恒生銀行
HANG SENG BANK

Banking Disclosure Statement

31 December 2017

(Unaudited)

These disclosures are prepared under the Banking (Disclosure) Rules

BANKING DISCLOSURE STATEMENT *(unaudited)*

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Introduction

Purpose

The information contained in this document is for Hang Seng Bank Limited ("the Bank") and its subsidiaries (together "the Group"). It should be read in conjunction with the Group's 2017 Annual Report. The Group's Annual Report and the Banking Disclosure Statement, taken together, comply with the Banking (Disclosure) Rules ("BDR") made under section 60A of the Banking Ordinance.

These banking disclosures are governed by the Group's disclosure policy, which has been approved by the Board. The disclosure policy sets out the governance, control and assurance requirements for publication of the document. While the Banking Disclosure Statement is not required to be externally audited, the document has been subject to independent review in accordance with the Group's policies on disclosure and its financial reporting and governance processes.

Basis of preparation

Except where indicated otherwise, the financial information contained in this Banking Disclosure Statement has been prepared on a consolidated basis. The basis of consolidation for regulatory purposes is different from that for accounting purposes. Information regarding subsidiaries that are not included in the consolidation for regulatory purposes is set out in the "Basis of consolidation" section in this document.

The information in this document is not audited and does not constitute statutory accounts.

Certain financial information in this document is extracted from the statutory accounts for the year ended 31 December 2017 which will be delivered to the Registrar of Companies and the Hong Kong Monetary Authority ("HKMA"). The Auditors expressed an unqualified opinion on those statutory accounts in their report dated 20 February 2018. The Auditor's Report did not include a reference to any matters to which the auditor drew any attention by way of emphasis without qualifying their report; and did not contain a statement under sections 406(2), 407(2) or (3) of the Hong Kong Companies Ordinance (Cap.622). The Group's 2017 Annual Report, which include the statutory accounts, can be viewed on our website: www.hangseng.com.

The Banking Disclosure Statement

The HKMA has implemented the Basel Committee on Banking Supervision ("BCBS") final standards on revised Pillar 3 disclosures issued in January 2015. These disclosures are supplemented by specific additional requirements of the HKMA set out in the BDR.

According to the BDR, disclosure of comparative information is not required unless otherwise specified in the standard disclosure templates.

The Banking Disclosure Statement includes the majority of the information required under the BDR. The remainder of the disclosure requirements are covered in the Group's 2017 Annual Report which can be found in the Investor Relations – Financial Statements section of our website, www.hangseng.com.

Disclosure requirements covered in the Group's 2017 Annual Report:

– Section 16J - The Group's definition of "Impaired" and "Renegotiated" and the methods adopted for determining impairments on page 55
– Section 46 - The general disclosure of the major business activities and product lines on pages 165 to 168 (or Note 22) and page 158 (or Note 5)
– Section 52 - Corporate governance on pages 92 to 115

Overview of Risk Management

Our risk management framework

We use an enterprise-wide, risk management framework across the organisation and across all risk types. It is underpinned by our risk culture and is reinforced by HSBC Values and our Global Standards programme.

The framework fosters continuous monitoring of the risk environment, and an integrated evaluation of risks and their interactions. It also ensures we have a consistent approach to monitoring, managing and mitigating the risks we accept and incur in our activities. Further information on our risk management framework is set out on page 38 of the Group's 2017 Annual Report. The measurement and management of principal risks facing the Group is described on pages 40 to 43 of the Group's 2017 Annual Report.

Risk culture

We have long recognised the importance of a strong risk culture, the fostering of which is a key responsibility of senior executives. Our risk culture is reinforced by HSBC Values and our Global Standards programme. It is instrumental in aligning the behaviours of individuals with our attitude to assuming and managing risk, which helps to ensure that our risk profile remains in line with our risk appetite.

Our risk culture is further reinforced by our approach to remuneration. Individual awards, including those for senior executives, are based on compliance with HSBC Values and the achievement of financial and non-financial objectives that are aligned to our risk appetite and strategy.

Risk governance

The Board has ultimate responsibility for the effective management of risk and approves the risk appetite. It is advised by the Risk Committee on risk appetite and its alignment with strategy, risk governance and internal controls, and high-level risk related matters.

Executive accountability for the ongoing monitoring, assessment and management of the risk environment and the effectiveness of the risk management framework resides with the Group's Chief Risk Officer, supported by the Risk Management Meeting ("RMM").

Day-to-day responsibility for risk management is delegated to senior managers with individual accountability for decision making. All employees have a role to play in risk management. These roles are defined using the Three Lines of Defence model, which takes into account the Group’s business and functional structures.

Our executive risk governance structures ensure appropriate oversight and accountability for risk, which facilitates the reporting and escalation to the RMM.

Risk appetite

Risk appetite is a key component of our management of risk. It sets out the aggregate level and types of risk that we are willing to accept in achieving our medium to long-term strategic goals. Within the Group, risk appetite is managed through a global risk appetite framework and articulated in a risk appetite statement ("RAS"), which is approved by the Board on the advice of the Group's Risk Committee.

The RMM regularly reviews the Group's actual risk appetite profile against the limits set out in the Risk Appetite Statement on monthly basis to enable senior management to monitor the risk profile and guide business activities in order to balance risk and return. The actual risk appetite profile is also reported to the Risk Committee and Board from Chief Risk Officer including material deviation and related management mitigating actions.

The Group's risk appetite informs our strategic and financial planning process, defining the desired forward-looking risk profile of the Group. It is also integrated within other risk management tools, such as the top and emerging risks report and stress testing, to ensure consistency in risk management. Information on our risk management tools is set out on page 39 of the Group's 2017 Annual Report. Details on the Group's overarching risk appetite are set out on in the global risk appetite framework.

Stress testing

The Group operates a comprehensive stress testing programme that supports our risk management and capital planning. It includes execution of stress tests mandated by our regulators, as well as internal stress tests. Our stress testing is supported by dedicated teams and infrastructure.

Our testing programme assesses our capital strength through a rigorous examination of our resilience to external shocks. It also helps us understand and mitigate risks, and informs our decision about capital levels.

The Group's risk functions

The Group's Risk function, headed by the Group's Chief Risk Officer, is responsible for enterprise-wide risk oversight. This includes establishing and monitoring of risk profiles and forward-looking risk identification and management. The Group's Risk function is made up of sub-functions covering all risks to our operations and forms part of the second line of defence. They are independent from the sales and trading functions, ensuring the necessary balance in risk/return decisions.

Risk management and internal control systems

The Directors are responsible for maintaining and reviewing the effectiveness of risk management and internal control systems, and for determining the aggregate level and risk types they are willing to accept in achieving the Group's business objectives.

On behalf of the Board, the Group's Audit Committee has responsibility for oversight of risk management and internal controls over financial reporting, and the Group's Risk Committee has responsibility for oversight of risk management and internal controls other than for financial reporting.

The Directors, through the Group's Risk Committee and the Group's Audit Committee, conduct an annual review of the effectiveness of our system of risk management and internal control. The Group's Risk Committee and the Group's Audit Committee received confirmation that executive management has taken or is taking the necessary actions to remedy any failings or weaknesses identified through the operation of our framework of controls.

Risk measurement and reporting systems

Our risk measurement and reporting systems are designed to help ensure that risks are comprehensively captured with all the attributes necessary to support well-founded decisions, that those attributes are accurately assessed, and that information is delivered in a timely manner for those risks to be successfully managed and mitigated.

Risk measurement and reporting systems are also subject to a governance framework designed to ensure that their build and implementation are fit for purpose and functioning appropriately. Risk information systems development is a key responsibility of the Risk and IT functions, while the development and operation of risk rating and management systems and processes are ultimately subject to the oversight of the Board.

We continue to invest significant resources in IT systems and processes in order to maintain and improve our risk management capabilities. A number of key initiatives and projects to enhance consistent data aggregation, reporting and management, and work towards meeting our BCBS data obligations are in progress. Group policy promotes the deployment of preferred technology where practicable. Group standards govern the procurement and operation of systems used in our subsidiaries to process risk information within business lines and risk functions.

Risk measurement and reporting structures deployed at Group level are applied throughout global businesses and major operating subsidiaries through a common operating model for integrated risk management and control. This model sets out the respective responsibilities of Group, global business and country level risk functions in respect of such matters as risk governance and oversight, compliance risks, approval authorities and lending guidelines, global and local scorecards, management information and reporting, and relations with third parties, including regulators, rating agencies and auditors.

Risk analytics and model governance

The Group's Risk functions manage a number of analytics disciplines supporting model development and management, including rating, scoring, economic capital and stress testing models for different risk types and business segments. They formulate technical responses to industry developments and regulatory policy in the field of risk analytics, supports the development of the HSBC Group's global risk model, develop local risk model and oversee the use around the Group toward our implementation targets for IRB approaches.

Model governance is under the general oversight of HSBC Group Model Oversight Committee ("MOC"). Local Model Oversight Committees ("Local MOCs") are established for Wholesale Credit and Market Risk ("WCMR") and Retail Banking and Wealth Management ("RBWM") Risk respectively with comparable terms of reference as HSBC Group MOC.

Linkage to the 2017 Annual Report

Basis of consolidation

The basis of consolidation for financial accounting purposes is in accordance with Hong Kong Financial Reporting Standards ("HKFRS"), as described in note 1 on the consolidated financial statements in the Group's 2017 Annual Report.

The basis of consolidation for regulatory purposes is different from that for accounting purposes. Subsidiaries included in the consolidation for regulatory purposes are specified in a notice from the HKMA in accordance with section 3C(1) of the Banking (Capital) Rules ("BCR").

Subsidiaries not included in consolidation for regulatory purposes are securities and insurance companies that are authorised and supervised by a regulator and are subject to supervisory arrangements regarding the maintenance of adequate capital to support business activities comparable to those prescribed for authorised institutions under the BCR and the Banking Ordinance. The capital invested by the Group in these subsidiaries is deducted from the capital base subject to certain thresholds, as determined in accordance with Part 3 of the BCR.

For insurance entities, the figures shown below exclude deferred acquisition cost assets as these are derecognised for consolidation purpose due to the recognition of the present value of in-force long-term insurance business ("PVIF") on long-term insurance contracts and investment contracts with discretionary participation features at Group level. As at 31 December 2017, the PVIF asset of HK$14,574m and the related deferred tax liability, however, are recognised at the consolidated Group level only, and are therefore also not included in the asset or equity positions for the standalone entities shown below.

As at 31 December 2017, there are no subsidiaries which are included within both the accounting scope of consolidation and the regulatory scope of consolidation but the method of consolidation differs.

There are also no subsidiaries which are included within the regulatory scope of consolidation but not included within the accounting scope of consolidation as at 31 December 2017.

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

The Group maintains a regulatory reserve to satisfy the provisions of the Banking Ordinance and local regulatory requirements for prudential supervision purposes. As at 31 December 2017, the effect of this requirement is to restrict the amount of reserves which can be distributed to shareholders by HK$6,018m.

There are no relevant capital shortfalls in any of the Group’s subsidiaries which are not included in its consolidation group for regulatory purposes as at 31 December 2017.

A list of subsidiaries not included in consolidation for regulatory purposes is shown below:

Table 1: List of subsidiaries outside the regulatory scope of consolidation

		As at 31 Dec 2017	
	Principal activities	**Total assets***	**Total equity***
		HK$m	**HK$m**
Hang Seng Futures Ltd	Futures brokerages	102	102
Hang Seng Investment Management Ltd	Fund management	1,553	1,535
Hang Seng Investment Services Ltd	Provision of investment commentaries	9	9
Hang Seng Securities Ltd	Stockbroking	3,655	1,307
Hang Seng Insurance Co. Ltd and its subsidiaries	Retirement benefits and life assurance	130,584	10,996
Hang Seng Qianhai Fund Management Co. Ltd	Asset management	179	164

** Prepared in accordance with HKFRS*

The approaches used in calculating the Group's regulatory capital and risk-weighted assets ("RWAs") are in accordance with the BCR. The Group uses the advanced internal ratings-based approach to calculate its credit risk for the majority of its non-securitisation exposures. For market risk, the Group uses an internal models approach to calculate its general market risk for the risk categories of interest rate and foreign exchange (including gold) exposures and the standardised (market risk) approach for calculating other market risk positions. For operational risk, the Group uses the standardised (operational risk) approach to calculate its operational risk.

Balance sheet reconciliation

The following tables together provide a reconciliation of the Group's consolidated statement of financial position, as published in the Group's 2017 Annual Report, to the transition disclosures template in Table 6 of this document.

The following table sets out the Group's consolidated statement of financial position based on the accounting scope of consolidation and the corresponding balances based on the regulatory scope of consolidation.

Table 2: Reconciliation of balance sheets – accounting to regulatory scope of consolidation

	As at 31 Dec 2017	
	Balance sheet as in consolidated financial statements	**Under regulatory scope of consolidation**
	HK$m	**HK$m**
Assets		
Cash and sight balances at central banks	21,718	21,718
Placings with and advances to banks	103,113	98,521
Trading assets	53,704	53,704
Financial assets designated at fair value	9,313	-
Derivative financial instruments	10,836	11,093
Loans and advances to customers	806,573	805,261
Financial investments	385,261	286,023
Investment in subsidiaries	-	7,104
Subordinated loans to subsidiaries	-	915
Interest in associates	2,170	-
Investment properties	10,166	7,249
Premises, plant and equipment	28,499	28,491
Intangible assets	15,354	445
Other assets	31,711	21,689
Total assets	**1,478,418**	**1,342,213**
Liabilities		
Current, savings and other deposit accounts	1,074,837	1,074,800
Repurchase agreements – non-trading	2,389	2,389
Deposits from banks	3,676	3,676
Trading liabilities	88,270	88,270
Financial liabilities designated at fair value	1,047	492
Derivative financial instruments	11,169	11,775
Certificates of deposit and other debt securities in issue	600	600
Other liabilities	22,222	22,801
Liabilities under insurance contracts	115,545	-
Current tax liabilities	568	550
Deferred tax liabilities	6,016	3,638
Total liabilities	**1,326,339**	**1,208,991**
Equity		
Share capital	9,658	9,658
Retained profits	113,646	94,853
Other equity instruments	6,981	6,981
Other reserves	21,745	21,730
Total shareholders' equity	**152,030**	**133,222**
Non-controlling interests	49	-
Total equity	**152,079**	**133,222**
Total equity and liabilities	**1,478,418**	**1,342,213**

The following table expands the balance sheet under the regulatory scope of consolidation to show separately the capital components that are reported in the transition disclosures template in Table 6. The capital components in this table contain a reference that shows how these amounts are included in the transition disclosures template in Table 6.

Table 3: Detailed reconciliation of balance sheets to transition disclosures template

	As at 31 Dec 2017		
	Balance sheet as in consolidated financial statements HK$m	**Under regulatory scope of consolidation HK$m**	Cross-referenced to capital component definition
Assets			
Cash and sight balances at central banks	21,718	21,718	
Placings with and advances to banks	103,113	98,521	
Trading assets	53,704	53,704	
Financial assets designated at fair value	9,313	-	
Derivative financial instruments	10,836	11,093	
Loans and advances to customers	806,573	805,261	
of which: Impairment allowances eligible for inclusion in Tier 2 capital		*703*	*(1)*
Financial investments	385,261	286,023	
Investment in subsidiaries	-	7,104	
Subordinated loans to subsidiaries	-	915	*(2)*
Interest in associates	2,170	-	
Investment properties	10,166	7,249	
Premises, plant and equipment	28,499	28,491	
Intangible assets	15,354	445	*(3)*
Other assets	31,711	21,689	
of which: Deferred tax assets		*211*	*(4)*
Defined benefit pension fund net assets		*54*	*(5)*
Total assets	**1,478,418**	**1,342,213**	
Liabilities			
Current, savings and other deposit accounts	1,074,837	1,074,800	
Repurchase agreements – non-trading	2,389	2,389	
Deposits from banks	3,676	3,676	
Trading liabilities	88,270	88,270	
Financial liabilities designated at fair value	1,047	492	
of which: Gains and losses due to changes in own credit risk on fair valued liabilities		*5*	*(6)*
Derivative financial instruments	11,169	11,775	
Certificates of deposit and other debt securities in issue	600	600	
Other liabilities	22,222	22,801	
Liabilities under insurance contracts	115,545	-	
Current tax liabilities	568	550	
Deferred tax liabilities	6,016	3,638	
of which: Deferred tax liabilities related to intangible assets		*37*	*(7)*
Deferred tax liabilities related to defined benefit pension fund		*9*	*(8)*
Total liabilities	**1,326,339**	**1,208,991**	
Equity			
Share capital	9,658	9,658	*(9)*
Retained profits	113,646	94,853	*(10)*
of which: Revaluation gains of investment properties		*6,463*	*(11)*
Regulatory reserve for general banking risks		*6,018*	*(12)*
Regulatory reserve eligible for inclusion in Tier 2 capital		*2,841*	*(13)*
Valuation adjustments		*53*	*(14)*
Other equity instruments	6,981	6,981	*(15)*
Other reserves	21,745	21,730	*(16)*
of which: Cash flow hedge reserve		*(41)*	*(17)*
Valuation adjustments		*242*	*(18)*
Revaluation reserve of properties		*18,379*	*(19)*
Total shareholders' equity	**152,030**	**133,222**	
Non-controlling interests	49	-	
Total equity	**152,079**	**133,222**	
Total equity and liabilities	**1,478,418**	**1,342,213**	

Table 4: LI1 – Differences between accounting and regulatory scopes of consolidation and mapping of financial statement categories with regulatory risk categories

		a	b	c	d	e	f	g
				Carrying values of items:				
		Carrying values as reported in published financial statements	**Carrying values under scope of regulatory con-solidation**	**subject to credit risk framework**	**subject to counterparty credit risk framework**	**subject to the securi-tisation framework**	**subject to market risk framework**	**not subject to capital require-ments or subject to deduction from capital**
As at 31 Dec 2017	*Footnote*	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**
Assets								
Cash and sight balances at central banks		21,718	21,718	21,718	-	-	-	-
Placings with and advances to banks		103,113	98,521	97,158	1,363	-	-	-
Trading assets		53,704	53,704	-	-	-	51,599	2,105
Financial assets designated at fair value		9,313	-	-	-	-	-	-
Derivative financial instruments	*1*	10,836	11,093	-	10,777	-	11,093	316
Loans and advances to customers		806,573	805,261	805,211	50	-	-	-
Financial investments		385,261	286,023	286,023	-	-	-	-
Investment in subsidiaries		-	7,104	7,104	-	-	-	-
Subordinated loans to subsidiaries		-	915	-	-	-	-	915
Interest in associates		2,170	-	-	-	-	-	-
Investment properties		10,166	7,249	7,249	-	-	-	-
Premises, plant and equipment		28,499	28,491	28,491	-	-	-	-
Intangible assets	*2*	15,354	445	-	-	-	-	408
Other assets	*2, 3*	31,711	21,689	21,306	118	-	-	256
Total assets		**1,478,418**	**1,342,213**	**1,274,260**	**12,308**	**-**	**62,692**	**4,000**
Liabilities								
Current, savings and other deposit accounts		1,074,837	1,074,800	-	-	-	-	1,074,800
Repurchase agreements – non-trading		2,389	2,389	-	2,389	-	-	-
Deposits from banks		3,676	3,676	-	646	-	-	3,030
Trading liabilities		88,270	88,270	-	-	-	88,270	-
Financial liabilities designated at fair value		1,047	492	-	-	-	-	492
Derivative financial instruments	*1*	11,169	11,775	-	11,775	-	11,775	-
Certificates of deposit and other debt securities in issue		600	600	-	-	-	-	600
Other liabilities	*3*	22,222	22,801	-	-	-	-	22,801
Liabilities under insurance contracts		115,545	-	-	-	-	-	-
Current tax liabilities		568	550	-	-	-	-	550
Deferred tax liabilities		6,016	3,638	-	-	-	-	3,638
Total liabilities		**1,326,339**	**1,208,991**	**-**	**14,810**	**-**	**100,045**	**1,105,911**

1 Assets/liabilities arising from derivative contracts held in the regulatory trading book are subject to both market risk and counterparty credit risk because derivative contracts are mark to market and there is a risk that the counterparty may not be able to fulfil the contractual obligations. As a result, the amounts shown in column (b) do not equal the sum of columns (c) to (g).

