)

14 Disclosure on Remuneration (Continued)

SENIOR MANAGEMENT AND KEY PERSONNEL REMUNERATION (Continued)

Deferred and retained remuneration in 2018	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 2018 due to ex post explicit adjustments	Total amount of amendment during the year of 2018 due to ex post implicit adjustments	Total amount of deferred remuneration paid out in 2018
Senior management					
Cash	10,265	–	–	–	3,563
Other	–	–	–	–	–
Key personnel					
Cash	910	–	–	–	233
Other	–	–	–	–	–
Total	11,175	–	–	–	3,796

Deferred and retained remuneration in 2017	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 2017 due to ex post explicit adjustments	Total amount of amendment during the year of 2017 due to ex post implicit adjustments	Total amount of deferred remuneration paid out in 2017
Senior management					
Cash	8,229	–	–	–	2,524
Other	–	–	–	–	–
Key personnel					
Cash	593	–	–	–	106
Other	–	–	–	–	–
Total	8,822	–	–	–	2,630

Notes:

(i) The outstanding deferred remuneration in 2018 relates to the 2016, 2017 and 2018 variable remuneration, while the outstanding deferred remuneration in 2017 relates to the 2015, 2016 and 2017 variable remuneration.