2 The assets disclosed in column (g) are net of any associated deferred tax liability.

3 The difference in the carrying values reported in the financial statements in column (a) and the scope of regulatory consolidation in column (b) mainly represents the amounts of acceptance and endorsements being included as contingencies in accordance with the BCR, whilst for accounting purposes, acceptances and endorsements are recognised on the balance sheet in accordance with Hong Kong Accounting Standard 39 ("HKAS39") "Financial instruments: Recognition and Measurement".

Table 5: LI2 – Main sources of differences between regulatory exposure amounts and carrying values in financial statements

		a	b	c	d	e
			Items subject to:			
		Total	**credit risk framework**	**securitisation framework**	**counterparty credit risk framework**	**market risk framework**
As at 31 Dec 2017		**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**
1	Asset carrying value amount under scope of regulatory consolidation (as per template LI1)	1,338,213	1,274,260	-	12,308	62,692
2	Liabilities carrying value amount under regulatory scope of consolidation (as per template LI1)	103,080	-	-	14,810	100,045
3	Total net amount under regulatory scope of consolidation	1,235,133	1,274,260	-	(2,502)	(37,353)
4	Off-balance sheet amounts and potential future exposures for counterparty risk	457,535	142,489	-	8,142	-
5	Differences due to consideration of provisions	1,576	1,576	-	-	-
6	Differences due to recognised collateral	(6,133)	(6,133)	-	-	-
7	Differences arising from off-balance sheet amounts recognised in regulatory exposures	(315,046)	-	-	-	-
8	Differences due to credit risk adjustments	6,850	-	-	6,850	-
9	Differences arising from capital deductions	(46)	-	-	-	-
10	Exposure amounts considered for regulatory purposes	**1,379,869**	**1,412,192**	**-**	**12,490**	**(37,353)**

Explanations of differences between accounting and regulatory exposure amounts

Off-balance sheet amounts and potential future exposures for counterparty risk

Off-balance sheet amounts subject to credit risk regulatory framework includes undrawn portion of committed facilities, various trade finance commitments and guarantees, by applying credit conversion factor ("CCF") to these items and consideration of potential future exposures ("PFE") for counterparty risk.

Differences due to consideration of provisions

The carrying value of assets is net of the total of specific and collective provisions. The regulatory exposure value is net of specific provisions under standardised approach.

Differences due to recognised collateral

Exposure value under the standardised approach is calculated after deducting credit risk mitigation whereas accounting value is before such deductions.

Differences due to credit risk adjustements

In counterparty credit risk, differences arise between accounting carrying values and regulatory exposure as a result of the application of credit risk mitigation.

Explanations of differences between accounting fair value and regulatory prudent valuation

Fair value is defined as the best estimate of the price that would be received to sell an asset or be paid to transfer a liability in an orderly transaction between market participants at the measurement date.

Some fair value adjustments already reflect valuation uncertainty to some degree. These are market data uncertainty, model uncertainty and concentration adjustments.

However, it is recognised that a variety of valuation techniques using stressed assumptions and combined with the range of plausible market parameters at a given point in time may still generate unexpected uncertainty beyond fair value.

A series of additional valuation adjustments ("AVAs") are therefore required to reach a specified degree of confidence (the "Prudent Value") set by regulators and that differ both in terms of scope and measurement from the Group's own quantification for disclosure purposes.

AVAs should consider at the minimum: market price uncertainty, bid/offer (close out) uncertainty, model risk, concentration, administrative cost, unearned credit spread and funding fair value adjustment ("FFVA").

AVAs are not limited to level 3 exposures, for which a 95% uncertainty range is already computed and disclosed, but must also be calculated for any exposure for which the exit price cannot be determined with a high degree of certainty.

Capital and risk-weighted assets ("RWAs")

Regulatory capital disclosures

The following table sets out the detailed composition of the Group's regulatory capital at 31 December 2017 using the transition disclosures template as specified by the HKMA. The table also shows those items that are currently benefiting from the Basel III transitional arrangements, and are consequently subject to the pre-Basel III treatment, as set out in Schedule 4H to the BCR.

Table 6: Transition disclosures template

		As at 31 Dec 2017		
		Component of regulatory capital HK$m	**Amounts subject to pre-Basel III treatment* HK$m**	Cross-referenced to Table 3
	CET1 capital: instruments and reserves			
1	Directly issued qualifying CET1 capital instruments plus any related share premium	9,658		(9)
2	Retained earnings	94,853		(10)
3	Disclosed reserves	21,730		(16)
4	Directly issued capital subject to phase out from CET1 capital (only applicable to non-joint stock companies)	Not applicable		
	Public sector capital injections grandfathered until 1 January 2018	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**	**126,241**		
	CET1 capital: regulatory deductions			
7	Valuation adjustments	295		(14) + (18)
8	Goodwill (net of associated deferred tax liability)	-		
9	Other intangible assets (net of associated deferred tax liability)	408	-	(3) - (7)
10	Deferred tax assets net of deferred tax liabilities	211		(4)
11	Cash flow hedge reserve	(41)		(17)
12	Excess of total EL amount over total eligible provisions under the IRB approach	-	-	
13	Gain-on-sale arising from securitisation transactions	-		
14	Gains and losses due to changes in own credit risk on fair valued liabilities	5	-	(6)
15	Defined benefit pension fund net assets (net of associated deferred tax liabilities)	45	-	(5) - (8)
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)	-	-	
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 (amount above 10% threshold)	Not applicable		
21	Deferred tax assets arising from temporary differences (amount above 10% threshold, net of related tax liability)	Not applicable		
22	Amount exceeding the 15% threshold	Not applicable		
23	*of which: significant investments in the common stock 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*		
26	National specific regulatory adjustments applied to CET1 capital	30,860		
26a	Cumulative fair value gains arising from the revaluation of land and buildings (own-use and investment properties)	24,842		(11) + (19)
26b	Regulatory reserve for general banking risks	6,018		(12)
26c	Securitisation 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**	**31,783**		
29	**CET1 capital**	**94,458**		

Table 6: Transition disclosures template *(continued)*

		As at 31 Dec 2017		
		Component of regulatory capital HK$m	**Amounts subject to pre-Basel III treatment* HK$m**	Cross-referenced to Table 3
	AT1 capital: instruments			
30	Qualifying AT1 capital instruments plus any related share premium	6,981		
31	*of which: classified as equity under applicable accounting standards*	*6,981*		(15)
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**	**6,981**		
	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	-		
41a	Portion of deductions applied 50:50 to core capital and supplementary capital based on pre-Basel III treatment which, during transitional period, remain subject to deduction from Tier 1 capital	-		
i	*of which: Excess of total EL amount over total eligible provisions under the IRB approach*	-		
ii	*of which: Capital shortfall of regulated non-bank subsidiaries*	-		
iii	*of which: Investments in own CET1 capital instruments*	-		
iv	*of which: Reciprocal cross holdings in CET1 capital instruments issued by financial sector entities*	-		
v	*of which: Capital investment in a connected company which is a commercial entity (amount above 15% of the reporting institution's capital base)*	-		
vi	*of which: 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*	-		
vii	*of which: Significant 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*	-		
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**	**6,981**		
45	**Tier 1 capital (Tier 1 = CET1 + AT1)**	**101,439**		
	Tier 2 capital: instruments and provisions			
46	Qualifying Tier 2 capital instruments plus any related share premium	-		
47	Capital instruments subject to phase out arrangements from Tier 2 capital	-		
48	Tier 2 capital instruments issued by consolidated bank subsidiaries and held by third parties (amount allowed in Tier 2 capital of the consolidation group)	-		
49	*of which: capital instruments issued by subsidiaries subject to phase out arrangements*	-		
50	Collective impairment allowances and regulatory reserve for general banking risks eligible for inclusion in Tier 2 capital	3,544		(1) + (13)
51	**Tier 2 capital before regulatory deductions**	**3,544**		

Table 6: Transition disclosures template *(continued)*

		As at 31 Dec 2017		
		Component of regulatory capital HK$m	**Amounts subject to pre-Basel III treatment* HK$m**	Cross-referenced to Table 3
	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	915	-	(2)
56	National specific regulatory adjustments applied to Tier 2 capital	(11,179)		
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	(11,179)		((11) + (19))*45%
56b	Portion of deductions applied 50:50 to core capital and supplementary capital based on pre-Basel III treatment which, during transitional period, remain subject to deduction from Tier 2 capital	-		
i	*of which: Excess of total EL amount over total eligible provisions under the IRB approach*	-		
ii	*of which: Capital shortfall of regulated non-bank subsidiaries*	-		
iii	*of which: Investments in own CET1 capital instruments*	-		
iv	*of which: Reciprocal cross holdings in CET1 capital instruments issued by financial sector entities*	-		
v	*of which: Capital investment in a connected company which is a commercial entity (amount above 15% of the reporting institution's capital base)*	-		
vi	*of which: 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*	-		
vii	*of which: Significant 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*	-		
57	**Total regulatory deductions to Tier 2 capital**	**(10,264)**		
58	**Tier 2 capital**	**13,808**		
59	**Total capital (Total capital = Tier 1 + Tier 2)**	**115,247**		
59a	Deduction items under Basel III which during transitional period remain subject to risk-weighting, based on pre-Basel III treatment	-		
i	*of which: Mortgage servicing rights*	-		
ii	*of which: Defined benefit pension fund net assets*	-		
iii	*of which: Investments in own CET1 capital instruments, AT1 capital instruments and Tier 2 capital instruments*	-		
iv	*of which: Capital investment in a connected company which is a commercial entity*	-		
v	*of which: 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*	-		
vi	*of which: Significant 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*	-		
60	**Total risk weighted assets**	**572,723**		
	Capital ratios (as a percentage of risk weighted assets)			
61	CET1 capital ratio	16.49%		
62	Tier 1 capital ratio	17.71%		
63	Total capital ratio	20.12%		
64	Institution specific buffer requirement (minimum CET1 capital requirement as specified in s.3A, or s.3B, as the case requires, of the BCR plus capital conservation buffer plus countercyclical buffer requirements plus G-SIB or D-SIB requirements)	7.585%		
65	*of which: capital conservation buffer requirement*	*1.250%*		
66	*of which: bank specific countercyclical buffer requirement*	*1.085%*		
67	*of which: G-SIB or D-SIB buffer requirement*	*0.750%*		
68	CET1 capital surplus over the minimum CET1 requirement and any CET1 capital used to meet the Tier 1 and Total capital requirement under s.3A, or s.3B, as the case requires, of the BCR	11.71%		

Table 6: Transition disclosures template *(continued)*

		As at 31 Dec 2017		
		Component of regulatory capital	**Amounts subject to pre-Basel III treatment***	Cross-referenced to Table 3
		HK$m	**HK$m**	
	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	4,093		
73	Significant capital investments in CET1 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation	7,848		
74	Mortgage servicing rights (net of related tax liability)	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 basic approach and the standardised (credit risk) approach (prior to application of cap)	804		
77	Cap on inclusion of provisions in Tier 2 under the basic approach and the standardised (credit risk) approach	763		
78	Provisions eligible for inclusion in Tier 2 in respect of exposures subject to the IRB approach (prior to application of cap)	3,077		
79	Cap for inclusion of provisions in Tier 2 under the IRB approach	2,781		
	Capital instruments subject to phase-out arrangements			
80	Current cap on CET1 capital instruments subject to phase out arrangements	Not applicable		
81	Amount excluded from CET1 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)	-		

* This refers to the position under the Banking (Capital) Rules in force on 31 December 2012.

Notes to the template:

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

		As at 31 Dec 2017	
		Hong Kong basis	**Basel III basis**
		HK$m	**HK$m**
10	Deferred tax assets net of deferred tax liabilities	211	96

Explanation

As set out in paragraphs 69 and 87 of the Basel III text issued by the Basel Committee (December 2010), DTAs that rely on future profitability of the bank to be realised 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 and other credit exposures to connected companies) under Basel III.

Remarks:
The amount of the 10% /15% thresholds mentioned above is calculated based on the amount of CET1 capital determined under the Banking (Capital) Rules.

Capital instruments

In December 2017, the Bank early repaid the subordinated loan of US$300m at par that is originally due in 2022. The following is a summary of the Group's outstanding capital instruments as at 31 December 2017.

Table 7: Capital instruments

As at 31 Dec 2017

		1) Ordinary shares	2) Perpetual subordinated loan (US$ 900 million)
1	Issuer	Hang Seng Bank Limited	Hang Seng Bank Limited
2	Unique identifier (eg CUSIP, ISIN or Bloomberg identifier for private placement)	HK0011000095	N/A
3	Governing law(s) of the instrument	Hong Kong law	Hong Kong law
	Regulatory treatment		
4	Transitional Basel III rules#	N/A	N/A
5	Post-transitional Basel III rules+	Common Equity Tier 1	Additional Tier 1
6	Eligible at solo*/group/group & solo	Group and Solo	Group and Solo
7	Instrument type (types to be specified by each jurisdiction)	Ordinary shares	Perpetual debt instrument
8	Amount recognised in regulatory capital (Currency in million, as of most recent reporting date)	HK$ 9,658 million	HK$ 6,981 million
9	Par value of instrument	N/A	US$ 900 million
10	Accounting classification	Shareholders' equity	Shareholders' equity
11	Original date of issuance	Various	22 Dec 2014
12	Perpetual or dated	Perpetual	Perpetual
13	Original maturity date	No maturity	No maturity
14	Issuer call subject to prior supervisory approval	N/A	Yes
15	Optional call date, contingent call dates and redemption amount	N/A	22 December 2019 at par value
16	Subsequent call dates, if applicable	N/A	Callable on any interest payment date after first call date
	Coupons / dividends		
17	Fixed or floating dividend/coupon	N/A	Floating
18	Coupon rate and any related index	N/A	12-month US$ LIBOR + 3.84%
19	Existence of a dividend stopper	N/A	No
20	Fully discretionary, partially discretionary or mandatory	Fully discretionary	Fully discretionary
21	Existence of step up or other incentive to redeem	N/A	No
22	Noncumulative or cumulative	Noncumulative	Noncumulative
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	Non-Viability Event. Hong Kong Monetary Authority – Contractual
32	If write-down, full or partial	N/A	Full
33	If write-down, permanent or temporary	N/A	Permanent
34	If temporary write-down, description of write-up mechanism	N/A	N/A
35	Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument)	Represents the most subordinated claim in liquidation	Subordinated to the claims of all Senior Creditors (including any holders of Tier 2 Instruments)
36	Non-compliant transitioned features	No	No
37	If yes, specify non-compliant features	N/A	N/A
	Terms and conditions	Terms and conditions - Ordinary shares	Terms and conditions – Perpetual subordinated loan

Footnote:

\# *Regulatory treatment of capital instruments subject to transitional arrangements provided for in Schedule 4H of the Banking (Capital) Rules*

\+ *Regulatory treatment of capital instruments not subject to transitional arrangements provided for in Schedule 4H of the Banking (Capital) Rules*

* *Include solo-consolidated*

Capital ratios and buffer requirements

The following tables show the capital ratios, RWAs after the applicable scaling factor and capital buffers as contained in the "Capital Adequacy Ratio" return required to be submitted to the HKMA on a consolidated basis under the requirements of section 3C(1) of the BCR.

Table 8: Capital ratios

	Footnote	31 Dec 2017 %
CET1 capital ratio	*1*	16.5
Tier 1 capital ratio	*2*	17.7
Total capital ratio	*3*	20.1
		HK$m
CET1 captial		94,458
Tier 1 capital		101,439
Total capital		115,247
Total RWAs	*4*	572,723

1 CET1 capital ratio is equal to CET1 capital divided by total RWAs
2 Tier 1 capital ratio is equal to Tier 1 capital divided by total RWAs
3 Total capital ratio is equal to total capital divided by total RWAs
4 Total RWAs is after the application of the scaling factor of 1.06

Table 9: Capital buffers

	31 Dec 2017 %
Capital conservation buffer ratio	1.250
Countercyclical capital buffer ratio	1.085
Higher loss absorbency ratio	0.750
Total	**3.085**

Countercyclical capital buffer ratio

Countercyclical capital buffer ("CCyB") is calculated as the weighted average of the applicable CCyB ratios in effect in the jurisdictions in which banks have a private sector credit exposure. The Group uses booking country as the basis of geographical allocation for credit risk and risk country for market risk, which is defined by considering the country of incorporation, location of guarantor, headquarter domicile, distribution of revenue and booking country.

As at 31 December 2017, the applicable jurisdictional CCyB ("JCCyB") ratio in force in Hong Kong was 1.25%, as set by the HKMA. For the rest of the jurisdictions in which the Bank had private sector credit exposures, the applicable JCCyB ratios were either at 0% or there was not yet an announcement made by the corresponding regulators. The Hong Kong JCCyB ratio increased from 0.625% to 1.25% on 1 January 2017. The exposure amounts of private sector increased comparing with 30 June 2017, mainly driven by the loan growth.

Table 10: Geographical breakdown of RWA in relation to private sector credit exposures

		As at 31 Dec 2017			
	Jurisdiction	**Applicable JCCyB ratio in effect**	**Total RWA used in computation of CCyB ratio of Authorised Institution ("AI")**	**CCyB ratio of AI**	**CCyB amount of AI**
		%	**HK$m**	**%**	**HK$m**
1	Hong Kong	1.250	411,244		
2	Mainland China	-	53,334		
3	Macau	-	7,782		
4	Singapore	-	1,626		
	Total		**473,986**	**1.085**	**5,142**

Leverage ratio

Table 11: Leverage ratio

	Footnote	31 Dec 2017 %
Leverage ratio	*1*	7.3
Capital and leverage ratio exposure measure		**HK$m**
Tier 1 capital		101,439
Total exposure measure		1,388,288

1 Leverage ratio is equal to Tier 1 capital divided by total exposure measure

Leverage ratio remained stable comparing with 30 June 2017.

Table 12: Leverage ratio common disclosure template

		Leverage Ratio Framework 31 Dec 2017 HK$m
	On-balance sheet exposures	
1	On-balance sheet items (excluding derivatives and SFTs, but including collateral)	1,329,437
2	Less: Asset amounts deducted in determining Basel III Tier 1 capital (reported as negative amounts)	(31,818)
3	**Total on-balance sheet exposures (excluding derivatives and SFTs) (sum of lines 1 and 2)**	**1,297,619**
	Derivative exposures	
4	Replacement cost associated with all derivatives transactions (i.e. net of eligible cash variation margin)	4,414
5	Add-on amounts for PFE associated with all derivatives transactions	10,882
6	Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the operative accounting framework	-
7	Less: Deductions of receivables assets for cash variation margin provided in derivatives transactions (reported as negative amounts)	-
8	Less: Exempted CCP leg of client-cleared trade exposures (reported as negative amounts)	-
9	Adjusted effective notional amount of written credit derivatives	-
10	Less: Adjusted effective notional offsets and add-on deductions for written credit derivatives (reported as negative amounts)	-
11	**Total derivative exposures (sum of lines 4 to 10)**	**15,296**
	Securities financing transaction exposures	
12	Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	2,677
13	Less: Netted amounts of cash payables and cash receivables of gross SFT assets (reported as negative amounts)	-
14	CCR exposure for SFT assets	287
15	Agent transaction exposures	-
16	**Total securities financing transaction exposures (sum of lines 12 to 15)**	**2,964**
	Other off-balance sheet exposures	
17	Off-balance sheet exposure at gross notional amount	457,535
18	Less: Adjustments for conversion to credit equivalent amounts (reported as negative amounts)	(385,126)
19	**Off-balance sheet items (sum of lines 17 and 18)**	**72,409**
	Capital and total exposures	
20	Tier 1 capital	101,439
21	**Total exposures (sum of lines 3, 11, 16 and 19)**	**1,388,288**
	Leverage ratio	
22	Basel III leverage ratio	**7.31%**

Table 13: Summary comparison table

		Leverage ratio framework 31 Dec 2017 HK$m
1	Total consolidated assets as per published financial statements	1,478,418
2	Adjustment for investments in banking, financial, insurance or commercial entities that are consolidated for accounting purposes but outside the scope of regulatory consolidation	(136,205)
3	Adjustment for fiduciary assets recognised on the balance sheet pursuant to the operative accounting framework but excluded from the leverage ratio exposure measure	-
4	Adjustments for derivative financial instruments	4,202
5	Adjustment for securities financing transactions (i.e. repos and similar secured lending)	287
6	Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	72,409
7	Other adjustments	(30,823)
8	**Leverage ratio exposure**	**1,388,288**

Other adjustments mainly represent the regulatory deductions of property revaluation reserves and regulatory reserve to Tier 1 capital under the leverage ratio framework.

Overview of the minimum capital requirements and RWAs

Using the standard template as specified by the HKMA, the following table provides an overview of the capital requirements in terms of detailed breakdown of RWAs for credit risk (before any applicable scaling factor of 1.06), market risk and operational risk. Minimum capital requirement represents the amount of capital required to be held for that risk based on its RWAs after any applicable scaling factor multiplied by 8%.

Table 14: OV1 – Overview of RWA

			a	b	c
			RWA		**Minimum capital requirements**
			31 Dec 2017	**30 Sep 2017**	**31 Dec 2017**
		Footnote	**HK$m**	**HK$m**	**HK$m**
1	Credit risk for non-securitisation exposures		458,812	446,286	38,616
2	*of which: Standardised (credit risk) ("STC") approach*		*60,646*	*58,515*	*4,852*
2a	*of which: Basic ("BSC") approach*		-	-	-
3	*of which: Internal ratings-based ("IRB") approach*		*398,166*	*387,771*	*33,764*
4	Counterparty credit risk		5,164	5,420	427
5	*of which: Standardised ("SA-CCR") approach*	*1*	*3,260*	*3,350*	*275*
5a	*of which: Current exposure method ("CEM")*		-	-	-
6	*of which: Internal models (counterparty credit risk) ("IMM(CCR)") approach*		-	-	-
7	Equity exposures in banking book under the market-based approach		16,591	16,386	1,407
8	Collective investment scheme ("CIS") exposures – Look-through approach ("LTA")		-	-	-
9	CIS exposures – Mandate-based approach ("MBA")		-	-	-
10	CIS exposures – Fall-back approach ("FBA")		-	-	-
11	Settlement risk		-	-	-
12	Securitisation ("S") exposures in banking book		-	-	-
13	*of which: IRB(S) approach – ratings-based method*		-	-	-
14	*of which: IRB(S) approach – supervisory formula method*		-	-	-
15	*of which: STC(S) approach*		-	-	-
16	Market risk		7,208	7,469	576
17	*of which: Standardised (market risk) ("STM") approach*		*68*	*64*	*5*
18	*of which: Internal models ("IMM") approach*		*7,140*	*7,405*	*571*
19	Operational risk		52,795	52,253	4,224
20	*of which: Basic indicator ("BIA") approach*		-	-	-
21	*of which: Standardised (operational risk) ("STO") approach*		*52,795*	*52,253*	*4,224*
21a	*of which: Alternative standardised ("ASA") approach*		-	-	-
22	*of which: Advanced measurement ("AMA") approach*		N/A	N/A	N/A
23	Amounts below the thresholds for deduction (subject to 250% RW)		19,620	19,435	1,664
24	Capital floor adjustment		-	-	-
24a	Deduction to RWA		(13,704)	(13,158)	(1,096)
24b	*of which: Portion of regulatory reserve for general banking risks and collective provisions which is not included in Tier 2 Capital*		*(41)*	*(28)*	*(3)*
24c	*of which: Portion of cumulative fair value gains arising from the revaluation of land and buildings which is not included in Tier 2 Capital*		*(13,663)*	*(13,130)*	*(1,093)*
25	**Total**		**546,486**	**534,091**	**45,818**

N/A: Not applicable in the case of Hong Kong

1 Prior to the implementation of SA-CCR, exposures corresponding to the counterparty credit risk reported here are calculated using current exposure method.

Total RWAs (before any applicable scaling factor) increased by HK$12.4bn since last quarter. Credit risk RWA for non-securitisation exposures was the main contributor and the key driver for its increase of HK$12.5bn was the changes in asset size (consisting of changes in book size and composition).

RWA flow statements

RWA flow statement for credit risk

The following table shows movements in RWAs for credit risk determined under the IRB approach. The analysis is prepared in accordance with the key drivers as specified in the standard template. For the purposes of this section, any reference to exposures related to "credit risk" is referring to credit risk for non-securitisation exposures excluding counterparty credit risk.

Table 15: CR8 – RWA flow statements of credit risk exposures under IRB approach

		a
		Amount
		HK$m
1	RWA as at end of previous reporting period (30 Sep 2017)	387,771
2	Asset size	10,411
3	Asset quality	1,694
4	Model updates	-
5	Methodology and policy	-
6	Acquisitions and disposals	-
7	Foreign exchange movements	1,036
8	Other	(2,746)
9	**RWA as at end of reporting period (31 Dec 2017)**	**398,166**

RWA increased by HK$10.4bn during the last quarter of 2017 that was mainly attributable to asset size increase driven by loan growth.

RWA flow statement for market risk

The following table shows movements in RWAs for market risk determined under the IMM approach. The analysis is prepared in accordance with the key drivers as specified in the standard template.

Table 16: MR2 – RWA flow statements of market risk exposures under IMM approach

		a	b	c	d	e	f
		Value at risk ("VaR")	**Stressed VaR**	**Incremental risk charge ("IRC")**	**Comprehensive risk charge ("CRC")**	**Other**	**Total RWA**
		HK$m	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**
1	RWA as at end of previous reporting period (30 Sep 2017)	2,664	4,741	-	-	-	7,405
2	Movement in risk levels	(189)	(81)	-	-	-	(270)
3	Model updates/changes	-	-	-	-	-	-
4	Methodology and policy	-	-	-	-	-	-
5	Acquisitions and disposals	-	-	-	-	-	-
6	Foreign exchange movements	2	3	-	-	-	5
7	Other	-	-	-	-	-	-
8	**RWA as at end of reporting period (31 Dec 2017)**	**2,477**	**4,663**	**-**	**-**	**-**	**7,140**

Credit risk

Credit risk management

Credit risk is the risk that financial loss arises from the failure of a customer or counterparty to meet its obligations under a contract. It arises principally from lending, trade finance, and treasury businesses. The Group has dedicated standards, policies and procedures in place to control and monitor risk from all such activities.

There are dedicated credit risk functions, reported to Chief Risk Officer, responsible for centralised management of credit risk through:

– formulating credit policies on approval process, post disbursement monitoring, recovery process and large exposure;
– issuing guidelines on lending to specified market sectors, industries and products; the acceptability of specific classes of collateral or risk mitigations and valuation parameters for collateral;
– undertaking an independent review and objective assessment of credit risk for all commercial non-bank credit facilities in excess of designated amount prior to the facilities being committed to customers;
– controlling exposures to selected industries, counterparties, countries and portfolio types etc by setting limits;
– maintaining and developing credit risk rating/facility grading process to categorise exposures and facilitate focused management;
– reporting to senior executives and various committees on aspects of the Group loan portfolio;
– managing and directing credit-related systems initiatives; and
– providing advice and guidance to business units on various credit-related issues.

These credit risk functions work closely with other functions of the Group.

Credit risk operates through a hierarchy of individual credit approval authority limits. With delegation from the Board, Executive Committee delegates the credit approval authority limits to Chief Executive and empowers the Chief Executive to further delegate to Chief Risk Officer and senior management teams on individual basis. Chief Risk Officer is empowered by Chief Executive to further delegate the credit approval authority limits.

Business model/strategy will be reviewed regularly by different business units taking into consideration of current market condition and the Group's risk appetite. Credit risk policies and limits will also be reviewed to align with the direction of defined risk appetite and business strategy.

Credit Risk Management

The Group's exposure to credit risk arises from a wide range of customers and product types. To measure and manage the risk in these exposures, both to distinct customer types or product categories, the Group employs diverse risk rating systems and methodologies: judgmental, analytical, and hybrids of the two.

A fundamental principle of the Group's policy and approach is that analytical risk rating systems and scorecards are decision tools facilitating management, serving ultimately judgemental decisions for which individual approvers are accountable.

For individually assessed customers, the credit process provides for at least annual review of the facility granted. Review may be more frequent, as required by circumstances.

The Group adopts a set of standards that govern the process through which risk rating systems are initially developed, judged fit for purpose, approved and implemented, the conditions under which analytical risk model outcomes can be overridden by approvers; and the process of model performance monitoring and reporting. The framework emphasises on an effective dialogue between business line and risk management, suitable independence of decision takers and a good understanding and robust reflection on the part of senior management.

Analytical risk rating systems are not static and are subject to review and modification in light of the changing environment and the greater availability and quality of data. Processes are established to capture the relevant data for continuous model improvement.

Credit quality of assets

Tables 17 to 21 analyse credit exposures between defaulted and non-defaulted, changes in defaulted loans and debt securities, credit quality of exposures by geographical locations, industries and residual maturity on a regulatory consolidation basis. The exposures covered in the tables include loans, debt securities and off-balance sheet exposures. Loans are generally referred to as any on-balance sheet exposures included as credit risk for non-securitisation exposures, covering exposures to customers, banks, sovereigns and etc., whilst cash items and non-financial assets are excluded.

Table 17: CR1 – Credit quality of exposures

		a	b	c	d
		Gross carrying amounts of			
		Defaulted exposures	**Non-defaulted exposures**	**Allowances/ impairments**	**Net values**
	As at 31 Dec 2017	**HK$m**	**HK$m**	**HK$m**	**HK$m**
1	Loans	1,970	922,297	1,597	922,670
2	Debt securities	-	282,153	-	282,153
3	Off-balance sheet exposures	-	457,535	-	457,535
4	**Total**	**1,970**	**1,661,985**	**1,597**	**1,662,358**

Table 18: CR2 – Changes in defaulted loans and debt securities

		a
		Amount
		HK$m
1	Defaulted loans and debt securities at end of the previous reporting period (30 Jun 2017)	3,136
2	Loans and debt securities that have defaulted since the last reporting period	482
3	Returned to non-defaulted status	(87)
4	Amounts written off	(983)
5	Other changes	(578)
6	**Defaulted loans and debt securities at end of the current reporting period (31 Dec 2017)**	**1,970**

The decrease in defaulted loans and debt securities in the second half of 2017 was mainly due to the amounts written off and repayment, which was partly offset by the increase of defaulted loans mainly related to retail loans in Hong Kong.

Table 19: CRB1 – Credit quality of exposures by geography

		31 Dec 2017
	Footnote	**HK$m**
Hong Kong SAR		1,484,298
Others	*1*	179,657
Total		**1,663,955**

1 Any segment which constitutes less than 10% of total gross carrying amounts is disclosed on an aggregated basis under the category "others".

Table 20: CRB2 – Credit quality of exposures by industry

	31 Dec 2017
	HK$m
Industrial, commercial and financial	
- Property development and investment	303,489
- Financial concerns	340,004
- Stockbrokers	3,967
- Wholesale and retail trade	94,988
- Manufacturing	74,848
- Transport and transport equipment	23,388
- Recreational activities	406
- Information technology	12,771
- others	264,133
Individuals	471,034
Trade finance	74,927
Total	**1,663,955**

Table 21: CRB3 – Credit quality of exposures by residual maturity

	31 Dec 2017 HK$m
Less than 1 year	700,346
Between 1 and 5 years	466,433
More than 5 years	494,553
Undated	2,623
Total	**1,663,955**

Impaired exposures, past due but not impaired exposures and renegotiated exposures

Tables 22 to 25 analyse impaired exposures, impairment allowances, past due but not impaired exposures and renegotiated exposures on a regulatory consolidation basis.

Our approach for determining impairment allowances is explained in Note 3(e) of the Group's 2017 Annual Report, and the Group's definitions for accounting purposes of "impaired" and "renegotiated" are set out on page 55. The accounting definition of impaired and the regulatory definition of default are generally aligned.

Gross advances, overdue advances, impaired advances, individually assessed and collectively assessed loan impairment allowances, the amount of new impairment allowances charged to income statement, and the amount of impaired loans and advances written off during the period in respect of industry sectors which constitute not less than 10 per cent of gross loans and advances to customers are analysed as follows:

Table 22: CRB4 – Impaired exposures and related allowances and write-offs by industry

As at 31 Dec 2017	Gross loans and advances[1] HK$m	Overdue loans and advances HK$m	Impaired loans and advances HK$m	Individually assessed allowances HK$m	Collectively assessed allowances HK$m	New impairment allowances HK$m	Advances written off during the period HK$m
Residential mortgages	198,935	54	111	-	(2)	-	3
Commercial, industrial and international trade	180,557	1,203	1,248	(591)	(655)	666	775
Commercial real estate	93,510	8	9	-	(3)	1	-
Other property-related lending	180,629	255	325	(7)	(18)	11	-
Others	153,227	121	277	(4)	(317)	550	658
Total	**806,858**	**1,641**	**1,970**	**(602)**	**(995)**	**1,228**	**1,436**

1 The amounts shown in column "Total gross loans and advances" represent the loans and advances to customers gross of provisions in the financial statements under the regulatory consolidation basis.

Compared with 30 June 2017, the decrease in individually assessed allowances was mainly due to write off of certain corporate customers.

Impairment is assessed collectively to cover losses that have been incurred but have not yet been identified on loans subject to individual assessment or for homogeneous groups of loans that are not considered individually significant.

Table 23: CRB5 – Impaired exposures and related allowances and write-offs by geographical location

As at 31 Dec 2017	Gross loans and advances[1] HK$m	Overdue loans and advances HK$m	Impaired loans and advances HK$m	Individually assessed allowances HK$m	Collectively assessed allowances HK$m	New impairment allowances HK$m	Advances written off during the period HK$m
Hong Kong SAR	726,331	1,450	1,774	(533)	(666)	924	843
China	66,265	191	196	(69)	(329)	304	593
Others	14,262	-	-	-	-	-	-
Total	**806,858**	**1,641**	**1,970**	**(602)**	**(995)**	**1,228**	**1,436**

1 The amounts shown in column "Total gross loans and advances" represent the loans and advances to customers gross of provisions in the financial statements under the regulatory consolidation basis.

Past due but not impaired exposures are those loans where, although customers have failed to make payments in accordance with the contractual terms of their facilities, they have not met the impaired loan criteria. Examples of exposures designated past due but not impaired include loans that have missed the most recent payment date but on which there is no evidence of impairment; loans fully secured by cash collateral; short-term trade facilities past due more than 90 days for technical reasons such as delays in documentation, but where there is no concern over the creditworthiness of the counterparty.

Table 24: CRB6 – Aging analysis of past-due exposures but not impaired exposures

As at 31 Dec 2017	**Up to 29 days HK$m**	**30-59 days HK$m**	**60-89 days HK$m**	**90-180 days HK$m**	**Over 180 days HK$m**	**Total HK$m**
Loans and advances held at amortised cost:						
- sight balances at central banks	-	-	-	-	-	-
- placings with and advances to banks	-	-	-	-	-	-
- loans and advances to customers#	4,031	338	83	-	-	4,452
Total	**4,031**	**338**	**83**	**-**	**-**	**4,452**
Other assets:	7	2	1	1	-	11
Total	**7**	**2**	**1**	**1**	**-**	**11**

 # The majority of the loans and advances to customers that are operating within revised terms following restructuring are excluded from this table.

Table 25: CRB7 – Breakdown of renegotiated loans between impaired and not impaired

	31 Dec 2017 HK$m
Neither past due nor impaired	219
Past due but not impaired	14
Impaired	294
Total	**527**

Loans and advances to customers

Tables 26 to 28 analyse the loans and advances to customers by geographical locations, by industries and the overdue and rescheduled loans and advances on a financial consolidation basis. The analysis of loans and advances to customers by geographical areas is in accordance with the location of counterparties, after recognised risk transfer.

Table 26: Segmental analysis of loans and advances to customers by geographical area

As at 31 Dec 2017	**Gross loans and advances HK$m**	**Individually impaired loans and advances HK$m**	**Collectively impaired loans and advances HK$m**	**Overdue loans and advances HK$m**	**Individually assessed allowances HK$m**	**Collectively assessed allowances HK$m**
Hong Kong SAR	687,867	1,523	252	1,451	(539)	(717)
China	90,056	189	-	187	(60)	(228)
Others	30,247	6	-	3	(3)	(50)
Total	**808,170**	**1,718**	**252**	**1,641**	**(602)**	**(995)**

The analysis of gross loans and advances to customers by industry sector based on categories and definitions contained in the "Quarterly Analysis of Loans and Advances and Provisions - (MA(BS)2A)" return submitted to the HKMA is as follows:

Table 27: Gross loans and advances to customers by industry sector

As at 31 Dec 2017	**Gross loans and advances HK$m**	**% of gross advances covered by collateral %**
Industrial, commercial and financial sectors		
- property development	62,715	46.5
- property investment	136,214	81.4
- financial concerns	8,757	59.8
- stockbrokers	150	13.3
- wholesale and retail trade	27,523	44.4
- manufacturing	23,548	40.2
- transport and transport equipment	14,153	55.0
- recreational activities	191	29.7
- information technology	7,027	1.1
- other	65,039	66.5
Individuals		
- loans and advances for the purchase of flats under the Government Home Ownership Scheme, Private Sector Participation Scheme and Tenants Purchase Scheme	22,046	100.0
- loans and advances for the purchase of other residential properties	174,068	100.0
- credit card loans and advances	29,229	-
- other	24,888	48.3
Gross loans and advances for use in Hong Kong	595,548	71.6
Trade finance	47,125	21.1
Gross loans and advances for use outside Hong Kong	165,497	35.3
Gross loans and advances to customers	**808,170**	**61.2**

Collateral includes any tangible security that carries a fair market value and is readily marketable. This includes (but is not limited to) cash and deposits, stocks and bonds, mortgages over properties and charges over other fixed assets such as plant and equipment. Where collateral values are greater than gross loans and advances to customers, only the amount of collateral up to the gross loans and advances is included.

Loans and advances to customers that are more than three months overdue and their expression as a percentage of gross loans and advances to customers are as follows:

Table 28: Overdue loans and advances to customers

As at 31 Dec 2017	**HK$m**	**%**
Gross loans and advances which have been overdue with respect to either principal or interest for periods of:		
- more than three months but not more than six months	162	0.02
- more than six months but not more than one year	253	0.03
- more than one year	1,226	0.15
Total	**1,641**	**0.20**
of which:		
- individually impaired allowances	(589)	
- covered portion of overdue loans and advances	880	
- uncovered portion of overdue loans and advances	761	
- current market value of collateral held against the covered portion of overdue loans and advances	1,488	
Rescheduled loans and advances to customers	118	0.01

Collateral held with respect to overdue loans and advances is mainly residential properties and commercial properties. The current market value of residential properties and commercial properties were HK$1,221m and HK$200m respectively.

Loans and advances with a specific repayment date are classified as overdue when the principal or interest is overdue and remains unpaid at year-end. Loans and advances repayable by regular instalments are treated as overdue when an instalment payment is overdue and remains unpaid at year-end. Loans and advances repayable on demand are classified as overdue either when a demand for repayment has been served on the borrower but repayment has not been made in accordance with the demand notice, or when the loans and advances have remained continuously outside the approved limit advised to the borrower for more than the overdue period in question.

The amount of repossessed assets as at 31 December 2017 was HK$42m.

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. This will normally involve the granting of concessionary terms and resetting the overdue account to non-overdue status. Rescheduled loans and advances to customers are stated net of any advances which have subsequently become overdue for more than three months and which are included in "Overdue loans and advances to customers".

Off-balance sheet exposures other than derivative transactions

The following table gives the nominal contract amounts and RWAs of contingent liabilities and commitments. The information is consistent with that in the "Capital Adequacy Ratio" return required to be submitted to the HKMA by the Group. The return is prepared on a consolidated basis as specified by the HKMA under the requirement of section 3C(1) of the BCR.

For the purpose of the BCR, acceptances and endorsements are included in the capital adequacy calculation as if they were contingencies.

Table 29: Off-balance sheet exposures other than derivative transactions

	31 Dec 2017
	HK$m
Contract amounts	
Direct credit substitutes	3,564
Transaction-related contingencies	5,569
Trade-related contingencies	14,431
Commitments that are unconditionally cancellable without prior notice	378,110
Commitments which have an original maturity of not more than one year	8,553
Commitments which have an original maturity of more than one year	47,308
Total	**457,535**
RWAs	**47,733**

Credit risk under internal ratings-based approach

Qualitative disclosures related to internal models for measuring credit risk under IRB approach

(i) Nature of exposures within each IRB class

The Group adopts advanced IRB approach for the majority of its business under the approval granted by the HKMA. The following non-securitisation exposures are subject to advanced IRB approach:

– Corporate exposures include exposures to global large corporates, local large corporates, middle market corporates and small and medium-sized enterprises, non-bank financial institutions and specialised lending.

– Sovereign exposures include exposures to central governments, government agencies, central monetary institutions, multilateral development banks and relevant international organisations.

– Bank exposures include exposures to banks and regulated securities firms.

– Retail exposures, including residential mortgages, qualifying revolving retail exposures, other retail exposures and retail SME exposures.

– Equity exposures.

– Other exposures mainly include notes and coins, premises, plant and equipment and other assets.

At 31 December 2017, the portion of exposure at default ("EAD") and RWAs within the Group covered by IRB apporach are summarised in the following table. The remaining portions not covered by IRB approach are under STC approach.

Portfolio	Percentage of total EAD under IRB approach	Percentage of total RWA under IRB approach
Corporate exposures (includes SME and other corporates and specialised lending)	93%	87%
Sovereign exposures	100%	100%
Bank exposures (including securities firms)	100%	100%
Residential mortgage loans	90%	77%
Other retail exposures	91%	74%
Equity exposures	100%	100%
Other exposures	100%	100%

The above table covers credit risk for non-securitisation exposures excluding counterparty credit risk. For counterparty credit risk, the percentage of total RWAs covered by models is 75% for corporate exposures and 100% for bank exposures.

(ii) The internal rating system

Exposure to credit risk arises from a very wide range of customers and product types, and the risk rating systems in place to measure and monitor these risks are correspondingly diverse.

Credit risk exposures are generally measured and managed in portfolios of either distinct customer types or product categories. Risk rating systems for the former are designed to assess the default risk of, and loss severity associated with, customers who are typically managed as individual relationships; these rating systems tend to have a higher subjective content. Risk rating systems for the latter are generally more analytical, applying techniques such as behavioural analysis across product portfolios comprising large numbers of homogeneous transactions.

A fundamental principle of the Group's policy and approach is that analytical risk rating systems and scorecards are decision tools facilitating management, serving ultimately judgmental decisions for which individual approvers are accountable. In the case of automated decision-making processes, accountability rests with those responsible for the parameters built into those processes/systems and the controls surrounding their use. For distinct customers, the credit process requires at least annual review of facility limits granted. Review may be more frequent, as required by circumstances.

Group standards govern the process through which risk rating systems are initially developed, judged fit for purpose, approved and implemented; the conditions under which individual approvers can override analytical risk model outcomes; and the process of model performance monitoring and reporting. There is emphasis on an effective dialogue between business lines and risk management, appropriate independence of decision takers, and a good understanding and robust reflection on the part of senior management.

(ii) The internal rating system *(continued)*

Like other facets of risk management, analytical risk rating systems are not static and are subject to review and modification in the light of the changing environment and the greater availability and quality of data. Structured processes and metrics are in place to capture relevant data and feed it into continuous model improvement.

(iii) Application of IRB parameters

The Group-wide credit risk rating framework incorporates probability of default ("PD", representing the likelihood of a default event in a one-year horizon) of an obligor and loss severity expressed in terms of exposures at default ("EAD", an estimate of exposures at time of default) and loss given default ("LGD", the estimates of loss that the Group may incur in the event of default expressed as a percentage of EAD). These measures are used to calculate expected loss and capital requirements, subject to any floors required by HKMA. They are also used in conjunction with other inputs to form rating assessments for the purpose of credit approval and for risk management decisions. The narrative explanations that follow relate to the IRB advanced approaches, that is, IRB advanced for distinct customers and retail IRB for the portfolio-managed retail business.

Wholesale Business

PD models are developed based on historical loss data, combining both quantitative and qualitative data on financial and various aspects such as industry environment, economic and political conditions. PD for wholesale customers segments is estimated using a Customer Risk Rating ("CRR") of 23 grades, of which 21 are non-default ratings representing varying degrees of strength of financial condition, and two are default ratings. The two major drivers of model methodology are the nature of the portfolio and the availability of internal or external data on historical defaults and risk factors.

Credit score generated by a model and/or a scorecard for individual obligor, mapped to the corresponding Customer Risk Rating, is recommended to and reviewed by credit approver taking into account all relevant information (including external rating and market data where available) for risk rating determination. The approved CRR is mapped to a PD value range of which the "mid-point" is used in regulatory capital calculation. PD models are developed where the risk profile of corporate borrower is specific to a country or a region.

LGD and EAD estimation for wholesale business is subject to Group framework of basic principles. EAD is estimated to a 12-month forward time horizon and broadly represents the current exposure plus an estimate for future drawdown on undrawn facilities and the crystallisation of contingent exposures after default. For funded facilities, the actual EAD is equal to the nominal EAD, i.e. 100% CCF. For unfunded facilities, the actual EAD is equal to the nominal EAD multiplied by CCF. The CCF is a measure of the probability that, contingent on the customer default the Bank will make actual payments in order to satisfy the obligation, taking into account product types and committed/uncommitted indicator to calculate EAD using current utilisation and available headroom.

None of the EAD models are calibrated for a downturn, as analysis shows that utilisation decreases during a downturn because credit stress is accompanied by more intensive limit monitoring and facility reduction.

LGD is based on the facility and collateral structure which takes into account the type of client, priority/seniority of the facility, the type and value of the collateral, which is expressed as a percentage of EAD. The LGD models are calibrated to a period of credit stress or downturn in economic conditions to arrive the downturn LGD.

The Group uses supervisory slotting criteria approach in rating its regulatory specialised lending exposure. Under this approach, rating will be assigned based on the borrower and transaction characteristics.

Retail Business

The Group adopts advanced IRB approach for the majority of its business under the approval granted by the HKMA. Retail exposures include residential mortgages, qualifying revolving retail exposures, small business retail exposures and other retail exposures to individuals. The Group's exposure to credit risk arises from a wide range of customers and product types. A fundamental principle of the Group's policy and approach is that analytical risk rating systems and scorecards are decision tools facilitating management. For automated decision making process, accountability rests with those responsible for the parameters built into those processes/systems and the controls surrounding their use.

Analytical risk rating systems are not static and are subject to review and modification in light of the changing environment and the greater availability and quality of data. Processes are established to capture the relevant data for continuous model improvement.

(iii) Application of IRB parameters *(continued)*

PD models are developed using statistical estimation generally based on a minimum of five years of historical data. The models typically incorporate the characteristics of the products and the borrower's account behaviour. The modelling approach is developed based on a point-in-time approach, the model outputs become effectively through-the-cycle through the application of long run adjustments. The main driver for the differences between PD and recent actual default rate is due to applying a long run adjustment which actual default rate is lower in benign period.

EAD models are also generally developed using at least five years of historical observations and typically adopt one of two approaches:

– Closed-end products without the facility for additional drawdowns, EAD is estimated as the outstanding balance of accounts at the time of observation; or
– EAD for products with the facility for additional drawdowns is estimated as the outstanding balance of accounts at the time of observation plus a credit conversion factor applied to the undrawn portion of the facility.

LGD estimates have more variation, particularly in respect of the time period that is used to quantify economic downturn assumptions. The LGD models for retail exposures are developed based on the Group's internal loss and default experience including recovery values for different types of collaterals for secured retail exposures such as residential mortgage; for unsecured retail exposures such as qualifying revolving retail exposures, LGD models are developed based on past recovery experiences, account behaviours and repayment ability.

The 3 most material risk rating systems for which we disclose details of modelling methodology and performance data represent RWAs of approximately 96% of the total retail IRB RWA as of December 2017.

Below tables set out the key characteristics of the significant wholesale credit risk models and retail credit risk models that drive the capital calculation split by regularly asset class, including the number of models for each component, the model method or approach and the number of years of loss data used.

(iii) Application of IRB parameters *(continued)*

Wholesale business

Regulatory asset classes measured	Component	Number of significant models	Model description and methodology	Number of years loss data	Regulatory Floors
Central governments and central banks	PD	1	A shadow rating approach that includes macroeconomic and political factors, constrained with expert judgement.	>10	No
	LGD	1	An unsecured model built on assessment of structural factors that influence the country's long-term economic performance. For unsecured LGD, a floor of 45% is applied.	8	45%[1]
	EAD	1	A cross-classification model that uses both internal data and expert judgement, as well as information on similar exposure types from other asset classes.	8	EAD must be at least equal to the current utilisation of the balance at account level
Bank / Securities firm	PD	2	A statistical model that combines quantitative analysis on financial information with expert inputs and macroeconomic factors.	10	0.03%
	LGD	1	A quantitative model that produces both downturn and expected LGD. Several securities types are included in the model to recognise collateral in the LGD calculation. For unsecured LGD, a floor of 45% is applied.	10	45%[2]
	EAD	1	A quantitative model that assigns credit conversion factors ("CCF") taking into account product types and committed/uncommitted indicator to calculate EAD using current utilisation and available headroom.	10	EAD must be at least equal to the current utilisation of the balance at account level
Other Corporate / Small and medium sized corporates[3]	PD	13	The corporate models use financial information, macroeconomic information and market-driven data, and is complemented by a qualitative assessment. The Non-Bank Financial Institutions ("NBFI") models which are the predominantly statistical models that combines quantitative analysis on financial information with expert inputs.	>=10	0.03%
	LGD	1	Regional statistical models covering all corporates, developed using historical loss/recovery data and various data inputs, including collateral information, facility seniority and customer geography.	>10	No
	EAD	1	Regional statistical models covering all corporates, developed using historical utilisation information and various data inputs, including product type and nature of commitment.	>10	EAD must be at least equal to the current utilisation of the balance at account level

1 LGD floor exempted for the People's Republic of China and Hong Kong Special Administrative Region

2 LGD floor exempted for intra-group entities

3 Excludes specialised lending exposures subject supervisory slotting approach.

(iii) Application of IRB parameters *(continued)*

Retail business

Retail Portfolio	Component	Number of significant models	Model description and methodology	Number of years loss data	Regulatory Floors
Hong Kong - Hang Seng Personal Residential Mortgages (Residential mortgage exposures)	PD	1	Statistical model built on internal behavioural data and calibrated to a long-run default rate by segment.	>10	0.03%
	LGD	3	2 statistical models and 1 historical average model based on estimate of loss incurred over a recovery period by different product types derived from historical data with downturn LGD based on the worst observed default rate.	>10	LGD floor of 10% at portfolio level
	EAD	1	Rule-based calculation based on current balance which continues to be a conservative estimate for EAD.	>10	EAD must at least be equal to current balance
Hong Kong – Hang Seng Credit Cards (Qualifying revolving retail exposures and Other retail exposures to individuals)	PD	1	Statistical model built on internal behavioural data and calibrated to a long-run default rate by segment.	>10	0.03%
	LGD	1	Statistical model based on forecasting the amount of expected future losses with downturn adjustment.	>10	
	EAD	1	Statistical model which derives a credit limit utilization by segment which is used to determine the EAD.	>10	EAD must at least be equal to current balance
Hong Kong – Hang Seng Personal Loans (Qualifying revolving retail exposures and Other retail exposures to individuals)	PD	1	Statistical model built on internal behavioural data and calibrated to a long-run default rate by segment.	> 10	PD floor of 0.03%
	LGD	1	Statistical model based on forecasting the amount of expected future losses with downturn adjustment.	> 10	
	EAD	1	EAD derived by different product types. Statistical model which derives a credit conversion factor to determine the proportion of undrawn limit to be added to the balance at observation for revolving nature while rule based calculation based on current balance for non-revolving nature.	> 10	EAD must at least be equal to current balance

These measures are used to calculate expected loss and capital requirements. They are also used in conjunction with other inputs to form rating assessments for the purpose of credit approval and for risk management decisions.

For management information and reporting purposes, retail portfolios are segmented into 10 Expected Loss ("EL") bands facilitating comparability across retail customer segment and product types. EL band is derived through a combination of PD and LGD.

(iv) Model Governance

Model governance is under the oversight of HSBC Group or Regional Model Oversight Committee ("Group MOC" or "Regional MOC"). Wholesale Credit and Markets MOC and Retail Banking and Wealth Management MOC ("Local MOCs") are established respectively in the Bank with comparable terms of reference as Group MOC or Regional MOC.

Local MOCs meet regularly and report to RMM. They are chaired by the Risk function, and its membership is drawn from Risk, Finance and Businesses. Its primary responsibilities are to oversee the framework for the management of model risk, bring a strategic approach to model-related issues across the Bank, and to oversee the governance of our risk rating models, their consistency, within the regulatory framework. Also, it identifies emerging risks for all aspects of the risk rating system, ensuring that model risk is managed within our risk appetite statement, and formally advises RMM / Group MOC / Regional MOC on any material model-related issues.

All new or materially changed IRB capital models require the HKMA and Prudential Regulation Authority's ("PRA") approval and such models fall directly under the remit of Local MOCs and Group MOC / Regional MOC. Additionally, the Local MOCs are responsible for the approval of stress testing models used for regulatory stress testing exercises such as those carried out by the HKMA and PRA.

The approval of models/model changes is the responsibility of individual approvers. Model Owner/Technical Expert ensures that the model is technically sound, has been developed robustly and follows the relevant modelling policies, standards, internal and regulatory requirements. Whereas the Model User/Steward for the function ensures that the model makes sense to the business or function where it will be used and that the model satisfies the requirements from the business, function and regulators.

Compliance with the Group and local standards for model development, credit risk models validation and implementation are subject to an independent model review process led by the HSBC Independent Model Review team which is separated from the Risk Analytics functions that are responsible for the development, usage and management of models. The Independent Model Review team provides robust challenge to the modelling approaches used and ensures that the performance of those models is transparent and that their limitations are visible to key stakeholders.

HSBC Group Audit, local Internal Audit, or a comparable independent model review unit also conducts regular reviews of the risk rating model application by credit and business groups.

Table 30.1: CR6 – Credit risk exposures by portfolio and PD ranges – for IRB approach (Wholesale)

	a	b	c	d	e	f	g	h	i	j	k	l
As at 31 Dec 2017	**Original on-balance sheet gross exposure**	**Off-balance sheet exposures pre-CCF**	**Average CCF**	**Exposure at default ("EAD") post-CRM and post-CCF**	**Average PD**	**Number of obligors**	**Average loss given default ("LGD")**	**Average maturity**	**RWA**	**RWA density**	**Expected loss ("EL")**	**Provisions**
PD scale	**HK$m**	**HK$m**	**%**	**HK$m**	**%**		**%**	**years**	**HK$m**	**%**	**HK$m**	**HK$m**
Sovereign												
0.00 to < 0.15	262,664	-	-	262,664	0.01	36	25.2	1.24	9,020	3	10	
0.15 to < 0.25	-	-	-	-	-	-	-	-	-	-	-	
0.25 to < 0.50	-	-	-	-	-	-	-	-	-	-	-	
0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	
0.75 to < 2.50	-	-	-	-	-	-	-	-	-	-	-	
2.50 to < 10.00	-	-	-	-	-	-	-	-	-	-	-	
10.00 to < 100.00	-	-	-	-	-	-	-	-	-	-	-	
100.00 (Default)	-	-	-	-	-	-	-	-	-	-	-	
Sub-total	262,664	-	-	262,664	0.01	36	25.2	1.24	9,020	3	10	-
Bank												
0.00 to < 0.15	114,676	823	44.6	115,043	0.04	1,045	42.5	1.12	15,468	13	19	
0.15 to < 0.25	208	230	50.3	324	0.22	74	42.1	0.78	102	31	-	
0.25 to < 0.50	4,035	260	45.0	4,152	0.37	69	45.3	0.68	2,233	54	7	
0.50 to < 0.75	940	-	5.0	940	0.63	50	45.0	0.51	647	69	3	
0.75 to < 2.50	978	1	-	978	0.89	41	45.0	0.90	849	87	4	
2.50 to < 10.00	3	-	-	3	5.75	8	45.0	0.06	4	133	-	
10.00 to < 100.00	-	-	-	-	-	-	-	-	-	-	-	
100.00 (Default)	-	-	-	-	-	-	-	-	-	-	-	
Sub-total	120,840	1,314	45.6	121,440	0.06	1,287	42.6	1.09	19,303	16	33	-
Corporate – small-and-medium sized corporates												
0.00 to < 0.15	5,951	1,799	24.7	6,420	0.12	207	29.3	3.25	1,232	19	2	
0.15 to < 0.25	10,041	2,678	29.3	10,826	0.22	198	26.0	3.10	2,758	25	6	
0.25 to < 0.50	23,294	3,854	32.0	24,528	0.37	347	28.8	2.77	8,187	33	26	
0.50 to < 0.75	24,337	7,814	33.6	26,940	0.63	439	31.0	2.59	11,685	43	53	
0.75 to < 2.50	41,181	10,718	28.2	44,202	1.53	1,196	28.1	2.36	23,313	53	189	
2.50 to < 10.00	3,463	1,578	37.0	4,048	3.70	151	30.6	1.41	2,847	70	47	
10.00 to < 100.00	15	1	20.6	15	10.00	2	43.6	1.15	20	133	1	
100.00 (Default)	9	-	12.0	9	100.00	2	31.8	1.55	-	-	3	
Sub-total	108,291	28,442	30.6	116,988	0.96	2,542	28.9	2.58	50,042	43	327	1,533
Corporate – others												
0.00 to < 0.15	111,931	59,178	36.4	133,450	0.09	556	44.5	2.72	36,948	28	52	
0.15 to < 0.25	44,776	31,109	32.3	54,825	0.22	334	41.2	2.14	20,735	38	50	
0.25 to < 0.50	49,778	28,303	28.4	57,819	0.37	486	41.5	1.86	27,893	48	89	
0.50 to < 0.75	38,654	22,817	28.9	45,249	0.63	415	36.9	2.30	27,255	60	105	
0.75 to < 2.50	88,198	52,715	25.0	101,367	1.42	1,384	37.5	1.67	75,589	75	536	
2.50 to < 10.00	15,017	14,281	23.5	18,366	3.79	295	42.5	1.61	21,531	117	295	
10.00 to < 100.00	27	59	15.5	36	11.21	14	10.0	3.98	16	44	-	
100.00 (Default)	1,533	-	20.4	1,533	100.00	101	42.8	1.60	-	-	656	
Sub-total	349,914	208,462	30.1	412,645	1.07	3,585	41.0	2.17	209,967	51	1,783	4,840

Table 30.2: CR6 – Credit risk exposures by portfolio and PD ranges – for IRB approach (Retail)

	a	b	c	d	e	f	g	h	i	j	k	l
As at 31 Dec 2017	**Original on-balance sheet gross exposure**	**Off-balance sheet exposures pre CCF**	**Average CCF**	**EAD post CRM and post-CCF**	**Average PD**	**Number of obligors**	**Average LGD**	**Average maturity**	**RWA**	**RWA density**	**EL**	**Provisions**
PD scale	**HK$m**	**HK$m**	**%**	**HK$m**	**%**		**%**	**years**	**HK$m**	**%**	**HK$m**	**HK$m**
Retail – qualifying revolving retail exposures ("QRRE")												
0.00 to < 0.15	11,415	123,676	39.1	59,709	0.07	1,611,033	104.3		2,708	5	43	
0.15 to < 0.25	1,845	10,152	43.6	6,268	0.22	170,093	104.0		760	12	15	
0.25 to < 0.50	4,671	16,731	32.4	10,088	0.39	204,825	100.1		1,845	18	39	
0.50 to < 0.75	1,952	3,752	46.2	3,684	0.60	62,782	101.6		961	26	22	
0.75 to < 2.50	6,466	10,371	31.0	9,677	1.45	116,843	98.9		4,775	49	139	
2.50 to < 10.00	4,160	2,641	57.0	5,665	4.75	61,495	99.2		6,492	115	267	
10.00 to < 100.00	1,557	450	103.3	2,023	29.61	22,276	99.2		4,033	199	578	
100.00 (Default)	53	-	-	53	100.00	713	93.6		-	-	50	
Sub-total	32,119	167,773	38.8	97,167	1.21	2,250,060	102.8		21,574	22	1,153	197
Retail – residential mortgage exposures												
0.00 to < 0.15	149,357	-	-	149,357	0.04	73,661	10.0		23,650	16	6	
0.15 to < 0.25	9,085	-	-	9,085	0.19	5,301	10.0		1,661	18	2	
0.25 to < 0.50	6,237	-	-	6,237	0.35	3,549	10.0		1,265	20	2	
0.50 to < 0.75	2,361	-	-	2,361	0.57	1,485	10.0		501	21	1	
0.75 to < 2.50	31,128	-	-	31,128	1.63	14,788	10.0		5,920	19	51	
2.50 to < 10.00	1,286	-	-	1,286	3.01	1,036	10.0		322	25	4	
10.00 to < 100.00	339	-	-	339	12.47	265	10.0		165	49	4	
100.00 (Default)	190	-	-	190	100.00	93	10.1		-	-	19	
Sub-total	199,983	-	-	199,983	0.45	100,178	10.0		33,484	17	89	-
Retail – small business retail exposures												
0.00 to < 0.15	2,816	-	-	2,816	0.06	1,008	4.3		21	1	-	
0.15 to < 0.25	323	-	-	323	0.17	99	15.2		18	6	-	
0.25 to < 0.50	77	-	-	77	0.49	14	24.6		14	18	-	
0.50 to < 0.75	361	-	-	361	0.54	137	0.8		2	1	-	
0.75 to < 2.50	489	-	-	489	1.18	202	6.1		32	7	-	
2.50 to < 10.00	448	-	-	448	5.22	165	7.0		47	10	2	
10.00 to < 100.00	-	-	-	-	-	-	-		-	-	-	
100.00 (Default)	-	-	-	-	-	-	-		-	-	-	
Sub-total	4,514	-	-	4,514	0.75	1,625	5.6		134	3	2	-
Other retail exposures to individuals												
0.00 to < 0.15	2,752	2,057	10.2	2,962	0.08	27,596	12.6		84	3	-	
0.15 to < 0.25	1,383	2,208	14.4	1,701	0.20	23,921	15.4		105	6	1	
0.25 to < 0.50	1,056	1,168	16.5	1,249	0.47	13,190	50.6		422	34	3	
0.50 to < 0.75	3,075	10	18.8	3,077	0.53	18,210	76.6		1,748	57	12	
0.75 to < 2.50	3,610	1,239	27.4	3,949	1.58	28,346	54.4		2,610	66	37	
2.50 to < 10.00	3,209	229	27.6	3,273	4.69	25,717	63.0		3,029	93	100	
10.00 to < 100.00	649	19	36.5	656	15.88	7,166	72.6		928	141	76	
100.00 (Default)	18	-	-	18	100.00	378	173.0		-	-	31	
Sub-total	15,752	6,930	16.3	16,885	2.16	144,524	49.4		8,926	53	260	106

Table 30.3: CR6 – Credit risk exposures by portfolio and PD ranges – for IRB approach (Total)

	a	b	c	d	e	f	g	h	i	j	k	l
As at 31 Dec 2017	**Original on-balance sheet gross exposure**	**Off-balance sheet exposures pre CCF**	**Average CCF**	**EAD post CRM and post-CCF**	**Average PD**	**Number of obligors**	**Average LGD**	**Average maturity**	**RWA**	**RWA density**	**EL**	**Provisions**
	HK$m	**HK$m**	**%**	**HK$m**	**%**		**%**	**years**	**HK$m**	**%**	**HK$m**	**HK$m**
Total (all portfolios)	1,094,077	412,921	33.5	1,232,286	0.66	2,503,837	36.5	1.81*	352,450	29	3,657	6,676

*This refers to the total average maturity for wholesale portfolio only as maturity is not a parameter in the internal model approved by the HKMA on calculating risk-weight ("RW") on retail portfolio.

Table 31: CR10 – Specialised lending under supervisory slotting criteria approach – other than high-volatility commercial real estate ("HVCRE")

As at 31 Dec 2017		a	b	c	d(i)	d(ii)	d(iii)	d(iv)	d(v)	e	f
					EAD amount						
Supervisory Rating Grade	**Remaining Maturity**	**On-balance sheet exposure amount** HK$m	**Off-balance sheet exposure amount** HK$m	**Supervisory risk-weighted ("SRW")**	**Project finance ("PF")** HK$m	**Object finance ("OF")** HK$m	**Commodities finance ("CF")** HK$m	**Income-producing real estate ("IPRE")** HK$m	**Total** HK$m	**RWA** HK$m	**Expected loss amount** HK$m
Strong^	Less than 2.5 years	2,285	89	50%	-	-	-	2,326	2,326	1,163	-
Strong	Less than 2.5 years	412	298	70%	-	-	-	486	486	340	2
Strong	Equal to or more than 2.5 years	3,763	901	70%	-	-	-	4,079	4,079	2,855	16
Good^	Less than 2.5 years	11	-	70%	-	-	-	11	11	8	-
Good	Less than 2.5 years	2,054	25	90%	-	-	-	2,061	2,061	1,855	17
Good	Equal to or more than 2.5 years	398	1	90%	-	-	-	398	398	359	3
Satisfactory		152	4	115%	-	-	-	154	154	177	4
Weak		-	-	250%	-	-	-	-	-	-	-
Default		-	-	0%	-	-	-	-	-	-	-
Total		**9,075**	**1,318**		**-**	**-**	**-**	**9,515**	**9,515**	**6,757**	**42**

^ *Use of preferential risk-weights.*

Table 32: CR10 – Equity exposures under the simple risk-weight method

As at 31 Dec 2017	a	b	c	d	e
Categories	**On-balance sheet exposure amount** HK$m	**Off-balance sheet exposure amount** HK$m	**SRW**	**EAD amount** HK$m	**RWA** HK$m
Publicly traded equity exposures	73	-	300%	73	219
All other equity exposures	4,093	-	400%	4,093	16,372
Total	**4,166**	**-**		**4,166**	**16,591**

Credit risk under standardised approach

The standardised approach is applied where exposures do not qualify for use of an IRB approach and/or where an exemption from IRB has been granted. The standardised approach requires banks to use risk assessments prepared by External Credit Assessment Institutions ("ECAI") to determine the risk weightings applied to rated counterparties.

The Group uses the following ECAIs to calculate its capital adequacy requirements under the STC approach prescribed in the BCR:

– Fitch Ratings
– Moody's Investors Service
– Standard & Poor's Ratings Services

Where exposures have been rated by the above-mentioned ECAIs, they are categorised under the following class of exposures:

– Sovereign exposures
– Public sector entity ("PSE") exposures
– Bank exposures
– Securities firm exposures
– Corporate exposures
– Collective investment scheme ("CIS") exposures

The process used to map ECAIs issuer ratings or ECAIs issue specific ratings in the Group's banking book is consistent with those prescribed in the Part 4 of the BCR.

Table 33: CR5 – Credit risk exposures by asset classes and by risk weights – for STC approach

		a	b	c	d	e	f	g	h	ha	i	j
	As at 31 Dec 2017											**Total credit risk exposures amount (post CCF and post**
	Risk weight	**0%**	**10%**	**20%**	**35%**	**50%**	**75%**	**100%**	**150%**	**250%**	**Others**	
		HK$m	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**
	Exposure class											
1	Sovereign exposures	106	-	-	-	-	-	-	-	-	-	106
2	PSE exposures	16,866	-	7,530	-	12	-	-	-	-	-	24,408
2a	*of which: Domestic PSEs*	-	-	*5,394*	-	-	-	-	-	-	-	*5,394*
2b	*of which: Foreign PSEs*	*16,866*	-	*2,136*	-	*12*	-	-	-	-	-	*19,014*
3	Multilateral development bank exposures	-	-	-	-	-	-	-	-	-	-	-
4	Bank exposures	-	-	46	-	8	-	-	-	-	-	54
5	Securities firm exposures	-	-	-	-	-	-	-	-	-	-	-
6	Corporate exposures	-	-	-	-	-	-	38,613	-	-	-	38,613
7	CIS exposures	-	-	-	-	-	-	-	-	-	-	-
8	Cash items	-	-	-	-	-	-	-	-	-	-	-
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	-	-	-	-	-	4,841	-	-	-	-	4,841
11	Residential mortgage loans	-	-	-	20,638	-	373	2,403	-	-	-	23,414
12	Other exposures which are not past due exposures	-	-	-	-	-	-	6,737	-	-	-	6,737
13	Past due exposures	2	-	-	-	-	-	3	153	-	-	158
14	Significant exposures to commercial entities	-	-	-	-	-	-	-	-	-	-	-
15	**Total**	**16,974**	**-**	**7,576**	**20,638**	**20**	**5,214**	**47,756**	**153**	**-**	**-**	**98,331**

The change in foreign PSEs exposures with 0% RW is the main driver for the overall increase in exposures.

Credit risk mitigation

The Group's approach when granting credit facilities is on the basis of capacity to repay, rather than primarily rely on credit risk mitigation. Depending on a customer's standing and the type of product, facilities may be provided on unsecured basis. Nevertheless, mitigation of credit risk is an important aspect of effective management and takes in many forms.

The Group's general policy is to promote the use of credit risk mitigation, justified by commercial prudence and good practice as well as capital efficiency. Policies covering the acceptability, structuring, control and valuation with regard to different types of collateral security are established to ensure that they are supported by evidence and continue to fulfil their intended purpose.

Concentration of credit risk exists when changes in geographic, economic or industry factors similarly affect groups of counterparties whose aggregate credit exposure is material in relation to the Group's total exposures. The Group's portfolio of financial instrument is diversified along geographic, industry and product sectors.

Collateral

The Group has implemented guidelines on the acceptability of specific classes of collateral or credit risk mitigation, and determined the valuation parameters. Such parameters are established prudently and are reviewed regularly in light of changing market environment and empirical evidence. Security structures and legal covenants are subject to regular review to ensure that they continue to fulfil their intended purpose and remain in line with local market practice.

While collateral is an important mitigant to credit risk, it is the Group's policy to establish that loans are within the customer's capacity to repay rather than to rely excessively on security. Facilities may be granted on unsecured basis depending on the customer's standing and the type of product. The principal collateral types are as follows:

– in the personal sector, charges over the properties, securities, investment funds and deposits;
– in the commercial and industrial sector, charges over business assets such as properties, stock, debtors, investment funds, deposits and machinery; and
– in the commercial real estate sector, charges over the properties being financed.

Repossessed assets are non-financial assets acquired in exchange for loans in order to achieve an orderly realisation, and are reported in the balance sheet within "Other assets" at the lower of fair value (less costs to sell) and the carrying amount of the loan (net of any impairment allowance). If excess funds arise after the debt has been repaid, they are made available either to repay other secured lenders with lower priority or are returned to the customer. The Group does not generally occupy repossessed properties for its business use.

Collateral held as security for financial assets other than loans and advances is determined by the nature of the instrument. Debt securities, treasury and other eligible bills are generally unsecured.

Credit Risk Mitigation under IRB Approach

The main types of recognised collateral taken by the Group are those as stated in section 80 of the BCR, including (but not limited to) cash on deposit, gold bullion, equities listed in a main index and/or a recognised exchange, collective investment schemes, various recognised debt securities, residential, industrial and commercial property, etc.

The Group's policy provides that netting is only to be applied where it has the legal right to do so. Consistent with the BCR, only bilateral netting arrangements are included for capital adequacy credit risk mitigation calculation.

In terms of the application within IRB approach, credit risk mitigants are considered in two broad categories: first, those which reduce the intrinsic PD of an obligor and therefore operate as adjustments to PD estimation, and second, those which affect estimated recoverability of obligations and require adjustment of LGD. The first includes, for example, full parental or group company guarantees; the second, collateral security of various kinds such as cash, equity, properties, fixed assets such as motor vehicles, plant and machinery, stock and debtors, bank and sovereign guarantees, etc.

Credit Risk Mitigation under STC Approach

As stated in sections 98 and 99 of the BCR, certain guarantees and credit derivative contracts are recognised for credit risk mitigation purposes. The main types of guarantees are from sovereigns, corporate and banks. With corporate guarantees, in order for it to be recognised as a credit risk mitigants, it must have a credit rating of A- or better by Standard & Poor's Ratings Services, Fitch Ratings or a credit rating of A3 or better by Moody's Investors Service.

Table 34: CR3 – Overview of recognised credit risk mitigation

		a	b1	b	d	f
		Exposures unsecured: carrying amount	**Exposures to be secured**	**Exposures secured by recognised collateral**	**Exposures secured by recognised guarantees**	**Exposures secured by recognised credit derivative contracts**
	As at 31 Dec 2017	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**
1	Loans	340,216	582,454	424,036	124,555	-
2	Debt securities	280,056	2,097	-	2,051	-
3	**Total**	**620,272**	**584,551**	**424,036**	**126,606**	**-**
4	*of which: Defaulted*	*494*	*886*	*762*	*1*	-

During the second half of 2017, the proportion of unsecured and secured exposures to the total exposures remained stable.

Table 35: CR7 – Effects on RWA of recognised credit derivative contracts used as recognised credit risk mitigation – for IRB approach

		a	b
		Pre-credit derivatives RWA	**Actual RWA**
	As at 31 Dec 2017	**HK$m**	**HK$m**
1	Corporate – Specialised lending under supervisory slotting criteria approach (project finance)	-	-
2	Corporate – Specialised lending under supervisory slotting criteria approach (object finance)	-	-
3	Corporate – Specialised lending under supervisory slotting criteria approach (commodities finance)	-	-
4	Corporate – Specialised lending under supervisory slotting criteria approach (income-producing real estate)	6,757	6,757
5	Corporate – Specialised lending (high-volatility commercial real estate)	-	-
6	Corporate – Small-and-medium sized corporates	50,042	50,042
7	Corporate – Other corporates	209,967	209,967
8	Sovereigns	6,554	6,554
9	Sovereign foreign public sector entities	-	-
10	Multilateral development banks	2,466	2,466
11	Bank exposures – Banks	18,952	18,952
12	Bank exposures – Securities firms	351	351
13	Bank exposures – Public sector entities (excluding sovereign foreign public sector entities)	-	-
14	Retail – Small business retail exposures	134	134
15	Retail – Residential mortgages to individuals	32,359	32,359
16	Retail – Residential mortgages to property-holding shell companies	1,125	1,125
17	Retail – Qualifying revolving retail exposures ("QRRE")	21,574	21,574
18	Retail – Other retail exposures to individuals	8,926	8,926
19	Equity – Equity exposures under market-based approach (simple risk-weight method)	16,591	16,591
20	Equity – Equity exposures under market-based approach (internal models method)	-	-
21	Equity – Equity exposures under PD/LGD approach (publicly traded equity exposures held for long-term investment)	-	-
22	Equity – Equity exposures under PD/LGD approach (privately owned equity exposures held for long-term investment)	-	-
23	Equity – Equity exposures under PD/LGD approach (other publicly traded equity exposures)	-	-
24	Equity – Equity exposures under PD/LGD approach (other equity exposures)	-	-
25	Equity – Equity exposures associated with equity investments in funds (CIS exposures)	-	-
26	Other – Cash items	436	436
27	Other – Other items	38,523	38,523
28	**Total (under the IRB calculation approaches)**	**414,757**	**414,757**

There is no effect in RWA, as the Group does not have credit derivative contracts used as recognised credit risk mitigation.

Table 36: CR4 – Credit risk exposures and effects of recognised credit risk mitigation – for STC approach

		a	b	c	d	e	f
		Exposures pre-CCF and pre-credit risk mitigation ("CRM")		**Exposures post-CCF and post-CRM**		**RWA and RWA density**	
As at 31 Dec 2017		**On-balance sheet amount**	**Off-balance sheet amount**	**On-balance sheet amount**	**Off-balance sheet amount**	**RWA**	**RWA density**
		HK$m	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**%**
	Exposure classes						
1	Sovereign exposures	-	-	104	2	-	-
2	PSE exposures	23,391	2,085	23,391	1,017	1,512	6
2a	*of which: Domestic PSEs*	*4,377*	*2,085*	*4,377*	*1,017*	*1,079*	*20*
2b	*of which: Foreign PSEs*	*19,014*	-	*19,014*	-	*433*	*2*
3	Multilateral development bank exposures	-	-	-	-	-	-
4	Bank exposures	54	-	54	-	14	25
5	Securities firm exposures	-	-	-	-	-	50
6	Corporate exposures	38,928	24,012	36,675	1,938	38,613	100
7	CIS exposures	-	-	-	-	-	-
8	Cash items	-	-	-	-	-	-
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	5,343	9,479	4,832	9	3,631	75
11	Residential mortgage loans	22,920	2,674	22,879	535	9,906	42
12	Other exposures which are not past due exposures	9,830	5,046	6,562	175	6,738	100
13	Past due exposures	158	-	158	-	232	148
14	Significant exposures to commercial entities	-	-	-	-	-	-
15	**Total**	**100,624**	**43,296**	**94,655**	**3,676**	**60,646**	**62**

An increase in EAD and RWA mainly resulted from the increase in asset size on corporate exposures.

Model performance

The disclosure covers wholesale and retail models which have been approved by regulators. It validates the PD estimation by comparing the PD estimated by IRB Models against actual default experience. It shows our IRB models are generally conservative.

Table 37.1: CR9 – Back-testing of PD per portfolio – for IRB approach (Wholesale)

a	b	c			d	e	f		g	h	i
							Number of obligors			of which:	
Portfolio	**PD Range**	**External rating equivalent (S&P)**	**External rating equivalent (Moody's)**	**External rating equivalent (Fitch)**	**Weighted average PD**	**Arithmetic average PD by obligors**	**Beginning of the year**	**End of the year**	**Defaulted obligors in the year**	**new defaulted obligors in the year**	**Average historical annual default rate**
As at 31 Dec 2017					%	%					%
Sovereign	0.00 to < 0.15	AAA to BBB	Aaa to Baa2	AAA to BBB	0.02	0.02	22	21	-	-	-
	0.15 to < 0.25	BBB-	Baa3	BBB-	0.22	0.22	1	-	-	-	-
	0.25 to < 0.50	BBB-	Baa3	BBB-	-	-	-	-	-	-	-
	0.50 to < 0.75	BB+ to BB	Ba1 to Ba2	BB+ to BB	-	-	-	-	-	-	-
	0.75 to < 2.50	BB- to B+	Ba3 to B2	BB- to B-	-	-	-	-	-	-	-
	2.50 to < 10.00	B to B-	B2 to Caa1	CCC+ to CCC	-	-	-	-	-	-	-
	10.00 to < 100.00	B- to C	Caa1 to C	CCC to C	-	-	-	-	-	-	-
Bank	0.00 to < 0.15	AAA to A-	Aaa to Baa1	AAA to BBB+	0.04	0.06	66	64	-	-	-
	0.15 to < 0.25	BBB+	Baa2	BBB	0.22	0.22	9	8	-	-	-
	0.25 to < 0.50	BBB	Baa3	BBB-	0.37	0.37	6	8	-	-	-
	0.50 to < 0.75	BBB-	Baa3	BBB-	0.63	0.63	4	4	-	-	-
	0.75 to < 2.50	BB+ to BB-	Ba1 to B1	BB+ to B+	0.87	1.04	4	7	-	-	-
	2.50 to < 10.00	B+ to B-	B2 to Caa1	B to CCC+	5.75	5.75	2	1	-	-	-
	10.00 to < 100.00	CCC+ to C	Caa1 to C	CCC to C	-	-	-	-	-	-	-
Corporate – small-and-medium sized corporates	0.00 to < 0.15	AAA to A-	Aaa to Baa1	AAA to BBB+	0.11	0.11	31	141	-	-	-
	0.15 to < 0.25	BBB+	Baa2	BBB	0.22	0.22	30	161	-	-	0.07
	0.25 to < 0.50	BBB	Baa3	BBB-	0.37	0.37	72	297	-	-	0.30
	0.50 to < 0.75	BBB-	Baa3	BBB-	0.63	0.63	59	373	-	-	0.60
	0.75 to < 2.50	BB+ to BB-	Ba1 to B1	BB+ to B+	1.44	1.50	197	1,006	-	-	0.49
	2.50 to < 10.00	B+ to B-	B2 to Caa1	B to CCC+	3.89	4.45	28	131	-	-	0.82
	10.00 to < 100.00	CCC+ to C	Caa1 to C	CCC to C	10.00	10.00	2	2	-	-	11.43
Corporate – others	0.00 to < 0.15	AAA to A-	Aaa to Baa1	AAA to BBB+	0.10	0.10	398	269	-	-	-
	0.15 to < 0.25	BBB+	Baa2	BBB	0.22	0.22	365	257	1	-	0.14
	0.25 to < 0.50	BBB	Baa3	BBB-	0.37	0.37	629	354	-	-	0.27
	0.50 to < 0.75	BBB-	Baa3	BBB-	0.63	0.63	664	326	-	-	0.69
	0.75 to < 2.50	BB+ to BB-	Ba1 to B1	BB+ to B+	1.39	1.50	1,919	1,098	3	-	0.89
	2.50 to < 10.00	B+ to B-	B2 to Caa1	B to CCC+	4.32	4.16	392	231	-	-	1.99
	10.00 to < 100.00	CCC+ to C	Caa1 to C	CCC to C	10.94	13.00	9	1	1	-	12.22

Note:

1. The number of obligors represents the obligor rated by key wholesale IRB models directly.

2. The number of obligors on corporate counterparty is being reported at counterparty level, while the number of obligors on Multilateral Development Bank (grouped under Sovereign portfolio) and Bank are being reported at entity level. Sovereigns are reported at country level based on local currency and foreign currency ratings.

3. Specialised lending exposures are excluded.

BANKING DISCLOSURE STATEMENT *(unaudited) (continued)*

Table 37.2: CR9 – Back-testing of PD per portfolio – for IRB approach (Retail)

a	b	c	d	e	f		g	h	i
					Number of obligors			**of which:**	
Portfolio	**PD Range**	**External rating equivalent****	**Weighted average PD**	**Arithmetic average PD by obligors**	**Beginning of the year**	**End of the year**	**Defaulted obligors in the year**	**new defaulted obligors in the year**	**Average historical annual default rate**
As at 31 Dec 2017			%	%					%
Retail – QRRE	0.00 to < 0.15		0.07	0.07	1,663,999	1,683,241	668	5	0.06
	0.15 to < 0.25		0.22	0.22	167,227	175,484	166	2	0.11
	0.25 to < 0.50		0.39	0.39	214,774	213,484	322	8	0.20
	0.50 to < 0.75		0.60	0.59	63,108	64,052	210	11	0.38
	0.75 to < 2.50		1.46	1.37	243,640	238,489	1,111	54	0.87
	2.50 to < 10.00		4.75	4.68	85,559	79,321	1,945	81	2.80
	10.00 to < 100.00		28.93	33.02	27,356	24,978	3,153	18	14.88
Retail – residential mortgage exposures	0.00 to < 0.15		0.04	0.05	76,029	78,709	15	-	0.02
	0.15 to < 0.25		0.19	0.19	6,213	5,338	3	-	0.05
	0.25 to < 0.50		0.35	0.35	3,760	3,584	10	-	0.14
	0.50 to < 0.75		0.59	0.59	1,550	1,491	5	-	0.19
	0.75 to < 2.50		1.62	1.64	16,608	16,106	38	-	0.26
	2.50 to < 10.00		3.01	3.15	1,236	1,050	14	-	1.19
	10.00 to < 100.00		15.01	16.74	350	270	44	-	7.17
Retail – small business retail exposures	0.00 to < 0.15		0.07	0.07	1,245	1,204	-	-	0.06
	0.15 to < 0.25		0.17	0.17	189	116	-	-	-
	0.25 to < 0.50		0.34	0.34	10	17	-	-	-
	0.50 to < 0.75		0.61	0.61	169	160	-	-	-
	0.75 to < 2.50		1.14	1.14	258	248	-	-	0.18
	2.50 to < 10.00		5.57	5.55	196	206	-	-	0.35
	10.00 to < 100.00		-	-	-	-	-	-	-
Other retail exposures to individuals	0.00 to < 0.15		0.08	0.08	14,903	14,710	2	-	0.01
	0.15 to < 0.25		0.20	0.20	12,304	12,254	9	-	0.08
	0.25 to < 0.50		0.39	0.41	7,483	8,722	13	-	0.24
	0.50 to < 0.75		0.53	0.52	8,940	19,338	34	2	0.38
	0.75 to < 2.50		1.52	1.60	16,548	25,630	139	10	1.08
	2.50 to < 10.00		4.99	5.15	20,819	26,624	583	34	3.22
	10.00 to < 100.00		16.48	17.38	8,518	7,618	908	5	11.88

*** External rating equivalent is N/A to retail exposures.*

Note:
The number of obligors is based on account level information for all retail IRB portfolios.

Counterparty credit risk exposures

Counterparty credit risk management

Counterparty credit risk ("CCR") arises for derivatives and securities financing transactions ("SFTs"). It is calculated in both the trading and non-trading books, and is the risk that a counterparty may default before settlement of the transaction. CCR is generated primarily in our wholesale global businesses.

The Bank uses current exposure method to calculate exposure value for CCR RWAs.

The PFE measures used for CCR management are calibrated to the 95th percentile. The measures consider volatility, trade maturity and the counterparty legal documentation covering netting and collateral.

Limits for CCR exposures are assigned within the overall credit process. The credit risk function assigns a limit against each counterparty to cover derivatives exposure which may arise as a result of a counterparty default. The magnitude of this limit will depend on the overall risk appetite and type of derivatives trading undertaken with the counterparty.

Credit valuation adjustment

Credit valuation adjustment ("CVA") risk is the risk of adverse moves in the credit valuation adjustments taken for expected credit losses on derivative transactions. The Bank uses the standardised approach to calculate the CVA capital charge.

Collateral arrangements

Our policy is to revalue all traded transactions and associated collateral positions on a daily basis. An independent collateral management function manages the collateral process including pledging and receiving collateral and investigating disputes and non-receipts.

Eligible collateral types are controlled under a policy to ensure price transparency, price stability, liquidity, enforceability, independence, reusability and eligibility for regulatory purposes. A valuation "haircut" policy reflects the fact that collateral may fall in value between the date the collateral was called and the date of liquidation or enforcement.

Credit ratings downgrade

A credit rating downgrade clause in a Master Agreement or a credit rating downgrade threshold clause in a Credit Support Annex ("CSA") is designed to trigger an action if the credit rating of the affected party falls below a specified level. These actions may include the requirement to pay or increase collateral, the termination of transactions by the non-affected party or the assignment of transactions by the affected party.

At 31 December 2017, the potential value of the additional collateral pertaining to International Swaps and Derivatives Association ("ISDA") CSA downgrade thresholds that we would need to post with counterparties in the event of a one-notch or two-notch downgrade of our rating was nil.

Wrong-way risk

Wrong-way risk occurs when a counterparty's exposures are adversely correlated with its credit quality.

There are two types of wrong-way risk.

– General wrong-way risk occurs when the probability of counterparty default is positively correlated with general risk factors, for example, where a counterparty is resident and/or incorporated in a higher-risk country and seeks to sell a non-domestic currency in exchange for its home currency.

– Specific wrong-way risk occurs in self-referencing transactions. These are transactions in which exposure is driven by capital or financing instruments issued by the counterparty and occurs where exposure from the Bank's perspective materially increases as the value of the counterparty's capital or financing instruments referenced in the contract decreases. It is the HSBC policy that specific wrong-way transactions are approved on a case-by-case basis.

We use a range of tools to monitor and control wrong-way risk, including requiring the business to obtain prior approval before undertaking wrong-way risk transactions outside pre-agreed guidelines. The Traded Risk functions are responsible for the control and monitoring process within an overarching HSBC framework and limit framework.

Central counterparties

While exchange traded derivatives have been cleared through Central counterparties ("CCP")'s for many years, recent regulatory initiatives designed to reduce systemic risk in the banking system are directing increasing volumes of over-the-counter ("OTC") derivatives to be cleared through CCPs.

A dedicated CCP risk team has been established by the HSBC to manage the interface with CCPs and undertake in-depth due diligence of the unique risks associated with these organisations. This is to address an implication of the regulations that the HSBC's risk will be transferred from being distributed among individual, bilateral counterparties to a significant level of risk concentration on CCPs. The HSBC has developed a risk appetite framework to manage risk accordingly, on an individual CCP and global basis. The Bank has adopted such risk appetite framework with limits allocated to individual CCP.

Table 38: CCR1 – Analysis of counterparty default risk exposures (other than those to CCPs) by approaches

			a	b	c	d	e	f
			Replacement cost ("RC")	**PFE**	**Effective expected positive exposure ("EPE")**	**Alpha (α) used for computing default risk exposure**	**Default risk exposure after CRM**	**RWA**
As at 31 Dec 2017		*Footnote*	**HK$m**	**HK$m**	**HK$m**		**HK$m**	**HK$m**
1	SA-CCR (for derivative contracts)	*1*	3,743	7,876		N/A	11,618	3,252
1a	CEM		-	-		-	-	-
2	IMM (CCR) approach				-	-	-	-
3	Simple Approach (for SFTs)						-	-
4	Comprehensive Approach (for SFTs)						326	20
5	VaR for SFTs						-	-
6	**Total**							**3,272**

1 Prior to the implementation of SA-CCR, exposures reported here are calculated using current exposure method.

Table 39: CCR2 – CVA capital charge

		a	b
		EAD post-CRM	**RWA**
As at 31 Dec 2017		**HK$m**	**HK$m**
	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 standardised CVA method	10,985	1,853
4	**Total**	**10,985**	**1,853**

Table 40: CCR8 – Exposures to CCPs

As at 31 Dec 2017		a Exposure after CRM HK$m	b RWA HK$m
1	**Exposures of the AI as clearing member or client to qualifying CCPs (total)**		**39**
2	Default risk exposures to qualifying CCPs (excluding items disclosed in rows 7 to 10), of which:	378	8
3	*(i) OTC derivative transactions*	*378*	*8*
4	*(ii) Exchange-traded derivative contracts*	-	-
5	*(iii) Securities financing transactions*	-	-
6	*(iv) Netting sets subject to valid cross-product netting agreements*	-	-
7	Segregated initial margin	-	
8	Unsegregated initial margin	118	30
9	Funded default fund contributions	50	1
10	Unfunded default fund contributions	-	-
11	**Exposures of the AI as clearing member or client to non-qualifying CCPs (total)**		**-**
12	Default risk exposures to non-qualifying CCPs (excluding items disclosed in rows 17 to 20), of which:	-	-
13	*(i) OTC derivative transactions*	-	-
14	*(ii) Exchange-traded derivative contracts*	-	-
15	*(iii) Securities financing transactions*	-	-
16	*(iv) Netting sets subject to valid cross-product netting agreements*	-	-
17	Segregated initial margin	-	
18	Unsegregated initial margin	-	-
19	Funded default fund contributions	-	-
20	Unfunded default fund contributions	-	-

Table 41: CCR5 – Composition of collateral for counterparty default risk exposures (including those for contracts or transactions cleared through CCPs)

		a	b	c	d	e	f
		Derivative contracts				**SFTs**	
		Fair value of recognised collateral received		**Fair value of posted collateral**		**Fair value of recognised collateral**	**Fair value of posted collateral**
		Segregated	**Unsegregated**	**Segregated**	**Unsegregated**		
As at 31 Dec 2017		**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**
1	Cash – domestic currency	-	109	-	98	-	-
2	Cash – other currencies	-	537	-	20	2,388	-
3	Domestic sovereign debt	-	-	-	-	-	-
4	Other sovereign debt	-	-	-	-	-	2,714
5	Government agency debt	-	-	-	-	-	-
6	Corporate bonds	-	-	-	-	-	-
7	Equity securities	-	-	-	-	-	-
8	Other collateral	-	-	-	-	-	-
9	**Total**	**-**	**646**	**-**	**118**	**2,388**	**2,714**

Counterparty default risk under internal ratings-based approach

Table 42: CCR4 – Counterparty default risk exposures (other than those to CCPs) by portfolio and PD range – for IRB approach

	a	b	c	d	e	f	g
As at 31 Dec 2017	**EAD post-CRM**	**Average PD**	**Number of obligors**	**Average LGD**	**Average maturity**	**RWA**	**RWA density**
PD scale	**HK$m**	**%**		**%**	**years**	**HK$m**	**%**
Sovereign							
0.00 to < 0.15	-	-	-	-	-	-	-
0.15 to < 0.25	-	-	-	-	-	-	-
0.25 to < 0.50	-	-	-	-	-	-	-
0.50 to < 0.75	-	-	-	-	-	-	-
0.75 to < 2.50	-	-	-	-	-	-	-
2.50 to < 10.00	-	-	-	-	-	-	-
10.00 to < 100.00	-	-	-	-	-	-	-
100.00 (Default)	-	-	-	-	-	-	-
Sub-total	-	-	-	-	-	-	-
Bank							
0.00 to < 0.15	9,306	0.05	101	35.2	1.27	1,262	14
0.15 to < 0.25	659	0.22	12	28.8	1.00	178	27
0.25 to < 0.50	105	0.37	3	45.0	1.01	61	58
0.50 to < 0.75	69	0.63	2	45.0	1.00	53	77
0.75 to < 2.50	404	0.89	5	45.0	1.00	360	89
2.50 to < 10.00	-	-	-	-	-	-	-
10.00 to < 100.00	-	-	-	-	-	-	-
100.00 (Default)	-	-	-	-	-	-	-
Sub-total	10,543	0.10	123	35.4	1.24	1,914	18
Corporates							
0.00 to < 0.15	46	0.10	18	49.5	3.07	17	37
0.15 to < 0.25	93	0.22	7	54.1	1.13	38	40
0.25 to < 0.50	103	0.37	25	53.1	1.31	57	55
0.50 to < 0.75	192	0.63	11	48.8	1.02	122	64
0.75 to < 2.50	344	1.57	67	56.9	1.10	378	110
2.50 to < 10.00	241	4.27	13	55.7	1.01	371	154
10.00 to < 100.00	-	-	-	-	-	-	-
100.00 (Default)	-	-	-	-	-	-	-
Sub-total	1,019	1.72	141	54.1	1.18	983	96
Retail							
0.00 to < 0.15	-	-	-	-	-	-	-
0.15 to < 0.25	-	-	-	-	-	-	-
0.25 to < 0.50	-	-	-	-	-	-	-
0.50 to < 0.75	-	-	-	-	-	-	-
0.75 to < 2.50	-	-	-	-	-	-	-
2.50 to < 10.00	-	-	-	-	-	-	-
10.00 to < 100.00	-	-	-	-	-	-	-
100.00 (Default)	-	-	-	-	-	-	-
Sub-total	-	-	-	-	-	-	-
Total (sum of all portfolios)	**11,562**	**0.24**	**264**	**37.0**	**1.24**	**2,897**	**25**

Note:
Details on the scope of models and percentage of RWAs covered by models for each of the regulatory portfolios can be found in the "Credit risk under internal ratings-based approach" section of this document.

The Group has not used IMM(CCR) approach to calculate its default risk exposure.

Counterparty default risk under standardised approach

Table 43: CCR3 – Counterparty default risk exposures (other than those to CCPs) by asset classes and by risk weights – for STC approach

	As at 31 Dec 2017	a	b	c	ca	d	e	f	g	ga	h	i
	Risk weight	**0%**	**10%**	**20%**	**35%**	**50%**	**75%**	**100%**	**150%**	**250%**	**Others**	**Total default risk exposure after CRM**
		HK$m	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**	**HK$m**
	Exposure class											
1	Sovereign exposures	-	-	-	-	-	-	-	-	-	-	-
2	PSE exposures	-	-	2	-	-	-	-	-	-	-	2
2a	*of which: Domestic PSEs*	-	-	*2*	-	-	-	-	-	-	-	*2*
2b	*of which: Foreign PSEs*	-	-	-	-	-	-	-	-	-	-	-
3	Multilateral development bank exposures	-	-	-	-	-	-	-	-	-	-	-
4	Bank exposures	-	-	-	-	-	-	-	-	-	-	-
5	Securities firm exposures	-	-	-	-	-	-	-	-	-	-	-
6	Corporate exposures	-	-	-	-	-	-	325	-	-	-	325
7	CIS exposures	-	-	-	-	-	-	-	-	-	-	-
8	Regulatory retail exposures	-	-	-	-	-	18	-	-	-	-	18
9	Residential mortgage loans	-	-	-	-	-	-	-	-	-	-	-
10	Other exposures which are not past due exposures	-	-	-	-	-	-	37	-	-	-	37
11	Significant exposures to commercial entities	-	-	-	-	-	-	-	-	-	-	-
12	**Total**	**-**	**-**	**2**	**-**	**-**	**18**	**362**	**-**	**-**	**-**	**382**

Market risk

Overview and governance

Market risk is the risk that movements in market factors, including foreign exchange rates and commodity prices, interest rates, credit spreads and equity prices, will reduce our income or the value of our portfolios.

There were no significant changes to our policies and practices for the management of market risk in 2017.

Exposure to market risk is separated into two portfolios:

– Trading portfolios comprise positions arising from market-making and warehousing of customer-derived positions.

– Non-trading portfolios comprise positions that primarily arise from the interest rate management of our retail and commercial banking assets and liabilities, and financial investments designated as available-for-sale.

The diagram below illustrates the major trading and non-trading market risk types and market risk measures used to monitor and limit exposures.

	Trading Risk	Non-Trading Risk
Risk Type	- Foreign exchange & Commodities - Interest rates - Credit spreads	- Structural foreign exchange - Interest rates - Credit spreads
Risk Measure	VaR / Sensitivity / Stress testing	VaR / Sensitivity / Stress testing

Where appropriate, the Group applies similar risk management policies and measurement techniques to both trading and non-trading portfolios. The Group's objective is to manage and control market risk exposures in order to optimise return on risk while maintaining a market profile consistent with the status as a professional banking and financial services organisation.

The nature of the hedging and risk mitigation strategies range from the use of traditional market instruments, such as interest rate swaps, to more sophisticated hedging strategies to address a combination of risk factors arising at portfolio level.

Market risk governance

Market risk is managed and controlled through limits approved by the Group's Chief Risk Officer, noting the support of RMM. These limits are allocated across business lines and to the Group's legal entities, including Hang Seng Bank (China) Limited.

The management of market risk is principally undertaken in Global Markets using risk limits allocated from the risk appetite, which is subject to the Board's approval. Limits are set for portfolios, products and risk types where appropriate, with market liquidity and business need being primary factors in determining the level of limits set.

An independent market risk management and control function is responsible for measuring, monitoring and reporting market risk exposures against the prescribed limits on a daily basis.

Model risk is governed through MOC at the WCMR level. The MOC has direct oversight and approval responsibility on traded risk models utilised for risk measurement and management and stress testing to ensure that they remain within our risk appetite and business plans.

Our control of market risk in the trading and non-trading portfolios is based on a policy of restricting trading within a list of permissible instruments authorised for each business lines, of enforcing new product approval procedures, and of restricting trading in the more complex derivative products only to business lines with appropriate levels of product expertise and robust control systems.

Market risk measures

Monitoring and limiting market risk exposures

The Group's objective is to manage and control market risk exposures while maintaining a market profile consistent with the Group's risk appetite. The Group uses a range of tools to monitor and limit market risk exposures including sensitivity analysis, VaR, and stress testing.

Sensitivity analysis

The Group uses sensitivity measures to monitor the market risk positions within each risk type. Sensitivity limits are set for portfolios, products and risk types, with the depth of the market being one of the principal factors in determining the level of limits set.

VaR

VaR is a technique that estimates the potential losses on risk positions as a result of movements in market rates and prices over a specified time horizon and to a given level of confidence. The use of VaR is integrated into market risk management and is calculated for all trading positions regardless of how the Group capitalises those exposures. Where there is no approved internal model, the Group uses the appropriate local rules to capitalise exposures.

In addition, the Group calculates VaR for non-trading portfolios in order to have a complete picture of market risk. Where VaR is not calculated explicitly, alternative tools are used.

Standard VaR is calculated at a 99% confidence level for a one-day holding period while Stressed VaR uses a 10-day holding period and a 99% confidence interval based on a continuous one-year historical significant stress period. The VaR models used by the Group are predominantly based on historical simulation which incorporate the following features:

– historical market rates and prices are calculated with reference to foreign exchange rates and commodity prices, interest rates, equity prices and the associated volatilities;

– potential market movements utilised for Standard VaR are calculated with reference to data from the past two years; and

– Standard VaR is calculated to a 99% confidence level and use a one-day holding period.

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

VaR model limitations

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

– the use of historical data as a proxy for estimating future events may not encompass all potential events, particularly those which are extreme in nature;

– the use of a holding period assumes that all positions can be liquidated or the risks offset during that period. This may not fully reflect the market risk arising at times of severe illiquidity, when the holding period may be insufficient to liquidate or hedge all positions fully;

– the use of a 99% confidence level, by definition does not take into account losses that might occur beyond this level of confidence; and

– VaR is calculated on the basis of exposures outstanding at the close of business and therefore does not necessarily reflect intra-day exposures.

Risk not in VaR ("RNIV") framework

The RNIV framework aims to manage and capitalise material market risks that are not adequately covered in the VaR model. In such instances the RNIV framework uses stress tests to quantify the capital requirement. On average in 2017, the capital requirement derived from these stress tests represented 3.7% of the total internal model-based market risk requirement.

RNIV is not viewed as being a material component of the Group's market risk capital requirement. Risks covered by RNIV represent 3.7% of market risk RWAs for models with regulatory approval.

Risk factors are reviewed on a regular basis and either incorporated directly in the VaR models, where possible, or quantified through the VaR-based RNIV approach or a stress test approach within the RNIV framework.

Stress testing

Stress testing is an important tool that is integrated into the Group's market risk management tool to evaluate the potential impact on portfolio values of more extreme, although plausible, events or movements in a set of financial variables. In such abnormal scenarios, losses can be much greater than those predicted by VaR modelling.

Stress testing is implemented at the legal entity and the overall Group levels. Scenarios are tailored in order to capture the relevant events or market movements. A scoring framework is in place for management to effectively assess the severity of the potential stress losses and the likelihood of occurrence of the stress scenarios. The risk appetite around potential stress losses for the Group is set and monitored against referral limits.

Market Risk Reverse stress tests are undertaken based upon the premise that there is a fixed loss. The stress test process identifies which scenarios lead to this loss. The rationale behind the reverse stress test is to understand scenarios which are beyond normal business settings that could have contagion and systemic implications.

Stressed VaR and stress testing, together with reverse stress testing, provide management with insights regarding the "tail risk" beyond VaR for which the Group appetite is limited.

Market risk capital models

There are a number of measures that the Group has permission to use in calculating regulatory capital, which are listed below.

VaR

The trading books that received approval from the regulator to be covered via an internal model are used to calculate VaR for regulatory purposes. Regulatory VaR levels contribute to the calculation of market risk RWAs.

Stressed VaR

Stressed VaR is primarily used for regulatory capital purposes and is integrated into the risk management process to ensure prudent capital management. Stressed VaR complements other risk measures by providing the potential losses under stressed market conditions. Calculations are based on a continuous one-year period of stress for the trading portfolio, based on the assessment at the Group level.

Stressed VaR modelling follows the same approach as our VaR risk measure, except for the following:

– potential market movements employed for stressed VaR calculations are based on a continuous one-year period of stress for the trading portfolio;
– it is calculated to a 99% confidence using a 10-day holding period;
– it is based on an actual 10-day holding period, whereas Regulatory VaR is based on a one-day holding period scaled to 10 days.

Market risk under standardised approach

Using the standard templates as specified by the HKMA, the following tables provide detailed information relating to market risk under STM and IMM approaches.

Table 44: MR1 – Market risk under STM approach

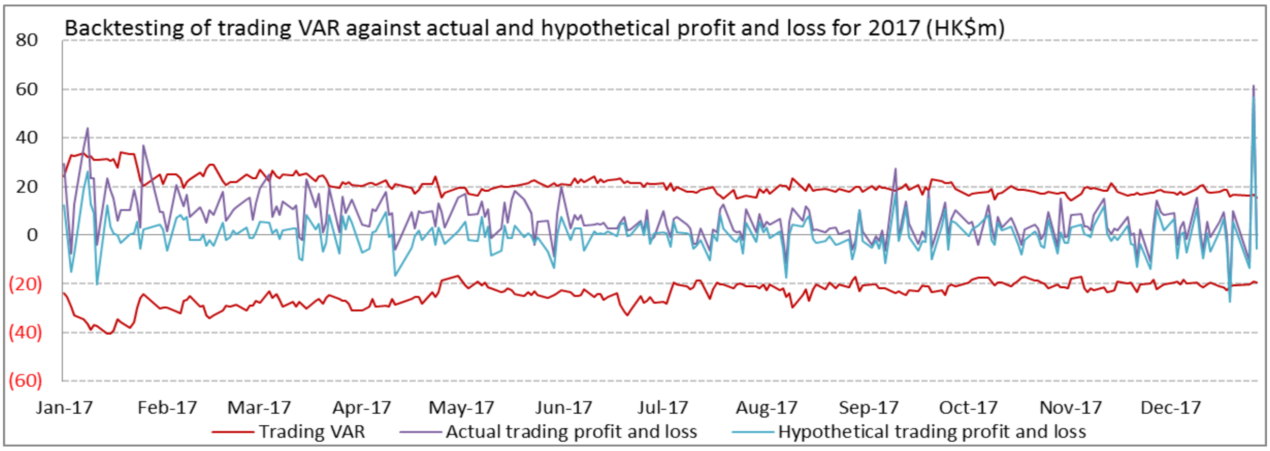
		a
		RWA
As at 31 Dec 2017		**HK$m**
	Outright product exposures	
1	Interest rate exposures (general and specific risk)	68
2	Equity exposures (general and specific risk)	-
3	Foreign exchange (including gold) exposures	-
4	Commodity exposures	-
	Option exposures	
5	Simplified approach	-
6	Delta-plus approach	-
7	Other approach	-
8	Securitisation exposures	-
9	**Total**	**68**

Analysis of VaR, stressed VaR and incremental risk charge measures

Table 45: MR3 – IMM approach values for market risk exposures

		a
		Value
As at 31 Dec 2017		**HK$m**
VaR (10 days – one-tailed 99% confidence interval)		
1	Maximum Value	128
2	Average Value	77
3	Minimum Value	53
4	Period End	65
Stressed VaR (10 days – one-tailed 99% confidence interval)		
5	Maximum Value	178
6	Average Value	106
7	Minimum Value	68
8	Period End	169
Incremental risk charge ("IRC") (99.9% confidence interval)		
9	Maximum value	-
10	Average value	-
11	Minimum value	-
12	Period end	-
Comprehensive risk charge ("CRC") (99.9% confidence interval)		
13	Maximum value	-
14	Average value	-
15	Minimum value	-
16	Period end	-
17	Floor	-

Table 46: MR4 – Comparison of VaR estimates with gains or losses



While comparing the daily VaR measures to the actual and hypothetical profit and loss ("P&L") for the backtesting, one loss side exception is observed in December 2017 due to exceptional market volatility approaching the end of the year. Some profit side exceptions are identified for actual P&L and those are mainly driven by intraday profit arising from trading activities.

The backtesting process applies only to regulatory trading book positions. The actual P&L excludes reserve which are resulted from regulatory banking book positions and also fee and commission which are non-modelled items.

Other disclosures

Interest rate exposures in the banking book

Non-traded interest rate risk is the risk of an adverse impact to earnings or capital due to changes in market interest rates. The risk arises from timing mismatches in the re-pricing of non-traded assets and liabilities and is the potential adverse impact of changes in interest rates on earnings and capital.

A principal part of the Group's management of non-traded interest rate risk is to monitor the sensitivity of projected net interest income at least quarterly under varying interest rate scenarios (simulation modelling), where all other economic variables are held constant. In its management of the risk, the Group aims to mitigate the impact of future interest rate movements which could reduce future net interest income, while balancing the cost of hedging activities to the current revenue stream.

The table below sets out the effect on future net interest income of an incremental 100 basis points ("bp") parallel rise or fall in yield curves at the beginning of year from 1 January 2018 and an incremental 25bp parallel rise or fall in yield curves at the beginning of each quarter during the 12-month period from 1 January 2018.

Table 47: Change in projected net interest income arising from a shift in yield curves

	100bp parallel increase	**100bp parallel decrease**	**25bp increase at the beginning of each quarter**	**25bp decrease at the beginning of each quarter**
	HK$m	**HK$m**	**HK$m**	**HK$m**
Change in 2018 projected net interest income				
- Hong Kong dollar ("HKD")	**2,045**	**(3,858)**	**1,496**	**(2,287)**
- US dollar ("USD")	**555**	**(1,154)**	**374**	**(670)**
- other	**716**	**(601)**	**420**	**(362)**
Total	**3,316**	**(5,613)**	**2,290**	**(3,319)**
Change in 2017 projected net interest income				
- HKD	1,453	(3,227)	1,051	(1,894)
- USD	679	(1,239)	457	(719)
- other	700	(382)	389	(204)
Total	2,832	(4,848)	1,897	(2,817)

The interest rate sensitivities set out in the table above represent the effect of the pro forma movements in projected yield curves based on a static balance sheet size and structure assumption. This effect, however, does not incorporate actions which would probably be taken by Balance Sheet Management ("BSM") or in the business units to mitigate the effect of interest rate risk. In reality, BSM proactively seeks to change the interest rate risk profile to optimise net revenues. The net interest income sensitivity calculations assume that interest rates of all maturities move by the same amount in the "up-shock" scenario. Rates are not assumed to become negative in the "down-shock" scenario unless the central bank rate is already negative and then not assumed to go further negative, which may, in certain currencies, effectively result in non-parallel shock. In addition, the net interest income sensitivity calculations take into account of the effect on net interest income of anticipated differences in changes between interbank interest rates and interest rates over which the entity has discretion in terms of the timing and extent of rate changes.

Key assumptions used in the measurement of interest rate sensitivities include business line interest rate pass-on assumptions, re-investment of maturing assets and liabilities at market rates per shock scenario and prepayment risk. BSM is modelled based on no management actions i.e. the risk profile at the month end is assumed to remain constant throughout the forecast horizon. The projections make other assumptions, including that contractually fixed term positions run to maturity, managed rate products and non-interest bearing balances, such as interest-free current accounts, are subject to interest rate risk behaviouralisation.

Mainland activities

The analysis of mainland activities exposures is based on the categories of non-bank counterparties and the type of direct exposures defined by the HKMA "Return of Mainland Activities - (MA(BS)20)". This includes the mainland activities exposures extended by the Bank's Hong Kong offices and its wholly owned banking subsidiary in mainland China.

Table 48: Mainland activities exposures

As at 31 Dec 2017	**On-balance sheet exposure HK$m**	**Off-balance sheet exposure HK$m**	**Total exposures HK$m**
Type of Counterparties			
1 Central government, central government-owned entities and their subsidiaries and joint ventures ("JVs")	55,809	3,214	59,023
2 Local governments, local government-owned entities and their subsidiaries and JVs	13,491	2,332	15,823
3 PRC nationals residing in Mainland China or other entities incorporated in Mainland China and their subsidiaries and JVs	68,101	23,287	91,388
4 Other entities of central government not reported in item 1 above	5,890	1,071	6,961
5 Other entities of local governments not reported in item 2 above	3,861	333	4,194
6 PRC nationals residing outside Mainland China or entities incorporated outside Mainland China where the credit is granted for use in Mainland China	39,745	4,046	43,791
7 Other counterparties where the exposures are considered by the reporting institution to be non-bank Mainland China exposures	17,889	1,571	19,460
Total	**204,786**	**35,854**	**240,640**
Total assets after provision	**1,363,885**		
On-balance sheet exposures as percentage of total assets	**15.01%**		

On-balance sheet exposures as percentage of total assets remained stable as compared with 30 June 2017.

International claims

The Group's country risk exposures in the table below are prepared in accordance with the HKMA "Return of International Banking Statistics - (MA(BS)21)" guidelines. International claims are on-balance sheet exposures to counterparties based on the location of the counterparties after taking into account the transfer of risk, and represent the sum of cross-border claims in all currencies and local claims in foreign currencies.

The table shows claims on individual countries and territories or areas, after recognised risk transfer, amounting to not less than 10% of the Group's total international claims.

Table 49: International claims

As at 31 Dec 2017	**Banks HK$m**	**Official Sector HK$m**	**Non Bank Financial Institution HK$m**	**Non-Financial Private Sector HK$m**	**Others HK$m**	**Total HK$m**
Developed countries	61,021	36,498	14,512	46,591	-	158,622
Offshore centres	14,431	5,980	5,205	108,410	-	134,026
of which : Hong Kong SAR	6,129	1,342	4,503	91,668	-	103,642
Developing Asia and Pacific	76,343	12,956	7,104	65,992	-	162,395
of which : China	56,571	12,892	6,056	58,265	-	133,784

At 31 December 2017, only claims on Hong Kong and China were the individual countries and territories or areas, which were not less than 10% of the Group's total international claims.

Foreign exchange exposure

The Group's foreign exchange exposures mainly comprise foreign exchange dealing by Global Markets and currency exposures originated by its banking business. The latter are transferred to Global Markets where they are centrally managed within foreign exchange position limits approved by the Group's Chief Risk Officer, noting the support of RMM. The net options position is calculated on the basis of delta-weighted positions of all foreign exchange options contracts.

The Group's structural foreign exchange exposure, monitored using sensitivity analysis, represents the Group's foreign currency investments in subsidiaries, branches and associates, and the fair value of the Group's long-term foreign currency equity investments. The Group's structural foreign exchange exposures are managed by the Group's Asset and Liability Management Committee ("ALCO") with the primary objective of ensuring, where practical, that the Group's and the Bank's capital ratios are largely protected from the effect of changes in exchange rates.

At 31 December 2017, the USD, Chinese renminbi ("RMB"), Pound sterling ("GBP") and Gold ("GOL") were the currencies in which the Group had non-structural foreign currency positions that were not less than 10% of the total net position in all foreign currencies. The Group also had a RMB structural foreign currency position, which was not less than 10% of the total net structural position in all foreign currencies.

The tables below summarise the net structural and non-structural foreign currency positions of the Group.

Table 50: Foreign exchange exposure

As at 31 Dec 2017	USD HK$m	RMB HK$m	GBP HK$m	GOL HK$m	Other foreign currencies HK$m	Total foreign currencies HK$m
Non-structural position						
Spot assets	188,684	119,550	19,529	4,142	91,371	423,276
Spot liabilities	(176,358)	(114,535)	(11,083)	(3,751)	(54,898)	(360,625)
Forward purchases	340,390	185,067	2,211	572	27,273	555,513
Forward sales	(352,756)	(189,122)	(10,456)	(810)	(63,707)	(616,851)
Net options position	356	(249)	3	-	(48)	62
Net long/(short) non-structural position	316	711	204	153	(9)	1,375
Structural position	-	15,571	-	-	1,136	16,707

Liquidity information

The Banking (Liquidity) Rules ("BLR") were introduced by the HKMA in 2014 and became effective from 1 January 2015. The Group is required to calculate its Liquidity Coverage Ratio ("LCR") on a consolidated basis in accordance with rule 11(1) of the BLR. During 2017, the Group is required to maintain a LCR of not less than 80%, increasing in steps of 10% each year to not less than 100% by January 2019.

The average LCRs for the period are as follows:

Table 51: Average liquidity coverage ratio

	Quarter ended			
	31 Dec 2017	**30 Sep 2017**	**30 Jun 2017**	**31 Mar 2017**
	%	**%**	**%**	**%**
Average LCR	209.5	242.3	256.7	267.7

The liquidity position of the Group remained strong in 2017. The average LCR ranged from 209.5% to 267.7% for the reportable quarters. The decrease in average LCR in 4th quarter mainly reflected the increase in net cash outflow as a result of the increase in short-term funding for IPO activities.

The composition of the Group's high quality liquid assets ("HQLA") as defined under Schedule 2 of the BLR is shown as below. The majority of the HQLA held by the Group are Level 1 assets which consist mainly of government debt securities.

Table 52: Total weighted amount of high quality liquid assets

	Weighted amount (Average value) at quarter ended			
	31 Dec 2017	**30 Sep 2017**	**30 Jun 2017**	**31 Mar 2017**
	HK$m	**HK$m**	**HK$m**	**HK$m**
Level 1 assets	261,705	269,223	283,481	295,635
Level 2A assets	15,520	16,748	14,980	13,669
Level 2B assets	563	393	528	766
Total weighted amount of HQLA	**277,788**	**286,364**	**298,989**	**310,070**

Sources of funding

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

Currency mismatch

The Group allows currency mismatches to provide some flexibility in managing the balance sheet structure and to carry out foreign exchange trading, on the basis that there is sufficient liquidity in the swap market to support currency conversion in periods of stress. The Group sets limits on LCR by currency for all material currencies based on liquidity in the swap markets. These limits are approved and monitored by ALCO.

Additional contractual obligations

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

Information relating to the Group's approach to liquidity risk management can be found in the Risk Report of the Group's 2017 Annual Report.

BANKING DISCLOSURE STATEMENT *(unaudited) (continued)*

The following table sets out the required disclosure items under the LCR Standard Disclosure Template as specified by the HKMA. The number of data points used in calculating the average value of the LCR and related components set out in this Template for the quarters ending on 31 December 2017, 30 September 2017, 30 June 2017 & 31 March 2017: (73, 77, 71 and 73 data points respectively)

Table 53: Liquidity coverage ratio

		Quarter ended 31 Dec 2017 (73 data points)		**Quarter ended 30 Sep 2017 (77 data points)**	
	Basis of disclosure: consolidated	**Unweighted amount (Average Value) HK$m**	**Weighted amount (Average Value) HK$m**	**Unweighted amount (Average Value) HK$m**	**Weighted amount (Average Value) HK$m**
A	High quality liquid assets				
1	Total high quality liquid assets ("HQLA")		277,788		286,364
B	Cash outflows				
2	Retail deposits and small business funding, of which:	773,376	62,657	761,559	61,633
3	*Stable retail deposits and stable small business funding*	*209,721*	*6,292*	*207,469*	*6,224*
4	*Less stable retail deposits and less stable small business funding*	*563,655*	*56,365*	*554,090*	*55,409*
5	*Retail term deposits and small business term funding*	-	-	-	-
6	Unsecured wholesale funding (other than small business funding) and debt securities and prescribed instruments issued by the institution, of which:	280,661	126,765	257,739	112,507
7	*Operational deposits*	*63,214*	*15,047*	*57,897*	*13,753*
8	*Unsecured wholesale funding (other than small business funding) not covered in Row 7*	*217,028*	*111,299*	*199,374*	*98,286*
9	*Debt securities and prescribed instruments issued by the institution and redeemable within the LCR period*	*419*	*419*	*468*	*468*
10	Secured funding transactions (including securities swap transactions)		-		19
11	Additional requirements, of which:	64,660	11,796	61,549	11,985
12	*Cash outflows arising from derivative contracts and other transactions, and additional liquidity needs arising from related collateral requirements*	*5,912*	*5,905*	*6,506*	*6,502*
13	*Cash outflows arising from obligations under structured financing transactions and repayment of funding obtained from such transactions*	*392*	*392*	*364*	*364*
14	*Potential drawdown of undrawn committed facilities (including committed credit facilities and committed liquidity facilities)*	*58,356*	*5,499*	*54,679*	*5,119*
15	Contractual lending obligations (not otherwise covered in Section B) and other contractual cash outflows	9,438	9,438	8,550	8,550
16	Other contingent funding obligations (whether contractual or non-contractual)	377,952	1,767	366,144	1,635
17	Total cash outflows		212,423		196,329
C	Cash inflows				
18	Secured lending transactions (including securities swap transactions)	-	-	-	-
19	Secured and unsecured loans (other than secured lending transactions covered in Row 18) and operational deposits placed at other financial institutions	121,172	67,899	119,529	66,870
20	Other cash inflows	18,422	11,393	17,499	10,709
21	Total cash inflows	139,594	79,292	137,028	77,579
D	Liquidity coverage ratio (Adjusted value)				
22	Total HQLA		277,788		286,364
23	Total net cash outflows		133,131		118,750
24	LCR (%)		209.5%		242.3%

Table 53: Liquidity coverage ratio *(continued)*

	Basis of disclosure: consolidated	Quarter ended 30 Jun 2017 (71 data points) Unweighted amount (Average Value) HK$m	Quarter ended 30 Jun 2017 (71 data points) Weighted amount (Average Value) HK$m	Quarter ended 31 Mar 2017 (73 data points) Unweighted amount (Average Value) HK$m	Quarter ended 31 Mar 2017 (73 data points) Weighted amount (Average Value) HK$m
A	High quality liquid assets				
1	Total high quality liquid assets ("HQLA")		298,989		310,070
B	Cash outflows				
2	Retail deposits and small business funding, of which:	739,585	59,845	729,516	59,439
3	*Stable retail deposits and stable small business funding*	*201,619*	*6,048*	*196,896*	*6,177*
4	*Less stable retail deposits and less stable small business funding*	*537,966*	*53,797*	*532,620*	*53,262*
5	*Retail term deposits and small business term funding*	-	-	-	-
6	Unsecured wholesale funding (other than small business funding) and debt securities and prescribed instruments issued by the institution, of which:	245,335	107,694	243,187	108,829
7	*Operational deposits*	*54,826*	*13,061*	*54,436*	*13,512*
8	*Unsecured wholesale funding (other than small business funding) not covered in Row 7*	*190,436*	*94,560*	*188,751*	*95,317*
9	*Debt securities and prescribed instruments issued by the institution and redeemable within the LCR period*	*73*	*73*	-	-
10	Secured funding transactions (including securities swap transactions)		9		10
11	Additional requirements, of which:	60,149	11,652	48,077	10,653
12	*Cash outflows arising from derivative contracts and other transactions, and additional liquidity needs arising from related collateral requirements*	*6,126*	*6,125*	*6,217*	*6,217*
13	*Cash outflows arising from obligations under structured financing transactions and repayment of funding obtained from such transactions*	*502*	*502*	*554*	*554*
14	*Potential drawdown of undrawn committed facilities (including committed credit facilities and committed liquidity facilities)*	*53,521*	*5,025*	*41,306*	*3,882*
15	Contractual lending obligations (not otherwise covered in Section B) and other contractual cash outflows	11,795	11,795	10,918	10,918
16	Other contingent funding obligations (whether contractual or non-contractual)	362,876	1,591	365,622	1,688
17	Total cash outflows		192,586		191,537
C	Cash inflows				
18	Secured lending transactions (including securities swap transactions)	-	-	38	-
19	Secured and unsecured loans (other than secured lending transactions covered in Row 18) and operational deposits placed at other financial institutions	118,325	65,799	113,153	63,703
20	Other cash inflows	16,790	9,881	18,868	11,451
21	Total cash inflows	135,115	75,680	132,059	75,154
D	Liquidity coverage ratio (Adjusted value)				
22	Total HQLA		298,989		310,070
23	Total net cash outflows		116,906		116,383
24	LCR (%)		256.7%		267.7%

Table 54: Assets pledged and secured liabilities

As at 31 Dec 2017	**HK$m**
Financial assets pledged to secure liabilities	
Trading assets and financial investments	**55,860**
Amount of liabilities secured	**51,244**

The above shows assets where a charge has been granted to secure liabilities on a legal and contractual basis. These transactions are conducted under terms that are usual and customary to collateralised transactions including, where relevant, standard securities lending and repurchase agreements.

Amount of liabilities secured included deposit of assets pledged in respect of sale and repurchase agreements, to cover short positions, and to facilitate settlement processes with clearing houses. These assets comprise of treasury bills, debt securities, equities and deposits.

Other information

Abbreviations

A	
AI	Authorised institution
ALCO	Asset and Liability Management Committee
AMA	Advanced measurement approach
ASA	Alternative standardised approach
AT1	Additional tier 1
AVAs	Additional valuation adjustments
B	
bp	Basis point
Bank	Hang Seng Bank Limited
BCBS	Basel Committee on Banking Supervision
BCR	Banking (Capital) Rules
BDR	Banking (Disclosure) Rules
BIA	Basic indicator approach
BLR	Banking (Liquidity) Rules
BSC	Basic approach
BSM	Balance Sheet Management
C	
CCF	Credit conversion factor
CCP	Central counterparty
CCR	Counterparty credit risk
CCyB	Countercyclical capital buffer
CEM	Current exposure method
CET1	Common equity tier 1
CF	Commodities finance
CIS	Collective investment scheme
CRC	Comprehensive risk charge
CRM	Credit risk mitigation
CRR	Customer risk rating
CSA	Credit support annex
CVA	Credit valuation adjustment
D	
D-SIB	Domestic systemically important authorised institution
DTAs	Deferred tax assets
E	
EAD	Exposure at default
ECAI	External Credit Assessment Institution
EL	Expected loss
EPE	Expected positive exposure
F	
FBA	Fall-back approach
FFVA	Funding fair value adjustment
G	
G-SIB	Global systemically important authorised institution
GBP	Pound Sterling
GOL	Gold
Group	Hang Seng Bank Limited together with its subsidiaries
H	
HK$bn	Billions (thousands of millions) of Hong Kong dollars
HK$m	Millions of Hong Kong dollars
HKAS	Hong Kong Accounting Standard
HKD	Hong Kong dollar
HKMA	Hong Kong Monetary Authority
HKFRS	Hong Kong Financial Reporting Standards
Hong Kong	The Hong Kong Special Administrative Region of the People's Republic of China
HSBC	HSBC Holdings together with its subsidiary undertakings
HVCRE	High-volatility commercial real estate
HQLA	High quality liquid assets

I	
IMM	Internal models approach
IMM(CCR)	Internal models (counterparty credit risk) approach
IPRE	Income-producing real estate
IRB	Internal ratings-based approach
IRB(S)	Internal ratings-based (securitisation) approach
IRC	Incremental risk charge
ISDA	International Swaps and Derivatives Association
J	
JCCyB	Jurisdictional countercyclical capital buffer
JVs	Joint ventures
L	
LCR	Liquidity coverage ratio
LGD	Loss given default
LTA	Look through approach
M	
MBA	Mandate-based approach
MOC	Model Oversight Committee
MSRs	Mortgage servicing rights
N	
N/A	Not applicable
NBFI	Non-Bank Financial Institutions
O	
OF	Object finance
OTC	Over-the-counter
P	
P&L	Profit and loss
PD	Probability of default
PF	Project finance
PFE	Potential future exposure
PRA	Prudential Regulation Authority
PRC	People's Republic of China
PSE	Public sector entity
PVIF	Present value of in-force long-term insurance business
Q	
QRRE	Qualifying revolving retail exposures
R	
RAS	Risk appetite statement
RBWM	Retail Banking and Wealth Management
RC	Replacement cost
RMB	Renminbi
RMM	Risk Management Meeting
RNIV	Risks not in VaR
RW	Risk-weight
RWA	Risk-weighted asset/risk-weighted amount
S	
S	Securitisation
SA-CCR	Standardised approach for counterparty credit risk
SFT	Securities financing transaction
SRW	Supervisory risk-weighted
STC	Standardised (credit risk) approach
STC(S)	Standardised (securitisation) approach
STM	Standardised (market risk) approach
STO	Standardised (operational risk) approach
U	
USD	US dollar
V	
VaR	Value at risk
W	
WCMR	Wholesale Credit and Market Risk